

**US-95  
FINAL ENVIRONMENTAL  
IMPACT STATEMENT/  
FINAL SECTION 4(f) EVALUATION**

*Las Vegas, Nevada*

*Volume I*



**Nevada  
Department of Transportation  
Division of Environmental Services**

*and*

**Federal Highway Administration**

*and*

**Federal Transit Administration  
Cooperating Agency**



*November 1999*



US-95 LAS VEGAS, NEVADA

FINAL ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to 42 U.S.C. 4332 (2) (c)  
16 U.S.C. 470 (f), 49 U.S.C. 303 and 23 U.S.C. 138

by the

U.S. Department of Transportation  
Federal Highway Administration,

Nevada Department of Transportation, and

Federal Transit Administration (Cooperating Agency)  
201 Mission Street, Suite 2210  
San Francisco, CA 94105-1839

The following persons may be contacted for additional information concerning this document. Written Comments to this document may also be provided to these individuals.

John T. Price, Division Administrator  
U.S. Department of Transportation  
Federal Highway Administration  
705 N. Plaza Street, Suite 220  
Carson City, Nevada 89701  
(775) 687-1204

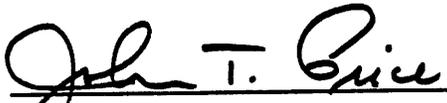
Thomas E. Stephens, P.E., Director  
Nevada Department of Transportation  
1263 South Stewart Street  
Carson City, Nevada 89712  
(775) 888-7440

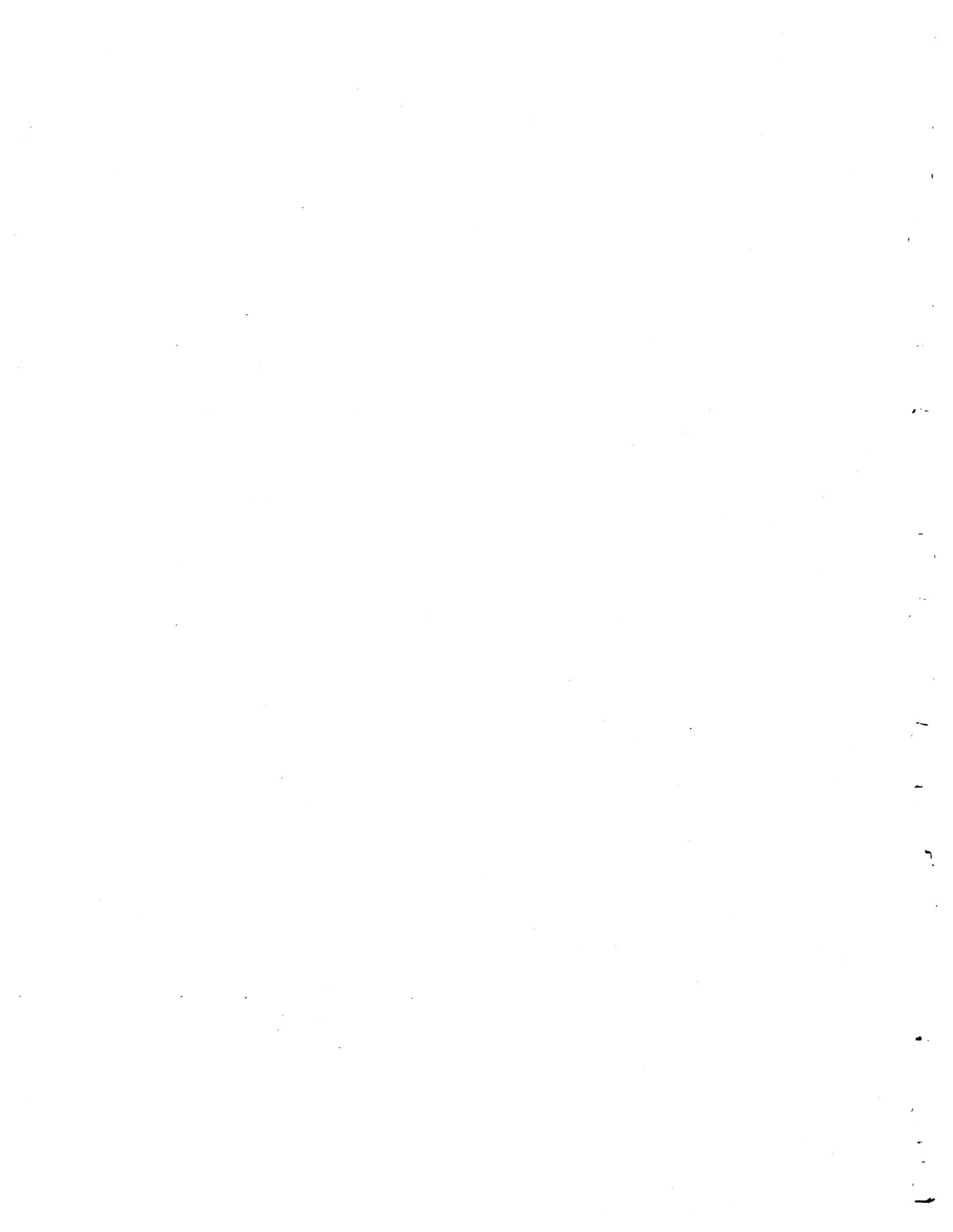
Abstract

This statement concerns the environmental impacts associated with the implementation of roadway, safety and transit improvements along US 95, Summerlin Parkway and the local and arterial road network in the Northwest Region of Las Vegas. The Northwest Region is comprised of the portion of the Las Vegas Valley north of Desert Inn Road and west of I-15 and Martin Luther King Boulevard. The proposed project resulted from the US 95 Major Investment Study, which served to identify and evaluate a range of alternatives to improve transportation in the project area. The proposed project improvements include: widening of US 95 and Summerlin Parkway, new arterial street connections, arterial street improvements, transit system improvements and Transportation Demand Measures (TDM). These improvements provide a coherent transportation strategy to meet the short, intermediate and long-term transportation demands of the Northwest Region of Las Vegas (project area). They are intended to improve transportation in the project area by increasing regional roadway capacity, increasing transit service, improving regional level of service, improving safety, improving the operational efficiency of the transportation system and increasing mobility options available to the traveling public. Two alternative alignments for US-95 improvements along with various local road improvements, transit improvements and TDM measures and the No-Action Alternative are presented. Based upon the findings of this environmental impact study, Alternative A is the preferred alternative.

11/18/99

Date of Approval

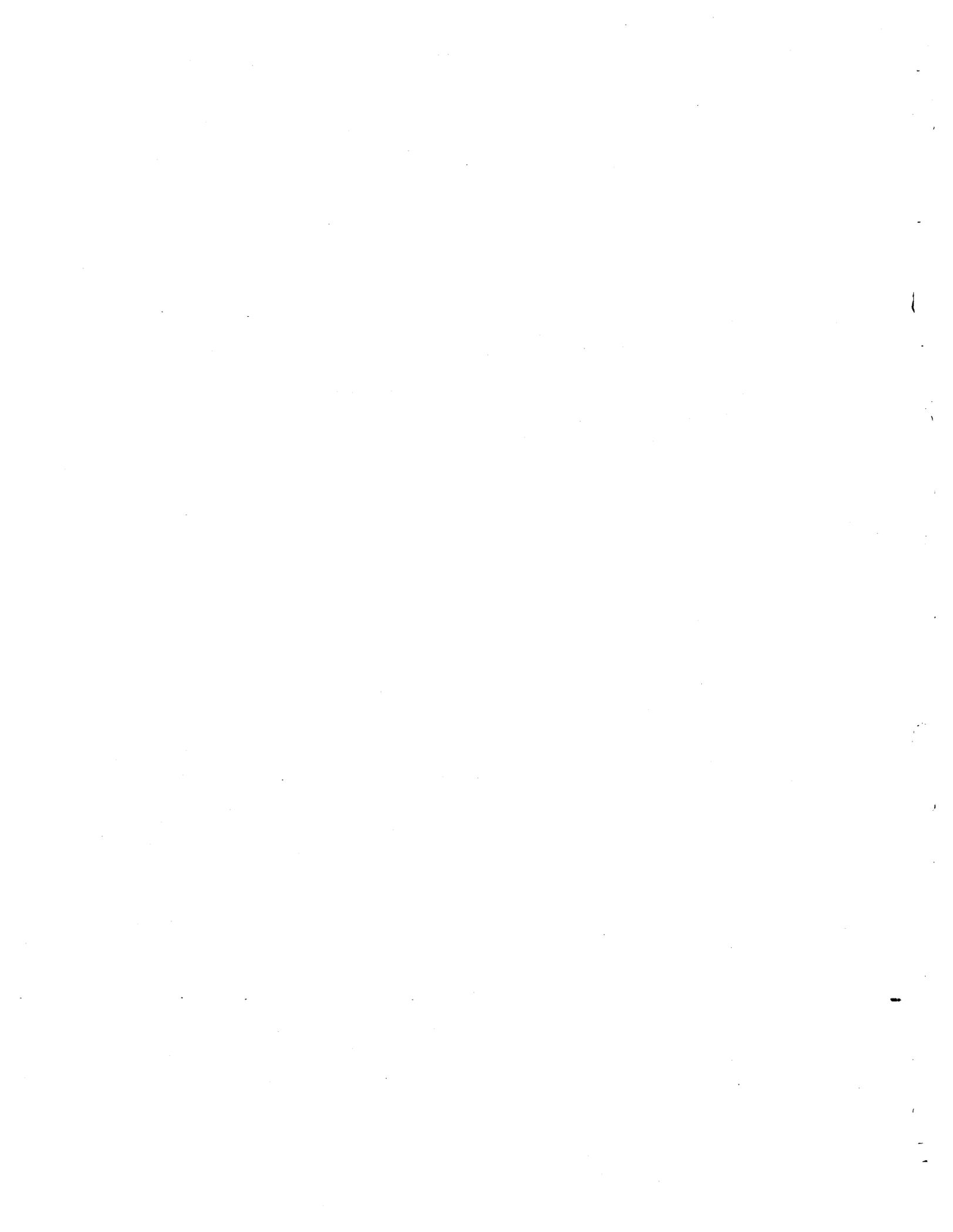
  
Federal Highway Administration  
Division Administrator



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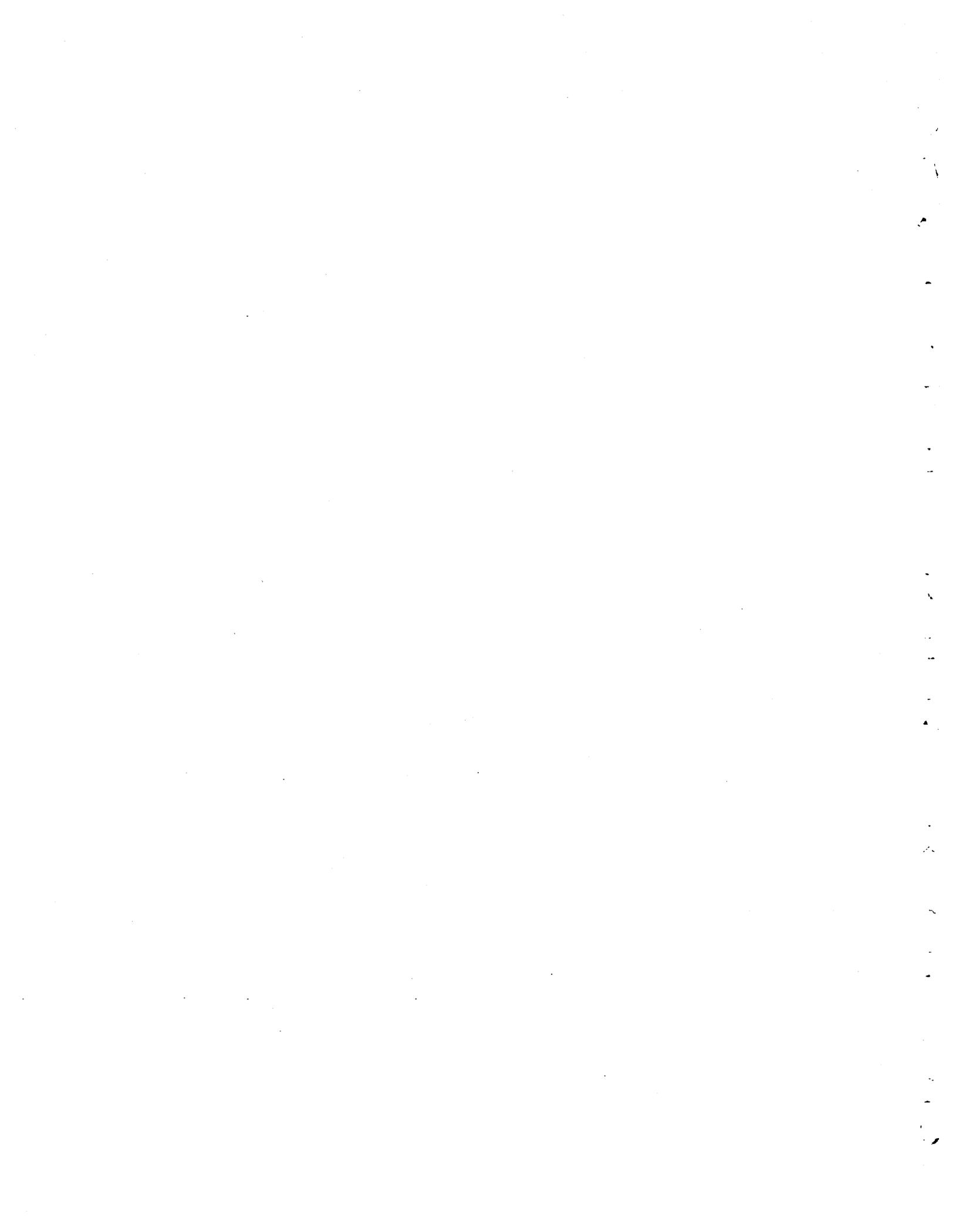
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**VOLUME II  
(Separately Bound)**



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**EXECUTIVE SUMMARY**

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## **EXECUTIVE SUMMARY**

### **A. Project Description**

The proposed project resulted from the US-95 Major Investment Study (MIS) which was prepared in April, 1997 by the Nevada Department of Transportation. The MIS, entitled "US-95 Major Investment Study, Detailed Evaluation of Alternative Strategies" served to develop a program to meet the short and long-term transportation needs for the Northwest Region of the Las Vegas Valley (project area). The MIS evaluated alternatives which would provide increased opportunities for enhancing mobility for local residents while at the same time, identifying technically sound and practical solutions in response to the need to relieve congestion and accommodate the continued and expanding growth of the region. The MIS also served to incorporate the needs and concerns of the local community through direct involvement in the identification of alternative strategies and the analysis of alternatives to be advanced for further review in the FEIS/Section 4(f) Evaluation.

The objective and purpose of the proposed project is to meet the short and long-term transportation needs of the project area and provide improved transportation in response to regional growth, decrease future congestion on the existing roadway network and enhance mobility. The project objective and need is based on the projected limitations and inadequacies of the existing and proposed arterial road network to handle projected traffic growth through the year 2020.

The project area includes portions of the City of Las Vegas, the City of North Las Vegas and unincorporated urbanized areas of Clark County. The project area is defined as the area bounded on the south by Desert Inn Road and on the east by Interstate-15 and Martin Luther King Boulevard. On the north and west, the project area limits extend to Craig Road and Rampart Road respectively, while the balance of the project area in the north and west is unbounded but constrained by the limits of existing and planned development.

The proposed project is comprised of various transportation improvements which provide a coherent transportation improvement strategy to meet the short, intermediate and long-term transportation demands of the Northwest Region of Las Vegas (project area). These improvement projects include; improvements to US-95, new arterial street connections, arterial street improvements, transit system improvements and transportation demand management measures. The proposed project includes the following transportation improvement projects which have been grouped into five elements as follows:

**US-95 IMPROVEMENTS**

Install a Freeway Management System on US-95  
Widen US-95 to 10 lanes from Rainbow to I-15  
Widen US-95 to 6 lanes from Craig to Rainbow  
Widen Summerlin Parkway to 6 lanes from Rampart to Rainbow  
Construct High Occupancy Vehicle Lanes on US-95 and the Summerlin Parkway

**NEW ARTERIAL STREET CONNECTIONS**

Martin Luther King to Industrial Road Connector including widening Industrial to 6-lanes: Sahara to Wyoming  
Rancho to Alta Connector including widening Alta to 6-lanes: Rancho to Martin Luther King

**ARTERIAL STREET IMPROVEMENTS**

Widen Desert Inn Road from 4 lanes to 6 lanes:  
Durango to Jones  
Widen Arville Street to 4 lanes: Charleston to Sahara  
Widen Martin Luther King to 6 lanes: Craig to Charleston  
Widen Valley View to 6 lanes, Sahara to Desert Inn  
Widen Carey Avenue to 4 lanes: Rancho to Clayton  
Widen Durango Drive to 6 lanes: Desert Inn to Edna  
Widen Rancho to 6 lanes: Craig south to US-95  
Widen Tenaya Way to 4 lanes: Westcliff to Smoke Ranch  
Widen Torrey Pines to 4 lanes: Washington to Craig

**TRANSIT SYSTEM IMPROVEMENTS**

Adopt Enhanced *CAT* Bus Service  
Develop Park-and-Ride lots

**TRANSPORTATION DEMAND MANAGEMENT MEASURES**

Adopt expanded rideshare program

The proposed project is intended to improve transportation in the Northwest Region of Las Vegas by increasing regional roadway capacity, improving regional level of service, improving the safety and operational efficiency of the transportation system, and increasing the mobility options available to the traveling public.

**1. Alternatives Considered****a. No-Build Alternative**

Under the No-Build Alternative, the proposed project would not be constructed or implemented and the existing local and regional road and highway network would essentially remain in its current configuration with only normal maintenance and repair of the existing roadways and associated structures by the respective agencies and departments. In addition, the No-Build Alternative

assumes that all currently planned projects included in the RTC's Regional Transportation Plan 1995-2020 will be constructed but that none of the roadway or transportation demand management improvements proposed as part of the proposed project would be undertaken.

### b. Build Alternatives A & B

Alternative A is the alternative adopted by the City of Las Vegas, the City of North Las Vegas, Clark County, the Regional Transportation Commission and the Nevada State Transportation Board as recommended in the US-95 Major Investment Study, April 1, 1997.

Alternative A includes all of the elements listed above as described in detail in Section IV of this FEIS.

Alternative B is the same as Alternative A except for the alignment of US-95. With Alternative B, US-95 is proposed to be widened on the south side between Valley View Boulevard and Rancho Drive. As a result, with Alternative B, US-95 would be widened into the Las Vegas Valley Water District (LVVWD) North Well Field and would directly effect water production and distribution facilities and sensitive natural, biological and cultural resources, including the Las Vegas Springs National Register Site.

Alternative A avoids the LVVWD North Well Field by widening US-95 to the north between Valley View Boulevard and Rancho Drive, into a single family residential neighborhood.

## 2. Estimated Project Costs

The estimated cost of the proposed project is shown in Table A.

### ESTIMATED CAPITAL AND OPERATING COSTS OF THE PROPOSED PROJECT THROUGH THE YEAR 2025

TABLE A

	<u>Alternative A</u>	<u>Alternative B</u>
Freeway Widening and HOV Lanes	\$312,800,000 <sup>1</sup>	\$305,900,000 <sup>1</sup>
Freeway Management System	4,900,000 <sup>1</sup>	4,900,000 <sup>1</sup>
Arterial Street Improvements	53,800,000 <sup>1</sup>	53,800,000 <sup>1</sup>
New Arterial Street Connections	61,500,000 <sup>1</sup>	61,500,000 <sup>1</sup>
Enhanced Bus Service & TDM	<u>440,000,000<sup>2</sup></u>	<u>440,000,000<sup>2</sup></u>
	\$873,00,000	\$866,100,000

<sup>1</sup> Estimated Capital Cost

<sup>2</sup> Estimated operating costs through the year 2025

Source: US-95 MIS, April 1997

The proposed project is proposed to be funded primarily with federal funds, specifically, with motor vehicle fuel taxes and congestion management/air quality funds.

### 3. Preferred Alternative

This EIS considered the potential impacts to the man-made and natural environment as a result of the construction of each of two build alternatives as described in this document. Based upon the results of the various environmental technical studies conducted as part of the EIS process, Alternative A will result in less substantial or severe impacts to the environment. Consequently, Alternative A is the preferred alternative.

The US-95 Major Investment Study, April, 1997, did not find any substantial differences between Alternatives A and B in terms of cost, right-of-way, traffic operations or traffic benefits and consequently recommended both alternatives for further consideration in the EIS.

Based on the information included in this Final EIS, Alternative A will avoid impacts to the Las Vegas Bearpoppy, a plant which is listed as a federal species of concern by the U.S. Fish and Wildlife Service and as critically endangered in Nevada and protected under Nevada Revised Statute Section 527.260-.300. Alternative B would result in the loss of the Bearpoppy population on the Las Vegas Valley Water District North Well Field property. According to the U.S. Fish and Wildlife Service, "the population of the Las Vegas Bearpoppy that occurs on the Las Vegas Valley Water District (LVVWD) North Well Field is specifically identified for conservation and protection. The Service considers the North Well Field population as one of three populations in the Las Vegas Valley that have unique genetic material considered essential for the long-term survival of the species. Irreversible adverse impacts to this important population of Las Vegas Bearpoppy may become the basis for the need to list the species under the Endangered Species Act of 1973, as amended (ESA)."

Alternative A will avoid impacts to the Las Vegas Springs National Register Site and will specifically avoid impacts to 22 historic structures/features within the site which are eligible individually or contribute to eligibility for the National Register. Alternative A avoids Section 4(f) impacts to the Las Vegas Springs National Register Site. Alternative B would result in Section 4(f) impacts by taking a portion of the Las Vegas Springs National Register Site, taking six historic structures/features which are either listed on the National Register as individual or contributing features or individually eligible for listing and indirectly impacting an additional 16 historic structures/features.

Alternative A will avoid direct and indirect impacts to the vegetation and wildlife of the LVVWD North Well Field which would occur with Alternative B. Specifically, alternative A will avoid the taking of a major portion of the cottonwood-willow forest on the North Well Field, and consequential decline in the number of individuals and species abundance of wildlife on the property. Indirect impacts to the Peregrine Falcon, a species listed by the U.S. Fish and Wildlife

Service as "threatened" and to the last population of the Desert Pocket Mouse in the Las Vegas Valley will be avoided.

Alternative A will also avoid impacts to LVVWD water production facilities which would occur with Alternative B. Specifically, Alternative A would avoid the relocation of two water production wells and a major pumping station on the LVVWD North Well Field.

While Alternative A will result in increased single family residential displacements, avoiding the impacts to the natural and man-made environment of the Las Vegas Valley Water District North Well Field and the Las Vegas Springs National Register Site with Alternative A outweighs the potential benefits of reduced residential displacements with Alternative B, given the availability of replacement housing.

A Draft EIS was issued on April 16, 1999, and public hearings were held on June 9 and June 10, 1999. Approximately 300 people attended the hearings. During the public comment period a total of 125 comment forms and 220 comment letters were received. The analysis of the public comments received indicate strong and preferential public support for Alternative A. In addition, comments received from the State of Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, the Natural Heritage Program, the City of Las Vegas and the Las Vegas Valley Water District express a preference for Alternative A.

There were no agency comments received supporting Alternative B.

## **B. Federal Action Required by the Proposed Project**

### **1. Federal Actions**

The following are the federal actions that would be required for the construction and implementation of the proposed project.

- U.S. Department of the Interior, Fish and Wildlife Service continued coordination for potential impacts to threatened and endangered species.
- Federal Transit Administration review and approval of the enhanced transit elements of the proposed project.

## 2. Other Governmental Projects in the Project Area

### a. Federal Projects in the Project Area

The U.S. Army Corp. of Engineers has an active program, in cooperation with the Clark County Flood Control District, to construct flood control detention and conveyance facilities within the Las Vegas Valley and the project area. This program is intended to reduce flooding in the developed and undeveloped areas within the Las Vegas Valley region and the project area. Planned flood control improvements are described in Section V.A of the Final EIS/Section 4(f)Evaluation and are considered to be compatible with the proposed project.

The Federal Housing Administration is also currently administering a housing relocation program in the Windsor Park neighborhood within the project area. Supported by Community Development Block Grant (CDBG) funds, the FHA is relocating residents within a subsidence zone to other areas within the community. This federal project is being undertaken separate from the proposed project and no direct involvement with the proposed project is anticipated.

The City of Las Vegas has secured federal funds to further the development of the Enterprise Park development site. Located on the southwest corner of Lake Mead Boulevard and Martin Luther King Boulevard, the Enterprise Park site currently includes the recently completed Veterans center. The latest development plans for this include; a new Post Office facility, a community health center and a new Metro Police Sub-Station. The proposed project is expected to support and enhance the development of this property through improved local and regional access and improved travel times. This federal project is being undertaken separate to the proposed project and no direct involvement with the proposed project is anticipated. The proposed project together with this federal project is not expected to result in any secondary or cumulative impacts.

The Regional Transportation Commission is using federal funding for the development of a fixed guideway system for the Resort Corridor. The Resort Corridor Fixed Guideway System will extend from Downtown Las Vegas to the Las Vegas "Strip" in Clark County and connect to a private fixed guideway system serving the "Strip". The Environmental Impact Statement is expected to be completed in the summer of 2000 and construction is expected to be completed in 2003. While the Resort Corridor Fixed Guideway System will not be located in the project area, it is a key component of the Valley-wide transit system which will link with the enhanced bus service in the project area.

There are currently no other known plans for major federal projects in the vicinity of the proposed project other than those identified above and those that are being considered as part of the proposed project and/or eligible transportation improvements included the State Transportation Improvement Plan (STIP).

**b. Local Government Projects in the Project Area**

The proposed project includes land areas within the City of Las Vegas, the City of North Las Vegas and unincorporated areas within Clark County, Nevada. State and local government projects within the project area are implemented through the city and/or county capital improvement programs as described below.

**(1.) City of Las Vegas Projects**

The City of Las Vegas Five Year Capital Improvement Plan, 1999-2003 identifies on-going and planned projects by the City of Las Vegas. The project area encompasses roughly 80% of the land area of the City of Las Vegas, including nearly all of the new residential growth areas. Therefore, most of the City's capital improvements are targeted for the project area, northwest Las Vegas. The City of Las Vegas Capital Improvement Plan includes \$740.6 million in infrastructure improvements in the categories of general government, judicial, public safety, public works, sanitation, culture and recreation and economic development and assistance.

The purpose of the City of Las Vegas Capital Improvement plan is to accommodate the "burden placed on public services, facilities and systems" by burgeoning growth and is not viewed as an inducement to growth.

The following describes the major initiatives of the City of Las Vegas Capital Improvement Plan as stated in the Plan:

"One of the City's ever-growing priorities is its streets. The Public Works function accounts for the construction of road and drainage improvements. The goal is to maintain a safe and effective road network. The annual Pavement Continuity and Street Rehabilitation Program are intended to prolong the life of existing streets and reduce traffic hazards. Interlocal agreements with other local governments allow expansion and construction of new major thoroughfares through the City.

Special improvement districts created by ordinance allow infrastructure development in a much more expedient fashion. The City is currently issuing Special Improvement District bonds for the construction of curbs, drainage systems, left-turn pockets, sidewalks, streetlights, and new traffic signals when warranted in high-growth areas. The bonds are repaid by assessing the property owners their proportionate share over a ten-year period.

In conjunction with the Clark County Regional Flood Control District (CCRFCD), the City will construct several conveyance systems and water detention basins. These projects are part of CCRFCD's master plan and are an integral part of the valley-wide flood control system.

The City's commitment to develop new and expand existing Business Parks continues in accordance with the City General Plan procedures and takes advantage of rapid real estate diversification and employment opportunities for the citizens of Las Vegas.

The City is blazing a new economic and ecological trail into the 21<sup>st</sup> century with the construction of two water reclamation facilities. The 10 million gallon per day Water Resource Center will be built in the northwest area and the 1 million gallon per day East Bonanza Water Reclamation Facility will be built on the City's east side. These facilities will provide irrigation water for public and private golf courses. This will reduce the need for downstream sewer capacity improvements and increase the potable water available for future housing needs and commercial development.

This year the Parks and Leisure Department will construct two Recreation Centers that will provide recreation and socialization for the citizens of Las Vegas. The City must continue to be proactive in providing for programmable space in order to keep up with demand. With the advent of year-round schools and double sessions occurring at our school sites, the school buildings are not available for recreational use as they have been in years past. These centers will be the first full-sized recreation centers built since 1964."

A list of the City of Las Vegas Capital Improvement Plan Projects, 1999-2003, is provided in Appendix C.

The following describes relevant City of Las Vegas Capital Improvement Plan projects.

**West Service Center.** The City of Las Vegas will be expanding their service center at 7500 Sauer Drive. The service center located near US-95 and Cheyenne Avenue reduces trips to the Downtown area by providing services to residents in the northwest nearer to their homes.

**Protective Services.** The City of Las Vegas will be installing traffic signals, school flashers, street lighting, neighborhood traffic control measures, optic-com systems, non-signal intersection improvements, video traffic detection systems, hazard elimination improvements, pedestrian push button retrofits, street sign upgrades and pavement markings to improve the safety of the street network.

**Street Paving.** The City of Las Vegas will continue its \$214 million program to pave and improve the arterial and collector streets in the project area.

**Sewage Collection.** The City of Las Vegas will also continue its \$217 million sewer program which includes the installation of sanitary sewer lines under City Streets, including the US-95/Rancho Interceptor.

## (2.) City of North Las Vegas Projects

The City of North Las Vegas Capital Improvement Plan, January 1998 identifies ongoing and planned projects by the City of North Las Vegas over a five year period. The project area encompasses roughly one-fourth of the land area of the City of North Las Vegas, including areas of rapidly growing residential and business growth. The City of North Las Vegas' Capital Improvement Plan includes \$415.6 million in infrastructure improvements in the categories of roadways, street lights, traffic control, water utility, sewer utility, flood control, parks and recreation, building and fire department.

The purpose of the City of North Las Vegas Capital Improvement Plan is "to provide quality infrastructure in response to our quickly expanding area" and is not viewed as an inducement to growth.

The following describes relevant City of North Las Vegas Capital Improvement Plan projects.

**Roadways.** Nine of the 36 City of North Las Vegas roadway projects will improve the arterial streets in the project area.

**Walker Memorial Pool Park Improvement.** The City of North Las Vegas will improve Walker Memorial Pool Park on Martin L. King Boulevard south of Cheyenne Avenue. The improvements will include improving parking areas, adding benches and tables, fencing play areas, replacing play equipment, improving ADA accessibility and planting a landscape buffer along Martin L. King Boulevard.

**Northwest Branch Library.** The City of North Las Vegas will build a new library on City owned land on Alexander Road west of Martin L. King Boulevard.

**Fire Station.** The City of North Las Vegas will build a new fire station on Martin L. King Boulevard south of Cheyenne Avenue.

## (3.) Clark County

The Clark County FY 1999-2003 Capital Improvement program identifies ongoing and planned projects by Clark County. Only a very small part of the project area is unincorporated. However,

Clark County is responsible for the implementation of some projects of regional significance within the boundaries of the Cities of Las Vegas and North Las Vegas. The Clark County Capital Improvement Program includes \$2.6 billion in infrastructure improvements. The following describes relevant Capital Improvement Program projects.

**Las Vegas Beltway.** Clark County will construct the Western and Northern Segments of the Las Vegas Beltway within the boundaries of the Cities of Las Vegas and North Las Vegas through the year 2003. The Las Vegas Beltway will be located in the western and northern extremes of the project area and will provide a circumferential route around the Valley, linking the project area to the southern and northeastern parts of the Valley. The Beltway will provide an alternative to US-95 for destinations in the southern part of the Resort Corridor.

**North Las Vegas Runway.** Clark County is the owner and operator of the North Las Vegas Airport, located within the boundaries of the City of North Las Vegas. Clark County will be constructing a new Runway 12L/30R to meet growing demand for general aviation facilities.

**Public Schools.** The Clark County School District has a ten year construction plan to build new elementary schools, middle schools and high schools throughout the Valley. Two new schools, Burke Elementary and Detwiler Elementary were constructed in the project area in 1998. Additional schools will be constructed in the project area in response to population growth.

### C. Project Benefits

The proposed project's primary benefit will be to provide the vehicular capacity necessary for the current and projected needs of the Northwest Region of the Las Vegas Valley (project area) by promoting enhanced and efficient travel through the introduction of increased roadway capacity, enhanced mass transit services and improved travel safety. Reduction of congestion is a critical need in the project area.

In addition, the proposed project will improve overall travel conditions in the project area and throughout the general Las Vegas Valley region, improve local and regional air quality, improve travel safety, improve transportation service to and from the project area and the region's traffic generators such as the Las Vegas Resort Corridor; improve travel time through the project area and region; and generally promote more efficient use of energy. The proposed project will provide much needed service to existing and emerging residential, commercial and industrial areas within the project area, as well as the various community facilities that currently serve them. It will also provide public benefits by contributing to fulfilling state and county transportation policies and goals.

## **D. Environmental Impacts and Mitigation Measures**

Under the No-Build Alternative, the proposed project would not occur, proposed freeway and roadway improvements would not be constructed and transit and transportation demand management measures would not be implemented. The No-Build Alternative therefore, would not result in impacts to natural and biological resources, or cultural resources, nor would it result in socioeconomic impacts. The No-Build Alternative will not involve hazardous waste sites or properties with environmental concerns. The No-Build Alternative will, however, have an affect on air quality and noise and these impacts are discussed further below.

Build Alternatives A and B will result in a wide range of impacts. These impacts are generally related to proposed physical improvements including freeway widening, arterial street improvements and the construction of new arterial streets. The implementation of enhanced bus transit, park-and-ride, a freeway management system and transportation demand management measures are generally not expected to result in physical impacts which would require mitigation. The beneficial impacts of the proposed project are included in the analysis of air quality and of energy resources.

Except for the widening of US-95 between Valley View Boulevard and Rancho Drive (in the vicinity of the LVVWD North Well Field) the impacts of the proposed projects alternative (A and B) and recommended mitigation are the same.

### **1. Natural Resources**

#### **a. Geology and Soils**

##### **(1.) Impacts**

Soils to be disturbed by the project possess properties that can have an impact on road construction and road maintenance. Soils with soluble sulfates are corrosive to concrete and all soils in the project area have developed conditions that are corrosive to uncoated steel. Many contain cemented horizons. Some soils contain large stones. Soil stability is reflected in the tendency to cave at cut banks, collapse, or expand. Some soils are particularly prone to flooding during storm events and all have a high potential to blow if disturbed and exposed to wind.

Soil properties and geological conditions can lead to construction and post-construction operation constraints and impacts. Construction period issues include: the presence of cemented horizons and desert pavement with large stones which can interfere with the operation of equipment and excavation; the presence of unstable soils that cave at cut banks and restrict excavation activities; flooding; blowing soils. Post-construction impacts include: structural damage and differential settlement of road surfaces, bridge foundations, and storm drain structures from localized corrosion and subsidence due to sulfate dissolution and position in a subsidence bowl; pavement damage due

to the presence of collapsible or expansive soils; flooding; maintenance interference due to large stones.

Impacts would be the same for both Alternative A and Alternative B.

## **(2.) Mitigation**

Numerous Best Management Practices (BMPs) and construction practices are available to mitigate constraints and impacts with regard to geology, soils, and ground water resources. Those measures deemed appropriate to minimize impacts identified will be implemented during all phases of the proposed project. In addition, all project-related activities will be in conformance with the Las Vegas Valley 208 Water Quality Management Plan.

### **b. Surface and Ground Water Resources**

#### **(1.) Impacts**

Potential project-related impacts to ground water resources include: loss of recharge area by the addition of impervious surfaces; loss of water supply wells, artificial recharge wells, and a pumping station; contamination of water supplies by the downward migration of pollutants during construction and post-construction surface sources. Surface nonpoint source pollution can infiltrate to the shallow aquifer zone. Storm water runoff and accidental spills are potential nonpoint surface sources of pollution during both construction and post-construction periods. Potential impacts of accidental spills are primarily restricted to the US-95 improvement sites because transported material such as chemicals, petroleum, and radioactive nuclides from the Nevada Test Site are primarily transported on US-95 in the project area.

In addition, the discharge of polluted shallow ground water, if present, that is collected during construction period dewatering activities could lead to water quality impacts. Discharge methods that potentially could impact ground water quality include infiltration and surface application for dust control. If discharged at off-site locations, the reintroduction of this pollution source will increase existing concentrations in the ground water which may subsequently leak downward to the developed aquifer or discharge to Las Vegas Wash.

The subsurface vertical and lateral migration of contaminants in the project area is facilitated by conduits provided by fractures, faults, and fissures. Highly fractured material is likely to be found near the surface in the vicinity of faults exhibiting surface expression. Thus, areas of known faults and fissures are considered particularly vulnerable to ground water quality impacts. Primary recharge to the ground water system is from snowmelt and rainfall in the Spring Mountains. The project is not expected to result in any impacts to the recharge area.

The acquisition of one LVVWD well north of US-95 adjacent to Western High School with Alternative A or three LVVWD wells, (including two wells in the North Well Field), and the Bonanza Pumping Station, (also located in the North Well Field), with Alternative B will require relocation of these facilities. The potential water quality impacts to water supply wells along the proposed US-95 construction sites will be mitigated by the introduction of a closed system that collects and contains storm water runoff and residual accidental spills which will be conveyed to an on-site or adjacent off-site drainage system. Accidental spills will be cleaned up to the maximum extent practicable immediately prior to any discharge of residual material to storm drains.

Impacts to surface water resources are related to water quality and the ability of the flood control system of the project area to accommodate flood flows. Potential construction period impacts are: increased sediment and pollutant loadings to surface waters from construction period storm water runoff and pollutant loadings from direct discharges to storm sewer systems of shallow ground water collected during dewatering activities. Elevated sediment loadings are a concern because of potential erosion of unconsolidated material exposed at excavations and fill exposed during fill placement. Potential post-construction impacts are: pollutant loadings from storm water runoff; increases in flood flow discharge; impacts to existing and future flood control facilities.

There will be no adverse impacts to surface water quality from roadway runoff. In addition, the proposed project will not adversely impact flood control in the project area watersheds. The proposed project is compatible with the latest Clark County Regional Flood Control District Master Plan.

## **(2.) Mitigation**

In conformance with the Las Vegas Valley 208 Water Quality Management Plan, appropriate BMPs will be implemented to ensure the continued protection of surface water quality throughout all phases of the proposed project. During project operation, these include catch basin and inlet maintenance, storm drain maintenance, and street sweeping. A specific storm water pollution prevention plan will be prepared for each construction project.

## **2. Biological Resources**

### **a. Vegetation**

#### **(1.) Impacts**

Except at the LVVWD North Well Field, effects of Alternatives A and B are the same for widening US-95, constructing arterial street improvements, and building new arterial connectors and other improvements. These alternatives would eliminate small areas of previously-disturbed vegetation but would not effect any special status species. Alternative A would not impact the LVVWD North Well Field. A 14.5-acre strip along the northern edge of the LVVWD North Well Field would be directly affected by Alternative B. Approximately 9 acres (62%) of this area consists of desert

riparian vegetation which is about one-third of all of the desert riparian vegetation found in the LVVWD North Well Field. Another 5 acres (35%) of the potentially-affected area consists of desert shrub vegetation, and 0.5 acres (3%) consists of invasive vegetation. This alternative, therefore, would result in a loss of 9 out of 30 acres (30%) of the desert riparian and 5 out of 58 acres (9%) of the desert shrub vegetation community types in the LVVWD North Well Field.

Direct impacts to the desert riparian habitat would include removing 92 of the 201 cottonwood trees (45.8%) and eight of the nine willow trees (89%) in the northern part of the LVVWD North Well Field as well as shrubs and forbs.

Indirect impacts to the remaining vegetation may be caused by changes in the microclimate and environmental stability of the remaining habitat. With a large portion (46%) of the cottonwood forest removed, it is likely that a major portion of the remaining 110 trees will be negatively affected.

Six plant species with special federal status were identified by the U.S. Fish and Wildlife Service as potentially occurring in the project area. Two of the six plants on the list, the Las Vegas bearpoppy and Merriam's bearpoppy are known to occur in the project area. These plants are federal species of concern. The Las Vegas bearpoppy is also listed as critically endangered in Nevada and protected under Nevada Revised Statute (NRS) Section 527.260-.300. The remaining four plant species, alkali mariposa lily, Las Vegas cats-eye, yellow two-tone beardtongue, and rosy two-tone beardtongue, were not observed during the field surveys. In addition, habitat for these species was not observed during the field survey.

Four populations of bearpoppy occur in the LVVWD North Well Field. The largest bearpoppy population on the LVVWD North Well Field consists of individuals of both species. This is the only recorded site in Las Vegas where the two species co-exist. This population is located on gypsum fill material which covers approximately 1.35 acres in the northwest corner of the LVVWD North Well Field, near US-95. The other three populations are well removed from proposed improvements.

The impact of the loss of vegetation on the North Well Field is exacerbated by the uniqueness of the site as the last natural desert riparian area in the Las Vegas Valley. Avoidance of the North Well Field by realignment of the freeway (i.e., Alternative A) would avoid impacts and eliminate the need for mitigation for vegetation.

The rare plant species that occur in the LVVWD North Well Field, the Las Vegas bearpoppy and Merriam's bearpoppy, would not be directly affected by either alternative. With Alternative A, US-95 would approach no closer to the bearpoppy habitat than at present. With Alternative B, individual plants are just outside the 200 feet proposed right-of-way and are protected by a fence which would serve to keep construction equipment from destroying or damaging the plants. The 1.35 acres of gypsum substrate that provide habitat for these two species would not be within the right-of-way required for either alternative. Gypsum habitat may be indirectly affected by changes in drainage patterns after construction is completed. Approximately five acres of desert shrub habitat that supports pollinators for bearpoppy population would be eliminated. This is

roughly 8.6% of the desert shrub habitat found on the North Well Field, but is in close proximity to the bearpoppy population. Without the pollinators, health and reproduction of the bearpoppy site in the North Well Field will be negatively impacted. While not immediate, these impacts will likely cause this population to decline, with extirpation of the plants at this site expected to occur within a few years of construction.

According to the U.S. Fish and Wildlife Service, "A draft memorandum of agreement (MOA) has been prepared for the Las Vegas bearpoppy among Federal land management agencies, the Nevada Division of Forestry, the Nevada Department of Transportation, Clark County, the Las Vegas Valley water District (LVVWD), The Nature Conservancy, and the Service. The primary purpose of this draft MOA is to provide management direction that will conserve the species and lead to reduction or removal of threats. As an obligation in the MOA, the population of Las Vegas bearpoppy that occurs on the LVVWD North Well Field is specifically identified for conservation and protection. The Service considers the North Well Field population as one of three populations in the Las Vegas Valley that have unique genetic material considered essential for the long-term survival of the species. Irreversible adverse impacts to this important population of Las Vegas bearpoppy may become the basis for the need to list the species under the Endangered Species Act of 1973, as amended (ESA)." (FWS letter dated 11/10/98 see Appendix B). In addition to those mentioned above, Nellis Air Force Base and the Nevada Natural Heritage Program are also included in the draft MOA.

## (2.) Mitigation

Mitigation would not be necessary for the No Build Alternative or for Alternative A since no impacts to special status plant species or their habitats would occur with these alternatives.

With Alternative B, avoiding direct impacts to the bearpoppy population and its habitat would be accomplished through several measures. The fence that currently protects the two species of bearpoppy would be upgraded and strengthened to protect individual plants during and after construction activities. Similarly, a temporary fence would be constructed around sensitive, unoccupied habitat (e.g. gypsum substrate) to avoid damage to this habitat from construction equipment. Final design of the Valley View/US-95 interchange and US-95 across the LVVWD North Well Field would be coordinated with LVVWD personnel and USFWS staff to ensure that drainage patterns are not altered by the proposed project in such a way as to directly affect this sensitive species. Elimination of the proposed right-turn ramp from northbound Valley View Boulevard to US-95 eastbound and re-vegetation of disturbed areas with native plants in order to minimize the area of permanently disturbed desert shrub habitat will reduce impacts.

However, despite measures to avoid direct impacts, indirect impacts to the bearpoppy population are expected to be severe enough to cause a decline and loss of the bearpoppy population on the North Well Field with Alternative B. According to the U.S. Fish and Wildlife Service, "In recognition of the importance of habitat and populations on the North Well Field for the Las Vegas bearpoppy .....

the Service believes that substantial impacts at this site cannot be adequately mitigated.” (FWS letter dated 11/10/98, See Appendix B).

**b. Wildlife**

**(1.) Impacts**

Alternative A would not impact wildlife in the LVVWD North Well Field.

Direct impacts to wildlife habitat in the LVVWD North Well Field with Alternative B include the elimination of approximately one-third of the desert riparian habitat at the property including nearly one-half of the cottonwood-willow forest habitat. Desert riparian vegetation is the most important habitat for birds using the LVVWD North Well Field. It is also important habitat for small mammals, some reptiles, a few species of bats, a coyote and the gray foxes which use this area. Implementation of this alternative may cause a decline in the total number of individuals for each species using the area and a decline in species abundance in the area.

Removal of 92 cottonwood and eight willow trees would eliminate nesting, perching, and roosting sites for bird and bat species. A number of birds including verdin, bushtit, and Abert's towhee, are reported to be dependent upon the cottonwood canopy. It is unknown how much of the wildlife diversity is dependent upon the dead wood and standing snags found in the direct impact zone. However, negative effects on predatory and migratory birds are likely to be high if the cottonwood forest is destroyed. The acquisition of property on the south side of US-95 with Alternative B might also mean that the Woodhouse's toad could be completely eliminated from the North Well Field. Gray foxes may cease to use the area because the disturbance factor may become too great with a reduction in suitable cover and increased traffic. The complete loss of some species from the area through diminished population viability would be anticipated. In particular, the desert pocket mouse population on the LVVWD North Well Field may be reduced to a level that is not sufficiently large enough to maintain a viable population over the long-term. According to the U.S. Fish and Wildlife Service, "The North Well Field contains the last population of the mouse in the Las Vegas Valley. The desert pocket mouse is known to occur in Clark County along a narrow band on the first lens of soil above the active drainage of the Virgin River and potentially along the Muddy River. Except for protection provided by the LVVWD on the North Well Field, no protection exists for the remaining population fragments. The loss of this population of desert pocket mouse may result in the need to list the species under the Endangered Species Act." (FWS letter dated 11/10/98, See Appendix B).

The U.S. Fish and Wildlife Service identified 20 species with special federal status as potentially occurring in the US-95 project area, including eight birds, three reptiles, and nine mammals. Of these 20 species, potential habitat exists within the LVVWD North Well Field for four species. Two of these - American peregrine falcon and western burrowing owl - were observed in the North Well

Field during the 1997 surveys for this project. The other two species, the desert tortoise (*Gopherus agassizii*) and the greater western mastiff bat (*Eumops perotis californicus*), were not observed during the surveys. Of the additional sixteen special status species identified, none were observed during the field surveys and no habitats suitable to support these species were observed. Surveys of the arterial streets and vacant lots adjacent to US-95 and Summerlin Parkway indicate that no suitable habitat exists in any of these areas for any of the 17 identified special status species identified as potentially-occurring in the project area. Two peregrine falcons were observed at the site in July 1997. The high density of mourning doves and the presence of suitable perch sites in cottonwood snags and on power poles provides suitable foraging habitat for this species. There are no suitable nesting sites for peregrine falcons in the LVVWD North Well Field.

Loss of riparian habitat would reduce the availability of foraging and nesting sites for mourning doves. A decline in mourning dove population may lead to a decrease in the desirability of the LVVWD North Well Field as a foraging area for the peregrine falcon resulting in the displacement of the species from this site. Since the North Well Field represents the last remaining natural area within the central Las Vegas Valley, this could adversely affect the viability of the peregrine falcon within the central portion of the Valley.

## (2.) Mitigation

With Alternative B, mitigation for the loss of habitat in the North Well Field would require the development of suitable replacement habitat for the peregrine falcon.

At the present time, the Las Vegas Wash Desert Wetlands Park located in the southeast portion of the Valley is the only other natural habitat area in the Valley which will support large numbers of waterfowl and mourning doves. Contribution to the Desert Wetlands Park program to expand habitat suitable for foraging would be recommended as mitigation. However, acquisition of priority land in southern Nevada along the Virgin or Muddy Rivers for the purpose of restoring breeding and foraging habitat to compensate for the potential reduction in the Las Vegas Valley falcon population could also be considered an alternative form of mitigation.

In addition to the Peregrine Falcon, the U.S. Fish and Wildlife Service has expressed that impacts to the Desert Pocket Mouse with Alternative B "cannot be adequately mitigated." (FWS letter dated 11/10/98, see Appendix B). Since the Desert Pocket Mouse was found in all habitats on the North Well Field, the impact on the Desert Pocket Mouse with Alternative B can be reduced by revegetating portions of the North Well Field which are currently devoid of vegetation and classified as "disturbed". Replacement of the 14 acres of habitat lost on the North Well Field, with Alternative B, with revegetated areas of equal size selected from the 87 acres of the North Well Field with no permanent vegetation cover at the present time would provide some mitigation.

Additional indirect effects to wildlife habitat would result from remaining habitat being located closer to the widened US-95 highway, resulting in increased noise levels, air pollution, and trash. This degradation of remaining habitat would likely further reduce wildlife use of the area. Species

that are currently present in low numbers (e.g. gray fox) may no longer use the area. Sensitive species including the peregrine falcon and western burrowing owl would lose some foraging habitat.

### c. Waters of the United States

Most of the jurisdictional waters of the United States in the project area which would be affected by the project are minor drainageways covered under the State of Nevada General Section 404 Permit #006.

A stream bed/channel located on the LVVWD North Well Field Las Vegas Springs National Register Site is the only water of the United States affected by this project not covered by the General Permit #006. With Alternative B, the northern approximately 325 ft. of the nearly 1/2 mile long relic stream bed/channel from the Las Vegas Springs to Las Vegas Creek would be filled in. Fill of this section of streambed/channel can be performed under Nationwide Permit Condition 14, Roadway Crossings, but would be subject to Section 106 Consultation. The Section 106 Consultation for the proposed project would fulfill Corps of Engineers requirements since filling of waters of the United States at this site would have no separate impact from the proposed project. (Kevin Roukey, Corps of Engineers, Personal Communication, 3/22/99).

A Clean Water Act §404 jurisdictional wetland determination and delineation was conducted for arterial and connector streets and US-95 outside the LVVWD North Well Field in November 1997. Only one jurisdictional wetland was identified in the survey area; it is located on vacant land southeast of the intersection of Durango and Desert Inn. This wetland would not be affected by proposed project features.

The potential for wetlands in the LVVWD North Well Field was assessed in the field with representatives from the U.S. Army Corps of Engineers, U.S. EPA, and USDA Natural Resources Conservation Services in June 1998. This cursory investigation did not include taking soil samples. However, it is likely that only relict hydric soils not meeting jurisdictional wetland criteria would be found at the site. Additionally, ground water levels are not suitable to maintain wetland hydrology and surface water flow is not frequent or prolonged enough to create hydric conditions.

## 3. Cultural Resources

Archaeological, architectural and ethnographic surveys were performed in the project area with archaeological testing conducted within the Las Vegas Valley Water District (LVVWD) North Well Field. As a result of the archaeological survey, eight (8) cultural resources were located within the proposed project area including six (6) previously recorded archaeological sites and two (2) newly recorded archaeological sites. The LVVWD North Well Field contains the Las Vegas Springs National Register Site. The site complex consists of three numbered archaeological sites, 26Ck948, 26Ck949, and 26Ck3848 and is the only cultural property that will attain 4(f) status in the project area (see Section D.11 below, for a discussion of Section 4(f) Resources). The eight site numbers and descriptions are:

26Ck948	Las Vegas Springs Site Complex; prehistoric, protohistoric, and historic
26Ck949	Spring Mound/Prehistoric midden with fire-cracked rock, sherds/lithics (part of 948)
26Ck3848	Remnants of the Old Spanish Trail and Mormon Trail, with part possibly located on 948
26Ck1647	Historic road bed
26Ck1767	Prehistoric lithic and historic trash scatter
26Ck2451	Historic (1940s) house foundation
26Ck5443	Historic trash dump and historic roads, ca. 1880s and/or 1910s to 1950s
26Ck5444	Prehistoric (Archaic and Anasazi) lithic and sherd scatter

As listed by the Keeper of the Register to the National Register on December 14, 1978, the Las Vegas Springs National Register Site presently contains 33.5 acres and encompasses portions of two sites. Site 26Ck948 contains prehistoric, protohistoric, and historic materials/features, and Site 26Ck3848, the Mormon Road, was thought to have passed through this location.

As the boundaries are defined by current testing, Site 26Ck948 encompasses a large, flat area extending between the Big Springs Channel and Las Vegas Creek and measures approximately 725 meters east/west by 250 meters north/south (181,250 square meters). Recent studies have been conducted by the University of Nevada at Las Vegas (UNLV). Based on these results, the Federal Highway Administration (FHWA) has determined, and the Nevada State Historic Preservation Officer (NV SHPO) has concurred, that the existing boundaries of the National Register District be expanded to encompass all contributing features and associated artifactual materials (i.e., the full 181,250 square meters), and treated as a 4(f) property, (see Section D.11, below, for a discussion of Section 4(f) Resources).

No historic buildings or potential historic architectural districts were identified within the area directly effected by the project except within the LVVWD North Well Field which contains the Las Vegas Springs National Register Site.

An architectural assessment of the Las Vegas Springs National Register Site resulted in the documentation of 22 historic structures/features of which six occur within the area of direct impact. Table A summarizes the recommendations for the historic architectural features discovered within the Las Vegas Springs National Register Site.

Table B. Historic Architectural Features Documented for the APE with Alternative B.

<b>Features Within the Area of Project Effect (APE)</b>			
<b>Inv. No.</b>	<b>Feature Name</b>	<b>Date Built</b>	<b>NR Status</b>
1.1	Clark Street Pumpstation	1929	eligible/individ.
8.1	Cleanout and Pipeline PL4	c. 1917	listed/contr.
11.1	Earthen Dam and Pond	c. 1904	listed/contr.
11.2	Perimeter Barbed Wire Fence	unkn (post-1925)	listed/not contr.
16.1	Little Spring Springhouse	c. 1911	listed/individ.
18.1	Well No. Three	1940	listed/contr.

The ethnographic study addressed the roles of the 3-Springs Area (Las Vegas National Register Site) in regional cultural landscapes, ecoscapes, and story/song scapes. The Big Springs Site is considered culturally significant because it is located in a Southern Paiute ecoscape, a regional landscape, and is a stop on a songscape (the Salt Song Trail).

#### **a. Impacts**

Under Alternative A, the Las Vegas Springs National Register Site is avoided.

Under Alternative B, 14 acres of the Las Vegas Springs National Register Site will be directly impacted by the US 95 widening. Acquisition of lands from this site will have an adverse affect on cultural resources and would result in an adverse visual effect. The realignment of US 95 into the North Well Field will impact numerous natural features which contribute significantly to the historic and visual landscape of the National Register site. These features include the headwaters of Las Vegas Creek, Little Spring, half of Middle Spring, and the channel creek flowing out of Middle Spring. Approximately half of the existing cottonwood canopy would be removed. The loss of this vegetation and the increased noise level associated with the closer proximity of the traffic would result in an adverse affect on the remaining National Register site complex.

#### **b. Mitigation**

With Alternative A, no mitigation is necessary for the Las Vegas springs National Register Site.

With Alternative B, there are two possible mitigation approaches to the Las Vegas Springs National Register Site. These are (1) data recovery and documentation, and (2) relocate impacted historic architectural structures and undertake data recovery on cultural resources which cannot be relocated.

If Alternative B is selected, impacts to the LVVWD North Well Field will require 4(f) consultation. All remaining resources, which are common to both Alternatives A and B, either do not meet the Criteria of Eligibility for the National Register, or are not a major factor in the selection of a preferred alternative.

#### **4. Socioeconomics**

##### **a. Economics**

##### **(1). Economic Impacts**

Direct economic impacts from the proposed project will result from material purchases in the region and construction payrolls. In addition, indirect and induced spending, or “multiplier effects,” will occur as a result of the direct payments made for materials and labor. Much of the economic benefit would occur within Clark County, the area in which the economic impacts are analyzed. For Alternative A, the estimated \$154.0 million to be spent on local material purchases would produce \$292.7 million in intermediate materials purchases, and the estimated \$30.9 million in local labor expenditures would produce \$36.8 million in purchases. In addition, 5,531 person-years (or 850 persons annually throughout the 6.5-year construction period) of direct, indirect and induced employment is expected to result from the proposed project, generating \$83.0 million in earnings. Similar impacts would result from the Alternative B. The estimated \$153.4 million to be spent on local material purchases would result in an estimated \$291.5 million in intermediate materials purchases, and \$30.7 million in local take-home pay for the construction project would produce \$36.7 million in sales. The 5,510 person-years of direct and indirect employment resulting from the proposed project would generate \$82.6 million in earnings. For both build alternatives, the direct and indirect economic impacts would occur during the construction period only.

Tax revenue loss from the proposed project is expected to be relatively small. The acquisition of commercial and industrial property will result in an annual estimated loss of about \$161,000 in property tax revenues. The fiscal impact of residential property acquisition is dependent upon the alignment alternative selected along US-95. Alternative A will result in the loss of approximately \$214,000 in annual property tax revenues while the Alternative B will result in the loss of approximately \$175,000 in property tax revenues annually.

##### **(2). Business Displacement**

Business displacement impacts are the same for both Alternative A and Alternative B. Up to 55 businesses and 1,367 employees could be displaced by the proposed project. Thirty-three businesses will be directly displaced and an additional 22 businesses could potentially or indirectly experience a displacement through ROW acquisition. The majority of business establishments expected to be displaced are small businesses employing under 10 persons, but the majority of the jobs to be impacted are within the six largest firms in the project area which each employ 300 persons or more.

### (3). Mitigation

Modification or refinement of preliminary designs to prevent loss of parking for businesses on Martin Luther King Boulevard, and to allow American Medical Response to continue in conjunction the Martin Luther King Boulevard/Industrial Road Connector, are recommended to reduce the most severe indirect and potential displacement impacts.

Mitigation measures to minimize business activity loss connected with relocation of full property acquisitions include the following recommended actions.

- ▶ Provide for relocation assistance as authorized under the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, AS AMENDED;
- ▶ Compensate for any direct loss of real property.
- ▶ Reimburse moving expenses for all businesses displaced by the proposed project.
- ▶ Compensate for reasonable expenses associated with the search for replacement facilities.
- ▶ Provide a payment in lieu of moving expenses to businesses that choose not to relocate.
- ▶ Provide advisory services to relocating businesses, including listings of comparable commercial properties and business locations, and information on loan programs and Small Business Administration programs.

Other governmental bodies (such as Clark County or the City of Las Vegas) may provide business assistance as well as employment counseling services and job training programs for employees who lose employment as a result of business displacement.

In addition to payments for property acquisition to owners of business property within the proposed ROW, businesses to be displaced by the proposed project will be entitled to additional types of monetary compensation through NDOT. Any business, farm or non-profit organization that qualifies as a displaced person and legally occupies the premises to be acquired on the date of initiation of negotiations for the purchase of property, and either moves or discontinues operation as a result of the acquisition may be eligible for the payments, determined to be reasonable and necessary. These forms of compensation are more fully described in the NDOT Brochure, *Relocation Assistance in Nevada*.

Coordination between the NDOT Right-of-Way Division and various state agencies and other local governments, organizations and groups such as local developers and realtors, the Las Vegas and Clark County Better Business Bureaus and Chambers of Commerce will serve to further the identification of replacement business sites for displaced business owners seeking assistance.

Although NDOT will be responsible for implementing the appropriate programs and assistance to displaced businesses, ongoing coordination with these various organizations and groups pursuant to the procedures and practices of NDOT and the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, AS AMENDED, will commence as needed and when deemed appropriate upon the development of final engineering design plans. At that time, the actual number of displaced businesses and the character of these businesses will be identified as well as any special assistance requirements that may arise as a result of type of business operation, or the special needs of the business owner.

## **b. Residential Displacement**

### **(1). Impacts**

The proposed project will result in the acquisition of approximately 396 residences with Alternative A, and about 334 residences with Alternative B including both single-family residences and multi-family residential units. The bulk of residential displacement necessary to implement the proposed project will result from the US-95 widening. Other road improvements that will cause residential displacement are: 1) the widening of Alta Drive for the Alta Connector; 2) the building of the Martin Luther King Boulevard/Industrial Road Connector; 3) the widening of Industrial Road; and 4) the widening of Valley View Boulevard.

Population displacement from the proposed project is estimated to be up to be approximately 942 persons with Alternative A and approximately 772 persons with Alternative B.

### **(2). Mitigation**

Mitigation measures to minimize the hardships that may be experienced by the households to be displaced include: reimbursement of property loss at fair market value; reimbursement for moving expenses; provision of supplemental housing payments and Last Resort Housing payments for eligible relocates, and provision of advisory services such as relocation counseling. Procedures for the acquisition of property and the relocation of households follow the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, As Amended. Coordination of relocation efforts with various state agencies, local governmental bodies, developers and realtors will serve to further the identification of relocation properties and the assistance of families required to move. Replacement housing must be decent, safe and sanitary. Relocation resources are available to all residential and business relocatees without discrimination.

**c. Land Use and Zoning Impacts**

Direct impacts to land use are conversion of existing uses to highway right-of-way. The potential for induced development resulting from the proposed project is expected to be minimal. The proposed project is intended to better accommodate the past and future growth in the Las Vegas Valley that has and is expected to occur. It is not expected that the improvements will alter existing land use and development patterns. The proposed project is considered to be consistent with the land use and transportation policies and objectives specified in the adopted plans of Clark County, the City of Las Vegas, the City of North Las Vegas, and the Regional Transportation Commission.

The proposed project would require the acquisition of commercial, industrial and residential zoned land, most of it currently developed. Generally, the loss of land zoned for residential and commercial use is not expected to have an adverse impact on land use patterns or the relocation of these businesses, since a small amount of land will be acquired relative to the amount of developable commercial and residential land in the City of Las Vegas and the region. However, the loss of industrial land could potentially have a more negative impact, since industrial uses are often incompatible with many other uses. Within the City of Las Vegas boundaries, finding land appropriate for industrial use may pose difficulties in accommodating relocated businesses or in allowing for future industrial development.

No joint use development opportunities have been identified for any of the alternatives of the proposed project.

**d. Community Facilities****(1). Impacts**

Direct impacts to community facilities would result from the acquisition of planned or existing community facility buildings or land. Community facilities, including schools and parks will be directly impacted by Alternatives A and B. Additionally, Alternative A would directly affect an additional elementary school and Alternative B would affect the proposed Mojave Desert Preserve. These impacts would result through improvements to Martin Luther King Boulevard, from the widening of US-95 from Rainbow Boulevard to Martin Luther King Boulevard, and from construction of the Martin Luther King Boulevard/Industrial Road Connector. Direct impacts range from the acquisition of land fronting the improved roads to the potential displacement and relocation of community facilities.

Torrey Pines Park, a City of Las Vegas neighborhood park, will be directly impacted by the realignment and widening of US-95 which will require the taking of approximately 1.6 acres of this 7.6 acre park. As a result, both of the soccer fields in the northern portion of the park will be eliminated in addition to portions of the park's jogging trail.

Mirabelli Park, a small City of Las Vegas neighborhood park, is located adjacent to US-95 west of Jones Boulevard. Located adjacent to the Mirabelli Community Center, this small park provides passive recreational facilities to the nearby community. Although not directly impacted by the proposed project, increased noise levels are predicted to affect the park.

Other parks in the project area, including Heers Park, Woofler Park, Meadow Street Park, Prentiss Walker Swimming Pool and Park, Highland Village Park and Lubertha Johnson Park will not be adversely affected by the proposed project.

The City of Las Vegas Department of Parks and Leisure Activities and the City of North Las Vegas Department of Parks and Recreation, by joint-use agreement with the Clark County School District, operate recreational programs such as "Safe Key", "Summer Fun", and little league baseball at the elementary and middle school facilities (Grades K through 8) throughout the Valley. Through these programs, supervised recreational activities for K through 8 grade school children are provided. All the elementary and middle school facilities located within the project area are included in this program. However, only the O.K. Adcock Elementary School and the Ruth Fyfe Elementary School are directly affected by the proposed project.

The O.K. Adcock Elementary School Building and land adjacent to US-95 will be displaced. The proposed right-of-way acquisition will require the taking of 2.4 acres of the 8.4 acre Adcock Elementary School property including the school building and outdoor recreation area.

The widening of US-95 will result in only a minor taking of landscaped frontage from the Ruth Fyfe Elementary School property. This minor taking will not affect the recreational function of the school or its services.

The proposed project will result in direct impacts to the City of Las Vegas pedestrian path and bikeway which extends along southbound US-95 between Westcliff Drive and Jones Boulevard. This impact will result in the elimination of the path and bikeway, particularly in the vicinity of the O.K. Adcock Elementary School and the Torrey Pines Park.

## **(2). Mitigation**

Mitigation of the impacts to Adcock Elementary School and the adjacent Torrey Pines Park involves the consolidation of the recreational facilities for these two properties. This mitigation plan will involve the reconstruction and functional replacement of the Adcock Elementary School on the remainder of the park site, and the construction and functional replacement of the park recreational facilities on the remainder of the school site with recreational facilities shared between the school and the park.

The introduction of noise walls along the widened US-95 right-of-way will serve to mitigate the predicted increased noise levels resulting from the US-95 widening at the outdoor recreation areas of Torrey Pines Park, Mirabelli Park, Adcock Elementary School and Fyfe Elementary School.

Mitigation for the City of Las Vegas pedestrian path and bikeway will involve the relocation of the path and bikeway along the southbound lanes of the widened US-95. This realignment and relocation of the path and bikeway will also serve the relocated O.K. Adcock Elementary School facility and Torrey Pines Park. The realignment of the path and bikeway will be undertaken through the cooperative efforts of NDOT, the City of Las Vegas Department of Parks and Leisure Activities and the Clark County School District.

#### **e. Neighborhood Cohesion**

##### **(1). Impacts**

Direct impacts, which consist of residential and commercial property acquisitions, are expected within five neighborhoods. Indirect impacts, which consist of changes in access to and from a neighborhood, motorist and pedestrian circulation within a community, and visual and noise level conditions, are expected at varying degrees for all neighborhoods within the project area. Because the proposed project roadways, with the exception of the Martin Luther King Boulevard/Industrial Road Connector, are designed along existing arterials and highways, there would be no physical barrier impacts, nor re-routing or vacating of local streets. Residential displacement is not expected to pose substantial impacts to community cohesion given the number of residences in each community. Potential business displacement within the West Las Vegas Neighborhood could be an adverse impact to cohesion within this community as these businesses serve as central meeting places for residents of the neighborhood.

By increasing the capacity of US-95 and the arterial streets and implementing enhanced bus service, as proposed, traffic on local collector roads serving residential areas is expected to decrease. All neighborhoods within the project area will experience improved access. Some communities will benefit from improved circulation, while increases in traffic within some communities will present some hazards at pedestrian crossings and may cause some change to the neighborhood's character.

##### **(2). Mitigation**

The impacts of business displacements in the West Las Vegas Neighborhood will be minimized by realigning of Martin Luther King Boulevard to the west in the area immediately north of Washington Avenue to reduce the likelihood of displacing these businesses' parking spaces. Indirect impacts associated with changes in circulation can be minimized by sensitive planning when improvements are taking place adjacent to residential areas and community facilities. This sensitivity includes consideration of cross walks to access community facilities or local commercial centers.

## **f. Environmental Justice**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994, directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

The purpose of the environmental justice review is to determine if a disproportionate share of the proposed project's adverse socioeconomic impacts are borne by minority and low income communities.

### **(1). Impacts**

Impacts of the proposed project in the West Las Vegas neighborhood on Martin Luther King Boulevard include the possible displacement of up to 11 local businesses, and the potential for more difficult pedestrian access due to higher traffic volumes and widening of Martin Luther King Boulevard. These impacts are not considered disproportionate because there is no indication that the neighborhood has been treated differently from other areas either in the planning of the proposed project or previous land use decision-making. However, because of the vulnerability of the neighborhood and the fact that it may possess social cohesion, these impacts should be addressed in mitigation planning.

The combination of the Martin Luther King Boulevard/Industrial Road Connector and the widening of Industrial Road, designed to create a new corridor for north/south traffic, could displace up to 24 businesses employing 1,120 persons in total, including nearly 100 minority employees. These improvements will primarily impact the industrial zone which runs along Western Avenue and Industrial Road.

### **(2). Mitigation**

Based on the above impacts and proposed mitigation measures, the project will not cause disproportionately high and adverse effects on any minority or low-income populations as discussed in E.O. 12898 regarding environmental justice.

If business displacement cannot be avoided through project design, relocation measures should emphasize the following:

- ▶ Displaced businesses that are located within minority and low income communities and serve an important role in the local community should receive priority in relocating to any available sites in or adjacent to the community.

- ▶ If a nearby relocation is not feasible for these businesses, relocation measures should address the specific negative impacts that relocation will have on the community.

Pedestrian access concerns result from widening and increased traffic volumes on Martin L. King Boulevard. In concert with community representatives, a plan will be established to address the impacts of the proposed project. This will include measures such as enhanced pedestrian crossings as well as the business displacement mitigation measures addressed previously. Involvement of the community should be maintained throughout this effort.

#### **g. Utilities**

Generally most, if not all, of the following utility companies have facilities located within the existing right-of-way of US-95 and the arterial streets included in the proposed project:

- Nevada Power
- Southwest Gas
- Las Vegas Valley Water District
- Southern Nevada Water Authority
- Central Telephone/Sprint
- Cox Communications
- Clark County Sanitation District and,
- City of Las Vegas Sanitation District

Project impacts will include displacements, adjustments and relocations of existing utilities within proposed right-of-way.

#### **(1.) Impacts**

In addition to transmission and distribution facility relocations for all utilities under Alternative A, the proposed project will require the replacement of the Las Vegas Valley District (LVVWD) Well No. 26. Based on information provided by the LVVWD, the replacement cost of this well is estimated to be approximately \$2,420,000. This cost includes the abandonment of the existing well, land acquisition, construction costs, a new discharge pipeline and the construction costs for the new pipelines. It is estimated that the time needed to replace this well is 36 to 48 months.

Under Alternative B, the proposed project will require the replacement of Well Nos. 79, 15a and 26 as well as the Bonanza Pumping Station. The replacement cost of these wells and the pumping station is estimated to be approximately \$14,830,000. This cost includes the abandonment of the existing wells, land acquisition, construction costs, new discharge pipelines and construction costs for new pipelines. It is estimated that the time needed to replace these facilities is 36 to 48 months.

## (2.) Mitigation

Coordination of construction schedules and techniques between officials from the Nevada Department of Transportation, the design and construction engineer, the public works departments of the Cities of Las Vegas and North Las Vegas and Clark County, the Las Vegas Valley Water District and the individual utility carriers will serve to limit the potential for adverse disruptions to existing services.

## 5. Air Quality

### a. PM<sub>10</sub> Impacts Due to Construction Activities

Demolition/Construction related activities can result in short-term impacts to ambient air quality. These impacts are typically related to fugitive dust emissions resulting from demolition and construction activities. Other potential air quality impacts from stationary activities are usually minimal when equipment is well maintained and operated in well ventilated areas. The potential for impacts will be short-term, occurring only while demolition or construction work is in progress and local conditions are appropriate.

Fugitive dust emissions typically occur during building demolition, ground clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and material transportation. Fugitive dust emissions are greatest during dry periods, periods of intense construction activity and during high wind conditions.

Impacts resulting from traffic disruptions during this period (i.e., decreased roadway capacity) could degrade air quality in the immediate surrounding environs. Traffic disruptions would be greatest at major roadway intersections, thus resulting in increased queuing and CO and PM<sub>10</sub> emissions.

Mitigation techniques to limit particulate emissions during demolition and construction activities will include the following: where possible, use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land; the application of asphalt, water or suitable chemicals on dirt roads, materials, stockpiles, and other surfaces which can give rise to airborne dusts; covering, at all times when in motion, open bodied trucks, transporting materials likely to give rise to airborne dusts; and the prompt removal of earth or other material from paved streets onto which earth or other material has been deposited. Deposition may occur by action of wind, storm water runoff, entrainment by construction vehicles and re-entrainment of dust from construction sources and shall be removed by periodic sweeping of streets. The potential for fugitive dust emissions from these activities would cease once barren earth is covered or stabilized. This would minimize pollutant emissions during high congestion periods hence, lowering the extent of potential impacts.

A site specific dust mitigation plan for each proposed construction project will be prepared and submitted to the Clark County Health District's Air Pollution Control Division for review and approval. Each site specific plan will include:

- The total area of land surface to be disturbed and the total area of the project site in acres.
- The dust generating operation(s) and/or activities to be carried-out at the site as well as the actual and potential sources of fugitive dust emissions on the site.
- A site plan showing the location of grading and/or earth moving activities, the location of ingress/egress points, and the location of parking, staging, or storage areas (including storage piles) for equipment, supplies, and/or trailers.
- Control measures to be applied for all sources of fugitive dust including plans or practices to be implemented during high wind events.
- No oil or other chemicals or suppressants which may adversely impact groundwater quality by means of percolation or storm water runoff shall be used for dust suppression purposes.

Construction contracts will specify the use of low sulfur diesel fuel for all diesel engines utilized for this project, and provide a mechanism to insure compliance with this requirement.

Each dust mitigation plan will include:

- A list of all grading and grubbing equipment (graders, scrapers, dozers, etc.) to be used on the project.
- The number and size of water trucks, water pulls and stand tanks to be employed and the distance and location of hydrants for refill.
- A requirement to pre-soak at least one day prior to beginning dirt work.
- A requirement for a separate water truck/water pull for each trencher used on the job.
- A requirement for a separate water truck/water pull for each powered soil screening operation.
- A requirement for a separate water truck/water pull for landscaping operations.
- Specifications for moisture control and dust control of stock piles including material imported to the job site.
- Specifications for asbestos removal prior to building demolition.
- Specification of blasting limitations.

Dust control measures will be used 24 hours a day, 7 days a week, even when there is no current activity on the site. All contractors and subcontractors will be provided a copy of the Dust Mitigation Plan and a copy will be available on-site at all times. The following dust control requirements will be incorporated into each Dust Mitigation Plan:

- The Contractor must take all reasonable precautions to minimize dust, even if additional measures beyond those listed in the Dust Mitigation Plan are necessary.

- All projects are required to set up a “gravel pad” at all site ingress and egress areas prior to commencing construction activities. The entrance/exit must be properly graded to prevent runoff from leaving the construction site.
- The Contractor shall not cause or permit fugitive dust to become airborne without taking reasonable precautions and shall not cause or permit the discharge of visible emissions of fugitive dust. Reasonable precautions may include, but are not limited to sprinkling, compacting, enclosure, chemical, or asphalt sealing, cleaning up, sweeping, reducing equipment operating speed or such other measures to accomplish satisfactory results.
- The Contractor shall not cause or permit the handling, transporting, or storage of any material in a manner which allows or may allow controllable particulate matter to become airborne.
- If the Contractor cannot provide satisfactory control of fugitive dust, or upon notification by the County Health District Control Officer, or his designated representative, the State Contractor shall suspend all or part of the construction activities (except water trucks) related to, or which may contribute to fugitive dust emissions.
- Paved ingress/egress and interior roads must be kept clean. Unpaved project ingress/egress and interior roads must be watered, covered with type II gravel or treated with a chemical dust suppressant.
- Stockpiles cannot exceed eight (8) feet in height (without County Health District Control Officer approval and irrigation access) or get within 100 feet of any occupied existing structures.
- The Contractor shall not conduct or allow any open burning at the site.
- The Contractor will be responsible for continuous dust control until a method of soil stabilization is implemented.
- If there is no continuing development for thirty (30) days after “cleaning”, “grading”, “final grade”, “demolition”, “trenching”, “stockpiling” and/or any other disturbance of the topsoil the Contractor shall stabilize disturbed areas within the construction site by the application of a chemical dust suppressant or Type II gravel to any and all disturbed areas.
- Trucks loaded with materials likely to be a source of fugitive dust shall be watered down and/or covered subsequent to leaving the site.
- Powered (motorized) crushing, screening or similar operations CANNOT BEGIN nor can the installation or startup of boilers, generators or similar emission units begin until the issuance of a Various Location Permit (VLP), Authority to Construct (ATC) and/or Operating Permit for each Emission Unit by the Clark County Health District.

- The Contractor shall install a sign prior to commencing construction activity, which is visible to the public and measures at least eight (8) feet wide by four (4) feet high. The Sign must conform to the Clark County Health District's policy on Posting of Signage.
- All on site Superintendents(s), Supervisor(s), Foreman, etc., (anyone on site in a supervisory position) prime and subcontractor, -must attend the Clark County Air Pollution Control Dust Control Class or possess a current Dust Control Class Certificate/Card (expires every 2 years).

The feasibility of requiring a snap acceleration test utilizing SAE J1667 test procedures and opacity limits of 55% for pre 1991 engines and 40% for 1991 and newer diesel engines will be explored for this project. The feasibility of requiring an inspection or certification program to insure that diesel engines used for this project are in good operating condition, with clean air filters, properly adjusted injection timing, unclogged injectors in good mechanical condition, properly operating smoke puff limiters, and proper fuel pump calibration will also be explored.

#### **b. Carbon Monoxide Impacts**

##### **(1.) No-Build Alternative**

The analysis indicates potential violations of the eight-hour NAAQS for CO of 9 ppm during the years 2015 (11.1 ppm) and 2020 (18.3 ppm). In the year 2020 No-Build there are two intersections that have the potential for predicted CO values higher than the eight-hour NAAQS: #2 - Valley View Boulevard/Desert Inn Road, and #6 - Rancho Drive/Washington Avenue.

##### **(2.) US-95 Widening (Alternatives A and B)**

The findings of the air quality analysis indicate that the air quality impacts of the proposed project on those areas along the proposed widening of US-95 are beneficial.

There is a single predicted violation of the CO NAAQS in the areas along the proposed widening of US-95 corridors during the year 2020 (9.6 ppm). As modeled, the proposed project would lessen CO levels in this area and will conform to the State Implementation Plan (SIP). While it is predicted that a single violation of the eight-hour NAAQS for CO will occur in the year 2020 under the Build condition, the predicted concentration of 9.6 ppm represents a 16.5 percent decrease in the concentration predicted at the same receptor under the No-Build condition (11.5 ppm). It is also noted that the predicted violation represents a 47.5 percent decrease from the highest concentration of 18.3 ppm predicted under the No-Build. As a result, no mitigation is recommended.

##### **(3.) Impacted Areas Along Arterials/Connectors**

- **Base Year 2000**—No intersections are predicted to have CO concentrations which exceed the eight-hour or one-hour NAAQS.

- **Interim Build Year 2015**—All eight modeled intersections are predicted to have CO levels below the NAAQS in the year 2015.
- **Design Year 2020** - In the year 2020 under the No-Build condition, two intersections are predicted to exceed the eight-hour CO NAAQS of 9.0 ppm. All predicted one-hour CO concentrations are below (within) the standards:
  - ▶ #2 - Valley View Blvd./Desert Inn Rd (11.9 ppm), and
  - ▶ #6 - Rancho Drive and/Lake Mead (11.0 ppm), and

In the year 2020 under the Build Alternative, there is one intersection predicted to exceed the eight-hour NAAQS for CO. All predicted one-hour CO concentrations are below (within) the standards):

- ▶ #2 - Valley View Blvd./Desert Inn Rd (10.5 ppm).

#### (4.) Park-and-Ride Lots

The results of the microscale analysis for the park-and-ride lot intersections indicates that no intersections will exceed the NAAQS for CO in the year 2000 or 2015. There is a single predicted exceedance of the eight-hour NAAQS at 11.0 ppm in the year 2020 under the No-Build alternative. This value is predicted to occur at the intersection of Rancho and Smoke Ranch. There are no predicted exceedances under the build alternative in 2020.

#### (5.) Mitigation

The proposed project demonstrates an overall improvement in air quality by lowering the highest eight-hour CO concentration under the No-Build alternative of 11.9 ppm to 10.5 ppm under the Build alternative. The proposed project will not create any new violations. The next highest eight-hour CO value under the Build alternative is 9.2 ppm. Since the eight-hour NAAQS value is based on an average of one-hour values over a non-overlapping eight-hour period, a violation of the eight-hour NAAQS is considered to be a value of 9.5 ppm or greater. Since predicted CO violations under the No-Build condition will be lowered under the Build condition and no new violations will be created, no mitigation is warranted.

The findings of the air quality analysis indicate that with the proposed project total ambient CO concentrations within the project area will be reduced and overall air quality will be improved. In addition, the proposed project will not increase the number of CO violations and that it will lessen the severity of predicted CO violations.

The proposed project conforms to the SIP by eliminating and reducing the severity and number of violations of the NAAQS for CO. The Regional Transportation Commission amended the RTP and TIP on March 11, 1999, to include all the components of this project.

## 6. Noise

### a. Impacts

#### (1). No-Build Alternative

The Future No-Build Alternative would result in an increase in traffic congestion; however, the traffic noise level, which is directly related to both traffic volume and speed, would not increase during the period of increased congestion, due to the decreased travel speeds. Therefore, the traffic noise levels at the sensitive receptor locations in the No-Build scenario would essentially be the same as the traffic noise levels under the Existing condition.

#### (2). Build Alternative (US-95/Summerlin Parkway)

Alternative A exhibits predicted year 2020 noise levels ranging from 66 to 83 dBA, with noise impacts expected to occur at all 30 noise sensitive areas analyzed along US-95 and Summerlin Parkway. In total, this alternative would result in noise impacts to approximately 1,663 single-family residences, 4,851 multi-family residences, three schools (including the Adcock Elementary School, Fyfe Elementary School, and Western High School), two churches, one public park, Sunrise Mountainview Hospital, Angel Park Golf Club, and two hotels.

Alternative B also exhibits predicted year 2020 noise levels ranging from 66 to 83 dBA, with noise impacts expected to occur at all 30 noise sensitive areas analyzed along US-95 and Summerlin Parkway. In total, this alternative would result in noise impacts to approximately 1,617 single-family residences, approximately 4,851 multi-family residences, three schools (including the Adcock Elementary School, Fyfe Elementary School, and Western High School), two churches, one public park, Sunrise Mountainview Hospital, Angel Park Golf Club, and two hotels. Therefore, the only difference between Alternative A and Alternative B is that the latter results in impacts to 46 fewer single-family residences than the former.

#### (3). Arterial Roadway Improvements

As a result of the proposed improvements to the arterial streets, noise impacts would occur to approximately 2,656 single-family residences, 1,382 multi-family residences, three schools, and a church.

### b. Mitigation

The analysis of mitigation measures included a range of considerations, including the placement of noise barriers and/or berms. Noise barriers and berms are considered to be an appropriate form of mitigation where predicted noise levels approach or exceed the FHWA Noise Abatement Criterion (NAC) of 67 dBA.

### (1.) Build Alternative (US-95/Summerlin Parkway)

Of the 30 noise sensitive areas (NSAs) impacted along US-95 and Summerlin Parkway, 27 areas are proposed for consideration of noise barriers, with the remaining three areas consisting of land uses that generally are not characterized by outdoor activities. Preliminary noise barrier locations with uniform heights between 10 and 26 feet were modeled and evaluated along US-95 and Summerlin Parkway. A total of 25 noise barriers (including walls and /or combination walls and earth berms), with a total length of approximately 70,765 feet and costing \$25,475,400 (based on an average height of 18 feet) are being considered at 25 NSAs along US-95 and Summerlin Parkway.

The number of single- and multiple-family residences, schools, parks, and churches receiving various levels of noise reduction benefits (i.e., 3, 5, and 7 or more dBA reduction scenarios) were counted for each noise sensitive area. The number of benefits under each noise level reduction scenario was then used to evaluate the appropriateness of each noise barrier height analyzed. The amount of noise level reduction and number of benefitted receptors increase when the height of the barrier increases. Noise level reductions range from 3 to 17 dBA at individual receptors within the NSAs studied. An estimated 5,700 out of approximately 6,500 impacted receptors (homes, schools, etc.) would benefit from an 18 ft. high noise barrier. For all but one area (NSA 29), future Build noise levels at a majority of the first-row receptors will be reduced by at least 5 dBA, while noise levels at most of the impacted receptors will be reduced by at least 3 dBA when a barrier of 18 feet is designed. Noise levels at more than half of the impacted receptors in NSA 29 would be reduced by at least 3 dBA, while the maximum noise level reduction at that NSA would be 12 dBA.

Based on a cost of \$20 per square foot of barrier panel, it was determined that all areas studied, with the exception of NSA's 12 and 15, which are entirely comprised of golf course property, would result in a cost-per-benefitted-resident value below NDOT's \$10,000-per-resident threshold for determining the feasibility of noise barrier construction.

Preliminarily, NDOT has concluded that each of the noise barriers evaluated, with the exception of NSA's 12 and 15, meet NDOT's criteria for reasonableness and feasibility. At NSAs 12 and 15, installation of noise barriers as a measure to minimize harm to this public recreational facility will be considered. However, whether or not individual noise barriers are constructed and the actual height to be constructed for each barrier will also be determined based on an evaluation of the benefits associated with the various heights investigated, as well as public safety and aesthetic considerations and community input received. A final decision will not be made until after and all public involvement procedures have been completed.

### (2.) Arterial Roadway Improvements

Barrier construction as a mitigation measure was considered in those areas adjacent to the several arterial roadways that are proposed to be improved. At most locations these land-service roadways are not conducive to the provision of noise barriers because of the numerous driveway access points and at-grade cross-streets that exist. These conditions preclude the construction of effective noise

barriers. Where existing single family and multi-family residences abut the street, full improvements exist, including sidewalk, curb and gutter and lighting, up to the right-of-way line. Property acquisitions to construct and maintain barriers would require extensive residential property acquisition and would be cost prohibitive. Existing residences have 6 ft. high block walls at the back of sidewalk which provides a degree of noise protection. In many cases, the construction of a noise barrier higher than 6 ft. in these locations would be inappropriate from a visual perspective because it would block views of distant mountains and be visually intrusive in typical yards which have only a standard 30 ft. setback.

## **7. Hazardous Waste**

Within the project area, 21 sites have been identified as potential hazardous waste sites, seven of which are located within the proposed right of way for both Alternatives A and B. Many of these sites have leaking underground storage tanks. The exact nature and extent of contamination of the sites, which have been identified within the proposed right-of-way, will be determined prior to right-of-way acquisition and any ground disturbance. Prior to construction, all guidelines and specifications as cited in the American Association of State Highway and Transportation Officials (AASHTO) Hazardous Waste Guide for Project Development, 1989, will be implemented by the Nevada Department of Transportation. These guidelines lay out the steps to determine if there is a hazardous waste present and the tasks involved if there is one present. These guidelines will become part of the acquisition, design and construction contract documents.

## **8. Energy**

By improving overall travel conditions and transportation services, the proposed project would promote efficient use of energy. The proposed project will result in a savings of operational energy when compared to the No-Build Alternative. This savings in operational energy is considered to offset any of the construction or other indirect energy requirements which would result, in the long term, in an overall net savings in energy use.

Because of the proposed project, the proposed arterial network which will serve the project area and region will also function at a higher and more acceptable level of service and overall traffic patterns in the area will move more freely to where vehicles operating on these roadways and the proposed roadway will be able to travel the same distance in much less time. As a result, greater efficiency of the existing arterial network is anticipated which will foster a more efficient consumption of energy.

## **9. Construction Period Impacts**

Construction period impacts related to the proposed project could include traffic detours and utility relocations and require temporary storage for construction materials and equipment. Some temporary disruption in local circulation patterns may result during the construction periods. In addition, construction may cause short-term air quality and noise impacts which could be mitigated

by specifying best construction practices. Coordination between the Nevada Department of Transportation and local and county engineering and public safety officials will serve to limit any long term adverse impacts to local circulation and travel patterns.

## 10. Cumulative and Secondary Impacts

The proposed project is not expected to result in any major secondary or cumulative impacts except as noted above. Although the proposed project may influence the timing of planned and programmed developments throughout the project area and region, the proposed project is not expected to result in any unanticipated induced development. In addition, the proposed project is not expected to result in any cumulative impacts to any of the natural or man-made environments within the project area.

## 11. Section 4(f) Resources

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49U.S.C.303(c)) and 23 CFR 771.135(a) (1) states that "the Secretary of Transportation/Administration may not approve a transportation project requiring the use of any land from significant publicly owned public parks, recreation areas or wildlife and waterfowl refuges, or any significant historic sites. The final determination allowing this use must document that there is no feasible and prudent alternatives to its use and the action or proposed project includes all possible planning to minimize harm to the property resulting from such use."

A Section 4(f) Evaluation has been prepared as part of this Final EIS for those parklands, public recreational facilities and historic sites that will be impacted by the proposed project.

The word "use" or "actual use" as is stated in the evaluation occurs when; land from a Section 4(f) property is acquired for a transportation project, referred to as a direct taking; or the proximity impacts of the transportation project on the Section 4(f) site, without acquisition of land, are so great that the purpose for which the Section 4(f) site exists are substantially impaired, known as "constructive use".

The No-Build alternative would not require the actual use of any community park or recreational facility nor would it result in any actual use or substantially impair any historic property listed on, or eligible for listing on the National Register of Historic Places. As a result, the No-Build will not result in any involvement with Section 4(f) resources.

Under Alternatives A and B, the proposed project will result in the acquisition of land from the City of Las Vegas Torrey Pines Park at Hyde Avenue and Torrey Pines Drive, which is adjacent to the site of the Adcock Elementary School, and an existing pedestrian/bicycle trail (along the south side of US-95) between Westcliff Drive and Jones Avenue. These two public recreational facilities will be impacted by the proposed project through direct takings which will result in an actual use of these resources, and therefore, have been evaluated as Section 4 (f) resources in the Final EIS. Avoidance

of the school by shifting the alignment of US-95 to the north was evaluated but not considered to be feasible or prudent due to the extraordinary magnitude of costs, environmental impacts and community disruption. Replacement of the park is proposed as mitigation. A noise barrier is proposed to mitigate noise impacts. Through on-going coordination with officials from the City of Las Vegas Department of Parks and Leisure Activities and the Clark County School District, the proposed project includes all possible planning to minimize harm to these Section 4 (f) resources resulting from their use.

Under Alternative B, the proposed project will result in direct impacts to the Las Vegas Springs Archaeological Site as well as those parks and recreational sites identified with Alternative A. In addition to mitigation measures to reduce impacts with Alternative B, an avoidance alternative (Alternative A) is considered to be prudent and feasible.

Under Alternatives A and B, the City of Las Vegas Mirabelli Park and Community Center adjacent to US-95 will experience noise impacts. A noise barrier is proposed to mitigate the noise impacts.

Under Alternatives A and B, the proposed project will also require land from the O.K. Adcock Elementary School and will displace the school. Adcock Elementary School is considered as a 4(f) Resource since the City of Las Vegas Department of Parks and Leisure Activities operates after school public recreation programs using the school recreational facilities. Functional replacement of the school is proposed as mitigation. Avoidance of the school by shifting the alignment of US-95 to the north was evaluated but not considered to be feasible or prudent due to the extraordinary magnitude of costs, environmental impacts and community disruption. A noise barrier is proposed to mitigate noise impacts. Through on-going coordination with officials from the City of Las Vegas Department of Parks and Leisure Activities and the Clark County School District, the proposed project includes all possible planning to minimize harm to these Section 4 (f) resources resulting from their use.

Under Alternative A, the proposed project will require a minor acquisition from the landscaped open recreational areas of Ruth Fyfe Elementary School. Fyfe Elementary School is also considered to be a 4(f) Resource since the City of Las Vegas Department of Parks and Leisure Activities operates after school public recreation programs using the school recreational facilities. The proposed acquisition is negligible and will not affect the intended function of the school recreational facilities. Avoidance of the school by shifting the alignment to the south has been evaluated as Alternative B. Replacement of this acquisition with an equal sized remainder from the realignment of Valley View Boulevard, contiguous to the recreational area, would provide mitigation if desired by the Clark County School District.

Numerous other parks and recreational facilities operated by the City of Las Vegas Department of Parks and Leisure Activities and the City of North Las Vegas Department of Parks and Recreation and two additional schools (Tobler Elementary and Booker Elementary) with after school recreational programs operated by these agencies are located adjacent to or near the proposed project

with both Alternatives A and B. No Section 4(f) use is required from these parks and recreational facilities and these facilities are expected to receive net benefits from improved accessibility.

## **12. Irreversible and Irretrievable Commitments of Resources**

Under each Build Alternative, resource commitments would enhance and increase local and regional accessibility while meeting the short and long-term transportation needs of the Las Vegas Valley Region.

## **13. Relationship of Local Short-term Use of the Environment and Long-term Productivity**

The proposed project would increase long-term productivity but will involve some short-term disruption of existing activities.

## **E. Subjects of Controversy**

Although mitigation measures have been recommended, the potential for impacts to the LVVWD North Well Field property with Alternative B will generate opposition due to the potential for adverse impacts to biological resources, the existing and future operations of the LVVWD, plans for the Mojave Desert Preserve and archaeological and historic resources. The LVVWD North Well Field is also the site of the Las Vegas Springs which is listed on the National Register of Historic Places. Alternative B would directly impact this cultural resource which will also result in local public and agency controversy.

At this time, there are no other known subjects of controversy associated with the proposed project.

## **F. Unresolved Issues with other Agencies**

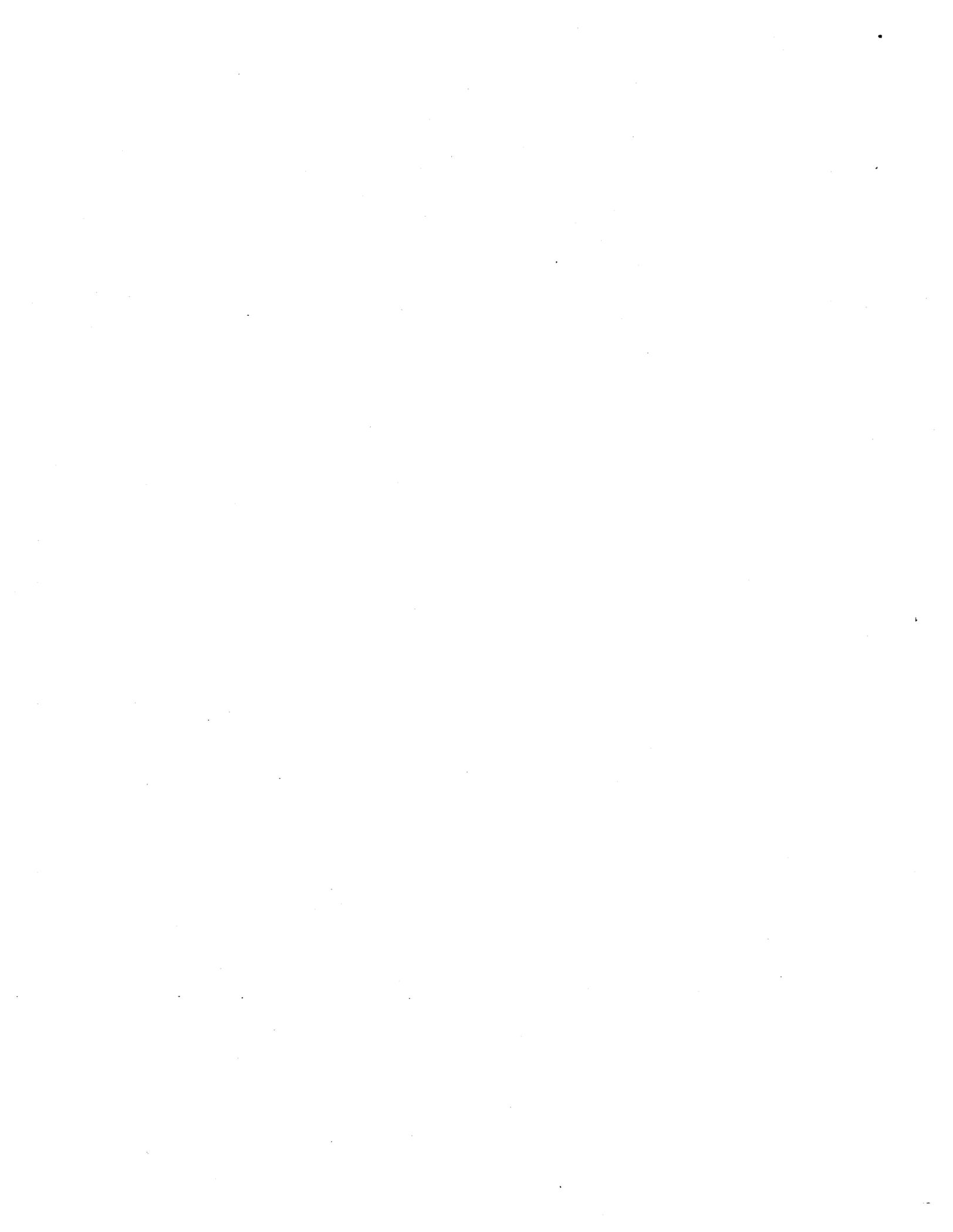
At this time, there are no major unresolved issues with local, county, state or federal agencies. Requirements for specific permits are acknowledged as discussed above. Any unresolved issues that may involve the local community, and as a result local and county agencies, are also discussed above.



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## **I. INTRODUCTION**

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## I. INTRODUCTION

An environmental analysis in the form of a Final Environmental Impact Statement and Section 4(f) Evaluation (FEIS/Section 4(f) Evaluation) has been prepared to assess the potential environmental impacts associated with the construction and operation of the proposed project which includes roadway, safety and transit improvements along US-95, Summerlin Parkway and the local arterial road network in the Northwest Region of Las Vegas (Project Area). The FEIS/Section 4(f) Evaluation presents a comprehensive and comparative analysis of the potential environmental impacts associated with two design alternatives for the widening of US-95, the widening of Summerlin Parkway, the improvement of various local roads, local and regional transit enhancement and Transportation Demand Measures (TDM) and the No-Build or No-Action Alternative. Both beneficial as well as adverse impacts are identified and discussed in a qualitative, as well as quantitative manner. A Section 4(f) Evaluation has been prepared as part of the FEIS to assess the potential impacts to public parklands and recreational facilities and historic sites.

A Draft Environmental Impact Statement/Section 4(f) Evaluation was issued on April 16, 1999, and public hearings were held on June 9 & 10, 1999. This FEIS/Section 4(f) Evaluation incorporates revisions based on the comments received on the DEIS/Section 4(f) Evaluation. Comments on the DEIS/Section 4(f) Evaluation, summaries of the comments and responses to the comments are included in the FEIS/Section 4(f) Evaluation as Volume III (separately bound) Appendices D through H.

The FEIS/Section 4(f) Evaluation has been prepared pursuant to the rules and regulations of the National Environmental Policy Act (NEPA) of 1969 (as amended) as implemented by the Council on Environmental Quality Regulations, 40 CFR parts 1500-1508 and the Federal Highway Administration's (FHWA) Environmental Impact and Related Procedures (23 CFR 771). In particular, the FEIS/Section 4(f) Evaluation has been prepared in compliance with FHWA Technical Advisory TA 6640.8A (1987) and it is being submitted pursuant to 42 USC 4332 (2) (c), 16 USC 470(f) and Section 4(f) of the Department of Transportation Act (49 USC 303 and 23 USC 138) by the U.S. Department of Transportation, Federal Highway Administration and the Nevada Department of Transportation.

The FEIS/Section 4(f) Evaluation provides a broad basis for which the proposed project has been analyzed for potential impacts to the natural and man-made environments and it provides an opportunity for public and agency input into roadway and transportation planning and the review of the environmental consequences for the proposed project. It identifies the extent to which impacts to the environment may be anticipated and the degree to which the potential impacts can be avoided or limited. Where deemed necessary and required, the FEIS/Section 4(f) Evaluation identifies appropriate mitigation measures which when considered as part of the implementation of the proposed project, can serve to limit any potential adverse impacts. The FEIS/Section 4(f) Evaluation also identifies the potential for project impacts to special population groups within the project area.

The proposed project resulted from the US-95 Major Investment Study (MIS) which was prepared in April 1997 by the Nevada Department of Transportation. The MIS, entitled "US-95 Major Investment Study, Detailed Evaluation of Alternative Strategies" served to develop a program to meet the short and long term transportation needs for the Northwest Region of the Las Vegas Valley (Project Area). The MIS evaluated alternatives which would provide increased opportunities for enhancing mobility for local residents while at the same time, identifying technically sound and practical solutions in response to the need to relieve congestion and accommodate the continued and expanding growth of the region. The MIS also served to incorporate the needs and concerns of the local community through direct involvement in the identification of alternative strategies and the analysis of alternatives to be advanced for further review in the FEIS/Section 4(f) Evaluation.

The proposed project considers the widening of US-95 and Summerlin Parkway to accommodate increased capacity and high occupancy vehicle lanes, new arterial street connections, arterial street improvements, a regional enhanced bus service, a regional ride-share program and a freeway management system.

The objective and purpose of the proposed project are to meet the short and long-term transportation needs of the project area and provide improved transportation in response to regional growth, decrease future congestion on the existing roadway network and enhance mobility. The project objective and need are based on the projected limitations and inadequacies of the existing and proposed arterial road network to handle projected traffic growth through the year 2020.

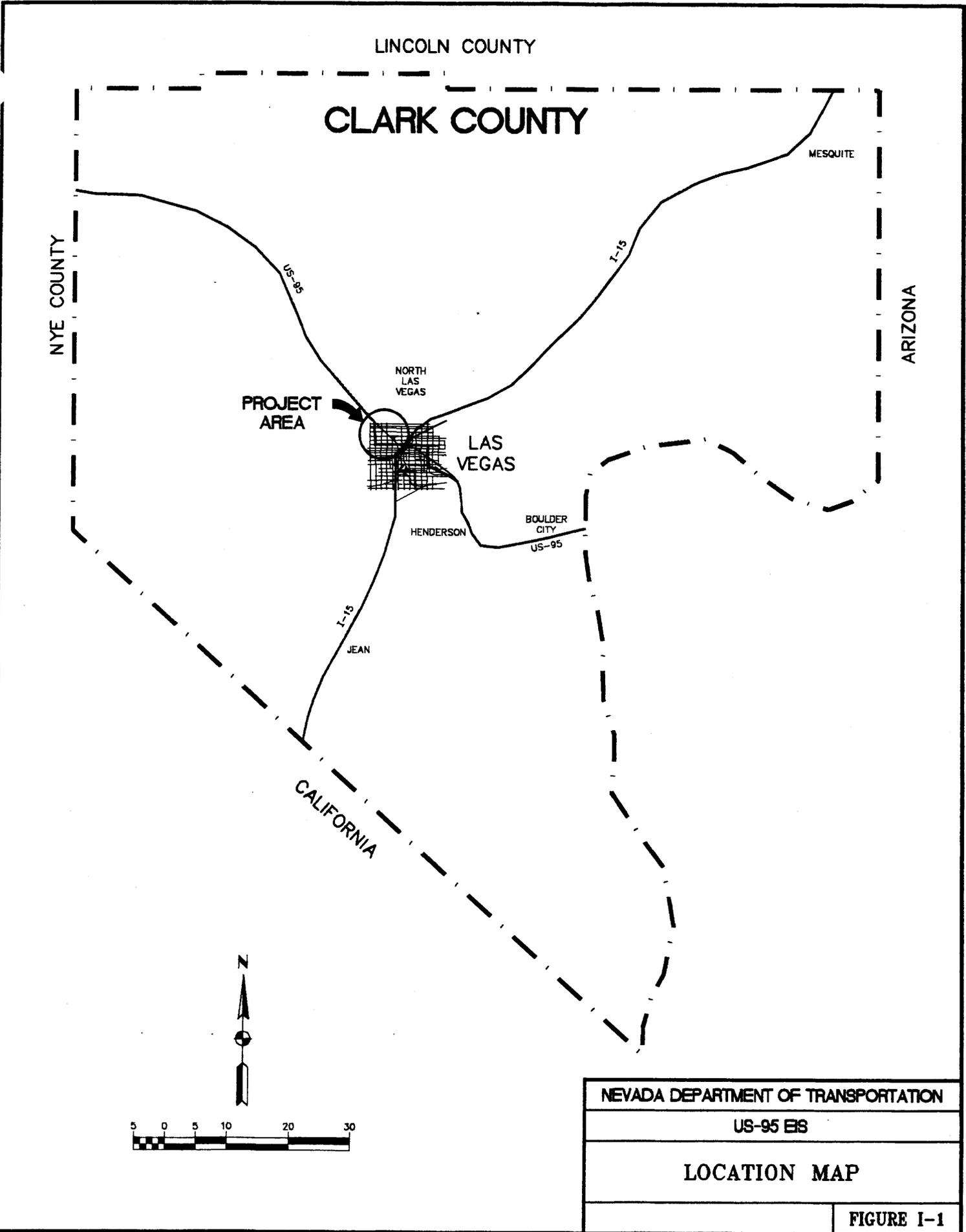
The project area includes portions of the City of Las Vegas, the City of North Las Vegas and unincorporated urbanized areas of Clark County. The project area is defined as the area bounded on the south by Desert Inn Road and on the east by Interstate-15 and Martin Luther King Boulevard. On the north and west, the project area limits of improvements extend to Craig Road and Rampart Road respectively, while the balance of the project area in the north and west is unbounded but constrained by the limits of existing and planned development. Figure I-1 depicts the location and extent of the project area within the Las Vegas Valley.

Environmental technical studies which support the findings of the FEIS/Section 4(f) Evaluation and which provide greater detailed information and analyzes for the affected environment and impacts and mitigation has been prepared separately to the FEIS/Section 4(f) Evaluation. These technical studies have been prepared for hazardous waste, air quality, noise, soils/ geology and water resources, vegetation and wildlife, archaeology and historical architecture, socioeconomics/land use and aesthetics. See Section XIII for a listing of the technical studies. These technical reports and studies are available for public review during normal business hours at the offices of the Nevada Department of Transportation, District I at 123 Washington Street, Las Vegas, Nevada (702) 486-3540.

Section II, "Description of the Proposed Project," provides a description of the proposed project, a general description of the project area and a historical perspective of the development, design and need for the proposed project. Included in this discussion is an overview of the Major Investment

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NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
LOCATION MAP	
	FIGURE I-1

Study which was prepared for this project. Section III, "Purpose and Need for the Proposed Project," discusses the purpose and need for the proposed project with respect to traffic and safety considerations and the relationship of the proposed project to local and regional transportation planning objectives as identified in the Major Investment Study. Section IV, "Project Alternatives," identifies and describes the two design alternatives for the US-95 widening and the Summerlin Parkway widening, the local and arterial street and roadway improvements, the expanded and enhanced transit program and TDM measures, the No-Build Alternative and the various freeway, roadway, transit, Transportation Demand Management and Transportation System Management alternatives which were considered and rejected as part of the Major Investment Study. Section V, "Description of the Affected Environment" provides a descriptive analysis of the existing (baseline) conditions for all of the various environmental elements within the project area while Section VI, "Environmental Impacts and Mitigation" identifies and describes the beneficial and adverse impacts associated with the construction and operation of the proposed project and appropriate mitigation measures. Section VII, "Section 4(f) Evaluation," presents the analysis of the impacts and the appropriate mitigation associated with the project impacts to parklands and historic properties. This section also presents the alternatives considered to avoid impacts to the Section 4(f) resources, measures to minimize harm to the Section 4(f) resources and related agency coordination.

Section VIII, IX and X provide discussions on the "Adverse Impacts Which Cannot Be Avoided," the "Relationship Between the Short-Term Use of the Environment and the Maintenance and Enhancement of Long Term Productivity," and the "Irreversible and Irrecoverable Commitments of Resources." Section XI, "Comments and Coordination" discusses the coordination which occurred between the local, state and federal agencies and other public and private concerns in the development and design of the proposed project.

Sections XII, XIII, XIV provide a listing of the persons, organizations and agencies to whom copies of the FEIS/Section 4(f) Evaluation is being provided, a listing of the various technical studies which were prepared to support the findings of the FEIS/Section 4(f) Evaluation, and a listing of the individuals who were responsible for the preparation of the FEIS/Section 4(f) Evaluation and the various environmental technical studies. .

Individual bibliographies are provided with each of the seven technical studies prepared to support this document and are available as cited above.

Appendix A provides Section 4(f) correspondence and includes correspondence received since the DEIS/Section 4(f) Evaluation was issued as evidence of continued coordination with local agencies to mitigate impacts to Section 4(f) resources.

Appendix B provides additional correspondence including a letter from the Federal Transit Administration agreeing to participate as a cooperating agency.

Appendix C provides a list of projects planned by the City of Las Vegas within the project area.

Appendices D through H provide public and public agency comments on the Draft EIS/Section 4(f) Evaluation, as well as summaries of the comments and responses to the comments. Appendices D through H are included as Volume III of the FEIS/Section 4(f) Evaluation, bound separately.



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## **II. DESCRIPTION OF PROPOSED PROJECT**

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## II. DESCRIPTION OF PROPOSED PROJECT

### A. Project Setting

The project area encompasses the northwest region of the Las Vegas Valley in Clark County, Nevada. Comprised of over five million acres of land, Clark County is continuing to experience strong commercial and residential growth, especially in the project area to the north and west of US-95. Clark County is one of the fastest growing counties in the United States and recent trends indicate that growth and development in the county, including the project area will continue at varying rates over the next decade. With the ongoing and continuing expansion of the resort industry, growth in all sectors of the Clark County economy is expected, thus resulting in further growth and expansion of the travel corridors which serve the project area.

Existing land use in the project area is predominately residential, with commercial use concentrated along many of the major arterial streets. The growth of the project area is fueled by the economic growth in the Las Vegas Resort Corridor. With a 67% increase in population growth forecast over the next ten (10) years, the project area is projected to house one-third of the population of Las Vegas by the year 2005.

Figure II-1 provides a layout of the Las Vegas Metropolitan Area showing the location of the Northwest Region (project area) with respect to the political jurisdictions within the Valley. The project area served by the US-95 Transportation Corridor includes portions of the City of Las Vegas, the City of North Las Vegas and unincorporated urbanized Clark County.

The project area is bounded on the south by Desert Inn Road and on the east by I-15 and Martin Luther King Boulevard. On the north and west, the project area is bounded by the limits of existing and planned development.

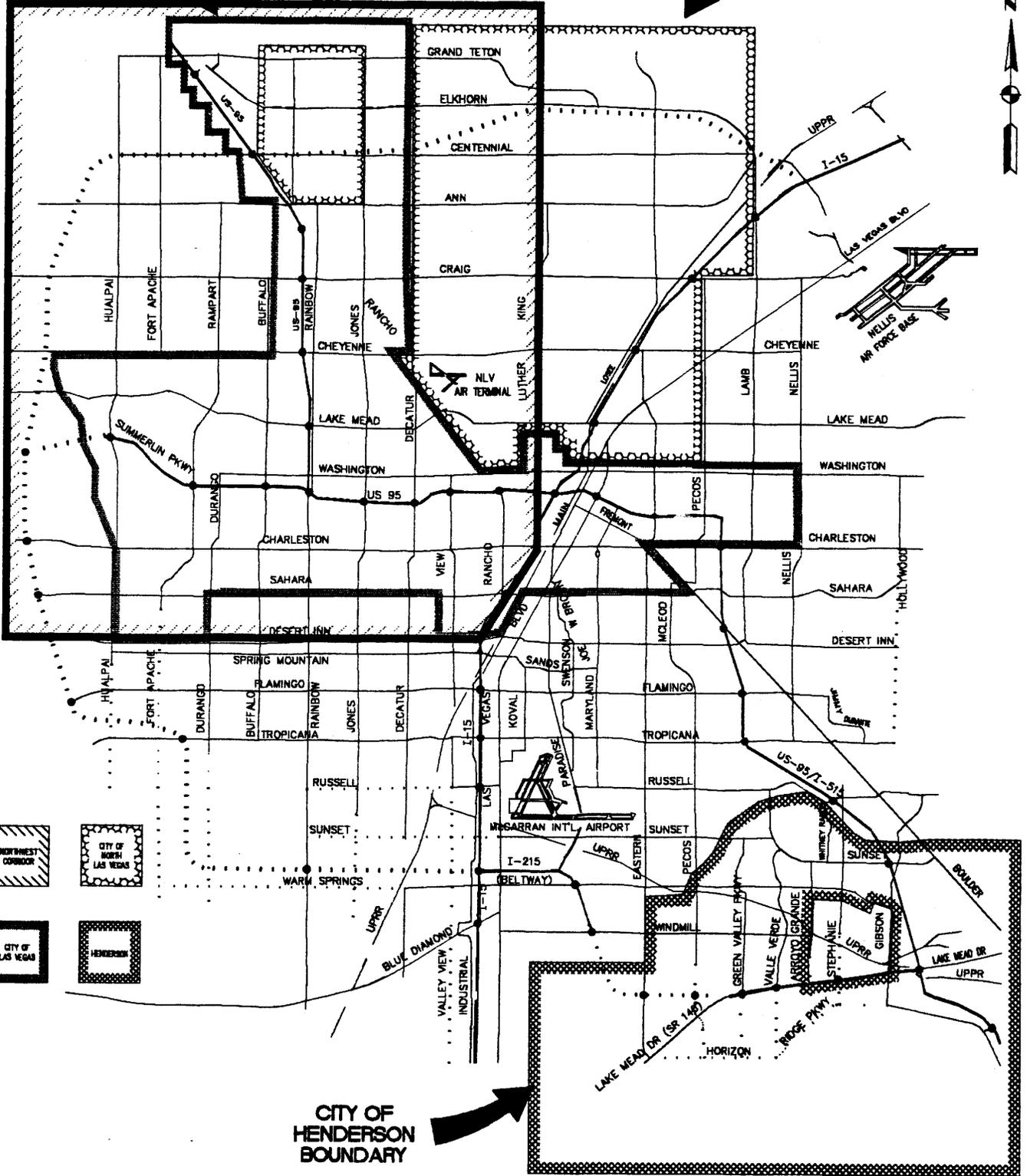
Figure II-2 shows the relationship between the project area and the geographic regions which comprise the Las Vegas Valley. The southeast portion of the project area overlaps the Resort Corridor which includes downtown Las Vegas and the "Las Vegas Strip." Because of the importance of the Resort Corridor as an employment center and its central geographic location, the other regions radiate outward from the Resort Corridor.

The project area is linked to the Resort Corridor by a number of major roadways which include US-95, Rancho Drive, Washington Avenue, Charleston Avenue, Sahara Avenue, Desert Inn Road and Martin Luther King Boulevard. These roadways provide a system of alternative routes between the project area and the Resort Corridor.

CITY OF LAS VEGAS BOUNDARY

PROJECT AREA

CITY OF NORTH LAS VEGAS BOUNDARY



MAJOR ARTERIAL STREET

(PROPOSED)

FREEWAY

(PROPOSED)

NEVADA DEPARTMENT OF TRANSPORTATION

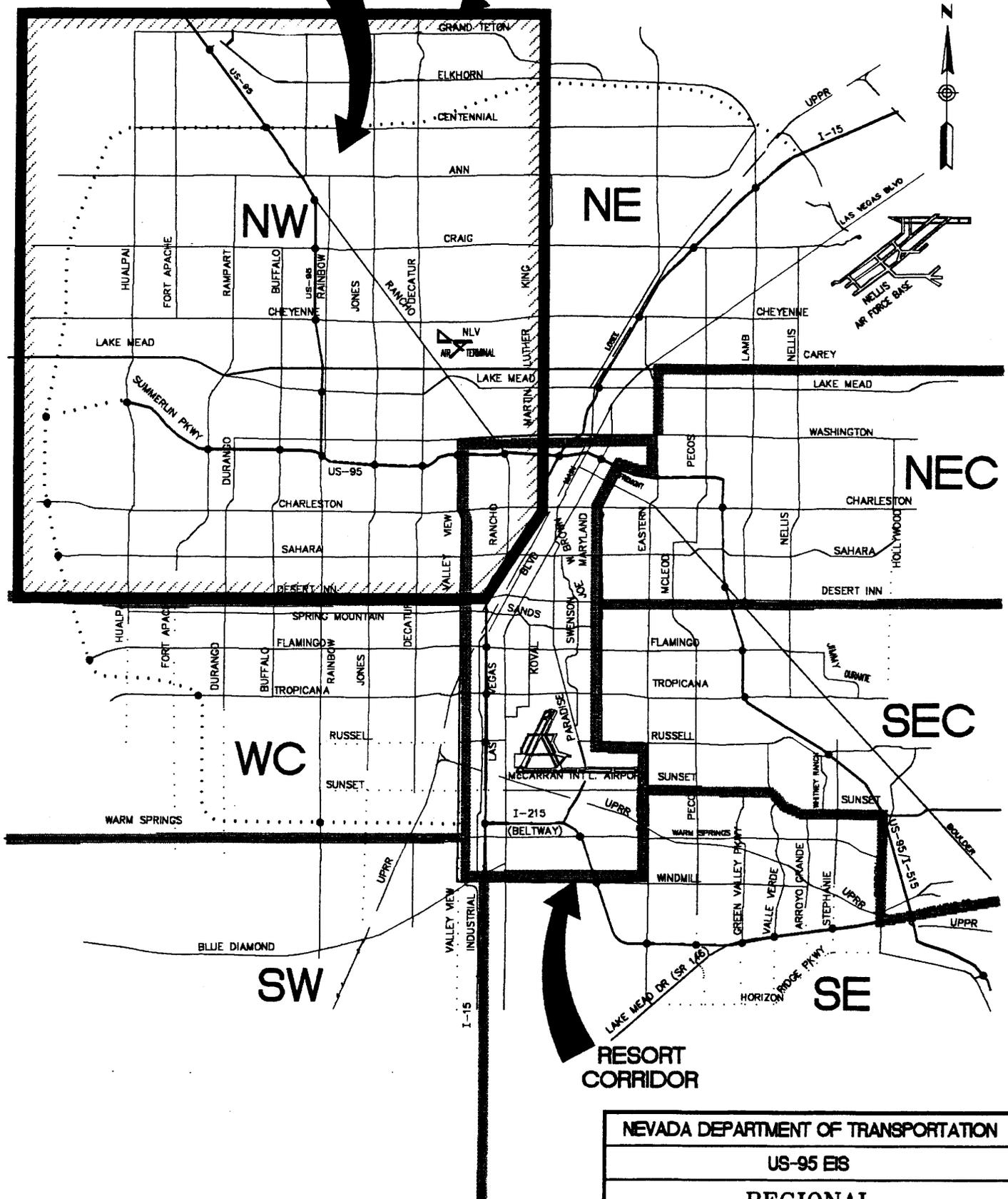
US-95 EIS

PROJECT AREA

FIGURE II-1

NORTHWEST REGION

PROJECT AREA



NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
REGIONAL TRANSPORTATION CORRIDORS	
	FIGURE II-2

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## **B. Project Description**

The proposed project is comprised of various transportation improvements which provide a coherent transportation improvement strategy to meet the short, intermediate and long-term transportation demands of the Northwest Region of Las Vegas (project area). These improvement projects include; improvements to US-95, new arterial street connections, arterial street improvements, transit system improvements and transportation demand management measures. The proposed project includes the following transportation improvement projects which have been grouped into five elements as follows:

### **US-95 IMPROVEMENTS**

- Install a Freeway Management System on US-95
- Widen US-95 to 10 lanes from Rainbow to I-15
- Widen US-95 to six lanes from Craig to Rainbow
- Widen Summerlin Parkway to six lanes from Rampart to Rainbow
- Construct High Occupancy Vehicle Lanes on US-95 and the Summerlin Parkway

### **NEW ARTERIAL STREET CONNECTIONS**

- Martin Luther King to Industrial Road Connector including widening Industrial to six lanes: Sahara to Wyoming
- Rancho to Alta Connector including widening Alta to 6-lanes: Rancho to Martin Luther King

### **ARTERIAL STREET IMPROVEMENTS**

- Widen Desert Inn Road from four lanes to six lanes: Durango to Jones
- Widen Arville Street to four lanes: Charleston to Sahara
- Widen Martin Luther King to six lanes: Craig to Charleston
- Widen Valley View to six lanes, Sahara to Desert Inn
- Widen Carey Avenue to four lanes: Rancho to Clayton
- Widen Durango Drive to six lanes: Desert Inn to Edna
- Widen Rancho to six lanes: Craig south to US-95
- Widen Tenaya Way to four lanes: Westcliff to Smoke Ranch
- Widen Torrey Pines to four lanes: Washington to Craig

### **TRANSIT SYSTEM IMPROVEMENTS**

- Adopt Enhanced *CAT* Bus Service
- Develop Park-and-Ride lots

### **TRANSPORTATION DEMAND MANAGEMENT MEASURES**

- Adopt expanded rideshare program

The Northwest Region of Las Vegas, the project area, is defined to include the portion of the Las Vegas Valley north of Desert Inn Road and west of I-15 and Martin Luther King Boulevard.

The proposed project is intended to improve transportation in the Northwest Region of Las Vegas by increasing regional roadway capacity, improving regional level of service, improving the safety and operational efficiency of the transportation system, and increasing the mobility options available to the traveling public.

The following sections describe the individual elements of the proposed project. Figure II-3 shows the locations of the proposed physical improvements within the project area.

## 1. US-95 Improvements

### a. Installation of a Freeway Management System on US-95

The installation of a Freeway Management System along US-95 is proposed to improve traffic flow. In addition to improving the flow of traffic along US-95, the Freeway Management System would ensure that the capacity of the freeway and the alternate arterial corridors are optimally used. This includes a “balanced diversion” of traffic from US-95 to the arterial street system in such a way that it does not overload the arterial streets.

The following infrastructure is proposed as part of the Freeway Management System:

- Integrated Central Control Center
- Surveillance
  - Detectors
  - CCTV
- Traffic Control
  - Ramp Meters
- Traveler Information
  - Changeable Message Signs
  - Trailblazer Signs
  - Highway Advisory Radio

The primary objectives of the Freeway Management System are to observe traffic conditions, control traffic, provide traveler information, promote incident management, and balance “Corridor” traffic demand.

### b. Widening of US-95 and Summerlin Parkway

The widening of US-95 and Summerlin Parkway would add 36 lane miles to both US-95 and the Summerlin Parkway, and will include the following:

- Widening US-95 from six lanes to ten lanes from Rainbow Blvd. to I-15, (five miles)

- Widening US-95 from four lanes to six lanes from Craig Road to Rainbow Boulevard (five miles), and
- Widening the Summerlin Parkway from four lanes to six lanes from Rampart to Rainbow (three miles).

Widening of US-95 from six lanes to ten lanes for five miles between Rainbow Boulevard and I-15 would include the full reconstruction of the existing US-95 freeway and will require the acquisition of additional right-of-way for the entire five miles.

Widening of US-95 from four lanes to six lanes from Craig Road to Rainbow Boulevard and widening the Summerlin Parkway from four lanes to six lanes from Rampart to Rainbow Boulevard would include the adding of a lane in each direction within the existing median. No additional right-of-way acquisition would be required.

### **c. High Occupancy Vehicle Lanes**

New lanes on US-95 and on Summerlin Parkway are proposed as High Occupancy Vehicle (HOV) Lanes. Of the 36 new freeway lane-miles proposed, approximately 26 lane-miles of HOV Lanes are recommended for inclusion in the design of the widened freeways. This will facilitate rideshare programs and regional efforts to implement Travel Demand Management (TDM) measures.

## **2. New Arterial Street Connections**

The following new arterial street connections are proposed as a component part of the proposed project

### **a. Martin Luther King to Industrial Road Connector**

Martin Luther King is an existing four lane road which extends from Craig Road to Oakey Boulevard. Widening Martin Luther King to six lanes is proposed to increase the north-south capacity of this major arterial street entering the Resort Corridor from the north, (See Section II, 3)

Realigning Martin Luther King Boulevard, and elevating it over Charleston Boulevard, over I-15 and over the U.P.R.R. and to tie into Industrial Road at Wyoming Avenue, is proposed to provide a direct connection between Martin Luther King Boulevard, north of Charleston Boulevard and Industrial Road south of Charleston Boulevard, thus providing an additional six lanes of capacity crossing I-15 and the U.P.R.R.

Industrial Road is six lanes wide south of Sahara Avenue. Widening Industrial Road from four lanes with a median turn lane and a northbound shoulder to six lanes from Wyoming Avenue to Sahara Avenue (½ mile) is proposed to provide additional north-south capacity and improve the flow of traffic from the Martin Luther King Boulevard/Industrial Road Connector into the Resort Corridor.



By linking Martin Luther King Boulevard and Industrial Road in the City of Las Vegas, a new north-south arterial would be created which parallels I-15 and extends the entire length of the Valley. In conjunction with the proposed I-15 East Access Road (presently under construction south of the Project area), the new north-south arterial would provide an alternative access to the major hotels in the Resort Corridor which are located between I-15 and Las Vegas Boulevard, from the Stratosphere Tower in the north to Russell Road in the south.

Extending Martin Luther King Boulevard from Palomino Street (north of Charleston Boulevard) to Industrial Road at Wyoming Avenue as a six-lane connector over Charleston Boulevard, I-15 and the U.P.R.R. would require additional right-of-way. Widening Industrial Road from Wyoming Avenue to Sahara Avenue would also require additional right-of-way.

#### **b. Rancho/Alta Connector**

North of US-95, Rancho Drive is four lanes wide with a median turn lane and outside shoulders. In this section, Rancho Drive is proposed to be widened to six lanes by converting the shoulders to travel lanes (see Section II, 3). From US-95 to Alta Drive, Rancho Drive is presently six lanes wide.

Alta Drive is an existing two to four-lane roadway between Rancho Drive and Martin Luther King Boulevard. The City of Las Vegas plans to widen Alta Drive to four lanes in the near future. The need to widen Alta Drive to four lanes in this section stems from the recent extension of Alta Drive eastward from Martin Luther King Boulevard to Bonneville Drive in downtown Las Vegas, with the construction of an underpass of the Union Pacific Railroad. The Regional Transportation Plan (RTP) includes the construction of a half interchange on I-15 at Alta Drive.

Widening Rancho Drive to six lanes north of Alta Drive and widening Alta Drive to six lanes from Rancho Drive to Martin Luther King Boulevard would provide an improved route from the northwest via Rancho Drive:

- To Downtown Las Vegas via Bonneville Drive,
- To the "Strip" via the proposed Martin Luther King Boulevard/Industrial Road Connector, and
- To I-15 via the planned Alta Interchange.

Widening Alta Drive from two lanes to six lanes from Rancho Drive to Martin Luther King Boulevard will require additional right-of-way. However, additional right-of-way acquisition would be required along Rancho Drive.

### 3. Arterial Street Improvements

The following are the major arterial streets are proposed for improvement as part of the proposed project. These arterial streets are located within existing or projected congested areas and would be improved to increase the roadway capacity in the Northwest.

- Widen Arville Street to four lanes: Charleston Blvd. to Sahara Avenue
- Widen Desert Inn Road from four lanes to six lanes: Durango Road to Jones Blvd.
- Widen Valley View Blvd. to six lanes, Sahara Ave/ to Desert Inn Road
- Widen Carey Ave. to four lanes: Rancho Drive to Clayton Street
- Widen Durango Drive to six lanes: Desert Inn Road to Edna Ave.
- Widen Martin Luther King to six lanes: Craig Road to Charleston
- Widen Rancho Drive to six lanes: Craig Road south to US-95
- Widen Tenaya Way to four lanes: Westcliff Drive to Smoke Ranch Road
- Widen Torrey Pines to four lanes: Washington Ave. to Craig Road

The widening of Martin Luther King Blvd., and Valley View Blvd. will require additional right-of-way along their entire lengths within the limits indicated. Widening the other streets can generally be performed within existing right-of-way, although portions of a few isolated parcels will need to be acquired.

### 4. Enhanced CAT Bus Service

The Citizens Area Transit (CAT) system has been in operation since December 5, 1992. The RTC funds and directs the CAT service. The system is operated under contract with a private service provider, ATC/Vancom and is presently operating at about 850,000 annual hours of service.

The proposed project would enhance CAT bus service by more than doubling the number of bus service hours presently serving the project area. The expansion of this bus service will involve the following types of enhancements:

- Extension of existing bus routes to serve the residential developments along the periphery of the community;
- Decrease in the time (headway) between buses along all routes;
- Addition of new Non-Stop (Express) and limited Stop Services.

A component part of the Enhanced Bus Element is the development of approximately ten (10) park-and-ride lots along the Express and Limited Stop bus routes. These park-and-ride lots would have a minimum of 500 vehicle parking spaces and would be located in commercial areas in close proximity to residential areas. The park-and-ride facilities would be located around the community on the outer edges of the zone of congestion and near the terminus of the express/limited stop routes.

General locations for these facilities have been identified by the Regional Transportation Commission, (See Sections IV.B.2 and VI.D.4).

The combination of convenient parking and express bus service would enable riders to more easily commute between home and the Resort Corridor on public transit.

The Federal Transit Administration (FTA) is a cooperating agency in the preparation of this environmental impact statement. Their review and approval is necessary since the enhanced CAT Bus Service element will be implemented by the Regional Transportation Commission under the auspices of the FTA and with funding approved by the FTA.

## **5. Transportation Demand Management (TDM)**

Transportation Demand Management (TDM) actions are directed at trip reduction and encouraging the use of transit, ridesharing, and other high-occupancy vehicle modes. These actions include:

- High Occupancy Vehicle Lanes: High Occupancy vehicle (HOV) lanes on US-95 and the Summerlin Parkway are proposed in conjunction with freeway widening as an effective way to increase the person carrying capacity of the freeway.
- A Freeway Management System on US-95: A Freeway Management System is proposed in conjunction with proposed improvements to US-95 as an effective means of improving traffic flow on US-95.

These TDM actions are considered low-cost measures to increase the effectiveness of the transportation system in the project area. These TDM actions could be expected to result in somewhat lower vehicular demand for trips between the project area and the Resort Corridor.

Since the Resort Corridor is the primary place for employment in the Las Vegas Valley, TDM measures directed at Resort Corridor employees can also have a beneficial effect in the project area. Continuation and expansion of the regional rideshare programs within the Resort Corridor to assist in the implementation of TDM strategies are therefore also proposed as part of the proposed project.

## **C. Project History**

In December 1995, the Nevada Department of Transportation (NDOT), in cooperation with the Regional Transportation Commission of Clark County, the City of Las Vegas, the City of North Las Vegas and Clark County, Nevada, undertook a Major Investment Study (MIS) for the US-95 Transportation Corridor servicing the Northwest Region of the Las Vegas Valley (project area).

The US-95 Transportation Corridor in the project area includes US-95 and the major arterial street system which serves to convey traffic between the predominantly residential areas of the project area and the Las Vegas Resort Corridor, the employment and recreational center of the Las Vegas Valley.

During January and February 1996, the City of Las Vegas, the City of North Las Vegas, Clark County, the Regional Transportation Commission and the Nevada Department of Transportation adopted the following Statement of Purpose and Need for the US-95 Major Investment Study.

“The purpose of the US-95 Major investment Study is to develop a program to meet the short and long-term transportation needs of the Northwest Region of the Las Vegas Valley. The Study will identify and evaluate alternatives which will provide increased opportunities for enhanced mobility for Valley residents. The Study will seek technically sound, practical solutions in response to the need to relieve congestion and to accommodate the continued growth of the community.”

The MIS was conducted in close cooperation with involved public agencies through regular meetings of a Technical Focus Group comprised of representatives of local, state and federal agencies. A very extensive public participation program was also conducted as part of the MIS.

The MIS was conducted in two phases. During Phase 1, alternatives were identified which would be effective in reducing congestion and improving mobility in the project area. The following reports were prepared during Phase 1 of the MIS:

- Technical Memorandum No. 1, Regional Needs Assessment, January 1996
- Technical Memorandum No. 2, Demographic & Development Analysis, March 1996
- Early Action Plan, May 1996 (Revised June 1996)
- Technical Memorandum No. 3, Phase 1 Public Involvement Summary, Volume 1 and Volume 2, October 1996 Phase 1 Preliminary Evaluation of Alternatives, February 1997 (Draft - September 1996)

Phase 1 of the MIS was completed in July 1996. Phase 1 recommended an Early Action Plan and alternative transportation improvement strategies which were studied in more detail during Phase 2 of the MIS.

An Early Action Plan, prepared as part of Phase 1, was developed for the specific purpose of identifying and implementing potential Transportation System Management (TSM) actions which would be effective in reducing congestion and improving the flow of traffic in the Northwest Region. A total of 37 TSM actions were identified as part of the Early Action Plan for the US-95 MIS and were implemented by the jurisdictional agencies. The TSM actions involved safety and operational improvements rather than capacity enhancements.

TSM actions implemented by NDOT, the Regional Transportation Commission and the City of Las Vegas through the Las Vegas Area Computer Traffic System included system wide traffic signal and

intersection modifications, construction of auxiliary lanes and accident investigation sites on US-95, implementation of a service patrol on US-95, implementation of express bus service on Sahara Avenue and other actions with a total estimated cost of \$26 million.

The Early Action Plan was locally funded and covered a wide range of TSM actions. However, these actions were insufficient to meet the long term purpose and need for the project.

During Phase 2 , a detailed evaluation of alternative strategies to meet the short and long-term transportation needs was conducted. Initially three alternative strategies were evaluated during Phase 2:

- Alternative Strategy 1 - US-95 Improvement Strategy
- Alternative Strategy 2 - Fixed Guideway/Enhanced Transit/TDM Strategy and
- Alternative Strategy 3 - Rainbow/Desert Inn Super Arterial Strategy.

During January, February and March 1997, the City of Las Vegas City Council, the City of North Las Vegas City Council, the Clark County Board of Commissioners, the Clark County Regional Transportation Commission and the State of Nevada Transportation Board each passed resolutions adopting a "Locally Preferred Alternative" as a result of the MIS. Their adoption of a "Locally Preferred Alternative" was based on the recommendations of the MIS Technical Focus Group, public comments from public workshops and public comments received during public hearings conducted by each of these governmental bodies.

The "Locally Preferred Alternative" was amended from *Alternative Strategy 1 - The US-95 Improvement Strategy* by adding enhanced bus service and transportation demand management. The Locally Preferred Alternative was then also evaluated in detail for comparison with Alternatives 2 and 3. The Report *US-95 Major Investment Study, Detailed Evaluation of Alternatives, April 1997* documented the development and comparison of the alternative strategies (Alternatives 1, 2 and 3 and the Locally Preferred Alternative). Details of the Phase II Public Involvement Program are documented in *Technical Memorandum No. 3, Volume 3, Public Involvement Summary, Phase II*, dated April 1997.

Public involvement was of critical importance to the successful completion of the US-95 MIS. It was the goal of the public involvement program to maximize public participation in all phases of the Study. It was felt that early and ongoing public involvement would result in more comprehensive, supported, agreeable, and cost-effective solutions.

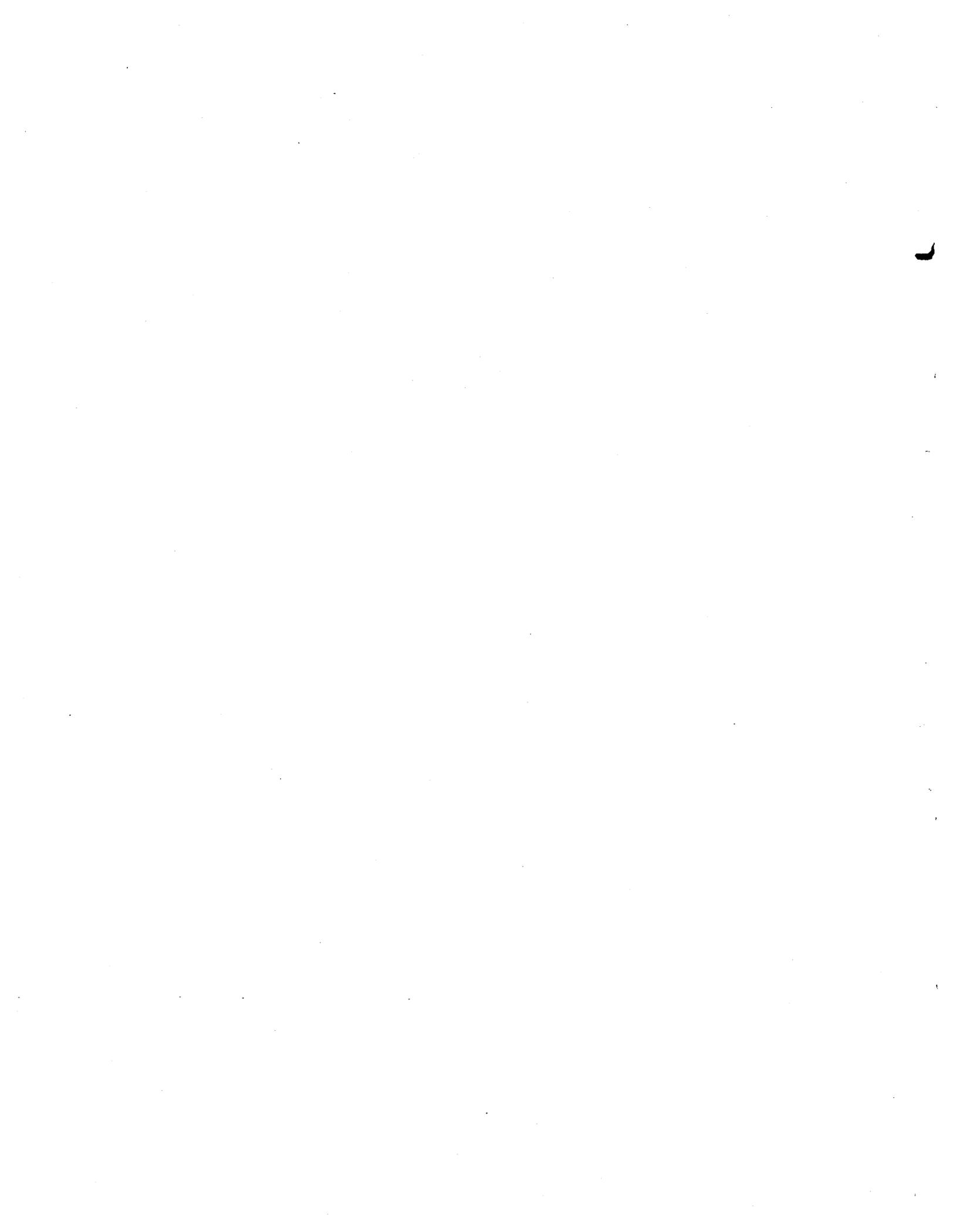
A combination of methods was utilized to notify the public about the MIS and to encourage participation. The objective of these outreach efforts was to involve the public, disseminate information, and to receive and consider comments and concerns. Input from the public and governmental agencies also served as a check and balance to information derived from technical data.

The MIS team performed community outreach by meetings with the public, local governmental leaders, government agencies, homeowner associates, neighborhood associations and community groups. Additional methods utilized to disseminate information included a telephone "Input Line," a project office, correspondence, direct mail such as newsletter/invitations, paid advertisements, workshops, transportation fairs, agency interaction, Technical Focus Group meetings, display of models and preliminary plans of proposed improvements, word-of-mouth, and media involvement.

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### **III. PURPOSE AND NEED FOR THE PROPOSED PROJECT**

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### **III. PURPOSE AND NEED FOR THE PROPOSED PROJECT**

#### **A. Project Purpose**

US-95, between Interstate 15 and Craig Road, is the primary north-south travel corridor in the Northwest Region (project area). At present, operating conditions are poor due to insufficient capacity to accommodate heavy travel demands. The poor operating travel conditions will continue to deteriorate during the next decade as population growth in the project area is projected to increase by 67 percent. As a result of the projected population growth and resulting travel demands within the project area, the arterial roadway network which also serves the project area will also experience lowered levels of service and deteriorating travel conditions.

The proposed project is being designed to meet the short and long-term transportation needs of the project area. Its intended purpose is to provide improved transportation in response to regional growth, decrease future congestion on the existing roadway network and enhance mobility. The project need is based upon the projected limitations and inadequacies of the existing and proposed arterial road network to handle projected traffic growth through the year 2020.

This purpose and need was established as the basis for the US-95 Major Investment Study (MIS) which served to identify and evaluate a range of alternatives to improve transportation in the project area. During January and February 1996, the City of Las Vegas, the City of North Las Vegas, Clark County, the Regional Transportation Commission and the Nevada Department of Transportation adopted the following statement of purpose and need for the US-95 Major Investment Study.

“The purpose of the US-95 Major Investment Study is to develop a program to meet the short and long term transportation needs of the Northwest Region of the Las Vegas Valley. The Study will identify and evaluate alternatives which will provide increased opportunities for enhanced mobility for Valley residents. The Study will seek technically sound, practical solutions in response to the need to relieve congestion and to accommodate the continued growth of the community.”

The MIS was conducted in two phases. During the first phase, alternatives were identified which would be effective in reducing congestion and improving mobility while the second phase presented a detailed evaluation of alternative strategies to meet the short and long term transportation needs of the region. The MIS identified the proposed project as the “Locally Preferred Alternative” and it includes roadway capacity improvements to US-95 and Summerlin Parkway, arterial capacity improvements, and the expansion and improvements to the local arterial street network. The proposed project also includes the introduction of Transportation Demand Management (TDM) measures which include: enhanced bus and transit operations, enhanced regional rideshare programs and the introduction of freeway management system operations along US-95.

The Regional Transportation Commission's (RTC) *Regional Transportation Plan, 1995-2015*, identified \$1.733 billion in programmed improvements for the major arterial streets and freeways in Las Vegas through 2015, including \$390 million for the project area. Despite this level of programmed investment, congestion is expected to continue to grow. Figure III-4 shows the major arterial streets and freeway sections in the project area where traffic volumes are projected to exceed the peak hour capacity of the roadways in the peak hour (peak hour V/C  $\geq$  1.0) in the year 2020. The major arterial streets and freeway sections shown in Figure III-4 are therefore expected to be severely congested in the year 2020. The number of miles of severely congested major arterial streets and freeways in the project area is expected to grow from approximately 40 miles in 1995 to over 100 miles in 2020 despite programmed investments.

At the present time, US-95 and the major arterial streets in the project area provide a combined capacity of roughly 50,000 vehicles per hour between the project area and the Resort Corridor. This capacity is not expected to increase very much with the improvements included in the *Regional Transportation Plan 1995-2015*, since most planned improvements are outside the congested area. The RTC's *Regional Transportation Plan, 1998-2020* includes the proposed project as part of the RTC's efforts to meet regional long term transportation needs and to establish air quality conformity.

At the present time, the existing capacity of the roadway network slightly exceeds the peak hour traffic volumes. The peak hour traffic volume between the project area and the Resort Corridor is expected to grow to over 80,000 vehicle trips per hour by the year 2020 and to exceed the peak hour capacity of the roadways by at least 50% within the most congested areas near the Resort Corridor.

Tables III-1 and III-2 show the projected peak hour traffic volumes and capacity forecast for the years 1995 and 2020, respectively, for the combined roadways between the project area and the Resort Corridor. In 1995, the volume/capacity ratio was approximately 0.85, in the congested areas of the project area nearest the Resort Corridor. As shown in Table III-2, the peak hour capacity shortfall in the year 2020 in the project area is estimated to average about 25,000 vehicle trips per hour.

**TABLE III-1  
1995 PEAK HOUR VOLUME AND CAPACITY  
FOR RESORT CORRIDOR COMMUTER TRIPS**

	<b>Peak Hour Vehicular Volume</b>	<b>Peak Hour Vehicular Capacity</b>	<b>Peak Hour V/C Ratio</b>
<b>I-15/MLK</b>	36,000	42,000	0.86
<b>Valley View</b>	40,000	47,000	0.85
<b>Decatur</b>	41,000	54,000	0.76
<b>Jones</b>	39,000	67,000	0.58
<b>Rainbow</b>	36,000	61,000	0.59
<b>Buffalo</b>	24,000	48,000	0.50

Source: US-95 MIS

**TABLE III-2  
2020 PEAK HOUR CAPACITY SHORTFALL  
FOR RESORT CORRIDOR COMMUTER TRIPS (NO BUILD)**

	<b>Peak Hour Vehicular Volume</b>	<b>Peak Hour Vehicular Capacity</b>	<b>Peak Hour V/c Ratio</b>	<b>Peak Hour Vehicular Capacity Shortfall</b>
<b>I-15/MLK</b>	84,000	49,000	1.71	35,000
<b>Valley View</b>	74,000	48,000	1.54	26,000
<b>Decatur</b>	80,000	58,000	1.38	22,000
<b>Jones</b>	96,000	75,000	1.33	24,000
<b>Rainbow</b>	103,000	84,000	1.23	19,000
<b>Buffalo</b>	96,000	74,000	1.30	22,000
		<b>Average</b>		<b>25,000</b>

Source: US-95 MIS

It may be concluded, therefore, that capacity improvements, (or conversely, demand reduction) to accommodate an additional 25,000 vehicle trips (or 32,500 person trips) during the peak hour between the project area and the Resort Corridor will be necessary to accommodate the projected growth in traffic through the year 2020.

US-95 is presently operating at a very poor level of service, (level of service F), with severe congestion occurring during peak travel hours. Without the proposed project, US-95 and the existing roadway network is expected to experience ever increasing congestion. The proposed project is an

overall strategy of transportation improvements to meet projected capacity shortfalls and accommodate the anticipated future commuter trips for the year 2020.

## **B. Regional Growth**

The project area comprises the northwest portion of the Las Vegas metropolitan area. The Las Vegas Resort Corridor, the Central Business District and most of the commercial centers are located to the east and south of the project area.

Since 1970, the population of Nevada has nearly doubled in each decade, making it the fastest growing state in the United States. Since 1970, its population has grown from approximately 496,960 to over 1.6 million, a 240 percent increase which represents a 9.2 percent annual increase in population growth.

Clark County has dominated the growth of population in Nevada. The latest available data for population indicates that by 1996, Clark County's population grew at an annual rate of 11.7 percent to about 1,115,940. This represents over 66 percent of the residents in Nevada.

Growth in population and housing has been fueled by expansion in the hotel/resort industry, the primary industry in the Las Vegas Valley. Most of the growth in the hotel/resort industry has taken place in the Resort Corridor. Along with the unprecedented population growth and hotel/resort industry growth, has come an unprecedented demand for transportation infrastructure to address the fast growing development of large scale residential and commercial strip developments, particularly in the project area.

The population of the project area was estimated to be approximately 243,000 in 1996, representing approximately 27 percent of the population of the Las Vegas Valley. The population of the project area is projected to increase by 67 percent to 407,000 persons by the year 2005, representing an estimated 35 percent of the population of the Las Vegas Valley. While the population of the project area is projected to grow disproportionately faster than the rest of the Valley, employment, as a percentage of population in the project area is expected to decline somewhat. It was estimated that in 1996, one person was employed in the project area for each 2.6 residents in the region. It is projected that by the year 2005, there will be one person employed in the project area for each 2.9 residents. As a result, demand for transportation services is expected to increase, due both to high population growth and a disproportionately lower employment growth, which will greatly increase the flow of traffic between the project area and the Resort Corridor, the primary employment area in the Las Vegas Valley.

During the year 1996, the Las Vegas Valley experienced three air quality exceedences of the 8-hour NAAQS for Carbon Monoxide (CO). As a result of these exceedences, the Las Vegas Valley has been designated as a serious non-attainment area for CO by the Environmental Protection Agency

(USEPA). In this regard, the introduction of programs and measures to further reduce mobile source emissions through the reduction of single-occupancy vehicle travel, improved and more efficient travel along major roadway corridors and the local arterial network, as well as expanded transit service is a matter of public importance and one which will serve to enhance the quality of life for the residents of the project area and the Las Vegas Valley.

## C. Existing Roadway Network

### 1. Freeways and Limited Access Roadways

The project area is linked to the Resort Corridor by a number of major roadways which include US-95, Rancho Drive, Washington Avenue, Charleston Avenue, Sahara Avenue, Desert Inn Road and Martin Luther King Boulevard. These roadways provide a system of alternative routes between the predominantly residential project area and the Resort Corridor. Figure II-2 shows the relationship between the project area and the other geographic regions which comprise the Las Vegas Valley.

Essentially, the project area is served by a single freeway, US-95. US-95 is centrally located with respect to the most densely developed areas of the project area. US-95 extends westward from the downtown "Spaghetti Bowl" Interchange at I-15, a distance of five miles to the Summerlin Parkway/Rainbow Boulevard Interchange, and then turns northward a distance of 5 miles to Craig Road, thence, US-95 turns northwestward as it proceeds out of the Las Vegas Valley towards the town of Tonopah. From Downtown Las Vegas to the Summerlin Parkway, US-95 is a six lane controlled access freeway with service interchanges at major arterials located at roughly one-mile spacings. From the Summerlin Parkway to Craig Road, US-95 is a four lane controlled access freeway with service interchanges at major arterials located at roughly one and a half mile spacings. US-95 provides access to I-15, the Las Vegas Strip and to downtown Las Vegas from the project area via the "Spaghetti Bowl" Interchange.

US-95 is centrally located in the project area and it is the only limited access freeway in the project area and provides direct access to the Resort Corridor. As a result, US-95 is the preferred commuter route between the project area and the Resort Corridor.

Summerlin Parkway is a City of Las Vegas owned and maintained four lane limited access arterial which links the Summerlin master-planned community to US-95. The Summerlin community is presently under construction with an anticipated build-out of 45,000 residential units. Summerlin Parkway extends westward from US-95 at Rainbow Boulevard to Town Center Drive. A complex, partly directional interchange connects US-95, the Summerlin Parkway and Rainbow Boulevard.

## 2. Arterial Streets

The project area is served by an extensive network of major and minor streets, many of which are at varying levels of improvement, expansion or construction. The following is a synopsis of the major and minor arterial streets serving the project area:

- Sahara Avenue, Charleston Boulevard, Lake Mead Boulevard and Cheyenne Avenue are generally fully improved. The remaining major east-west arterials either have sections which are unimproved or have not yet been fully extended into developing areas.
- Desert Inn Road has not been fully improved west of Valley View Boulevard.
- Oakey Boulevard has not been fully improved west of Decatur Boulevard and terminates at Durango Drive.
- Alta Drive has not been fully improved between Martin Luther King Boulevard and Valley View Boulevard.
- Washington Avenue has not been fully improved west of Rainbow Boulevard and terminates at the TPC Golf Course.
- Vegas Drive has not been fully improved west of Michael Way.
- Smoke Ranch Road /Carey Avenue has not been fully improved east of Rancho Drive or west of Rainbow Boulevard and terminates at Desert Shores.
- Major east-west arterials north of Cheyenne are being improved in conjunction with development.
- Desert Inn Road, Sahara Avenue, Oakey Boulevard, Charleston Boulevard, Alta Drive and Washington Avenue are the only east-west arterials which extend across the project area and cross I-15, thus providing access to the Resort Corridor east of I-15. Bonanza Avenue, which extends into the project area as an arterial street only as far west as Rancho Drive, is the only other east-west arterial which crosses I-15 and serves the Resort Corridor.
- Rancho Drive, Valley View Boulevard and Decatur Boulevard are the only north-south arterials in the project area which are generally fully improved. However, Valley View Boulevard extends only as far north as Washington Avenue.

- The remaining north-south major arterials have sections which are unimproved. In most cases, the unimproved sections correspond to undeveloped properties where infilling has not yet occurred even though much of the surrounding areas have been fully developed.
- West of Buffalo Drive, most north-south arterials are planned as part of master planned developments.
- None of the north-south arterials cross I-15 or provide any direct access to the Resort Corridor east of I-15. Rather, access to the Resort Corridor from the north-south arterials is via US-95 and the east-west arterials.

## D. Existing Travel Characteristics

The RTC Travel Demand Forecasting model (TRANPLAN) reports trip patterns and purposes in terms of person trips. At the present time, there are an estimated 4 million daily person trips in the Las Vegas Valley. Person trips vary from vehicle trips because of the potential of multiple occupancy in private vehicles and the use of public transit. The average vehicle occupancy in the Valley is about 1.3 persons per vehicle. Therefore, an average of three million vehicle trips per day currently are estimated to take place in the Las Vegas Valley.

The following summarizes the current estimated daily person trips in the project area:

Total Valley Wide Daily Person Trips	4,000,000
Total Daily Person Trips with Origins or Destinations within the Northwest Corridor	1,349,000
Daily Person Trips with Both the Origin and Destination in the Northwest Corridor	625,000
Daily Person Trips with One Trip End in the Northwest Corridor and One Trip End in the Resort Corridor	435,000
Daily Person Trips with One Trip End in the Northwest Corridor and One Trip End in another Regional Corridor	289,000

*Source: US-95 MIS*

Currently, 34% of all trips in the Las Vegas Valley either begin or end in the project area. 16% of all trips in the Las Vegas Valley occur entirely within the project area while 18% of all trips in the Las Vegas Valley have one trip end in the project area and one trip end outside the project area.

Currently, 32% of all trips in the project area, 435,000 daily trips, have their origin or destination in the Resort Corridor. These trips primarily utilize the seven major arterials: US-95, Rancho Drive, Martin Luther King Boulevard, Washington Avenue, Charleston Boulevard, Sahara Avenue and Desert Inn Road.

The 435,000 daily person trips between the project area and the Resort Corridor also represents 32% of the total 1,340,000 person trips which are estimated to enter the Resort Corridor daily.

Whereas there are an estimated 1,340,000 daily person trips between the Resort Corridor and the other regional corridors, there are only an estimated 1,000,000 daily person trips which pass between the other seven regional corridors. Only 289,000 daily person trips, or 28% of the total estimated 1,000,000 daily interregional non resort corridor person trips, have their origin or destination in the project area. The movement of traffic between the project area and the Resort Corridor is one of the primary, dominant traffic movements in the Las Vegas Valley. Although this movement is the most important and influential on the travel conditions within the project area, travel to other regional corridors is also important.

As described below, person trips vary from vehicle trips because of the potential of multiple occupancy in private vehicles and the use of public transit. The valley has low vehicle occupancy rates and a relatively small volume of trips made on public transit, so the number of vehicle trips is not substantially different from the number of person trips. Of the estimated 1,349,000 total daily person trips in the project area, only about 18,000 or 1.3 percent are made on the transit system. The remaining 1,331,000 trips are made in private vehicles and result in 1,008,000 vehicle trips per day, for an average vehicle occupancy rate of about 1.3 persons.

## **E. Existing and Projected Trip Patterns and Purposes**

Currently, approximately 1.35 million daily trips, or 34 percent of the Las Vegas Valley total trips, have origins or destinations within the project area. These trips have two basic patterns.

### **1. Trip Patterns**

- a. **Commuter Trips:** Trips that have either their origin or destination within the project area and their opposite trip end outside of the Resort Corridor
- b. **Internal Trips:** Trips that have both trip ends within the project area for this report.

### **2. Trip Purposes**

The traditional categories of trip purposes have been consolidated into three groups. These groups include:

- a. Home-Based Work: Trips that have one end at home and the other end at work.  
 b. Home-Based Other: Trips that have one end at home and the other end at a location other than work.  
 c. Non-Home-Based: Trips that have neither end at home.

Table III-3 shows the trip patterns and purposes of the daily commuter and internal person trips in the project area. For the Las Vegas Valley as a whole, 30 percent of all trips are home-based work, 35 percent are home based other, and 35 percent are non home based. Within the project area, 26 percent are home-based work trips, 38 percent are home-based other trips, and 36 percent trips are non-home-based trips.

**TABLE III-3**  
**Project Area Daily Person Trip Patterns and Purposes (1995)**  
**Trip Purpose**

Trip Pattern	Home-Based Work	Home-Based Other	Non-Home Based	Total
Commuter (to Resort Corridor)	156,000	125,000	154,000	435,000
Commuter (to other Regions)	69,000	104,000	116,000	289,000
Internal	121,000	292,000	212,000	625,000
<b>Total</b>	<b>346,000</b>	<b>521,000</b>	<b>482,000</b>	<b>1,349,000</b>

*Source: US-95 MIS*

Of the 1.35 million daily trips in the project area, 724,000 (54 percent) are commuter trips, and 625,000 (46 percent) are Internal trips, with both origin and destination within the project area. Sixty-one percent of all commuter trips in the project area have their origin or destination in the Resort Corridor.

Future transportation system performance is a function of land use projections. Future mobility conditions are estimated utilizing the RTC's TRANPLAN model. This model projects mobility demands in terms of person and vehicle trips based on a series of assumptions that include residential population, employment, and roadway capacity.

Future land use projections are based on historic data and include:

- 1995 land use
- Historic land use patterns and intensities
- Land use projections by local units of government
- Major proposed developments that are part of the public record
- Regional population growth projections

Table III-4 shows the trip patterns and purposes of the projected daily person-trips in the year 2020 in the project area. Approximately 44 percent of the total trips to the Resort Corridor will be home-based work trips; 28 percent will be home-based other trips; and 28 percent will be non-home-based trips. Between 1995 and 2020, the total number of Commuter trips to and from the project area will increase by about 87 percent to 1,351,000 daily person trips, and the total number of Internal trips in the Northwest will increase by about 64 percent to 1,024,000 daily person trips. Commuter trips between the project area and the Resort Corridor are expected to increase by about 67 percent from 435,000 to 725,000 daily person trips in the year 2020.

TABLE III-4

## Daily Person Trip Patterns and Purposes (2020)

Trip Pattern	Trip Purpose			Total
	Home-Based Work	Home-Based Other	Non-Home Based	
Commuter (to Resort Corridor)	317,000	205,000	203,000	725,000
Commuter (to other Regions)	175,000	224,000	227,000	626,000
Internal	205,000	582,000	237,000	1,024,000
<b>TOTAL</b>	<b>697,000</b>	<b>1,011,000</b>	<b>667,000</b>	<b>2,375,000</b>

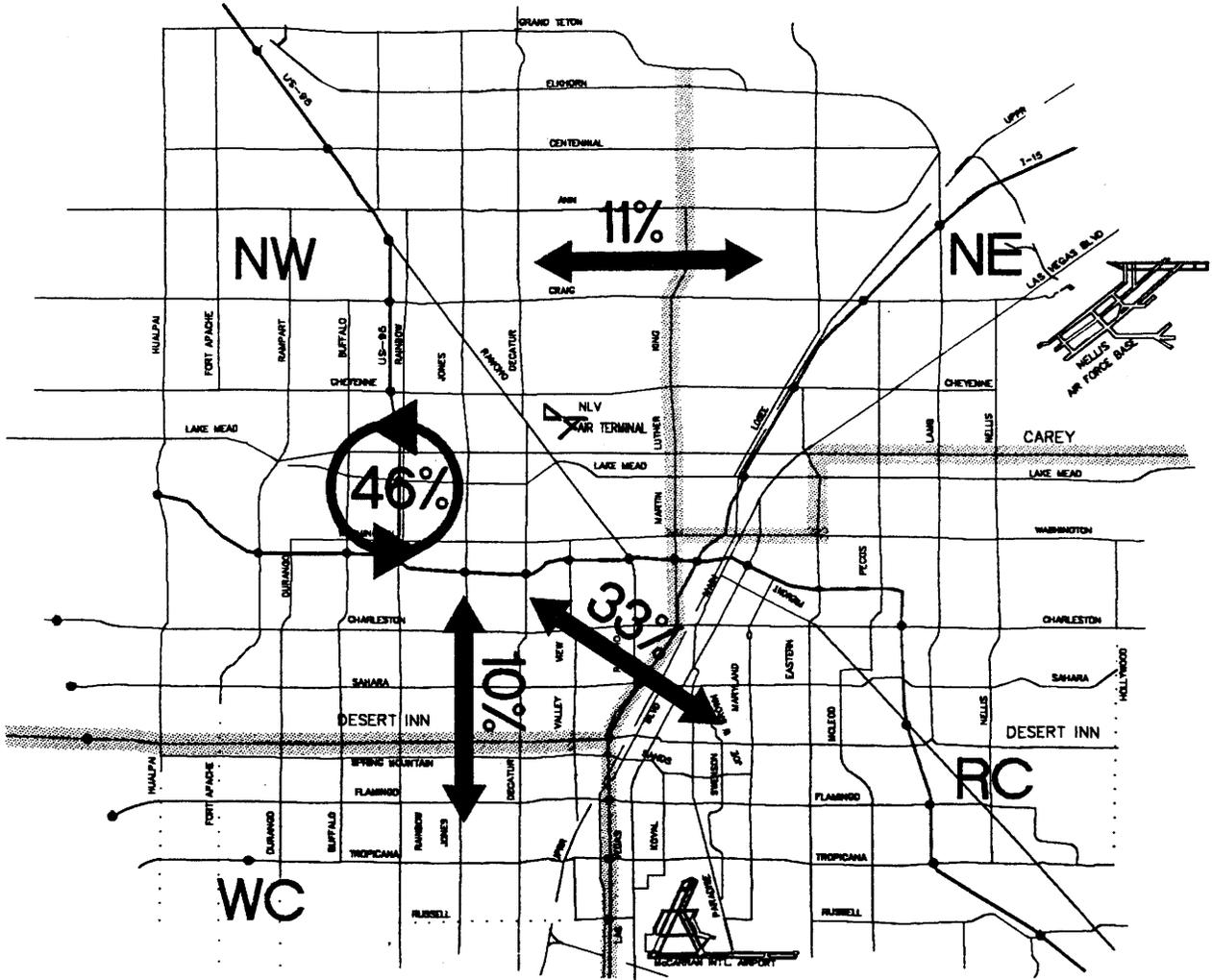
Source: Regional Transportation Commission TRANPLAN Model

## F. Regional Distribution of Commuter Trips

### 3. Person Trips

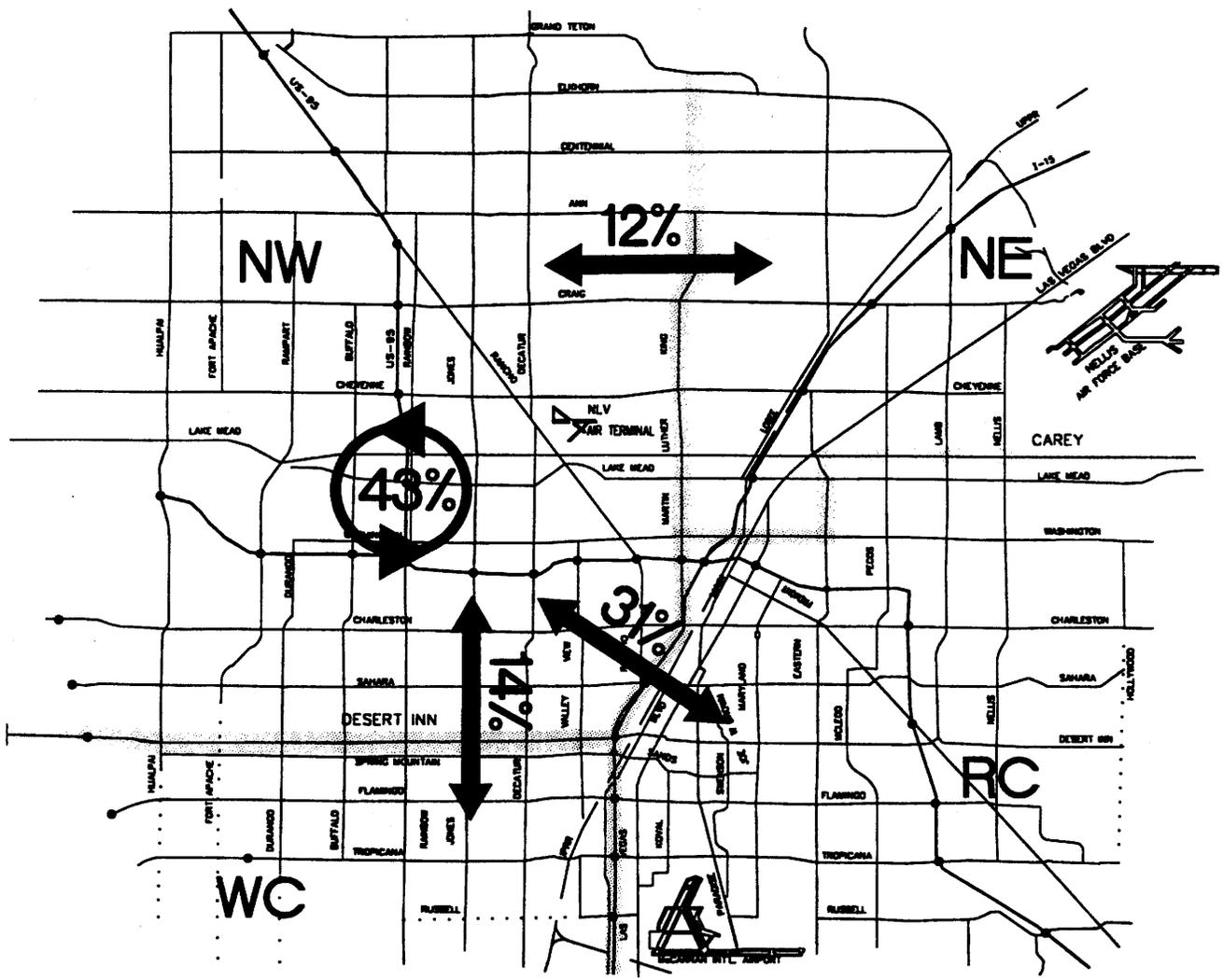
Figures III-1 and III-2 illustrate the regional distribution of project area person trips in 1995 and 2020 respectively. These figures show the percentages of total daily person trips that are estimated to occur to and from the three regional travel corridors adjacent to the project area.

These Figures illustrate that the Resort Corridor have highest trip-generation into the project area, creating 60 percent of the daily Commuter person-trips to and from the project area in the year 1995 and 54 percent of the daily Commuter person trips by the year 2020. Trip distribution from the adjacent corridors (West Central and Northeast) will grow from 40 percent of the daily Commuter trips to and from the project area in 1995 to 46 percent of the daily commuter person trips by the year 2020.



PERCENTAGE DISTRIBUTION OF  
TOTAL DAILY TRIPS (1,349,392)

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EB	
1995 PERSON TRIP DISTRIBUTION	
	FIGURE III-1



PERCENTAGE DISTRIBUTION OF  
TOTAL DAILY TRIPS (2,375,000)

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
2020 PERSON TRIP DISTRIBUTION	
	FIGURE III-2

## 2. Vehicle Trips

Person trips can be converted to vehicle trips by dividing the person trips by a vehicle occupancy rate. The RTC provided vehicle occupancy rates for the three trip purposes. These occupancies are shown in Table III-5 and apply to trips made throughout the Las Vegas Valley.

**TABLE III-5**

### 1995 Vehicle Occupancy Rates by Trip Purpose

	<u>Home-Based Work</u>	<u>Home-Based Other</u>	<u>Non-Home-Based</u>
<b>Occupancy Rate</b>	1.15	1.49	1.32

(Note: The overall vehicle occupancy rate is 1.32 and is derived by multiplying the occupancy rates for each trip purpose by the number of person trips for that purpose to calculate the overall average occupancy rate.)

## G. Transportation System Performance

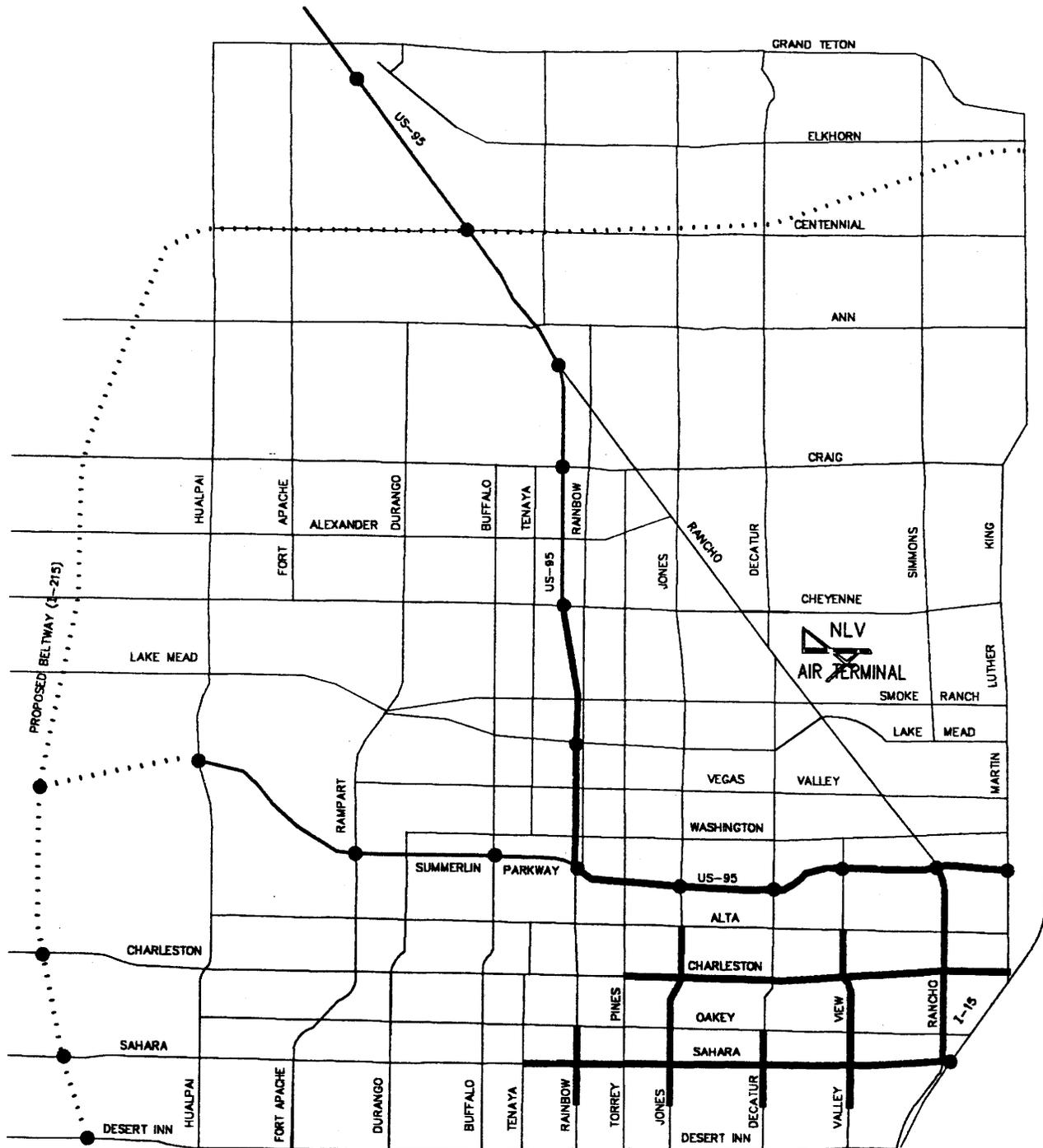
### 1. Roadway Congestion

Based on RTC data, Figure III-3 displays those major arterial streets and freeways in the project area where traffic volumes currently (1995) exceed capacity during the P.M. peak traffic hour and are therefore considered to be severely congested at the present time. Approximately 80 miles of major arterial streets and freeways in Las Vegas have a Volume/Capacity ratio greater than 1.0 (level of service F+) during the evening peak hour at the present time. Approximately 40 miles or 50 percent of these roadways are located in the project area. Figure III-4 displays those major arterial streets and freeways in the project area, where traffic volumes are expected to exceed the peak hour capacity of the roadways in the peak hour (peak hours  $V/C \geq 1.0$ ) in the Year 2020.

### 4. Highway Accidents

A total of 2,187 accidents were recorded on the nearly eleven mile section of US-95 between Craig Road and I-15 in the three year period, 1993 through 1995; for an average of sixty-six accidents per mile per year. Approximately 30 percent of the accidents involved injuries. Three quarters of the accidents occurred in the four mile section of US-95 from Jones Boulevard to Martin L. King Boulevard.

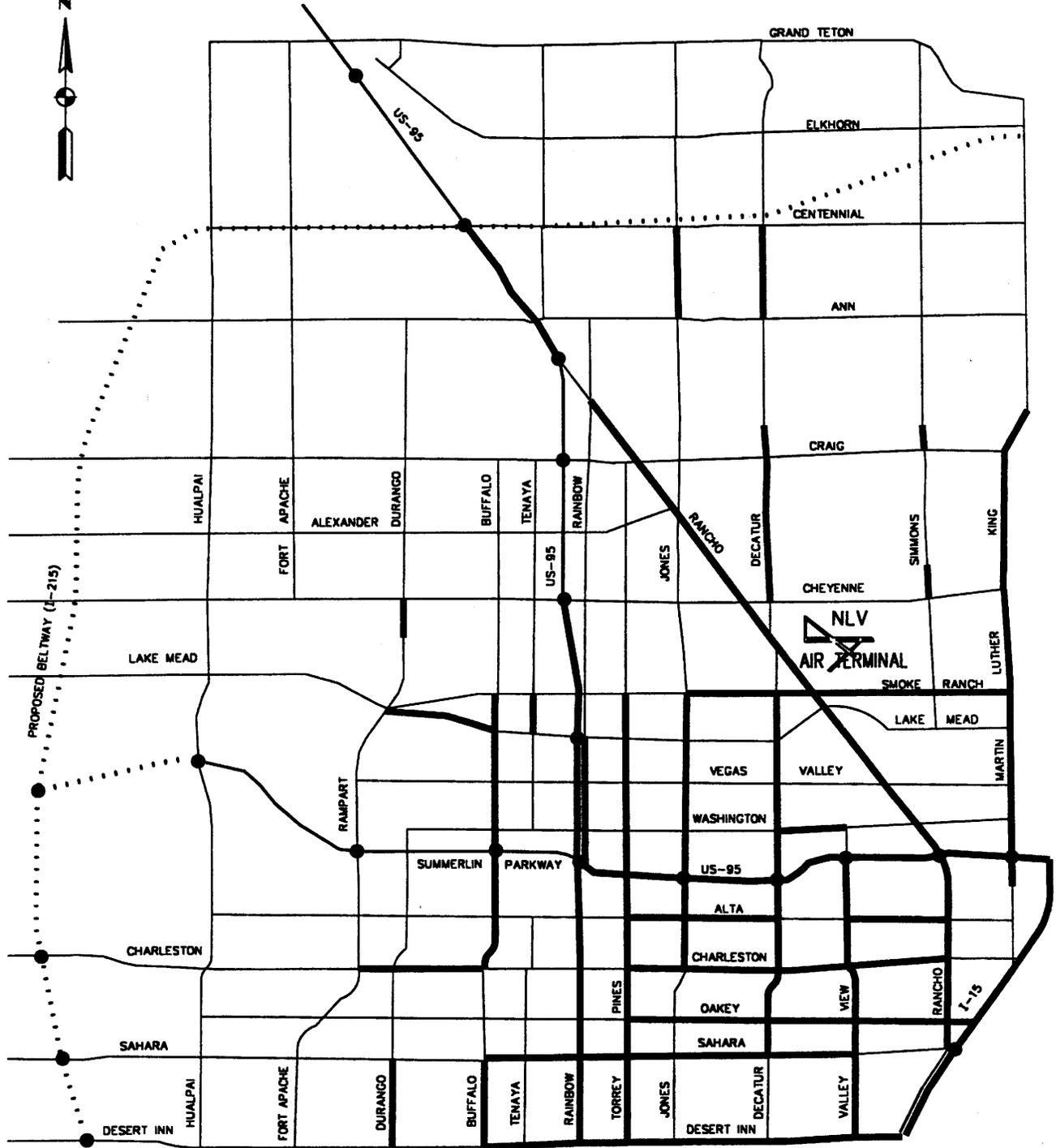
On average, two accidents occur each day on US-95 in the Northwest Region. This accident rate is very high and is a major contributor to congestion during peak traffic hours.



**—** MAJOR ARTERIAL STREET OR FREEWAY SEGMENT  
 WITH P.M. PEAK HOUR TRAFFIC EXCEEDING THE  
 CAPACITY ( $V/C \geq 1.0$ ) OF THE ROADWAY

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
YEAR 1995	
CONGESTED ROADWAYS	
	FIGURE III-3

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**MAJOR ARTERIAL STREET OR FREEWAY SEGMENT  
 WITH P.M. PEAK HOUR TRAFFIC EXCEEDING THE  
 CAPACITY (V/C ≥ 1.0) OF THE ROADWAY**

NEVADA DEPARTMENT OF TRANSPORTATION

US-95 EIS

YEAR 2020  
CONGESTED ROADWAYS

FIGURE III-4

### 3. Transit System

The Citizen Area Transit (*CAT*) system has been in operation since December 5, 1992. The RTC funds and directs the *CAT* service. The system is operated under contract with a private service provider, ATC/Vancom. The current system is operating at 850,000 annual hours of service. There are currently 36 routes operating throughout the Las Vegas Valley.

During 1996, the total *CAT* system ridership was about 35 million passengers. The daily (weekdays and weekends) average ridership has increased to about 100,000 passengers at the end of 1996. On average, weekday system ridership exceeds weekend system ridership by approximately 22 percent.

Table III-6 shows the transit ridership in the project area by route for November 1996. Currently, 18 of the 36 *CAT* bus routes serve the project area. These 18 routes had a total ridership of 870,000 riders for the month of November 1996.

At the present time there are approximately 18,000 daily bus passengers boarding and/or disembarking within the project area. Approximately, 7,500 daily bus passengers travel between the project area and the Resort Corridor. Presently, therefore, bus passengers represent only 1.7% of the total daily trips between the project area and the Resort Corridor.

The *CAT* fixed route bus fleet currently consists of 189 coaches, 177 of which have an average of 42 seats, and 12 of which are articulated and have an 86-person seating capacity.

The Regional Transportation Commission (RTC) has established a goal of achieving a 95 percent Service Standard and of providing a minimum 30-minute service frequency during the peak hours of 6 a.m. to 6 p.m. on all routes. To achieve this goal, the RTC estimates that it would be necessary to increase the bus fleet to a minimum of 243 coaches and to increase the annual hours of service from 857,000 at present to 1,135,000.

When the RTC's goal is realized, it is likely that daily ridership between the project area and the Resort Corridor will increase to over 8,000 riders per day, or about 1.8% of the 435,000 total daily person trips between the project area and the Resort Corridor.

By the year 2020, the total person trips between the project area and the Resort Corridor is expected to increase to 725,000 per day. Without further improvements in the *CAT* bus system serving the Northwest, the percentage of total person trips between the project area and the Resort Corridor using the *CAT* Bus Service would be expected to remain below 2% (on the order of 13,000 trips per day in the year 2020).

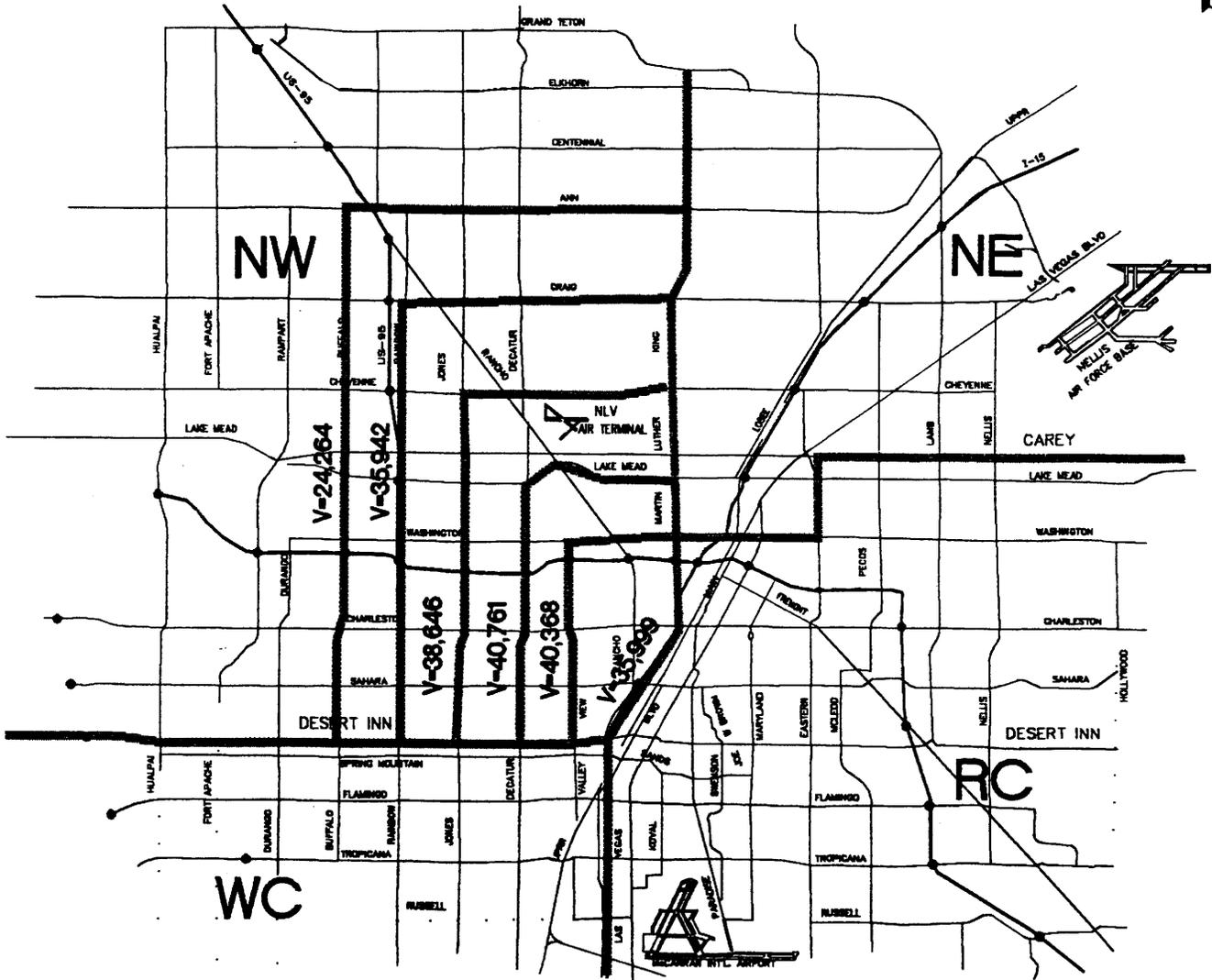
**TABLE III-6  
TOTAL TRANSIT RIDERSHIP BY ROUTE  
NOVEMBER 1996 STATISTICS**

RANK	ROUTE	RIDERSHIP
1	206/Charleston Boulevard	162,094
2	204/Sahara Avenue	113,617
3	215/Bonanza Road	69,152
4	214/D Street/H Street	67,172
5	203/Decatur Boulevard	67,540
6	210/Lake Mead Boulevard	63,567
7	207/Alta Drive/Stewart	54,250
8	106/Rancho Drive	46,303
9	208/Washington	43,588
10	105/Martin Luther King Boulevard	43,409
11	209/Vegas Drive Owens Avenue	36,547
12	101/Rainbow Boulevard	33,025
13	104/Valley View/Torrey Pines	28,056
14	102/Jones Boulevard	25,694
15	211/Smoke Ranch/Carey	17,627
16	205/Oakey Boulevard	16,432
17	218/Cheyenne Road	14,308
18	402/NW Express	7,713
<b>TOTAL</b>		<b>870,049</b>

#### 4. Estimated Capacity Shortfall

Figure III- 5, shows the estimated year 1995 peak hour traffic volumes crossing the major arterials in the project area as a function of distance from the Resort Corridor while the corresponding capacities and V/C ratios for the combined major arterials are shown in Figures III-6 and III-7, respectively. Within the project area, volume/capacity ratios decline as a function of distance from the Resort Corridor. At the present time, peak hour traffic volumes are approaching 90 percent of the roadway system capacity near the Resort Corridor.

Figure III-8 shows the estimated year 2020 peak hour traffic volumes crossing the major arterials in the project area as a function of distance from the Resort Corridor while the corresponding capacities and V/C ratios for the combined major arterials are shown in Figures III-9 and III-10, respectively. Within the project area, peak hour traffic volumes are projected to substantially exceed the roadway system capacity.

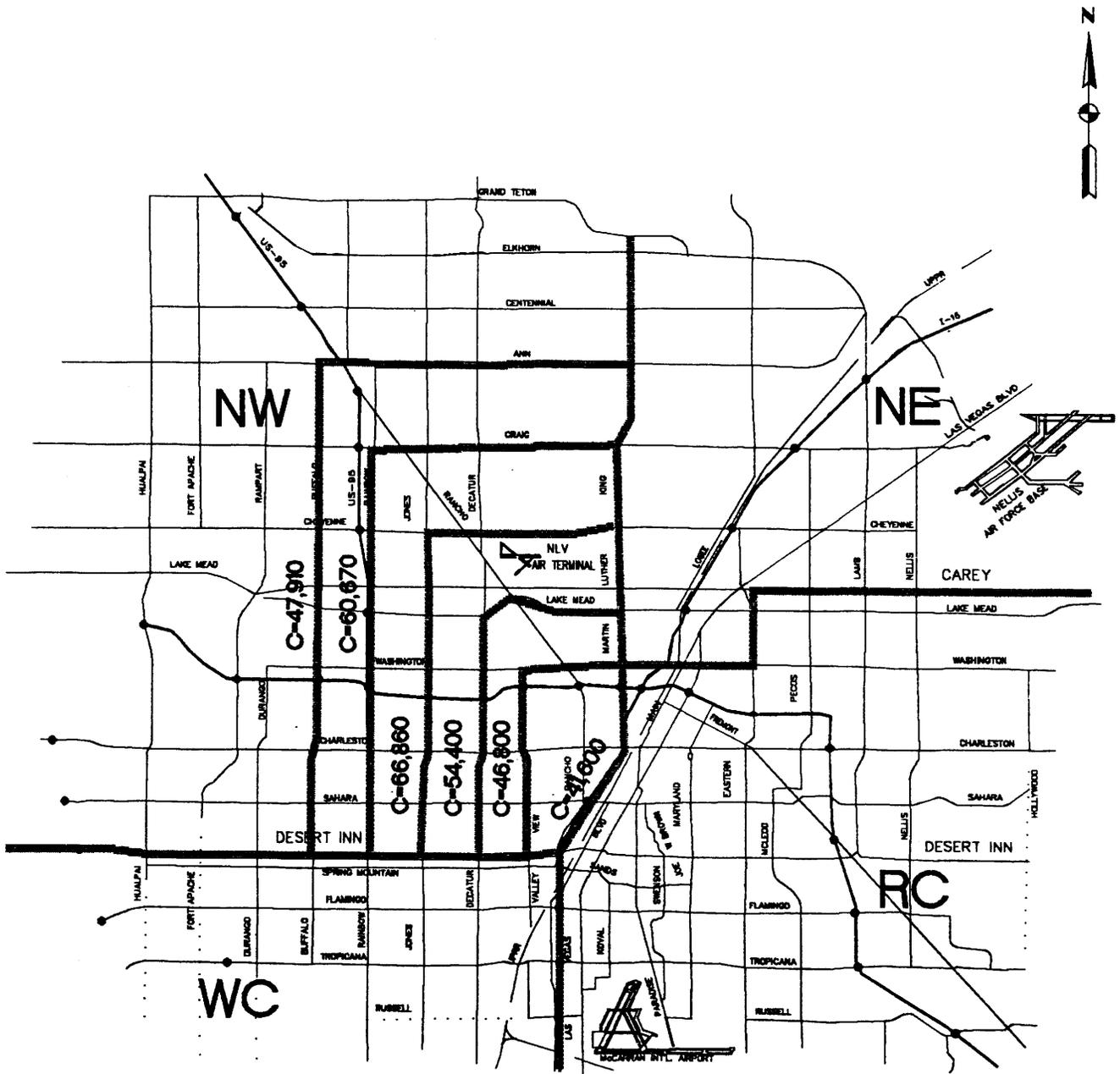


NEVADA DEPARTMENT OF TRANSPORTATION

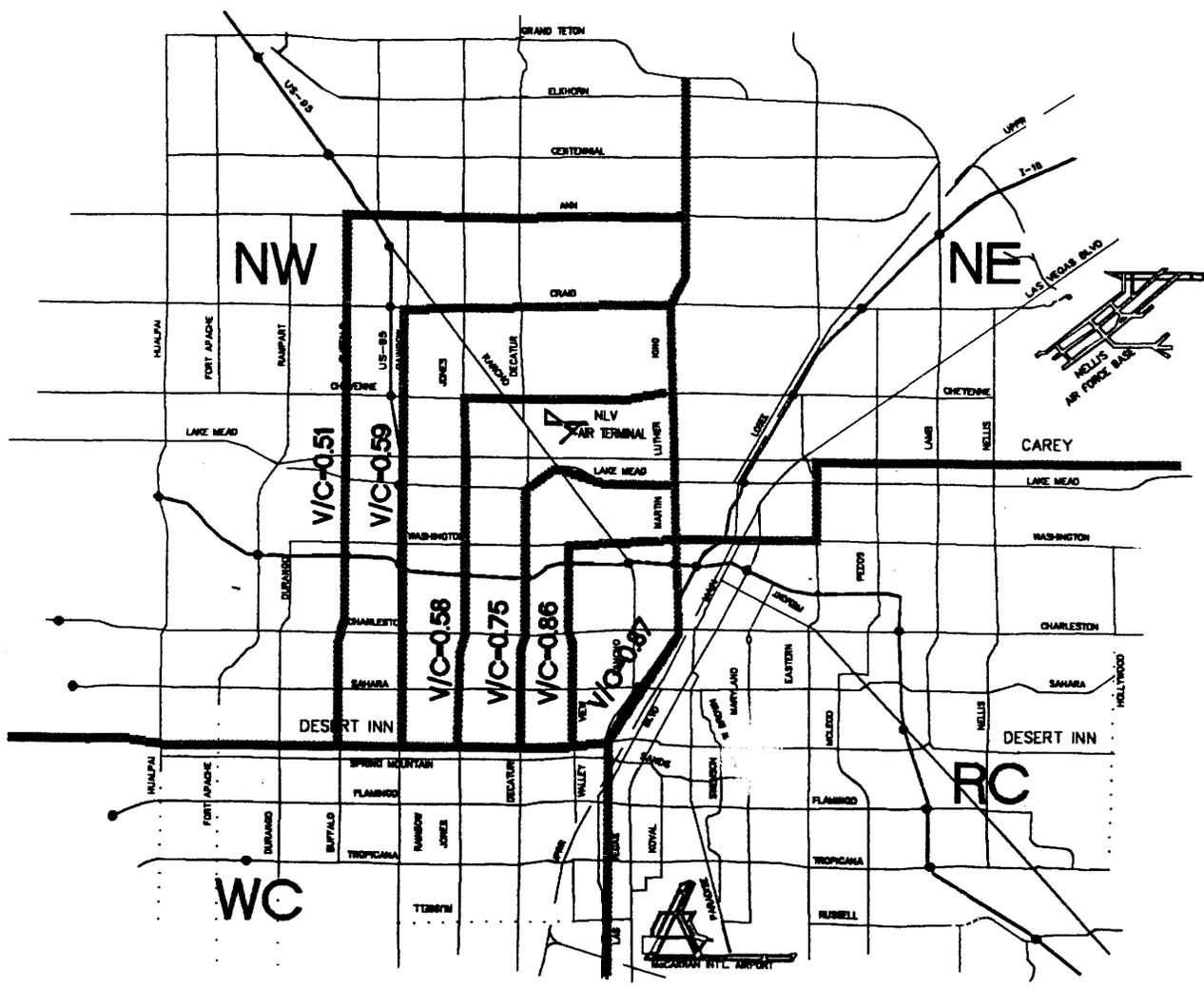
US-95 EIS

SCREENLINE VOLUME  
1995 PEAK HOUR

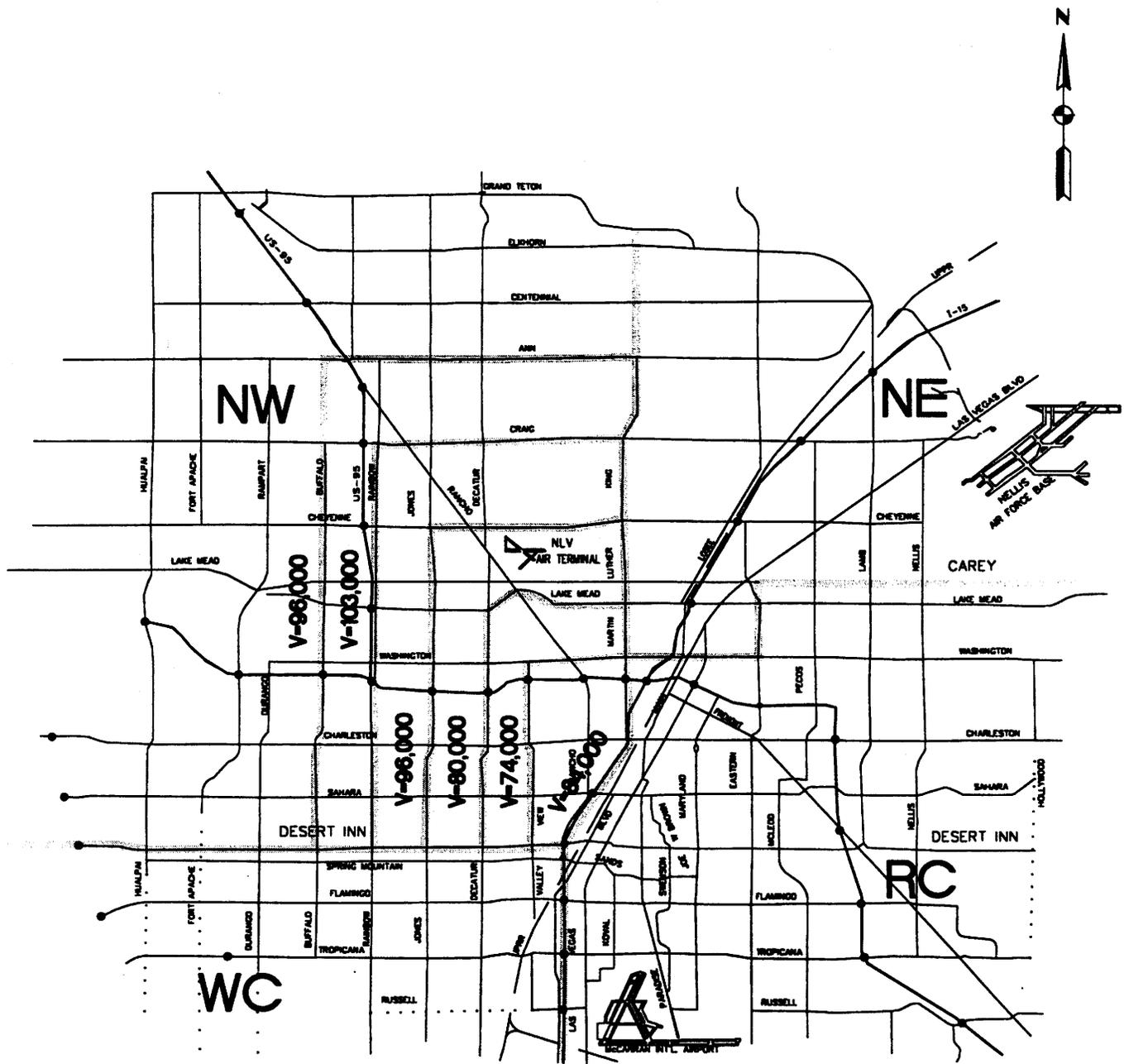
FIGURE III-5



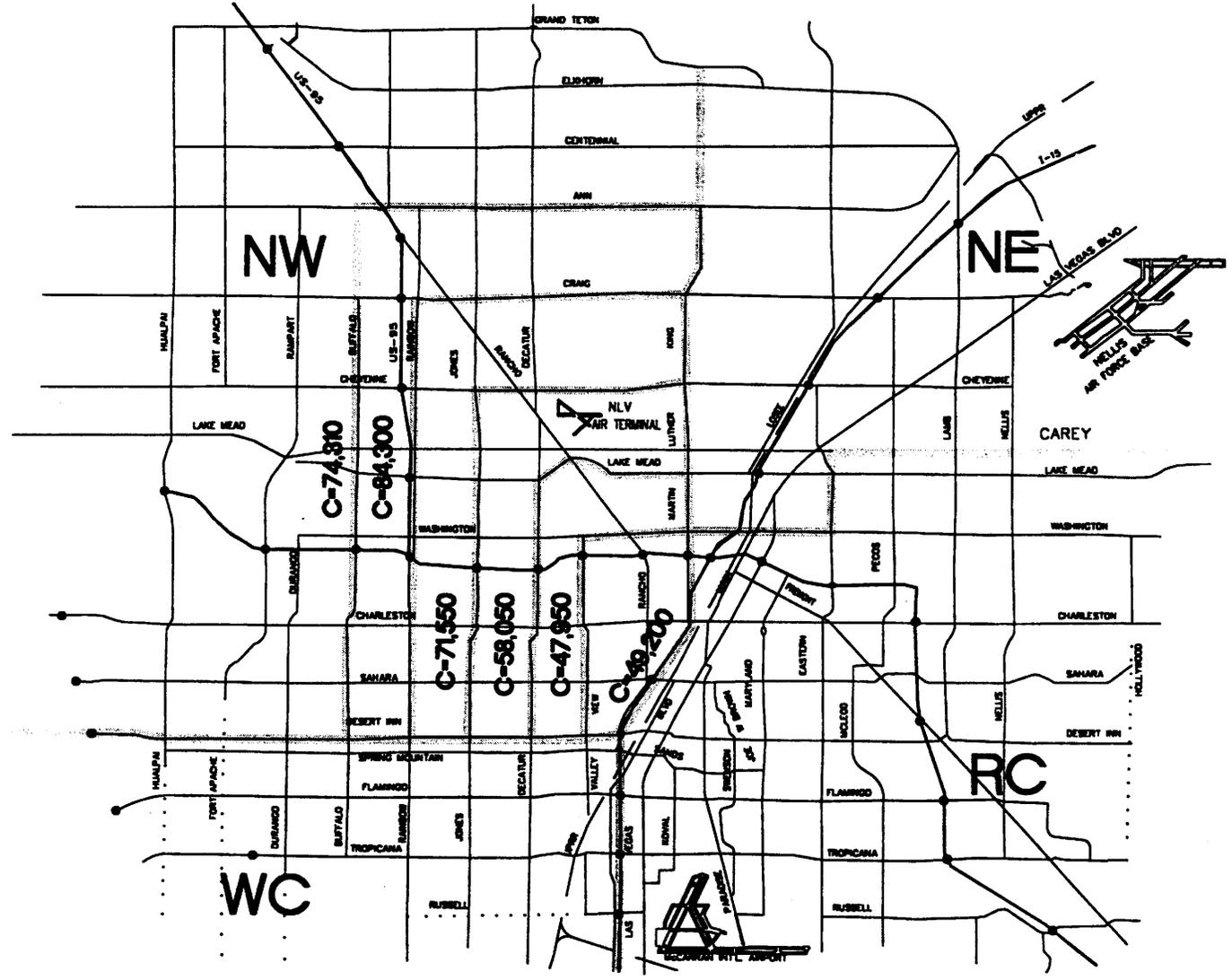
NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
SCREENLINE CAPACITY	
1995 PEAK HOUR	
FIGURE III-6	



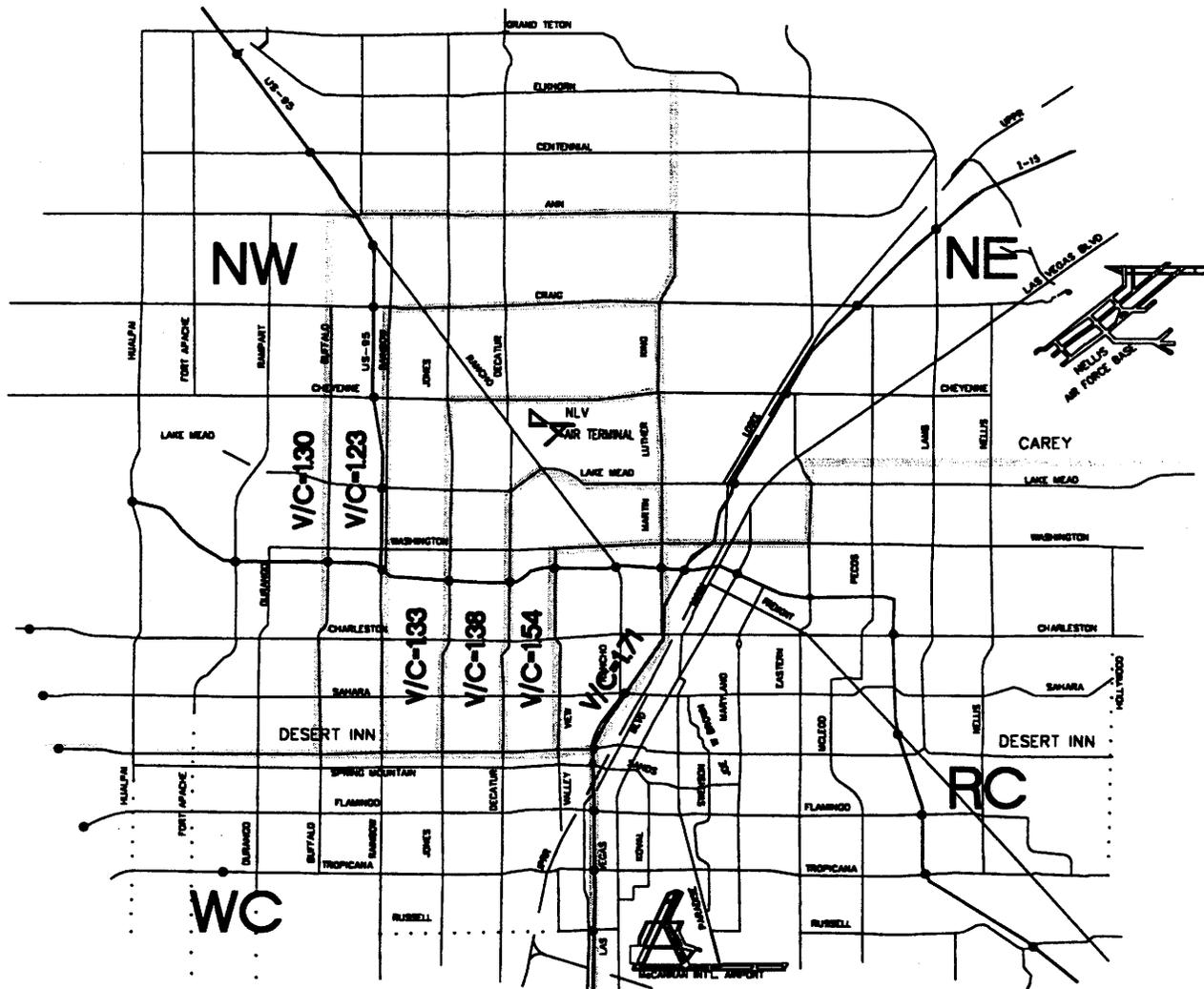
NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
NORTHWEST REGION PEAK HOUR VOLUME TO CAPACITY RATIOS 1995
FIGURE III-7



NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
SCREENLINE VOLUME 2020 PEAK HOUR	
	FIGURE III-8



NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
SCREENLINE CAPACITY PEAK HOUR 2020
FIGURE III-9



NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
NORTHWEST REGION PEAK HOUR VOLUME TO CAPACITY RATIOS - 2020	
	FIGURE III-10

## H. Roadway Supply and Demand

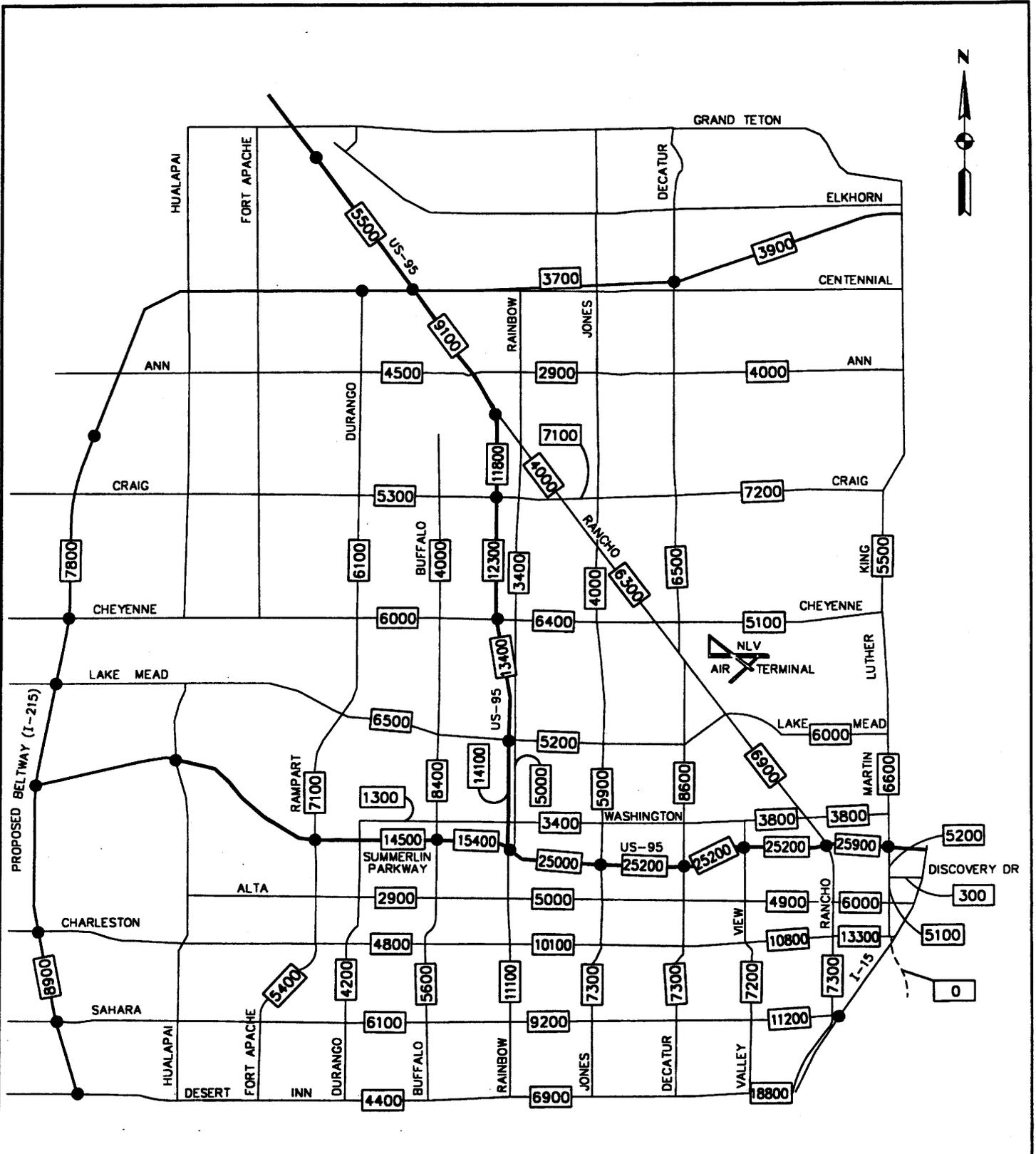
Volume-to-capacity (V/C) ratios, like those shown in Figures III-7 and III-10, are a measure of roadway system performance. V/C ratios are the ratios of travel demand to capacity, with demand defined as the volume of traffic traveling on the system in a specified time period, and capacity being the maximum number of vehicles that the system can accommodate in that same time period. When the volume of traffic exceeds the system's capacity, congestion occurs.

Figure III-11 presents estimated year 2020 no-build peak hour traffic volumes in the project area. These no-build volumes were derived using the RTC's TRANPLAN model. Figure III-12 presents the estimated year 2020 volume/capacity ratios in the project area with the "No-Build" Alternative.

In the absence of improvements (i.e., "No-Build", Figure III-12) the volume of peak hour traffic is projected to equal or exceed the capacity of most of the major arterial streets between Buffalo and I-15 and between Cheyenne and Desert Inn, including US-95, Charleston, Sahara, Desert Inn, Martin Luther King, Rancho, Valley View, Decatur, Jones, Rainbow and Buffalo. The average regional V/C ratio is forecast to exceed 1.0, so that extreme congestion and level of service F will prevail.

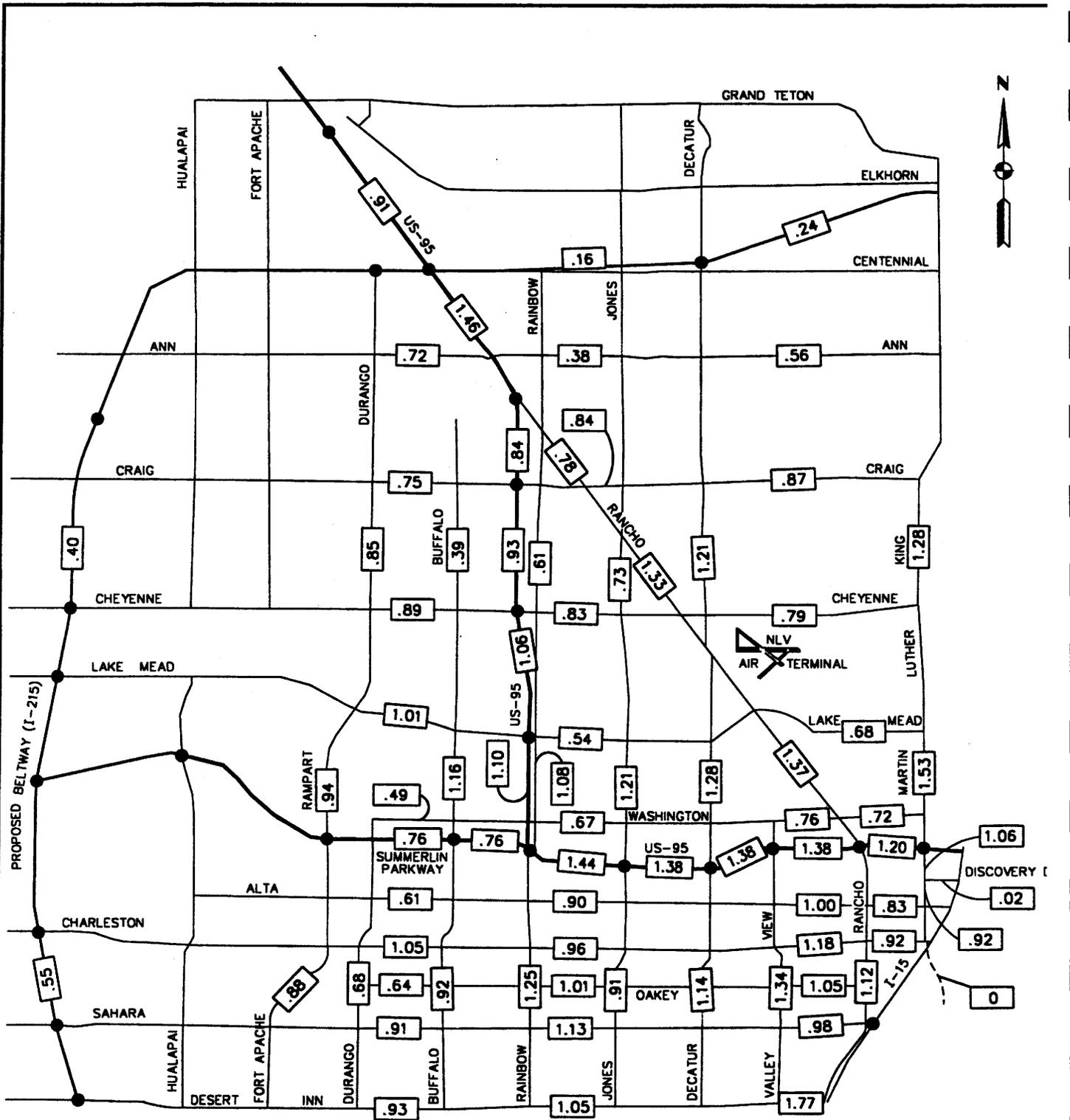
In contrast, with the proposed project, the peak hour volume of traffic on US-95 and the arterial street system is generally less than the capacity of the improved roadway network. The average regional V/C ratio is forecast to be less than 1.0 (see Figure III-15). Figure III-13 presents projected year 2020 peak hour traffic for the proposed project using the RTC's TRANPLAN model. Figure III-14 shows changes in projected year 2020 peak hour traffic compared to the "No Build" Alternative. Compared to the "No Build" Alternative, the proposed project shows increasing traffic volumes on US-95, Rancho Drive and Martin Luther King reflecting the increased capacity of these roadways and lower traffic volumes on the other arterial streets. Figure III-15 shows the estimated year 2020 volume/capacity ratios (using the TRANPLAN Model) on US-95 and the arterial streets in the project area with the proposed project.

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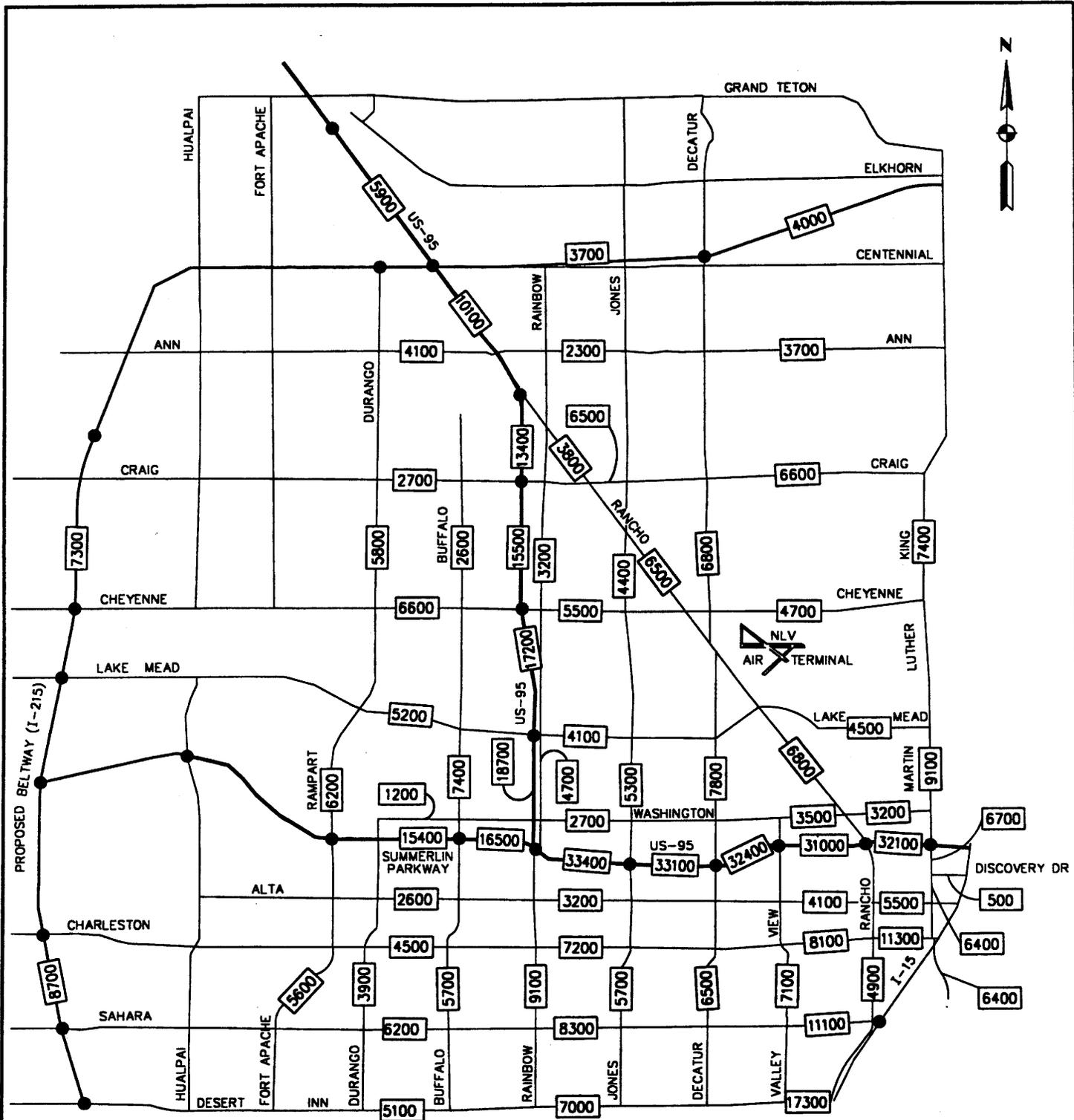
NEVADA DEPARTMENT OF TRANSPORTATION  
US-95 EIS  
NO BUILD  
YEAR 2020 PEAK HOUR TRAFFIC  
FIGURE III-11

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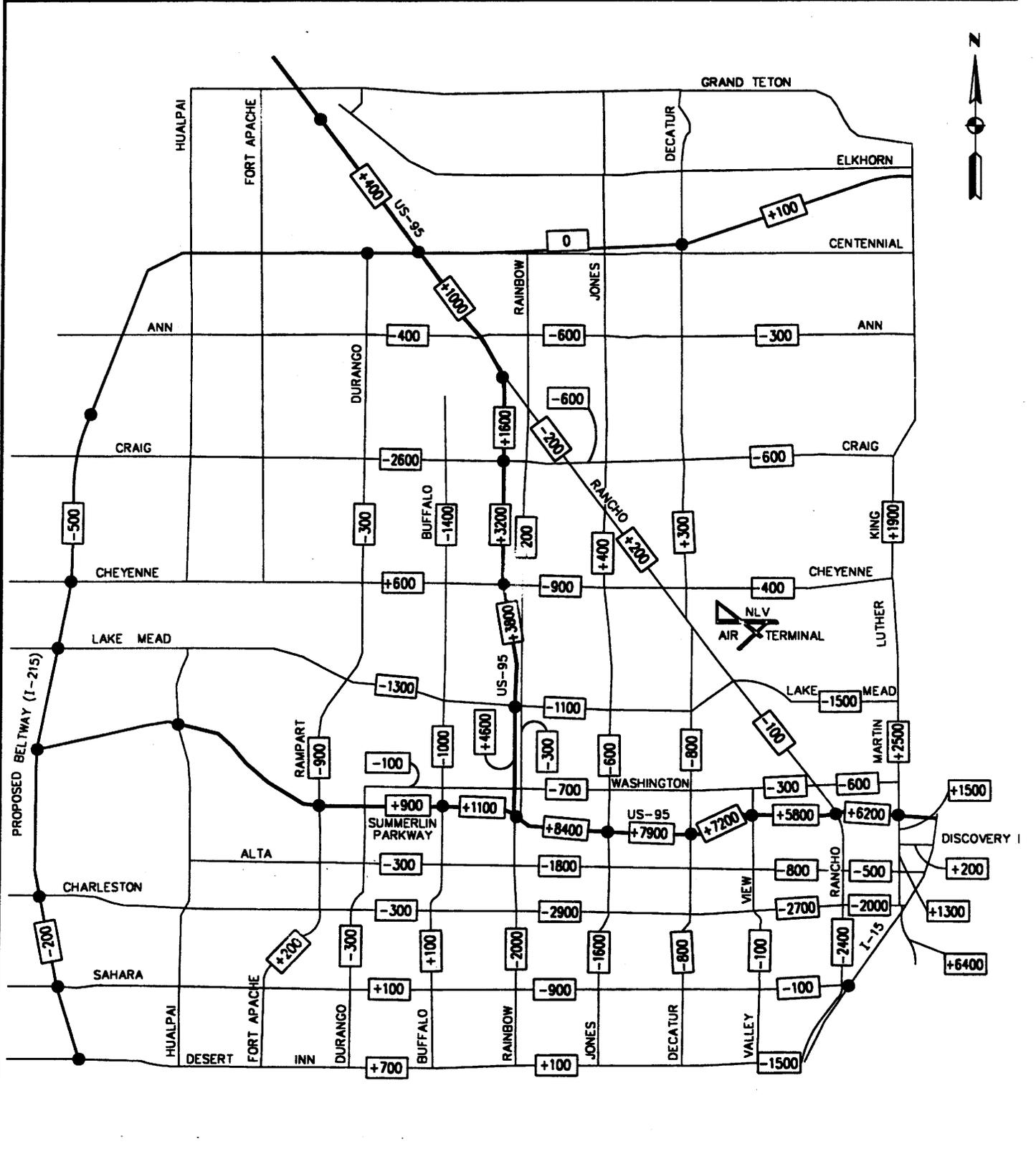
NEVADA DEPARTMENT OF TRANSPORTATION  
US-95 EIS  
NO BUILD - YEAR 2020  
VOLUME / CAPACITY RATIO  
FIGURE III-12

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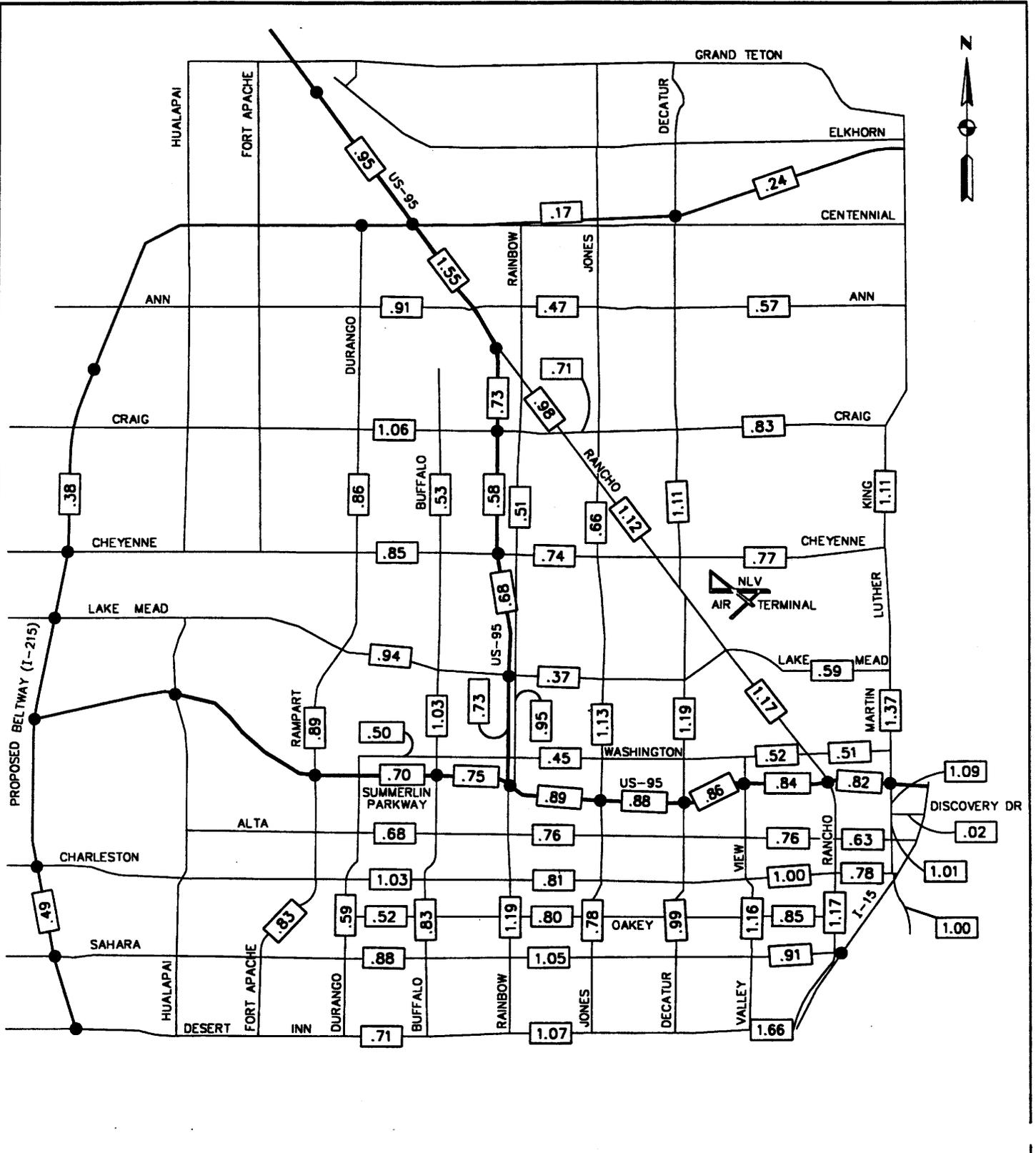


NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
YEAR 2020 PEAK HOUR TRAFFIC WITH THE PROPOSED PROJECT	
	FIGURE III-13

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NEVADA DEPARTMENT OF TRANSPORTATION  
 US-95 EIS  
 CHANGE IN YEAR 2020 PEAK HOV  
 TRAFFIC WITH THE PROPOSED PROJ  
 FIGURE III-14



NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
YEAR 2020 VOLUME / CAPACITY RATIO WITH THE PROPOSED PROJECT	
FIGURE III-15	

## I. Summary

The proposed project will provide the capacity to accommodate projected year 2020 transportation demand in the project area. US-95 and the arterial street network are currently experiencing severe congestion during peak travel hours. Without improvement, US-95 and the arterial network is expected to experience increased congestion through the year 2020. The proposed project will address the purpose and need by the following:

- Improve the flow of traffic from the residential growth areas of the project area into the employment centers of the Resort Corridor.
- Increase the capacity of the roadway system linking the project area with the Resort Corridor.
- Improve roadway operations and levels of service.
- Improve overall mobility within the project area through enhanced transit service.
- Facilitate rideshare programs and regional efforts to implement TDM measures.
- Improve overall travel safety.
- Accommodate planned growth within the project area.
- Improve the operational efficiency of the US-95 corridor through the introduction of Freeway Management System operations.
- Improve the distribution and flow of traffic in the congested portions of the project area by improving the arterial street network.
- Decrease dependence on single-occupancy vehicles.
- Increase vehicle occupancy on the project area roadway network through the introduction of Transportation Demand Management Measures, constructed in conjunction with HOV lanes on US-95 and the Summerlin Parkway.
- Improve pedestrian access in the project area.

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## **IV. PROJECT ALTERNATIVES**

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## **IV. PROJECT ALTERNATIVES**

### **A. Major Investment Study Analysis of Alternatives**

The US-95 Major Investment Study was undertaken by the Nevada Department of Transportation to evaluate a full range of alternative transportation improvements to serve the short, intermediate and long-term needs of the Northwest Region of Las Vegas and to select a transportation alternative for inclusion in the Clark County Regional Transportation Plan.

The Major Investment Study Process was considered to be well suited for the evaluation of the Northwest Region of Las Vegas because of the need to combine both FHWA and FTA planning and project development processes, (since both roadway and transit alternatives would be considered), and the need to integrate National Environmental Policy Act (NEPA) principals, including consideration of multiple alternatives, consideration of environmental impacts and public involvement.

The Major Investment Study (MIS) provision provided flexibility in the planning and project development process for federally funded transportation projects by allowing local planners to select one of two options. The planning process selected, known as Option 1, enabled the MIS to proceed and conclude prior to beginning the NEPA documentation process.

The US-95 MIS was conducted from December 1995 through April 1997. Following the Option 1 planning process, the MIS included both technical and environmental evaluations. However, during the preparation of the MIS, the level of detail of social, economic and environmental analysis was limited to the degree to which these factors would affect the comparison of alternatives and the decision making process.

The MIS considered a wide range of transportation improvement alternatives including arterial street improvements, new arterial streets, improvement of existing freeways (including widening, HOV lanes, reversible lanes, freeway management systems, and double-decking), new freeway corridors, super arterials, enhanced bus service, transportation system management, travel demand management and fixed guideway transit. These improvements were considered both individually and combined into alternative transportation strategies.

During the MIS, environmental conditions were evaluated based on consultation with agency professionals having jurisdictional responsibilities, review of available data and mapping, field reconnaissance and public participation. Environmental factors considered during the MIS process included residential and commercial displacements, natural resources (specifically native vegetation and wildlife habitat), cultural resources, parks, schools and recreational facilities, air quality, noise, aesthetics and hazardous materials.

For potential environmental impacts, a collaborative process of public involvement and agency coordination was used to determine the importance of these environmental factors at the MIS level of the evaluation process. This was particularly important in considering social impacts including displacements and relocations, neighborhood cohesion, neighborhood quality and lifestyles and access to community services.

The MIS process involved a collaborative process, involving the public, local stakeholders and community groups, local and regional government agencies, regulatory agencies and local and state officials. Due to the need to integrate these groups into the decision making process, the MIS workflow process provided for maximum public participation at all stages of the Study. Since the goal of the MIS was to reach a decision to include a particular transportation alternative in the adopted regional transportation plan, the development of public consensus was of paramount importance.

Figure IV-1 outlines the workflow process which was followed for the MIS.

At the beginning of the MIS, a Public Information Program was established which was continued throughout the MIS. The Public Information Program included a series of Public Workshops (seven total), a project information hotline, a community information office, paid advertising, public service announcements, press releases, media advisories, direct mailing of newsletters and workshop advisories, presentations to home owners associations, presentations to local officials and participation at Town Hall meetings. During the course of the MIS, in addition to the public workshops, 73 meetings were held with homeowners associations, neighborhood associations, citizens advisory boards and other stakeholders and nearly 800 phone calls and personal visits were made to the project information hotline and community information office.

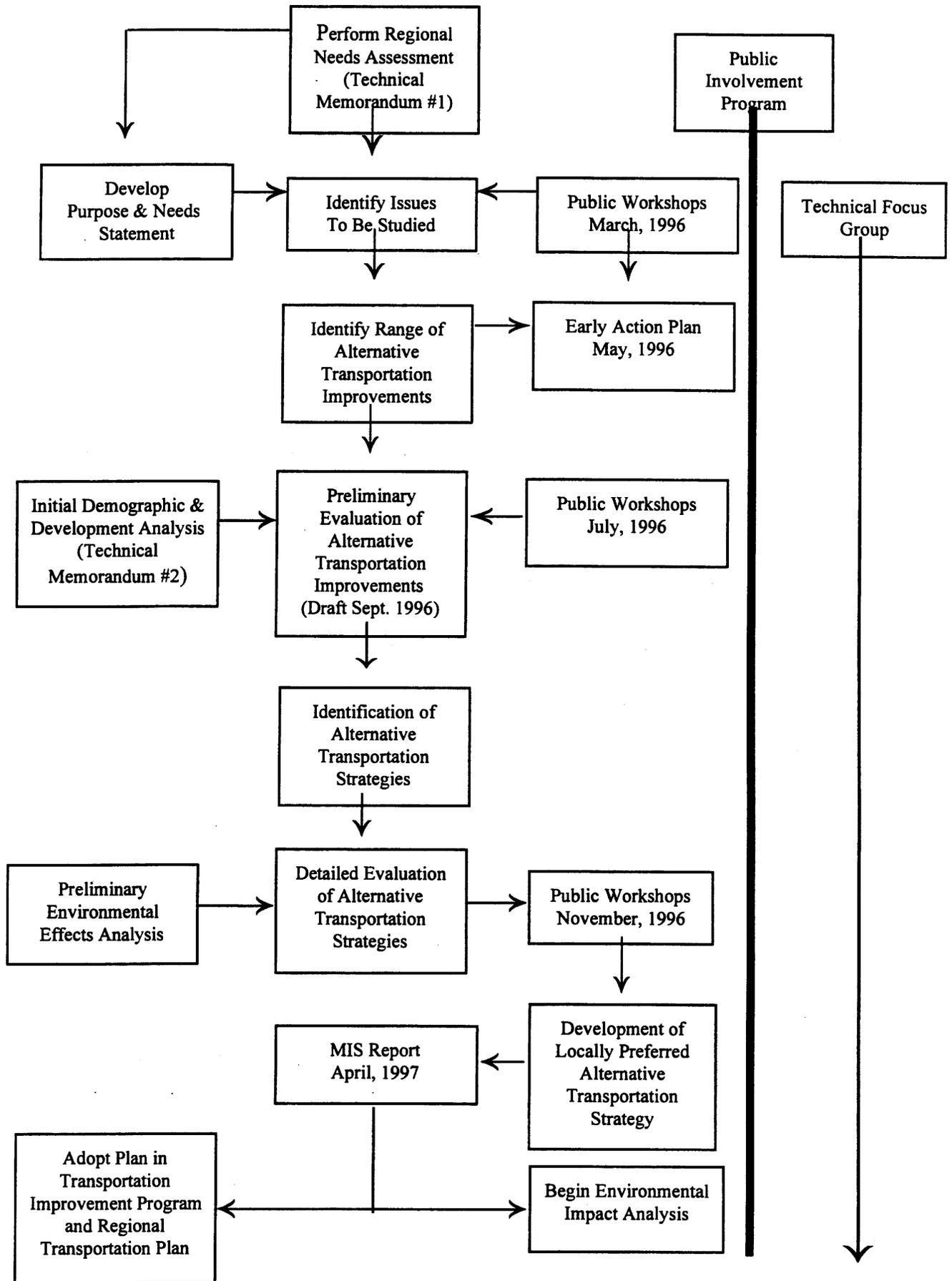
At the outset of the Study, a Technical Focus Group was established. The Technical Focus Group met periodically during the course of the MIS to provide technical direction. Members of the Technical Focus Group included representatives of:

- The Federal Highway Administration
- The Nevada Department of Transportation
- The City of Las Vegas
- The City of North Las Vegas
- Clark County Department of Public Works
- Clark County Comprehensive Planning
- The Regional Transportation Commission
- The Las Vegas Area Computer Traffic System

The Technical Focus Group met a total of 16 times in twelve months. Federal Transit Authority representatives were also invited to attend the Technical Focus Group Meetings.

At the beginning of the MIS, a regional needs assessment was performed which identified transportation problems and capacity shortfalls in the Northwest Region of Las Vegas (Technical Memorandum No. 1, January 1996). This allowed the development of a statement of purpose and need.

**FIGURE IV-1  
US-95 MAJOR INVESTMENT STUDY WORKFLOW PROCESS**



Issues to be addressed by the MIS were established through meetings of the Technical Focus Group and through Public Workshops held in March 1996. The identification of issues allowed a range of alternative transportation improvements to be identified and also established the framework for an Early Action Plan of region-wide safety and operational improvements which was adopted in May 1996.

Alternative transportation improvements were preliminarily evaluated through technical studies and demographic analyzes which culminated in public workshops in July 1996. During the public workshops, a broad range of transportation alternatives were selected for inclusion in alternative transportation strategies to meet short, intermediate and long-range demand.

A detailed evaluation of alternative transportation strategies was then conducted to provide a comparison of alternative strategies considering both technical and preliminarily-identified environmental effects. A series of public workshops were held in November 1996. Based on the comments received during the public workshops and during public hearings conducted in accordance with local ordinances, a "Locally Preferred Alternative" was adopted during January, February and March 1997, by the City of Las Vegas, the City of North Las Vegas, Clark County, the Regional Transportation Commission (RTC) and the Nevada State Transportation Board.

The MIS final report was published in April 1997. Local officials have included the "Locally Preferred Alternative" in The Regional Transportation Plan Update.

The "Locally Preferred Alternative" has been advanced for analysis in the EIS as Alternative A. As discussed in Section IV-B.3, the proposed project (Alternatives A and B) is the only alternative studied in the US-95 MIS which meets the purpose and need for the proposed project. All the alternatives identified and evaluated during the US-95 MIS process, failed to meet the purpose and need for the proposed project for the reasons discussed in Section IV-B.3.

Importantly, the proposed project combines roadway improvements with transit improvements and transportation demand management. It has been recognized by the public as well as by local and state governmental officials that conventional roadway improvements alone cannot satisfy the growing need for increased capacity and increased mobility in the northwest Region. Therefore, the proposed project relies heavily upon practical TDM measures including enhanced bus service, HOV lanes and freeway management systems which can be implemented within local fiscal constraints.

Since the proposed project (Alternatives A and B) is the only alternative which was found to meet the project purpose and need, potential environmental impacts which were preliminarily identified during the Major Investment Study were not the determining factor in the selection of alternative transportation strategies. However, potential environmental impacts were considered in the decision to advance the proposed project for further study and in the identification of design alternatives for the proposed project. The proposed project includes major design alternatives (A and B) which can reduce or avoid many of the potential environmental impacts preliminarily identified in the US-95 MIS.

## **B. Alternatives Considered**

### **1. No-Build Alternative**

Under the No-Build Alternative, the proposed project would not be constructed or implemented and the existing local and regional road and highway network would essentially remain in its current configuration with only normal maintenance and repair of the existing roadways and associated structures by the respective agencies and departments. In addition, the No-Build Alternative assumes that all currently planned projects included in the RTC's Regional Transportation Plan 1998-2020 will be constructed but that none of the roadway or transportation demand management improvements proposed as part of the proposed project would be undertaken.

The No-Build Alternative is not considered to be a viable alternative to the proposed project due to the following:

- Traffic volumes throughout the base network will continue to increase with unacceptable increases in the volume/capacity ratio, substantial declines in traffic flow conditions, and potential increases in accident rates.
- Increased travel through the project area and between the project area and the Resort Corridor will continue to increase and lead to additional congestion and level of service F conditions.
- Decreased efficient use of energy.
- General decline in safe and efficient travel.
- Existing and new development under construction as well as planned and programmed will not be adequately served.

Although the No-Build Alternative is not considered to be a viable alternative to the proposed project, it is however evaluated in the Environmental Impact Statement to provide a baseline for comparison for select environmental conditions, and as an alternative to the build alternative (Proposed Project).

## 2. Build Alternative A

The following subsection describes the proposed improvements included in Alternative A the proposed project.

### a. US-95 Widening

As shown schematically in Figure IV-2, US-95 is proposed to be widened from six lanes to 10 lanes from Rainbow Boulevard to I-15. A widening to 10 lanes would be compatible with the current I-15/US-95 Spaghetti Bowl reconstruction program, avoiding bottlenecks at the Spaghetti Bowl Interchange.

From Craig Road to Rainbow Boulevard, US-95 is proposed to be widened to six lanes. With the Summerlin Parkway also widened to six lanes (Subsection b.) a total of 12 lanes from the Summerlin Parkway and from US-95 north of Rainbow would converge into the proposed 10 lane freeway section from Rainbow Boulevard to I-15.

From Craig Road to Rainbow Boulevard, a distance of about five miles, the existing median is approximately 48 feet wide from edge of travel lane to edge of travel lane. This is wide enough to allow for construction of an additional lane in the median in both directions with shoulders. Widening in the median between Craig Road and Rainbow Boulevard would not require additional right-of-way and would avoid reconstruction of the existing interchange ramps.

From Craig Road to Rainbow, existing overpass bridges have sufficient clearance to permit median widening without modification. The existing underpass bridge at Gowan Road would require widening to accommodate the additional lanes. The existing US-95 overpass at Washington Avenue would be widened from two (2) lanes to four (4) lanes in order to complete improvements to Washington Avenue within the existing US-95 right-of-way.

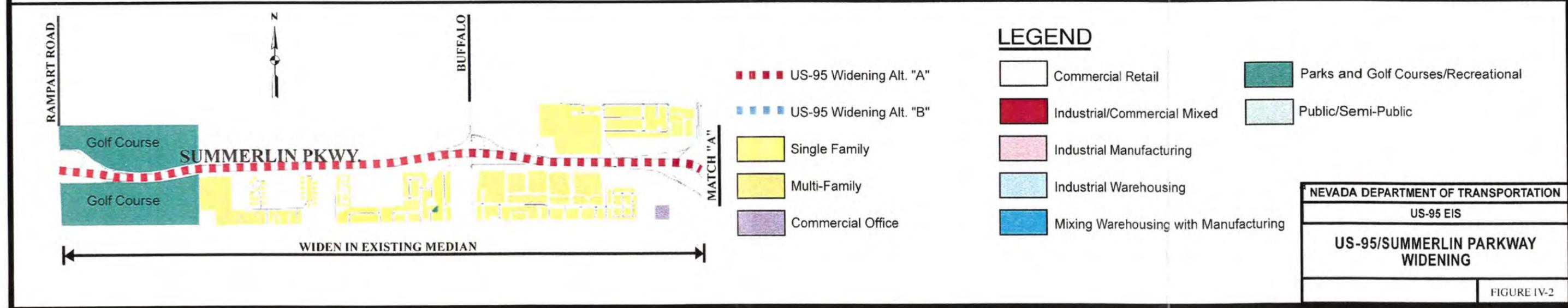
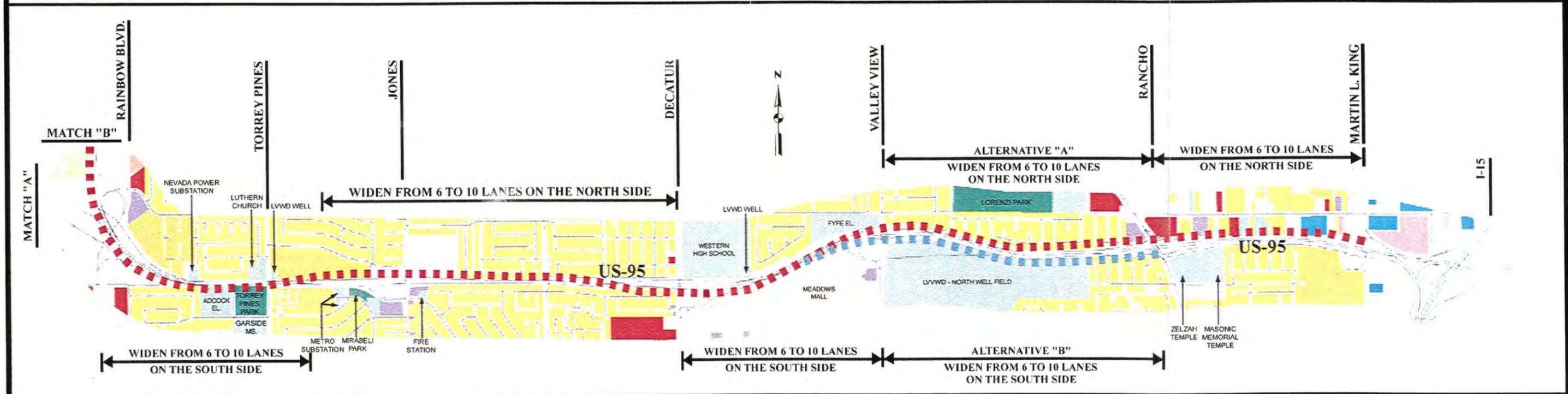
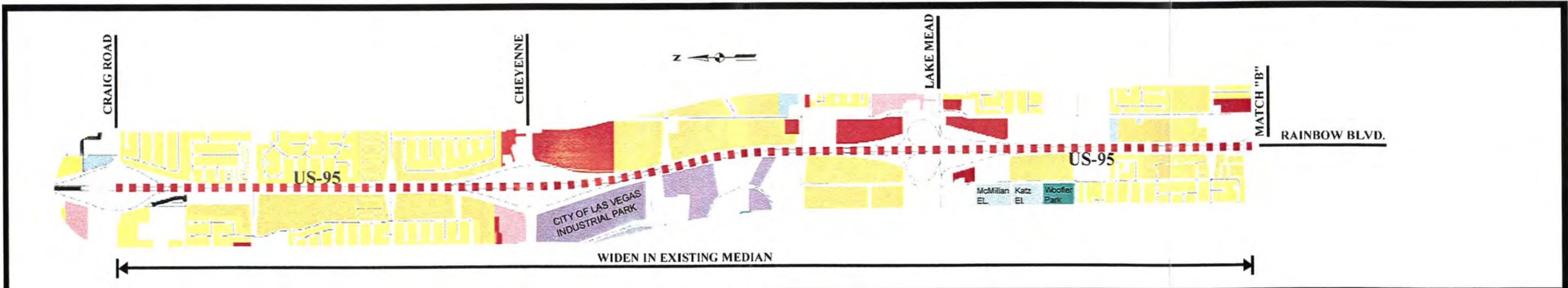
From Rainbow Boulevard to I-15, a distance of about five miles, widening of US-95 is proposed to take place on the outside of the existing highway since there is no open median at the present time.

Widening of US-95 to 10 lanes between Rainbow Boulevard and I-15 would require the complete reconstruction of all existing bridges and all existing interchanges from east of Rainbow Boulevard to Rancho Drive due to insufficient horizontal clearance and changes in horizontal geometry. It would also require substantial right-of-way acquisitions due to the very narrow existing right-of-way.

Figure IV-3 shows the proposed typical sections for the widening of US-95.

#### Craig Road to Rainbow Boulevard (5 miles)

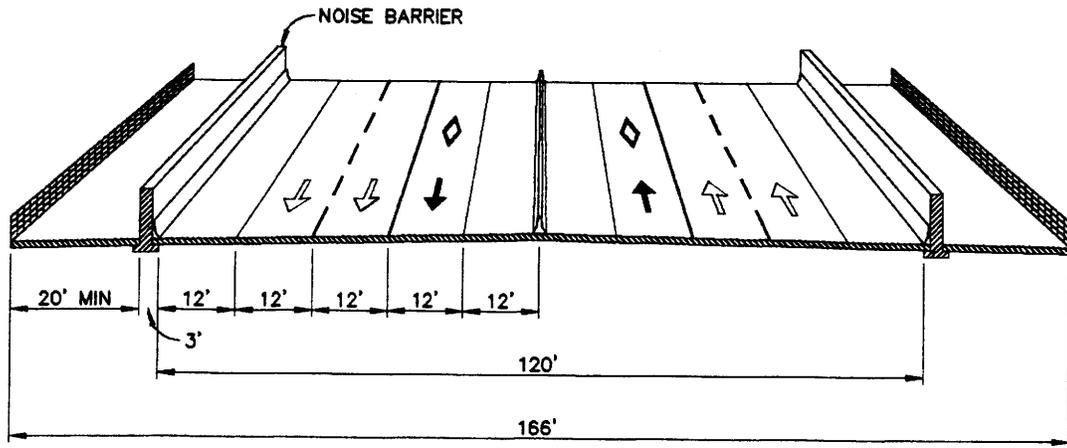
Existing properties adjacent to US-95 from Craig Road to Rainbow Boulevard are single family residential, multi-family residential and commercial.



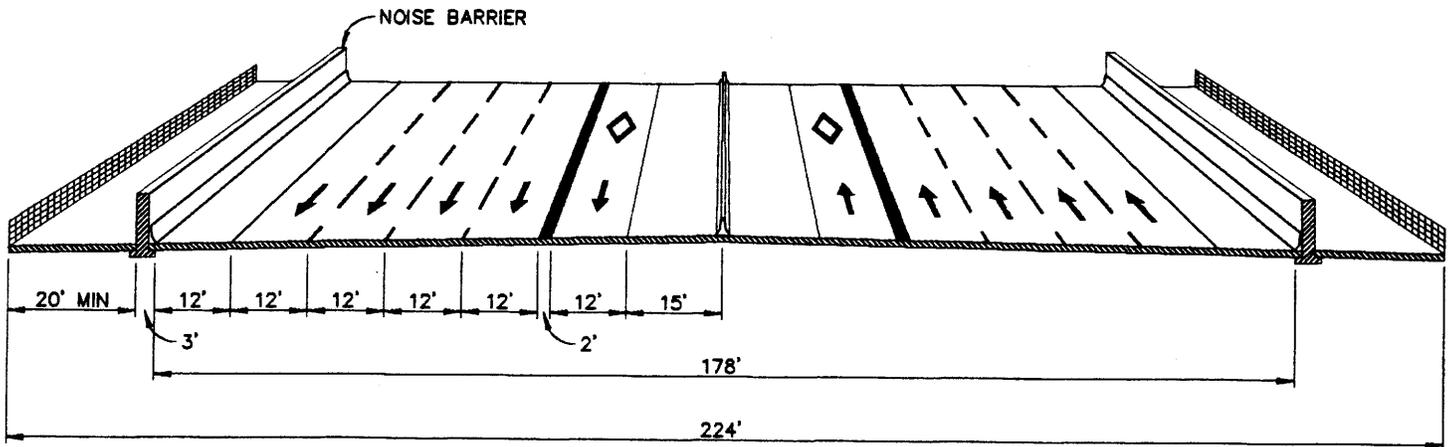
**LEGEND**

- - - US-95 Widening Alt. "A"
- Commercial Retail
- Parks and Golf Courses/Recreational
- - - US-95 Widening Alt. "B"
- Industrial/Commercial Mixed
- Public/Semi-Public
- Single Family
- Industrial Manufacturing
- Industrial Warehousing
- Multi-Family
- Mixing Warehousing with Manufacturing
- Commercial Office

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
<b>US-95/SUMMERLIN PARKWAY WIDENING</b>	
	FIGURE IV-2



 GENERAL PURPOSE LANE (EXISTING)  
 HIGH OCCUPANCY VEHICLE (HOV) LANE



 GENERAL PURPOSE LANE  
 HIGH OCCUPANCY VEHICLE (HOV) LANE

NEVADA DEPARTMENT OF TRANSPORTATION

US-95 EIS

SIX-LANE & TEN LANE  
FREEWAY CONCEPTS

FIGURE IV-3

On the west side of US-95 between Craig Road and Rainbow Boulevard there are eleven large apartment or condominium complexes with approximately 90 individual multi-family buildings abutting US-95, averaging about eight dwelling units per building.

On the east side of US-95 between Craig Road and Rainbow Boulevard there are eight large apartment or condominium complexes with approximately 55 individual multi-family buildings abutting US-95, averaging about eight dwelling units per building.

Three single family residential neighborhoods exist along the east side of US-95 between Craig Road and Gowan Road. Together, these neighborhoods include approximately 54 single family residences abutting US-95.

Commercial properties abutting US-95 between Craig Road and Rainbow Boulevard have their principal access from Rainbow Boulevard and Tenaya Way, which parallel US-95 on the east and west sides, respectively.

The City of Las Vegas Industrial park is located adjacent to US-95 on the west side between Cheyenne Avenue and Lake Mead Boulevard.

Widening of US-95 in the median from Craig Road to Rainbow Boulevard is proposed to avoid any takings of properties. Physical improvements would include the widening of the US-95 Bridge over Gowan Road and the Washington Avenue Bridge of over US-95 to facilitate median improvements.

#### **Rainbow Boulevard to Torrey Pines (½ mile)**

Existing properties on the north side of US-95 between Rainbow and Torrey Pines include a single family residential neighborhood, two multi-family apartment complexes, a Lutheran Church and a Nevada Power electrical substation.

Existing properties on the south side of US-95 between Rainbow and Torrey Pines include a single family residential neighborhood, the Adcock Elementary School and the Torrey Pines Park.

The existing US-95 right-of-way width in this section narrows to less than 150 feet adjacent to the Adcock Elementary School, the Torrey Pines Park, the Lutheran Church and both single family residential neighborhoods. The Adcock Elementary School, the Lutheran Church and the electrical substation have minimal setbacks (less than 40 feet) from the existing pavement. A total of 29 single family residences abut US-95 in this section.

Widening on the south side of US-95 is proposed between Rainbow Boulevard and Torrey Pines. Widening on the south side in this section would require the acquisition of land and building from the Adcock Elementary School, the acquisition of approximately nine single family residences and

the acquisition of land from the Torrey Pines Park, but avoids acquisition of an Lutheran Church, the electrical substation, a well, 25 single family residences and over 100 apartment units located along the north side of US-95. The park and the school are proposed to be constructed/reconstructed on the smaller, remainder parcels.

An existing 8 ft. wide pedestrian path and bikeway adjacent to US-95 on the south side is located within NDOT right-of-way and maintained by the City of Las Vegas. The pedestrian path and bikeway would be reconstructed to continue to serve the school and the park.

The existing Torrey Pines bridge over US-95 would have to be replaced to accommodate the widening.

**Torrey Pines to Jones Boulevard (½ mile)**

Existing properties on the north side of US-95 between Torrey Pines and Jones include a multi-family apartment complex and a “strip” shopping center. The multi-family apartment complex has seven buildings abutting US-95.

Existing properties on the south side of US-95 between Torrey Pines and Jones include two multi-family apartment complexes, a Metro police substation, a park, the Mirabelli Community Center and a professional office building. The multi-family apartment complexes have 12 buildings abutting US-95.

The existing US-95 right-of-way width in this section is about 180 feet adjacent to the multi-family apartment complexes and increases to about 500 feet at the Jones Boulevard Interchange. The police substation, the park and the community center abut the US-95 southbound exit ramp to Jones Boulevard.

The proposed widening of US-95 is proposed to shift from the south side to the north side in this section. The proposed shift to the north side is proposed in order to avoid impacts to the police substation, the park and the Mirabelli Community center.

The proposed widening would acquire part of six multi-family townhouse buildings on the south side of US-95 and at least seven apartment buildings on the north side of US-95. Two single family residences on Clarice would be acquired to maintain access to the remaining apartment units on the north side of US-95.

A 20,000 S.F. “strip” shopping center with multiple tenants on Clarice west of Jones would also have to be acquired taken to accommodate the widening.

The Jones Boulevard Interchange would be reconstructed in the same configuration. The existing Jones Bridge would have to be reconstructed. To improve the traffic flow on Jones, the Clarice/Jones

intersection would be realigned to the north and the three existing traffic signals north of US-95 consolidated to two. The relocation of Clarice would require the acquisition of at least three single family residences on the west side of Jones.

**Jones Boulevard to Decatur Boulevard (1 mile)**

Existing properties on both the north and south side of US-95 between Jones and Decatur are predominately single family residential. However, a Smith's Shopping Center and four apartment buildings occupy the northeast quadrant of the Jones Interchange, a professional office building and a fire substation occupy the southeast quadrant of the Jones Interchange, and an apartment building occupies the northwest quadrant of the Decatur Interchange.

The existing US-95 right-of-way width is about 120 feet between Jones and Michael Way and increases to about 200 feet approaching the Decatur Interchange.

One hundred twenty-nine single family residences abut US-95 between Jones and Decatur Boulevard, 40 on the north side and 89 on the south side.

Widening of US-95 on the north side is proposed between Jones and Decatur because there are fewer houses along the north side and to avoid impacting the fire station at Jones.

The proposed widening between Jones and Decatur would require the acquisition of approximately 50 single family residences and five apartment buildings with about 20 dwelling units which presently abut US-95 on the north side and approximately 23 single family residences which presently abut US-95 on the south side between Jones and Decatur. In addition, a McDonald's, a car wash, a service station and parking spaces of the Smith's Shopping Center in the northeast quadrant of the Jones Interchange would be acquired.

To maintain residential access between Michael Way and Decatur, Alaska Avenue is proposed to be reconstructed adjacent to the north side of US-95.

**Decatur Boulevard to Valley View Boulevard (¾ mile)**

Existing properties on the north side of US-95 between Decatur and Valley View include Western High School in the northeast quadrant of the Decatur Interchange and Ruth Fyfe Elementary School in the northwest quadrant of the Valley View Interchange. A residential neighborhood is located between the two schools on the north side of US-95 with approximately 17 residences abutting US-95.

The south side of US-95 between Decatur and Valley View is occupied by the Meadows Mall and associated retail stores.

The existing US-95 right-of-way width varies from about 200 feet to over 600 feet at interchanges.

Widening of US-95 on the south side is proposed between Decatur and Valley View in order to minimize impacts to Western High School, Ruth Fyfe Elementary School and existing residences. The taking of property at Ruth Fyfe Elementary School will be avoided. At Western High School it is anticipated that acquisitions would be limited to small landscaped areas on the southeast and southwest corners of the school property (less than one acre) without direct impacts to existing recreational facilities.

On the north side of US-95, a Las Vegas Valley Water District well would be impacted and vacant private land adjacent to the existing single family residential neighborhood would likely be acquired in part.

On the south side of US-95 property would be acquired from the Meadows Mall, requiring the relocation of their perimeter circulation road and a loss of parking area.

The Decatur and the Valley View Interchanges would require reconstruction to accommodate the widened freeway. Existing bridges would have to be reconstructed. The basic configurations of the interchanges are proposed to be retained. However, to improve traffic flow on Decatur, it is proposed that a right turn ramp be considered from US-95 southbound to Decatur southbound.

The existing distance between Decatur and Valley View is only about three quarters of a mile. Therefore, to avoid adverse weaving conditions on US-95 the following is proposed.

- Braiding of the US-95 northbound exit ramp to Decatur under the Valley View entrance ramp to US-95 northbound and
- A collector-distributor road along US-95 southbound serving the Decatur and Valley View Interchanges.

The collector-distributor road along the south side of US-95 would allow the existing loop ramps at Decatur and at Valley View to be reconstructed with tighter radii, minimizing the amount of additional right-of-way required. On the north side of US-95, the braided ramps would minimize takings.

#### **Valley View Boulevard to Rancho Drive (1 mile)**

The existing US-95 right-of-way width varies from about 150 feet to about 300 feet at interchanges between Valley View Boulevard and Rancho Drive.

Single family residential neighborhoods occupy most of the land adjacent to US-95 on the north side between Valley View and Rancho. Approximately 58 single family residences abut US-95 on the

north side. The northwest quadrant of the Rancho Interchange is occupied by an office tower complex.

The Las Vegas Valley Water District (LVVWD) owns the property adjacent to US-95 on the south side from Valley View three quarters of a mile eastward. The LVVWD property includes two active wells and a pumping station which are located immediately adjacent to US-95. The area of the LVVWD property south of US-95 has been designated as the Las Vegas Springs Archaeological site. A single family residential neighborhood is located between the LVVWD and Rancho Drive on the south side of US-95 and includes approximately 13 residences which abut US-95.

With Alternative A, widening on the north side of US-95 between Valley View and Rancho is proposed. This widening would require the acquisition of approximately 63 single family residences on the north side of US-95 and an additional approximately twenty-two single family residences on the south side of US-95. This alternative would minimize impacts to the LVVWD land by avoiding, as much as possible, property acquisition on the south side of US-95.

The Rancho Drive interchange would have to be reconstructed to accommodate the widened freeway, with the existing Rancho Bridge reconstructed.

#### **Rancho Drive to Martin Luther King Boulevard (3/4 mile)**

Existing properties on the north side of US-95 between Rancho and Martin Luther King are commercial, fronting on Bonanza Avenue.

Existing properties on the south side of US-95 between Rancho and Martin Luther King include a single family residential neighborhood, a multi-family apartment complex and private community facilities in the southeast quadrant of the Rancho Interchange. A total of 24 single family residences and three apartment buildings abut US-95 on the south side in this section.

The existing US-95 right-of-way width varies from about 170 feet to over 500 feet at the Martin Luther King Interchange.

Widening on the north side is proposed between Rancho Drive and Martin Luther King Boulevard.

As part of the long range I-15/US-95 Spaghetti Bowl reconstruction, ramps to Martin Luther King to and from US-95 to the north are planned to be braided with the Rancho Interchange ramps. With US-95 widened, more right-of-way would be required for the widened freeway and the ramps. Partial acquisition of approximately twelve businesses on the north side of US-95 would be required.

The acquisition of at least two single family residences on the south side of US-95 is anticipated.

**Martin Luther King Boulevard to I-15 (1/3 mile)**

Improvements east of Martin Luther King compatible with the proposed ten lane widening of US-95 are included in the Spaghetti Bowl Interchange reconstruction and are not included in this project.

The existing US-95 bridge over Martin Luther King Boulevard would not require reconstruction

**b. Widening of Summerlin Parkway from Rampart Boulevard to US-95**

Much of the traffic growth on US-95 is expected to come from Summerlin Parkway. The widening of Summerlin Parkway from four lanes to six lanes from Rampart Boulevard to US-95 would be needed to accommodate the growth of traffic associated with a 10-lane US-95 from Rainbow to I-15.

The existing Summerlin Parkway is an at-grade four lane limited access freeway. The existing right-of-way width generally exceeds 300 feet. Eastbound and westbound travel lanes are separated by a wide-open median, exceeding 100 feet in width at places. Widening of Summerlin Parkway in the median is recommended in order to avoid impacts to adjacent properties.

Between Rampart and US-95, land along the north side of US-95 is mostly vacant except for an apartment complex west of US-95 with four (4) multi-family buildings abutting the Summerlin Parkway.

Land along the south side of Summerlin Parkway between Rampart and US-95 is mostly developed with eight (8) apartment complexes and two single family residential developments with approximately 30 multi-family and nine (9) single family buildings abutting Summerlin Parkway. An office building is located on the southwest quadrant of the Buffalo Interchange.

The Angel Park Public Golf Course straddles US-95 east of Rampart Boulevard on land owned by the City of Las Vegas. The golf course includes both an 18 hole course and a 12 hole executive course adjacent to the Summerlin Parkway. (See Sections V.D.4.a and VII, Section 4(f) Resources).

No properties along the Summerlin parkway would be acquired with the proposed project.

**c. Construction of High Occupancy Vehicle (HOV) Lanes**

High occupancy vehicle (HOV) lanes are proposed to be integrated into the widening of US-95 and the Summerlin Parkway. Specifically, HOV lanes are proposed to be constructed as the median lane, in each direction, on US-95 from Craig Road to I-15 (ten miles) and on Summerlin Parkway from Rampart to Rainbow (three miles).

Since only one new lane is proposed for construction on US-95 from Craig to Rainbow and on Summerlin Parkway from Rampart to Rainbow, it is proposed that this new lane, which is proposed to be constructed in the median, be designated for HOV use.

From Rainbow to I-15 it is proposed that at least one of the two lanes proposed to be added be designated for HOV use.

The proposed widening of US-95 and Summerlin Parkway would add an additional 36 lane-miles to the existing freeways. At least twenty-six lane miles, or 72% of the proposed new lanes, are recommended to be designated as HOV lanes.

Elevated HOV ramps are proposed to facilitate the flow of HOV traffic between US-95 and the Summerlin Parkway. The HOV ramps would exit and enter the respective freeways from the left side, avoiding the need for HOV traffic to weave across other traffic when moving between the two freeways. Figure IV-4 shows a typical section of the proposed elevated HOV ramps.

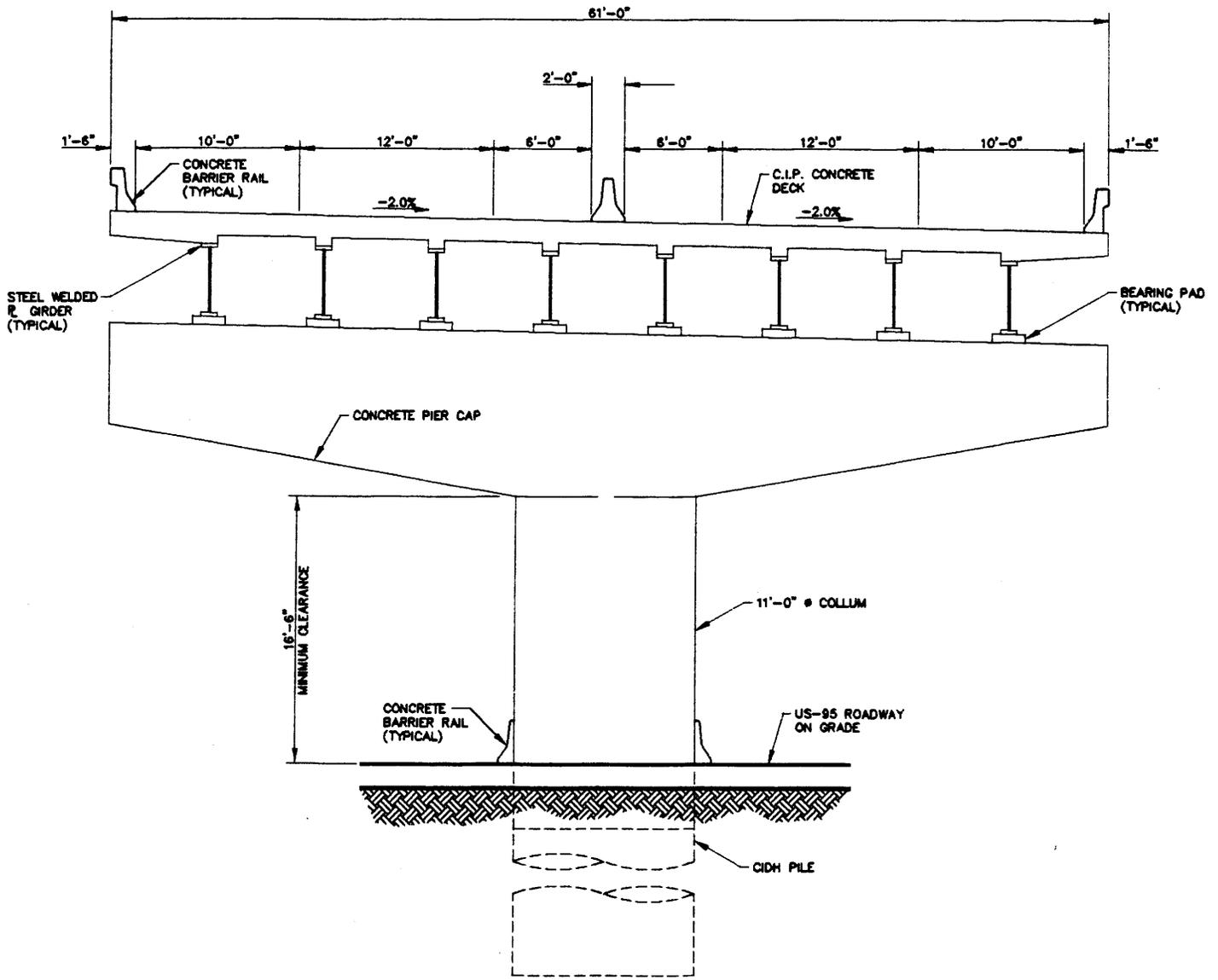
Year 2020 traffic projections indicate that Summerlin Parkway will require a three-lane exit from US-95 and a three-lane entrance to US-95 to accommodate traffic growth. The proposed HOV ramps would augment the traffic carrying capacity between the two freeways while avoiding the need to reconstruct the existing two lane ramps between US-95 and the Summerlin Parkway.

#### **d. Installation of a Freeway Management System**

A Freeway Management System is proposed for US-95. The primary objectives of the proposed Freeway Management System would be to:

- Observe traffic conditions
- Meter the flow of traffic
- Provide traveler information
- Promote incident management
- Balance "corridor" traffic demand

In addition to improving the flow of traffic along US-95, the objective of a Freeway Management System would be to ensure that the capacity of the freeway and the alternate arterial corridors is optimally used. This includes a "balanced diversion" of traffic from US-95 to the arterial street system in such a way that it does not overload the arterial streets.



**TYPICAL HOV RAMP**  
(ONE LANE IN EACH DIRECTION)

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
TYPICAL HOV RAMP SECTION	
	FIGURE IV-4

The components of the proposed Freeway Management System include:

- An Integrated Central Control Center
- Surveillance
  - Vehicle Speed/Volume Detectors
  - Closed Circuit Television
- Traffic Control
  - Ramp Meters
- Traveler Information
  - Changeable Message Signs
  - Trailblazer Signs
  - Highway Advisory Radio

The proposed infrastructure would be constructed within the freeway and arterial street right-of-way.

**e. New Arterial Street Connections**

As shown in Figure IV-5, two proposed arterial street connections are proposed to improve the flow of traffic and increase the capacity of the arterial street system in the most congested part of the Northwest Region. Specifically:

- The Martin Luther King to Industrial Road Connector, and
- The Rancho Drive to Alta Drive Connector

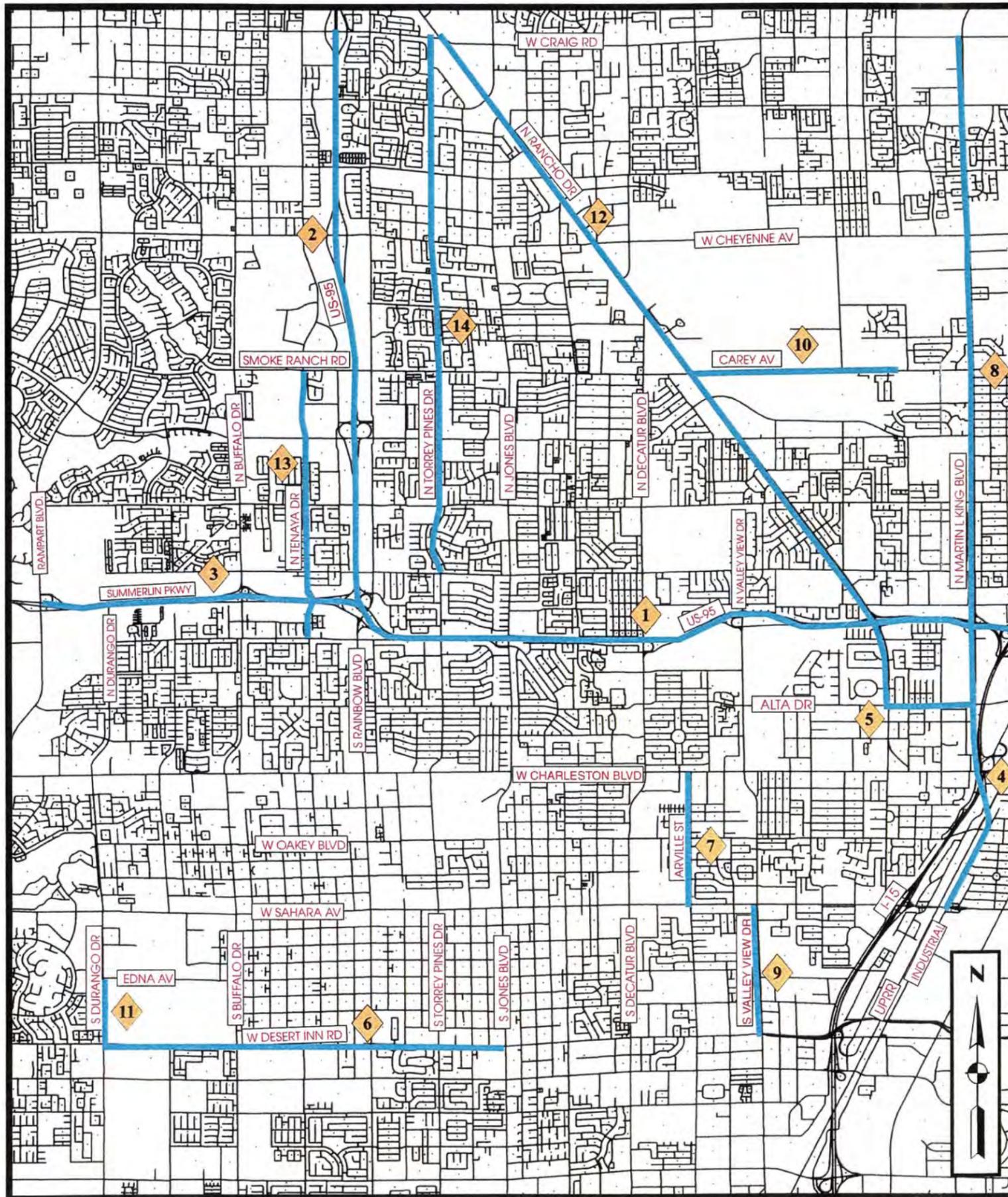
**Martin Luther King Boulevard to Industrial Road Connector**

Martin Luther King Boulevard is an existing four lane road which extends from Craig Road to Oakey Boulevard. Property along Martin Luther King is residential and commercial. Currently, only about 25 percent of the properties along Martin Luther King are developed.

Widening Martin Luther King to six lanes, as discussed in subsection f, would increase the north-south capacity of this major arterial street entering the Resort Corridor from the north.

Realigning Martin Luther King, over Charleston Boulevard, over I-15 and over the Union Pacific Railroad (U.P.R.R.) and to tie into Industrial Road at Wyoming, would provide an additional six lanes of capacity crossing I-15 and the U.P.R.R.

Currently, Industrial Road is six lanes wide south of Sahara Avenue. Widening Industrial Road from four lanes with a median turn lane and a northbound shoulder to six lanes from Wyoming to Sahara would provide additional north-south capacity and improve the flow of traffic from the Martin Luther King/Industrial Connector into the Resort Corridor.



# US-95 EIS

## LEGEND

### US-95 IMPROVEMENTS

- 1 Widen US-95 to 10 lanes from Rainbow to I-15.
- 2 Widen US-95 to 6 Lanes from Craig to Rainbow.
- 3 Widen Summerlin Parkway to 6 lanes from Rampart to Rainbow.

### NEW ARTERIAL STREET CONNECTIONS

- 4 Martin Luther King to Industrial Road Connector including widening Industrial to 6 lanes: Sahara to Wyoming.
- 5 Rancho to Alta Connector including widening Alta to 6 lanes: Rancho to Martin Luther King.

### ARTERIAL STREET IMPROVEMENTS

- 6 Widen Desert Inn Road to 6 lanes: Durango to Jones.
- 7 Widen Arville Street to 4 lanes: Charleston to Sahara.
- 8 Widen Martin Luther King to 6 lanes: Craig to Charleston.
- 9 Widen Valley View to 6 lanes: Sahara to Desert Inn.
- 10 Widen Carey Avenue to 4 lanes: Rancho to Clayton.
- 11 Widen Durango Drive to 6 lanes: Desert Inn to Edna.
- 12 Widen Rancho to 6 lanes: Craig south to US-95.
- 13 Widen Tenaya Way to 4 lanes: Westcliff to Smoke Ranch.
- 14 Widen Torrey Pines to 4 lanes: Washington to Craig.

— Proposed Roadway Improvements

NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
LOCATION OF PROPOSED ARTERIAL STREET IMPROVEMENTS
FIGURE IV-5

By linking Martin Luther King and Industrial Road in the City of Las Vegas, a new north-south arterial would be created which parallels I-15 and extends the entire length of the Valley. In conjunction with the proposed I-15 East Access Road, the new north-south arterial would provide an alternative access to all of the major hotels in the Resort Corridor which are located between I-15 and Las Vegas Boulevard, from the Stratosphere Tower in the north to Russell Road in the south.

The extension of Martin Luther King from Palamino Street (north of Charleston) to Industrial Road at Wyoming as a six-lane connector over Charleston, I-15 and the U.P.R.R. would be through an existing light industrial area and require the taking of approximately fifteen single family residences, fifty-nine multi-family apartment units, thirteen small businesses, seven medium size businesses and four large businesses. The fifteen single family residences and six of the small businesses have been previously identified for taking as part of the approved environmental assessment for the reconstruction of the Charleston Interchange.

Widening of Industrial Road from Sahara to Wyoming would require about 15 feet of additional right-of-way including the acquisition of four businesses and effecting about 27 additional businesses with partial acquisitions. At Sahara Avenue, the southbound lanes would have to be realigned under the second bent of the Sahara Avenue Bridge over the U.P.R.R. This would require the acquisition of a major business included in the above total.

### **Rancho/Alta Connector**

North of US-95, Rancho Drive is four lanes wide with a median turn lane and outside shoulders. In this section, Rancho Drive could be widened to six lanes as discussed in subsection f, by converting the shoulders to travel lanes. From US-95 to Alta Drive, Rancho Drive is presently six lanes wide.

Alta Drive is an existing two to four lane roadway between Rancho Drive and Martin Luther King. The City of Las Vegas plans to widen Alta Drive to four lanes in the near future. The need to widen Alta to four lanes in this section stems from the recent extension of Alta Drive eastward from Martin Luther King to Bonneville Drive in Downtown Las Vegas, with the construction of an underpass under the Union Pacific Railroad. The Regional Transportation Plan includes the construction of a half interchange on I-15 at Alta.

Widening Rancho Drive to six lanes north of Alta and widening Alta Drive to six lanes from Rancho Drive to Martin Luther King would provide an improved route from the northwest via Rancho Drive:

- To Downtown Las Vegas via Bonneville,
- To the "Strip" via the proposed Martin Luther King/Industrial Road Connector, and
- To I-15 via the planned Alta Interchange.

Widening Alta Drive from two lanes to six lanes for about ½ mile from Rancho Drive to Martin Luther King would require the acquisition of about fourteen existing single family residences. No right-of-way would be required along Rancho Drive.

Widening of Rancho Drive and Martin Luther King from four lanes to six lanes would provide four additional travel lanes entering the Resort Corridor from the northwest. The Martin Luther King/Industrial Road Connector would provide six additional lanes crossing I-15 and the U.P.R.R. tracks.

Rancho, Alta, Martin Luther King and Industrial, if connected as proposed, would provide an alternate route parallel to I-15 which would allow motorists to avoid US-95 and the I-15/US-95 Spaghetti Bowl Interchange.

#### **f. Arterial Street Improvements**

As shown in Figure IV-5, the following arterial street improvements are proposed to improve the capacity and circulation of the surface street network in the Northwest Region.

- Widen Arville Street to four lanes: Charleston to Sahara
- Widen Desert Inn Road from four lanes to six lanes: Durango to Jones
- Widen Valley View Boulevard from four lanes to six lanes: Sahara to Desert Inn
- Widen Carey Avenue to four lanes: Ranchos to Clayton
- Widen Durango Drive to six lanes: Desert Inn to Edna
- Widen Martin Luther King to six lanes: Craig to Charleston
- Widen Rancho to six lanes: Craig south to US-95
- Widen Tenaya Way to four lanes: Westcliff to Smoke Ranch
- Widen Torrey Pines to four lanes: Washington to Craig

Each of the proposed street improvements is described below.

All of these streets are currently designated as minor arterials or collectors and are located in areas which are projected to be congested within the next 10 years.

Each of the proposed street improvements is described below. Arterial street improvements will generally consist of design, construction and right-of-way acquisition to provide an increase in the number of travel lanes available and include pavement, drainage, street lights, curb, gutter, sidewalks, medians, driveways, traffic signals, conduit and fiber optic cables for signal interconnects, signing, striping, retaining walls, bus turnouts, and flared intersection at cross streets.

**Arville Street - Charleston to Sahara**

Arville Street is a north-south street extending from Tropicana Avenue in Clark County, to Charleston Boulevard in the City of Las Vegas. It is classified as a collector and is located between and parallel to Valley View and Decatur.

Arville Street serves a combination of suburban residential and commercial areas. It principally serves to provide access to the major east-west streets such as Charleston, Sahara and Desert Inn. South of Sahara Avenue, Arville Street is presently four lanes wide or planned for improvement to four lanes in the Regional Transportation Plan (RTP).

Widening of Arville Street from two lanes to four lanes from Sahara to Charleston is proposed. The proposed improvements are located in the City of Las Vegas.

No additional right-of-way would be required. In order to widen Arville Street to four lanes within existing right-of-way, it would be necessary to eliminate the existing median turn lane and shoulders.

**Desert Inn Road - Durango to Jones**

Desert Inn Road is an east-west street located at the southern boundary of the Northwest Region in unincorporated Clark County. It is classified as a minor arterial and is nearly continuous across the entire Valley. The Desert Inn Road Super Arterial is a higher order facility which crosses the Resort Corridor from Valley View to Paradise linking sections of Desert Inn Road east and west of the Resort Corridor.

Desert Inn Road in the Northwest Region principally serves suburban residential areas. Clark County is presently improving Desert Inn Road to four lanes between Buffalo and Jones.

Widening of Desert Inn Road from four lanes, as included in the Regional Transportation Plan 1995-2015, to six lanes between Durango and Jones is proposed. The proposed improvements are located in Clark County.

No additional right-of-way would be required to widen Desert Inn Road to six lanes between Durango and Jones since the planned widening to four lanes is expected to include full improvements within a 100-foot wide right-of-way.

**Valley View Boulevard - Desert Inn to Sahara**

Valley View Boulevard is a north-south road which extends as a four-lane roadway from Washington Avenue in the City of Las Vegas to south of Russell Road in Clark County, but is discontinuous at the U.P.R.R. tracks (Harmon Avenue). It is classified as a minor arterial and is located between Decatur and Rancho and parallel to Decatur.

Valley View Boulevard serves commercial and suburban residential areas in the City of Las Vegas and Clark County.

South of Desert Inn Road, in Clark County, Valley View is being planned as a six-lane roadway or has sufficient width to accommodate six lanes. A bridge over the U.P.R.R. is being planned to make Valley View continuous. From Sahara to Charleston, the City of Las Vegas has plans to widen Valley View to six lanes. The section of Valley View between Desert Inn and Sahara is presently fully improved to four lanes and located between the above-mentioned sections which are planned for widening to six lanes.

Widening of Valley View Boulevard from four lanes to six lanes from Desert Inn to Sahara is proposed. The proposed improvements are located partly in the City of Las Vegas and partly in Clark County.

Approximately 20 feet of additional right-of-way would be required. Approximately seven businesses would be affected between Desert Inn and Sahara, however, no total acquisitions would be required.

#### **Carey Avenue - Rancho to Clayton**

Carey Avenue is an east-west street extending across most of the Valley. (Smoke Ranch Road is the western extension of Carey Avenue west of Rancho Drive in the City of Las Vegas.) It is classified as a minor arterial and is located between and parallel to Lake Mead Boulevard and Cheyenne Avenue.

Carey Avenue/Smoke Ranch Road principally serve suburban residential areas. It forms the southern boundary of the North Las Vegas Airport.

Carey Avenue and Smoke Ranch are presently two to four lanes wide, however, they are planned in the RTP for improvement to four lanes for most of their length.

Widening of Carey Avenue from two lanes to four lanes from Rancho east to Clayton is proposed. The proposed improvements are located in the City of North Las Vegas.

No additional right-of-way would be required. Most of the land in this area adjacent to Carey Avenue is presently vacant.

#### **Durango Drive - Desert Inn to Edna**

Durango Drive is a north-south street which is either existing or planned for extension across most of the Valley. (North of the Summerlin Parkway, Durango was realigned to interconnect with Rampart Boulevard so that Durango is offset and discontinuous for two miles north of the

Summerlin Parkway.) It is classified as a collector and is located between and parallel to Buffalo and Fort Apache.

Durango Drive principally serves suburban residential areas in Clark County and the City of Las Vegas.

Durango Drive, where it exists, ranges from two to six lanes wide. It is currently planned as a four to six-lane roadway except between Desert Inn and Edna.

Widening of Durango Drive from two lanes to six lanes from Desert Inn to Edna is proposed. At this location, the west side of the roadway is located within the City of Las Vegas and has been fully improved to match the existing six lane section north of Edna. The east side of the roadway is located within Clark County and is unimproved. The proposed improvements are therefore located in Clark County.

No additional right-of-way would be required. The adjacent land is vacant.

#### **Martin Luther King Boulevard - Charleston to Craig**

Martin Luther King is a north-south street extending from Oakey Boulevard, in the City of Las Vegas, to Craig Road in the City of North Las Vegas. It is classified as a minor arterial and forms the eastern boundary of the Northwest Region. It is the principal north-south street serving the northern part of the Valley between Rancho Drive and I-15.

Martin Luther King serves both commercial and suburban residential areas.

Martin Luther King Boulevard is presently four lanes wide for most of its length.

Widening of Martin Luther King Boulevard from four to six lanes is proposed. The proposed improvements are located in the City of Las Vegas south of Carey Avenue and in the City of North Las Vegas north of Carey Avenue.

Additional right-of-way would be required from Charleston Boulevard to Lake Mead Boulevard in the City of Las Vegas. Between Charleston Boulevard and Palomino Lane, property acquisitions were previously described in association with the proposed Martin Luther King/Industrial Connector.

To widen Martin Luther King Boulevard from four lanes to six lanes from Palomino Lane north to Lake Mead Boulevard, approximately 20 feet of additional feet of right-of-way would be required. While most of the adjacent property is vacant, some property would be required from existing businesses and residences. Acquisition of two businesses located south of Alta (adjacent to I-15) would be required. Up to 20 feet would be required from approximately 12 businesses and from approximately seven residences.

**Rancho Drive - Craig Road south to US-95**

Rancho Drive is a northwest to southeast diagonal street which extends from US-95 in the extreme northwest, crossing US-95 again west of Downtown Las Vegas, to Desert Inn Road. It is classified as a minor arterial. It is located within the City of Las Vegas but forms the boundary with the City of North Las Vegas between Cheyenne and Lake Mead and forms the boundary with Clark County from Edna to Desert Inn Road.

Rancho Drive principally serves both commercial and suburban residential areas.

Rancho Drive is presently two to six lanes wide.

Widening of Rancho Drive from four lanes to six lanes from Craig Road south to US-95 is proposed. These improvements are located in the Cities of Las Vegas and North Las Vegas. However, Rancho Drive is under the jurisdiction of the Nevada Department of Transportation in this section.

Widening of Rancho Drive from four lanes to six lanes from Craig Road to US-95 would not require any additional right-of-way and would only involve restriping of the existing roadway to eliminate the existing shoulders. Since Rancho Drive is presently six lanes wide from US-95 to Charleston, this improvement would make Rancho Drive six lanes wide continuously from Craig Road to Charleston Boulevard.

**Tenaya Way - Westcliff to Smoke Ranch Road**

Tenaya Way is a north-south street which extends from Flamingo Road in Clark County, to Grand Teton in the City of Las Vegas, although it is discontinuous at Charleston, Summerlin Parkway and US-95. It is classified as a collector. It is located between and parallel to Buffalo and Rainbow.

Tenaya Way principally serves suburban residential areas. Since it is discontinuous, it principally provides access to east-west arterials such as Charleston, Sahara and Desert Inn.

Tenaya Way is generally two lanes wide, except from Alexander to Smoke Ranch Road where it is four lanes wide. It is planned for improvement to four lanes between Sahara and Charleston and the City has purchased property to make it continuous at Charleston.

Widening of Tenaya Way from two lanes to four lanes from Charleston to Smoke Ranch Road is proposed. The section from Charleston to Smoke Ranch Road is located in the City of Las Vegas.

Widening of Tenaya Way to four lanes from Westcliff to Smoke Ranch would not require any additional right-of-way. However, a bridge over the Summerlin Parkway would be required to make the street continuous.

**Torrey Pines - Washington to Craig**

Torrey Pines is a north-south street which extends from Tropicana Avenue in Clark County, to Centennial Parkway in the City of Las Vegas. It is classified as a collector. It is located between and parallel to Rainbow and Decatur.

Torrey Pines principally serves residential areas.

Torrey Pines is presently two lanes wide for most of its length. However, it is planned for improvement to four lanes from Craig to Centennial Parkway and from Sahara to Charleston. (It is presently four lanes wide from Charleston to Washington.)

Widening of Torrey Pines from two lanes to four lanes from Washington to Craig is proposed. The section from Washington to Rancho is located in the City of Las Vegas.

Widening of Torrey Pines to four lanes between Washington and Craig would not require any additional right-of-way.

**g. Enhanced Bus Transit Service**

In cooperation with the Regional Transportation Commission, an enhanced bus transit service plan has been prepared and is proposed as part of the project.

Currently, 18 of 36 existing *CAT* bus routes serve the Northwest Region. These 18 routes had a total ridership of 870,000 riders for the month of November 1996. This represents about 29% of the total system ridership of 3.0 million for the month of November 1996.

The average daily ridership for the month of November 1996 on the 18 *CAT* bus routes serving the Northwest Region was about 29,000 riders. Approximately 18,000 of these riders (61%) had their origin or destination in the Northwest Region and roughly 7,500 of these riders (26%) had an origin or destination in the Northwest and the other trip end in the Resort Corridor.

Overall, in November 1996, approximately 18% of the total *CAT* bus system ridership had their origin or destination in the Northwest Region and approximately 8% of the total *CAT* bus system ridership also had their other trip end in the Resort Corridor.

The proposed enhanced bus transit service is intended to provide a substantial increase in the level of bus service currently available or planned. The proposed enhanced bus service has three components:

- Reduced bus headways to 10 or 15 minutes on all existing routes during peak hours,
- Adding express non-stop bus routes, and
- Adding express limited-stop routes.

The proposed project would increase the planned number of *CAT* buses from 243 to approximately 500 buses and annual hours of service would increase from 1,135,000 to 2.4 million. This expansion of service would be distributed over three types of enhancements:

- Extension of existing bus routes to serve the residential developments along the periphery of the community;
- Decrease in the time (headway) between buses along all routes with concentration of improvements in the areas of high roadway congestion;
- Addition of new Non-Stop (Express) and Limited Stop Services.

The distribution of the proposed bus services during peak and off-peak periods, compared to 1996 service levels, is depicted in Table IV-1.

The Express Bus Service Concept would provide express buses which travel between Northwest residential areas and the Resort Corridor without intermediate stops, using shoulders converted to "bus only" lanes where possible. This service would provide travel times similar to current driving times in private vehicles and would operate with a 15-minute service frequency during peak commuter periods.

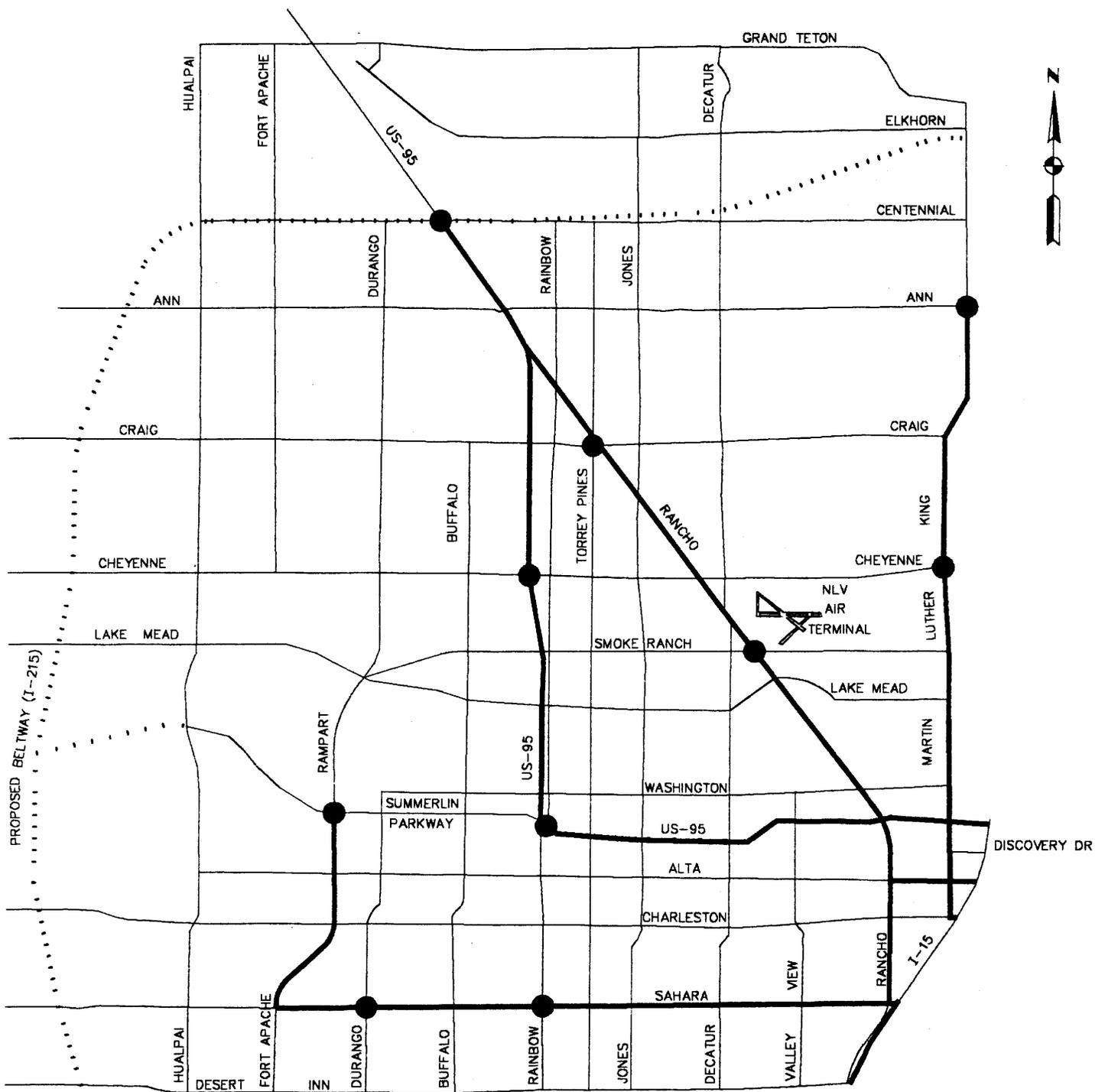
Limited stop bus service routing would follow existing bus routes but would operate at higher speeds by stopping at fewer bus stops. These buses would "leapfrog" the local buses, operate at 15-minute service intervals, stop at high volume stops and provide a decreased commute time.

Proposed express and limited stop bus routes are shown in Figure IV-6

Neither the express buses nor the limited stop buses would operate during off-peak hours.

The enhanced bus alternative would provide a 240% increase in bus service in the Northwest Region, targeted at peak hour commuters. In November 1996, the average daily bus system ridership in the Northwest was about 18,000 riders per day. Assuming that an increase in ridership would be nearly proportional to the increase in service, the total ridership having their origin or destination in the Northwest Region would be expected to increase to about 43,000 riders per day.

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- PROPOSED EXPRESS/LIMITED STOP BUS ROUTES
- PROPOSED AREA FOR PARK AND RIDE LOT

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
EXPRESS/LIMITED STOP BUS ROUTES AND PARK & RIDE LOTS	
	FIGURE IV-6

In order to achieve a 240% increase in bus service with only a 100% increase in the number of buses, the Regional Transportation Commission plans to reallocate buses currently operating in the Resort Corridor to Northwest Region routes. The Regional Transportation Plan, 2000 to 2020, includes a Resort Corridor Fixed Guideway System which would replace a great number of buses currently operating in the Resort Corridor.

Since the enhanced bus service targets commuters, approximately 30,000 of the 60,000 daily bus trips would be between the Northwest Region and the Resort Corridor.

Peak hour ridership would be expected to increase as a result of the express and limited stop bus service. Therefore, peak hour ridership with the enhanced bus alternative would be expected to be on the order of 4500 passengers per hour ( $30,000 \times 0.15$ ) in the year 2020 between the Northwest Region and the Resort Corridor with the enhanced bus alternative.

In conjunction with the enhancement of the bus transit service, the development of approximately ten park-and-ride facilities is proposed (Figure IV-6). The park-and-ride lots would have an average of 500 vehicle parking spaces and be located in commercial areas in close proximity to residential areas. The park-and-ride facilities would be located around the community on the outer edges of the zone of congestion and near the terminus of the express/limited stop routes. As much as possible, park-and-ride facilities would share existing or future commercial parking lots through agreements with property owners. They would generally be located with direct access to major arterial streets, to reduce traffic impacts. Table IV-2 shows the number of existing and projected commercial parking spaces at the locations targeted for park-and-ride lots. Estimates of projected spaces are based on the acreage zoned commercial assuming medium density commercial development.

The combination of convenient parking and express bus service, would enable riders to more easily commute between home and the Resort Corridor on public transit. The Regional Transportation Commission is currently constructing a bus maintenance facility in the Northwest Region to service the existing and future bus fleet. Additional bus maintenance facilities, if required in the long-term, would be located outside the Northwest Region in order to balance travel distance.

**Table IV-1  
ENHANCED BUS ALTERNATIVE  
CAT FIXED BUS ROUTE SERVICE**

Rt#	Name	October 1996		BASE CASE - Assumed Level of Service for Year 2000			FREQ 6:00 a.m.- 1:00 a.m.	FREQ 6:00 a.m.- 6:00 p.m.	FREQ 6:00 p.m.- 1:00 a.m.
		FREQ 6:00 a.m.- 6:00 p.m.	FREQ 6:00 p.m.- 1:00 a.m.	FREQ 6:00 a.m.- 6:00 p.m.	FREQ 6:00 p.m.- 1:00 a.m.	FREQ 6:00 a.m.- 6:00 p.m.			
101	Rainbow Blvd	60	60	30	60	60	15	30	
102	Jones Blvd	60	60	30	60	60	15	30	
103	Decatur Blvd	30	60	30	60	60	15	30	
104	Valley View/Torrey Pines	60	60	30	60	60	10	30	
105	Martin Luther King/Lakes	60	60	30	60	60	10	30	
106	Rancho Drive	60	60	30	60	60	10	30	
204	Sahara Avenue	30	60	30	30	30	10	30	
205	Oakey Blvd	60	60	30	60	60	15	30	
206	Charleston Blvd	20	30	20	30	30	10	30	
207	Alta Drive/Stewart Avenue	60	60	30	60	60	15	30	
208	Washington Avenue	60	60	30	60	60	15	30	
209	Vegas Drive/Owens Avenue	60	60	30	60	60	15	30	
210	Lake Mead Blvd	40	45	30	45	45	15	30	
211	Smoke Ranch/Carey	60	60	30	60	60	15	30	
214	D Street/H Street	30	30	30	30	30	15	30	
215	Bonanza Avenue	30	60	30	60	60	10	30	
218	Cheyenne Avenue	60	60	30	60	60	15	30	
EX1	Peak express service from NW to Strip & DTC -TBD	-	-	-	-	-	15	-	
L1	Limited Stop Routing	-	-	-	-	-	15	-	

**TABLE IV-2  
EXISTING AND PROJECTED COMMERCIAL PARKING SPACES AT LOCATIONS  
OF PROPOSED PARK AND RID LOTS**

Proposed Park/Ride Lot Location	Quadrant	Current Use	Current Zoning	# of Parking Spaces	
				Current	Projected
1. Centennial/US-95	SE SW NE NW	Park/Ride Lot Vacant Vacant Vacant	Commercial Commercial Commercial Commercial	500	7600
2. Rancho/Craig	SE SW NE NW	Vacant Lido Plaza Smith's/Big K Strip Mall	Commercial Commercial Commercial Commercial	2500	4600
3. Cheyenne/US-95	SE SW NE NW	Wal-Mart/Strip Hospital Complex Strip Mall Target	Commercial Non-Urban Commercial Commercial	3200	3200
4. Summerlin Pkwy./US-95	SE SW NE SW	Vacant Albertson's Vacant Vacant	Non-Urban Commercial Non-Urban Non-Urban	425	2000
5. Summerlin Pkwy./Rampart	SE SW NE SW	Golf Course Vacant Golf Course Summerlin Resort	Civic District Commercial Civic District Commercial	0	11,000
6. Sahara/Ft. Apache	SE SW NE NW	Lucky's Offices Albertson's Under Devel.	Commercial Commercial Commercial Commercial	800	2300
7. Sahara./Rainbow	SE SW NE NW	Strip Mall Strip Mall Home Base Courtesy Pontiac	Commercial Commercial Non-Urban Commercial	0	2100
8. Rancho/Carey	SE SW NE NW	Texas Station Resort Strip Mall Theater Vacant	Commercial Commercial Industrial Commercial	2500	5800
9. Martin Luther King/Cheyenne	SE SW NE NW	Hughes Corp Vacant Vacant Vacant	Industrial Industrial Industrial Industrial	0	2500
10. Martin Luther King/Ann	SE SW NE NW	Vacant Vacant Single Family Res. Single Family Res.	Open Land Open Land Open Land Open Land	0	4300

#### **h. Transportation Demand Management (TDM)**

TDM actions are directed at trip reduction and encouraging the use of transit, ridesharing, and other high-occupancy vehicle (HOV) modes.

Several TDM actions have been discussed above in the context of major actions to improve transportation in the Northwest Region. These include:

- High Occupancy Vehicle Lanes on US-95 and the Summerlin Parkway
- A Freeway Management System on US-95 and

High occupancy vehicle lanes on US-95 and the Summerlin Parkway are proposed in conjunction with widening US-95 as an effective way to increase the person carrying capacity of the freeway.

A Freeway Management System is proposed in conjunction with proposed improvements to US-95 as an effective means of improving traffic flow on US-95.

These TDM actions are relative low-cost measures to increase the effectiveness of the transportation system in the Northwest Region.

Since the Resort Corridor is the primary place for employment in the Las Vegas Valley, TDM measures directed at Resort Corridor employees can also have a beneficial effect in the Northwest Region. Therefore, continuation and expansion of the regional rideshare programs is proposed. This action, while not specifically targeting Northwest Region commuters, could be expected to result in somewhat lower vehicular demand for trips between the Northwest Region and the Resort Corridor.

### **3. Build Alternative B**

Alternative B, like Alternative A, is comprised of various transportation improvements which provide a coherent transportation strategy to meet the projected transportation demands of the Project Area.

Alternative B includes the same proposed improvements as Alternative A with the following exceptions:

**a. US-95 Widening**

With Alternative B, US-95 is proposed to be widened within the City of Las Vegas from four lanes to six lanes from Craig Road to Rainbow Boulevard and from six lanes to ten lanes from Rainbow Boulevard to I-15, a total of approximately ten miles.

With Alternative B, the widening is proposed to be the same as with Alternative A everywhere except between Valley View Boulevard and Rancho Drive. (See Figure I-4). With Alternative B, between Valley View Boulevard and Rancho Drive, US-95 is proposed to be widened on the south side.

The Las Vegas Valley Water District (LVVWD) owns the property adjacent to US-95 on the south side from Valley View Boulevard three quarters of a mile eastward. This property is the LVVWD North Well Field and includes active wells and a pumping station which are located immediately adjacent to US-95. The LVVWD North Well Field has been designated as the Las Vegas Springs Archaeological Site.

With Alternative B, this widening alternative would acquire all of the property required for widening the US-95 freeway from the south side of US-95 between Valley View Boulevard and Rancho Drive and include a taking of approximately 14 acres from the LVVWD North Well Field and the taking of about 25 single family residences on the south side of US-95.

With Alternative B, the Valley View Boulevard and the Rancho Drive Interchanges would be reconstructed to accommodate the widened freeway, with the existing Valley View Boulevard and Rancho Bridges reconstructed. With Alternative B, a right-turn ramp from northbound Valley View to southbound US-95 will be considered.

All other proposed improvements would be the same as with Alternative A.

**4. Alternatives Considered and Rejected**

As discussed in Section IV-A, the proposed project (Alternatives A and B) is the only project identified and evaluated in the US-95 Major Investment Study which meets the project purpose and need. This section describes alternatives which were studied as part of the US-95 Major Investment Study and rejected because they did not meet the purpose and need for the proposed project.

The full range of alternatives considered for this project were identified and evaluated in the US-95 Major Investment Study (MIS). The US-95 MIS was conducted in two phases. During the first phase of the MIS, a large number of individual transportation improvements were identified and evaluated. During the second phase of the MIS, potential improvements recommended for further consideration in the first phase were combined to form alternative transportation improvement strategies and subjected to a detailed evaluation of alternative strategies.

The following reports were prepared describing the evaluation of alternatives.

- US-95 Major Investment Study, Phase 1, Preliminary Evaluation of Alternatives, February 1997.
- US-95 Major Investment Study, Detailed Evaluation of Alternative Strategies, April 1997.

**a. Phase 1 - Major Investment Study**

During Phase 1 of the US-95 Major Investment Study, alternatives to improve transportation in the Northwest were identified through a series of technical studies, through meetings with public agencies, through public meetings and through reviews of previous studies. These improvement alternatives included:

- Expansion and Improvement of the Regional Street System,
- New Arterial Street Connections,
- Improvement of US-95:
  - Widening of US-95
  - Installation of a Freeway Management System
  - Installation of Reversible Lanes
  - Installation of HOV Lanes
  - Double Decking of US-95
- Enhanced Bus Transit Service
- Travel Demand Management
- Fixed Guideway Transit, and
- New Freeway and Super Arterial Corridors

Through technical studies and public meetings, those improvement alternatives which were found to be potentially beneficial were recommended for further consideration. The following improvement alternatives were identified, evaluated and rejected during the preliminary evaluation of alternatives.

**(1.) Installation of Reversible Lanes on the Existing US-95 Freeway**

US-95 is six lanes wide at present. Using the reversible lane concept, and without additional widening, US-95 would be converted to four lanes inbound (toward the Resort Corridor) and two lanes outbound (away from the Resort Corridor) in the morning and four lanes outbound and two lanes inbound in the afternoon.

Traffic on US-95 is directional. During the A.M. peak hour, based on current traffic counts, approximately 61% of the traffic on US-95 is inbound and 39% is outbound. The heavy inbound traffic in the morning represents the local commute to work and is typical of a freeway connecting residential areas with a centralized business district. During the P.M. peak hour, based on current traffic counts, approximately 54% of the traffic on US-95 is outbound and 46% is inbound. While approximately equal in total volume to the A.M. peak hour, the afternoon peak hour is much less directional. In general, the heavy commute home from work tends to be spread out over a longer period in the afternoon and is nearly balanced by a return flow of traffic from the project area into the Resort Corridor in the early evening.

It was concluded that, due to the nearly balanced directional flow of traffic on the P.M. peak period, conversion of the existing six lane US-95 to provide a reversible lane would have no beneficial effect, causing level of service F for contra-flow traffic. Since the alternative would not achieve overall purpose and need, it was rejected from further consideration.

## **(2.) Installation of HOV lanes on the Existing US-95 Freeway (Without Widening)**

High Occupancy Vehicle (HOV) lanes give priority to those vehicles carrying two, three or more passengers, including buses, vanpools and carpools. By providing priority facilities for those who use buses, vanpools and carpools, a change in commuting travel is encouraged which decreases the use of single occupant vehicles. An increase in average vehicle occupancy means that the highway facility can accommodate more commuters traveling in the same number of vehicles at the same level of service.

Based on vehicle occupancy counts on US-95, therefore, it was concluded that if one of the existing lanes on US-95 in each direction were converted to an HOV lane then:

- During the morning inbound commute, the HOV lane would operate at Level of Service C and the remaining two lanes would operate at Level Of Service F and be required to carry 25% more traffic than they now carry.
- During the afternoon outbound commute, the HOV lane and the remaining two lanes would all operate at Level Of Service E.

The installation of HOV lanes on US-95 was found not to achieve overall purpose and need except in conjunction with an increase in the number of lanes on US-95. Therefore, this alternative was rejected from further consideration, except in the context of a potential freeway widening.

### (3.) Construction of Desert Inn Road as a Super Arterial in the Project Area

An alternative for a new super arterial along Desert Inn Road between the planned Las Vegas Beltway to the west and the existing Desert Inn Road Super Arterial at Valley View Boulevard to the east was evaluated. The Desert Inn Road alignment was considered because it would connect to high capacity facilities on both ends.

The proposed Desert Inn Super Arterial route would be approximately eight miles long, located primarily in unincorporated Clark County.

The proposed Desert Inn Super Arterial would be eight lanes wide. It would have four through lanes (two in each direction) which are depressed, crossing under the major arterial streets. It would also have four frontage roads lanes (two in each direction) which would be at grade and provide local access.

Urban configuration interchanges would be constructed at the eight major crossing arterials including Hualapai, Fort Apache, Durango, Buffalo, Rainbow, Jones, Decatur and Valley View, located at one mile intervals.

The through lanes would provide for the continuous uninterrupted flow of traffic between the Beltway and the Desert Inn Road Super Arterial at Valley View. A 50 m.p.h. rolling design for the through lanes, depressed at interchanges and at-grade between interchanges would permit traffic to enter the through lanes from the frontage roads and allow traffic to exit onto the frontage roads between interchanges.

The frontage roads would be one-way on each side of the through lanes. Driveways and local streets would provide local access to the frontage roads, although all local access to the frontage roads would be right-on/right-off.

An estimated 160 feet of right-of-way would be required to construct the Super Arterial with frontage roads. Retaining walls would be used extensively, wherever the through lanes are at a different elevation than the frontage roads (about half of the total length) so that right-of-way acquisition would be minimized.

Directional interchange ramps were proposed at the Beltway Interchange to facilitate the smooth flow of traffic between the proposed Super Arterial and the Beltway.

All local traffic would use the urban interchanges to cross from one side of the Super Arterial to the other. Half mile streets would terminate at the frontage roads on either side of the Super Arterial and would not cross the Super Arterial.

It was found that the proposed Desert Inn Super Arterial would not provide an adequate level of service or relieve congestion and would not result in a meaningful reduction of either vehicle miles of travel or vehicle hours of travel. The Desert Inn Super Arterial would only provide a benefit/cost ratio of about 0.3 by itself and about 0.6 when combined with other improvements including enhanced transit, TDM and arterial street improvements. In addition, the Desert Inn Super Arterial would require very substantial single family residential relocations (at least 139) and would have 4(f) impacts associated with a partial taking of the Cashman Middle School. Therefore, the Desert Inn Super Arterial would not achieve the purpose and need identified for this project and was not considered to be practical or reasonable.

**(4.) Construction of Cheyenne Avenue as a Freeway Between US-95 and I-15**

Construction of Cheyenne Avenue as a freeway linking US-95 and I-15 in the northern part of the project area was proposed as an alternative to widening US-95. A freeway on the Cheyenne Avenue alignment would provide an alternative high speed route from the northern part of the project area to the Resort Corridor via I-15.

Between US-95 and I-15, over 80 single family residences, over 100 multi-family apartment units and more than 25 businesses would have to be acquired to upgrade Cheyenne Avenue to a freeway.

More importantly, an evaluation of Cheyenne Avenue as a freeway between US-95 and I-15, with interchanges located at major cross streets, indicates that Cheyenne Avenue is poorly situated to relieve traffic congestion in the project area. Specifically, when modeled as a freeway, traffic studies found that Cheyenne Avenue would increase travel in the Valley by an estimated 35 million vehicle miles of travel annually. With congestion on US-95, Charleston and Sahara, motorists from the west would be compelled to travel longer distances via Cheyenne, to avoid congested areas. In addition to residential and business impacts, a Cheyenne Avenue freeway would be expected to have major negative impacts on air quality. In addition, a freeway on a Cheyenne Avenue alignment was found to not relieve congestion on US-95 or the major arterial streets approaching the Resort Corridor. Therefore, a Cheyenne Avenue alignment for a new freeway would not achieve the purpose and need identified for this project and was not considered to be practical or reasonable.

**(5.) Convert Washington Avenue and Bonanza Road to a One-way Couplet from Rancho Drive to Las Vegas Boulevard**

Traffic volumes are projected to continue to grow on Washington Avenue and on Bonanza Road. Conversion of these streets to a one-way couplet between Rancho Drive and Las Vegas Boulevard was considered. Bonanza Road would be one-way eastbound and Washington Avenue would be one-way westbound. This one-way couplet would have a number of advantages:

- All of the intersections would be converted to three phase traffic signals, thereby increasing their capacity and level of service.
- Greater traffic volumes could be accommodated without widening the streets.
- Bonanza Road and Washington Avenue could accommodate increased traffic during the reconstruction of the “Spaghetti Bowl.”

However, after meeting with property owners, it was concluded that the additional travel distances necessary to access residences and businesses greatly outweighed the relatively small increase in capacity that would be achieved and therefore did not meet the purpose and need for the project.

#### **b. Phase 2 - Major Investment Study**

Individual improvements which were found to be potentially effective in improving transportation in the project area during Phase 1 of the US-95 MIS included the following:

- Improvement of US-95:
  - Installation of a Freeway Management System
  - Installation of HOV Lanes
  - Widening of US-95
  - Double Decking of US-95
- A Rainbow/Desert Inn Super Arterial
- Fixed Guideway Transit
- New Arterial Street Connections
- Expansion and Improvement of the Regional Street System
- Enhanced Bus Transit Service
- Travel Demand Management

In order to accommodate short, intermediate and long-term transportation growth in the project area, the improvement alternatives identified above were combined into three alternative transportation strategies. These three alternative transportation strategies were subjected to detailed evaluation during Phase 2 of the US-95 MIS.

#### **Alternative Strategy**

#### **Components**

- |                               |  |
|-------------------------------|--|
| 1. US-95 Improvement Strategy | <ul style="list-style-type: none"> <li>• Widen or Double Decking US-95 with a Freeway Management System</li> <li>• Expand and Improve the Regional Street Network</li> <li>• Conventional Bus Service</li> </ul> |
|-------------------------------|--|

- |  |  |
|--|--|
| 2. Fixed Guideway/<br>Enhanced Transit/TDM<br>Strategy | <ul style="list-style-type: none"> <li>• Enhanced Bus Service</li> <li>• Transportation Demand Management</li> <li>• Fixed Guideway Transit</li> <li>• Expand and Improve the Regional Street Network</li> <li>• US-95 Freeway Management System</li> </ul>                      |
| 3. Rainbow/Desert Inn Super<br>Arterial Strategy       | <ul style="list-style-type: none"> <li>• Construct Rainbow/Desert Inn Super Arterial</li> <li>• Expand and Improve the Regional Street Network</li> <li>• US-95 Freeway Management System</li> <li>• Transportation Demand Management</li> <li>• Enhanced Bus Service</li> </ul> |

At the conclusion of the US-95 Major Investment Study, the US-95 Improvement Strategy noted above was amended by the US-95 MIS Technical Focus Group and subsequently adopted as Alternative A as follows:

**Alternative Strategy**

**Components**

- |                  |   |
|------------------|---|
| 4. Alternative A | <ul style="list-style-type: none"> <li>• US-95 Freeway Management System</li> <li>• Widening US-95</li> <li>• Expand and Improve the Regional Street Network</li> <li>• Enhanced Bus Service</li> <li>• Transportation Demand Management</li> </ul> |
|------------------|---|

The Alternative A differs from the US-95 Improvement Strategy because it adds enhanced bus service and transportation demand management and, for reasons described below, excludes the US-95 Double Decking Alternative.

Alternative A is designated as one of the two build alternatives evaluated in this Study.

All of the above alternative strategies were evaluated in detail during the Phase 2 of the US-95 MIS. The US-95 Improvement Strategy (Double Decking Alternative), the Fixed Guideway/Enhanced Transit/TDM Strategy and the Rainbow/Desert Inn Super Arterial Strategy were rejected on the basis of technical studies and public input because they did not meet the purpose and need for the project as discussed below:

**(1.) US-95 Improvement Strategy (Alternative 1) - Double Decking of US-95**

A US-95 Improvement Strategy was proposed and evaluated with the following components:

- US-95 Freeway Management System
- Widen or Double Decking US-95
- Expand and Improve the Regional Street Network
- Conventional Bus Service

The US-95 Improvement Strategy including the widening of US-95 (Alternative 1), was amended to become the "Locally Preferred Alternative" (the proposed project) by adding Enhanced Bus Service and Transportation Demand Management Measures.

In lieu of widening US-95 between the Summerlin Parkway and the I-15/US-95 Spaghetti Bowl interchanges, a second, elevated level added to US-95 was considered as part of Alternative Strategy 1 - The US-95 Improvement Strategy. With the double deck concept, an elevated deck would be constructed over US-95. Four elevated lanes would be constructed spanning the entire US-95 freeway.

To operate most efficiently, with limited right-of-way taking, the following configuration was proposed:

- The elevated second level of US-95 would be integrated into the Summerlin Parkway Interchange and the Spaghetti Bowl Interchange without intermediate service interchanges. In this way, motorists on US-95 north of the Summerlin Parkway Interchange and on the Summerlin Parkway would be able to utilize the elevated deck as express lanes to the Resort Corridor.
- The existing at-grade US-95 freeway would remain as is, but would be primarily used for local movements to and from the Jones, Decatur, Valley View, Rancho and Martin Luther King Interchanges.

Only a limited amount of right-of-way would be required since construction would occur above the existing roadway. Construction activities would undoubtedly disrupt traffic on US-95, even with work performed extensively at night, and frequent freeway closures and detours could be expected.

The elevated double deck would be elevated approximately 25 feet above the existing ground in order to clear the at-grade freeway and existing bridges at Decatur and Valley View. The deck would be elevated about 45 feet above the existing ground in the vicinity of Torrey Pines, Rancho and Martin Luther King where the existing freeway is elevated to clear existing bridges. Noise

walls adding approximately 15 feet to the height of the elevated structures would most likely be required since the area is primarily residential.

At the present time, there are 110 single family residences located within 50 feet of the travel lanes on US-95. Therefore, the height of the elevated double deck structure would be greater than the horizontal distance from adjacent homes to the structure. Since the height of the structure would be 40 to 60 feet above the existing ground, visual impacts to adjacent residential neighborhoods would be very great. During the public meetings for the US-95 MIS, 59% of the participants opposed double decking US-95, indicating that the double deck structure would create an unacceptable visual obstruction for hundreds of residents in adjoining neighborhoods.

While double decking of US-95 to provide a total of 10 lanes could be expected to provide a capacity similar to the widening of US-95 to 10 lanes, the distribution of traffic between the upper and lower deck would be poor, due to the limited accessibility of the upper deck, with a resultant poor level of service (level of service F) on US-95 based on year 2020 peak hour traffic projections.

The cost to double deck the freeway would be at least \$340 million more than the cost to widen US-95 with a benefit/cost ratio of only 0.8. In addition, double decking would not avoid the taking of Adcock Elementary School or the bicycle trail along US-95 from Rainbow to Jones.

The Double Decking alternative would not relieve congestion on US-95 and would not provide a benefit/cost ratio greater than unity. This alternative would not meet the purpose and need for the project because it was not considered practical and would not relieve congestion.

## **(2.) Fixed Guideway/Enhanced Transit/TDM Strategy (Alternative 2)**

A Fixed Guideway/Enhanced Transit/TDM Strategy (Alternative 2) was proposed and evaluated with the following components:

- Enhanced Bus Service
- Transportation Demand Management (TDM)
- Fixed Guideway Transit
- Expand and Improve the Regional Street Network
- US-95 Freeway Management System

Alternative 2 proposed to improve transportation in the project area through a heavy reliance on transit. In addition to enhanced bus service, TDM, a US-95 Freeway Management System, and expansion and improvement of the Regional Street Network, which are also included in the proposed project, Alternative 2 would construct a fixed guideway transit system as the major component of this alternative transportation strategy.

The fixed guideway transit system was proposed to be an elevated light rail system in order to be compatible with the planned Resort Corridor Fixed Guideway System proposed by the Clark County Regional Transportation Commission. The preferred alignment for the Resort Corridor Fixed Guideway System extends two north-south guideway routes from Russell Road in the south to Sahara Avenue in the north, paralleling Las Vegas Boulevard approximately one-quarter mile on both the east and west sides. The two guideway routes would converge at the Stratosphere Tower, north of Sahara Avenue, and follow Main Street north to downtown Las Vegas terminating at Cashman Field.

To extend fixed guideway service into the project area, two logical options were identified. First to extend the Resort Corridor system further northward from Cashman Field and, second, to extend the system westward from the Stratosphere Tower Hub. Three basic alternative alignments for a fixed guideway were evaluated as an extension of the Resort Corridor Fixed Guideway System:

- Alternative Alignment 1* From Cashman Field north along Las Vegas Boulevard to Lake Mead Boulevard, west along Lake Mead Boulevard to Rancho Drive and northwest along Rancho Drive.
- Alternative Alignment 2* From Main Street in Downtown Las Vegas west along Charleston Boulevard to Rancho Drive and northwest along Rancho Drive.
- Alternative Alignment 3* From Main Street in Downtown Las Vegas west along Charleston Boulevard to Valley View Boulevard, north along Valley View Boulevard to US-95, and then west and north along US-95 (and/or west along the Summerlin Parkway).

Alternative Alignments 1 and 2 would be located in the Cities of Las Vegas and North Las Vegas. Alternative Alignment 3 would be entirely within the City of Las Vegas.

The ultimate terminus for the above alignments would be the planned Northwest Las Vegas Town Center for Alignments 1 and 2, and the Summerlin Town Center or the Northwest Las Vegas Town Center for Alignment 3.

The fixed guideway system would include train stations located at approximately one mile intervals and park-and ride lots located along Rancho Drive, US-95 and/or Summerlin Parkway to facilitate the transfers from cars to train. The alternative alignments would range from nine to eleven miles in length. The elevated guideway would primarily be constructed within existing arterial street and highway right-of way. Since the fixed guideway system would be elevated, and would extend through residential neighborhoods, there would be a visual intrusion even though right-of-way requirements would be limited.

The Fixed Guideway/Enhanced Bus/TDM Strategy would not provide sufficient capacity to meet the year 2020 projected capacity shortfall in the Northwest Region. With a year 2020 projected peak hour capacity shortfall of 32,500 person trips between the Northwest and the Resort Corridor, Alternative 2 would only be able to provide a total increase in capacity of 26,000 person trips. As a result, traffic studies for Alternative 2 showed that this Alternative would not provide an adequate level of service or relieve congestion on US-95 or the regional street system. With Alternative 2, level of service F is projected on US-95 and on most of the arterial streets linking the project area and the Resort Corridor in the year 2015 and beyond.

Including capital and operating costs, Alternative 2 was estimated to cost about \$487 million more than the proposed project over the life of the project. In addition, the fixed guideway system serving the project area would have little utility without connecting into the proposed Resort Corridor Fixed Guideway System to distribute passengers throughout the Resort Corridor. The Resort Corridor Fixed Guideway System has not been approved or funded, increasing the uncertainty of this alternative accommodating the projected ridership.

This alternative was not considered practical due to the very high costs over the life of the project and because it does not relieve congestion. Therefore, this alternative has been rejected from further consideration.

### **(3.) Rainbow/Desert Inn Super Arterial Strategy (Alternative 3)**

A Rainbow/Desert Inn Super Arterial Strategy (Alternative 3) was proposed and evaluated with the following components:

- Construct Rainbow/Desert Inn Super Arterial
- Expand and Improve the Regional Street Network
- US-95 Freeway Management System
- Transportation Demand Management
- Enhanced Bus Service

Alternative 3 proposed to improve transportation in the Northwest Region through a combination of major arterial street enhancements and enhanced transit. In addition to enhanced bus service, TDM, a US-95 Freeway Management System and expansion and improvement of the regional street network, which are also included in the proposed project, Alternative 2 would construct a new super arterial serving the project area and linking US-95 with the existing Desert Inn Road Super Arterial in the Resort Corridor.

The proposed Rainbow/Desert Inn Super Arterial would extend from the US-95 Summerlin Parkway Interchange southbound along Rainbow Boulevard to Desert Inn Road and thence eastward along Desert Inn Road to tie into the existing Desert Inn Road Super Arterial at Valley View Boulevard.

The proposed Rainbow/Desert Inn Super Arterial route would be approximately six miles long and tie into higher order facilities at both ends, US-95 and the Summerlin Parkway on the northwest end and the Desert Inn Road Super Arterial on the southeast end.

The proposed Super Arterial would be located in the City of Las Vegas from US-95 to Sahara Avenue (2 miles) and in unincorporated Clark County from Sahara to Valley View (4 miles).

The proposed Rainbow/Desert Inn Super Arterial would be eight lanes wide. It would have four through lanes (two in each direction) which are depressed, crossing under the major arterial streets. It would also have four frontage roads lanes (two in each direction) which would be at grade and provide local access.

Urban configuration interchanges would be constructed at the six major crossing arterials including Charleston, Sahara, Desert Inn, Jones, Decatur and Valley View, located at one mile intervals.

The through lanes would provide for the continuous uninterrupted flow of traffic between the Summerlin Interchange and the Desert Inn Road Super Arterial. A 50 m.p.h. rolling design for the through lanes, depressed at interchanges and at-grade between interchanges would permit traffic to enter the through lanes from the frontage roads and allow traffic to exit onto the frontage roads between interchanges.

The frontage roads would be one-way on each side of the through lanes. Driveways and local streets would provide local access to the frontage roads, although all local access to the frontage roads would be right-on/right-off.

An estimated 160 feet of right-of-way would be required to construct the Super Arterial with frontage roads. Retaining walls would be used extensively, wherever the through lanes are at a different elevation than the frontage roads (about half of the total length) so that right-of-way acquisitions would be minimized.

Directional interchange ramps were proposed at the Summerlin Parkway Interchange to facilitate the smooth flow of traffic between the proposed Super Arterial, US-95 and the Summerlin Parkway.

All local traffic would use the single point urban interchanges to cross from one side of the Super Arterial to the other. Half mile streets including Alta, Oakey, Edna, Torrey Pines, Lindell and Arville would terminate at the frontage roads on either side of the Super Arterial and would not cross the Super Arterial. This would be expected to cause major community disruption.

Because the Rainbow and Desert Inn Corridors are highly urbanized, the Rainbow/Desert Inn Super Arterial would require the relocation of 112 single family residences, 229 multi-family residences, and 58 business. It would also require a taking of a substantial part of Cashman Middle School.

The Rainbow/Desert Inn Super Arterial Strategy would not provide sufficient capacity to meet the year 2020 projected capacity shortfall in the Northwest Region. With a year 2020 projected peak hour capacity shortfall of 32,500 person trips between the Northwest and the Resort Corridor, Alternative 3 would only be able to provide a total increase in capacity of 28,800 person trips. As a result, traffic studies for Alternative 3 showed that this Alternative will not provide an adequate level of service or relieve congestion on US-95 or the regional street system in the year 2020. With Alternative 3, level of service F is projected on US-95 and on most of the arterial streets linking the project area and the Resort Corridor in the year 2015 and beyond.

Including capital and operating costs, Alternative 3 was estimated to cost about \$15 million more than the proposed project over the life of the project. In addition, Alternative 3 was projected to have substantially lower benefits than the "Locally Preferred Alternative," providing a benefit/cost ratio of only 1.0 (compared to 2.6 for the proposed project).

Given the inability of this alternative to achieve the overall purpose and need identified for this project and because it would not relieve congestion, this alternative has been rejected from further consideration.

## 5. Alternatives Comparison Matrix

Table IV-3 presents a matrix comparing the alternatives evaluated in the US-95 Major Investment Study.

The proposed project is the only alternative which meets the project purpose and need, by providing an improved level of service through the year 2020 and enhancing mobility through a combination of roadway improvements, enhanced transit and TDM. Two alignments, a northerly and a southerly alignment for US-95 are being considered for the proposed project. The northerly alignment alternative for US-95 (Alt. A) avoids potential impacts on biological resources and historic (cultural/archaeological) resources at the Las Vegas Valley Water District North Well Field and has demonstrated public support. There is potential for biological and historic resource impacts with the southerly US-95 alignment alternative (Alt. B) which encroaches onto the North Well Field. The proposed project would require a large number of residential and business relocations as well as have noise impacts and require the relocation of Adcock Elementary School and a bicycle trail. The proposed project provides the greatest benefit/cost ratio (2.6).

The US-95 Improvement Alternative, (Alt. 1), including the widening of US-95 is included in the Matrix for illustrative purposes but was amended to form the proposed project. It provided the same capacity and level of service benefits and had the same potential impacts as the proposed project but had a lower benefit/cost ratio and lower air quality benefits than the proposed project. Therefore, this alternative was amended and adopted as Alternative A to include enhanced bus transit service and transportation demand management measures to increase mobility, improve air quality and increase project benefits.

TABLE IV-3

US-95 MAJOR INVESTMENT STUDY  
ALTERNATIVE COMPARISON MATRIX

US-95 MIS/EIS ALTERNATIVES ANALYSIS SUMMARY MATRIX		Meets Purpose and Need	Additional Capacity Provided (Person trips per hour)	Meets Capacity Requirements	Provides Improved L.O.S./Congestion Relief	Provides Increased Mobility	Cultural Resources Sites		Biological Resources Impacts	Noise Impacts	Visual Impacts	4. (f) Impacts		Air Quality Impacts (Year 2015 Estimated CO reduction tons per day)	Potential Hazardous Materials Sites Impacts	Community Facilities Impacts		Displacements			Neighborhood Disruption/Env. Justice	Water Quality/Hydrology Impacts	Public Support	2015 Annual Reduction in VMT (Millions of Miles)	Estimated Capital and Operating Cost over the life of the project (millions)	Benefit/Cost Ratio
							Major ≥ 10 Acres	Minimum ≤ 10 Acres				Historic	Parks/Trails			Schools	Other	Residential	Businesses (Full Takes)	Businesses (Partial Takes)						
Proposed Project	Alternative A	Y	36,000	Y	Y	Y	0	16	N	Y	N	N	Y	7.9	2	Y, Adcock El. Relocation and Western H.S.	N	378	51	46	P	P	Y	115	\$873	2.6
	Alternative B	Y	36,000	Y	Y	Y	1	16	Y	Y	N	Y	Y	7.9	2	Y, Adcock El. Relocation and Western H.S.	N	318	51	46	P	P	P	115	\$867	2.6
Alt. 1 US-95 Improvements	Widening	N	30,000	Y	Y	Y	0	16	N	Y	N	N	Y	0.6	2	Y, Adcock El. Relocation	N	378	51	46	P	P	Y	9	\$447	1.5
	Double Deck	N	30,000	Y	N	Y	0	16	N	Y	Y	N	Y	1.0	0	Y, Adcock El. Relocation	N	93	30	46	P	P	N	16	\$787	0.8
Alt. 2 Fixed Guiderail		N	26,000	N	N	Y	0/1	9/10	N	P	P	P	N	8.2	17	N	N	89	30	46	P	P	N	119	\$1,360 \$1,420	1.5
Alt. 3 Rainbow/DI		N	28,800	N	N	Y	0	0	N	Y	Y	N	N	1.5	1	Y, Cashman M.S.	N	341	58	149	Y	P	N	22	\$888	1.0
No Build		N	0	N	N	N	0	0	N	Y	N	N	N	0	0	N	N	0	0	0	N	N	N	0	\$0	0

Y = YES

N = NO

P=POTENTIAL

The US-95 Improvement Alternative, (Alt. 1), including the double decking of US-95, did not provide an adequate level of service or relieve congestion on US-95. While this alternative would require fewer relocations than the proposed project, noise and visual impacts could not be adequately mitigated. This alternative had a benefit/cost ratio of only 0.8.

The Fixed Guideway Alternative (Alt. 2) enhanced mobility but did not provide an adequate level of service or relieve congestion in the project area through the year 2020. This alternative generally had the fewest impacts but had the greatest cost and a benefit/cost ratio of 1.5.

The Rainbow/Desert Inn Super Arterial Alternative (Alt. 3) enhanced mobility but did not provide an adequate level of service or relieve congestion in the project area through the year 2020. This alternative had substantial relocation, noise, visual and neighborhood disruption impacts and required a major property taking at Cashman Middle School. This alternative had a benefit/cost ratio of only 1.0.

Because of the inability to provide an adequate level of service or relieve congestion in the project area through the year 2020, the Double Decking of US-95, the Fixed Guideway Alternative and the Rainbow/Desert Inn Super Arterial Alternative do not meet the purpose and need for the project.

The "No Build" Alternative does not meet the purpose and need, does not provide an adequate level of service or enhance mobility.

## 6. Cost, Funding and Time Frame for Implementation of the Proposed Project

The estimated cost of the proposed project is shown in Table IV-4.

**TABLE IV-4  
ESTIMATED CAPITAL AND OPERATING COSTS OF THE PROPOSED PROJECT  
THROUGH THE YEAR 2025**

	<u>Alternative A</u>	<u>Alternative B</u>
US-95 Widening	\$312,800,000 <sup>1</sup>	\$305,900,000 <sup>1</sup>
Freeway Management System	4,900,000 <sup>1</sup>	4,900,000 <sup>1</sup>
Arterial Street Improvements	53,800,000 <sup>1</sup>	53,800,000 <sup>1</sup>
New Arterial Street Connections	61,500,000 <sup>1</sup>	61,500,000 <sup>1</sup>
Enhanced Bus Service & TDM	<u>440,000,000<sup>2</sup></u>	<u>440,000,000<sup>2</sup></u>
	\$873,00,000	\$866,100,000

<sup>1</sup> Estimated Capital Cost

<sup>2</sup> Estimated operating costs through the year 2025

Source: US-95 MIS, April 1997

The proposed project is proposed to be funded primarily with federal funds, specifically, with motor vehicle fuel taxes and congestion management/air quality funds.

The various elements of the proposed project will be constructed and implemented over a period of time. The capital costs of widening US-95 and constructing arterial street improvements will be incurred at the time of construction and budgeted as capital improvement projects by the NDOT, the City of Las Vegas, the City of North Las Vegas and Clark County. The cost of Enhanced Bus Service and Transportation Demand Management measures will be included in the annual operating budget of the Regional Transportation Commission.

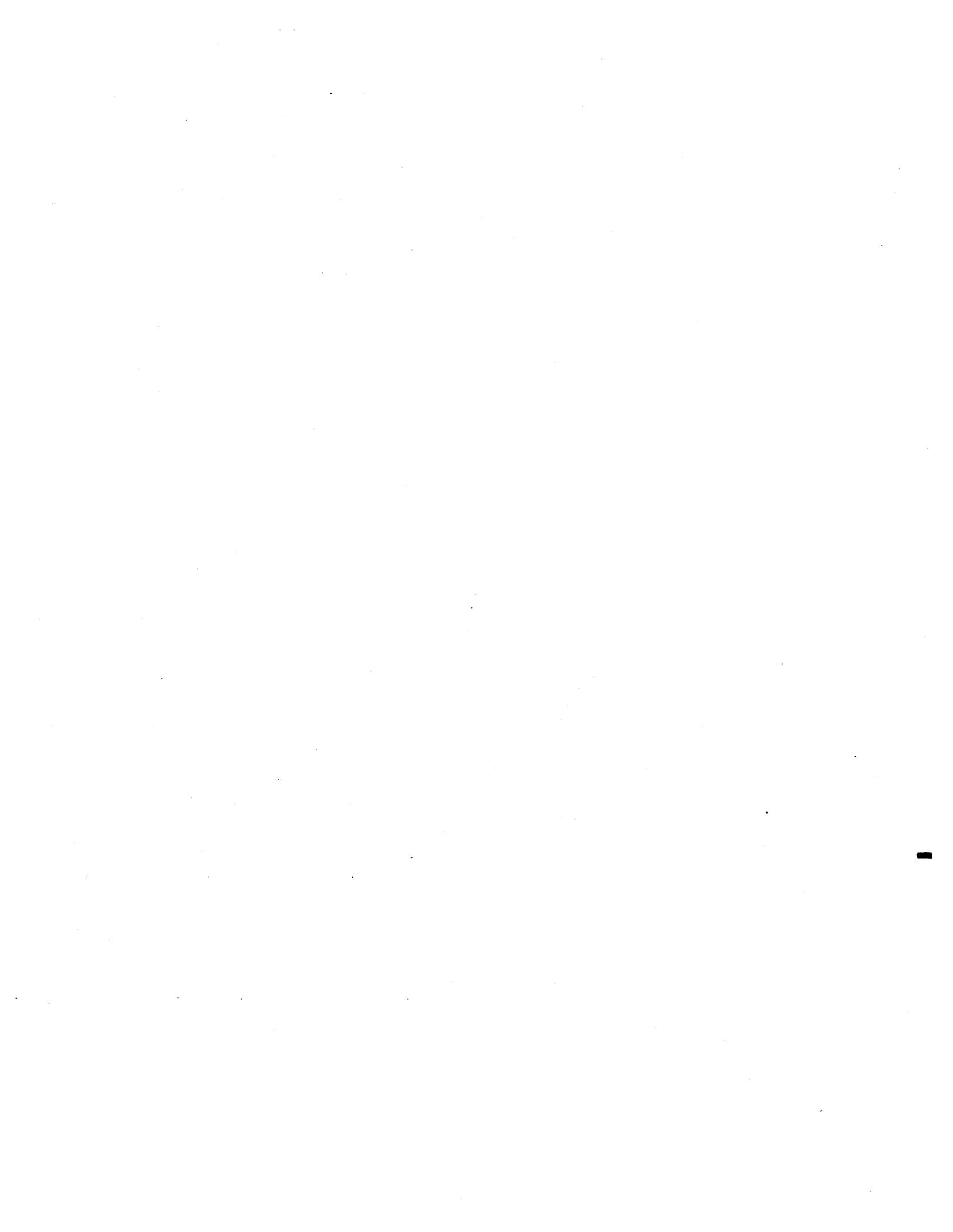
To meet short-term demand and relieve congestion in the short-term (1 to 8 years), the construction of arterial street improvements, the construction of arterial street connections and the implementation of enhance bus service and transportation demand management measures would be initiated in the short-term.

To meet long-term demand and relieve congestion in the long-term (8 to 20 years), construction of improvements to US-95 and the Summerlin Parkway, including HOV lanes and a Freeway Management System, will also be initiated in the short-term. The US-95 widening will be constructed in a series of overlapping contracts. Since the benefits of widening US-95 will not be realized until the construction is completed, construction contracts which will sequentially rebuild structures, realign city streets, and reconstruct sections of the roadway, will be closely scheduled and coordinated with right-of-way acquisition.

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**V. AFFECTED ENVIRONMENT**

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## V. AFFECTED ENVIRONMENT

### A. Natural Resources

#### 1. Geology

The project area lies within the Basin and Range physiographic province of the southwest United States. The Las Vegas Valley is a structural basin formed by faulting during Pliocene time. The valley is comprised of alluvial and possible lacustrine and other fine grained deposits associated with past ground water discharge as well as with wind related (eolian) deposits that began to accumulate in Miocene time. The entire project area occurs in near surface Plio-Pleistocene basin fill (valley fill) which is incised with active and inactive Holocene wash channels. Valley fill deposits are coarse-grained near the surrounding mountains and get progressively finer towards the center of the valley.

Seismic activity within a 160 kilometer radius of the Nevada Test Site indicate the number of earthquakes originating in the immediate Las Vegas area to be relatively few in contrast to clusters of earthquake activity originating nearby. Most of the earthquakes originating within this 160 kilometer radius since 1868 have a magnitude less than 3. However, earthquakes with magnitudes ranging 5 to 8 have occurred. Thus, while Las Vegas itself is not the site of origin for many earthquakes, the potential for Las Vegas to experience the effects of seismic waves generated by nearby earthquakes is possible.

Lateral and vertical variations in the lithologic and chemical properties of these deposits create geologic conditions that have impacts on the proposed project. These geologic features are: gypsum and gravel; cemented horizons; ground subsidence and faults; and fissures.

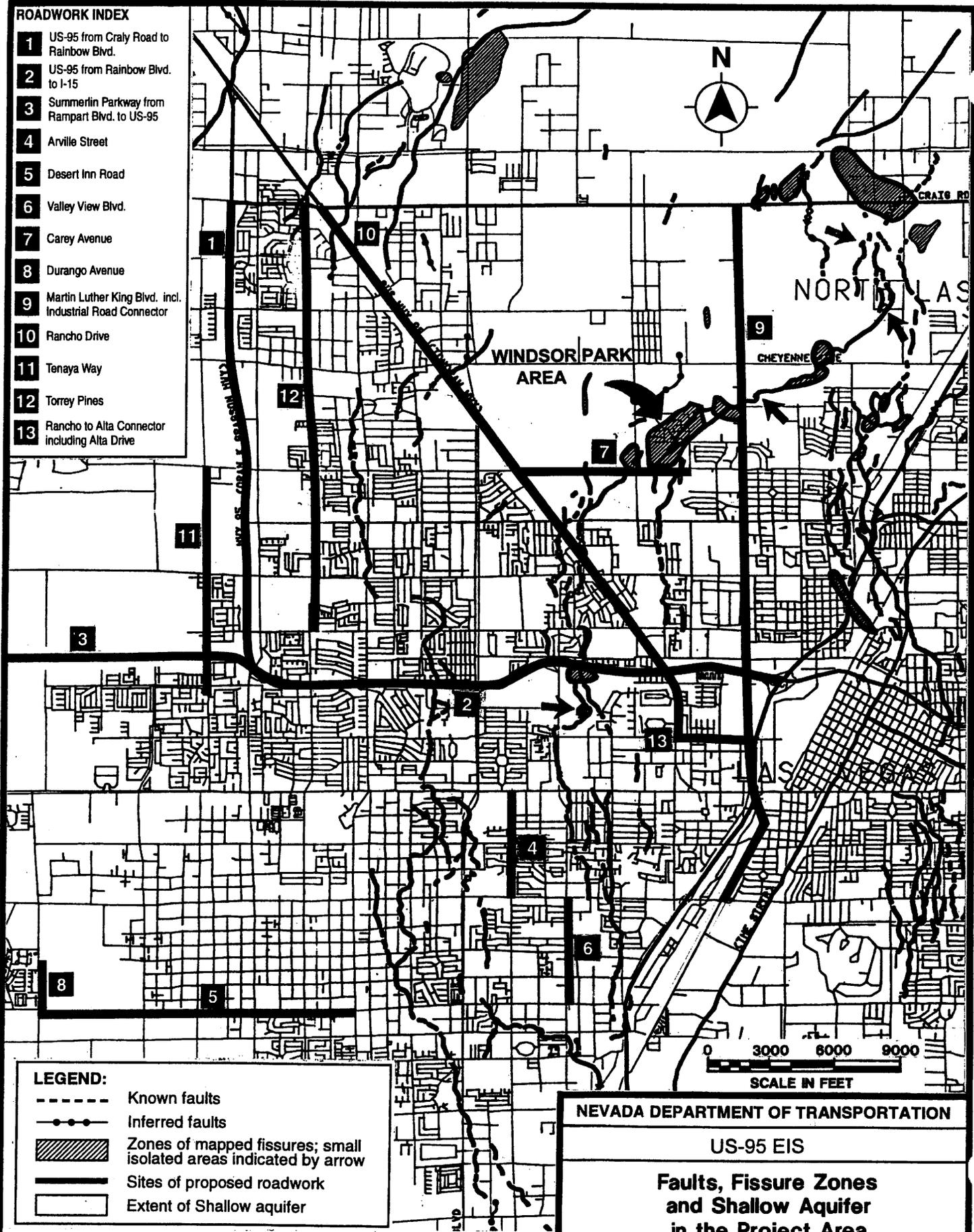
Rocks and unconsolidated material in the project area are enriched in gypsum. The dissolution of gypsum releases sulfate ions which are corrosive to concrete. There are no known active gypsum mines along the proposed project alignments, but there is an active gravel pit located south of Desert Inn Road east of Buffalo Drive.

Cemented horizons at or near the surface are present throughout the project area. These cemented horizons are also termed calcrete, caliche, or hardpans and may be as much as 3 meters thick. Active alluvium may also be cemented. Cemented horizons can be an obstacle to excavation and produce a perched water table that may intensify any existing sulfate dissolution problems.

Ground water withdrawal in excess of recharge has caused local land subsidence in the project area. Some proposed project sites traverse subsidence bowls. Faults attributed to tectonic forces and/or the differential compaction of fine and coarse-grained basin fill are present. These are preferred sites of subsidence and fissuring. Fissures occur at and below the ground surface. Extensive fissuring occurs in the Windsor Park area of the proposed project, (Figure V-I).

**ROADWORK INDEX**

- 1** US-95 from Craly Road to Rainbow Blvd.
- 2** US-95 from Rainbow Blvd. to I-15
- 3** Summerlin Parkway from Rampart Blvd. to US-95
- 4** Arville Street
- 5** Desert Inn Road
- 6** Valley View Blvd.
- 7** Carey Avenue
- 8** Durango Avenue
- 9** Martin Luther King Blvd. incl. Industrial Road Connector
- 10** Rancho Drive
- 11** Tenaya Way
- 12** Torrey Pines
- 13** Rancho to Alta Connector including Alta Drive



**LEGEND:**

- Known faults
- Inferred faults
- ▨ Zones of mapped fissures; small isolated areas indicated by arrow
- Sites of proposed roadwork
- ▭ Extent of Shallow aquifer

Sources: Bell (1993)  
Zikmund (1996)

NEVADA DEPARTMENT OF TRANSPORTATION  
US-95 EIS  
**Faults, Fissure Zones and Shallow Aquifer in the Project Area**

FIGURE V-1

## 2. Soils

Soils to be disturbed by the project possess properties that can have an impact on road construction and road maintenance. Soils with soluble sulfates are corrosive to concrete and all soils in the project area have developed conditions that are corrosive to uncoated steel. Many contain cemented horizons. Some soils contain large stones. Soil stability is reflected in the tendency to cave at cut banks, collapse, or expand.

High intensity storm events of short duration, particularly in summer months, are the predominant means of soil erosion and transport by water. High peak discharges, flash floods, and debris flows are generated during these storm events. The susceptibility of soils to flooding can affect construction sites and adjacent roads.

Desert pavements are a common wind erosion feature of the Las Vegas area. These features are a residual lag of pebbles, boulders, other rock fragments and coarse-grained sediment where finer material has been removed by wind. Gravel and rock fragments in the soil can interfere with the operation of equipment and excavation, as well as require additional maintenance. The development of desert pavement is essentially a natural means of wind erosion protection. However, if disturbed and exposed to wind, each of the soils in the project area presents a high potential for particles to blow. This dust is transported great distances and contributes to the fugitive dust in the air. Fugitive dust is the dominant component of PM<sub>10</sub> in the Las Vegas Valley and construction activities are a major source.

## 3. Ground Water Resources

There are no sole source aquifers in the project area.

The valley fill aquifers that underlie the project area are divided into zones based on depth: shallow zone, near-surface zone, developed aquifer zone, deep zone. Most of the natural recharge areas are in the surrounding mountains.

The shallow aquifer zone is perched and occurs where the water table is within 20 to 30 feet of the land surface. In some locations, the water table has been reached at a depth of 10-feet below the surface. This zone has developed from secondary recharge and consists of the upper 20 to 50 feet of saturated sediment. Ground water from this zone has the greatest potential to reflect contamination from sources at the land surface. It typically high in total dissolved solids. The near-surface aquifer lies beneath the shallow aquifer and extends to approximately 200 to 300 feet below the land surface. The developed aquifer zone extends beneath the near-surface zone to about 1,000 feet below the land surface. This zone serves as the primary source of ground water supply. A zone of deep valley fill aquifers with a low yield and a bedrock reservoir that is not utilized as a water source underlie the developed aquifer zone.

Under pre-development valley conditions, ground water from the developed aquifer zone discharged upward into the near-surface aquifer and to the surface as springs. Since development, the natural recharge from the mountains has been augmented by secondary recharge to the near-surface aquifer. This has resulted in local rises in water in the near-surface aquifer. Simultaneously, increased pumpage has resulted in local declines in water levels in the developed zone. The overall consequences of these processes have been the local transformation of intermittent washes to perennial streams, the cessation of spring flow, and a reversal in net leakage such that it is downward toward the developed zone.

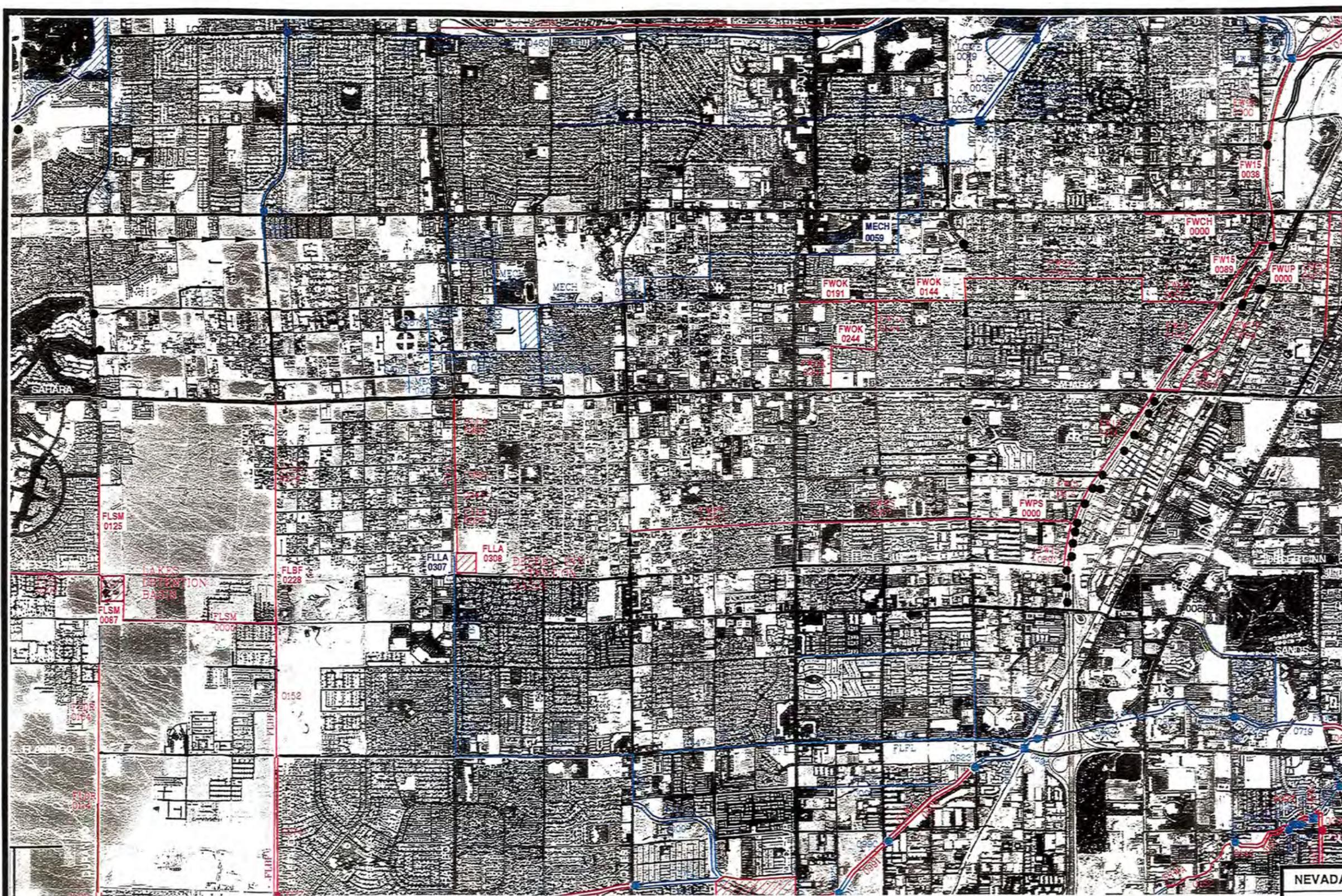
Twenty active public production wells within 1,000 feet of the proposed project are operated by the city of North Las Vegas and the Las Vegas Valley Water District (LVVWD) in addition to two LVVWD artificial recharge wells (Figure V-2). Eleven of the 19 LVVWD production wells were also used for artificial recharge in 1996. The public water supply comes from the developed aquifer zone and is protected by overlying confining layers. In some instances, the presence of faults, fractures, and fissures may enable vertical water movement across confining units. Within the 1,000 foot corridor, there are also 49 domestic wells, one industrial well, and a LVVWD pumping station.

The ground water from the shallow aquifer zone is characterized by high total dissolved solids. Existing concentrations of water quality parameters related to roadway pollutants in public production wells meet the state standards for drinking water. This suggests that pollutants from surface sources, such as roadway runoff, do not reach the upper limits of the developed aquifer due to overburden with clay and caliche, even with the presence of nearby faults and fissures. Thus, surface nonpoint source pollution, which includes roadway runoff, is not adversely affecting ground water quality of public water supplies at present.

#### **4. Surface Water Resources**

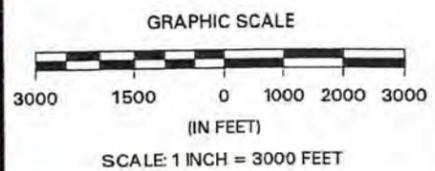
Las Vegas is located within the Colorado River Basin. Runoff in the Las Vegas Valley is ultimately conveyed to the Las Vegas Wash which discharges to Lake Mead, an impoundment on the Colorado River formed by the Hoover Dam. Lake Mead is the principal surface water resource in the Valley, supplying approximately 80 percent of the water used in the Valley in 1990 (Covay et al. 1996). There are no perennial streams or live springs in the project area. All drainageways in the project area are tributaries to Las Vegas Wash. The Las Vegas Wash watershed drains about 1,600 square miles. Surface drainage in the project area occurs in four subwatersheds of Las Vegas Wash depicted in the Clark County Regional Flood Control District Flood Control Master Plan (Figure V-3). They are the Northern Las Vegas Wash, Gowan, Central Basin and Flamingo/Tropicana. Las Vegas Creek, which drains the Central Basin, is one of eight major tributaries to the lower Las Vegas Wash.

Drainageways crossed by or immediately adjacent to proposed project sites (flood control facilities) are indicated in Figure V-4a. An inventory of these facilities is provided in Table V-1. These drainages are ephemeral with no flow except for nuisance flow (from landscape overwatering) most days of most years; they accommodate the high peak discharges generated during high intensity



**LEGEND**

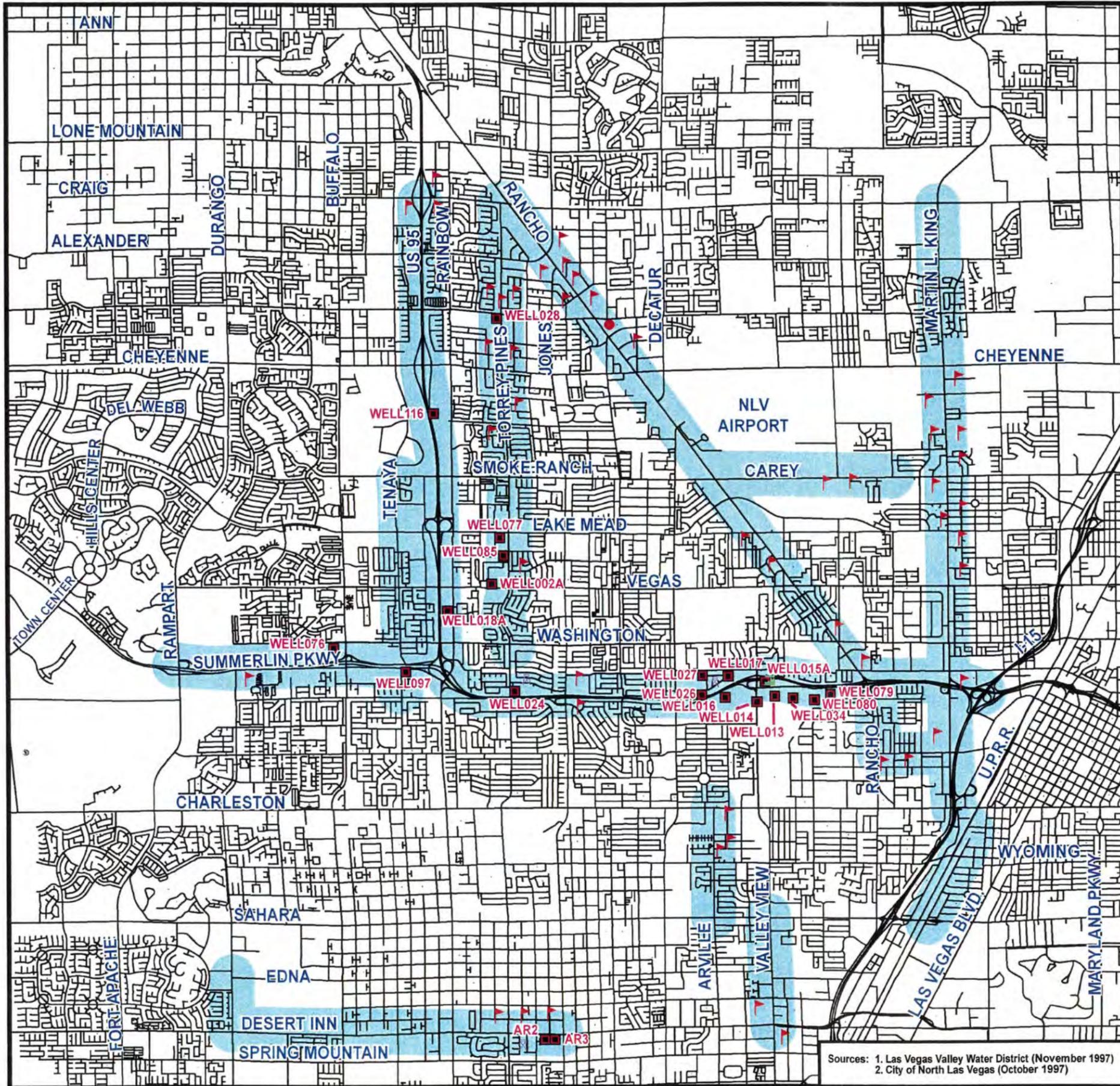
- █ EXISTING MASTER PLAN FACILITIES
- █ PROPOSED MASTER PLAN FACILITIES
- █ LOCAL OR UNSTUDIED FACILITIES
- DETENTION/DEBRIS BASIN
- CULVERT
- BRIDGE
- PIPELINE
- LINED CHANNEL
- UNLINED CHANNEL



NEVADA DEPARTMENT OF TRANSPORTATION  
US-95 EIS  
**Project Area  
Flood Control Facilities  
(Drainageways)**

Source: CCRFCD (1997b)

FIGURE V-4c



**LEGEND:**

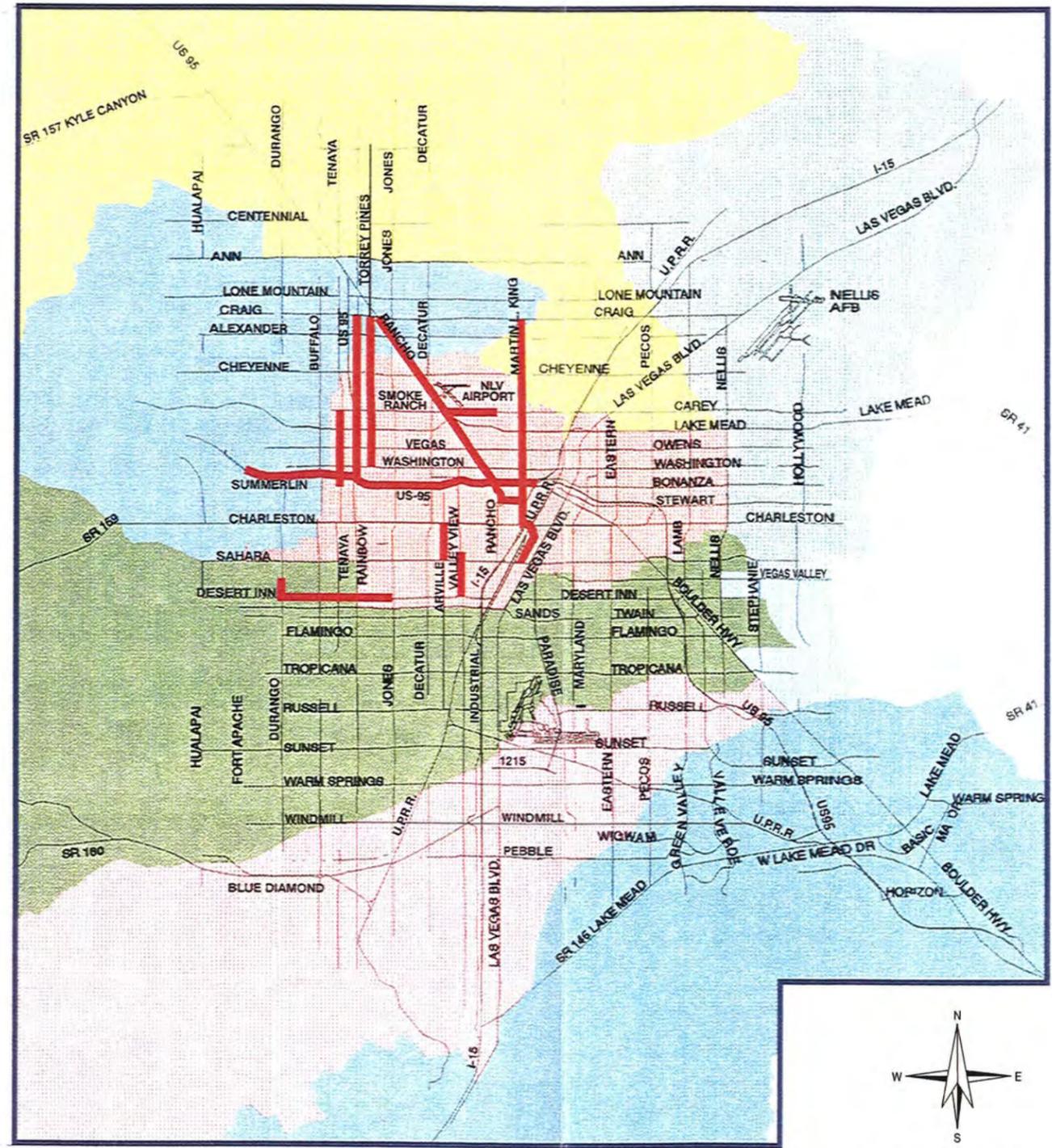
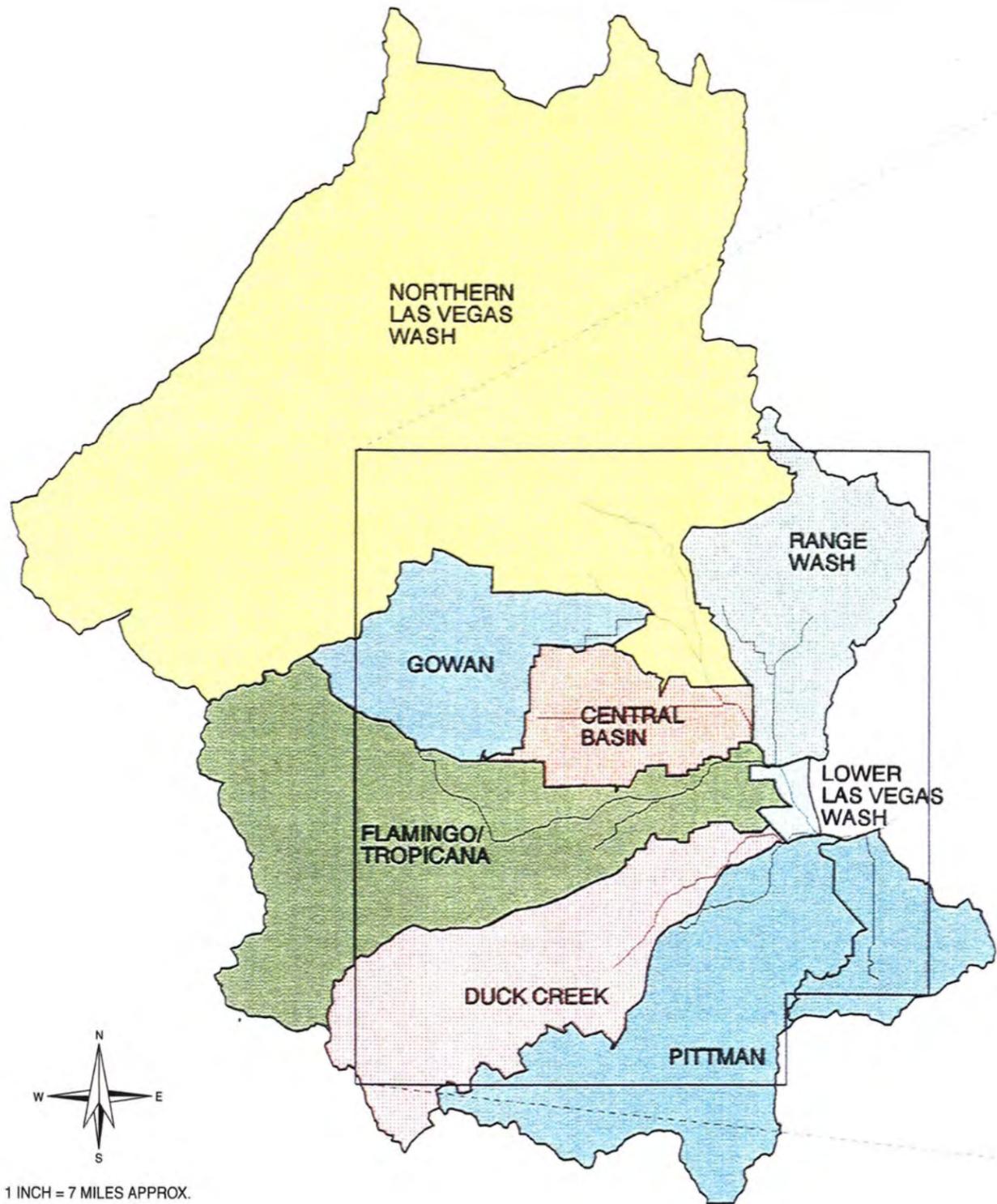
-  Domestic
-  Industrial
-  Public supply (Municipal)
-  Las Vegas Valley Water District Wells
-  City of North Las Vegas Well
-  1000-foot zone on each side of Proposed Roadwork

**Note:** Because the Domestic and Industrial wells are located to the nearest quarter quarter section, multiple wells may occur in the same location on the map.



Sources: 1. Las Vegas Valley Water District (November 1997)  
2. City of North Las Vegas (October 1997)

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
<b>Wells within 1000-foot of Proposed Roadwork</b>	
FIGURE V-2	

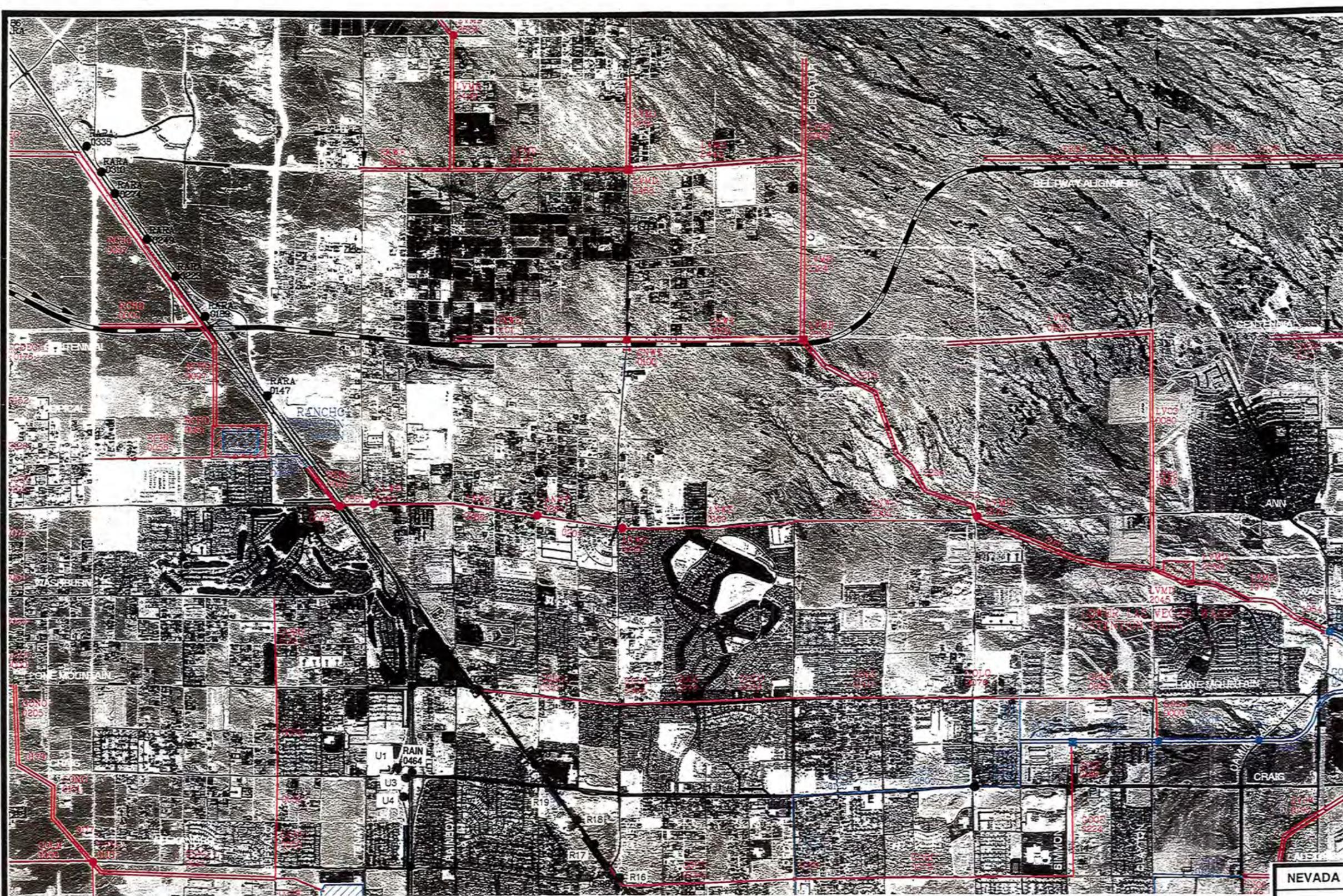


**LEGEND**  
 Sites of Proposed Roadwork

NEVADA DEPARTMENT OF TRANSPORTATION  
 US-95 EIS  
 SUBWATERSHEDS  
 OF THE  
 LAS VEGAS WASH

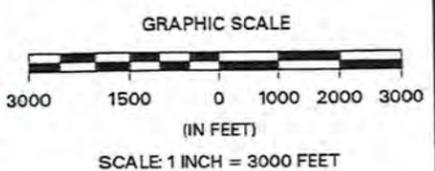
FIGURE V-3

Source: CCRFCD (1997b)



**LEGEND**

- EXISTING MASTER PLAN FACILITIES
- PROPOSED MASTER PLAN FACILITIES
- LOCAL OR UNSTUDIED FACILITIES
- DETENTION/DEBRIS BASIN
- CULVERT
- BRIDGE
- PIPELINE
- LINED CHANNEL
- UNLINED CHANNEL



NEVADA DEPARTMENT OF TRANSPORTATION  
 US-95 EIS  
 Project Area  
 Flood Control Facilities  
 (Drainageways)

Source: CCRFCD (1997b)

FIGURE V-4a



**TABLE V-1**  
**Storm Drain Inventory**  
**US 95 from Craig Road to Rainbow Boulevard Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
U1	V-4a	existing 6 - 8' x 3' RCB culverts	dry	across southbound offramp	no	-
RAIN 0464	V-4a		dry	across US 95	no	-
U3	V-4a	existing 4-10' x 4' RCB culverts and 29' wide concrete channel	dry	across Craig Road, adjacent to US 95	no	-
U4	V-4a	existing 6 - 8' x 3' RCB culverts	dry	across southbound onramp	no	-
U5	V-4b	existing graded channel with rip-rap bank	dry	adjacent to US 95	no	-
U6	V-4b	existing 2 - 6' x 2' RCB culverts	dry	across US 95	no	-
U7	V-4b	existing 4 - 10' x 4' RCB culverts	dry	across Alexander Road, adjacent to US 95	no	-
U8	V-4b	existing 50' wide, 4' deep open channel	dry	adjacent to US 95, between Alexander and Gowan	no	-
U9	V-4b	existing 2 - 9' x 2' RCB culverts	dry	across US 95, north side of Gowan Road	no	-
GOOF 0511	V-4b	existing 8' x 5' RCB drain	-	across US 95	no	-
U10	V-4b	existing 2 - 9' x 2' RCB culverts	standing	across US 95, south side of Gowan Road	no	-
U11	V-4b	not found	-	-	-	-
U12	V-4b	existing 2 - 42" RCP culverts	dry	across northbound offramp	no	-
U13	V-4b	existing 2 - 6' x 2' RCB culverts	dry	across US 95	no	-
U14	V-4b	existing 6' x 3' RCB culvert	dry	across southbound onramp	no	-
U15	V-4b	existing 24" RCP culvert	dry	across US 95	no	-
U16	V-4b	not found	-	-	-	-
U17	V-4b	existing 36" RCP culvert	dry	across US 95	no	-
U18	V-4b	existing 6' x 4' RCB culvert	dry	across US 95	no	-
U19	V-4b	existing 60" RCP and concrete lined channel ( 8'wide, 4'depth )	dry	adjacent to US 95 northbound offramp	no	-
U20	V-4b	existing 48" RCP and concrete lined channel	standing	across southbound onramp	no	-
U21	V-4b	existing 2 - 10' x 4' RCB culverts	standing	across US 95	no	-
U22	V-4b	not found	-	-	-	-
U23	V-4b	existing 2 - 10' x 4' RCB culverts	dry	across US 95	no	-
U24	V-4b	not found	-	-	-	-

\* RCB - Reinforced Concrete Box, RCP - Reinforced Concrete Pipe

**TABLE V-1 (Continued)**  
**Storm Drain Inventory**  
**US-95 from Rainbow Boulevard to I-15 Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
LCCH 0486	V-4b	existing 42" RCP storm drain	continuous	under US 95	no	-
LCCH 0477	V-4b	existing 36" RCP storm drain	continuous	under US 95	no	-
LCCH 0460	V-4b	existing 36" RCP storm drain	continuous	under US 95	no	-
LCCH 0441	V-4b	existing 48" RCP storm drain	continuous	under US 95	no	-
LCCH 0420	V-4b	existing 60" RCP storm drain	continuous	under US 95	no	-
LCCH 0373	V-4b	existing 60" RCP storm drain	continuous	under US 95	no	-
LCCH 0344	V-4b	existing 48" RCP storm drain	continuous	under US 95	no	-
LCCH 0321	V-4b	existing 48" RCP storm drain	continuous	under US 95	no	-
LCCH 0300	V-4b	existing 48" RCP storm drain	continuous	under US 95	no	-
LCCH 0249	V-4b	existing 60" RCP storm drain	continuous	under US 95	no	-
U25	V-4b	existing 36" RCP storm drain	continuous	connect to Las Vegas Creek channel	no	-
LCCH 0232	V-4b	existing 54" RCP storm drain	continuous	under US 95	no	-
U26	V-4b	existing 6' x 6' RCB storm drain	continuous	connect to Las Vegas Creek channel	no	-
LCCH 0184	V-4b	existing 8' x 4' RCB storm drain	continuous	under US 95	no	-
LCCH 0176	V-4b	existing concrete lined channel (4' wide, 7' depth)	continuous	south side of US 95	no	-
LCCH 0114	V-4b	existing concrete lined channel (9' wide, 7' depth)	continuous	south side of US 95	no	-
LCCH 0113	V-4b	existing 2 - 8' x 7' RCB culverts	continuous	across Rancho Drive	no	-
LCRA 0015	V-4b	existing 7' x 7' RCB culvert	continuous	across westbound onramp	yes	-
LCRA 0007	V-4b	existing 60" RCP culvert	continuous	connect to Las Vegas Creek channel	no	-
LCCH 0047	V-4b	existing concrete lined channel (9' wide, 8' depth)	continuous	south side of US 95	no	-
LCCH 0046	V-4b	existing 2 - 10' x 10' RCB culverts	continuous	across easibound onramp	no	-
LCCH 0037	V-4b	existing 2 - 10' x 7' RCB culverts	continuous	across Martin Luther King Boulevard	no	-
LCCH 0038	V-4b	existing concrete lined channel (9' wide, 8' depth)	continuous	south side of US 95	no	-
LCCH 0001	V-4b	existing concrete lined channel (10' wide, 8' depth)	continuous	south side of US 95	no	-
LCCP 0286	V-4b	proposed 6' x 5' RCB culvert	-	under US 95	no	>2007
LCCP 0182	V-4b	proposed 8' x 5' RCB culvert	-	under US 95	no	>2007
LCCP 0000	V-4b	proposed 12' x 5' RCB culvert	-	under US 95	no	>2007

\* RCB - Reinforced Concrete Box, RCP - Reinforced Concrete Pipe

**TABLE V-1 (Continued)**  
**Storm Drain Inventory**  
**Rancho Drive from Craig Road to US-95 Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
LV15 0460	V-4b	proposed 66" RCP	-	across Rancho Drive	yes	>2007
R1	V-4b	existing 36" RCP storm drain	dry	across Rancho Drive	yes	-
LVOW 0146	V-4b	proposed 78" RCP	-	across Rancho Drive	yes	2002/2003
R2	V-4b	existing 6' x 3' RCB to 48" RCP culvert	dry	across Rancho Drive	yes	-
R3	V-4b	existing 6' x 3' RCB culvert	dry	across Rancho Drive	yes	-
LVLM 0336	V-4b	existing 84" RCP storm drain	dry	across Rancho Drive	yes	-
LVRA 0000	V-4b	existing 45' wide grass-lined channel (irrigated)	standing	adjacent to Rancho Drive on southwest side	yes	-
LVRA 0038	V-4b	proposed 72" RCP storm drain	-	adjacent to Rancho Drive on southwest side	yes	2003/2004
LVRA 0057	V-4b	proposed 60" RCP storm drain	-	adjacent to Rancho Drive on southwest side	yes	2003/2004
LVRA 0025	V-4b	proposed 72" RCP storm drain	-	adjacent to Rancho Drive on southwest side	yes	2003/2004
LVRA 0081	V-4b	proposed 60" RCP storm drain	-	adjacent to Rancho Drive on southwest side	yes	2003/2004
LVRA 0091	V-4b	proposed 60" RCP storm drain	-	adjacent to Rancho Drive on southwest side	yes	2003/2004
LVSR 0360	V-4b	existing 66" RCP storm drain	dry	across Rancho Drive	yes	-
R4	V-4b	existing 6' x 3' RCB culvert	dry	across Rancho Drive	yes	-
R5	V-4b	existing 36" CMP culvert	dry	across Rancho Drive	yes	-
R6	V-4b	not found	-	-	-	-

\* RCB - Reinforced Concrete Box, RCP - Reinforced Concrete Pipe, CMP - Corrugated Metal Pipe

**TABLE V-1 (Continued)**  
**Storm Drain Inventory**  
**Rancho Drive from Craig Road to US 95 Drainage Facility Inventory (Cont.)**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
R7	V-4b	existing vegetated ditch	dry	adjacent to Rancho Drive on southwest side	yes	-
R8	V-4b	not found	-	-	-	-
R9	V-4b	existing 40" x 28" elliptical CMP	dry	across Rancho Drive	yes	-
R10	V-4b	existing 6' x 3' RCB culvert	dry	across Rancho Drive	yes	-
R11	V-4b	existing 48" x 36" drop inlet / 24" CMP	dry	across Rancho Drive	yes	-
RANC 0474	V-4b	existing 24" CMP storm drain	dry	across Rancho Drive	yes	-
R13	V-4b	existing 2 - 6' x 3' RCB culverts	standing	across Rancho Drive	yes	-
R14	V-4b	existing 4' x 4' RCB, 2-48" CMP, grass-lined channel	dry	adjacent to Rancho Drive on southwest side	yes	-
GOOF 0511	V-4b	existing 8' x 5' RCB storm drain	dry	across Rancho Drive	yes	-
R15	V-4b	existing 6' x 2' RCB culvert	dry	across Rancho Drive	yes	-
GOCR 0234	V-4b	proposed 90" RCP storm drain	-	across Rancho Drive	yes	>2007
RANC 0598	V-4a	not found	-	-	-	-
R17	V-4a	existing 7' x 3' RCB culvert and 6' x 3' RCB culvert	standing	adjacent to Rancho Drive then across Rancho Drive	yes	-
R18	V-4a	existing 6' x 3' RCB culvert	dry	across Rancho Drive	yes	-
R19	V-4a	existing open channel with 2 - 7' x 3' RCB culverts	dry	adjacent to Rancho Drive on southwest side	yes	-

\* RCB - Reinforced Concrete Box, RCP - Reinforced Concrete Pipe, CMP - Corrugated Metal Pipe

**TABLE V-1 (Continued)**  
**Storm Drain Inventory**

**Martin Luther King Boulevard from Craig Road to Industrial Road at Wyoming Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
M1	V-4b	existing 60" RCP storm drain	standing	across Martin Luther King Boulevard	no	-
M2	V-4b	existing 6' x 3' RCB culvert	dry	across Martin Luther King Boulevard	no	-
LV06 0199	V-4b	not found	-	-	-	-
LV06 0138	V-4b	proposed concrete lined channel (10' wide, 5' depth)	-	east of Martin Luther King Boulevard	no	2001/2002
LV05 0131	V-4b	proposed concrete lined channel (8' wide, 3' depth)	-	east of Martin Luther King Boulevard	no	>2007
LVSR 0148	V-4b	existing 54" RCP storm drain	dry	across Martin Luther King Boulevard	no	-
LVOR 0070	V-4b	existing 66" RCP storm drain	dry	across Martin Luther King Boulevard	no	-
LVOW 0000	V-4b	proposed 90" RCP storm drain	-	across Martin Luther King Boulevard	no	2002/2003
LV15 0339	V-4b	proposed 9' x 6' RCB	-	across Martin Luther King Boulevard	no	1997/1998
LVLM 0072	V-4b	existing 72" RCP storm drain	dry	across Martin Luther King Boulevard	no	-
LCCH 0037	V-4b	existing 2 - 10' x 7' RCB culverts	continuous	across Martin Luther King Boulevard	no	-
FW15 0038	V-4c	proposed 3 - 14' x 10' RCB	-	under I 15	no	2001/2002
FW15 0089	V-4c	proposed 3 - 13' x 9' RCB	-	under I 15	no	2003/2004
FWCH 0000	V-4c	proposed 78" RCP	-	across Martin Luther King Boulevard	no	>2007
FWUP 0000	V-4c	proposed 84" RCP	-	freeway channel bypass facility	no	2005/2006

**Summerlin Parkway from Rampart Boulevard to Rainbow Boulevard Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
S1	V-4b	existing 2 - 60" RCP culverts	dry	across Summerlin Parkway	no	-
S2	V-4b	existing Angel Park Detention Basin	dry	across Summerlin Parkway	no	-
S3	V-4b	existing 18" RCP culvert	dry	across Summerlin Parkway	no	-
S4	V-4b	existing 18" RCP culvert	dry	across Summerlin Parkway	no	-

**TABLE V-1 (Continued)**  
**Storm Drain Inventory**  
**Carey Avenue from Rancho Drive to Clayton Street Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
LVSF 0208	V-4b	existing 54" RCP storm drain	dry	across Carey Avenue	no	-
LVLN 0223	V-4b	existing Carey / Lake Mead Detention Basin	dry	adjacent to Carey Avenue	yes	-

**Torrey Pines Drive from Washington Avenue to Craig Road Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
GOOF 0511	V-4b	existing 8' x 5' RCB storm drain	dry	across Torrey Pines Drive	no	-
LVLN 0453	V-4b	existing 54" RCP storm drain	dry	across Torrey Pines Drive	no	-
LVSF 0552	V-4b	proposed 60" RCP storm drain	-	east of Torrey Pines Drive	no	>2007

**Arville Street from Charleston Boulevard to Sahara Avenue Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
MECH 0059	V-4c	existing 36" RCP storm drain	dry	across Arville Street	no	-
FWOK 0144	V-4c	proposed 78" RCP storm drain	-	under Arville Street	no	2005/2006
FWOK 0191	V-4c	proposed 78" RCP storm drain	-	west of Arville Street	no	2005/2006
FWOK 0244	V-4c	proposed 60" RCP storm drain	-	west of Arville Street	no	2005/2006
* RCB - Reinforced Concrete Box, RCP - Reinforced Concrete Pipe						

**TABLE V-1 (Continued)  
Storm Drain Inventory**

**Desert Inn Road from Durango Drive to Jones Boulevard Drainage Facility Inventory**

Facility Designation	Figure No.	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
FLSM 0087	V-4c	proposed Lakes Detention Basin	-	south of Desert Inn Road and east of Durango Drive	no	1998/1999
FLLA 0307	V-4c	existing 8 1/2" RCP storm drain	dry	across Desert Inn Road	no	-
FLLA 0308	V-4c	proposed Desert Inn Detention Basin	-	north of Desert Inn Road and east of Rainbow Boulevard	no	1998/1999
FLSM 0125	V-4c	proposed 72" RCP	-	under Durango Drive	no	1998/1999
FLBF 0228	V-4c	proposed 10' x 6' RCB	-	across Desert Inn Road	no	1998/1999

**Valley View Boulevard from Sahara Avenue to Desert Inn Road**

Facility Designation	Sec-V-A_C.wpd	Type of Facility	Type of Flow	Position	FEMA SFHA	Proposed Facilities Construction Date Fiscal Year
FWPS 0000	V-4c	proposed 90" RCP storm drain	-	across Valley View Boulevard	no	>2007

\* RCB - Reinforced Concrete Box, RCP - Reinforced Concrete Pipe

Note: Observations made October and November 1997.

Source: Louis Berger & Associates, Inc.



storm events that produce large quantities of rain in a short period of time. However, USGS discharge records of Las Vegas Creek (designated as LCCH on Figure V-4b) which drains the Central Basin in the project area indicate continuous flow despite some months with 0.00 inches precipitation (October 1993 through September 1996). This dry weather flow is attributable to nuisance urban flow (e.g., landscape overwatering and vehicle washing). Downstream of the project area Las Vegas Wash is a perennial stream due to the discharge of sewage treatment plant effluent, ground water and urban runoff.

The areas inundated by 100-year floods and designated as Special Flood Hazard Areas by the Federal Emergency Management Agency (FEMA) are presented in Figure V-5.

Beneficial uses for surface waters in the project area are: irrigation; watering of livestock; recreation not involving contact with the water; maintenance of a freshwater marsh; propagation of wildlife; and propagation of aquatic life, excluding fish. Point sources of pollution to Las Vegas Wash consist of sewage treatment plant effluent downstream of the project area. The primary nonpoint sources (NPS) are: storm water runoff; ground water discharge; erosion; miscellaneous urban activities (e.g., irrigation flows, excess wash water, illicit discharges to streets and drainage facilities). Roadway storm water runoff is one of several components of NPS.

During dry weather, Las Vegas Wash water quality is affected by the discharge of sewage treatment plant effluent to the perennial portion of the lower Las Vegas Wash downstream of the project area, urban runoff, and ground water. Roadway runoff from Las Vegas is one of several components of the storm water runoff to Las Vegas Wash during wet weather. Within the project area, the primary sources of pollution are dry weather nuisance flows to Las Vegas Creek and, during wet weather, urban activities and soil erosion.

A National Pollutant Discharge Elimination System (NPDES) permit for municipal storm water discharges to Las Vegas Wash and its tributaries is jointly issued by NDEP to Clark County Regional Flood Control District; the cities of Las Vegas, North Las Vegas and Henderson; Clark County; and Nevada Department of Transportation. In compliance with this permit, dry weather and wet weather flows in major tributaries to Las Vegas Wash are monitored.

The overall mass pollutant load contribution of all NDOT roads to Las Vegas Wash are small, with elevated contributions of oil and grease and some total metals, when compared to tributary loadings. Only dry weather total dissolved solids (TDS), wet weather total suspended solids TDS and sediments, wet and dry weather bacteria, and phosphorous present potential threats to receiving waters. TDS loadings are primarily from ground water discharges. Bacteria loadings are not a concern with respect to project area roadway runoff. Table V-2 indicates the NDOT contribution to TDS and nutrient loadings is very small. The existing roadways at the sites of the proposed project are a very small portion of existing NDOT roads in Las Vegas Valley and presently contribute an even smaller proportion of these loadings. The existing impact of roadway runoff from the improvement sites to the surface water quality of area drainages is small and not adverse.

TABLE V-2

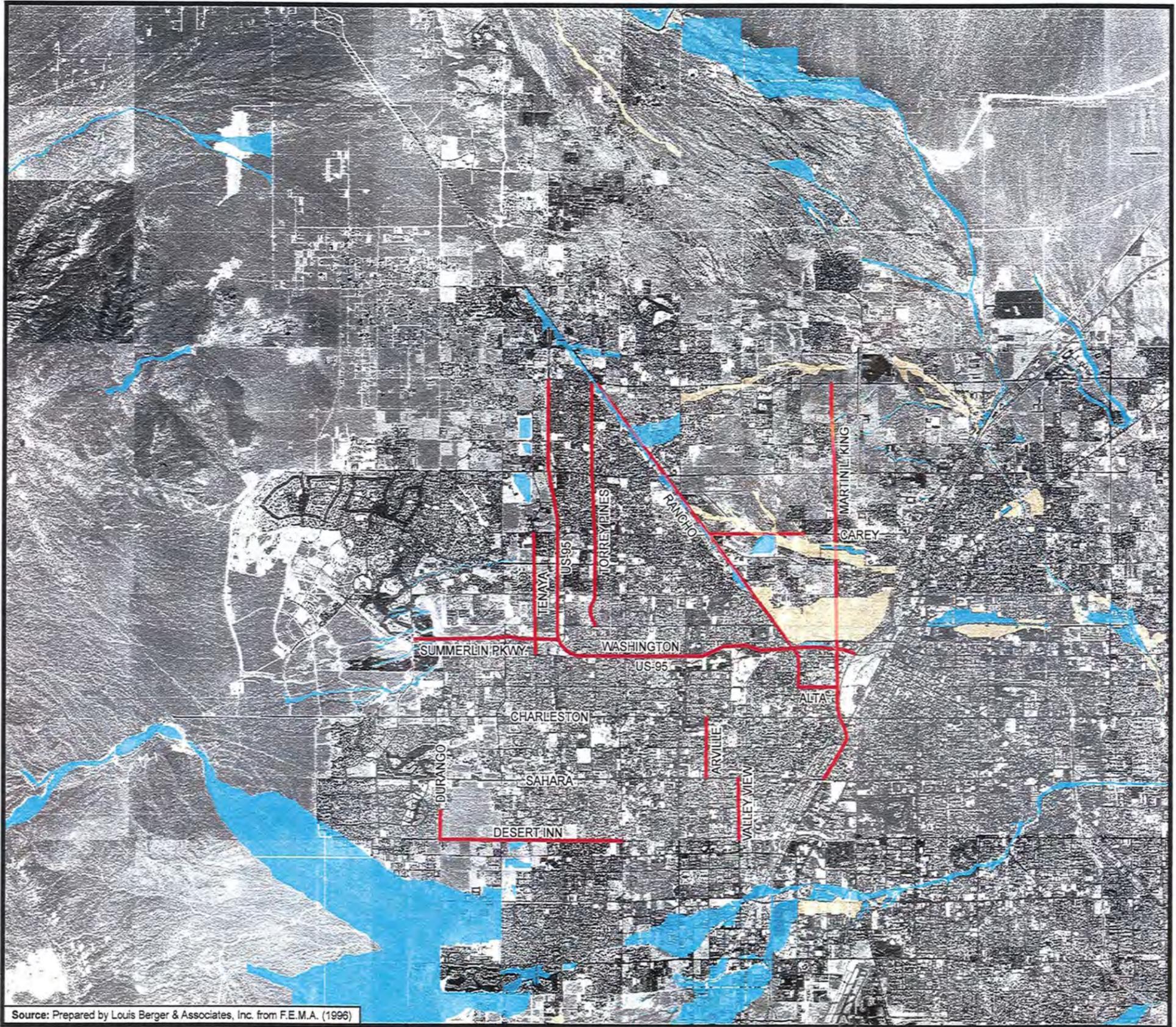
**NDOT ROADWAY RUNOFF  
CONTRIBUTION TO WET WEATHER NPS  
LOADS IN LAS VEGAS VALLEY**

Parameter	Estimated Annual Wet Weather Tributary Loads (tons)	Estimated Annual NDOT Roadway Loads (tons)	NDOT/Tributaries (Percent)
Oil and Grease	29	9	31
Total Suspended Solids	8000	568	7
Total Dissolved Solids	9500	145	2
Total Phosphorous	9	0.6	7
Total Nitrogen	68	5	7
Copper	0.5	0.06	12
Lead	0.7	0.5	71
Cadmium	0.05	0.01	20
Zinc	1.4	0.6	43
BOD	400	32	8
COD	2700	226	8

BOD: biochemical oxygen demand  
COD: chemical oxygen demand

Sources: Montgomery Watson (1997b); Louis Berger & Associates, Inc. (1997)

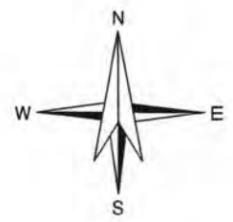
The Nevada 1996 Water Quality Assessment Report highlights concern for Las Vegas Wash that, in the reach between the wastewater discharge points and Lake Mead, the concentrations are attained that enable surface water quality standards for Lake Mead to be met. An assessment of dry weather and wet weather nonpoint source pollutant loadings in the Las Vegas Valley indicates that the impact of existing roadway runoff from within the project area to the surface water quality of area drainages is small and not adverse. The impact of existing roadway runoff from within the project area to the lower Las Vegas Wash between the wastewater discharge points and Lake Mead is minimal.



Source: Prepared by Louis Berger & Associates, Inc. from F.E.M.A. (1996)

**LEGEND:**

-  Special Flood Hazard Area Inundated by 100-Year Flood
-  Area of 500-Year Flood; Areas of 100-Year Flood with average depths of less than 1 Foot or with Drainage Areas less than 1 Square Mile; and areas Protected by Levees from 100-Year Flood.
-  Sites of Proposed Roadwork



NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
<b>Federal Emergency Management Agency Flood Areas</b>	
	FIGURE V-5

## B. Biological Resources

### 1. Vegetation

The project area is located in the Mojave desert scrub biome (Turner 1982). The boundaries of the project area are entirely within the Las Vegas metropolitan area; thus, only remnants of the undisturbed habitat occur in this heavily-urbanized and developed area. The majority of the US-95 project area, including existing and proposed right-of-way for the arterial streets, connectors, and US-95 are public roadway landscapes, suburban yards, or business landscapes. Vegetation along each of the arterial roadway sections and in vacant lots along US-95 and the Summerlin Parkway was surveyed. Arterial street connectors (i.e. Industrial Road and MLK Boulevard) have been urbanized for more than 40 years; there are no remaining areas of undisturbed native vegetation. Pockets of native vegetation survive in undeveloped lots along arterial streets, US-95, and Summerlin Parkway.

With the exceptions discussed below, these vegetation communities are dominated by creosote bush (*Larrea tridentata*) and bursage (*Ambrosia dumosa*). Table V-3 shows the acreage of undisturbed native vegetation found within the area of direct impact of the project, with the exception of the LVVWD North Well Field discussed below. No special status plant species were found in these areas.

On the south side of US-95 east of Valley View Boulevard, the approximately 180-acre Las Vegas Valley Water District (LVVWD) North Well Field property is surrounded by urban development within the City of Las Vegas. This parcel of land is unique because it contains the original spring sites that allowed historic Las Vegas to develop. These spring sites and downstream areas historically supported lush riparian habitat in stark contrast to the scant vegetation of the surrounding creosote dominated Mojave Desert. Consequently, this area has been utilized by humans for hundreds of years. Since 1924, with the drilling of the first well, this area has been dedicated to water production for Las Vegas. By 1947, the Las Vegas Valley artisan aquifer was sufficiently dewatered to reduce the spring flow to intermittent and later to no surface flow. Except for development of well sites, water storage, pumping and conveyance facilities, construction of a flood retention basin, and some dumping of fill material, native habitat still exists at this site.

The uniqueness of this site is enhanced by the fact that it represents the last natural desert riparian area in the Las Vegas Valley and that the site is now totally surrounded by urban residential and commercial development. Due to the abundance of native vegetation at the Las Vegas Valley Water District North Well Field, a detailed survey was performed on the North Well Field.

Three vegetation types were identified in the LVVWD North Well Field. These vegetation types were: desert riparian, which consisted of Fremont cottonwood (*Populus fremontii*) and Goodding willow (*Salix gooddingii*) overstory with a mesquite (*Prosopis* sp.), acacia (*acacia* sp.), and saltbush (*Atriplex canescens*) understory; desert shrub, characterized by creosote bush, white bursage, and saltbush; and invasive vegetation, consisting of saltcedar (*Tamarix chinensis*), Russian knapweed (*Centaurea repens*), star thistle (*Centaurea melitensis*), and horse nettle (*Solanum elaeagnifolium*).

**TABLE V-3  
Natural Vegetation Within the Area of Direct Impact  
(Excluding the LVVWD North Well Field)**

	Disturbed (Acres)	Disturbed (Acres)	Disturbed (Acres)
<b><u>FREEWAYS<sup>1</sup></u></b>			
US-95	15.0	14.3	0.7
Summerlin Parkway	21.8	21.8	0.0
<b><u>CONNECTORS</u></b>			
Martin Luther King Blvd /Industrial Road	0.0	0.0	0.0
Rancho Drive/Alta Drive	0.6	0.6	0.0
<b><u>ARTERIAL STREETS</u></b>			
Desert Inn Road	0.0	0.0	0.0
Arville Street	0.0	0.0	0.0
Martin Luther King Blvd.	17.6	15.7	1.9
Valley View Blvd.	0.1	0.1	0.0
Carey Avenue	4.8	4.7	0.1
Durango Drive	4.8	2.4	2.4
Rancho Drive	0.0	0.0	0.0
Tenaya Way	2.3	1.9	0.4
Torrey Pines	1.3	0.7	0.6
<b>TOTAL</b>	<b>68.3</b>	<b>62.2</b>	<b>6.1</b>

<sup>1</sup> Excludes fully disturbed areas within the existing US-95 NDOT right-of-way.

The community types delineated were based on dominant and co-dominant species (per Brown 1982, Sawyer & Keeler-Wolf 1995) found in the study area. Additionally, areas devoid of vegetation, including wells, storage facilities, and roads, were classified as facilities. Over forty-five percent of the LVVWD North Well Field is devoid of vegetation (Table V-4). Figure V-6 shows the distribution of these community types in the LVVWD North Well Field.

**TABLE V-4**  
**Vegetation Community Types in the North Well Field**

Source: Knight & Leavitt Associates, 1997

Community Type	Area (Acres)	Percent of Total
desert riparian	30	16.7
desert shrub	58	32.2
invasive	5	2.8
facilities (disturbed)	87	48.3
<b>Total</b>	<b>180</b>	<b>100.0</b>

The desert riparian community in the North Well Field is a remnant woodland associated with the historic water resources known as Big and Las Vegas Springs. Often termed “cieneegas” by explorers and settlers, this marsh-deciduous woodland type is distinctive. According to Hendrickson and Minckley (1985), cieneegas are a marshland-riparian vegetation associated with perennial springs and small headwater streams. Cieneegas are perpetuated by permanent, scarcely-fluctuating water, with little probability of scouring floods. Plants and plant communities typical to cieneegas and desert wetlands in the southwestern United States are described in Hendrickson and Minckley (1985) and Brown (1982). The desert riparian area at the North Well Field fits the cieneegas description, but the area is now a de-watered remnant of the original riparian zone. This remnant community supports an active localized fauna, and is a haven for migratory wildlife.

The LVVWD North Well Field desert riparian community consists of two main plant associations: cottonwood-willow forest; and mesquite-acacia-saltbush shrub. The cottonwood-willow forest occurs in the relict drainages of the defunct springs. The largest portion of the cottonwood-willow forest is found on the northern extent of the property adjacent to US-95. This cottonwood-willow forest extends along the historic outflow channels of Big and Las Vegas Springs and follows the two main drainages that eventually merge toward the east end of the property. The mesquite-acacia-saltbush association occurs interspersed with the cottonwood-willow forest and in areas throughout the LVVWD North Well Field. This vegetation type predominates at several sites, e.g. on flood plain terraces of the historic creek, around leaking water reservoirs, and at the spring mound.

There are 9 willow and 201 cottonwood trees in the northern portion of the LVVWD North Well Field that may be affected directly or indirectly by the proposed project. Large (greater than 16 inches [in] dbh) cottonwoods comprise over 40% of the cottonwood forest. Twenty-seven percent of the stand is composed of trees in the 12-16 in dbh class, and approximately 28% of the stand is in the 4-12 in dbh class. The stand is characterized by large, senescent cottonwood trees. This senescent stand is characterized by many dead and down trees. There is no evidence of seedlings or saplings (0-4 in dbh range) in the cottonwood forest along the relic stream bed/channel on the North Well Field. Young trees in this size class along the streambed/channel (less than 5%) are suckers from older individuals. There are a number of saplings scattered in other areas of the North Well Field.

Desert shrub vegetation accounts for an estimated 58 acres, or 32.2%, of the North Well Field. This vegetation is made up of creosote bush and mixed saltbush communities. One Mohave Yucca has been identified in the desert shrub vegetation area near US-95 and Valley View Boulevard. The Mohave Yucca is protected from commercial traffic, such as buying and selling, in the State of Nevada under NRS 527.060.

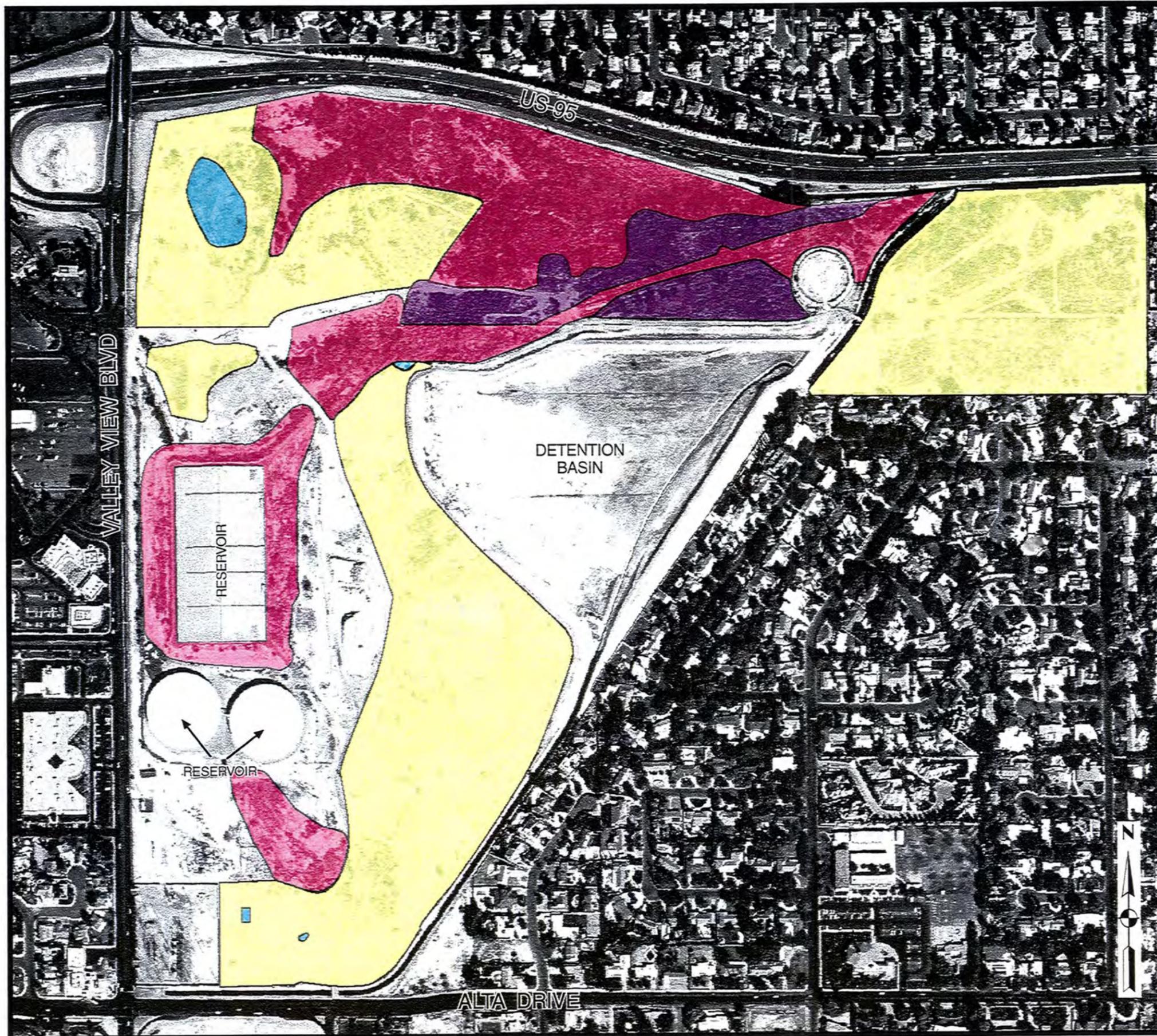
Invasive, non-native plant species, occur in patches within the major plant communities in the North Well Field. Supplemental water, from leaky storage reservoirs or surface drainage from well pumping, has been sufficient to modify local vegetation. This water has come to support several invasive, exotic plants. Non-native species having the largest geographic extent and most cover are Russian knapweed. Smaller patches of star-thistle and horse -nettle occur adjacent to the water reservoirs and in the cottonwood-willow community. Due to their small acreage, these latter two species appear to be recent invaders. However, a small plot of invasives bisect the riparian zone (cottonwood forest) and is made up almost exclusively of Russian knapweed. This plot is estimated at 5 acres (2.02 hectares), and it represents 2.8% of the North Well Field property.

Using data from the field survey it is estimated that about 87 acres (35.21 hectares), or 48.3%, of the North Well Field is degraded, with no permanent vegetative cover. Areas within this category include the detention basin, water reservoirs, pipelines, wells, and other surfaces.

#### **a. Special Status Species**

Five plant species with special federal status were identified by the U.S. Fish and Wildlife Service as potentially occurring in the project area (Table V-5) (FWS species letter dated 12/15/97, See Appendix B). Two of the five plants on the list, the Las Vegas bearpoppy and Merriam's bearpoppy are known to occur in the project area (Mistretta et al. 1996, Tepedino and Hickerson 1996, Morefield and Knight 1993). These plants are federal species of concern. The Las Vegas bearpoppy is also listed as critically endangered in Nevada and protected under Nevada Revised Statute (NRS) Section 527.260-.300.

Alkali Mariposa Lily, Las Vegas Cats-eye, and Yellow Two-tone Beardtongue were not observed during the field surveys. In addition, habitats appropriate to these species were not observed during

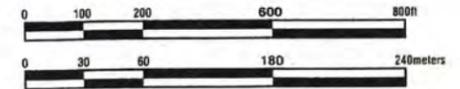


Las Vegas Valley Water District  
North Well Field

Vegetation Map

LEGEND

- DESERT RIPARIAN
- DESERT SHRUB
- INVASIVE <sup>1</sup>
- BEARPOPPY SITE
- DISTURBED



<sup>1</sup> Approximate area at time of survey

NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
LVVWD - NORTH WELL FIELD VEGETATION MAP
FIGURE V-6

the field survey. The Alkali Mariposa Lily is found in mostly alkaline clays in meadows surrounding spring areas. The Las Vegas Cats-Eye is found at elevations well above the elevation of Las Vegas (4,500 to 6,700 ft.) on white calcareous barrens. The Yellow Two-tone Beardtongue is also found at elevations above the elevation of Las Vegas (2,500 to 5,500 ft.) in intermittent washes in calcareous or carbonate rock outcrops and/or soils.

**TABLE V-5**  
**Plant Species With Special Status That May Occur in the US-95 Project Area**  
**Clark County, Nevada**

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal</u>				
		<u>Species Status</u>	<u>State Status</u>	<u>NNNPS Status</u>	<u>Suitable Habitat</u>	<u>Seen</u>
Las Vegas bearpoppy	<i>Arctomecon californica</i>	SC	CE	T	Y	Y
Merriam's bearpoppy	<i>Arctomecon merriamii</i>	SC	-	W	Y	Y
Alkali mariposa lily	<i>Calochortus striatus</i>	SC	-	W	N	N
Las Vegas cats-eye	<i>Cryptantha insolita</i>	SC	CE	PE	N	N
Yellow two tone beardtongue	<i>Penstemon bicolor ssp. bicolor</i>	SC	None	W	N	N

Source: U.S. Fish and Wildlife Service and Nevada National Heritage Program.  
(FWS species letter dated 12/15/97, See Appendix B)

Note: Federal Species of Concern (SC) are former category 2 candidate species under the Endangered Species Act which are afforded no legal protection under that law. State Critically Endangered (CE) species or subspecies of native flora determined by the state forester to be threatened with extinction and whose survival requires assistance under NRS Section 527.260-.300. No member of its kind may be removed or destroyed except under permit issued by the state forester. Northern Nevada Native Plant Society (NNNPS) status: T=Threatened; W=Watch - Potentially vulnerable taxa that requires monitoring and additional information to determine status, and PE = Possibly Extinct.

### Las Vegas bearpoppy and Merriam's bearpoppy

The Las Vegas bearpoppy has deeply toothed, densely hairy basal leaves. Between April and May when the species is in flower, several stalks emerge with a terminal, single yellow flower on each stalk, producing abundant seed. The stalks are leafless but hairy. This distinctive plant grows in gypsiferous soils, often growing on slopes and thriving in disturbed areas. These plants are endemic to the Mojave Desert. Although there are several populations of the Las Vegas bearpoppy in Las Vegas, it is considered by some experts in the field to be a declining species within its narrow range (Bair 1997, Morefield and Mistretta 1996; Marrs-Smith 1995). Efforts are being made by the local conservation community to protect remaining habitat in the Las Vegas urban area in hope that a federal listing as Threatened can be avoided.

Four populations of bearpoppy occur in the LVVWD North Well Field. At each location, they occur within the desert shrub vegetation type. The largest bearpoppy population on the LVVWD North Well Field consists of individuals of both species (Tepedino and Hickerson 1996). This is the only recorded site in Las Vegas where the two species co-exist. This population is located on gypsum fill material in the northwest corner of the LVVWD North Well Field, partly within the project area. The other three populations are smaller, in good health, and well removed from the Alternative B. They are not discussed in this report.

The gypsum habitat in the LVVWD North Well Field that is critical to the largest bearpoppy population covers approximately 1.35 acres (Figure IV-1) and is surrounded by a creosotebush shrub community. Forty-nine plants were counted in this population, but because the plants were not in flower at the time of data collection, no distinction could be made between the two species. Thirty-six of the 49 plants (74%) were dead. Of the 13 living plants, four (8%) are immature and nine (18%) are mature; all 13 are in very good health. These plants had many rosettes, and some had remains of flowering stems indicating successful seed production. No seedlings were noted, which is not unusual due to the lack of rainfall in spring 1997.

Life history patterns for bearpoppies (Meyer 1986, Sheldon 1994) show very high germination of seeds from the seed bank in years of above-average rainfall. An estimated 75% or more of the seedlings die before end of the first summer (Meyer 1986, Sheldon 1994). Those remaining rosettes will become mature, bloom, and set seed in future summers. Massive die-offs of mature rosettes is common with fungal pathogens implicated as one cause (Meyer 1986). The critical life history phase for this short-lived perennial is the small number of individuals that become established after germination of seeds. These plants are responsible for the large number of seeds that make it into the seed bank resident in gypsum soils. Without this large seed bank to draw from, the bearpoppies would not be able to survive the long droughts typical of desert ecosystems.

The pattern of individuals dying off during years of extended drought is consistent with observations of this plant at other locations (Sheldon 1994). The future viability of bearpoppies at any given site is in the seed bank found within the gypsum soil matrix. Overall viability of a site is also dependant on having enough surrounding habitat (creosotebush community) to support the native insects that are key pollinators of the bearpoppy (Tepedino and Hickerson 1996).

## 2. Wildlife

Remnant patches of wildlife habitat along each of the arterial roadway sections and in vacant lots along US-95 and the Summerlin Parkway were surveyed. Because of the urbanized nature of the arterial streets and land adjacent to US-95 and the Summerlin Parkway, there is no habitat that will support any of the animal species such as mammals and reptiles typical of the Mojave Desert except the LVVWD North Well Field. Bird species most commonly observed in suburban neighborhoods along arterial streets, connectors, and freeways in the project area include three introduced species, the rock dove (*Columbia livia*), house sparrow (*Passer domesticus*), and starling (*Sturnus vulgaris*), and a few adaptable native birds, such as the American robin (*Turdus migratorius*) and house finch

(*Carpodacus mexicanus*). Greater roadrunner (*Geococcyx californianus*) and American kestrel (*Falco sparverius*) were observed in vacant lots along Rancho Drive.

The LVVWD North Well Field is an isolated tract of mostly disturbed habitat in the city. Disturbances include numerous active and abandoned well sites, three large water storage facilities, an abandoned water storage facility, abandoned buildings, a 27-acre storm water detention basin, a concrete-lined channel crossing the parcel, and numerous gravel roads and dirt vehicle trails. In addition, fill material has been dumped in two locations and dikes constructed for control of surface flooding. Due to the extant native habitat at the LVVWD Well Field, a detailed survey was conducted on the North Well Field. The survey included trapping along transects, spotlight surveys, mist nets and visual surveys.

Three species of small mammals were recorded at the LVVWD North Well Field site during a total of 760 trap nights of effort. The most common small mammal species was the desert pocket mouse (*Perognathus [Chaetodipus] penicillatus*). A total of 26 different individuals were captured on 38 occasions. This species was captured in all transect lines, although it appeared to be most abundant in transects #2 and #4. Table V-6 shows the trapping results and estimated number of pocket mice along each transect line. One house mouse (*Mus musculus*) was captured in transect #5 and one white-tailed antelope squirrel (*Ammospermophilus leucurus*) was captured in transect #1. The desert pocket mouse and house mouse are primarily nocturnal while the antelope squirrel is diurnal. The house mouse is an introduced species that is frequently associated with urban and suburban areas.

Three antelope squirrels were also observed during the five survey days on the LVVWD North Well Field site. The antelope squirrels were associated with the saltbush and mesquite/acacia/saltbush habitats. Antelope squirrels were observed to feed extensively on mesquite seed pods.

**TABLE V-6**  
**Desert Pocket Mouse Live-Trap Capture Rates at the LVVWD North Well Field Site**  
**July 21-25, 1997**

Transect Line	Trap Nights	Total Captures	Number of Individuals	Estimated Number
#1	160	7	4	6
#2	160	9	7	12
#3	160	6	3	3
#4	160	14	11	15
#5	120	2	1	1
<b>Total</b>	<b>760</b>	<b>38</b>	<b>26</b>	<b>37</b>

Source: Knight and Leavitt Associates, July 1997

The Botta's pocket gopher (*Thomomys bottae*) may also be present at the LVVWD North Well Field site. Mounds of dirt characteristic of pocket gopher activity were frequently observed in the cottonwood and mesquite/acacia habitats. However, pocket gophers are not normally caught in Sherman live-traps and no special trapping effort was made to verify the source of the mounds. Botta's pocket gopher has been recorded by others at this site (Appendix A).

This lack of small mammal species diversity appears consistent with other survey efforts at the LVVWD North Well Field (K. Bardeen, LVVWD, pers. comm.). Other species common to creosotebush desert habitat in southern Nevada that would be expected to occur at the LVVWD North Well Field include Merriam's kangaroo rat (*Dipodomys merriami*), little pocket mouse (*Perognathus longimembris*), cactus mouse (*Peromyscus eremicus*), and desert woodrat (*Neotoma lepida*).

No bats were captured in mist nets on either night that the nets were set. Bat occurrence in all habitats was very low or non-existent. One western pipistrelle (*Pipistrellus hesperus*) was observed at dusk on July 21 flying over the concrete channel. Two other unidentified bats were observed at the concrete channel. It is possible that bat use may be higher in the spring and fall, but it is unlikely that bat use would ever be very common. All bat species with the potential to occur in the LVVWD North Well Field are insectivorous, and few insects were observed during the survey.

Two species of nocturnal predators were observed during the spotlight surveys. A coyote (*Canis latrans*) was observed in the central area of the LVVWD North Well Field site. Two gray foxes (*Urocyon cinereoargenteus*) were observed during the spotlight surveys. One gray fox was observed in the grassy area south of the circular storage tanks and another gray fox was found along the cinder block wall south of the mesquite/acacia habitat in the northeastern portion of the LVVWD North Well Field site. No canid dens were observed. Gray foxes are closely associated with deciduous woodlands throughout their range and in brushy vegetation in western North America (Fritzell and Haroldson 1982). At the LVVWD North Well Field site, the cottonwood-willow riparian area and mesquite/acacia/saltbush provide habitat for this species. The coyote is a highly-adaptable species and may be found in a wide variety of habitats including grasslands, deserts, and mountains (Befkoff 1982). Prey density does not appear to be sufficient to sustain predators year-round at the LVVWD North Well Field; thus, it is assumed that these species forage in areas outside the LVVWD North Well Field including subdivision yards where pet food is available.

Over 90 bird species, including migratory species, have been recorded at the LVVWD North Well Field between July 1997 and August 1998. Twenty-nine bird species were observed from July 21-25, 1997 either at the LVVWD North Well Field site or immediately adjacent to the area (Table V-7). Birds appear to use the LVVWD North Well Field site for nesting habitat, foraging, or as a migratory stop-over site. Several old nests were located in mesquite and cottonwood trees. The bird community at the LVVWD North Well Field site is extremely diverse. Of the species observed at the site, the warblers and verdins are foliage-gleaning insectivorous birds, the kingbirds and flycatchers are aerial insectivorous birds, the flicker is a bark-gleaning insectivorous bird, and the

killdeer is an insectivorous shore bird. Mourning doves are ground-foraging seed eaters. The red-tailed hawk is a predator on small mammals and reptiles, the falcons are aerial predators on birds, and the greater roadrunner is a predator on reptiles, small mammals, and birds.

Many of the bird species observed at the LVVWD North Well Field site are either directly or indirectly associated with the cottonwood riparian habitat. Field data collected in July 1997 show that over half of the species observed in this area were associated to some degree with the cottonwood habitat while only 16.7% of the LVVWD North Well Field is covered by this habitat. Many of the birds using the cottonwood riparian habitat also used the mesquite/acacia habitat in the northeastern portion of the LVVWD North Well Field. This habitat provides a productive semi-open foraging area for several bird species. Over a third of the bird species observed made use of this habitat.

Bird species using the LVVWD North Well Field are mostly habitat generalists that are able to exploit a variety of habitats. Habitat loss and fragmentation does not appear to have affected the bird community at the LVVWD North Well Field site to as great a degree as it has affected populations of small mammal and reptile species. This is to be expected as birds are highly-mobile and capable of finding and exploiting suitable habitat even in a fragmented landscape.

The most common species occurring on the LVVWD North Well Field site was the mourning dove. The mourning dove is known to use a wide range of habitats with the exception of deep or extensive forests. It appears to select more open woodlands, preferring edge habitat between prairie and forest for nesting habitat (Thomilson et al. 1994). Mourning doves were observed to use all habitats in the LVVWD North Well Field including the flood water detention basin. However, they were most abundant within the mesquite/acacia habitat and the riparian cottonwood habitat along the portion of the property adjacent to US-95. Mourning dove density in the three cottonwood habitat transects was 13.1, 6.9, and 36.0 birds per 100 yards.

Another common bird species was the house finch. This species used similar habitats as the mourning dove but occurred in lesser numbers. Some bird species appeared to be moving through the area and were observed only on one or two days. Examples of such transient birds included the western kingbird (commonly seen on July 21 and 22 but not observed on July 23-25), black phoebe, northern flicker, western burrowing owl, and the peep.

Some bird species were very habitat specific. The verdin and bushtit were primarily associated with the cottonwood riparian zone but occasionally they used the mesquite/acacia habitat. The Abert's towhee was found almost exclusively in the mesquite/acacia habitat and two individuals were captured in live-traps in transect #2 which was located in this habitat. A single killdeer was observed along the concrete channel and at one well site that was leaking water. Two coveys (approximately 18 birds) of Gambel's quail were observed on the LVVWD North Well Field site. These birds used the mesquite/acacia habitat and were more of a habitat specialist than many of the other bird species using the site.

The American kestrel was the most common raptor observed at the LVVWD North Well Field. Three counts of kestrels on the LVVWD North Well Field on July 22-24 resulted in 9, 7, and 9 birds being counted. The kestrels frequently perched on power poles, cottonwood snags, and mesquite.

**TABLE V-7**  
**Bird Species Observed in the Vicinity of the LVVWD North Well Field**  
**July 21-25, 1997**

<u>Common Name</u>	<u>Scientific Name</u>
American coot	<i>Fulica americana</i>
red-tailed hawk	<i>Buteo jamaicensis</i>
American kestrel	<i>Falco sparverius</i>
American peregrine falcon	<i>Falco peregrinus anatum</i>
Cooper's hawk	<i>Accipiter cooperi</i>
western burrowing owl	<i>Athene cunicularia hypugea</i>
killdeer	<i>Charadrius vociferus</i>
peep	<i>Calidris sp.</i>
Gambel's quail	<i>Callipepla gambelii</i>
black-chinned hummingbird	<i>Archilochus alexandri</i>
northern flicker	<i>Colaptes auratus</i>
lesser nighthawk	<i>Chordeiles acutipennis</i>
western kingbird	<i>Tyrannus verticalis</i>
black phoebe	<i>Sayornis nigricans</i>
morning dove	<i>Zenaida macroura</i>
rock dove	<i>Columba livia</i>
American robin	<i>Turdus migratorius</i>
northern mockingbird	<i>Mimus polyglottos</i>
hooded oriole	<i>Icterus cucullatus</i>
boat-tailed grackle	<i>Quiscalus mexicanus</i>
greater roadrunner	<i>Geococcyx californianus</i>
verdin	<i>Auriparus flaviceps</i>
bush tit	<i>Psaltriparus minimus</i>
Abert's towhee	<i>Pipilo aberti</i>
common raven	<i>Corvus corax</i>
house finch	<i>Carpodacus mexicanus</i>
lark sparrow	<i>Chondestes grammacus</i>
house sparrow	<i>Passer domesticus</i>
European starling	<i>Sturnus vulgaris</i>

Source: Knight and Leavitt Associates, July 1997

One pair of red-tailed hawks was consistently observed each day in the LVVWD North Well Field, and at least one immature red-tailed hawk was using the site. These birds were generally observed perching on power poles and cottonwood snags along the northern portion of the LVVWD North

Well Field. An inspection of cottonwood trees along the riparian area did not reveal any red-tailed hawk stick nests, but the trees were fully leafed out and viewing conditions for finding nests were poor.

Other raptor species observed on the site included a Cooper's hawk in the cottonwood riparian habitat, peregrine falcons and a western burrowing owl (discussed below).

Four reptile species were observed on the LVVWD North Well Field. These were the side-blotched lizard (*Uta stansburiana*), western whiptail lizard (*Cnemidophorus tigris*), desert spiny lizard (*Sceloporus magister*), and coachwhip snake (*Masticophis flagellum*). Other reptiles observed at the LVVWD North Well Field, the great basin gopher snake (*Pituophis melanoleucus*) and desert night lizard (*Xantusia vigilis*), were recorded by other investigators (Appendix C). Only four side-blotched lizards and three western whiptail lizards were observed during the survey. Observations of these two lizard species were restricted to the saltbush habitat, areas of mesquite adjacent to the cottonwood riparian habitat, and at abandoned well sites which were devoid of vegetation. The desert spiny lizard was observed in only one location and this was along a 440 yard length of a cinder block wall on the south side of the northeastern portion of the LVVWD North Well Field. Several common reptile species that would be expected to occur in these habitats were not observed. These include desert iguana (*Dipsosaurus dorsalis*), zebra tailed lizard (*Callisaurus draconoides*), desert horned lizard (*Phrynosoma platyrhinos*), black-collard lizard (*Crotaphytus insularis*), longnose leopard lizard (*Gambelia wislizenii*), western banded gecko (*Coleonyx variegatus*), side winder (*Crotalus cerastes*), longnose snake (*Rhinocheilus lecontei*), common king snake (*Lampropeltis getulus*), night snake (*Hypsiglena torquata*), western patchnose snake (*Salvadora hexalepis*) and western ground snake (*Sonora semiannulata*). Reptiles have limited mobility and are easily affected by habitat degradation and fragmentation, which may account for why these species were not observed.

One large adult Woodhouse's toad (*Bufo woodhousei*) was observed on two nights in the cottonwood riparian habitat on the northern portion of the LVVWD North Well Field. This toad was using an area temporarily flooded with water from a well that had recently been placed into service. The ground in this area was very damp throughout the survey period. This site was also close to the concrete channel located along the northern boundary of the LVVWD North Well Field. Presumably the Woodhouse's toad would breed in the concrete channel which appears to contain water throughout the growing season.

#### a. Special Status Species

The U.S. Fish and Wildlife Service identified 17 species with special federal status as potentially occurring in the US-95 project area, including three birds, three reptiles, and eleven mammals (Table V-8) (FWS species letter dated 12/15/97, See Appendix B). Of these 17 species, **suitable habitat exists within the LVVWD North Well Field for four species**. Two of these - American peregrine falcon and Western burrowing owl - were observed in the North Well Field during the July, 1997 surveys. The other two species, the desert tortoise and the greater western mastiff bat, were not

observed during the July, 1997 surveys. Of the additional thirteen special status species identified in Table V-8, none were observed during the field surveys and no habitats suitable to support these species were observed (see Table V-8a). Surveys of the arterial streets and vacant lots adjacent to US-95 and Summerlin Parkway indicate that no suitable habitat exists for special status species in any of these areas.

**TABLE V-8**  
**Wildlife Species With Special Status That May Occur in the US-95 Project Area**  
**Clark County, Nevada**

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal Status</u>	<u>State Status</u>	<u>Suitable Habitat</u>	<u>Species Seen</u>
<u>Birds</u>					
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	P	N	N
American peregrine falcon	<i>Falco peregrinus anatum</i>	E	P	Y	Y
Western burrowing owl	<i>Athene cunicularia hypugea</i>	SC	P	Y	Y
<u>Reptiles</u>					
Desert tortoise	<i>Gopherus agassizii</i>	T	T	Y	N
Banded gila monster	<i>Heloderma suspectum cinctum</i>	SC	P&R	N	N
Chuckwalla	<i>Sauromalus obesus</i>	SC	NS	N	N
<u>Mammals</u>					
Spotted bat	<i>Euderma maculatum</i>	SC	T&P	N	N
Greater western mastiff-bat	<i>Eumops perotis californicus</i>	SC	NS	Y	N
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	SC	NS	N	N
California leaf-nosed bat	<i>Macrotus californicus</i>	SC	NS	N	N
Small-footed myotis	<i>Myotis ciliolabrum</i>	SC	NS	N	N
Long-eared myotis	<i>Myotis evotis</i>	SC	NS	N	N
Fringed myotis	<i>Myotis tisanodes</i>	SC	NS	N	N
Long legged myotis	<i>Myotis volans</i>	SC	NS	N	N
Yuma myotis	<i>Myotis yumanensis</i>	SC	NS	N	N
Big free-tailed bat	<i>Nyctinomops macrotis</i>	SC	NS	N	N
Pale Townsend's big-eared bat	<i>Plecotus townsendii pallescens</i>	SC	NS	N	N

Source: U.S. Fish and Wildlife Service and Nevada Natural Heritage Office, (FWS species letter dated 12/15/97, See Appendix B).  
Note: Federal status = Endangered (E), Threatened (T), Candidate (C), and Species of Concern (SC). Species of Concern are former category 2 candidate species under the Endangered Species Act which are afforded no legal protection under that law. State status = Threatened (T); Rare (R); and Protected (P) - Species which is protected from hunting or killing.

TABLE V-8a  
Wildlife species with special status in Clark County, Nevada Without Appropriate Habitat in the Project Area

Common Name	Scientific Name	Habitat Requirement
<b>BIRDS</b>		
Southwestern willow flycatcher	<i>Empidonax traillii eximius</i>	riparian areas along streams, rivers, or other wetlands
<b>REPTILES</b>		
Banded gila monster	<i>Heloderma suspectum cinctum</i>	heavy brush, intermittent streams, wash-beds and canyon bottoms
Chuckwalla	<i>Sauromalus obesus</i>	rocky desert areas, creosote bush, lava-flows, rocky hillsides
<b>MAMMALS</b>		
Spotted bat	<i>Euderma maculatum</i>	cliff dwellings, pinyon-pine/juniper associations, or open scrub associations in desert areas
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	forested mountainous areas
California leaf-nosed bat	<i>Macrotus californicus</i>	desert shrub below 3000 feet, desert washes with riparian vegetation
Small-footed myotis	<i>Myotis ciliolabrum</i>	hibernation in caves or mine tunnels
Long-eared myotis	<i>Myotis evotis</i>	elevations ranging between 6000 to 9600 feet.
Fringed myotis	<i>Myotis thysanodes</i>	desert, arid grasslands and woodlands, 3800 to 6600 feet
Long legged myotis	<i>Myotis volans</i>	widespread except in lowland deserts, coniferous woodlands
Yuma myotis	<i>Myotis yumanensis</i>	streams or lakes
Big free-tailed bat	<i>Nyctinomops macrotis</i>	ruined, rocky country; high canyon walls
Pale Townsend's big-eared bat	<i>Plecotus townsendii pallescens</i>	coniferous forests, woodlands, deciduous riparian woodland, or semi-desert and montane shrublands

### **American peregrine falcon**

This wide-ranging species may occur in almost any habitat. The breeding territories of peregrine falcons center on cliffs that are in wooded/forested habitats, with large "gulfs" of air nearby in which these predators can forage (Hubbard 1985). The nest sites are typically ledges or potholes, with the 3-4 eggs being laid directly on the bare substrate. Chris Thomlinson (NDOW biologist, pers. comm.) Reported that peregrines were "hacked" for a few years at the Hilton Hotel starting in 1989, and one pair nested there around 1994. Another peregrine pair reportedly nested at the Bank of American building in 1996. This site is a few miles west of the North Well Field property. Peregrines are also reported to hunt waterfowl at the Las Vegas sewage treatment facility in Henderson, and peregrines are occasionally reported in the Red Rocks Recreation Area west of Las Vegas. Although an active peregrine nest is suspected in the Las Vegas Valley, NDOW has not attempted to follow up on reports of peregrine sightings (Chris Thomlinson, pers. comm.).

The scope of the peregrine falcon inventory for this project was limited to trying to document the bird and its habitat in the project area. In addition, information was obtained from personal communications with representatives of the Nevada Department of Wildlife, U.S. Fish and Wildlife Service, Water District personnel and local avian enthusiasts. Systematic research on this species in the Las Vegas Valley is very thin. It is believed that only two pair of peregrines are currently using the Las Vegas Valley. This includes a pair on the west side (using the North Well Field) and an east side pair which exploits resources in the Las Vegas Wash. In general however, the peregrine falcon is believed to be increasing in numbers within the Colorado Plateau and adjacent areas (Cade et al. 1997), but population recovery in the desert southwest and central California has been slow (Wootton and Bell 1992). Currently there is considerable debate over a proposal to delist the peregrine falcon (Cade et al. 1997, Pagel et al. 1996).

Peregrine falcons have demonstrated some adaptability for nest site selection and are reported to use a variety of man-made structures for nesting (Cade et al. 1997). However, peregrine falcons require high prey densities for successful foraging and frequently take up to three birds daily (Dekker 1997). There are few areas in the Las Vegas Valley providing the high quality hunting opportunities found at the North Well Field site. At this time, only the Las Vegas Wash is thought to be a prime habitat for this species outside of the North Well Field Property.

There are no suitable nesting sites in the LVVWD North Well Field. The high density of mourning doves and the presence of suitable perch sites in cottonwood snags and on power poles provides suitable foraging habitat for the American peregrine falcon. Two peregrine falcons were observed at the site on July 24, 1997; one captured a mourning dove on the property and both used perches on the property.

### **Western burrowing owl**

This species breeds from southern Canada throughout the western United States and Mexico. The owl winters in the southwestern United States and Florida, and Mexico. It inhabits open areas in the

desert, grasslands, and agricultural fields. There is concern for this owl due to habitat loss and degradation through urban expansion and agricultural practices. One western burrowing owl was observed at the LVVWD North Well Field. The burrowing owl was observed during two different passes while spot lighting on July 22. It was observed both times on a graded area east of the large rectangular water reservoir.

### **Desert tortoise**

The desert tortoise, a large, herbivorous reptile is widely distributed over portions of the Mojave, Sonoran, and Colorado deserts of the western United States and northwestern Mexico. In Nevada, the desert tortoise typically inhabits creosote bush scrub within valleys and on low bajadas and subsists on a variety of annual flowers, perennial grasses, and small shrubs. Tortoises are adept diggers, preferring consolidated alluvium as the substrate for burrow construction. However, burrows are often found in less optimal conditions. Burrows may be constructed in a variety of locations, including under boulders, beneath canopies of shrubs, in wash embankments, or in the open (Woodbury and Hardy 1984; Burge and Bradley 1976; Coombs 1977). Burrow depth ranges from shallow "pallets" that are used during active periods to deeper, more extensive burrows that are used during periods of inactivity (Woodbury and Hardy 1984). Water is acquired through forage and through drinking from puddles after spring and summer rain showers (Medics et al. 1982).

The western Mojave populations of desert tortoise, which comprise the majority of all extant desert tortoise populations, occur at elevations of 2,000-3,700 feet above mean sea level in creosotebush, alkali sink and tree yucca habitats in valleys, alluvial fans and low, rolling hills (Spang et al. 1988).

In recent years, populations in portions of the species' range have been declining. This decline has been attributed to habitat loss, collection of animals for the pet trade, off-road vehicle use, indiscriminate killing, habitat fragmentation attributed to paved roads, and an upper respiratory disease that has been found in many populations.

The desert tortoise was federally-listed as endangered under emergency provisions of the ESA on August 4, 1989 (54 Federal Register 32326). This latter listing was changed to threatened on April 2, 1990 (55 Federal Register 12178). A recovery plan, the Desert Tortoise (Mojave Population) Recovery Plan, has been prepared and desert tortoise populations in Clark County are considered to be part of the Northeast Mojave Desert Tortoise Recovery Unit (USFWS 1994). The desert tortoise is listed as a protected reptile in Nevada under Section 501.110.1 (d) of the Nevada Revised Statutes and as threatened under Section 503.080 of the Nevada Administrative Code. It is also listed as protected and rare outside the urban areas of Clark County under Section 503.080.1 (a) of the Nevada Administrative Code, and it is unlawful to transport animals across state lines without written permission from NDOW.

At least one desert tortoise was released at the North Well Field site during this decade but it has never been subsequently observed (Kristen Bardeen, pers. comm.). The LVVWD biologist believes that potential habitat, although fragmented, exists at the North Well Field. However, no desert

tortoises have been observed at the LVVWD North Well Field for at least five years (K. Bardeen, LVVWD, pers. comm.). A desert tortoise survey of the area of direct impact on the North Well Field on August 14, 1998 by the Barrick Museum of Natural History and the Harry Reid Center for Environmental Studies personnel concluded that the direct impact area for Alternative B contains no tortoise habitat.

No desert tortoises were observed on the North Well Field site during the surveys of July 21-25, 1997 or August 14, 1998.

Tortoise survey work in Las Vegas has shown that tortoises are generally absent from desert habitat that is bordered by developed land on two or more sides. Loss of tortoises from sites such as the North Well Field can be attributed to pet collection, vandalism, and vehicle impacts when attempting to cross high traffic volume roads. In addition, these sites become isolated from surrounding desert and risk of populations extinctions due to demographic and environmental stochastic events is high. Upon extinction there is virtually no probability of population recovery through immigration.

#### **Greater western mastiff bat**

Greater western mastiff bat occurs throughout the southwest to central Mexico. It has been documented in southern California, southern Nevada, southern New Mexico, and western Texas. It is found in a variety of habitats including desert, chaparral, oak woodlands, and pine forests. This bat roosts in cliffs and occasionally in buildings. The greater western mastiff bat forages over riverine and riparian areas, desert washes, and meadows. This species is threatened by actions that destroys or disturbs roost sites and forage areas, such as urban expansion, water impoundments, quarry operations, highway construction, and recreational rock climbing. Mastiff bats have been documented in the Las Vegas Valley but not at the North Well Field site. It is not likely that this bat occurs at the North Well Field.(M. O'Farrell, pers. comm.).

### **3. Waters of the United States**

Section 328.3 of the regulatory program of the U.S. Corps of Engineers (33 CFR parts 320 through 330, Federal Register, November 13, 1986) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps of Engineers under the Clean Water Act. Intermittent streams (328.3(a){3}) and tributaries of rivers and streams, including intermittent streams, (328.3(1){5}) are waters of the United States.

Waters potentially affected by the proposed project are drainageways which are tributaries to Las Vegas Wash where it is intermittent. Las Vegas Wash is perennial only downstream of the project area. Most of the potentially affected drainageways are intermittent with no flow most days of most years except for nuisance flows from landscape overwatering.

Regional General Permit #006 of the Sacramento District of the U.S. Army Corps of Engineers authorizes the Nevada Department of Transportation to discharge up to 2,000 cubic yards of fill

material in waters of the United States within the State of Nevada for the construction and maintenance of bridges or culverts. All but a few of the drainageways within the project area fall under the General Permit. Excluded from this General Permit are wetlands; perennial streams; waterways which provide habitat for Federally-listed, proposed, or candidate threatened or endangered species; waterways designated or being considered for Federal or State Wild and Scenic River classification; or work on or adjacent to sites identified or eligible for inclusion in the national Register of Historic Places.

A Clean Water Act §404 jurisdictional wetland determination and delineation was conducted for arterial and connector streets and US-95 outside the LVVWD North Well Field in November 1997. Only one jurisdictional wetland was identified. This wetland was located on vacant land southeast of the intersection of Durango and Desert Inn. The wetland was approximately two acres and was situated on land managed by the Bureau of Land Management. Dominant overstory species included saltcedar and Goodding willow. Cattails (*Typha* sp.) were abundant in the herbaceous layer. Wetland hydrology was maintained by irrigation and storm water runoff collected in a drainage channel that terminated at the site. Mourning doves were numerous at this site, and two unidentified raptors were observed perched on power poles east of the wetland.

A potential wetland was identified in a storm water drainage channel east of Martin Luther King Boulevard and north of Alexander Boulevard. Vegetation at this site was dominated by cattails (an obligate wetland species), Goodding willow, and saltcedar (both facultative wetland species); thus hydrophytic vegetation was present. However, wetland hydrology and hydric soils were absent. Because only one of the three wetland indicators was present, this area is not a jurisdictional wetland.

A culvert crossing of a drainage on Rancho Drive near Michael Way supported wetland vegetation (i.e. cattails) at the inlet and outlet. Each of these areas was approximately 0.001 acres. Due to the small size of these areas and absence of any proposed direct impacts to the sites, no determination was made.

The potential for wetlands in the LVVWD North Well Field, which includes the Las Vegas Springs Archeological Site National Register Site, was assessed in the field with representatives from the U.S. Army Corps of Engineers (ACOE), U.S. EPA (EPA), and USDA Natural Resources Conservation Services (NRCS) on June 25, 1998. This cursory investigation did not include taking soil samples as surface disturbance at the North Well Field is allowed only with authorization from the State Historic Preservation Officer (SHPO). It is likely that only relict hydric soils not meeting jurisdictional wetland criteria would be found at the site. Ground water levels are not suitable to maintain wetland hydrology and surface water flow is not frequent or prolonged enough to create hydric conditions (D. Merkler, NRCS, pers. comm.).

Within the Las Vegas Springs Archeological site, the relic stream bed/channel from the defunct Las Vegas Spring to the Las Vegas Creek is considered to be a jurisdictional water of the United States. The stream bed/channel is nearly one-half mile in length and traverses diagonally across the northern

part of the North Well Field, intercepting the US-95 right-of-way line about 1/2 mile east of Valley View Boulevard. It is overgrown with desert riparian and invasive vegetation. The stream bed/channel is dry except when inundated by water pumped from nearby LVVWD wells during routine maintenance and well cleaning activities. Since the relic stream once conveyed spring waters rather than storm runoff, the channel is not a flood conveyance facility.

### C. Cultural Resources

“Las Vegas,” which means “the meadows” in Spanish, is the name for both the Valley and the City which encompass the project area. A spring-fed creek once flowed through this Valley (Las Vegas Creek) and supported a meadow which extended nearly one hundred acres in the area where the present-day US-95 passes the Las Vegas Valley Water District’s North Well Field. This desert oasis became an important stop on a pack trail linking Utah and California, and later provided an access corridor to the west coast. This abundant source of water also provided an oasis for both wildlife and human populations. Numerous processes, including prehistoric and historic land clearing and historic ground water production, have destroyed the original lush riparian setting that once characterized the area. The Las Vegas Valley has been a major focus of human activity and occupation for thousands of years.

Prehistoric occupation is represented by four major temporal periods: the PaleoIndian, Archaic, Formative and Protohistoric. Paleontological and archaeological data suggests that the Las Vegas Valley was not always hot and dry. Current evidence indicates that during the PaleoIndian Period (13,000 to 10,000 B.P.) and Lake Mojave Period {the Archaic} (9,000 to 7,500 B.P.), local environmental conditions and climate were wetter and more temperate. The Lake Mojave Period is characterized as a lacustrine-oriented hunting and gathering subsistence-based prehistoric population. There are periods throughout the region’s prehistory where large scale environmental fluctuations occurred, providing a greater diversity of environmental resources to be exploited and allowing agricultural production to be practiced.

Archaeological investigations reveal that initial Las Vegas Valley utilization began sometime between 13,000 and 10,000 B.P. This PaleoIndian occupation is termed the Tule Springs Period and was characterized by Pleistocene big-game hunting.

The big-game hunters of the PaleoIndian Period were followed by lacustrine-focused hunters and gatherers who occupied the valley between 10,000 and 7500 B.P which archaeologists refer to as the Lake Mojave Period. The Archaic Period is divided into the Lake Mojave and Pinto-Gypsum Periods based on dated stratigraphic sequences exposed in rock shelter sites located within the eastern Great Basin and the Colorado Plateau.

Current archaeological evidence suggests these lacustrine-adaptive hunting and gathering behaviors were replaced by later desert-adapted Pinto-Gypsum Period hunters and gatherers who could better respond to the increasingly arid environment of the Las Vegas Valley. This Pinto-Gypsum Period dates between 7500 and 1500 B.P. in the Las Vegas region and reflects a wide range of resource

zones exploited by seasonally transient populations who appear to have increasingly relied on gathering seeds, nuts, berries, and other wild food stuffs.

The Formative Period is characterized by an agricultural economy with sedentary villages and various limited activity sites. It is hypothesized that Anasazi populations played a major role in the prehistory of the Las Vegas Valley during the Formative Period, which dates between A.D. 300 and A.D. 1250. The principal associated cultures are the Virgin Anasazi, who were centered near the Virgin and Muddy Rivers in the Moapa Valley to the northeast and the Patayan, found to the south along the Colorado River in Arizona and California.

Between A.D. 1200 and 1250 Anasazi populations abandoned the region which appears to have resulted in a partial occupational hiatus for nearly 350 years. This was eventually filled by the arrival of Paiute groups after A.D. 1550. Prior to and during this hiatus, however, the area was populated to some degree by the Patayan.

The Patayan thrived as a cultural entity from A.D. 500 to 1500 which was subdivided into the Patayan I (A.D. 500-1050) and Patayan II (A.D. 1050-1500) periods. They maintained villages and temporary camps which were distinguished by various rock alignments and rock shelters as well as the use of simple pottery including various buff, beige, and redwares. The Patayan are thought to have occupied the Las Vegas Valley based on the presence of diagnostic buff-ware ceramics at several sites.

Data regarding Paiute utilization of the Las Vegas Valley during the Protohistoric Period (A.D. 1500 to 1855) is limited to a small number of ceramic sites (predominately brown plainwares or corrugated ceramics) and /or diagnostic projectile points (e.g., Desert Side-notched) recovered from surface deposits. The Paiute are one of the few transient human populations to use ceramics. Most of the Paiute material culture assemblage appears to be orientated toward food procurement including rabbit snares and nets, wooden crooks for hunting smaller game, woven baskets, and a generalized chipped-stone tool kit.

The late 1800s saw the arrival of Euro-American settlers to the region, initially for trapping, but soon for purposes of mining. The Historic Period begins between 1844 and 1855 for the Las Vegas Valley. Frontiersmen knew of the Las Vegas Valley as early as the 1840s, with John C. Fremont recording his trip through the valley in his 1843-1844 journals. The Southern Paiute Indians occupied the valley in the 1840s when the first EuroAmerican explorers entered the region. At permanent spring sites such as Big Springs (the Las Vegas Springs National Register Site), the Paiutes raised small crops of corn, beans and pumpkins.

The American Southwest was acquired by the United States in 1848, following the war with Mexico. Southern Nevada became a corridor for immigrants and gold seekers on their way to California.

Warren's investigations (University of Nevada at Las Vegas [UNLV]) demonstrate an early EuroAmerican usage and settlement in the project area. Big Springs and several other adjacent

spring sources formed the headwaters of the Las Vegas Creek. Approximately three miles east of Big Springs (just outside the project area) lies the first EuroAmerican settlement in the Valley, the original 1855 Mormon Mission/Fort. After abandonment by the original Mormon settlers, there was intermittent usage of the Fort as a way-station and temporary encampment site. In 1860, the Knapp brothers bought the Fort and began ranching operations. In 1865, O.D. Gass bought the property and established a major program of ranching, farming, trading and land acquisition. In January 1878, he bought the Spring Ranch which encompassed the present day Las Vegas Valley Water District North Well Field. The Spring Ranch, originally called "Spring Rancho," is believed to have started as early as 1871, however, hard evidence of such an early start still remains to be derived. EuroAmerican utilization of the site, however, was well established by 1875 and continued without interruption until the present day.

In 1880, Stewart acquired the Spring Rancho and in 1902, his widow, Helen Stewart, sold both the Las Vegas Rancho and the Big Springs property to the San Pedro, Los Angeles, and Salt Lake City Railroad Company. A portion of this company was subsequently formed into the Las Vegas Land and Water Company. In 1921, the Land and Water Company was purchased by the Union Pacific Railroad, and by 1924 wells were being drilled at the Big Springs site. Eventually, the Land and Water Company became the Las Vegas Valley Water District (LVVWD) whose operations continue to supply water to the Valley.

The combination of prehistoric, protohistoric, and historic cultural components, as well as the preservation of various features (pit houses, possible pueblo rooms, hearths, pits, historic structures, historic well pads/towers, etc.) makes the Big Spring site one of the two most important sites still remaining in the Las Vegas Valley to the present day.

## 1. Methodology

An archaeological and historic architectural survey of the project area was completed with eight (8) cultural resources located within the project area. This includes six (6) previously recorded archaeological sites and two (2) newly recorded archaeological sites. No isolated artifacts were observed. The eight site numbers and descriptions are:

26Ck948	Las Vegas Springs Site Complex; prehistoric, protohistoric, and historic.
26Ck949	Spring Mound/Prehistoric midden with fire-cracked rock, sherds/lithics (part of 948).
26Ck3848	Remnants of the Old Spanish Trail and Mormon Trail, with part possibly located on 948.
26Ck1647	Historic road bed.
26Ck1767	Prehistoric lithic and historic trash scatter.
26Ck2451	Historic (1940s) house foundation.
26Ck5443	Historic trash dump and historic roads, ca. 1880's and/or 1910's to 1950's.
26Ck5444	Prehistoric (Archaic and Anasazi) lithic and sherd scatter.

Other than the Las Vegas Springs National Register site, no historic buildings or potential historic architectural districts were identified within the area that might be directly affected, although a portion of the historic Union Pacific Railroad was found. However, further study demonstrated that no historical integrity remains for this small segment of the rail line.

An ethnographic study of the site was completed. At the request of the Nevada State Historic Preservation office, concerned Native American Tribes and groups were consulted.

To evaluate possible impacts, an area of potential effect (APE) was defined in consultation with the Nevada State Historical Preservation Office, to include the area anticipated to be disturbed by proposed improvements. At the LVVWD North Well Field, this included an area approximately 200 feet wide abutting US-95 along the northern edge of the North Well Field for ground disturbing activities. The APE was defined as 150 feet for the architectural survey.

Other forms of impacts to cultural resources, especially standing historic architectural resources, may be derived from visual, audible, and/or atmospheric elements. Such impacts constitute adverse effect(s) as defined in 36 CFR 800.9 (b) (3). With the exception of the Las Vegas Springs National Register Site, there are no impacts to eligible cultural resources from visual, audio, or atmospheric modification from the proposed project.

Archaeological testing was conducted at five sites. At the most sensitive site, the Las Vegas Springs National Register Site, testing was performed by the Harry Reid Center for Environmental Studies at UNLV.

## 2. Las Vegas Springs National Register Site

The Las Vegas Valley Water District North Well Field, south of US-95 between Valley View Boulevard and Rancho Drive, contains the Las Vegas Springs National Register Site. This site complex encompasses three numbered archaeological sites, 26Ck948, 26Ck949 and 26Ck3848 and is the most important of the cultural resources identified within the project area.

As listed by the Keeper of the Register to the National Register on December 14, 1978, the Las Vegas Springs National Register Site currently contains 33.5 acres and encompasses portions of two sites. Site 26Ck948 contains prehistoric, protohistoric, and historic materials/features, and Site 26Ck3848 (the Mormon Road), was thought to have passed through this location, although no evidence of this historic road has yet been discovered on the North Well Field property (see discussions in Seymour *et al.* 1998:304). Site 26Ck949, while considered as part of the National Register District, lies outside the APE and is not addressed.

In boundaries currently defined by Seymour and Warren (1998), Site 26Ck948 encompasses a large, flat area extending between the Big Springs Channel and Las Vegas Creek, and measuring approximately 725 meters east/west by 250 meters north/south (181,250 square meters). Based on recent studies by the Nevada Department of Transportation (NDOT) and the Harry Reid Center for

Environmental Studies (HRC) at UNLV, the Federal Highway Administration (FHWA) has determined, and the Nevada State Historic Preservation Officer (NV SHPO) has concurred, that the existing boundaries of the National Register District will be expanded to encompass all contributing features and associated artifactual materials (i.e., the full 181,250 square meters), and considered a 4(f) property. (See Alice Baldrice, SHPO, letter dated 2/3/98 for eligibility concurrence.)

The Las Vegas Springs National Register Site was listed on the National Register of Historic Places on December 14, 1978 for the significance of its prehistoric and historic archaeology, and its historic architecture and engineering.

In 1937, William S. Park undertook archaeological excavations at what was then called the Big Springs Site (Site 26Ck948). According to local historic accounts and catalog cards on file at the Lost City Museum, Park excavated five prehistoric rooms at this location which he attributed to the prehistoric Indian cultures of the southwest. These five rooms were apparently contiguous, above-ground structures composed of puddled adobe displaying slightly rounded rectangular shapes. These prehistoric structures excavated at the site were destroyed by the construction of one of the larger LVVWD storage reservoirs.

Dr. Warren believes the earliest site occupation begins prior to A.D. 500, most likely dating to the Middle or Late Archaic Period. This argument is based upon the discovery of characteristic projectile point types with a cluster of lithic materials whose style were typical of Archaic manifestations as well as a total absence of ceramic remains on the site. Seymour, et. al. (1998b:2.215) now suggest that there ".....is strong evidence of a human presence at Big Springs for the last 5,000 years" (i.e., 3,000 B.C.)

These studies indicate that the site complex was occupied sometime between A.D. 500 and A.D. 1150 by prehistoric populations believed to be Virgin Anasazi people, based upon the similarities in ceramic types and styles when compared to material collected within the Muddy River Valley where these prehistoric populations are known to occur. Dr. Warren suggests that Paiutes subsequently utilized the site intermittently, perhaps seasonally, during the post-pueblo period.

Initial investigations by UNLV also revealed historic EuroAmerican materials and features. During their investigations at Site 26Ck948, UNLV observed a large (approximately 30 foot in diameter), shallow depression located in the southeastern section of the site complex. Within this depression, the team recovered numerous historic period artifacts, plus discovered "charred limbs" of wood, probably reflecting the remains of a burnt wooden roof. Dr. Warren believes he found the remains of an historic house which had burned down and was not rebuilt. Based on associated artifactual material, especially a bullet, UNLV postulates possible house construction beginning sometime between 1880 and 1890.

An architectural assessment of the Las Vegas Springs National Register Site resulted in the documentation of 22 historic structures/features. Of these 22 historic features, six occur within the APE. Table 9 summarizes the recommendations for the historic architectural features discovered within the APE of the Las Vegas Springs National Register Site.

During the historic architectural assessment, it was found that several of these structures, when combined with their natural setting, formed a rural historic landscape. Subsequent studies by UNLV support these initial evaluations and conclusions.

Of the 22 historic architectural features surveyed and evaluated within the study area, 20 of them are contributors to the Las Vegas Springs National Register Site. The historical architecture survey identified five contributing features which can be considered as individually eligible for listing on the National Register of Historic Places. Fifteen features are eligible as contributors to the existing National Register Site when taken as a group. Two fence features were found to be non-contributing, although both are currently within the National Register Site boundaries. Within the APE there are two individually eligible features, three contributing features, and one non-contributing component.

During the architectural assessment, it became evident that the landscape setting as an important feature of the site should be considered. National Register Bulletin No. 30 currently defines a Rural Historic Landscape as:

".... a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features."

**TABLE V-9**  
**Historic Architectural Features Documented for the APE**  
**(after Hohmann *et al.* 1998:31-32)**

**Features Within the Area of Project Effect (APE)**

<b>Inv. No.</b>	<b>Feature Name</b>	<b>Date Built</b>	<b>NR Status</b>
1.1	Clark Street Pumpstation	1929	eligible/individ.
8.1	Cleanout and Pipeline PL4	c. 1917	listed/contr.
11.1	Earthen Dam and Pond	c. 1904	listed/contr.
11.2	Perimeter Barbed Wire Fence	unkn (post-1925)	listed/not contr.
16.1	Little Spring Springhouse	c. 1917	listed/individ.
18.1	Well No. Three	1940	listed/contr.

Evaluating the Las Vegas Springs National Register Site in terms of its chronology of development as a Rural Historic Landscape is valid and helps document the changes to the land from the beginning of the Mormon Period in 1855 through the end of the Railroad Period in 1957. Specifically, Little Spring Springhead, Little Spring Springhouse, and the upper extension of the Las Vegas Creek (which originates from Little Spring), along with its man-made cottonwood canopy and historic cultural features, forms one crucial Rural Historic Landscape. The second critical Rural Historic Landscape is that formed by Middle Spring Springhead, Middle Spring Springhouse, the

Middle Springs channel and its cottonwood canopy, plus associated historic cultural features. Research suggests that the cottonwoods which are presently visible on-site are second-generation growth (with a few exceptions) and that the most likely source of first generation cottonwood tree planting is Helen Stewart, after she acquired this portion of the Las Vegas Ranch from O.D. Gass.

In 1998, archaeologists from the HRC at UNLV conducted archaeological test excavations within the 200 foot wide APE for Alternative B on the North Well Field. These test excavations consisted of 20 "test probes," excavated to an average depth of 50 centimeters Below Present Ground Surface (BPGS). FHWA approved, and the Nevada SHPO concurred with, this limited level of testing to preserve the Big Springs.

The results of UNLV testing were the recovery of 16 cultural artifacts and no evidence of subsurface features. The UNLV report concludes that all areas located within the 200 foot APE clearly contain cultural materials and features, and therefore, *must* be avoided by all proposed improvements and/or construction undertakings.

The ethnographic study by Richard Stoffle of the University of Arizona addressed the role or roles of the 3-Springs Area in regional cultural landscapes, ecoscapes, and story/song scapes. The ethnographers have been studying American Indian cultural landscapes as a cultural phenomena for a number of years; however, this is the first time a cultural landscaped form has been used. Based on an analysis of the Southern Paiute responses to these cultural landscape questions, the following points seem to be known and concluded:

- the ethnographers are confident that the cultural landscape questions elicited information regarding various dimensions of cultural landscapes and their overall relationship(s) to the Big Springs site [aka the Las Vegas Springs National Register Site].
- the Southern Paiute cultural landscapes identified in this study are a distinct category of cultural resources and should be assessed regarding potential impacts deriving from the US-95 proposed improvements.

Native American consultants retained for this study represent all concerned Native American tribes or legally recognized groups (see Stoffle 1998; Stoffle *et al.* 1998). Mostly represented by Paiute peoples, these consultants consistently documented the cultural and historical importance of the "Big Springs Site" [the Las Vegas Springs National Register Site] to native peoples. Specifically, they defined this site complex as a Paiute Cultural Landscape consisting of a regional landscape, an ecoscape, and/or a storyscape. The cultural significance of the Big Spring Complex must be understood as:

".... one of three springs that was used traditionally, aboriginally, and historically .... by the Southern Paiute people. The Big Spring Complex is being understood in this study as a part of a place that is slightly larger than itself; that is, a place containing the three springs and the intervening spaces that divide and immediately surround them." (Stoffle *et al.* 1998:40)

The Native American ethnographic studies conducted by University of Arizona ethnographers, who have extensive experience working with Southern Paiute people and their culture, and who have professional experience researching American Indian cultural landscapes, found that the 3-Springs Area is:

- one place because it is perceived as one of a series of integrated springs which are bound by common creation, common water source, and a common role in the traditional lives of Southern Paiute people; and
- highly culturally important because it is located in a Southern Paiute ecoscape, a regional landscape, and is a stop on a songscape which is called the Salt Song Trail.

The following conclusions can be drawn from interviews conducted with the Native Americans using the Cultural Landscape instrument. According to these Paiute interviews and responses:

- there were Indian villages in the 3-Springs Area;
- Indian people gathered plants, conducted ceremonies, farmed, gambled, and held political meetings in the 3-Springs Area;
- there are physical and spiritual trails which connect the 3-Springs Area with other places in the region;
- Southern Paiutes were created near the 3-Springs Area;
- there are other places related to Paiute creation surrounding and connected to the 3-Springs area;
- historic events that are culturally important to Paiutes occurred in the 3-Springs Area;
- the surrounding mountains, some of which contain spirit caves, are connected to the 3-Springs Area; and
- the Colorado River is connected with the 3-Springs Area.

### 3. Additional Sites Within the Project Area

While the North Well Field Site Complex constitutes a major set of cultural resources (possibly encompassing up to three discrete sites), there are five additional sites which were investigated. This section identifies these remaining cultural resources and discusses their current status/condition.

**Site 26Ck1647** is section of an historic road bed in good condition. The 592 meter-long, five-meter wide southeast/northwest trending segment may have originally connected Las Vegas to Tule Springs and beyond based on 1915 and 1927 plat maps. No artifacts were found in association with the road. An archaeological survey of the site confirmed that most of the original road has been covered or damaged/destroyed by modern development. Based on the results of the Phase II testing, FHWA determined and Nevada SHPO concurred that Site 26CK1647 is not eligible for listing to the National Register.

**Site 26Ck1767**, a prehistoric lithic and historic trash scatter associated with a large Spring Mound, has been heavily impacted by building construction, and over 95 percent of the remaining vacant lot

on which it was located has been graded or otherwise disturbed. UNLV originally recorded Site 26Ck1767 in 1979 and indicated at that time that seven discrete artifact clusters were visible upon the site's surface; four containing prehistoric lithics and three containing historic domestic refuse. UNLV surface collected all visible historic and prehistoric artifacts from the site in 1979. The initial UNLV site card and verbal descriptions suggest that prehistoric objects collected included cryptocrystalline flakes, a point fragment, and a mano fragment. Historic materials included fragments of liquor bottles, crockery, milk and meat cans.

Since most modern ground disturbance is occurring in shallow surface contexts, subsurface testing was warranted. These excavations recovered 12 artifacts; one cryptocrystalline (chert) primary flake and 11 late historic or modern glass and metal fragments. Also recovered was a modern dog skeleton during the Phase II testing. The current investigations demonstrate that UNLV exhausted the research potential of Site 26Ck1767 when it was surface collected in 1979. Based on these findings, FHWA determined and Nevada SHPO concurred that Site 26CK1767 is not eligible for listing to the National Register.

**Site 26Ck2451**, an historic house foundation located in what is today a predominately black neighborhood, was first recorded in 1980 by UNLV and relocated during the recent survey and is located on a vacant lot. As reported in the UNLV's original site survey, Site 26Ck2451 consists of a three-by-three meter concrete slab floor with cinder block edging rising 10 to 20 centimeters above the ground. The site still exhibits these same cultural manifestations. The original site survey recorders wrote that the structure remains may relate to the "...1940s period and to Black Culture occupation," a critical component of interest and study as defined within the Nevada Comprehensive Preservation Plan, Second Edition (see Bernstein, James, and White 1991).

Oral interviews and historic background research determined that the house which once occupied this lot was built in the mid-1940s by Ms. Carrie Christensen, who also owned and occupied a larger house located on the adjacent lot. In 1954, Ms. Ella Council, a current resident of Las Vegas, purchased this small house from Ms. Christensen. In a set of extensive oral interviews with Ms. Council, it was determined that she occupied this house until it was demolished in 1968.

Excavations at Site 26Ck2451 consisted of instrument mapping, extensive photo documentation, a limited sample surface collection of artifacts, and the excavation of five 1 by 1 meter test units. A total of 170 artifacts were recovered and analyzed. The majority of collected materials reflect domestic refuse and dated between 1913-1968, with most dates aggregating around 1954 to 1967.

These investigations at Site 26Ck2451 confirmed data derived from both the historic background research and oral interviews, plus provided new insight into black heritage and life in the Las Vegas Valley from the late 1940s through the 1960s. Based on the results of the Phase II testing, FHWA determined and Nevada SHPO has concurred that Site 26Ck2451 is not eligible for listing to the National Register.

**Site 26Ck5443** was originally thought to contain turn-of-the-century historic trash and contained possibly two segments of an historic road system indicating this site complex was an historic

roadside trash dump. The site is characterized by a moderate-density historic trash scatter along with 15 discrete, small trash piles and contains historic Euro-American artifacts including glass, metal, china, ceramic, animal bone, concrete block, and other materials.

The site appeared to contain substantial subsurface deposits based on the surface indicators. The western half of the site is traversed by two single-lane road segments that appear to be contemporaneous in age with the historic materials. These late-dating historic roads run from the southwest to northeast, and from the southwest curving toward the east, respectively. Inspection of a 1920 plat map reveals that Site 26Ck5443 was, at the time, owned by M. Powers. No roads through the property are illustrated on the 1920 plat map, nor is the presence of a formal dump site noted. Based on the presence of various diagnostic artifacts, the dump site was apparently in use from the mid-1910s through the late 1960s.

During the investigations, substantial efforts went into historic record and land ownership searches. These searches indicated that the two historic road segments were created sometime between 1925 and 1935, with most trash accumulation beginning after 1935. The excavation of 15 test units, one for each definable trash loci, resulted in the collection of over 1,500 artifacts which were analyzed. The results of these artifact studies confirmed that most trash dated between 1935 and 1968, with most post-dating 1945. Based on the results of the Phase II testing, FHWA determined and Nevada SHPO concurred that Site 26Ck5443 is not eligible for listing to the National Register

**Site 26Ck5444** is a prehistoric/protohistoric sherd and lithic scatter located in the southeast corner of a large, relatively undisturbed vacant lot. The artifact distribution displays a low density sherd and lithic surface scatter, with two areas of moderate artifact density.

Based on observations conducted during the survey, associated lithic artifacts include secondary and tertiary flakes of fine-grained basalt and chert, a chert core, and a ground stone fragment made from vesicular basalt. Ceramic artifacts include rim and body sherds that appear to be North Creek Gray, North Creek Corrugated, North Creek Corrugated/Indented, North Creek Fugitive Red, and Paiute brownware types. Based on ceramic typology, the artifact scatter likely represents the remnants of a transitory camp used by both Anasazi (Pueblo II to Pueblo III periods) and subsequent proto-historic Paiute peoples.

Ethnographic studies indicate that members of the seven Paiute tribes consider Site 26Ck5444 an ancestral site. In general, Native Americans believe that this location was (1) a part of a group of connected places in the region; (2) perhaps part of a major trail system which once connected upland sites to lowland sites; and (3) a place where Indian people gathered food, lived, camped, and conducted ceremonies. An archaeological site such as this is important to Indian people because it was used to communicate with other Indians, conduct ceremonies, communicate with spiritual beings, seek knowledge and power, teach other Indians, and as territorial markers. Based on the site survey and the subsequent ethnographic studies, it appears that Site 26Ck5444 may have the potential to be eligible for listing on the National Register of Historic Places under criterion A and D. Final determination will be completed when archaeological testing is allowed to proceed. However, this particular site is not a major factor in the selection of a preferred alternative.

## D. Socioeconomic Resources

### 1. Economics

#### a. Economic Base

The gaming industry historically has been, and continues to be, the engine of growth in Las Vegas and in the State of Nevada. Prior to the legalization of gambling in 1931, the Nevada economy was heavily dependent upon mining activities and was affected by the unstable economic conditions associated with this industry. The construction of the Hoover Dam in the 1930s gave southern Nevada an abundant supply of water and hydroelectric energy, advantages which helped to stimulate casino development. In recent years, Las Vegas has become a tourist destination not only for gambling, but for entertainment targeted to non-gamblers and families. Although legalized gambling now exists in many other states and geographic areas, Las Vegas continues to attract increasing numbers of tourists, supporting the continued growth of casinos and non-gaming entertainment activities. Clark County boasted nearly 100,000 hotel rooms in 1996 and maintained a room occupancy rate of over 90 percent. Over 9,000 hotel rooms were added between 1995 and 1996 alone. In 1996, Clark County received over 29.6 million visitors who generated over \$22.5 billion in revenue. The revenues brought into the county by tourists is the primary force propelling the rest of the county's economic activity.

State and county earnings statistics confirm the region's concentration of economic activity in gaming and entertainment, as well as the concentration of the state's economic activity within Clark County. Table V-10 provides county, state and U.S. earnings by industry sector in 1994. Clark County's earnings accounted for approximately 64 percent of the state's earnings, and about 71 percent of the state's earnings in the service sector, which includes hotel and gaming activities. Half of Clark County's earnings originated from the services sector, compared to 28 percent of United States earnings. The county and the state's low percentage of earnings from manufacturing, in comparison with total United States earnings, provides further evidence of the lack of diversity in Clark County's economic base. Manufacturing constitutes 19 percent of the nation's private sector earnings, but only three percent of Clark County's earnings.

Employment data desegregated by industry sector shows a similar pattern of concentration for Clark County and Nevada not found in the United States as a whole. Table V-11, which provides Clark County, Nevada and U.S. employment by industry, reveals that 47 percent of all Clark County jobs were in the services sector, compared to 30 percent of employment nationally. Less than three percent of Clark County employment was found in the manufacturing sector, as opposed to 13.5 percent of U.S. employment in this industry. Furthermore, location quotients (LQs) indicate that Clark County has very high levels of employment concentrated in gaming and gaming-related industries. Location quotients provide a tool for assessing the concentration of an area's economic activity within specific industries by comparing the proportion of an area's total employment found within a given industry to the same industry proportion for a larger geographic area, such as the United States as a whole. Hotel employment represents Clark County's highest LQ; the county's concentration of employment in this industry is 16 times higher than its concentration nationally.

**TABLE V-10**  
**Sectoral Distribution of Earnings by Industry, 1994**  
**Clark County, Nevada, United States**

Industry Sector	Clark County		Nevada		United States	
	Earnings	% of Total	Earnings	% of Total	Earnings	% of Total
Private Sector	\$14,713,400	87.9%	\$22,755,651	86.8%	\$3,378,062,000	83.8%
Agricultural Services	\$83,323	0.5%	\$130,313	0.5%	\$26,804,000	0.7%
Mining	\$25,540	0.2%	\$696,179	2.7%	\$36,349,000	0.9%
Construction	\$1,598,126	9.5%	\$2,370,124	9.0%	\$218,117,000	5.4%
Manufacturing	\$522,503	3.1%	\$1,195,482	4.6%	\$747,326,000	18.5%
Transportation and public utilities	\$1,007,310	6.0%	\$1,612,707	6.2%	\$272,608,000	6.8%
Wholesale trade	\$582,842	3.5%	\$1,045,570	4.0%	\$254,791,000	6.3%
Retail trade	\$1,603,008	9.6%	\$2,519,993	9.6%	\$392,234,000	9.7%
Finance, insurance, and real estate	\$823,562	4.9%	\$1,190,731	4.5%	\$302,857,000	7.5%
Services	\$8,467,186	50.6%	\$11,994,552	45.7%	\$1,126,976,000	27.9%
Government and government enterprises	\$2,021,769	12.1%	\$3,464,348	13.2%	\$654,814,000	16.2%
Total Earnings - Government and Private Sector	\$16,735,169	100.0%	\$26,219,999	100.0%	\$4,032,876,000	100.0%

Source: U.S. Department of Commerce, Bureau of Economic Analysis, 1996.

**TABLE V-11**  
**Employment by Industry Sector, 1994**  
**Clark County, Nevada and the United States**

Industry	Percent of Total Employment		
	Clark County	Nevada	U.S.
Private Sector	89.4%	88.3%	84.7%
Agricultural Services	0.8%	0.9%	1.2%
Mining	0.2%	1.5%	0.6%
Construction	8.4%	7.7%	5.2%
Manufacturing	2.8%	4.1%	13.5%
Transportation and Public Utilities	4.6%	4.7%	4.9%
Wholesale Trade	3.0%	3.4%	4.8%
Retail Trade	15.6%	15.4%	17.2%
Finance, Insurance and Real Estate Services	7.0%	6.7%	7.5%
	47.1%	44.0%	29.9%
Government and Government Enterprises	10.6%	11.7%	15.3%

Source: U.S. Department of Commerce, Bureau of Economic Analysis, 1996.

Other industries with a high concentration of employment include local and interurban transportation (SIC 41) with an LQ of about 2.6, and amusement and recreation (SIC 79) with an LQ of almost 2.

Although gaming continues to dominate the economic base of the county, the wealth brought into the area through this industry has allowed other industries to flourish as well. The demand for new resorts and hotels, as well homes for new residents and commercial space for new businesses, has resulted in booming conditions for the construction industry in Clark County. The 1997 market forecast prepared by CB Commercial Real Estate Group, Inc. reported that in 1996, 8,000 new rental units and five million square feet of industrial space was built. Two million square feet of office space in Las Vegas was planned for construction in 1997, and three million square feet of additional retail space was planned for construction in the resort corridor by the year 2000.

Between 1984 and 1994, overall employment in Clark County nearly doubled, as shown in Table V-12. While some sectors have grown at a much slower rate, employment in the construction sector had the largest rate of increase, growing by 188 percent during that time period. Agricultural services and wholesale trade also experienced healthy employment growth between 1984 and 1994. As the county has become a major population center, with a population exceeding one million residents, an economy of scale and the demand for goods and services by its growing population has opened opportunities for non-gaming businesses. The Nevada Development Authority reported 34 company relocations in the 1997 *Las Vegas Perspective*, adding 2,873 jobs in Clark County. Nearly half (16) were manufacturing businesses, and the remainder were wholesale, distribution, or service firms. In addition to its population growth, the state's pro-business environment, its low taxes and utility costs, its climate and lifestyle are advantages of the region emphasized in business attraction and diversification efforts.

Measured by average earnings per worker, the gaming industry has produced favorable economic conditions which have allowed Clark County residents to prosper. Table V-13 compares average earnings per worker in Clark County to Nevada and national averages in 1994. Per capita earnings for private-sector employment for Clark County residents were \$28,997, slightly higher than the averages for Nevada and the United States. Clark County's average earnings in the services sector, which accounted for nearly one-half of the county's employment in 1994, exceeded the national average in this sector by \$5,000. Sectors where per capita county earnings were substantially lower than the national average include manufacturing (accounting for less than three percent of county employment), finance, insurance, real estate (accounting for seven percent of county employment), and mining (accounting for only 0.2 percent of employment).

While economic and population growth may not be sustained at the rapid rate seen in recent years, the economic climate in Clark County will most likely continue to attract new residents and businesses. According to U.S. Department of Commerce projections, the public and private sectors together will add 224,200 workers in Nevada between 1994 and 2005, an increase of 25 percent over 1994 employment levels. The largest increase in employment is projected in agricultural services (30.3 percent) and services (28.9 percent). Many of these jobs will be added in Clark County, given the current concentration of Nevada employment in the county (Table V-14).

**TABLE V-12**  
**Clark County Employment, 1984 and 1994**

Industry	1994	1984	Change, 1984-1994	
			Number	Percent
Agricultural Services	4,650	1,670	2,980	178.44%
Mining	915	677	238	35.16%
Construction	47,533	16,502	31,031	188.04%
Manufacturing	15,771	8,042	7,729	96.11%
Transportation and Public Utilities	26,178	15,114	11,064	73.20%
Wholesale Trade	16,943	8,039	8,904	110.76%
Retail Trade	88,565	47,085	41,480	88.10%
Finance, Insurance and Real Estate	39,605	21,428	18,177	84.83%
<u>Services</u>	267,244	130,457	136,787	104.85%
Private Sector Total	507,404	249,014	258,390	103.77%
Public Sector	59,890	40,239	19,651	48.84%
Total Employment - Public & Private	567,294	289,253	278,041	96.12%

*Source: U.S. Department of Commerce, Bureau of Economic Analysis, 1996.*

**TABLE V-13**  
**Average Earnings Per Worker, 1994**  
**Clark County, Nevada and the United States**

<b>Industry</b>	<b>Clark County</b>	<b>Nevada</b>	<b>United States</b>
Private Sector	\$28,997	\$28,771	\$28,206
Agricultural Services	\$17,919	\$17,059	\$15,825
Mining	\$27,913	\$51,239	\$39,839
Construction	\$33,621	\$34,441	\$29,934
Manufacturing	\$33,131	\$32,776	\$39,282
Transportation and public utilities	\$38,479	\$38,498	\$39,379
Wholesale trade	\$34,400	\$34,342	\$37,611
Retail trade	\$18,100	\$18,212	\$16,157
Finance, insurance, and real estate	\$20,794	\$19,951	\$28,478
Services	\$31,683	\$30,441	\$26,681
Government and government enterprises	\$33,758	\$33,037	\$30,280

*Source: U.S. Department of Commerce, Bureau of Economic Analysis, 1996.*

**TABLE V-14**  
**Nevada Employment Projections**  
**Employment in Thousands**

Industry	1994	Projected		Change, 1994 - 2005	
		2000	2005	Number	Percent
Private Sector	790.9	884.9	990.7	199.8	25.3%
Agricultural Services	7.6	8.4	9.9	2.3	30.3%
Mining	13.6	14.9	15.4	1.8	13.2%
Construction	68.8	73.8	81.5	12.7	18.5%
Manufacturing	36.5	37.7	40.5	4	11.0%
Transportation and Public Utilities	41.9	45.8	50.4	8.5	20.3%
Wholesale Trade	30.4	34.6	38.9	8.5	28.0%
Retail Trade	138.4	155.3	172.9	34.5	24.9%
Fire, Insurance and Real Estate Services	59.7	65.9	73.5	13.8	23.1%
Services	394	448.5	507.7	113.7	28.9%
Government	104.9	118.6	129.3	24.4	23.3%
Total Private Sector and Government	895.8	1,003.5	1,120.0	224.2	25.0%

Source: U.S. Department of Commerce, Bureau of Economic Analysis, 1996; Nevada State Data Center

The percentage of Clark County workers who are business owners, and the distribution of firms by employee size suggests that there are proportionally less small businesses in Clark County than there are nationally. As shown in Table V-15, the percentage of business owners in Clark County equals 11 percent of all workers, compared to 12.7 percent in the State of Nevada and 15.5 percent in the United States. A breakdown of businesses by size, displayed in Table V-16, shows that the majority of firms in Clark County are very small: 52 percent of firms have less than five employees, and 72 percent of businesses employ less than 10 people. Only three percent of firms employ over 100 people. Nevertheless, Clark County has a slightly smaller proportion of small businesses compared to the United States: 85.3 percent of Clark County firms employ less than 20 workers, compared to 87 percent of firms in the United States.

### **b. Labor Force Characteristics**

Clark County experienced impressive employment growth over the past decade, yet its unemployment rate fluctuated in a pattern similar to the national unemployment rate. Table V-17, which provides Clark County labor force statistics, indicates a net gain of 329,000 employed persons<sup>1</sup> between 1985 and 1996. During this time period, the unemployment rate was at its highest levels in 1985, as the county and the nation were recovering from a recession beginning in the early 1980s, and again in 1992 to 1993, corresponding to the most recent recession.

Census data from 1990 provides occupational data for employed persons (see Table V-18). The occupational profile of workers residing in the project area closely resembles that of Clark County, the City of Las Vegas and, to a lesser degree, North Las Vegas. In 1990, the project area contained about 193,053 employed persons age 16 years or older. The project area accounted for 26 percent of employed persons in Clark County, a proportion consistent with its share of the county's population. In the project area, 22.3 percent of employed residents worked in a professional/managerial occupation. A slightly higher percentage of project area workers were employed in a professional/managerial occupation than in Las Vegas or the county as a whole, and a substantially higher number of residents were employed in these occupations compared to North Las Vegas. About 24.5 percent of the employed residents of the project area worked in service occupations, a slightly lower proportion than in Clark County or Las Vegas and a substantially lower proportion than in the City of North Las Vegas.

### **c. Journey to Work Patterns of Clark County**

The county's journey-to-work patterns are heavily influenced by several factors: the size of Clark County, which at 7,911 square miles is larger than the state of New Jersey (7,419 square miles); the concentration of economic activity within the county; and the county's isolation from other sizable population centers. As a result, 96 percent of Clark County's 360,000 workers reside in the county. Table V-19 contains data on the journey-to-work patterns of Clark County workers and residents.

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<sup>1</sup> Labor force is a combination of employed and unemployed persons.

**TABLE V-15**  
**Wage and Salary Employment and Proprietors' Employment**  
**Clark County, Nevada and the United States, 1994**

Type of Employment	Number of Employees					
	Clark County		Nevada		U.S.	
	Number	Percent	Number	Percent	Number	Percent
Wage and salary employment	505,017	89.0%	786,087	87.3%	122,049,000	84.5%
Proprietors' employment	62,637	11.0%	114,257	12.7%	22,341,500	15.5%

Source: U.S. Department of Commerce, Bureau of Economic Analysis, 1996.

**TABLE V-16**  
**Number of Businesses by Establishment Size**  
**Clark County, Nevada and United States, 1994**

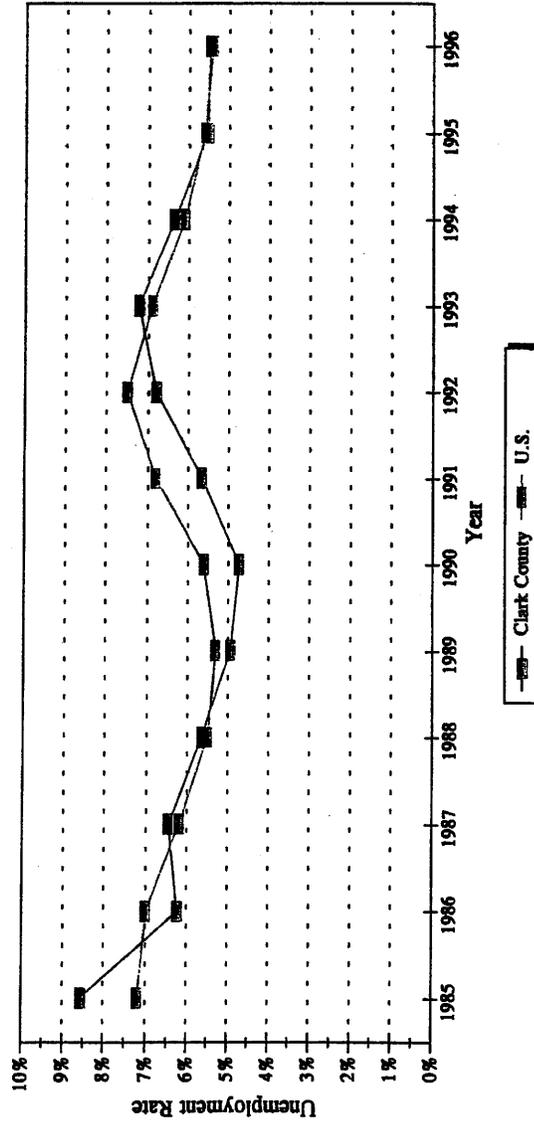
Establishment Size: Number of Employees	Number of Establishments					
	Clark County		Nevada		U.S.	
	Number	Percent	Number	Percent	Number	Percent
1-4	10,512	52.0%	19,479	54.7%	3,575,704	54.9%
5-9	3,976	19.7%	6,910	19.4%	1,286,260	19.8%
10-19	2,755	13.6%	4,540	12.7%	799,561	12.3%
20-49	1,863	9.2%	2,952	8.3%	526,553	8.1%
50-99	590	2.9%	956	2.7%	177,946	2.7%
100-249	367	1.8%	556	1.6%	102,007	1.6%
250-499	77	0.4%	119	0.3%	25,669	0.4%
500-999	31	0.2%	55	0.2%	9,766	0.2%
1000+	55	0.3%	76	0.2%	5,810	0.1%
Total Establishments	20,226	100.0%	35,643	100.0%	6,509,276	100.0%

Source: County Business Patterns, 1996

**TABLE V-17**  
**Clark County Labor Force Statistics, 1985 -1996**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Employment in Thousands												
Labor Force	296.3	305.3	324.6	343.0	359.8	468.7	491.4	507.3	530.3	572.4	598.5	634.6
Employed Persons	270.9	286.2	303.6	323.6	342.0	446.5	463.5	472.7	491.9	535.9	565.4	599.7
Unemployed Persons	25.4	19.1	21.0	19.4	17.8	22.2	27.9	34.6	38.4	36.5	33.1	34.9
<b>Unemployment Rate:</b>												
Clark County	8.6%	6.3%	6.5%	5.7%	4.9%	4.7%	5.7%	6.8%	7.2%	6.4%	5.5%	5.5%
U.S.	7.2%	7.0%	6.2%	5.5%	5.3%	5.6%	6.8%	7.5%	6.9%	6.1%	5.6%	5.4%

Source: Nevada Department of Employment and Training; U.S. Department of Labor, Bureau of Labor Statistics.



**TABLE V-18**  
**Occupations of Employed Persons, 1990**

	Project Area		Clark County		Las Vegas		North Las Vegas	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total Population	193,053		741,459		258,295		47,707	
Total Employed Persons 16 Years or Older	99,844	100.0%	370,583	100.0%	131,001	100.0%	19,510	100.0%
<b>Occupation:</b>								
Professional/Managerial	22,240	22.3%	76,826	20.7%	26,956	20.6%	1,873	9.6%
Technical, Sales, Administrative Support	31,052	31.1%	113,745	30.7%	39,295	30.0%	4,744	24.3%
Service	24,500	24.5%	97,753	26.4%	34,531	26.4%	7,287	37.4%
Farming, Forestry and Fishing	1,079	1.1%	4,155	1.1%	1,586	1.2%	353	1.8%
Precision Production and Craft	10,852	10.9%	40,263	10.9%	14,668	11.2%	2,467	12.6%
Operators, Fabricators and Laborers	10,121	10.1%	37,841	10.2%	13,965	10.7%	2,786	14.3%

*Source: 1990 Census of Population and Housing*

**TABLE V-19**  
**Journey-To-Work Patterns of the Employed Labor Force, 1990**

<u>Clark County Workplace, Residence in:</u>	<u>Number</u>	<u>Percent</u>
Clark County	356,452	95.99%
Nye County	646	0.17%
Remainder of Nevada	262	0.07%
Nevada Total	357,360	96.23%
Mohave County AZ	6,444	1.74%
Outside Nevada and Mohave County AZ	7,538	2.03%
Total Working in Clark County	371,342	100.00%

<u>Clark County Residence, Workplace in:</u>	<u>Number</u>	<u>Percent</u>
Clark County	356,452	97.49%
Nye County	4,55	71.25%
Remainder of Nevada	589	0.16%
Nevada Total	361,598	98.90%
Outside Nevada	4,034	1.10%
Total Residing in Clark County	365,632	100.00%

<u>Las Vegas Valley* Residence, Workplace in:</u>	<u>Number</u>	<u>Percent</u>
City of Las Vegas	152,705	46.58%
City of North Las Vegas	11,962	3.65%
City of Henderson	13,382	4.08%
Boulder City	3,694	1.13%
Winchester and Paradise CDP's**	119,877	36.57%
Other Unincorporated CDP's and Nellis Air Force Base	26,186	7.99%
Total Residing and Working in Las Vegas Valley	327,806	100.00%

\* Includes incorporated cities of Las Vegas, North Las Vegas, Henderson, and Boulder City, as well as 6 unincorporated Census Designated Places (CDP's) and Nellis Air Force Base.

\*\* Unincorporated CDP's in the Las Vegas Valley include Ease Las Vegas, Enterprise, Paradise, Sunrise Manor, Spring Valley and Winchester.

Source: 1990 Census of Population and Housing

Within the county, the Las Vegas Valley is the site of the majority of the economic activity, as is seen in Table V-19. The City of Las Vegas is the workplace for the largest number of workers (47 percent) residing and working in the Las Vegas Valley. Work locations in the Census Designated Places (CDPs) of Winchester and Paradise, which include McCarran Airport and the resorts on and adjacent to Las Vegas Boulevard, employ 37 percent of workers residing and working in the Las Vegas Valley.

**d. Fiscal Resources**

**(1.) Clark County**

The primary effect that the proposed project may have on the county's fiscal resources is a decrease in the amount of revenue derived from property taxes levied on the land and improvements falling within the proposed ROW extension. Property tax rates in Clark County are kept low because of the high amounts of sales tax revenue generated through tourism, as well as continued growth in the value of land and improvements in the county. The State of Nevada, by statute, sets a maximum rate at which Nevada counties can levy property taxes. Clark County currently levies taxes below this authorized level. The 1996-1997 Clark County Budget indicates that the county raised \$198,794,364 in revenue through property taxes for Fiscal Year (FY) 1997. An additional \$20 million in tax revenue was authorized by the state but not levied. Continued growth in tourism and real estate development will allow Clark County to keep its property tax rates low.

For FY 1997, the Clark County General Fund budget projected revenues of \$486,144,689, an increase of 7.6 percent over the previous year. Ad valorem (property) taxes were projected to account for 19.4 percent of revenue for that year. The largest source of revenue was projected to be state sales taxes, accounting for 24.8 percent of revenue.

Real property in Nevada is assessed at 35 percent of its appraised value. All properties are appraised using a cost approach to valuation. By law, the appraised value of property in Nevada cannot exceed its market value. All properties must be physically appraised at least once every five years. The total assessed valuation of Clark County has grown over 300 percent between 1986 and 1996. Table V-20 provides the assessed valuation of Clark County, Las Vegas and North Las Vegas for the past three fiscal years. Clark County assessed value grew from \$17.107 billion to \$21.023 billion between FY 1994-95 and FY1996-97, an increase of nearly 23 percent. North Las Vegas, with a 40.3 percent increase in assessed value during this time period, had the largest rate of increase. The proportion of the county's assessed value found in Las Vegas and North Las Vegas increased slightly during this time period, from 32.8 percent to 34.4 percent; however, about two-thirds of the county's assessed value is still found outside these two cities in FY 1996-1997.

**(2.) Project Area**

The project area covers land situated in eight separate taxing districts. Two districts are in unincorporated county areas, four are in the City of Las Vegas, and two are in the City of North Las Vegas. Table V-21 details the property tax rates paid by these tax districts. The four City of Las

<b>TABLE V-20</b>			
<b>Clark County Assessed Valuation</b>			
<b>FY 1994-95 to FY 1996-97</b>			
<b>Area</b>	<b>FY 1994-95</b>	<b>FY 1995-96</b>	<b>FY 1996-97</b>
Clark County	\$17,107,694,601	\$18,909,830,761	\$21,023,607,462
Las Vegas	\$4,818,993,988	\$5,302,035,294	\$6,167,421,776
North Las Vegas	\$795,128,593	\$906,043,851	\$1,115,757,579
Remainder of Clark Co.	\$11,493,572,020	\$12,701,751,616	\$13,740,428,107
<b>Percent of Clark County Total:</b>			
Las Vegas	28.2%	28.0%	29.3%
North Las Vegas	4.6%	4.8%	5.3%
Remainder of Clark Co.	67.2%	67.2%	65.4%
<b>Percent Change FY 1994-95 to FY 1996-97:</b>		<b>Number</b>	<b>Percent</b>
Clark County		\$3,915,912,861	22.9%
Las Vegas		\$1,348,427,788	28.0%
North Las Vegas		\$320,628,986	40.3%
Remainder of Clark County		\$2,246,856,087	19.5%

*Source: Clark County Office of Budget and Financial Planning, 1997.*

TABLE V-21  
Project Area Tax Rates by Tax District

Tax District	Assessments	Rates	Tax District	Assessments	Rates
125	Artesian Basin Fire 911 - Total	2.5396	207	L. V. City Redev. Library Artesian - Total	3.0269
	State, County and School	2.1319		City County and School	2.1066
	Clark County Fire Service District	0.1772		Las Vegas City	0.6384
	Clark County Fire Service District Debt	0.0127		Las Vegas City Debt	0.0302
	Las Vegas/Clark County Library District	0.0605		Las Vegas/Clark County Library District	0.0597
	Las Vegas/Clark County Library District Debt	0.0389		Las Vegas/Clark County Library District Debt	0.0384
	Las Vegas Artesian Basin	0.0034		Las Vegas Artesian Basin	0.0034
	LVMPD Emergency 911	0.0050		LVMPD Emergency 911	0.0049
	LVMPD Manpower Supplement - County	0.1100		LVMPD Manpower Supplement - City	0.1090
					Las Vegas Redevelopment Area 3
200	Las Vegas City - Total	3.0268	250	North Las Vegas City - Total	3.3646
	State, County, and School	2.1319		State, County and School	2.1319
	Las Vegas City	0.6465		North Las Vegas City	0.3711
	Las Vegas City Debt	0.0306		North Las Vegas City Debt	0.1700
	Las Vegas/Clark County Library District	0.0605		North Las Vegas City Public Safety	0.5500
	Las Vegas/Clark County Library District Debt	0.0389		North Las Vegas City Street Maintenance	0.0700
	Las Vegas Artesian Basin	0.0034		North Las Vegas City Library	0.0632
	LVMPD Emergency 911	0.0050		Las Vegas Artesian Basin	0.0034
	LVMPD Manpower Supplement - City	0.1100		North Las Vegas City Emergency 911	0.0050
203	Las Vegas City Redevelopment - Total	3.0265	251	North Las Vegas City Library - Total	3.4008
	State, County and School	1.2611		State, County and School	2.1319
	Las Vegas City	0.3681		North Las Vegas City	0.3711
	Las Vegas City Debt	0.0174		North Las Vegas City Debt	0.1700
	Las Vegas/Clark County Library District	0.0344		North Las Vegas City Public Safety	0.5500
	Las Vegas/Clark County Library District Debt	0.0221		North Las Vegas City Street Maintenance	0.0700
	Las Vegas Artesian Basin	0.0019		Las Vegas/Clark County Library District	0.0605
	LVMPD Emergency 911	0.0028		Las Vegas/Clark County Library District Debt	0.0389
	LVMPD Manpower Supplement - City	0.0755		Las Vegas Artesian Basin	0.0034
	Las Vegas Redevelopment Area 1	1.2432		North Las Vegas City Emergency 911	0.0050
204	Las Vegas City Redevelopment Library - Total	3.0267	410	Winchester Town - Total	2.7426
	State, County and School	1.4613		State, County and School	2.1319
	Las Vegas City	0.4321		Winchester Town	0.2064
	Las Vegas City Debt	0.0205		Clark County Fire Service District	0.1772
	Las Vegas/Clark County Library District	0.0404		Clark County Fire Service District Debt	0.0127
	Las Vegas/Clark County Library District Debt	0.0260		Las Vegas/Clark County Library District	0.0605
	Las Vegas Artesian Basin	0.0023		Las Vegas/Clark County Library District Debt	0.0389
	LVMPD Emergency 911	0.0033		LVMPD Emergency 911	0.0050
	LVMPD Manpower Supplement - City	0.0835		LVMPD Manpower Supplement - County	0.1100
	Las Vegas Redevelopment Area 2	0.9573			

Source: Clark County Office of Budget and Financial Planning, 1997.

Vegas tax districts pay \$3.027 per \$100 of assessed value; three of the four districts have an assessment for redevelopment activities, but the balance of the assessments are adjusted so that the total tax rate for each district is equal. The two City of North Las Vegas districts have slightly higher tax rates (\$3.364 and \$3.400 per \$100) than the City of Las Vegas. Tax rates for the two districts in unincorporated county areas are the lowest in the project area—\$2.540 and \$2.742 per \$100.

## **2. Population Growth and Housing Development**

### **a. Population Growth and Distribution**

#### **(1.) Regional Trends**

With a 27 percent increase in population, Nevada was the fastest growing state in the country between 1990 and 1995. Table V-22 compares population growth in Clark County, Nevada and the United States. Since 1970, population growth in Clark County and Nevada has far outpaced average growth throughout the nation. Between 1970 and 1996, Clark County gained approximately 838,710 residents and tripled its 1970 population; the State of Nevada added approximately 1,191,640 persons to its population between 1970 and 1996, increasing the population by nearly 250 percent. In contrast, the U.S. population grew by about 30 percent during the same time period. Clark County's population dominates statewide growth trends, since the majority of Nevada residents live in Clark County. Furthermore, Nevada's population growth has become increasingly concentrated in Clark County because Clark County's population growth has outpaced the state. In 1996, about 66 percent of Nevada's population resided in Clark County, compared to approximately 56 percent in 1970.

The state and the county's brisk population growth rate has been fairly consistent throughout the past 25 years. U.S. Census data indicates that Clark County's population increased approximately 67 percent between 1970 and 1980 and approximately 66 percent between 1980 and 1990. Similarly, Nevada increased its population by about 61 percent between 1970 and 1980, and 54 percent between 1980 and 1990 (Table V-22). Data from the Nevada Department of Motor Vehicles (NDMV), shown in Table V-23, gives further indication that the number of adults migrating to Clark County from other parts of the United States has risen steadily since 1980. Only three periods of decline in the number of new drivers' licenses occurred over this 16-year time span, between 1980 and 1981, 1983 and 1984, and between 1990 and 1992. Over 70,000 new drivers' licenses were issued in Clark County in 1996. Although net migration to the area cannot be determined without information on the number of residents leaving the area, it is clear that most of the migrants from other parts of the United States and other countries have remained in Clark County and are responsible for its booming population growth.

The high rate of growth is expected to continue. The Southern Nevada Water Authority projects Clark County's population to be 2,165,949 in 2020, an increase of 181 percent over the county's 1990 population reported by the U.S. Census.

**TABLE V-22**  
**Population Trends, 1970-1996**  
**Clark County, Nevada, and United States**

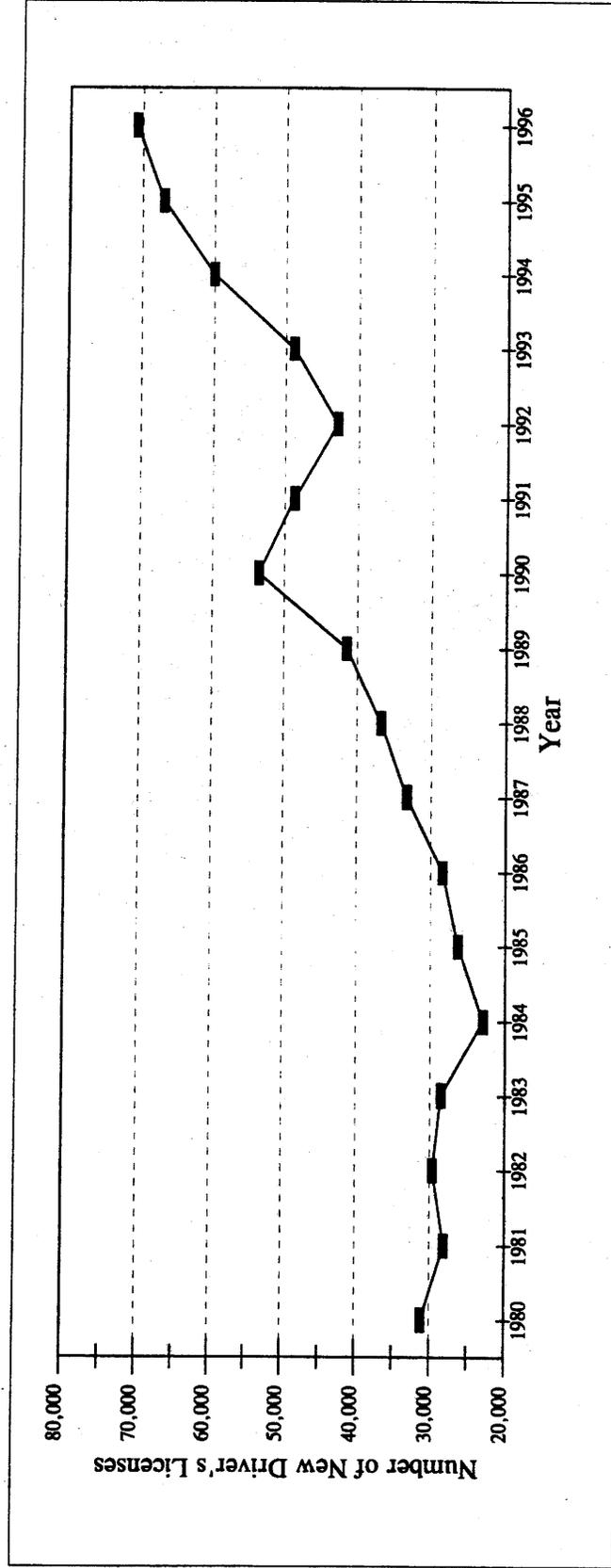
Year	Clark County	Nevada	U.S.	NV Share of U.S. Pop.	Clark Co. Share of NV Pop.
1970	277,230	496,960	203,984,000	0.24%	55.8%
1980	463,087	800,508	227,225,000	0.35%	57.8%
1990	770,280	1,236,130	249,403,000	0.50%	62.3%
1991	820,840	1,297,910	252,138,000	0.51%	63.2%
1992	856,350	1,343,940	255,039,000	0.53%	63.7%
1993	898,020	1,398,760	257,800,000	0.54%	64.2%
1994	971,680	1,494,230	260,350,000	0.57%	65.0%
1995	1,036,290	1,582,390	262,755,000	0.60%	65.5%
1996	1,115,940	1,688,600	265,253,000	0.64%	66.1%
<b>Population Change:</b>					
1970-1980	185,857	303,548	23,241,000		
1980-1990	493,050	739,170	45,419,000		
1990-1996	345,660	452,470	15,850,000		
1970-1996	838,710	1,191,640	61,269,000		
<b>Population Change - Percent:</b>					
1970-1980	67.0%	61.1%	11.4%		
1980-1990	66.3%	54.4%	9.8%		
1990-1996	44.9%	36.6%	6.4%		
1970-1996	302.53%	239.79%	30.04%		

Note: population and household estimates from the State of Nevada, Clark County and City of Las Vegas sources differ.  
Sources: Nevada State Demographer; U.S. Statistical Abstract

**TABLE V-23  
Migration to Clark County From other U.S. States - Total Number of New Drivers' Licenses Issued in Clark County**

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Number	31,146	28,102	29,625	28,477	22,892	26,275	28,384	33,203	36,704	41,431	53,460	48,645	42,885	48,858	59,988	67,021	70,780

Source: NV Department of Motor Vehicles



## (2.) Project Area

The large size of the project area can best be appreciated when compared to the size of the City of Las Vegas. The project area's population is equivalent to about 75 percent of the population of the City of Las Vegas. The project area consists of 29 census tracts within the City of Las Vegas and two census tracts within the boundaries of the City of North Las Vegas. Islands of unincorporated land within the City of Las Vegas also can be found in some of the project area's census tracts. Population growth in the project area has occurred at roughly the same rate as in the county as a whole during the period 1990 to 1996. Accordingly, the proportion of Clark County's population residing within the project area remained fairly level during the same time period, at approximately 26 percent in 1990 and 27 percent in 1996. According to the Clark County Department of Comprehensive Planning, the project area population increased approximately 55 percent from its 1990 level reported by the U.S. Census, from about 193,053 in 1990 to an estimated 299,014 in 1996. The City of North Las Vegas grew more quickly than the project area, increasing its population by nearly 76 percent from 1990 to 1996. Growth outside the cities of Las Vegas and North Las Vegas (which includes the city of Henderson and all unincorporated areas, including the Las Vegas Strip) grew more slowly, increasing by about 46 percent between 1990 and 1996 (Table V-24).

Growth rates varied widely within the census tracts which comprise the project area, and reflect spatial variations in population growth levels within the Las Vegas Valley. Despite the high rates of population growth within Clark County and its incorporated areas, population levels at the core of the urbanized area have remained stable or have decreased. Much of the population growth has occurred at the fringes of previously developed areas of the Las Vegas Valley, as new residential development in these areas contrasts the slow or nonexistent levels of new residential development in the older residential and commercial areas in the vicinity of the US-95 and Interstate 15 junction. The largest residential development project in the project area has been the new planned community of Summerlin, concentrated in Census Tract 32.02. This development contributed most of the nearly 60,000 residents added to Tract 32.02 since 1990, a more than five-fold increase between 1990 and 1996. Other project area tracts in which population more than doubled during this time period include Tracts 34.04 and 29.06, in the northwest and southwest sections of the City of Las Vegas, respectively. The two North Las Vegas census tracts experienced a population increase between 1990 and 1996, but grew at a slower rate than the North Las Vegas average: Tract 36.02 grew by 20.1 percent and Tract 37 grew by 7.9 percent. In contrast, Tract 3.02, abutting Martin Luther King Boulevard south of the two North Las Vegas census tracts, lost approximately 12 percent of its population between 1990 and 1996. Tract 11, surrounding Industrial Road, lost 13 percent of its population between the same time period.

**TABLE V-24**  
**Project Area Population Growth, 1990 - 1996**

Area	1990	1996	Change 1990-1996	
			Number	Percent
Project Area	193,053	299,014	105,961	54.9%
Clark County	741,459	1,119,708	378,249	51.0%
City of Las Vegas	258,295	401,703	143,408	55.5%
City of North Las Vegas	47,707	83,920	36,213	75.9%
Remainder of Clark County	435,457	634,085	198,628	45.6%
<b>Project Area Census Tracts</b>				
1.01	5,608	5,580	(28)	-0.5%
1.02	6,177	6,604	427	6.9%
1.03	4,868	5,045	177	3.6%
1.04	6,286	7,697	1,411	22.4%
1.05	3,119	3,131	12	0.4%
2.01	2,878	3,393	515	17.9%
2.02	5,735	5,205	(530)	-9.2%
3.01	3,452	3,379	(73)	-2.1%
3.02	4,193	3,680	(513)	-12.2%
9	1,696	1,613	(83)	-4.9%
10.97	8,212	9,491	1,279	15.6%
10.98	5,850	6,070	220	3.8%
11	4,867	4,215	(652)	-13.4%
22.01	3,818	3,794	(24)	-0.6%
22.02	13,559	14,642	1,083	8.0%
29.05	5,192	5,390	198	3.8%
29.06	7,598	20,562	12,964	170.6%
29.07	7,838	8,337	499	6.4%
30.01	3,937	3,779	(158)	-4.0%
30.02	11,236	15,063	3,827	34.1%
31	7,461	10,846	3,385	45.4%
32.02	10,641	68,083	57,442	539.8%
34.01	8,030	9,702	1,672	20.8%
34.03	8,895	13,228	4,333	48.7%
34.04	5,659	11,441	5,782	102.2%
34.05	9,498	12,128	2,630	27.7%
34.06	9,716	16,554	6,838	70.4%
34.07	7,361	9,393	2,032	27.6%
35	2,458	2,696	238	9.7%
36.02	3,992	4,795	803	20.1%
37	3,223	3,478	255	7.9%

Note: population and household estimates from the State of Nevada, Clark County and City of Las Vegas sources differ.

Sources: 1990 Census of Population and Housing; Clark County Planning Department

**b. Population Age Characteristics****(1.) Regional Trends**

The average age of the Clark County population is rising. As the number of retirees in Clark County grows more quickly than the number of younger residents, a greater percentage of the population falls into the age group of 65 years and older. An annual survey by the University of Nevada, Las Vegas, Center for Business and Economic Research (CBER) reports age data for Clark County residents, as shown in Table V-25. The survey estimates that the number of retirees in Clark County has grown from 43,900 in 1982 to 156,155 in 1996, an increase of about 256 percent. In comparison, the number of all Clark County residents increased about 140 percent from 1980 to 1996 (see Table V-22). Accordingly, the CBER survey results indicate a gradual increase in the median population age over time: in 1980 the median age was 30, compared to 38 in 1995 and 37 in 1996. According to the Census, 10.5 percent of Clark County residents were 65 years of age or older in 1990, compared to 7.6 percent of the residents in 1980 and 5.1 percent in 1970.

**(2.) Project Area**

As Table V-26 demonstrates, the age demographics of project area residents in 1990 closely resembled those of Clark County. Sixty-five percent of residents of both geographic areas were at least 18 and younger than 65, while about one-quarter were under age 18, and 10 percent were 65 or older. A greater proportion of North Las Vegas residents were children, while the portion of Clark County excluding Las Vegas and North Las Vegas had a slightly higher percentage of its population in the oldest age group.

The age makeup of individual census tracts within the project area varied greatly from the project area in the aggregate. For example, senior citizens comprised 29 percent of Tract 22.01's population and 20.1 percent of Tract 1.04's population. Tract 22.01 abuts the proposed extension of the ROW along Valley View Boulevard; Tract 1.04 will be impacted by the proposed extension of US-95 ROW along the northern boundary of the tract. Three tracts adjacent to the proposed improvements to Martin Luther King Boulevard—Tracts 3.02, 35, and 36.02—had over 40-percent of their population under the age of 18.

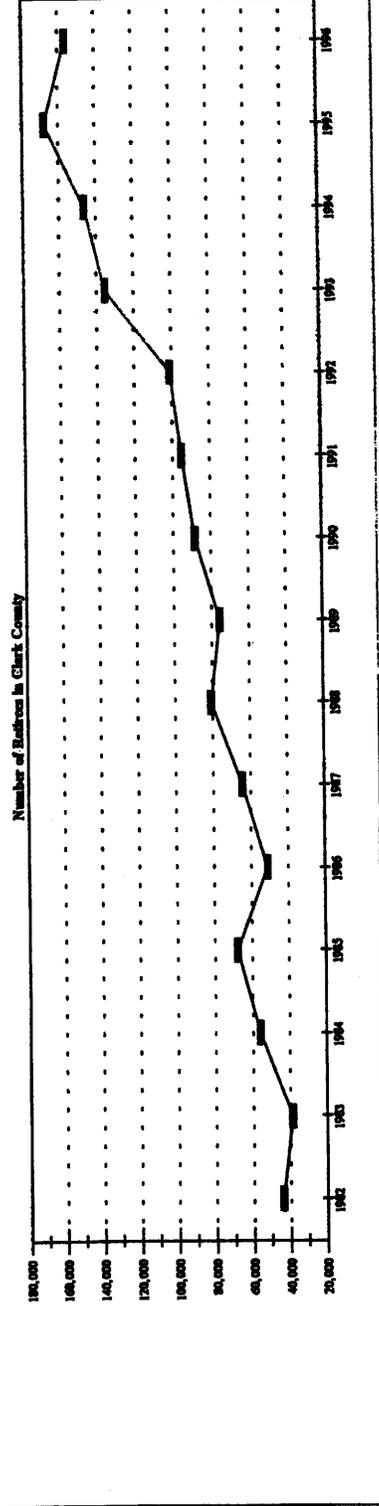
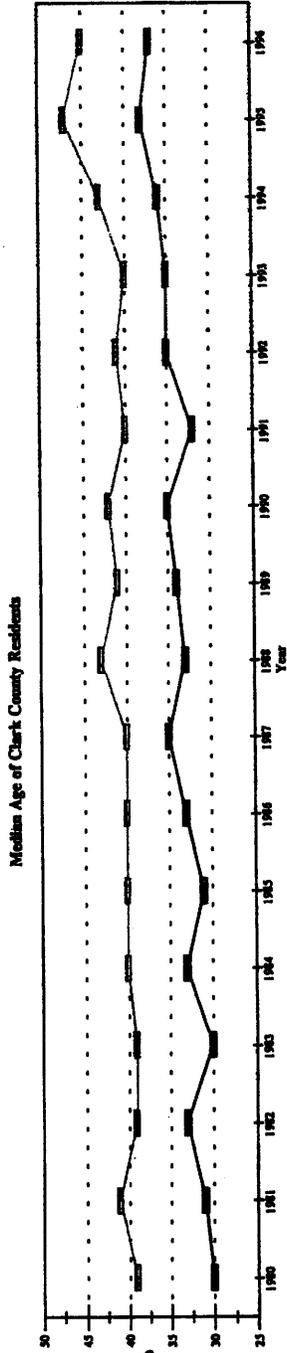
**c. Race and Ethnicity****(1.) Regional Trends**

Clark County's population is predominantly white, although the number of non-white residents has been increasing over time. According to the U.S. Census, less than 18.7 percent of its residents identified themselves as non-white in 1990, compared to about 15.6 percent in 1980 and 11.5 percent in 1970. In 1990, less than 10 percent of the county's population was African American; Asian/Pacific Islanders made up 3.5 percent of the county population, and American Indians, Eskimos and/or Aleuts comprised less than one percent of the county population. Nearly 11 percent of Clark County's population (of all races) was of Hispanic origin in 1990 (Table V-27). An annual survey prepared by the Center for Business and Economic Research, University of Nevada Las

**TABLE V-25**  
**Clark County Population Age Trends, 1980 - 1996**

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Median Population Age	30	31	33	30	33	31	33	35	33	34	35	32	35	35	36	38	37
Median Adult Age	39	41	39	39	40	40	40	40	43	41	42	40	41	40	43	47	45
Total Retirees	43,900	38,600	38,600	38,600	55,800	67,800	51,000	64,400	80,600	75,600	88,499	94,992	100,801	133,227	146,176	167,688	156,155

Source: Las Vegas Perspective Annual Survey



**TABLE V-26**  
**Distribution of Population by Age, 1990**

Area	Under 18	18 to 64	65 and older
Project Area	25.5%	65.0%	9.5%
Clark County	24.5%	65.0%	10.5%
City of Las Vegas	25.0%	64.8%	10.3%
City of North Las Vegas	34.2%	59.1%	6.8%
Remainder of Clark Co.	23.2%	65.8%	11.0%
Project Area Census Tracts:			
1.01	23.8%	62.9%	13.3%
1.02	25.0%	64.2%	10.8%
1.03	27.6%	65.4%	7.0%
1.04	19.8%	60.1%	20.1%
1.05	23.8%	62.7%	13.6%
2.01	26.1%	62.9%	10.9%
2.02	16.1%	66.2%	17.7%
3.01	24.7%	62.9%	12.4%
3.02	43.4%	49.2%	7.4%
9	6.8%	77.7%	15.6%
10.97	20.6%	68.8%	10.7%
10.98	18.2%	64.1%	17.7%
11	22.2%	70.2%	7.6%
22.01	13.5%	57.5%	29.0%
22.02	24.6%	67.6%	7.8%
29.05	23.8%	67.3%	8.8%
29.06	27.2%	65.2%	7.7%
29.07	21.8%	69.9%	8.3%
30.01	27.6%	65.2%	7.2%
30.02	27.1%	66.8%	6.1%
31	24.6%	69.3%	6.1%
32.02	22.7%	64.7%	12.6%
34.01	29.4%	60.6%	10.0%
34.03	29.9%	65.0%	5.1%
34.04	26.6%	63.7%	9.6%
34.05	27.1%	67.7%	5.1%
34.06	27.5%	68.6%	3.9%
34.07	27.1%	66.1%	6.8%
35	41.3%	52.5%	6.3%
36.02	42.4%	53.1%	4.5%
37	28.5%	65.0%	6.5%

Note: percentages do not always add up to 100% because of rounding.

**TABLE V-27**  
Breakdown of 1990 Population by Race and Hispanic Origin

Area	Total Population	White		Black		American Indian, Eskimo, Aleut		Asian/Pacific Islander		Other	
		number	percent	number	percent	number	percent	number	percent	number	percent
Project Area	193,053	151,466	78.5%	28,716	14.9%	1,381	0.7%	5,478	2.8%	6,012	3.1%
Clark County	741,459	602,818	81.3%	70,484	9.5%	6,939	0.9%	26,087	3.5%	35,131	4.7%
City of Las Vegas	258,295	202,604	78.4%	29,472	11.4%	2,415	0.9%	9,332	3.6%	14,472	5.6%
City of N. Las Vegas	47,707	21,525	45.1%	17,833	37.4%	681	1.4%	1,087	2.3%	6,581	13.8%
Remainder of Clark Co.	435,457	378,689	87.0%	23,179	5.3%	3,843	0.9%	15,668	3.6%	14,078	3.2%

Area	Total Population	Hispanic		Non-Hispanic	
		number	percent	number	percent
Project Area	193,053	16,318	8.5%	176,735	91.5%
Clark County	741,459	80,704	10.9%	660,755	89.1%
City of Las Vegas	258,295	31,249	12.1%	227,046	87.9%
City of N. Las Vegas	47,707	10,353	21.7%	37,354	78.3%
Remainder of Clark Co.	435,457	39,102	9.0%	396,355	91.0%

Source: 1990 Census of Population and Housing

Vegas, also documents the trend of increasing racial and ethnic diversity in Clark County, as the number of individuals identifying themselves as white has decreased slightly between 1981 and 1996. Seventy-six percent of survey respondents were white in 1981, compared to 70.1 percent in 1991 and 72.5 percent in 1996. The number of black respondents also decreased slightly, but a corresponding increase occurred in the number of Asian and Hispanic respondents.

## (2.) Project Area

In 1990, the percentage of non-whites in the project area—over 21 percent—was greater than the percentage found in the Clark County population. African Americans made up 14.9 percent of the project area population, compared to 9.5 percent of Clark County's population. However, as indicated in Table V-27, the proportion of American Indians, Asian/Pacific Islanders, and Hispanics living in the project area was slightly less than the proportion found county-wide. The City of North Las Vegas had a much higher proportion of blacks (37.4 percent) and Hispanics (21.7 percent) in its population compared to Clark County (9.5 percent and 10.9 percent, respectively). The geographic concentration of minorities within segments of Clark County is reflected in the wide variation in racial/ethnic composition of the project area's component census tracts. Table A-1 in Appendix A of the Socioeconomic Technical Report provides data on the racial/ethnic composition of project area tracts. Census tracts with a large black population include Tracts 3.01 and 3.02, adjacent to Martin Luther King Boulevard in Las Vegas north of US-95 (85.7 percent and 90.8 percent black, respectively). Tracts 9 and 11, directly impacted by the proposed Martin Luther King Boulevard/Industrial Road Connector, have the highest proportion of residents of Hispanic origin within the project area: 19.2 percent and 49.2 percent of their respective residents are of Hispanic origin. Tract 22.02, adjacent to planned improvements on Valley View Boulevard includes nearly 2,000 Hispanic residents, or 14.7 percent of the tract's population.

### d. Education

In general, the education attainment of project area residents exceeded that of the City of Las Vegas and North Las Vegas, and was similar to Clark County averages (See Table V-28). Census data from 1990 indicates that among persons 25 years of age or older, approximately 79 percent of project area residents, and 77 percent of Clark County residents, were high school graduates. Similarly, 76 percent of Las Vegas residents had a high school diploma. Residents of the City of North Las Vegas had lower levels of educational attainment: 61 percent had graduated from high school, and 14 percent had less than a ninth grade education.

Levels of educational attainment across the project area's census tracts vary widely from these city and county averages. Several tracts in North Las Vegas had very low percentages of high school graduates. In Tract 35, for example, 17 percent of residents had not completed ninth grade and an additional 41 percent did not complete high school. Tracts surrounding the proposed Martin Luther King Boulevard/Industrial Road corridor improvements and Connector also had disproportionately low percentages of high school graduates among its residents. In Tracts 3.01, 3.02, and 9, between 40 and 50 percent of residents age 25 or older had not completed high school. Tract 11, which surrounds the planned widening of Industrial Road, contains a population in which nearly 54 percent

**TABLE V-28**  
**Highest Level of Schooling Completed, 1990**  
**Persons Age 25 and Older**

Area	Less than Ninth Grade		9th to 12th Grade, No Diploma		High School Graduate		Some College, No Degree	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Project Area	6,815	5.47%	19,356	15.52%	39,393	31.60%	33,298	26.71%
Clark County	31,036	6.37%	79,250	16.28%	156,127	32.06%	124,921	25.66%
City of Las Vegas	11,571	6.86%	28,417	16.84%	53,363	31.63%	43,281	25.65%
City of N. Las Vegas	3,653	14.11%	7,145	27.60%	8,562	33.07%	4,514	17.44%
Remainder of Clark Co.	15,812	5.41%	43,688	14.95%	94,202	32.23%	77,126	26.39%

Area	Associate Degree		Bachelor's Degree		Graduate or Professional Degree	
	Number	Percent	Number	Percent	Number	Percent
Project Area	7,410	5.94%	11,981	9.61%	6,424	5.15%
Clark County	28,323	5.82%	43,492	8.93%	23,759	4.88%
City of Las Vegas	9,528	5.65%	15,064	8.93%	7,500	4.45%
City of N. Las Vegas	965	3.73%	661	2.55%	387	1.49%
Remainder of Clark Co.	17,830	6.10%	27,767	9.50%	15,872	5.43%

Source: 1990 Census of Population and Housing

of residents in the same age group had not received a high school diploma. Table A-2 in Appendix A of the Socioeconomic Technical Report provides tract-level detail on the highest level of schooling completed by residents.

**e. Household and Income Characteristics**

**(1.) Regional Trends**

As the population of Clark County increases, the number of households also increases. Within the county, there were 287,684 households in 1990, 173,891 households in 1980, and 87,728 households in 1970; the increase of nearly 200,000 families over 20 years resulted in a 327 percent increase in the number of households. However, more households are forming with fewer people: the average household size decreased from over three persons per household in 1970 to 2.58 in 1990. This decrease corresponds to a decrease in the proportion of households that are made up of two-parent households with children. In 1990, married couples with children made up 22.4 percent of Clark County households, compared to 38.9 percent of households in 1970. The number of single-parent families increased slightly, to 9.8 percent of all Clark County households in 1990 from 6.4 percent in 1970. The growth in the number of families with children has been outpaced by the growth in childless couples, couples with grown children, and the households made up of singles and unrelated adults. See Table V-29 for characteristics of county, city and project area households.

A comparison of per capita income data over a ten-year period, displayed in Table V-30, indicates that per capita income has been rising more quickly in Clark County than in Nevada or the United States. In 1994, Nevada had a per capita income of \$23,817, slightly higher than Las Vegas or the United States figures. However, per capita income rose about 73 percent in Las Vegas between 1984 and 1994, compared to 68 percent in Nevada and 62.7 percent for the United States. Due to the increases in per capita income for Clark County residents, as well as the continuing concentration of the Nevada population in Clark County, personal income in Nevada has become more concentrated in Clark County: Clark County accounted for 62.8 percent of personal income in Nevada in 1994, compared to 56.4 percent 10 years earlier.

**(2.) Project Area**

■ **Household Characteristics**

Several characteristics of households in the project area closely resembled those of Clark County and the City of Las Vegas in 1990. The average household size was nearly identical in the project area, Clark County and Las Vegas (about 2.6 persons per household). About two-thirds of the households in these three geographic areas were families; slightly less than one-quarter of households contained a married couple with children, and the number of single-parent families was under 10 percent (Table V-29). Households in North Las Vegas differed from these patterns: the average household was larger (3.3 persons) and a higher percentage of households were families (77.7 percent). The percentage of households comprised of a married couple with children was slightly higher, at nearly 26 percent, but the percentage of households made up of single parents with children, at 18.5 percent, was more than double the rate of Clark County.

**TABLE V-29**  
**Household Composition, 1990**

Area	Total	Total	Population	
	Population	Households	Per House Hold	
Project Area	193,053	73,453	2.63	
Clark County	741,459	287,684	2.58	
City of Las Vegas	258,295	99,944	2.58	
City of North Las Vegas	47,707	14,450	3.30	
Remainder of Clark County	435,457	173,290	2.51	
<b>Percent of Total Households</b>				
Area	Non-Family	Family	Two Parents	Single Parent
			With Children	With Children
Project Area	32.3%	67.7%	22.7%	9.6%
Clark County	33.4%	66.6%	22.4%	8.5%
City of Las Vegas	34.1%	65.9%	22.2%	9.3%
City of North Las Vegas	22.3%	77.7%	25.7%	18.5%
Remainder of Clark County	34.0%	66.0%	22.2%	7.3%

Source: 1990 Census of Population and Housing

**TABLE V-30**  
**Personal Income, 1984 and 1994**  
**Clark County, Nevada and the United States**

	Clark County		Nevada		United States	
	1984	1994	1984	1994	1984	1994
<b>Personal Income:</b>						
Total personal income (in 1,000s)	\$7,398,784	\$21,807,642	\$13,113,416	\$34,702,746	\$3,144,363,000	\$5,648,263,000
Per capita personal income	\$13,426	\$23,243	\$14,177	\$23,817	\$13,332	\$21,696
<b>Change, 1984-1994:</b>						
Total personal income (in 1,000s)	\$14,408,858	194.7%	\$21,589,330	164.6%	\$2,503,900,000	79.6%
Per capita personal income	\$9,817	73.1%	\$9,640	68.0%	\$8,364	62.7%
Clark Co. Share of NV Income	56.4%	62.8%				
NV Share of US Income	0.4%	0.6%				

Source: U.S. Department of Commerce, Bureau of Economic Analysis, 1996.

Household characteristics varied considerably among the project area census tracts. Table A-3 in Appendix A of the Socioeconomic Technical Report provides a tract-level profile of household characteristics. The highest proportion of family households were found in Tracts 1.01 (81.4 percent), 30.01 and (82.3 percent), 36.02 (86.3 percent). Tract 9, which had the smallest average household size (1.5 persons), also had the lowest proportion of family households (18.1 percent). Only about 5.4 percent of households in Tract 9 contained children under 18. Conversely, several tracts had high proportions of households with children; some had a high percentage traditional families with two parents and children (Tracts 30.01, 34.03, and 34.05) while others had many more single-parent households than two-parent households (Tracts 3.02, 34.03 and 34.05).

#### ■ Per Capita and Household Income

Project area residents tend to enjoy slightly higher incomes than the residents of Clark County as a whole. Table V-31 presents 1989 average income levels for persons, households and families in the project area, Clark County, and three component areas of the county, as well as updated median income for Clark County in 1989, 1993 and 1995. In the project area, average income levels were higher than those in all four geographic areas used in comparison, with exception of only one category—average non-family household income is higher in the areas of Clark County excluding Las Vegas and North Las Vegas. Per capita income in the project area in 1989 was nearly \$16,000 and the average household income was approximately \$42,000. Average family income in the project area, at \$47,426, was substantially higher than the average income for non-family households. This pattern holds true for all four comparison areas and probably corresponds to younger age levels (and briefer periods in the labor force) for single persons compared to married persons.

As shown in Table V-31, there was not a substantial change in median household income<sup>2</sup> in Clark County between 1989 and 1995, in terms of constant (1989) dollars. While median household income rose by 24 percent in current dollars, from \$30,746 in 1989 to \$38,184 in 1995, the growth adjusted for the Consumer Price Index was only one percent in those six years. There was actually a decrease in constant-dollar median household income between 1989 and 1993, a period which included a recession. Between 1993 and 1995, there was a rebound of five percent growth in median household income (measured in constant dollars). During the 1989-95 period, the percentage of persons in poverty in Clark County edged up from 10.3 percent to 11.2 percent. As was the case with median household income, the poverty statistic worsened during the recession years between 1989 and 1993. Still, poverty in Clark County was in 1995 somewhat above its 1989 level.

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<sup>2</sup> Note that household income data for 1989 in the top portion of Table V-31 is reported as *mean*, whereas the household income data shown in the bottom portion of the table is reported as *median*. The purpose of the bottom portion of Table V-31 is only to show how incomes changed in the 1989-95 period. Only median income data is available after 1989.

The pattern of income distribution within the project area and Clark County is also very similar. Table V-31 indicates that in both areas, approximately 10 percent of the population and seven percent of families received income less than the poverty level in 1989. Poverty levels<sup>3</sup> were slightly higher in Las Vegas (11.3 percent of all persons, 7.7 percent of families) and substantially higher in North Las Vegas (21.1 percent of all persons, 18.6 percent of families). Table V-32 presents a distribution household income for the project area and the four Clark County comparison areas in 1989. Approximately 54 percent of project area households had an income ranging from \$25,000 to \$75,000; 51.9 percent of Clark County households had income in the same range. Approximately thirty-six percent of project area households had an income of less than \$25,000, and almost ten percent of households had incomes of \$75,000 or above. In comparison, 39.6 percent of Clark County households had incomes under \$25,000, and 8.4 percent had incomes of \$75,000 or above.

Again, disaggregated data about the project area, found in Tables A-4 and A-5 in Appendix A of the Socioeconomic Technical Report, indicates that household income characteristics diverge sharply from the Clark County and Las Vegas averages. For example, Tract 10.98, which abuts the proposed extension of the ROW along US-95, had very high income levels—1989 per capita income was almost \$43,000, the mean family income was over \$119,000, and almost 40 percent of households had incomes of \$75,000 or more. Many tracts adjacent to the proposed improvements to Martin L. King/Industrial, on the other hand, had much lower income levels than the project area averages. Tract 35, for example, had 59.3 percent of its population and 37.1 percent of its families living below the poverty line in 1989; due to its low household and family income levels, combined with high numbers of persons per household, it had the second lowest per capita income in the project area (\$5,578) in 1989. Other tracts with per capita income levels under \$10,000 in 1989 include Tract 3.01 (\$7,432), Tract 3.02 (\$5,155), Tract 11 (\$7,998), and Tract 36.02 (\$5,754).

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<sup>3</sup> The poverty level, or poverty income level, is defined by agencies of the Federal Government, including the U.S. Bureau of the Census and the Department of Health and Human Services (HHS). The Bureau of the Census estimates this level of income (called the poverty threshold) annually to estimate the percentage of persons or households with incomes below the poverty level. HHS derives *poverty guidelines* annually based on the Census poverty thresholds. The HHS poverty guidelines are not used for statistical purposes (I.E., estimating the number of people in poverty) but only to determine eligibility for certain Federal assistance programs. When percentages of persons or households in poverty are presented in this study, the U.S. Bureau of the Census *poverty threshold* is used. Whenever the terms *low income person* or *low income household* are used in this study, they mean a person or household whose income is below the poverty threshold. In 1990, the Census poverty threshold ranged between \$6,652 for unrelated individuals to \$17,839 for families with six or more persons (there are actually 13 categories for which poverty thresholds are listed). In 1993, these numbers were \$7,363 and \$19,718, respectively, and in 1995, \$7,763 and \$20,804. The poverty threshold does not vary by region of the country.

**TABLE V-31  
1989 Income and Poverty Statistics**

Area	Per Capita Income	Mean Income			% Below Poverty Level	
		All Households	Family Households	Non-Family Households	Persons	Families
Project Area	\$15,916	\$41,832	\$47,426	\$27,921	10.4%	7.4%
Clark County	\$15,109	\$38,595	\$43,396	\$26,973	10.3%	7.5%
City of Las Vegas	\$14,737	\$37,719	\$42,954	\$25,565	11.3%	7.7%
City of North Las Vegas	\$8,565	\$27,857	\$28,262	\$19,780	21.1%	18.6%
Remainder of Clark County	\$15,916	\$39,996	\$45,137	\$28,180	8.6%	6.3%

Source: 1990 Census of Population and Housing

**Change in Income and Poverty Statistics, Clark County, 1989 - 1995**

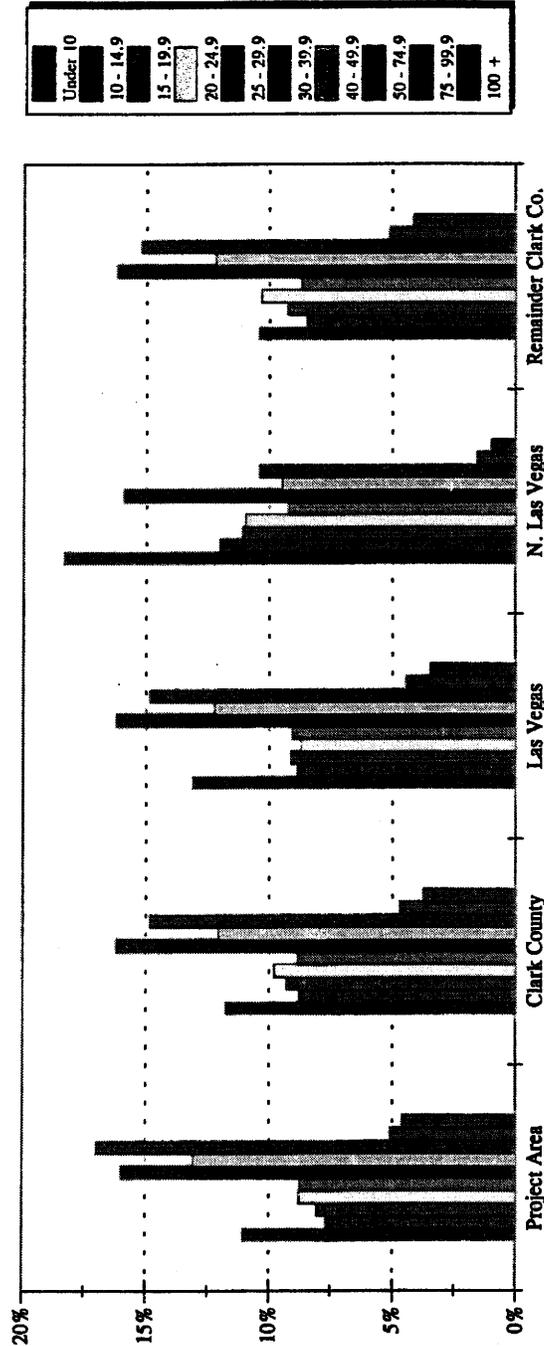
Statistic	1989	1993	1995
Median Household Income (current dollars)	\$30,746	\$34,216	\$38,184
Median Household Income (constant 1989 dollars)	\$30,746	\$29,497	\$31,044
Percent of Persons Below Poverty Level	10.3%	12.4%	11.2%

Sources: 1990 Census of Population and Housing; U.S. Bureau of the Census, Small Area Income and Poverty Estimation Program, 1998-99; Louis Berger & Associates, 1999.

**TABLE V-32**  
**1989 Household Income Distribution**

Area	Total Households	Household Income Distribution - Percent of Total Households (Income in \$1,000s)									
		Under 10	10 - 14.9	15 - 19.9	20 - 24.9	25 - 29.9	30 - 39.9	40 - 49.9	50 - 74.9	75 - 99.9	100 +
Project Area	73,453	11.1%	7.7%	8.1%	8.8%	8.7%	16.0%	13.1%	17.0%	5.1%	4.6%
Clark County	287,684	11.7%	8.8%	9.3%	9.8%	8.8%	16.2%	12.1%	14.8%	4.7%	3.7%
City of Las Vegas	99,944	13.1%	8.8%	9.1%	8.7%	9.1%	16.2%	12.2%	14.8%	4.4%	3.5%
City of North Las Vegas	14,450	18.4%	12.0%	11.1%	11.0%	9.2%	15.9%	9.5%	10.4%	1.6%	1.0%
Remainder of Clark County	173,290	10.4%	8.5%	9.2%	10.3%	8.7%	16.2%	12.2%	15.2%	5.1%	4.1%

Source: 1990 Census of Population and Housing



**f. Housing****(1.) Regional Trends**

Since 1980, residential construction in Clark County has both spurred the booming economy and supported the influx of new residents. Table V-33 presents the number of building permits issued in Las Vegas, North Las Vegas and Clark County in its entirety between 1980 and 1996. A total of 284,221 housing permits were issued in Clark County during this time period, an average of 16,719 housing units per year. The number of permits issued each year has consistently increased, with the exception of declines between 1980 to 1982, 1983 to 1984 and 1988 to 1992. The aggregate number of building permits issued in Las Vegas and North Las Vegas from 1980 to 1996 equals 37.1 percent and 5.7 percent of the Clark County total, respectively.

Despite the brisk rate of new housing construction, new housing units have quickly been absorbed into the market. Housing sales prices and apartment rental costs, adjusted for inflation, have risen over the past 10 years. As shown in Table V-34, median housing sale prices (in 1985 dollars) have increased 14 percent between 1985 and 1996, from \$75,596 to \$86,375, with sharp increases between 1986 and 1988, and 1989 and 1990. New homes account for a remarkably large and growing portion of all housing sales: 43 percent in 1985, 79 percent in 1996, with a peak of 94 percent in 1994. According to the Clark County Department of Comprehensive Planning, approximately 3.3 percent of all Clark County housing units were vacant in July 1996; the percentage of vacant units in the project area was roughly equal at 3.5 percent. Table V-35 indicates that rental costs (in 1985 dollars) and vacancy rates fluctuated widely between 1985 and 1996. In general, however, average rents increased and vacancy levels decreased during this time period. There was an overall increase of 73 percent in average rental costs during this time period. Although there were wide fluctuations in vacancy rates, the vacancy rate was at its highest level in 1985 (6.8 percent) and at its lowest level in 1996 (2.7 percent).

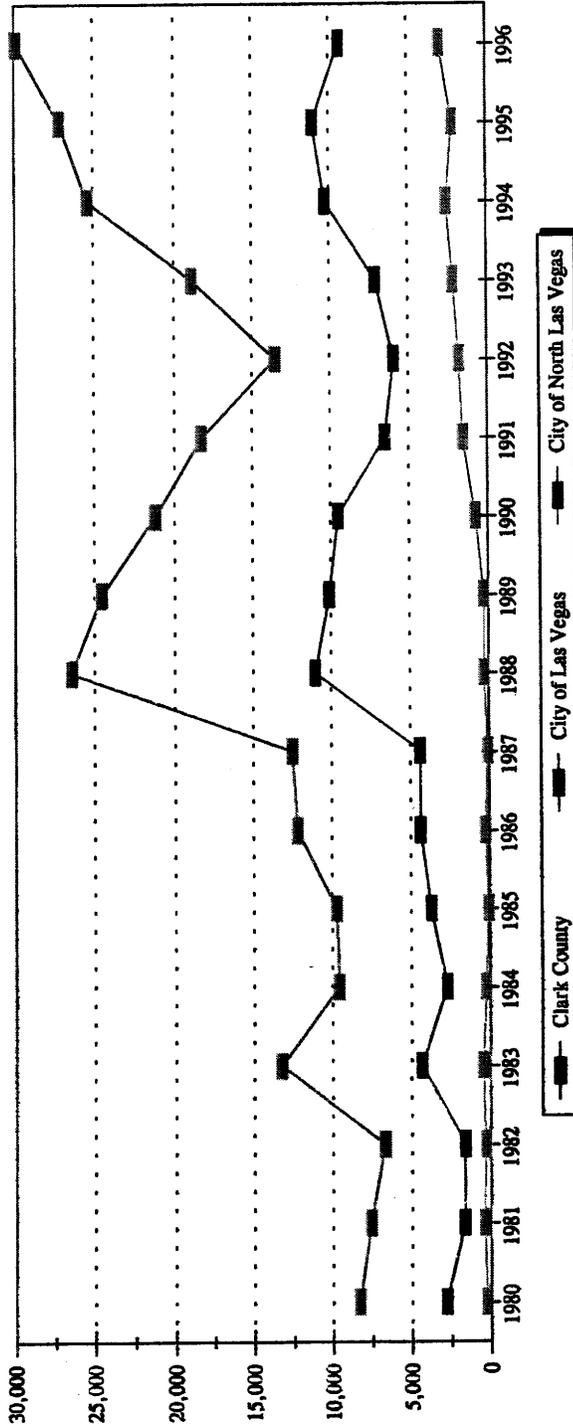
**(2.) Project Area**

About 25 percent of the Clark County housing stock was found in the project area in 1990. The project area housing stock grew by almost 50 percent between 1990 and 1996, as demonstrated in Table V-36. The growth in the number of project area housing units outpaced new housing construction in Clark County as a whole (39.8 percent between 1990 and 1996), due to the 382 percent growth in the housing stock of Tract 32.02, corresponding to the development of the new planned community of Summerlin in the western part of the project area. Started in 1991, one-quarter of the planned 60,000 units were built as of September 1996. An additional 7,700 units of retirement housing are planned for or built in Sun City Summerlin. Housing development has some of the more built-out tracts where extension of the ROW and full or partial property acquisitions been strongest in the western portion of the project area, in areas previously undeveloped or only sparsely developed. Tracts with the highest rates of growth include Tract 29.06 (152.4 percent), Tract 34.04 (93.6 percent), and 34.06 (59.6 percent). A net decrease in the number of housing units occurred in are proposed in connection with this project: Tract 3.02 (-21.8 percent), Tract 9 (-13.9 percent), and Tract 11 (-19.4 percent).

**TABLE V-33**  
**Housing Units Authorized by Building Permit, 1980-1996**

Area	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Clark County	8,262	7,513	6,652	13,189	9,514	9,659	12,139	12,462	26,402	24,488	21,144	18,211	13,478	18,831	25,306	27,102	29,869
single-family	4,272	4,241	3,269	6,157	4,532	5,333	6,355	5,630	7,850	11,024	11,177	12,120	9,986	15,015	17,374	17,674	18,701
multi-family	3,990	3,272	3,383	7,032	4,982	4,326	5,784	6,832	18,552	13,464	9,967	6,091	3,492	3,816	7,932	9,428	11,168
City of Las Vegas	2,718	1,581	1,557	4,273	2,653	3,638	4,322	4,309	10,966	10,034	9,449	6,441	5,872	7,024	10,218	10,993	9,296
single-family	1,170	757	947	1,998	1,371	1,582	2,479	2,106	3,318	5,720	4,998	5,296	4,475	6,029	6,822	7,017	6,393
multi-family	1,548	824	610	2,275	1,282	2,056	1,843	2,203	7,648	4,314	4,451	1,145	1,397	995	3,396	3,976	2,903
City of North Las Vegas	235	370	320	457	236	63	244	84	281	270	789	1,523	1,744	2,122	2,539	2,111	2,915
single-family	23	17	48	22	42	61	76	84	119	270	787	1,499	1,496	2,122	2,539	2,111	2,135
multi-family	212	353	272	435	194	2	168	0	162	0	2	24	248	0	0	0	780

Source: University of Nevada Las Vegas Center for Business and Economic Research

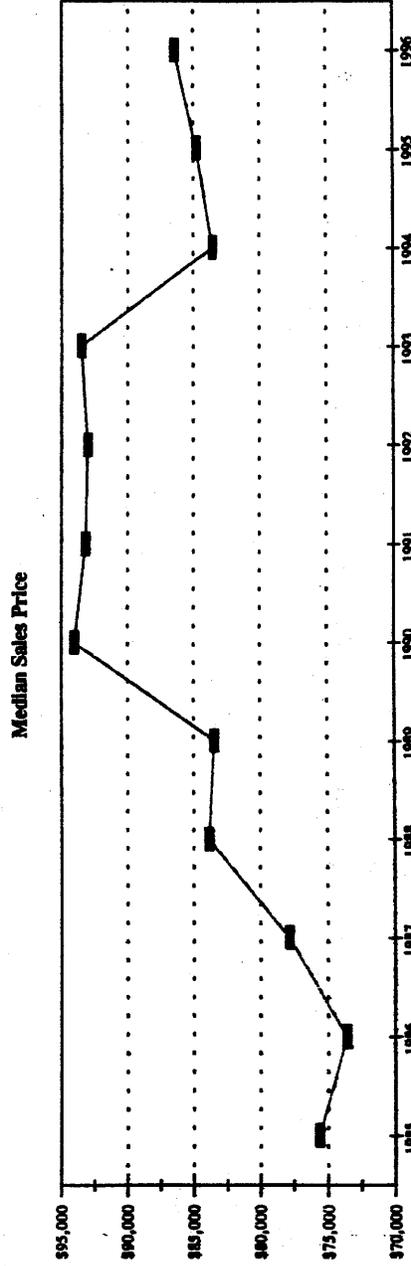


**TABLE V-34**  
**Clark County Housing Prices, 1985 - 1996**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Median Sales Price*	\$75,596	\$73,570	\$77,802	\$83,812	\$83,414	\$94,016	\$93,143	\$92,971	\$93,452	\$83,495	\$84,724	\$86,375
New Homes as a % of Sales	43.0%	57.0%	69.0%	79.0%	74.0%	77.0%	75.3%	74.1%	69.1%	93.6%	87.7%	78.9%

\* Adjusted for inflation - prices reflect 1985 dollars

Source: University of Nevada Las Vegas Center for Business and Economic Research

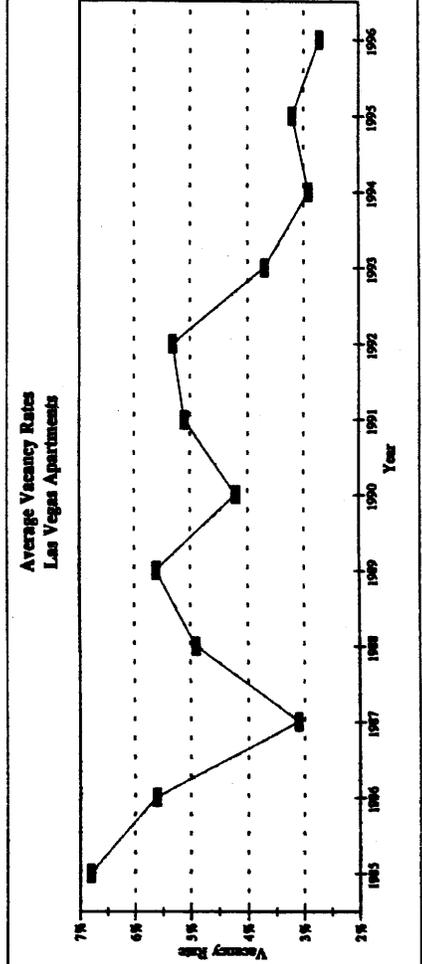
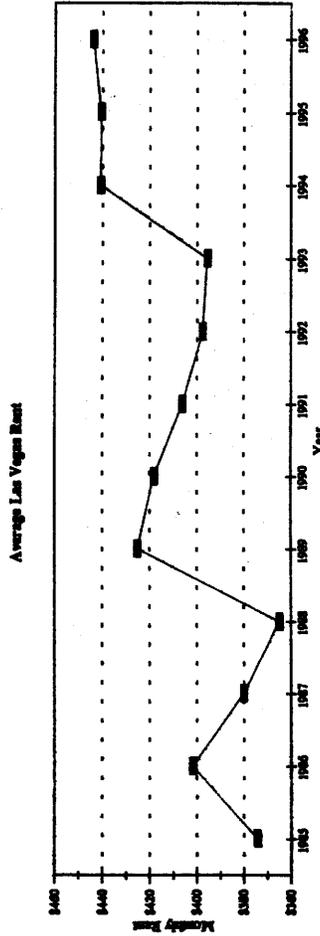


**TABLE V-35**  
**Las Vegas Apartments: Average Rental Cost and Vacancy Rate**  
**Fourth Quarter, 1985 - 1996**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Rental Rate*	\$374	\$402	\$380	\$365	\$425	\$418	\$406	\$397	\$395	\$441	\$441	\$444
Vacancy Rate	6.8%	5.6%	3.1%	4.9%	5.6%	4.2%	5.1%	5.3%	3.7%	2.9%	3.2%	2.7%

\* Adjusted for inflation - prices reflect 1985 dollars

Source: University of Nevada Las Vegas Center for Business and Economic Research



**TABLE V-36**  
**Project Area Housing Units, 1990 and 1996**

Area	1990 units	1996 units	Change 1990-1996	
			Number	Percent
Clark County	317,188	443,391	126,203	39.8%
Project Area	80,810	118,926	38,116	47.2%
<b>Project Area Census Tracts</b>				
1.01	1,990	1,990	0	0.0%
1.02	2,462	2,596	134	5.4%
1.03	1,962	1,952	(10)	-0.5%
1.04	3,066	3,559	493	16.1%
1.05	1,186	1,168	(18)	-1.5%
2.01	1,209	1,369	160	13.2%
2.02	2,619	2,644	25	1.0%
3.01	1,450	1,450	0	0.0%
3.02	1,619	1,266	(353)	-21.8%
9	1,284	1,105	(179)	-13.9%
10.97	3,548	4,039	491	13.8%
10.98	2,576	2,645	69	2.7%
11	2,452	1,976	(476)	-19.4%
22.01	2,158	2,098	(60)	-2.8%
22.02	5,980	6,057	77	1.3%
29.05	2,094	2,208	114	5.4%
29.06	3,040	7,672	4,632	152.4%
29.07	3,224	3,302	78	2.4%
30.01	1,335	1,266	(69)	-5.2%
30.02	4,156	5,791	1,635	39.3%
31	3,214	4,338	1,124	35.0%
32.02	5,753	27,703	21,950	381.5%
34.01	3,228	3,789	561	17.4%
34.03	3,189	4,865	1,676	52.6%
34.04	2,101	4,067	1,966	93.6%
34.05	3,890	4,472	582	15.0%
34.06	4,237	6,762	2,525	59.6%
34.07	2,828	3,565	737	26.1%
35	809	829	20	2.5%
36.02	1,155	1,272	117	10.1%
37	996	1,111	115	11.5%

Sources: 1990 Census of Population and Housing;  
Clark County Planning Department

The composition of the housing stock in both the county and the project area has been changing. Table V-37 illustrates the distribution of housing units by type of structure in Clark County, and the project area's census tracts between in 1990 and 1996. During this time period, the proportion of single-family detached homes increased county-wide. This increase is also reflected in the project area's housing stock as a whole. The percentage of the county's housing stock made up of mobile homes remains higher than the project area's, which is likely to be a result of the more rural nature of many parts of the county, in comparison to the project area, which is urbanized. Individual tracts within the project area display a wide variety in the types of housing they contain, and the change in the proportion of single-family, multi-family and mobile homes between 1990 and 1996.

In the aggregate, characteristics of the project area housing stock indicate that it is representative of the Clark County housing stock as a whole. A housing profile for the project area and various geographic components of Clark County is presented in Table V-38. According to the 1990 Census, roughly half of all occupied units were owner-occupied units in the project area, Clark County and the three geographic areas of Clark County used in comparison to the project area. Within the project area, the levels of owner occupancy ranged from two or three percent (in the predominantly industrial/commercial area found in Tracts 9 and 11) to over 80 percent (in predominantly residential areas found in Tracts 1.01, 1.05, 32.02, and 37). Average 1990 housing values and rental costs in the project area and Clark County were roughly equivalent, although prices for sale and rental housing in North Las Vegas were substantially lower. Several project area tracts had housing prices considerably higher and lower than the average. For example, Tract 29.06 in the western portion of the project area had a mean 1990 housing value of \$222,301; over 90 percent of houses had a value of \$100,000 or more. In contrast, Tract 35, one of the two project area tracts in North Las Vegas, had an average housing value of \$54,212 and an average rent of \$197. Tract-level housing characteristics information can be found in Tables A-6 in Appendix A of the Socioeconomic Technical Report.

The vacancy rate in 1996 for housing units in the project area also closely resembled that of the entire county: 3.3 percent of Clark County's housing units were vacant, compared to 3.5 percent of the housing in the project area. Vacancy rates among Census tracts in the project area ranged from a low of 1.5 percent in Tracts 10.97 and 29.07 and vacancy levels under two percent for many other tracts, to 9.6 percent in Tract 3.02. Vacancy rates for all project area Census tracts are found in Table V-39.

**TABLE V-37**  
**Distribution of Housing Units by Type of Structure**  
**For Project Area and Clark County**

Area	Single-Family Detached		Single-Family Attached and Multi-Family		Mobile Home	
	1990	1996	1990	1996	1990	1996
Project Area	52.5%	58.2%	45.8%	40.6%	1.7%	1.2%
Clark County	44.0%	50.8%	46.5%	42.6%	9.4%	6.6%
<b>Project Area Census Tracts:</b>						
1.01	98.4%	94.5%	1.5%	5.5%	0.1%	0.0%
1.02	64.7%	66.9%	35.2%	33.1%	0.1%	0.0%
1.03	61.3%	61.7%	38.7%	38.3%	0.1%	0.0%
1.04	53.1%	50.1%	46.8%	49.9%	0.1%	0.0%
1.05	91.7%	93.0%	8.2%	7.0%	0.1%	0.0%
2.01	45.4%	53.1%	54.1%	46.7%	0.4%	0.1%
2.02	42.7%	42.6%	55.5%	55.7%	1.8%	1.7%
3.01	46.4%	49.5%	53.5%	50.5%	0.1%	0.0%
3.02	31.0%	40.4%	69.0%	59.6%	0.1%	0.0%
9	9.5%	10.0%	90.5%	90.0%	0.0%	0.0%
10.97	57.9%	52.5%	42.1%	47.5%	0.0%	0.0%
10.98	73.2%	63.7%	26.8%	36.3%	0.0%	0.0%
11	4.1%	4.4%	95.8%	95.6%	0.0%	0.0%
22.01	21.9%	21.8%	60.3%	62.1%	17.8%	16.1%
22.02	15.1%	14.8%	83.2%	83.5%	1.8%	1.7%
29.05	25.6%	24.9%	74.3%	75.1%	0.0%	0.0%
29.06	47.9%	49.3%	45.1%	47.4%	7.1%	3.4%
29.07	54.3%	55.1%	45.7%	44.9%	0.1%	0.0%
30.01	81.9%	86.7%	18.1%	13.3%	0.0%	0.0%
30.02	75.8%	63.7%	24.2%	36.3%	0.0%	0.0%
31	50.5%	57.4%	49.5%	42.6%	0.0%	0.0%
32.02	68.7%	76.6%	31.0%	23.4%	0.3%	0.0%
34.01	43.0%	49.7%	54.7%	48.2%	2.3%	2.1%
34.03	81.0%	75.8%	7.7%	17.1%	11.3%	7.1%
34.04	65.9%	79.8%	33.5%	20.2%	0.7%	0.0%
34.05	53.9%	62.5%	46.0%	37.5%	0.1%	0.0%
34.06	41.8%	41.1%	58.2%	58.9%	0.0%	0.0%
34.07	59.3%	49.9%	40.6%	50.1%	0.0%	0.1%
35	50.8%	52.6%	46.5%	45.1%	2.8%	2.3%
36.02	72.8%	77.3%	26.4%	22.6%	0.8%	0.1%
37	88.2%	79.8%	2.2%	0.9%	9.6%	19.3%

Source: 1990 Census of Population and Housing; Clark County Comprehensive Planning Dept.

**TABLE V-38**  
**Housing Profile, 1990**

Area	Total Units	Occupied Units	Persons	Mean	Mean
			Per Occ. Unit	House Value (1)	Contract Rent (2)
Project Area	80,810	73,510	2.63	\$112,202	\$465
Clark County	317,188	287,025	2.54	\$111,010	\$471
City of Las Vegas	109,670	99,735	2.55	\$104,154	\$443
City of N. Las Vegas	15,837	14,525	3.24	\$63,310	\$344
Remainder of Clark Co.	191,681	172,765	2.52	\$119,940	\$500
Area	Owner-Occupied Units		Renter-Occupied Units		
	Number	Percent	Number	Percent	
Project Area	39,010	53.1%	34,500	46.9%	
Clark County	149,007	51.9%	138,018	48.1%	
City of Las Vegas	50,246	50.4%	49,489	49.6%	
City of N. Las Vegas	7,244	49.9%	7,281	50.1%	
Remainder of Clark Co.	91,517	53.0%	81,248	47.0%	

Notes:

Median and mean contract rents exclude units paying no cash rent.

1. Mean value includes only single-family, owner-occupied units on 10 acres or less without a business or medical office on the property.
2. Mean contract rent excludes single-family houses on 10 acres or more, and units paying no cash rent.

Source: 1990 Census of Population and Housing.

**TABLE V-39**  
**Vacancy Rates in the Project Area**  
**and Clark County, 1996**

<b>Area</b>	<b>Total Units</b>	<b>Occupied Units</b>	<b>Vacancy Rate</b>
Clark County	443,391	428,821	3.3%
Project Area	118,926	114,753	3.5%
<b>Project Area Census Tracts</b>			
1.01	1,990	1,949	2.1%
1.02	2,596	2,543	2.0%
1.03	1,952	1,916	1.8%
1.04	3,559	3,487	2.0%
1.05	1,168	1,147	1.8%
2.01	1,369	1,257	8.2%
2.02	2,644	2,418	8.5%
3.01	1,450	1,325	8.6%
3.02	1,266	1,145	9.6%
9	1,105	1,059	4.2%
10.97	4,039	3,979	1.5%
10.98	2,645	2,603	1.6%
11	1,976	1,943	1.7%
22.01	2,098	2,047	2.4%
22.02	6,057	5,949	1.8%
29.05	2,208	2,172	1.6%
29.06	7,672	7,368	4.0%
29.07	3,302	3,253	1.5%
30.01	1,266	1,242	1.9%
30.02	5,791	5,526	4.6%
31	4,338	4,247	2.1%
32.02	27,703	26,478	4.4%
34.01	3,789	3,605	4.9%
34.03	4,865	4,736	2.7%
34.04	4,067	3,986	2.0%
34.05	4,472	4,369	2.3%
34.06	6,762	6,470	4.3%
34.07	3,565	3,478	2.4%
35	829	763	8.0%
36.02	1,272	1,231	3.2%
37	1,111	1,062	4.4%

Source: Clark County Department of Comprehensive Planning

### **3. Land Use and Zoning**

The purpose of this section is to describe current land use and zoning conditions so that an assessment can be made regarding the nature and extent of direct and indirect impacts on land use and land use policy. This section describes 1) existing land use patterns in the region and in the project area; 2) plans and policies that govern land use in the Las Vegas Valley; and 3) zoning regulations and current zoning patterns in the project area.

#### **a. Existing Land Use**

##### **(1.) Summary of Regional Land Use Patterns**

Clark County is an area encompassing over five million acres of land in the extreme southeastern section of the State of Nevada. The majority of this land is unincorporated and undeveloped desert land. Clark County includes the cities of Las Vegas, North Las Vegas, Henderson, Mesquite, and Boulder City. The main development occurs in the Las Vegas Valley Urban Area in central Clark County which includes the cities of Las Vegas, North Las Vegas, and Henderson. Land uses are varied and include relatively dense urban development around a central core, suburban residential communities with commercial areas, and rural areas with scattered development.

Land development throughout the valley is rapidly expanding, with residential development being the most dominant pattern. By the year 2004, approved master planned communities alone are expected to construct an estimated 22,650 additional dwelling units. By the year 2020, a minimum of an additional 45,000 homes will be constructed based on master planned projects already approved. Residential development in the valley occurs in a wide variety of types, with single-family detached units at moderate densities being among the most prevalent. Single-family homes comprise just over 50 percent of all housing county-wide. Single-family attached units and apartment complexes are, however, becoming more prevalent throughout the area.

The casino resort industry continues to grow and remains a primary focus of automobile trip generation throughout the Las Vegas Valley. Casino development occurs in pockets throughout the valley, but is concentrated in the old downtown area of the City of Las Vegas and along the Las Vegas Boulevard corridor in the County.

In addition to the commercial development which is expanding to meet the needs of the growing residential population, many commercial service and retail establishments exist because of the casino industry. Most of the casino-related commercial development is concentrated along the corridors which lead out from the City's central core. Newer commercial development, in response to residential growth, is occurring in regional and community malls. Office commercial, primarily concentrated in the city core area, comprises the smallest degree of commercial development in the valley. As residential growth continues and the need for professional services grows as well, office and professional commercial space is expected to expand.

Industrial development is comprised primarily of light industry, industrial warehousing, and freight operations (e.g., trucking, airport). Manufacturing and heavy industry accounts for approximately 25 percent of the industrial land uses in the valley. This type of industry is concentrated in the southeast portions of the valley and is associated with specific manufacturing and mining operations.

Public and semi-public facilities are located throughout the valley region and include government facilities and services, public utilities, parks and recreation areas, institutions and schools. Many of the locally-oriented public facilities, such as schools, parks, recreation facilities and fields, libraries, and medical facilities are located within neighborhoods. Other government services and offices are located in the central core areas of the cities.

Undeveloped desert land is the largest land use in the Las Vegas Valley. Much of this land is owned and managed by federal government agencies, with the Bureau of Land Management being the largest government land holder.

## (2.) Existing Land Use within the Project Area

Within the project area, current land use patterns comprise a mix of urban and suburban uses including: residential uses at a variety of densities; retail, professional office, and service commercial uses; light to medium industrial uses; public land and facilities; and vacant parcels. Vacant parcels comprise a relatively small percent of the land use within the project area. Figure V-7 and Figures V-8 through V-62 in Volume 2 of the DEIS indicate graphically the location and mix of existing land uses in the impact project area, adjacent to proposed improvements.

### ■ US-95 from Craig Road to the Summerlin Parkway Interchange

From Craig Road to the Summerlin Parkway Interchange, existing land uses adjacent to US-95 are a mix of single and multi-family residential, office and retail commercial, and public/semi-public facilities. (Figures V-8 through V-15).

Along the west side of this segment of US-95, there are 11 large apartment complexes with approximately 90 individual multi-family buildings. These buildings average about eight dwelling units per building. There are no single-family residences along the west side.

Other uses on the west side include a commercial property (a *Target* store) north of Cheyenne Avenue and the City of Las Vegas Technology Center located between Cheyenne Avenue and Smoke Ranch. Sunrise Mountainview Hospital and Medical Center, Sierra Health Services, and one other commercial use currently exists within the Technology Center. A hotel (Hampton Inn) was recently developed on a vacant lot between the hospital and Sierra Health Services. There are several other vacant lots within the Technology Center which are likely to develop within the next several years. The principal access to these uses is from Tenaya Way, which parallels US-95 on the west side. Two other vacant parcels exist on the west side of U.S. 95 between Lake Mead and Summerlin Parkway. City records show that there is no current development activity occurring or planned on these parcels.

Along the east side of this segment of US-95, there are eight large apartment complexes with approximately 55 individual multi-family buildings. The buildings average about eight dwellings per unit. Between Craig Road and Gowan Road on the east side of US-95, there are three single-family residential neighborhoods. Together these neighborhoods contain approximately 54 homes directly adjacent to the highway. There are also five large retail commercial properties on the east side, with the principal access being from Rainbow Boulevard which parallels US-95.

A commercial subdivision has been approved on the vacant land south of Lake Mead, on the east side of US-95. Specific uses that will be developed soon include a restaurant, hotel, and an auto dealership. On the parcel which abuts Washington Avenue to the north, a multi-family apartment complex is currently being built. On the vacant parcel just south of Washington Avenue, development plans for a 100,000-square-foot office complex have been submitted to the city for approval. According to city records, there are no current development plans for the other vacant parcels on the east side of US-95.

■ **US-95 from Rainbow Boulevard to I-15**

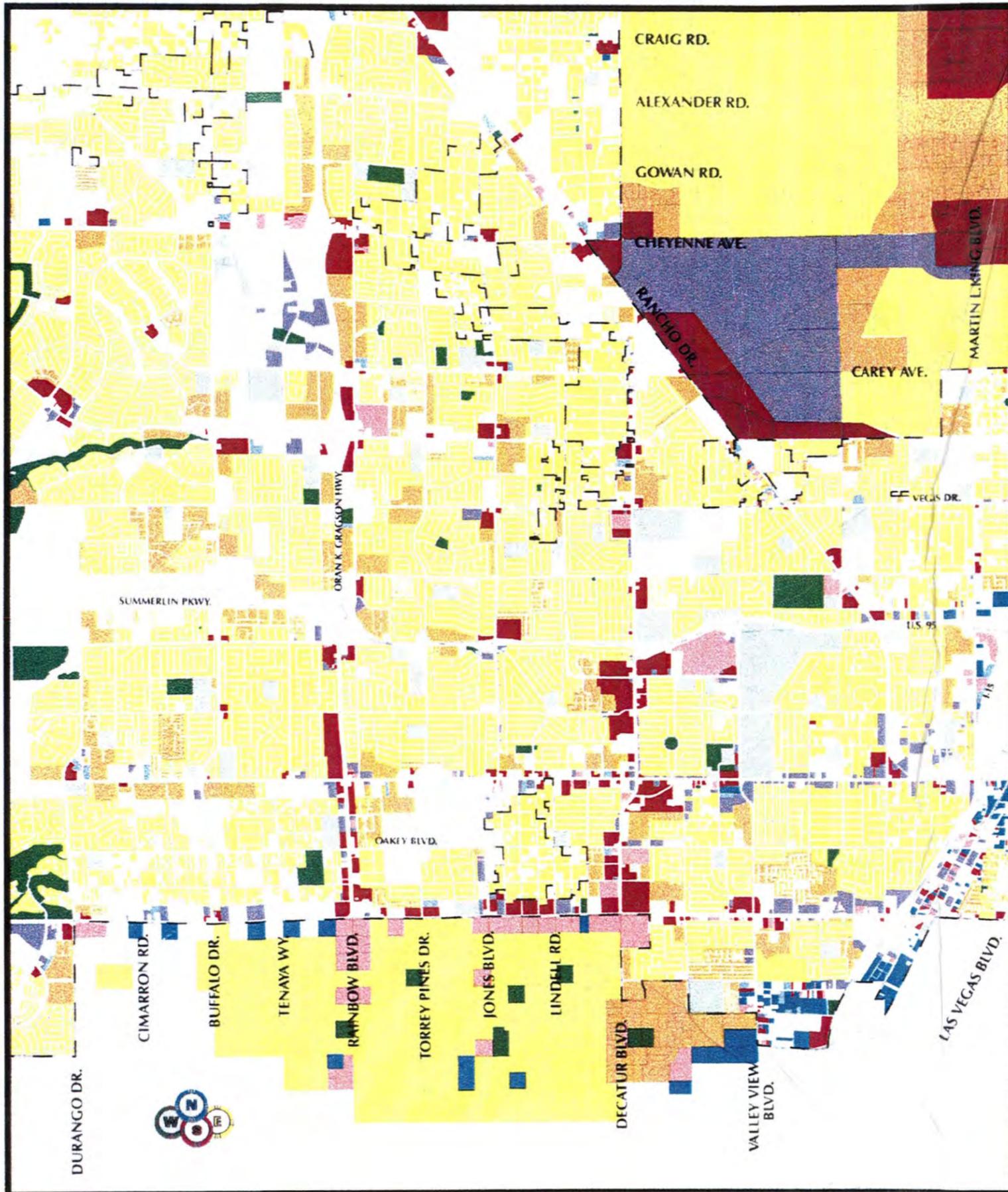
Land along this east/west portion of US-95, between Rainbow Boulevard and I-15, is densely developed with a mix of uses, with single-family residential neighborhoods being predominate. Because land is more intensely developed along this segment and potential impacts are greater, existing land uses will be discussed in smaller segments (Figures V-15 to V-27).

▶ ***Rainbow Boulevard to Jones Boulevard***

Along the north side of US-95, there is one single-family neighborhood and three multi-family apartment complexes located adjacent to the highway. Approximately seven apartment buildings abut US-95. Other uses include one commercial strip shopping center, a church, and a Nevada Power electrical substation.

Along the south side of this stretch, there is one single-family neighborhood and two multi-family apartment complexes. Approximately 12 apartment buildings abut the highway. Also located along the south side are a professional office building, the Adcock Elementary School, The Torrey Pines Park, a police substation, and the Mirabelli Community Center.

On the southwest corner of the Summerlin Parkway/US-95 interchange, a church has been approved for development, just to the east of the Bank of America building. The other vacant land in this area of the interchange is owned by the BLM.



# Project Area Existing Land Use

## LEGEND

- Single Family
- Multi-Family
- Commercial Office
- Commercial Retail
- Office/Retail Mixed
- Industrial/Commercial Mixed
- Industrial Manufacturing
- Industrial Warehousing
- Mixed Warehousing with Manufacturing
- Parks and Golf Courses/Recreational
- Public/Semi-Public
- Corporate Limits

Sources: City of Las Vegas; City of North Las Vegas; Clark County

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
<b>PROJECT AREA EXISTING LAND USE</b>	
	FIGURE V-7

▶ ***Jones Boulevard to Decatur Boulevard***

Properties on both the north and south sides of the highway, are predominantly single-family residential. One hundred twenty-nine single-family homes abut US-95 between Jones Boulevard and Decatur Boulevard, 40 on the north side and 89 on the south side. Other uses on the north side include a Smith's Shopping Center and four apartment buildings on the east corner of the Jones Boulevard interchange and a small apartment complex on the west corner at the interchange at Decatur Boulevard. On the south side of US-95, an office building and a fire substation are located on the east corner at the Jones Boulevard interchange.

▶ ***Decatur Boulevard to Valley View Boulevard***

Land uses along the north side of the highway include a single-family neighborhood with approximately 19 homes abutting US-95, Western High School on the east corner of Decatur Boulevard, and Ruth Fyfe Elementary School on the west corner of Valley View Boulevard. The south side of US-95 between Decatur Boulevard and Valley View Boulevard is occupied by the Meadows Mall, other retail stores, and a day care facility.

▶ ***Valley View Boulevard to Rancho Drive***

Single-family residential neighborhoods occupy most of the land adjacent to US-95 on the north side between Valley View Boulevard and Rancho, with approximately 58 homes abutting the highway. An office complex is located at the northwest corner of the Rancho Drive interchange.

Along the south side of US-95 from Valley View Boulevard three quarters of a mile eastward is mostly North Well Field property which is owned by the Las Vegas Valley Water District (LVVWD). This property contains two active wells and a pumping station immediately adjacent to US-95. In addition, the LVVWD property contains several historic structures associated with early Las Vegas ranching and water supply activities. This area also contains large undeveloped areas of natural vegetation. The North Well field serves as a critical link in the potable water storage recovery and transmission system which is operated by the LVVWD and the Southern Nevada Water Authority. The North Well Field contains numerous facilities including ten ground-water production and artificial recharge wells, two pump stations, eight water level monitoring wells, disinfection facilities and pipelines. The North Well Field has a potable water storage capacity of 50 million gallons. Four large pipelines which are maintained by the Southern Nevada Water Authority extend beneath US-95 from the North Well Field. The facilities of the North Well Field are situated within a critical service zone where as it supplies potable water to much of the project area and downtown Las Vegas. This area has been designated as the Las Vegas Springs Archaeological Site and is listed on the National Register of Historic Sites. Between the LVVWD property and Rancho Drive is a single-family residential neighborhood with approximately 150 homes abutting US-95.

▶ **Rancho Drive to I-15**

From Rancho Drive to Martin Luther King Boulevard and onto I-15, existing land uses on the north side of US-95 are commercial and light industrial businesses, with access and frontage along Bonanza Avenue. On the south side of this segment, land uses include a single-family residential neighborhood and a multi-family apartment complex. Twenty-four homes and three apartment buildings abut US-95. Private community facilities are located at the southeast corner of the Rancho Drive interchange. A commercial use is located between Martin Luther King Boulevard and I-15.

■ **Rancho Drive**

Land uses on Rancho Drive from Alta Drive to Craig Road are varied (Figures V-34 to V-38). The first segment of Rancho Drive, from Alta Drive to US-95, is primarily single-family residential on both sides of the road. North of US-95, up to the Washington Avenue area, properties are a mix of commercial and industrial uses along both sides. Beyond Washington Avenue, on both sides of Rancho, single-family neighborhoods are again the primary land use, up to Vegas Drive. From Vegas, up to Coran Lane, the residential areas become interspersed with commercial, light industrial, and vacant properties. Vacant properties become more present from Coran northward. Several of these vacant properties have, according to city records, recently received approval for commercial development. The North Las Vegas Airport is on the east side of Rancho between Carey Avenue and Decatur Boulevard. From Cheyenne Avenue, up to Craig Road, land uses include vacant parcels, areas with a mix of industrial/commercial businesses, multi-family residential, civic uses, light industrial, and retail commercial businesses. City planning staff expects that many of the vacant parcels along Rancho Drive will be developed with predominantly commercial uses in the near future.

■ **Summerlin Parkway**

Current land-use from the Summerlin Parkway/US-95 interchange to Rampart Boulevard directly adjacent to Summerlin Parkway is a mix of open, undeveloped land and residential development (Figures V-34 to V-38). From the interchange to Tenaya Way, to the north and south of Summerlin Parkway, there are open, vacant parcels. The open land continues on the north side, with the exception of one multi-family apartment complex located just west of Tenaya. Much of the open land along Summerlin Parkway is currently owned by the BLM. The BLM, which often leases its land for various uses, is reserving a portion of land along Summerlin Parkway for transportation purposes. On the south side of Summerlin Parkway, there are several single-family and multi-family residential areas interspersed with vacant parcels. Angel Park Golf Course is located to the north and south of Summerlin Parkway at its intersection with Rampart Boulevard.

■ **Torrey Pines**

The section of Torrey Pines within the project area runs north to south between Craig Road and Washington Avenue. The land is primarily in residential use with a wide variety of densities and lot

sizes. Other uses on Torrey Pines include commercial uses, civic uses, and vacant parcels (Figures IV-33 to IV-37).

#### ■ **Martin Luther King Boulevard**

A wide variety of land uses occur along Martin Luther King Boulevard between Charleston Boulevard and Craig Road (Figures V-38 to V-50). Generally commercial and industrial uses are predominant between Charleston Boulevard and Carey Avenue with interspersed residential. North of Carey Avenue new residential development is occurring adjacent to vacant parcels.

Along the west side of Martin Luther King Boulevard, from Charleston Boulevard to Lake Mead Drive, land uses are a mix of residential, commercial and light industrial. From Lake Mead to Craig Road, relatively new single-family and multi-family residential development is interspersed with vacant lots. According to the City of Las Vegas planning staff, the vacant lot on the southwest corner of Cheyenne Avenue and Martin Luther King Boulevard is currently being developed as warehouses. Public and semi-public uses along the west side of Martin Luther King Boulevard include the Adeliar D. Guy III Ambulatory Care Center, the Kermit R. Booker Elementary School, the Prentiss Walker Memorial Pool, and the City of North Las Vegas Fire Station #53.

On the east side of Martin Luther King Boulevard, I-15 parallels the road from Charleston Boulevard to Alta Drive. Adjacent land uses are a mix of light industrial and commercial businesses from Alta Drive to Washington Avenue. The Andre Agassi Boys and Girls Club is on the southeast corner of Washington Avenue and Martin Luther King Boulevard. North from Washington Avenue commercial property and, a variety of multi- and single-family residential homes and neighborhoods occur, along with several churches and vacant lots. Just inside the City of North Las Vegas boundary, at the northeast corner of Carey Avenue and Martin Luther King Boulevard, Clark County is building a community center which will focus on activities for senior citizens. The land from Alexander Road to Craig Road is vacant with no plans currently submitted for development approval.

#### ■ **Industrial Road**

Between Sahara Avenue and Wyoming Avenue, the land adjacent to Industrial Road is occupied by a mixture of industrial and commercial uses. Older single-story apartments are located behind the business area on the east side of Industrial Road (Figure V-51).

#### ■ **Martin Luther King Boulevard to Industrial Road Connector**

Along the west side of Martin Luther King Boulevard near its intersection with Charleston Boulevard, are apartments, several commercial uses, and one public/semi-public use, American Medical Response Ambulance Service. From the Martin Luther King Boulevard/Charleston Boulevard intersection to Industrial Road, which is several blocks southeast, land uses include I-15 and its associated ROW, railroad tracks (UPRR), and industrial businesses (Figure V-45).

### ■ Desert Inn Road

Current land uses on Desert Inn Road between Jones Boulevard and Durango Drive include vacant parcels, mined land, residential development, and a small amount of commercial (Figure V-52 to V-54). On the northeast corner of Durango Drive and Desert Inn Road is a large vacant parcel which is the subject of a pending development application with Clark County for approximately 1,900 new dwelling units and 43 acres of commercial development. The majority of the remaining land on the north side of Desert Inn Road, east to Jones Boulevard, is single-family residential.

On the south side of Desert Inn Road, the land uses are a little more varied. A vacant parcel on the southeast corner of Durango Drive and Desert Inn Road, owned by the BLM, is a collection point for much of the area's storm water runoff. A portion of this BLM land is being reserved for transportation purposes. To the east is a high density residential development, a parcel currently being mined for sand and gravel, a vacant parcel, several residential developments, and two small commercial areas.

### ■ Durango Drive

Along Durango Drive, between Desert Inn Road and Edna Avenue, the land is occupied on the west by a single-family residential subdivision and a multi-family apartment complex. A vacant lot is along the east side of Durango Drive (Figure V-55).

### ■ Carey Avenue

The land along the north side of Carey Avenue, between Rancho Drive and Clayton Street, is occupied by vacant land, and the North Las Vegas Airport and its associated open land. According to city records, a casino is proposed for development on the northeast corner of Rancho Drive and Carey Avenue (Figure V-56 to V-57).

On the south side of Carey Avenue, at Rancho Drive, the land developed is in commercial use. To the east is vacant land, some of which is associated with the airport. Further to the east, between Simmons Street and Clayton Street, there is a relatively new single-family subdivision along the south side. At the southwest corner of Carey Avenue and Clayton Street, a residential development has been recently approved by the City of North Las Vegas.

### ■ Valley View Boulevard

On Valley View Boulevard, between Sahara Avenue and Desert Inn Road, the land is mainly in single-family and multi-family residential use, with professional offices, retail commercial uses, and some light industrial use from Penwood Avenue, south to Desert Inn Road (Figure V-58).

- **Arville Street**

Arville Street, between Sahara Avenue and Charleston Boulevard, contains single-family residences, a multi-family apartment complex, a church, and a mix of retail businesses and professional offices (Figure V-59).

- **Alta Drive**

The land uses on Alta Drive, from Rancho Drive to Martin Luther King Boulevard, include single-family residences, office and retail commercial businesses, a mix of industrial/commercial businesses, and several Clark County social service agencies (Figure V-60).

- **Tenaya Way**

Land uses on Tenaya Way between Westcliff Drive and Smoke Ranch Road include vacant land, and single-family and multi-family residential (Figures V-61- V-62).

- **Park and Ride Facilities**

- ▶ ***Rancho Drive and Centennial Parkway***

This interchange is surrounded on all sides by vacant land. On the southeast side of the interchange is an existing park and ride parking lot.

- ▶ ***Rancho Drive and Craig Road***

Land use at this intersection consists of commercial retail and office space, and vacant land. Residential property is found adjacent to the intersection, to the west at Craig Road and Torrey Pines Drive. See Figure V-33

- ▶ ***Rancho Drive and Smoke Ranch Road***

Commercial retail uses are situated on three corners of this intersection; the fourth corner is vacant land. Adjacent uses consist of multi-family housing, utilities, and vacant land. See Figure V-31.

- ▶ ***US-95 and Cheyenne Avenue***

Commercial retail uses are found on the eastern side of this interchange; on the western side of the interchange, commercial retail and institutional uses are found. Single- and multi-family housing is situated adjacent to the commercial property north of the interchange. See Figure V-12.

▶ ***US-95 and Summerlin Parkway***

Surrounding this interchange, industrial/commercial, commercial office, and multi-family residential uses predominate. Single-family housing is also situated on property near the interchange. See Figure 37.

▶ ***Summerlin Parkway and Rampart Boulevard***

This park and ride location, unlike the others, is not as specific and may not be at the intersection of Summerlin Parkway and Rampart Boulevard. Generally however land use at the interchange consists of vacant land and semi-public use (a golf course). See Figure V-34

▶ ***Sahara Avenue and Fort Apache Road***

Commercial retail uses are found on three corners of this intersection; the southwest corner consists of commercial office uses. Some single and multi-family residential uses exist to the nearby north and south.

▶ ***Sahara Avenue and Rainbow Boulevard***

This intersection has commercial retail land uses on all sides, with some vacant land adjacent to these commercial properties.

▶ ***Martin Luther King Boulevard and Cheyenne Avenue***

The northern side of this intersection consists of vacant land. South of the intersection, commercial office use is situated on the parcel on the eastern side of Martin Luther King Boulevard; on the western side, industrial and public uses are found. See Figures V-44 and V-45.

▶ ***Martin Luther King Boulevard and Ann Road***

The northern side of this intersection consists of multi-family residential uses, and the south side of the intersection is vacant.

**b. Land Use Plans and Policies**

Within the project area, land use planning and regulation at the local level is guided by the comprehensive development plans adopted by the City of Las Vegas, Clark County, and the City of North Las Vegas. These plans establish policy guidelines for land use, circulation, community facilities, and other physical, social, and economic concerns. Planning at the regional level occurs through agencies which have jurisdiction over areas that span city and county boundaries. The following section briefly describes currently adopted comprehensive plans which pertain to the project area.

**(1.) City of Las Vegas**

The City of Las Vegas General Plan, adopted in 1992, is the primary growth management tool and policy document which guides the future growth of the City of Las Vegas. The General Plan discusses the importance of the relationship between land use and the city's circulation system, including streets, road and highway systems, rail systems, and pedestrian and bike trail systems. Topics and areas of concern, addressed in the plan which deal with transportation and land use, include the following:

**■ Balancing Land Development and the Circulation System**

The plan calls for the extension and expansion of a comprehensive circulation system which serves local, as well as regional, needs. Several city maps, including the Future Land Use Classification map and the Planned Communities map, show continued development and increased densities occurring in the north and west portions of the city. The plan states that circulation systems will need to be developed and coordinated to serve existing and future developments.

One specific example which pertains to this project is the development of the Summerlin area on the west side of the city. The plan recognizes that the Summerlin Planned Community, which is 23,180 acres, will have a major impact on the transportation system of the entire Las Vegas Valley. US-95 and Summerlin Parkway will be especially impacted by the increased growth. The plan calls for the consideration of, at a minimum, a Transportation Demand Management (TDM) program and a High Occupancy Vehicle operation to mitigate the potential traffic problems as development of Summerlin continues.

**■ Promoting Safe, Efficient, and Adequate Levels of Highway and Road Service**

One of the city's primary circulation objectives is to maintain a safe and efficient roadway system which operates at an adequate level of service. The General Plan recognizes that increased congestion has compromised safety and efficiency. Specifically, the plan states that additional access to and from US-95 will be crucial in distributing traffic efficiently and maintaining an adequate level of service throughout the city. The plan establishes a policy to improve regional access to and from the downtown area.

**■ Promoting a Multi-Modal Approach to Transportation Planning**

The plan states that a focus on alternatives to the automobile is needed which includes linking transit to affordable housing, a bicycle program, pedestrian circulation, and a multi-use trail system. The plan establishes a policy to support the expansion of transit service to all areas of the city, especially those areas which have transit dependent populations.

## (2.) Clark County

The Clark County Comprehensive Plan was adopted in 1983. The Master Plan is presently being updated for the various sections of the country. The stated purpose of the existing plan is to adequately respond to the projected continuation of the county's intense growth rate and to provide a management framework for growth into the year 2000. Out of this planning effort has come the development of local area plans for specific locations.

One of these local plans, the Spring Valley Land Use Plan, adopted in August 1997, covers the portion of Clark County north of Warm Springs and Sunset roads and west of I-15. Desert Inn Road, which is a segment of the project, is within this area. The stated goal of the Spring Valley Land Use Plan is to ensure that the area remains a desirable place in which to live and work. The vision statement and subsequent policy sets forth the need for major streets to be improved aesthetically through appropriate landscaping and setbacks. To preserve and enhance the rural character of the residential neighborhood along the north side of Desert Inn Road, the plan establishes this area as a Rural Neighborhood Preservation area.

The Clark County Comprehensive Plan states that the transportation system must be part of the comprehensive planning process. The system should move goods, services, and people in an efficient manner, according to regional land use and transportation goals. The plan lists the five main transportation goals of Clark County as the following:

- Goal 1: Provide an efficient, integrated, and safe multi-modal transportation system at the least cost to the public and the user, which maximizes convenience and minimizes conflict between the various modes of transportation.
- Goal 2: Provide a transportation system which supports the desired growth and development goals of the community, has the flexibility to meet changing needs within the community, and is capable of utilizing evolving technologies.
- Goal 3: Fulfill the mobility needs of the community, giving special attention to the segments of the population which, for reasons of age, disability, or income levels, have had limited transportation opportunities.
- Goal 4: Emphasize the movement of people and goods, rather than the movement of vehicles.
- Goal 5: Protect the environment of Clark County by reaching and maintaining national ambient air quality standards, minimizing the consumption of energy and other natural resources, enhancing the aesthetic attributes of the community, and minimizing the noise impact of the transportation system.

## (3.) City of North Las Vegas

A portion of the project along Rancho Drive, Carey Avenue and Martin Luther King Boulevard extends into the City of North Las Vegas. The City of North Las Vegas has a Master Plan Update 1993 which establishes visions, goals, objectives, and policies for guiding growth within the city to the year 2010. The master plan sets the framework for development patterns within land use,

transportation, housing, economic development, municipal facilities, public utilities and conservation.

The master plan envisions that growth will continue to occur throughout North Las Vegas. A main goal is to promote economic development and maximize the city's growth potential. The plan seeks to encourage growth to occur first where infrastructure is already in place. Growth in undeveloped areas will be timed so that utilities, roads, and other facilities can be properly planned and sized to accommodate the new development. Generally, the plan promotes a diversity of residential types, sizes, and densities throughout the city. Regarding circulation and transportation, stated objectives include:

- To continue to develop and maintain a municipal street system that provides appropriate access to all land uses, protects the integrity of neighborhoods and non-residential areas, encourages appropriate infill development, and promotes systematic and orderly municipal growth;
- To coordinate transportation planning efforts with the Regional Transportation Commission (RTC) to ensure timely provisions of required transportation improvements;
- To develop a multi-modal circulation system that provides for a variety of transportation options;
- To provide for the safe, adequate flow of traffic; and
- To provide a vehicular circulation system that allows movement of through traffic on a regional basis with minimal effect on local land uses, provides efficient local traffic movement, and connects regional and local transportation facilities.

Specifically related to Martin Luther King Boulevard, the plan states that this major arterial provides one of the main, continuous north-south routes through the city. The plan states that commercial, office, and light industrial land uses are more appropriate along major arterials than residential uses. The plan suggests that improvements to Martin Luther King Boulevard would be beneficial to the overall transportation system and also calls for street beautification along this and other roads in North Las Vegas.

#### (4.) Regional Planning Policy

The RTC, as the regions' Metropolitan Planning Organization, has a responsibility to ensure that there is a comprehensive, coordinated, and continuing transportation planning effort for the Las Vegas Valley. The RTC administers the funds generated by the motor vehicle fuel tax, bond issues, and other taxes. A primary goal of the RTC is the improvement of street and highway systems within Clark County. The RTC has been extensively involved in the development of this project and the alternatives. The RTC's Regional Transportation Plan 1998-2020, adopted in January 1998, includes the proposed project.

## c. Zoning Regulations and Current Zoning Patterns

### (1.) Zoning Regulations

Zoning regulations are the key tool by which the cities of Las Vegas, North Las Vegas, and Clark County legally enforce the guiding principals and goals established in their comprehensive plans. The majority of the project is subject to the zoning regulations established by the Las Vegas Zoning Code Title 19A and its associated Existing Zoning Classifications Map, which establishes zoning regulations within the boundaries of the City of Las Vegas. The zoning ordinance for Clark County, Title 29 of the Clark County Code Zoning Ordinance, establishes zoning for the county including Desert Inn Road, portions of Durango Drive, and parcels of land along Torrey Pines. The City of North Las Vegas Zoning Ordinance and the Official Zoning Map establishes the zoning categories and regulations for a portion of Rancho Drive near the North Las Vegas Airport, Carey Avenue, and the northern segment of Martin Luther King Boulevard. Table V-40 identifies and summarizes the zoning categories used by Las Vegas, North Las Vegas, and Clark County.

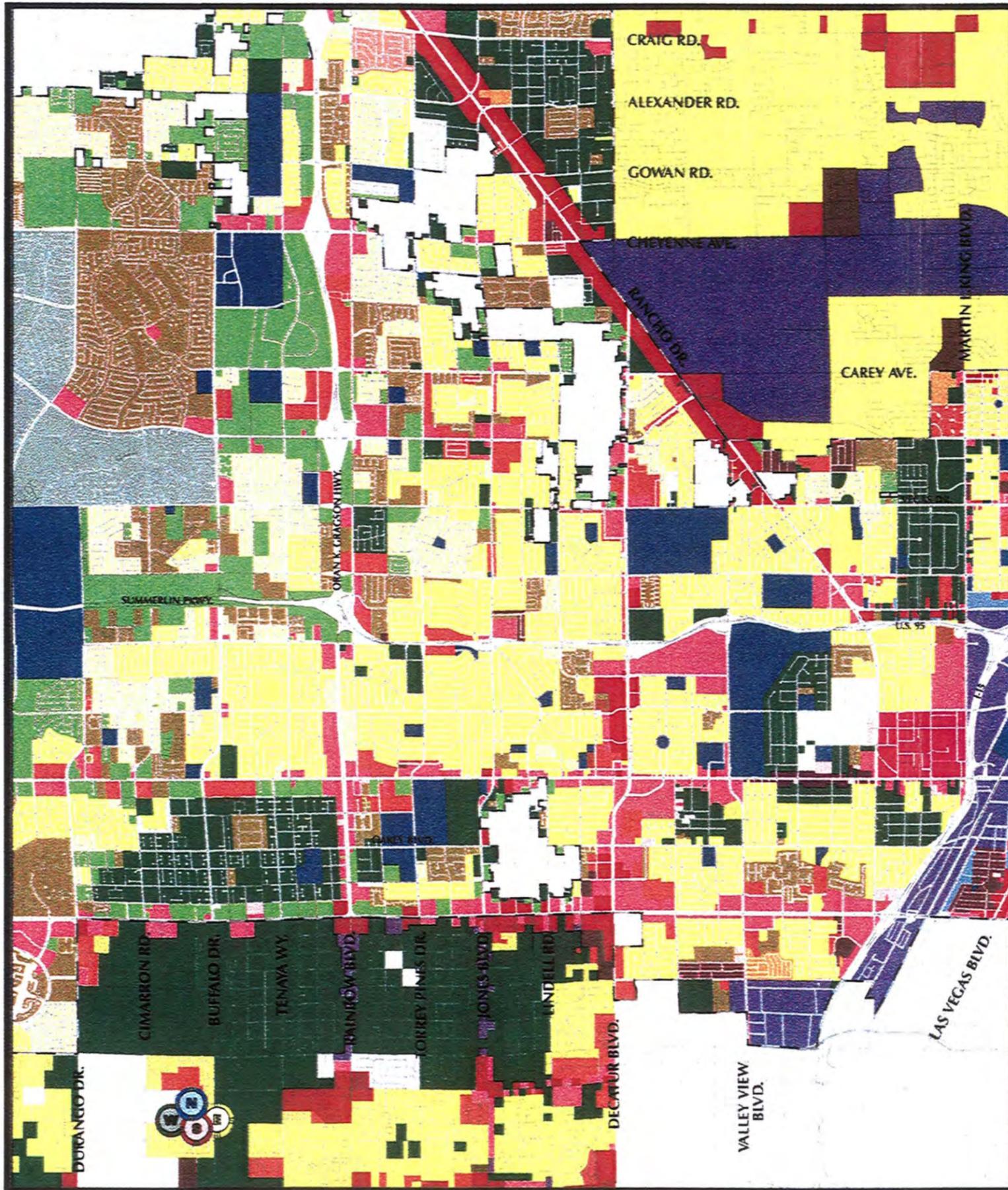
### (2.) Current Zoning Patterns

This section discusses zoning patterns and the consistency between zoning and current land use along US- 95 and the various arterials within the project (see also Figure V-63).

#### ■ US-95

The first portion of US-95, from Martin Luther King Boulevard west to Rancho Drive is a mix of commercial (C-2), commercial/industrial (C-M) and large lot residential (R-E) along the north side. The southern side is primarily residential (R-1). From Rancho Drive, further west to the Rainbow Boulevard area, single-family residential (R-1) is the main zoning category to the north and south of US-95. Pockets of land zoned for commercial and civic uses occur within the residentially zoned areas. The land around the US- 95/Summerlin Parkway interchange is zoned U, C-1, C-2, and R-PD. From the Summerlin Parkway interchange north to Craig Road, zoning is a wide mix of higher density, planned residential areas (R-PD, R-CL) with larger commercial parcels (C-1, C-2) occurring both east and west of the corridor. Approximately nine parcels of varying sizes are zoned in the city's temporary holding category (U). This category is a temporary holding zone until a more intense zone becomes appropriate for the area and development is pursued by the land owner.

Differences between zoning and current land use occur along US-95. Along the north-south segment of US-95, between Carey Avenue and Lake Mead, land on the west side of the highway is zoned for commercial (C-2), yet it is developed as an apartment complex. Between Alexander Road and Cheyenne Avenue on the west side of US-95, land zoned U (the temporary holding category), is developed as a multi-family apartment complex. South of this area, land is also zoned U, but is being developed commercially as the Las Vegas Technology Center.



# Project Area Zoning

## LEGEND

- |   |   |   |  |
|---|---|---|--|
|    | U - Non-Urban District                            |    | P-R - Professional Offices and Parking |
|    | R-A - Ranch Acres District                        |    | O - Office                             |
|    | R-E - Residence Estates District                  |    | C-D - Designed Commercial District     |
|    | R-D - Single-Family Residence-Restricted District |    | C-1 - Limited Commercial District      |
|    | R-PD - Residential Planned Development District   |    | C-2 - General Commercial District      |
|    | R-1 Single Family Residence District              |    | C-M - Commercial Industrial District   |
|   | R-MH - Mobile Home Residence District             |   | M - Industrial District                |
|  | R-CL - Single Family Compact Lot District         |  | C-V - Civic District                   |
|  | R-2 - Two-Family Residence District               |  | C-PB - Planned Business Park District  |
|  | R-3 - Limited Multiple Residence District         |  | P-C - Planned Community District       |
|  | R-4 - Apartment Residence District                |  | PD - Planned Development               |
|  | R-5 - Downtown Apartment District                 |  | Corporate Limits                       |
|  | R-MHP - Residential Mobile Home Park District     |   |  |

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95	EIS
PROJECT AREA ZONING	
FIGURE V-63	

Sources: City of Las Vegas; City of North Las Vegas; Clark County

**Table V-40**  
**Zoning Classifications**

Jurisdiction	Zoning	District	Zoning Characteristics
City of Las Vegas	R-1	Single-family Residential	Provides for single-family detached dwellings in a suburban setting.
	R-3	Medium Density Residential and Apartment	Provides for a variety of multi-family units such as townhouses, duplexes, and medium density apartments.
	R-4	High Density Residential and Apartment	Provides for a variety of multi-family units such as townhouses, duplexes, and high density apartments.
	R-5	Apartment	Provides for high-density multi-family units in the downtown urban core and other suitable areas.
	R-CL	Single-family Compact Lot	Provides for single family units on smaller, minimum lot sizes.
	R-PD	Residential Planned Development	Provides for planned residential communities with appropriate amenities to establish a clear sense of community.
	R-E	Residence Estates	Low density on large lots to convey a rural environment.
	R-D	Single-family Restricted	Low density, large lot, single family detached residential units.
	U	Undeveloped District	A temporary classification used until property is ready for more intense development; until rezoned, allows for single-family residential development at 1/2 acre minimum lot size.
	C-1	Limited Commercial	Retail shopping and personal services; confined to periphery of residential areas.
	C-2	General Commercial	Retail, service, automobile, wholesale, office, and other businesses for the general and traveling public.

Table V-40 (Continued)  
Zoning Classifications

Jurisdiction	Zoning District	District	Zoning Characteristics
City of Las Vegas	P-R	Professional Office	Office uses in primarily residential areas which are no longer suitable for the continuation of residential uses due to traffic or other factors.
	PD	Planned Development	A flexible district intended for redevelopment, economic development, and cultural enrichment; allows developer to write own development criteria within guidelines.
	C-M	Commercial/Industrial	A variety of business, warehouse, wholesale, office, and limited industrial uses.
	M	Industrial	Heavy manufacturing industries in appropriate locations.
	C-V	Civic	Public and quasi-public uses such as schools, libraries, public parks, public flood control facilities, police, fire, electrical transmission and other public utility facilities.
	R-1	Residential	Single-family residential at moderately low densities.
	R-4	Residential - High Density	Multi-family dwelling units in very high densities (up to 50 du/acre)
	PUD	Planned Unit Dev.	Allows for an integration of residential, commercial, industrial uses within innovative developments.
	C-1	Neighborhood Commercial	Provides for goods and services for the convenience of residents of the adjacent neighborhood.

Table V-40(Continued)  
Zoning Characteristics

Jurisdiction	Zoning	District	Zoning Characteristics
	C-2	General Commercial	Very intense retail and service areas that will serve as major community cores.
	C-3	General Service Commercial	Provides for intensive retail or service operations that generally need large amounts of land for success.
	M-2	General Industrial	Uses that would not be compatible with most other land uses, but are desirable activities.
	R-E	Rural Estates Residential	Provides for low density residential uses, raising crops and a limited number of animals are permitted; lot size is 1/2 acre per dwelling minimum.
Clark County	C-P	Office and Professional	Permits office and clinic uses, and provides a buffer use area between the more intensive commercial and residential districts.
	C-1	Local Business District	A variety of locally-oriented service and retail businesses.
	C-2	General Commercial	Allows retail stores or businesses not involving any kind of manufacture, processing, or treatment of products, excluding wholesale storage, warehouses, and trailer courts.

Along the east-west segment of US-95, from Torrey Pines to Jones Boulevard, land on both sides of the highway is zoned for general commercial (C-2) use. Currently, multi-family apartments occupy these areas. Between Decatur Boulevard and Valley View Boulevard, on the north side of US-95, two large parcels are zoned residential (R-E), but are actually Western High School and Fyfe Elementary School. The southeast corner of Rancho Drive and US-95, zoned residential (R-1), is currently developed as a private community facility.

#### ■ **Rancho Drive**

The majority of land along Rancho Drive from Alta Drive to Craig Road is zoned for commercial use; however, several blocks near the southern end are zoned residential. Between Alta Drive and US-95, the land is zoned for a mix of residential uses (R-1, R-A, R-PD). From US-95 north to Washington Avenue, the land is zoned for limited commercial use (C-1). Between Washington Avenue and Vegas Drive, the zoning adjacent to Rancho Drive is primarily residential (R-1). Except for land within the City of North Las Vegas, the remainder of the Rancho corridor, up to Craig Road is primarily zoned for general commercial (C-2) use. The east side of Rancho Drive between Coran Lane and Cheyenne Avenue is within the boundaries of the City of North Las Vegas. The zoning is industrial (M-2), except for a small area near Lake Mead Boulevard zoned for commercial use (C-2, C-3). The North Las Vegas Airport is within the industrial zoning.

Zoning and current land use are generally consistent along Rancho. It is anticipated that the vacant parcels from Vegas Drive up to Craig Road, which are almost entirely zoned for general commercial, will develop commercially. Several residential properties currently exist within this commercially zoned area.

#### ■ **Summerlin Parkway**

From the Rainbow Boulevard interchange with US-95 to Durango Drive, zoning on the land directly along Summerlin Parkway is identified as Undeveloped (U). Just beyond this U designation the land is zoned for a mixture of residential uses (R-PD, R-CL, R-1), with several parcels zoned for limited commercial use (C-1). From Durango Drive west to Rampart Boulevard, Summerlin Parkway is bordered by land zoned for civic use (C-V).

The zoning along Summerlin Parkway is generally consistent with current land uses. It is unclear how the vacant land along Summerlin Parkway, currently zoned U, will develop in the future. City planners suggest that the land will be developed commercially, yet the Future Land Use map leaves the area blank.

#### ■ **Torrey Pines**

With the exception of a small section of land still within Clark County jurisdiction, Torrey Pines is subject to the zoning requirements of the City of Las Vegas. The zoning allows for a range of residential uses (R-1, R-CL, R-PD, R-E, R-D), commercial uses (C-1, C-2), and civic uses (C-V). Several parcels are zoned Undeveloped District (U). The land located between Gowan Road and

Cheyenne Avenue, which is subject to County regulations, is zoned for large lot residential use (R-E), which has a minimum lot size of one-half acre per dwelling.

Zoning on Torrey Pines is generally consistent with current land use; however, the parcels under County zoning are surrounded by higher density developments. If the parcels are, in the future, annexed into the City, they will likely be developed much more densely than the current county zoning would now permit.

#### ■ **Martin Luther King Boulevard**

The southern portion of Martin Luther King Boulevard, from Carey Avenue to Charleston Boulevard is within the City of Las Vegas. The zoning is a wide mix of categories throughout this segment of the corridor. The zoning includes residential (R-1, R-2, R-3, R-5, R-E, ); commercial (C-1, C-2); mixed-use (PD), which could include residential, commercial, and industrial; mixed commercial and industrial (C-M), industrial (M), and civic (C-V). The northern portion of Martin Luther, Jr. King Boulevard, within the City of North Las Vegas, is mainly zoned as a mix of residential (R-1, PUD, R-4) and commercial (C-1, C-2). An industrial zone (M-2) occurs near Cheyenne Avenue and Alexander Road.

Except for one area, there is a general consistency between zoning and current land use on Martin Luther King Boulevard. Between Alta Drive and US-95, on the west side of Martin Luther King Boulevard land is currently used for multi-family residential and a mix of light industrial and commercial uses. This area is zoned for limited commercial.

#### ■ **Industrial Road**

Zoning along the west side of Industrial Road and at the intersection of Industrial Road and Wyoming Avenue is for industrial use (M). On the east side of Industrial Road, the land is zoned for mixed commercial/industrial use (C-M). Behind this mixed use area, is a district zoned for high density multi-family apartments (R-4).

Along the west side of the road and at the Wyoming Avenue intersection, the current uses are as much commercial as industrial. Because the zoning is for industrial rather than mixed use, it appears that the city's intention is to permit these areas to become more completely industrial. Zoning and current land use are generally consistent along the east side of Industrial Road.

#### ■ **Martin Luther King Boulevard to Industrial Road Connector**

The area between the intersection of Martin Luther King Boulevard and Charleston Boulevard, and of Industrial Road at Wyoming Avenue is zoned entirely for industrial use (M). While primarily industrial, several commercial businesses do currently exist in this area. Most commercial businesses are permitted by right within the industrial zone; however, some commercial uses are required to meet specific conditions.

### ■ Desert Inn Road

The zoning on the north side of Desert Inn Road, between Jones Boulevard and Durango Drive, is low density residential (R-E). On the south side, zoning is mainly large lot residential (R-E and R-D), with two small areas of commercial (C-P, C-1, C-2) on the southwest corner of Rainbow Boulevard and the southwest corner of Jones Boulevard. A large vacant parcel at Durango Drive, owned by the BLM, was recently rezoned from residential (R-E) to public facility. County records did not show any current plans or proposals to develop the parcel. Two other large vacant parcels to the east of Buffalo Drive, one currently being mined, are zoned for large lot residential (R-E).

Zoning and current land use are largely consistent in that the developed area is mainly residential; however, several of the residential areas are more dense than the R-E zone generally permits, which is two units per acre. As described previously in the current land use section, a large residential development has been approved for the vacant parcel on the northeast corner of Desert Inn Road and Durango Drive. The density of this new development will be approximately five units to the acre. Because the parcel is over 100 acres and is owned by one entity, it qualifies as a Major Development Project. As a Major Development Project, the land can be developed more densely than the R-E classification permits, but development plans for the entire parcel must be submitted and approved by the county.

### ■ Durango Drive

The land to the west of Durango Drive, between Desert Inn Road and Edna Avenue, is within the City of Las Vegas. The zoning is residential (R-CL). This land is currently developed in a subdivision which is consistent with the R-CL zone. The vacant land along the east side of Durango Drive, at the corner of Durango Drive and Desert Inn Road, is the same parcel described previously in the Desert Inn Road section.

### ■ Carey Avenue

Zoning along Carey Avenue is determined by the City of North Las Vegas. The land at the north and south corners of Carey Avenue and Rancho Drive, on the east side, is zoned to permit mixed use commercial businesses (MXC). From Rancho Drive east to Simmons Street is industrial (M-2). The airport, which occurs in this area, is a permissible land use under the M-2 category. From Simmons Street to Clayton Street, the area is zoned for single-family residences (R-1).

Zoning and current land use are generally consistent along Carey Avenue. The City of Las Vegas Land Use Master Plan does show a large area east of Simmons Street, on the north side of Carey Avenue, to be developed at a residential density of 18 units per acre, which is somewhat higher than R-1 zoning. Given this, the area is likely to develop more densely than the zoning map currently indicates.

**■ Valley View Boulevard**

On Valley View Boulevard between Sahara Avenue and Desert Inn Road, the land is zoned for residential (R-1, R-PD) and commercial (C-1, C-2) uses. This zoning is generally consistent with the current land use.

**■ Arville Street**

Zoning along the block long section of Arville Street is a mix of single-family and larger lot residential uses (R-1, R-E) and limited commercial and professional offices (C-1, P-R). The zoning is consistent with current land uses.

**■ Alta Drive**

Along the entire south side of this portion of Alta Drive, the zoning is called Planned Development (PD). Generally, this zone is intended to be a flexible district used to encourage redevelopment, economic development, and cultural enrichment. Residential, commercial, and light industrial uses are permitted within the context of an integrated master plan. According to city staff, this block of Alta Drive is the northern boundary for an area identified as a medical facility overlay area which permits and encourages the development of medical facilities and related establishments, such as nursing homes. Along the north side of Alta Drive, land is zoned single-family residential (R-1) and limited commercial (C-1).

Currently, zoning and land use are generally consistent along Alta Drive. However, over time, the residential area on the south side of Alta Drive may become redeveloped into medically-oriented commercial and public/semi-public uses given its location within the PD overlay district.

**■ Tenaya Way**

The developments along Tenaya Way between Westcliff Drive and Smoke Ranch Road are zoned for low- to medium-density residential development. The zoning is compatible with existing land use. Vacant parcels have an Undeveloped (U) zoning classification.

**4. Social****a. Community Facilities****(1.) Project Area**

The expanding growth of the Las Vegas Valley has been placing major demands on the ability of existing community facilities to serve new populations and on the ability of local governments to generate new facilities in developing areas. These needs are being met by newly completed community facilities and by proposed development of several more within the next few years. Despite this extensive growth rate, the project area, located within the northwest portion of the Las Vegas Valley, has a reasonably broad distribution of community facilities. All existing and proposed

community facilities within the project area are depicted on Figure V-64. For the impact project area, existing and proposed community facilities are shown on Figures V-8 through V-62.

#### ■ Public Parks

The City of Las Vegas maintains 34 Parks and, through a joint-use contract with the Clark County School District, is able to use an additional 48 School District open spaces after regular school hours. Twenty-six new parks are planned to be developed within the next ten years. The city has four classifications of parks, neighborhood parks (0-25 acres) which are intended to serve a single neighborhood, district parks (25-50 acres) which are intended for use by several neighborhoods and include play fields, major urban parks (50-100 acres) which offer unique activities that could not be supported by the district or neighborhood parks. The last category of park is the regional park (100+ acres) which would serve an entire urban area. There are currently no regional parks within the City of Las Vegas.

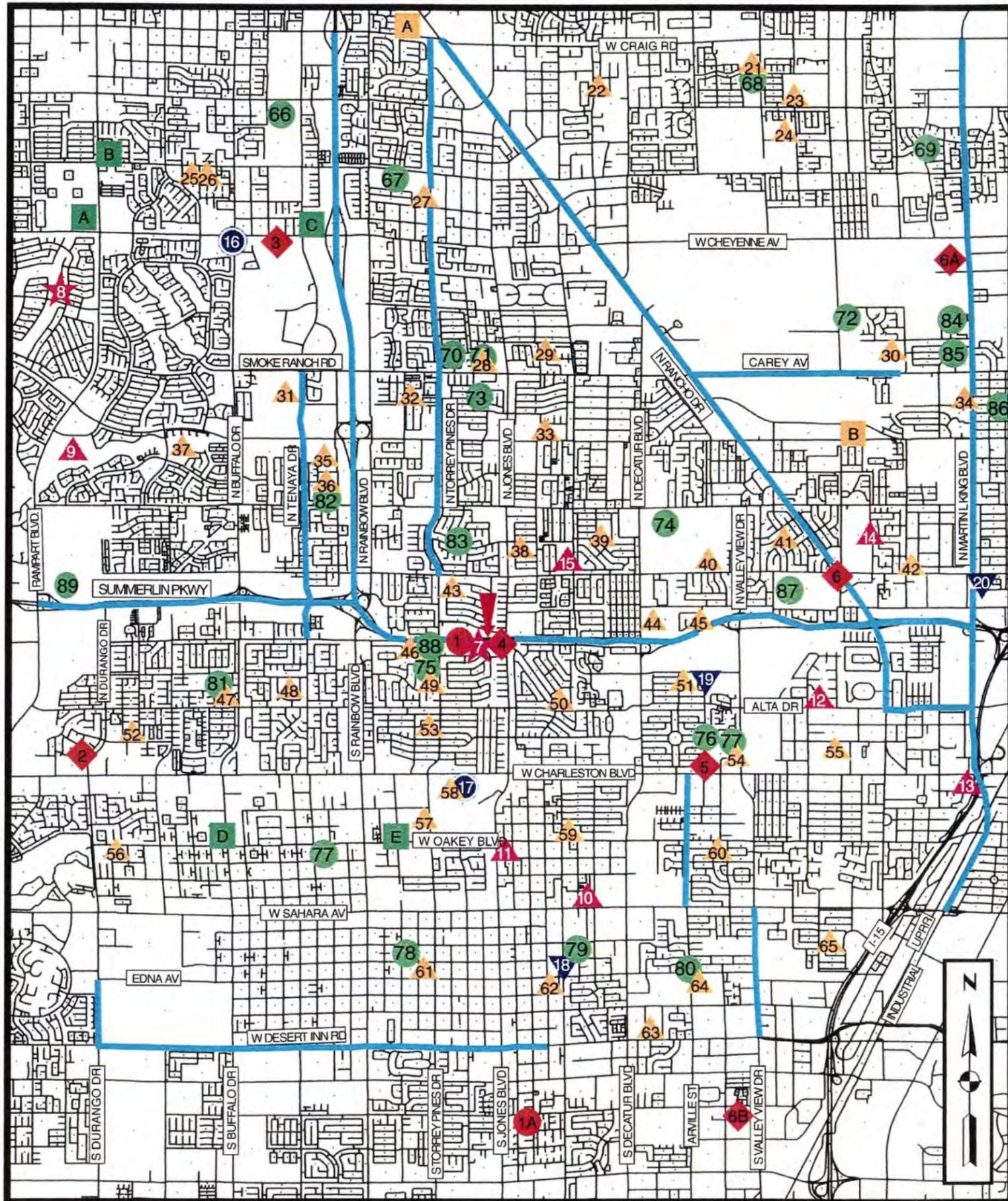
The City of North Las Vegas maintains 16 parks and, through a joint use agreement with the Clark County School District, shares an additional five parks. One hundred and sixty-seven acres are proposed for development within the next 10 to 20 years. Of this, 160 acres is proposed for a regional park to be located north of the project area, between Decatur Boulevard and Allen Lane. The City of North Las Vegas classifies their parks as Vest Pocket (less than 1 acre), neighborhood parks (1-10 acres), community parks (10-100 acres), and regional parks (100-200 acres).

Most parks within the project area are neighborhood parks. An exception to this is the Lorenzi Park which is classified as a Major Urban Park. Located northwest of Rancho Drive and Bonanza, this park offers picnic facilities, fishing, and numerous playing fields. The northwestern portion of the project area, which is characterized by new development, has fewer parks and more private golf courses.

The following parks are located near to proposed improvements and may be affected by the proposed project.

The Torrey Pines Park is a City of Las Vegas neighborhood park which abuts the existing US-95 right-of-way on the property's northern edge; the widening of the US-95 right-of-way will require a strip of land approximately 100 feet in width across the northern boundary of the property. The property is bounded to the east by Torrey Pines Drive, and to the west by the Adcock Elementary School. The park includes two soccer fields which conflict with the proposed widening of US-95 as well as passive recreational facilities.

The Mirabelli Park and Community Center is a City of Las Vegas neighborhood park which abuts the existing US-95 ROW on the property's north edge adjacent to the US-95 southbound Jones Boulevard exit ramp. The park and community center is located west of Jones Boulevard and includes passive recreational facilities in addition to a community center building. No part of the park is proposed to be acquired for the proposed project.



# Existing and Proposed Community Facilities

## LEGEND

- METRO SUBSTATIONS
  - 1. NW SUBSTATION - LVMPD
  - 1A. SW SUBSTATION - LVMPD
- ◆ FIRE STATIONS
  - 2. STATION 2 - CLV
  - 3. STATION 42 - CLV
  - 4. STATION 6 - CLV
  - 5. STATION 5 - CLV
  - 6. STATION 3 - CLV
  - 6A. STATION 53 - CNLV
  - 6B. STATION 10 - CLARK COUNTY
- ★ COMMUNITY & RECREATION CENTERS
  - 7. MIRABELLI COMMUNITY CENTER
  - 8. SUN SHADOWS COMMUNITY CENTER
- ▲ PRIVATE SCHOOLS
  - 9. MEADOWS SCHOOL
  - 10. NEW HORIZONS ACADEMY
  - 11. LAS VEGAS JR. ACADEMY
  - 12. OUR LADY OF LAS VEGAS CATHOLIC SCHOOL
  - 13. FIRST PRESBYTERIAN ACADEMY
  - 14. FAITH LUTHERN JUNIOR - SENIOR HIGH SCHOOL
  - 15. ST. FRANCIS DE SALES ELEMENTARY
- LIBRARIES
  - 16. RAINBOW LIBRARY - CC
  - 17. WEST CHARLESTON LIBRARY - CC
- ▼ YOUTH ORGANIZATIONS
  - 18. BOYS & GIRLS OF LAS VEGAS - LIED UNIT
  - 19. YMCA OF SOUTHERN NEVADA
  - 20. ANDRE AGASSI BOYS & GIRLS CLUB OF L.V. - AD GUY UNIT
- ▲ PUBLIC SCHOOLS
  - 21. LUCILE BRUNER
  - 22. CLAUDE & STELLA PARSON
  - 23. CHEYENNE
  - 24. THERON L SWAINSTON
  - 25. MARC KAHRE
  - 26. DOROTHY EISENBERG
  - 27. R.E. TOBLER
  - 28. BRINLEY COMMUNITY SCHOOL
- PARK LOCATIONS
  - 29. DORIS REED
  - 30. GILBERT MAGNET
  - 31. CIMARRON - MEMORIAL
  - 32. LILLY & WING FONG
  - 33. BERTHA RONZONE
  - 34. KERMIT BOOKER
  - 35. EDYTHE & LLOYD KATZ
  - 36. JAMES B McMILLAN
  - 37. RICHARD H BRYAN
  - 38. PAUL E CULLEY
  - 39. J.T. McWILLIAMS
  - 40. ROBERT GIBSON
  - 41. TWIN LAKES
  - 42. HOGGARD MAGNET
  - 43. VAIL PITTMAN
  - 44. WESTERN
  - 45. RUTH FYFE
  - 46. O.K. ADCOCK
  - 47. JOHNSON COMMUNITY SCHOOL
  - 48. HELEN SMITH
  - 49. FRANK GARSIDE
  - 50. RED ROCK
  - 51. E.W. GRIFFITH
  - 52. WALTER JACOBSON
  - 53. ROSE WARREN
  - 54. HYDE PARK
  - 55. HOWARD WADSEN
  - 56. HERBERT A DERFELT
  - 57. BONANZA
  - 58. COMMUNITY COLLEGE SOUTHERN NEV.- CHARLESTON CAMPUS
  - 59. DORIS HANCOCK
  - 60. VEGAS VERDES
  - 61. GUILD GRAY
  - 62. ELAINE WYNN
  - 63. JAMES CASHMAN
  - 64. CLARK COMMUNITY SCHOOL
  - 65. REX BELL
- PROPOSED PARKS
  - A. CHEYENNE/DURANGO GOLF FACILITY
  - B. NW FAMILY RECREATION COMPLEX PARK
  - C. CHEYENNE BASIN
  - D. OAKEY & BUFFALO RECREATION CENTER & POOL
  - E. OAKEY & REDWOOD
- PROPOSED SCHOOLS
  - A. L. BUNKER ELEMENTARY
  - B. OLLIE DETWILER ELEMENTARY
- ▶ BICYCLE PATH SOUTH OF US-95 BETWEEN TORREY PINE & JONES
- PROPOSED ROADWAY IMPROVEMENTS

Sources: Clark County Geographic Information Systems Management Office; Louis Berger and Associates, Inc.

NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
<b>EXISTING &amp; PROPOSED COMMUNITY FACILITIES</b>
FIGURE V-64

Lorenzi Park is a City of Las Vegas major urban park located on Washington Avenue north of US-95 and east of Valley View Boulevard. The park is located 500 to 800 feet north of US-95 and separated from US-95 by a single family residential neighborhood. The park includes the Nevada State Museum, Sammy Davis Jr. Festival Plaza, baseball and soccer fields, a man-made lake (fishing), two community recreation centers, tennis courts, a memorial gardens and passive recreational facilities. No portion of the park is proposed for acquisition with the proposed project.

Heers Park is a City of Las Vegas neighborhood park located on Zorro Drive, approximately 500 feet east of Torrey Pines Drive and north of Smoke Ranch Road. The park includes a soccer field and playground. The park is not adjacent to proposed improvements and no portion of the park is proposed for acquisition with the proposed project.

Woofler Park is a City of Las Vegas neighborhood park located on the northwest corner of Vegas and Rock Springs about 700 ft. east of Tenaya Way. The park is not adjacent to proposed improvements and no portion of the park is proposed for acquisition with the proposed project.

Meadow Street Park is a City of Las Vegas neighborhood park located on West Carmen Boulevard about 1000 ft. east of Torrey Pines Drive. The park is not adjacent to proposed improvements and no portion of the park is proposed for acquisition with the proposed project.

Prentiss Walker Memorial Swimming Pool and Park is a City of North Las Vegas neighborhood park located on the west side of Martin L. King Boulevard about 1500 ft. north of Carey Avenue. The park includes a swimming pool, basketball court and passive recreational areas. No portion of the park is proposed for acquisition with the proposed project.

James H. Anderson Memorial Park is a City of North Las Vegas neighborhood park located on the southeast corner of West Street and Cartier Avenue about 700 ft. west of Martin L. King Boulevard and about 1000 ft. north of Carey Avenue. The park includes basketball courts and passive recreational facilities. The park is not adjacent to proposed improvements. No portion of the park is proposed for acquisition with the proposed project.

Lubertha Johnson Park is a City of Las Vegas neighborhood park located on Balzar Avenue two blocks east of Martin L. King Boulevard. The park includes playground facilities. The park is not adjacent to proposed improvements and no portion of the park is proposed for acquisition with the proposed project.

All other City of Las Vegas and City of North Las Vegas Parks are not located close to proposed improvements.

By joint use agreement with the Clark County School District, elementary and middle schools in the cities of Las Vegas and North Las Vegas are available for public recreational usage after school hours. The City of Las Vegas Department of Parks and Leisure Activities and the City of North Las Vegas Department of Parks and Recreation operate programs such as "Safe Key", "Summer Fun"

and “Little League Baseball” on school grounds under a joint-use agreement. Schools which are affected by the project and which are used for public recreation after school hours are:

- O.K. Adcock Elementary School (Adjacent to US-95)
- Ruth Fyfe Elementary School (Adjacent to US-95)

Other schools which are near proposed improvements and which are used for public recreation after school hours are:

- Kermit Booker Elementary School (Adjacent to Martin L. King)
- R.E. Tobler Elementary School (Adjacent to Torrey Pines)

Outdoor recreational facilities at these schools are typical of elementary schools and include playgrounds, baseball diamonds and open recreational fields. The proposed project includes the acquisition of land from the Adcock and Fyfe Elementary schools.

A recreational bike path (the Las Vegas Pedestrian Path and Bikeway) extends from Westcliff Drive to Jones Boulevard along the southern edge of US- 95. The paved route is located primarily within the existing ROW owned by the Nevada Department of Transportation on a utility easement which varies from eight feet to 20 foot in width. The Las Vegas Pedestrian Path and Bikeway is maintained by the City of Las Vegas according to an agreement with NDOT. The impacted area corresponds to the extension of the US- 95 ROW on its southern side, from Westcliff Drive to the Azure Crest Apartments property east of Torrey Pines Boulevard.

#### ■ Public Golf Courses

The Angel Park Golf course is located on the east side of Rampart Boulevard in the City of Las Vegas and occupies the northeast and southeast quadrants of the Summerlin Parkway Interchange at Rampart Boulevard. The golf course is open to the public with normal green fees of \$110 to \$125 discounted about 30% for Las Vegas residents. The golf course property is owned by the City of Las Vegas and operated under lease agreement with the City. The golf course includes an 18 hole regular course and a 12 hole executive course. The fairways of the 18 hole course are setback an average of about 400 ft. From the Parkway. The 12 hole executive course is located adjacent to the eastbound on-ramp from Rampart Boulevard and setback an average of 200 ft. from the ramp.

#### ■ Schools

The Clark County School District is the primary provider of kindergarten through twelfth grade education for all jurisdictions within Clark County. The pace of growth within the Las Vegas Valley has caused overcrowding for all three levels of schools. Therefore, the School District has instituted measures to alleviate this capacity shortage by having some schools operate year-round. Additionally, the school district has developed a ten-year construction plan whereby areas with

greatest population growth or existing school capacity deficiencies will be provided new schools. Two elementary schools are currently under construction and are proposed to open for the 1998 school year within the project area. These are the L. Bunker Elementary, northeast of Peak Drive and Torrey Pines Drive, and Ollie Detwiler Elementary, northeast of Holly Avenue and Simmons Street. The Fyfe elementary school is located in the study area and located near Valley View, between US-95 and Bonanza Road. Also, the Adcock School is located adjacent to US 95 near Torrey Pines Drive at the intersection of Hyde Avenue and Newcomer Street. Western High School is situated immediately north of US-95 and is bounded by Decatur Boulevard on the western edge of the property.

#### ■ **Day Care, Religious, and Medical Facilities**

Within the project area day care facilities are widely dispersed and are found predominantly in high density areas or in areas where employment density is high, such as large shopping malls. The predominant religious facilities are churches that are located primarily in densely populated areas and close to major arterials and intersections. Medical facilities are dispersed widely, with a few large hospitals located on major arterials and highways. The east central portion of the project area, north of Charleston Boulevard, south of Alta Drive, west of I-15, and east of Valley View Boulevard has been designated as a medical services area for future land use, and is where the University Medical Center, Valley Hospital Medical Center, and numerous medical laboratory facilities are located. American Response Ambulance Service is located immediately south of this area.

#### ■ **Police Protection Services**

The Las Vegas Metropolitan Police Department (LVMPD) provides police services to the City of Las Vegas as well as unincorporated Clark County. The LVMPD is headed by an elected sheriff and is broken down into five area commands. Centrally located in the Las Vegas Valley is the Downtown area command surrounded by the remaining Southeast, Northeast, Northwest, and Southwest area command quadrants. The project area is primarily served by the Northwest area command with its headquarters located just south of US-95 between Torrey Pines Drive and Jones Boulevard. The City of North Las Vegas maintains its own police protection services. There is currently only one police station for the City of North Las Vegas, which is located east of the project area. Figure V-65 shows police protection service areas in the project area.

#### ■ **Fire Protection Services**

Clark County, the City of Las Vegas, and the City of North Las Vegas maintain their own fire protection services. Clark County does not maintain any fire stations within the project area. The Las Vegas Fire Department (LVFD) operates 10 stations throughout the city, four of which are located in the project area. The LVFD is responsible for planning and programming for fire prevention, enforcing fire safety standards, fighting fires, managing hazardous materials, and investigating major fires. Despite the rapid growth of the city, the LVFD has maintained effective response times. This has primarily been accomplished by relocating some fire stations to higher

density areas. The LVFD is proposing to develop at least two more stations in the city though these plans have not yet been approved. The City of North Las Vegas maintains four fire stations, one of which is located in the project area northwest of Martin Luther King Boulevard and Brooks Avenue. A fifth fire station is planned for development at Allen and Washburn, just north of the project area. Figure V-65 shows fire protection services areas in the project area.

#### ■ Utilities

The LVVWD North Well Field property, located immediately south of US-95, is bounded by Valley View Boulevard at its western edge and extends three-quarters of a mile eastward. The 188-acre property is currently the site of the LVVWD and Southern Nevada Water Authority Central Operations which includes two active wells and a pumping station, located immediately adjacent to US-95 along the northern border of the property. The LVVWD North Well Field Property is also viewed as a historic resource, but is considered more a utility than a community facility.

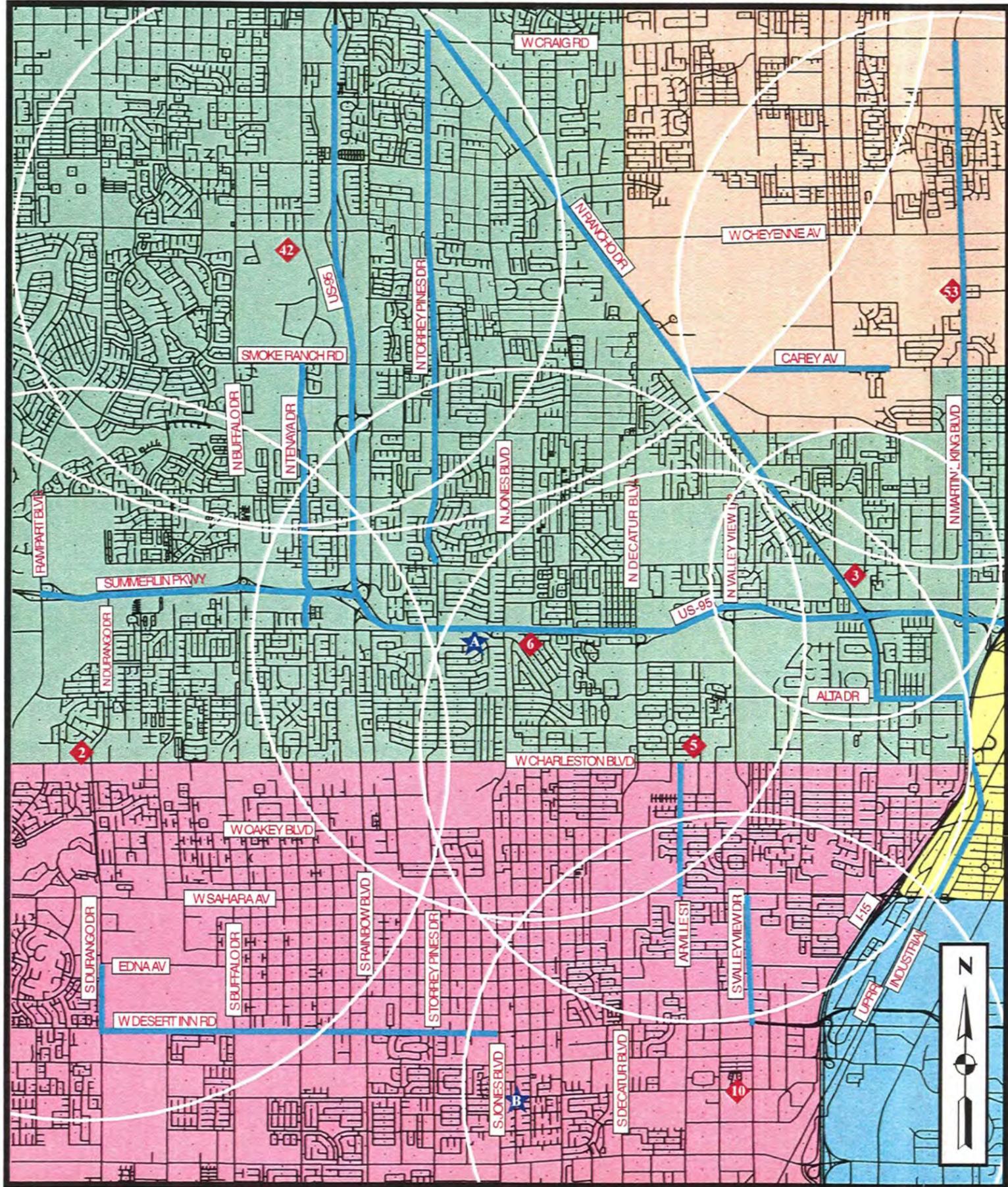
#### ■ Libraries

The Las Vegas—Clark County Library District (LV-CCLD) administers all library facilities in the City of Las Vegas and unincorporated Clark County. Of the 24 libraries maintained by LVCCLD, two are located in the project area. The City of North Las Vegas administers one library east of the project area. A future library site has been donated to the City of North Las Vegas within the project area at Alexander Road and Martin Luther King Boulevard but funds for a library there have not been designated.

#### ■ LVVWD Mojave Desert Preserve-Interpretive/Natural Recreation Area

To protect the ongoing operations of the LVVWD North Well Field property and to preserve and manage its environmental and cultural resources, the LVVWD developed a long-term, multi-use land management direction for the North Well Field property. Based on a set of goals and objectives, a development and multi-use land management plan was devised which would serve “to preserve and manage the cultural, biological, and water resources of the Las Vegas Springs Archaeological Site and to promote sustainable life in the Mojave Desert, by integrating environmentally sensitive design and conservation, through demonstration, education and research.” This mission statement, along with the goals and objectives which were developed by the LVVWD, comprise the framework for managing and preserving the resources of the North Well Field to foster a greater awareness of the historical importance of the property in the life of the Las Vegas Valley.

Known as the Mojave Desert Preserve Master Plan, the LVVWD has developed a plan which will promote the North Well Field property as a multi-use, outdoor passive recreation/park area while continuing to operate and function as a critical link in the delivery of potable water to the Las Vegas area. The North Well Field or Mojave Desert Preserve, is approximately 180 acres in size and is bordered by US-95 on the north, Valley View Boulevard on the west and Alta Drive to the south is



# Fire and Police Protection Service Areas

## LEGEND

### POLICE PROTECTION SERVICE AREAS

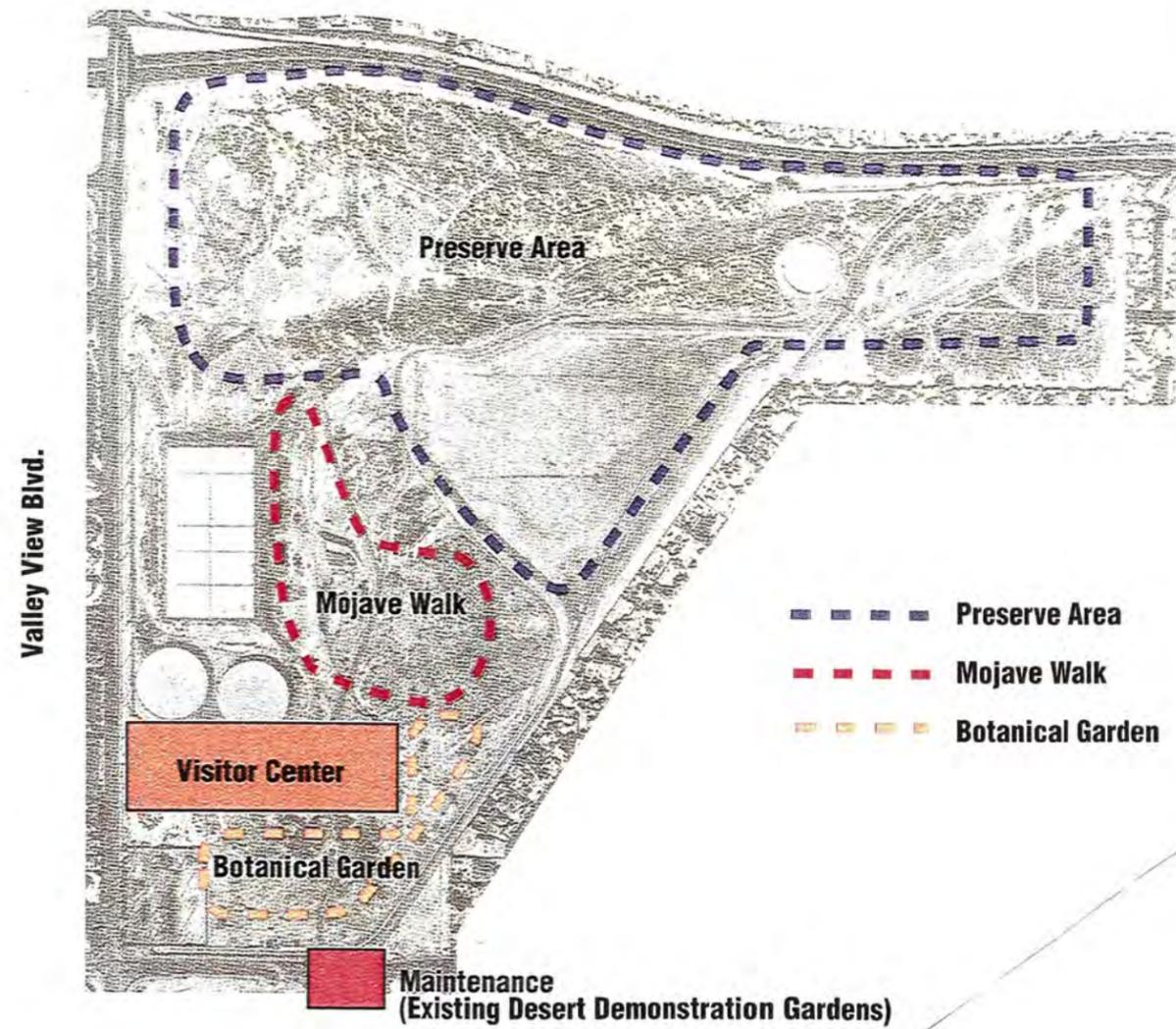
- Northwest Area Command (NWAC) ★  
6208 Hargrove  
Las Vegas, NV
- Northeast Area Command  
831 N. Mojave (Not in Project Area)  
North Las Vegas, NV
- Downtown Area Command  
401 S. 4th Street (Not in Project Area)  
Las Vegas, NV
- Southeast Area Command  
2300 E. St. Louis (Not in Project Area)  
Las Vegas, NV
- Southwest Area Command ★  
5925 W. Spring Mountain Rd.  
Las Vegas, NV

### FIRE STATIONS & SERVICE AREAS

- Station ◆ 2 City of Las Vegas
- Station ◆ 3 City of Las Vegas
- Station ◆ 5 City of Las Vegas
- Station ◆ 6 City of Las Vegas
- Station ◆ 12 City of Las Vegas
- Station ◆ 53 City of North Las Vegas
- Station ◆ 10 Clark County
- Proposed Roadway Improvements
- Fire Service Area

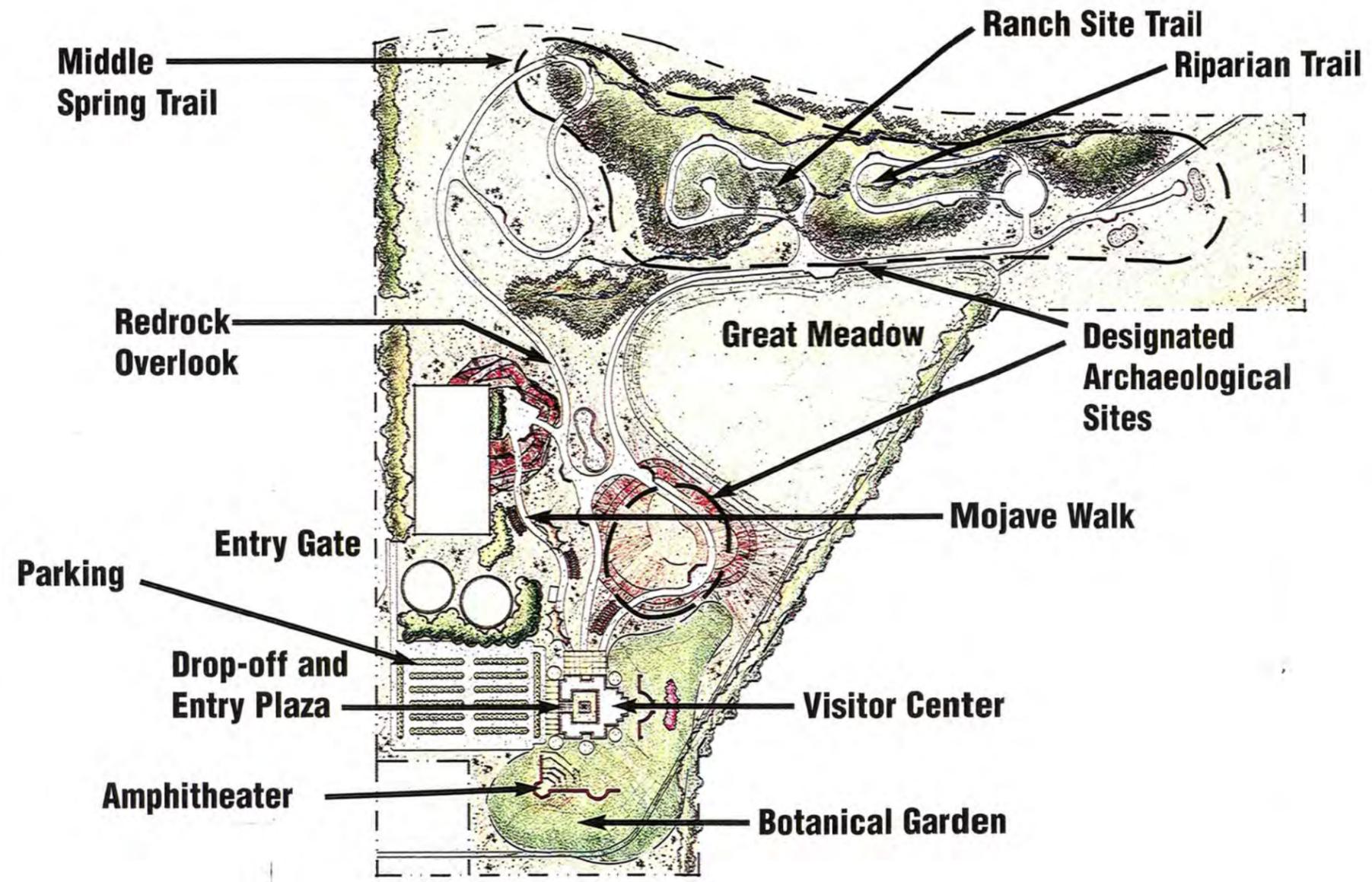
NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
<b>FIRE &amp; POLICE PROTECTION SERVICE AREAS</b>
FIGURE V-65

Sources: City of Las Vegas Police Department;  
City of Las Vegas Planning and Development Department  
NOTE: The service areas of fire stations located outside of project area are not identified on this map.



Source: LVVWD MOJAVE DESERT PRESERVE MASTER PLAN

NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
LVVWD MOJAVE DESERT PRESERVE PHYSICAL PLAN
FIGURE V-66



Source: LVVWD MOJAVE DESERT PRESERVE MASTER PLAN

NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
LVVWD MOJAVE DESERT PRESERVE MASTER PLAN
FIGURE V-67

the northern most portion of the LVVWD property which extends from West Charleston Boulevard to US-95.

The Mojave Desert Preserve Master Plan is comprised of five primary components which include; the Courtyard and Visitor Center, the Botanical Gardens, the Mojave Walk, a Preserve and a Maintenance Area. Figure V-66 depicts the five components of the Mojave Desert Preserve Master Plan. The master plan includes several elements including; an entry drive and plaza, a courtyard and visitor center, a botanical garden area, a grand lawn, a desert courtyard, a network of Mojave Desert nature walks and trails, a riparian preserve, an amphitheater an outdoor parking area. Figure V-67 presents the elements of the Master Plan.

The Mojave Desert Preserve Master Plan was adopted by the Las Vegas Valley Water District Board of directors in the summer of 1997. The Nevada State Legislature has allocated funds to further the development and implementation of the plan while a foundation has been established to guide the funding and implementation of the plan. Although the Mojave Desert preserve is considered to be a public outdoor recreation/park, it will be maintained and operated as a function of the Las Vegas Water District property and will not be included as part of the City of Las Vegas and Clark County parks, leisure and recreational inventory.

## **(2.) Impacted Project Area**

### **■ Martin Luther King Boulevard From Craig Road to Charleston Boulevard**

Abutting Martin Luther King Boulevard are the City of North Las Vegas Fire Station No.53, Prentiss Walker Memorial Pool and Park, Church of Christ, Kermit R. Booker Sr. Elementary School, Greater St. John's Missionary Baptist Church, Adeliar D. Guy III Ambulatory Care Center, and André Agassi Boys and Girls Club. Within the impact project area but not adjacent to Martin Luther King Boulevard are the Greater Most High Church of God in Christ, Greater Evergreen Missionary Baptist Church, New Revelation Baptist Church, and Veterinary Center.

### **■ Martin Luther King Boulevard/Industrial Road Connector**

American Medical Response, a large emergency medical services company, is located at the southwest corner of Martin Luther King Boulevard and Charleston Boulevard. This company provides important ambulatory and medical services throughout all of Clark County. West of Mercy Medical, on Desert Lane Road, is the First Presbyterian Church of Las Vegas.

### **■ US-95 From Rainbow Boulevard to Martin Luther King Boulevard**

Located adjacent to US-95 are the Adcock Elementary School, the Torrey Pines Park located west of Torrey Pines, the Las Vegas Pedestrian Path and Bikeway located between Westcliff and Jones, Christ Lutheran Church, Metro Police Station Northwest Area Command, Las Vegas Fire Station No. 6, Mirabelli Park, Mirabelli Community Center, Western High School, Prime Time Preschool

and Child Care Center, Ruth Fyfe Elementary School, the proposed LVVWD Mojave Desert Preserve, and the Zelzah Shrine Temple. Within the impact project area, but not adjacent to US-95, are the Frank Garside Jr. High School, Nevada State Museum and Historical Society, Lorenzi Park, First Christian Church, Las Vegas Indian Center, and Doyme Medical Clinic.

■ **Rancho Drive From Craig Road to Alta Drive**

With the exception of the Little Round Up Pre-School and Child Care and City of Las Vegas Fire Station No. 3, all community facilities within this portion of the impact project area are adjacent to Rancho Drive. These facilities are the Shadow Mountain Transitional Care and Rehabilitation Center, Southern Nevada Zoological Park, Zelzah Shrine Temple, and First Christian Church.

■ **Carey Avenue From Rancho Drive to Clayton Street**

Within the impact project area but not adjacent to Carey Avenue is the baseball park that is associated with Gilbert Magnet Elementary School.

■ **US-95 From Craig Road to Rainbow Boulevard**

Abutting the west side of US-95 is the Columbia Sunrise Mountain View Hospital Medical Center. Just south of this hospital, also on the west side of US-95, is Sierra Health Services. The McMillan and Katz Elementary schools are southwest of US-95 and Lake Mead Boulevard.

■ **Summerlin Parkway From Rainbow Boulevard to Rampart Boulevard**

South of Summerlin Parkway are the West Valley Preschool and Day Care, West Valley Church, and a multiple medical offices facility.

■ **Torrey Pines Drive From Craig Road to Washington Avenue**

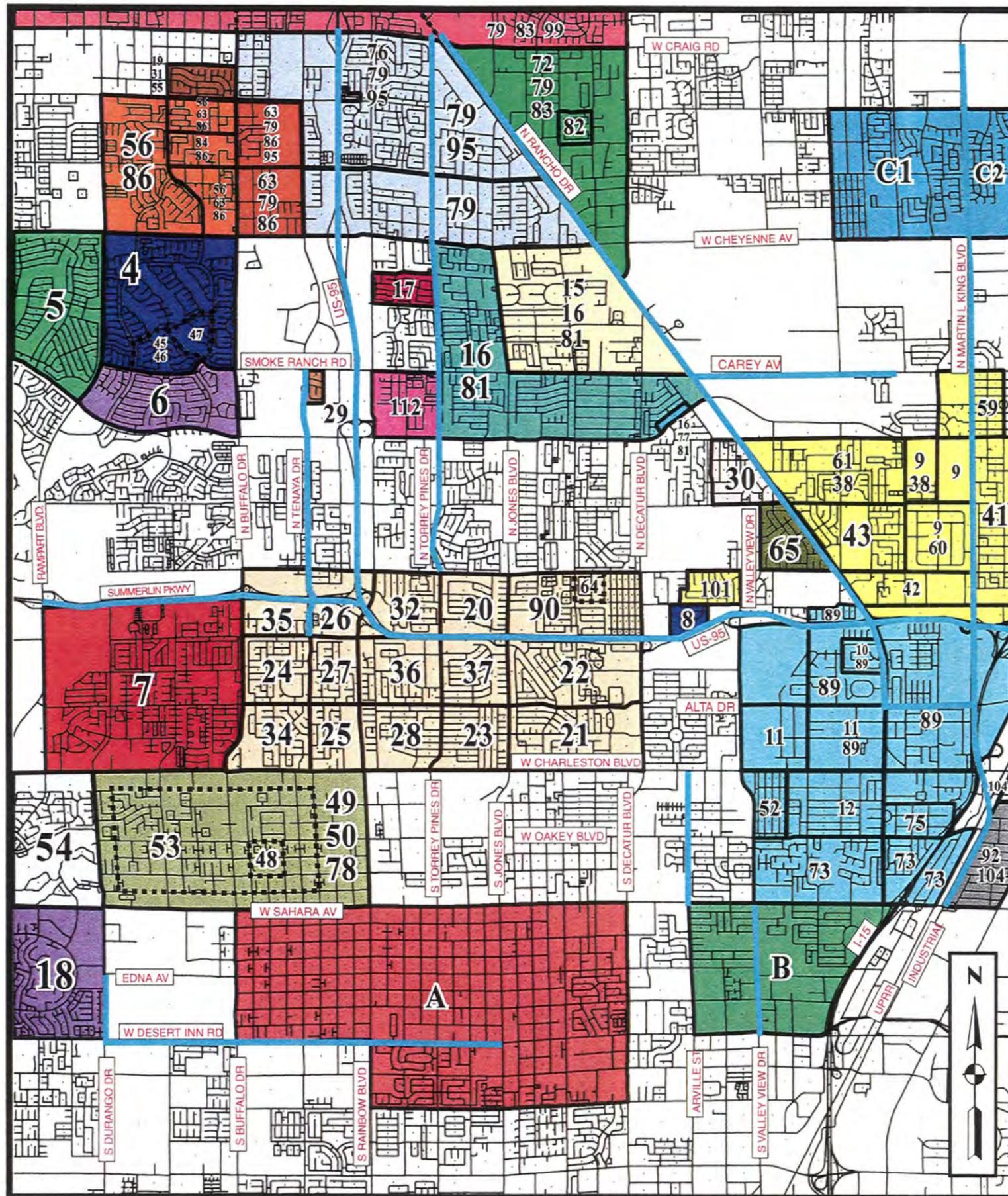
Adjacent to Torrey Pines Drive are Tobler Elementary School, Foothills Baptist Church, and the Calvary Community Church. Not abutting Torrey Pines, but in the impact project area is the Center for Vietnam Veterans.

■ **Tenaya Way From Westcliff Drive to Smoke Ranch Road**

Southwest of Tenaya Way and Smoke Ranch Road is the Cimmaron Memorial High School. The only other community facility within this portion of the impact project area but not adjacent to Tenaya Way is the Westcliff Medical and Dental Center.

■ **Arville Street From Charleston Boulevard to Sahara Avenue**

A Church is adjacent to Arville Street at Sun City Road.



# Neighborhood Associations

## LEGEND

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>83</li> <li>99</li> <li>4</li> <li>45</li> <li>46</li> <li>47</li> <li>5</li> <li>6</li> <li>7</li> <li>8</li> <li>9</li> <li>38</li> <li>40</li> <li>41</li> <li>42</li> <li>43</li> <li>58</li> <li>59</li> <li>60</li> <li>61</li> <li>15</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> <li>20</li> <li>21</li> <li>22</li> <li>23</li> <li>24</li> <li>25</li> <li>26</li> <li>27</li> <li>28</li> <li>32</li> <li>34</li> <li>35</li> <li>36</li> <li>37</li> <li>90</li> <li>29</li> <li>30</li> <li>31</li> </ul> | <p>NORTHWEST CITIZENS ASSOCIATION<br/>LONE MOUNTAIN CITIZENS ADV. COMM.</p> <p>Rancho Alta Mira Owners Association</p> <p>Sheep Mountain Neighborhood Association #5</p> <p>Desert Shores Community Assoc.</p> <p>Pelican Point</p> <p>La Jolla Classic HOA</p> <p>Desert Shores Racquet Club</p> <p>Sun City Summerlin Community Assoc.</p> <p>South Shore Community Assoc.</p> <p>Westcliff Property Owners Assoc.</p> <p>Charleston Estates #6</p> <p>WEST LAS VEGAS NEIGHBORHOOD EXECUTIVE BOARD</p> <p>Bonanza Village HOA</p> <p>G-704 Neighborhood Assoc.</p> <p>WLV-NAA2</p> <p>WLV-NAA4</p> <p>WLV-NAA6</p> <p>WLV-NAA7</p> <p>WLVNAA1</p> <p>WLVNAA3</p> <p>WLVNAA5</p> <p>WLVNAA8</p> <p>Clark County Department of Aviation</p> <p>Sincerely Concerned Citizens in the N.W.</p> <p>Sterling Springs HOA</p> <p>West Sahara Community Assoc.</p> <p>Mountain Shadows HOA</p> <p>CHARLESTON NEIGHBORHOOD PRESERVATION</p> <p>Charleston Neighborhood Preservation #12</p> <p>Charleston Neighborhood Preservation #14</p> <p>Charleston Neighborhood Preservation #15</p> <p>Charleston Neighborhood Preservation #10</p> <p>Charleston Neighborhood Preservation #2</p> <p>Charleston Neighborhood Preservation #4</p> <p>Charleston Neighborhood Preservation #6</p> <p>Charleston Neighborhood Preservation #5</p> <p>Charleston Neighborhood Preservation #7</p> <p>Charleston Neighborhood Preservation #9</p> <p>Charleston Neighborhood Preservation #1</p> <p>Charleston Neighborhood Preservation #3</p> <p>Charleston Neighborhood Preservation #8</p> <p>Charleston Neighborhood Preservation #11</p> <p>Charleston Neighborhood Preservation #16</p> <p>Gates Mill HOA</p> <p>Eastland Heights 1,2,3,4</p> <p>Alexander NA Anthony Bruges</p> | <p>RANCHO SOUTH<br/>RANCHO OAKLEY</p> <p>73 Glen Heather Estates HOA</p> <p>75 Scotch 80's HOA</p> <p>10 Rancho Bel Air</p> <p>11 Palonino Area Preservation Assoc.</p> <p>12 Charleston McNeil HOA</p> <p>52 Westleigh NA</p> <p>48 Home Land Association</p> <p>49 Encantada Homeowners Assoc.</p> <p>50 Neighborhood Alliance</p> <p>53 Charles Lam Court Association</p> <p>78 Buffalo Area Owners, Inc.</p> <p>54 Canyon Gate Master Association</p> <p>55 Mountain Shadows HOA Group II</p> <p>56 Presidio HOA</p> <p>63 Hobble Creek Estates</p> <p>65 Twin Lakes Neighborhood Association</p> <p>72 Northwest Area Residents Association</p> <p>76 Las Hadas HOA</p> <p>77 Rancho Sierra Condominiums HOA</p> <p>79 Independent NW HOA</p> <p>81 NFPC Neighbors for Positive Change</p> <p>82 Plaza San Miguel HOA</p> <p>84 Palm West</p> <p>86 Excel</p> <p>89 Rancho/Mesquite Association</p> <p>92 Meadows Village Neighborhood Association</p> <p>95 The ACT Neighborhood Preservation</p> <p>101 Charleston Estates Neighborhood Association</p> <p>104 Las Vegas Business Owners Association</p> <p>112 Smoke Ranch Pines Association</p> <p>A West Desert Inn Neighborhood</p> <p>B Clark High School Neighborhood</p> <p>C1 Cheyenne Ridge</p> <p>C2 Del Prado Highland</p> <p>PROPOSED ROADWAY IMPROVEMENTS</p> |
|--|---|---|

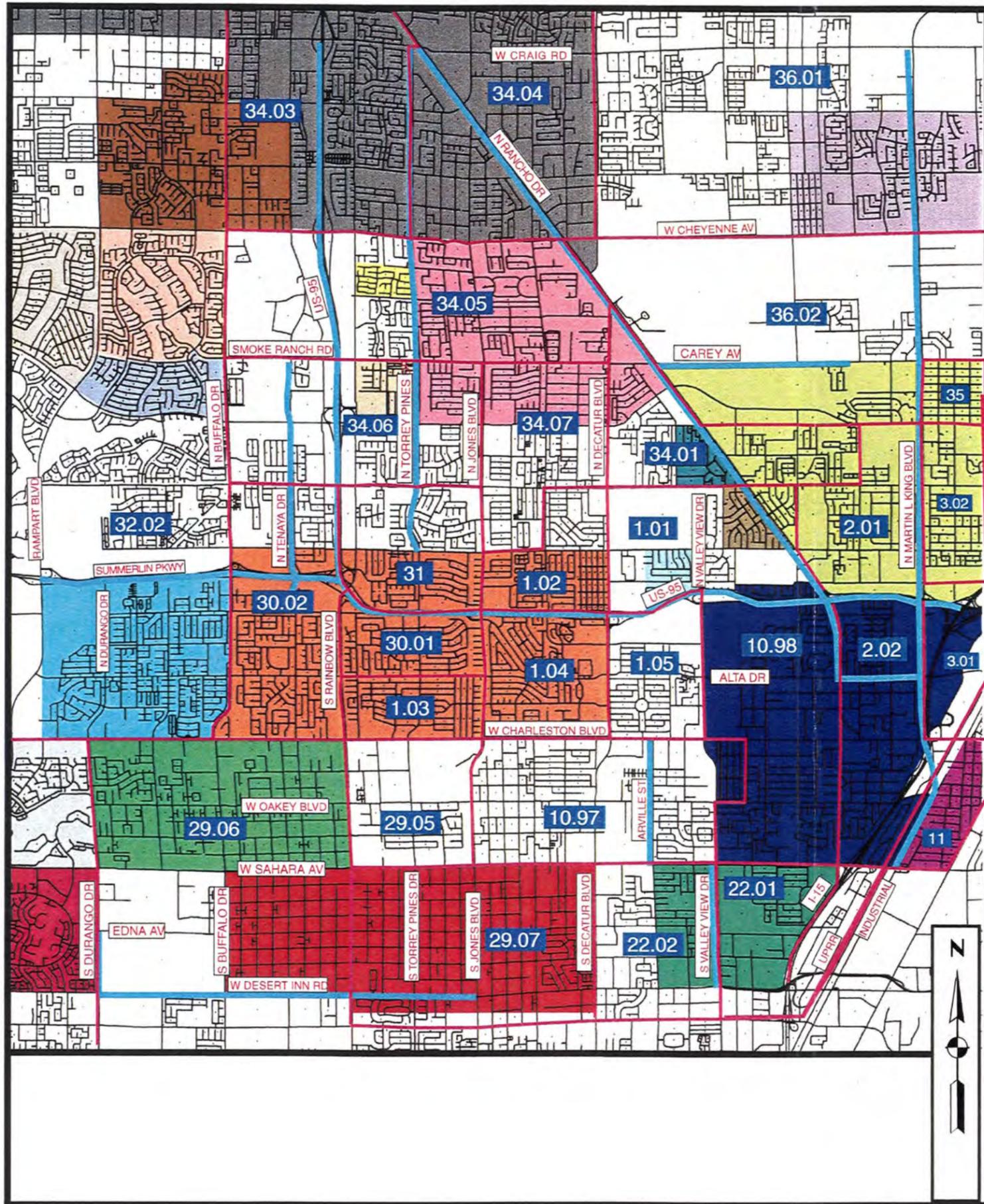
Sources: City of Las Vegas Neighborhood Services Department;  
City of North Las Vegas Planning Department;  
Clark County Department of Comprehensive Planning

NEVADA DEPARTMENT OF TRANSPORTATION

US-95 EIS

**US-95 EIS  
NEIGHBORHOOD  
ASSOCIATIONS**

FIGURE V-68



# Neighborhoods and Corresponding 1990 Census Tracts

## LEGEND

- 34.07 Census Tract
- Census Tract Boundary
- Proposed Roadway Improvements
- West Sahara Community
- Canyon Gates
- Buffalo Area / Charles Lam
- West Desert Inn Neighborhood
- Clark High School Neighborhood
- Meadows Village / Las Vegas Business Owners
- Rancho South / Rancho Oakey
- Charleston Neighborhood Preservation
- Wescliff Property Owners
- West Las Vegas Neighborhood
- Charleston Estates
- Twin Lakes Neighborhood
- Eastland Heights
- Sincerly Concerned / NFPC Neighbors
- Smoke Ranch Pines
- Sterling Springs
- South Shore Community
- Desert Shores Community
- Sun City Summerlin
- Presidio / Excel / Hobble Creek
- Independent NW / The ACT Neighborhood
- Cheyenne / Del Prado

NEVADA DEPARTMENT OF TRANSPORTATION	
US-95 EIS	
Neighborhoods and Corresponding 1990 CENSUS TRACTS	
Source: 1990 Census of Population and Housing	FIGURE V-69

**■ Alta Drive From Rancho Drive to Martin Luther King Boulevard**

Adjacent to Alta Drive are the Alta Care Home and a Child Development Center. Within the impact project area are the Clark County Social Service Center and Reach Out, a non-profit organization serving children with AIDS.

**■ Desert Inn Road From Durango Drive to Jones Boulevard**

The United States Post Office Spring Valley Station is located in this portion of the impact project area.

The following arterials do not have community facilities within those portions of the impact project area:

- ▶ Industrial Road From Wyoming Avenue to Sahara Avenue;
- ▶ Valley View Boulevard From Sahara Avenue to Desert Inn Road; and
- ▶ Durango Drive From Edna Avenue to Desert Inn Road.

**b. Neighborhood Cohesion**

Criteria generally used to identify a neighborhood are the pattern of development which characterize a predominant housing type, the physical configuration of housing within an area, whether a community has become associated as is a common process in the Las Vegas Valley, and the existence and location of community facilities.

**(1.) Residential Neighborhoods**

There are 22 neighborhoods within the project area as defined by City of Las Vegas, City of North Las Vegas, and Clark County Community Planners. Figure V-68 depicts the various neighborhoods and their subgroups. Table D-1, Appendix D of the Socioeconomic Technical Report lists all neighborhoods and their subgroups and identifies which Census Tracts and block groups comprise those neighborhoods. Figure V-69 depicts the neighborhoods and their relationship to each Census Tract.

The Charleston Neighborhood Preservation, Rancho South/Rancho Oakey, and West Las Vegas Neighborhoods are some of the oldest and largest neighborhoods in the project area. They are characterized by a mix of both single family and multi-family dwellings with local and large commercial centers located along some of their major arterials. Because of the age of these three neighborhoods, residents are served by a considerable array of community facilities.

**Charleston Neighborhood Preservation**

This neighborhood is comprised of 15 subgroup/neighborhood associations. Primarily comprised of older single family dwellings, this community is also comprised of numerous commercial

developments associated with the major arterials which bind and transect this community. The Charleston Preservation Neighborhood is transected by US-95 and several major arterials such as Rainbow and Jones Boulevards and is bound by Charleston Boulevard to the south, Washington Avenue to the north, and Buffalo Drive and Decatur Boulevard to the west and east respectively. In addition to US-95, other roadways designated for improvement are Tenaya Way, and Summerlin Parkway.

Centrally located within this neighborhood are the Las Vegas Metropolitan Police Department Northwest Substation, Mirabelli Park and Community Center, City of Las Vegas Fire Station No. 6, Adcock Elementary School, the Torrey Pines Park, Frank Garside Middle School and Frank Garside Park. In the northern portion of Charleston Neighborhood is the Vail Pittman Elementary School. Just north of the neighborhood boundaries are the St. Francis De Sales Private Elementary School, Paul E. Culley Elementary School, J. T. McWilliams Elementary School, and Meadow Sweet Park. In the western portion of the neighborhood is the Helen Smith Elementary School. Also serving the western portion of the neighborhood are the Walter Johnson Park and Johnson Community School. Serving the southern area of the neighborhood are the Rose Warren Elementary School, West Charleston Library and Community College, Southern Nevada Charleston Campus. Within the southeast is Red Rock Elementary School. Western High School serves Charleston Preservation Neighborhoods Northeastern area. The central and eastern portions of this neighborhood have experienced little growth in the early 1990's ranging from -4.0 percent to 6.9 percent population growth rates. The western third of Charleston Preservation Neighborhood lies within Census tract 30.02 which had a population increase of 34.1 percent between 1990 to 1996.

### **Rancho South/Rancho Oakey**

The Rancho South/Rancho Oakey is characterized by a mix of multi-family and single family dwellings and is made up of seven neighborhood associations. With Rancho Drive, Martin Luther King Boulevard, and I-15 within the neighborhood and bound by Sahara and Valley View, this neighborhood has considerable amounts of commercial and industrial development. Also transecting Rancho South/Rancho Oakey is Alta Drive. This neighborhood has numerous medical facilities within it and is zoned for further medical facility uses. Comprised primarily of Census Tracts 2.02 and 10.98, this neighborhood experienced negative growth rates in the early 1990's at -9.2 percent and 3.8 percent respectively.

### **West Las Vegas Neighborhood**

The West Las Vegas Neighborhood is characterized by a higher proportion of minorities as compared to most other neighborhoods within the project area with over 72 percent of its population comprised of African Americans. Made up of ten subgroups/neighborhood associations, this community has a mix of multi-family and single family dwellings with considerable industrial and commercial land uses along Bonanza Road, Washington Avenue, and Martin Luther King Boulevard. Community facilities serving this neighborhood are the André Agassi Boys and Girls club of Las Vegas, Hoggard Magnet Elementary School, City of Las Vegas Fire Station No. 3, Faith

Lutheran Private Junior/High School, Kermit Booker Elementary School and Lubertha Johnson Park. The Ollie Detwiler Elementary School is proposed at the northern portion of the West Las Vegas Neighborhood on Lake Mead Boulevard. Population growth rates during the early 90's within this community range from -12.2 percent to 17.9 percent. The West Las Vegas Neighborhood is bordered by Rancho Drive and US-95, and is transected by Martin Luther King Boulevard.

#### **Meadows Village/Las Vegas Business Owners**

The Meadows Village/Las Vegas Business Owners neighborhood is a combination of two neighborhood associations and is characterized primarily by multi-family and industrial development along Industrial Road which serves as this neighborhood's western-most boundary. Immediately to the east of this neighborhood are the Casinos of Las Vegas Boulevard which have purchased portions of this neighborhood for their development. Also characteristic of this community is a large proportion of minority, primarily Hispanic, populations. Completely within Census tract 11, this neighborhood experienced a negative population growth rate during the early 90 of -13.4 percent. There are no community facilities within Meadows Village/Las Vegas Business Owners neighborhood.

#### **Clark High School Neighborhood**

The Clark High School neighborhood is not comprised of any formal neighborhood associations and is characterized by numerous land uses including primarily multi-family, and some single family, mobile home park, commercial, and industrial uses. To the west is the Clark Community High School, and Ed Clark Park. To the east is the Rex Bell Elementary School. Population growth during the early to mid 1990's ranged from -0.6 to 8.0 percent. Clark High School Neighborhood is transected by Valley View Boulevard.

Neighborhoods in the farthest west, north, and northwest sections of the project area are relatively new and are experiencing continued growth and development. Neighborhoods falling into this category are the West Sahara Community, Canyon Gates, Buffalo Area/Charles Lam, and Westcliff Property Owners to the west and Sun City Summerlin, South Shore Community, Desert Shores Community and Presidio/Excel/Hobble Creek neighborhoods to the northwest. Northern neighborhoods experiencing this fast pace of growth and development are Independent Northwest/The ACT, and Cheyenne/Del Prado.

#### **West Sahara Community and Canyon Gates Master Association**

Portions of the West Sahara Community and Canyon Gates Master Association lie to the southwest of the project area. These two communities while relatively new compared to more central Las Vegas neighborhoods were developed in the late 1980's as part of 'The Lakes' master residential development. These two neighborhoods lie within Census tract 58.97 which has had an 88 percent increase in population from 1990 to 1997. There are no community facilities within the project area to serve these two neighborhoods. Durango Drive borders the eastern side of the West Sahara Community.

**Buffalo Area/Charles Lam**

The Buffalo Area/Charles Lam community lies in the upper third of Census tract 29.06 which has experienced a 170.6 percent increase in population from 1990 to 1996. Comprised of five neighborhood associations, this neighborhood is served by the Herbert A. Derfelt Elementary School, and Rainbow Park at Oakey Boulevard between Montessori and Belcastro Streets. The Oakey and Buffalo Recreation Center and Pool are proposed for development at the center of this neighborhood. None of the proposed roadway improvements transect or border this neighborhood.

**Westcliff Property Owners Association**

The Westcliff Property Owners Association is situated to the west of the project area between Summerlin Parkway and Charleston Boulevard. This neighborhood lies entirely within Census tract 32.02 which has experienced 539.8 percent increase in population from 1990 to 1996. Community facilities serving this neighborhood are the Walter Jacobsen Elementary School, Walter Johnson Park, Johnson Community School and City of Las Vegas Fire Station No. 2. Summerlin Parkway borders Westcliff to the north.

**Sun City Summerlin, Desert Shores, and South Shores Neighborhoods**

A portion of the Sun City Summerlin neighborhood lies within the project area. This community is characterized by single family development and is served by the Sun Shadow Community Center. Immediately to the east of Sun City Summerlin are the Desert Shores and South Shores neighborhoods. These neighborhoods are not currently home to any community facilities though South Shore is served by Meadows private school and Richard H. Bryan Elementary School immediately to the south. Just to the north of Desert Shores are the Rainbow Library and the proposed Cheyenne/Durango Golf Facility. All three of these northwestern neighborhoods lie within Census tract 32.02 which has experienced a 539.8 percent increase in population between 1990 to 1996. None of the proposed roadway improvements transect or border these three neighborhoods.

**Presidio/Excel/Hobble Creek**

The Presidio/Excel/Hobble Creek community is made up of six neighborhood associations and is served by several community facilities. To the west are two proposed parks including the NW Family Recreation Complex Park and the Cheyenne/Durango Golf Facility just to the southwest of its boundaries. Centrally located in the neighborhood are the Marc Kahre and Dorothy Eisenberg Elementary Schools. To the southeast are the Rainbow Library, and City of Las Vegas Fire Station No. 42. Just outside of its southeastern boundary is the proposed Cheyenne Basin Park. At its northeastern corner is the W. Wayne Bunker Family Park. The eastern half of this neighborhood lies within tract 34.03 which has experienced a 48.7 percent increase in population during the early 1990's. The western half lies within Census tract 32.02. None of the proposed roadway improvements transect or border these three neighborhoods.

**Independent Northwest/The ACT**

Independent NW/The ACT is a large neighborhood made up of seven neighborhood associations. This neighborhood is situated primarily within Census tract 34.04 which experienced a 102.2 percent increase in population during the early 1990's. Transected by US-95 and by major arterials such as Rancho Drive and Craig Road, this neighborhood is characterized by numerous land uses including Industrial, and Commercial. Community facilities serving this neighborhood are The Children's Memorial Park, R. E. Tobler Elementary School, Claude & Stella Parson Elementary School. The Cheyenne Basin Park is proposed for development at its southwestern boundary. The L. Bunker Elementary School is also proposed for development.

**Cheyenne/Del Prado**

The Cheyenne Ridge/Del Prado Neighborhood lies within the City of North Las. This neighborhood is comprised of two neighborhood associations which are divided by Martin Luther King Boulevard. The neighborhood is characterized by single-family dwellings that have been developed within the last five to eight years. Within this neighborhood is the Cheyenne Ridge Park. Also serving the community just south of its boundaries is the City of North Las Vegas Fire Station No. 53. To the east are the Cheyenne High School and Theron L. Swainston Middle Schools.

Centrally located within the Project area are five smaller neighborhoods which are identified either by type of housing development or by its relationship to a community facility such as a school.

**Sterling Springs**

Sterling Springs neighborhood lies to the west of Torrey Pines Drive between Cheyenne Avenue and Smoke Ranch Road. With no major community facilities within the near vicinity, the community is primarily characterized by its single-family detached housing development.

**Smoke Ranch**

Also to the west of Torrey Pines Drive and south of Sterling Springs, Smoke Ranch is characterized by both multi-family and single family development. Central to this community is the Lilly and Wing Fong Elementary School. To the east of Smoke Ranch are the Heers Park, Charleston Heights Park, Harold Brinkley Pool, and Brinkley Community School.

**Eastland Heights**

Eastland Heights lies to the west of Rancho Drive between Vegas Drive and Lake Mead Boulevard. This community is characterized by a mix of land uses including multi-family and single family housing developments and industrial and commercial development along the west side of Rancho Drive. Immediately to the west of Rancho Drive is a private zoological park; there are no other major community facilities within this neighborhood.

**Twin Lakes**

South of Eastland Heights and also bordered to the east by Rancho Drive is the Twin Lakes Neighborhood Association. This community is characterized by generally older single family detached housing and has at its core the Twin Lakes Elementary School.

**Charleston Estates**

The last small neighborhood within the central section of the project area is Charleston Estates which is made up of two neighborhood associations. Situated north of US-95 between Decatur Boulevard and Valley View Boulevard, this community is characterized by older single family detached housing and surrounds the northern area of the Ruth Fyfe Elementary School. Immediately to the west of this neighborhood is Western High School.

**Sincerely Concerned/NFPC**

Sincerely Concerned/NFPC is a relatively large neighborhood within the north-central portion of the project area. Situated within Census Tracts 34.07 and 34.05 primarily, this neighborhood has experienced a moderate 27 to 28 percent increase in population between 1990 to 1996. Bound by Rancho Drive to the east, Cheyenne Avenue to the north and Lake Mead Boulevard to the south, this neighborhood has a fair amount of commercial and industrial land uses along these major arterials. Community facilities serving this neighborhood are: Heers, Harold Brinkley, and Charleston Heights Parks, Brinkley Community School, Doris Reed Elementary School, and Bertha Ronzone Elementary School.

**West Desert Inn**

The West Desert Inn neighborhood is situated at the southern boundary of the project area and lies within Spring Valley/Unincorporated Clark County. It is a relatively new neighborhood and is characterized by new, low density single family housing. Just south of this neighborhood is a sand and gravel pit which is proposed to be filled in the next several years and is designated for multi-family development. There is only one community facility in this neighborhood, the Spring Valley Station, U.S. Post Office. The rate of growth in this community during the early 1990's was at an estimated 170.6 percent at its western end, and 6.4 percent at its eastern end.

**(2.) Level of Neighborhood Cohesion**

Criteria used to determine the degree of cohesion of a community are less absolute than those used to identify a neighborhood. Measures of neighborhood cohesion include the relative age of a community, owner/renter ratios, vacancy rates, level of involvement in local political issues, and leadership of a neighborhood. Neighborhoods with a higher proportion of minorities tend to have higher degrees of cohesion as these groups are often bonded by common social and economic concerns; the number of community facilities within a neighborhood can also be used as a measure

of community cohesion as these facilitate interaction and social ties among residents. Table D-2 in Appendix D of the Socioeconomic Technical Report lists criteria used to study neighborhood cohesion within the 22 neighborhoods in the project area.

### **Charleston Neighborhood Preservation**

Of all of the neighborhoods within the project area the Charleston Neighborhood Preservation is among the most cohesive, being quite vocal on local government policies that affect their neighborhood and having particularly strong leadership. Residents of this neighborhood meet regularly to set goals and discuss local concerns. Recognized within the City of Las Vegas as being one of the oldest neighborhoods, the Charleston Neighborhood Preservation remains quite stable with most of the neighborhood maintaining less than a 10 percent population increase throughout the early 90's, a three to two owner/renter ratio, and less than 6 percent housing vacancy. Community facilities are abundant and located throughout the community with a small clustering of facilities at its center.

### **Rancho South/Rancho Oakey**

The Rancho South/Rancho Oakey neighborhood is one of the most centrally located neighborhoods in the City of Las Vegas and is among the oldest. While this neighborhood has enclaves of special groups identified by blocks of lower-income/elderly, and minority groups<sup>4</sup>, it is also comprised of affluent non-minority groups. The disparity between these groups often inhibits social bonds. This community is experiencing pressure to its stability through a general decline in population, and from city zoning which has slated the central area of this community for future medical facilities development. This loss of stability is also expressed by a decline in neighborhood meetings, decline in leadership strength and in local, city-wide involvement. Because of this general reduction in neighborhood stability, community cohesion is considered to be at a low to medium level.

### **West Las Vegas Neighborhood**

The West Las Vegas neighborhood is also among the most cohesive neighborhoods in Las Vegas. It is known for being active in local, city-wide issues and has established goals for the community which include the promotion of further economic development and the reduction of multi-family land uses. Because of its high proportion of African Americans (over 72 percent), the West Las Vegas neighborhood is further bonded by a common identity and common social and economic concerns. Despite the flux in leadership that has occurred in the last few years and the relatively few community facilities within the neighborhood, this community is considered to have a high degree of community cohesion.

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<sup>4</sup> Appendix G of the Socioeconomic Technical Report identifies all Census blocks and block groups with special populations. Note two entries in Census Tract 2.02 which is within the Rancho Oakey/Rancho South neighborhood.

**Meadows Village/Las Vegas Business Owners**

The Meadows Village/Las Vegas Business Owners neighborhood is quite unique in the project area. With nearly half of the area comprised of businesses and the other half by multi-family housing, and with nearly 100 percent of all housing units rented, it is difficult to establish a sense of community cohesion here. Nearly 50 percent of the residents in Meadows Village/Las Vegas Business Owners neighborhood are Hispanic. Generally neighborhoods with a large proportion of minorities tend to develop common bonds based on similar identities and interests; however, this neighborhood is known to be quite transient with a large number of immigrants moving to the community initially and then settling elsewhere in the Las Vegas Valley. Stability, and therefore cohesion, is further impeded by the encroachment of Casino development to the east of its borders. This largely explains the 13.4 percent decline in population from 1990 to 1996.

**Clark High School Neighborhood**

The Clark High School Neighborhood, though not formally associated is considered to have a low to medium level of community cohesion. Comprising over 13 percent of the population, the Hispanic contingent is known to be quite active in the community and has been central to organizing regular meetings at Clark High School to discuss common concerns within the community. Within the Clark High School Neighborhood are enclaves of elderly citizens which reside primarily in a mobile home park adjacent to Valley View Boulevard. Other special groups within this neighborhood are foreign born populations who reside in the northwest corner of the neighborhood primarily. Despite a low owner to renter ratio, housing vacancy is relatively low at 6.5 percent, possibly indicating low turnover in the community.

**Westcliff Property Owners Association, Sun City Summerlin, Desert Shores, and South Shores Neighborhoods**

For those newer neighborhoods at the west, northwest, and north sections of the project area there has been little time to build a sense of cohesion. Neighborhoods falling within this category are the Westcliff Property Owners Association, Sun City Summerlin, Desert Shores, and South Shores Neighborhoods which have experienced population growth rates exceeding 530 percent during the early 1990's. While community facilities within these neighborhoods generally continue to keep pace with residential housing developments, their relatively recent development has not allowed a sufficient amount of time to develop a strong sense of community cohesion within these neighborhoods.

Other neighborhoods which have experienced considerable growth during the 90's are the Independent Northwest/The ACT and the Buffalo area/Charles Lam communities with an estimated 102 percent and 170 percent increase in population respectively.

**Independent Northwest/The ACT**

The Independent Northwest/The ACT neighborhood is situated to the northwest of the project area. With an owner/renter ratio of 75 percent to 25 percent, a relatively low vacancy rate, and several community facilities to serve it, this neighborhood is beginning to develop a small degree of community cohesion, particularly in the western portion of the neighborhood surrounding US-95 where there has been less growth and development and where several community facilities are clustered (i.e. the Proposed Cheyenne Basin Park, Children's Memorial Park, R.E. Tobler Elementary School, and immediately to the west, the W. Wayne Bunker Family Park and City of Las Vegas Fire Station No. 42).

**Buffalo Area/Charles Lam**

Community cohesion within the Buffalo Area/Charles Lam neighborhood is impeded not only by considerable growth and development but also by the fact that renters outnumber property owners at a 6.3 to 3.7 ratio. Vacancy rates from 1990 are relatively high at 11 percent, though this data may be offset by the fact that this neighborhood experienced tremendous development at that time. Despite these obstacles to developing a strong sense of community cohesion, the Buffalo Area/Charles Lam neighborhood enjoys two community facilities and the proposed development of the Oakey & Buffalo Recreation Center and Pool. These centers for community involvement and interaction support a small degree of cohesion within the community.

**Presidio/Excel/Hobble Creek**

The Presidio/Excel/Hobble Creek neighborhood lies within two Census tracts that have experienced differing levels of growth, with the eastern half of this community in Tract 34.03 which experience a 48 percent population increase and the western half in Tract 32.02 with a 539 percent increase. While the overall growth rate for this community is quite large, it has a considerable array of community facilities which have begun to engender a greater sense of community cohesion. In addition to those facilities that already exist, two new Parks are slated for development in the western portion of the neighborhood where development and population growth outpaced the eastern half. Also contributing to this community's sense of cohesion is the four to one ratio of property owners to renters. While community cohesion is beginning to develop in the Presidio/Excel/Hobble Creek neighborhood, a vocal leadership and involvement in local, city-wide politics is lacking. In general, community cohesion within this neighborhood is considered to be small and developing.

**Canyon Gates Master Association**

The Canyon Gates Master Association has experienced less growth as compared to other western neighborhoods in the project area. A gated community developed in the late 80's, Canyon Gate is primarily owner occupied and has less than a 5 percent vacancy rate. While no community facilities exist within the eastern portion of the neighborhood which lies in the project area, this community is part of 'The Lakes' which is a larger master planned area with large open spaces for recreation.

Community cohesion within the Canyon Gates neighborhood is considerable though the level of leadership and involvement in local Las Vegas Valley political issues is small.

### **West Sahara Community**

West Sahara, just south of Canyon Gates, is a relatively new neighborhood with a 1990 vacancy rate of over 16%, - a likely indication of its development during that time. Given its recent development and an estimated 88 percent increase in population between 1990 to 1997, this neighborhood has not yet established a recognizable level of community cohesion.

### **Cheyenne/Del Prado**

While the Cheyenne/Del Prado neighborhood was developed in the last four to five years, it is the only recognizable City of North Las Vegas neighborhood within the project area as determined by local government Community Planners. Comprised of two neighborhood associations that are divided by Martin Luther King Boulevard, this neighborhood has a high proportion of minorities with African Americans and Hispanics making up over 43 percent and 41 percent of the population respectively. Ownership ratios are also high here with 85 percent of residents owning homes while 15 percent rent. Community facilities within Cheyenne/Del Prado are few with only one park, though two schools serve this community immediately to the west. The neighborhood is becoming involved in local political issues and, in hand with this, leadership is becoming quite vocal and active. Community cohesion in this neighborhood is relatively high considering its recent development.

### **Sincerely Concerned/NFPC**

North-centrally located in the project area is the Sincerely Concerned/NFPC neighborhood. With a moderate 27 percent increase in population during the early 1990's, this community has a six to four owner/renter ratio and less than 5 percent housing vacancy. These criteria and the fact that several schools and parks serve its southwestern quadrant contribute to a sense of relative stability in this neighborhood, and therefore toward a noticeable degree of community cohesion. However, leadership within the neighborhood is lacking and involvement in local political issues is small.

Of the five smaller neighborhoods within the central portion of the project area, the Charleston Estates and Twin Lakes neighborhoods are perhaps the most cohesive.

### **Charleston Estates**

Charleston Estates is an older neighborhood and is considered to be quite stable with minor changes in population during the early 90's, a nine to one owner/renter ratio, and negligible 3% vacancy rate. This community has at its core the Ruth Fyfe Elementary School. Also contributing to its concerns and interests are the Western High School and Robert Gibson Middle School flanking its west and

north borders. Charleston Estates is not particularly active in local area politics however. Community cohesion in this neighborhood is considered to be at a medium level.

### **Twin Lakes**

The Twin Lakes neighborhood has a relatively high proportion of African American residents and a relatively high owner/renter ratio. At its center is the Twin Lakes Elementary School; immediately to the south is the large Lorenzi Park. Housing vacancy in this community is less than 3 percent and population change in the early 90's was negligible. This neighborhood is very stable and is somewhat vocal in local politics. Community cohesion in this neighborhood is at a medium to high level.

### **Sterling Springs**

Sterling Spring is a small neighborhood with no community facilities. Bonded primarily by its high ratio of owners to renters, and its housing type which is single family detached in an area that otherwise has more multi-family development, and a lower ratio of owners to renters, this community is relatively stable. Given its size and therefore scope of concerns, this neighborhood is not active in local political issues. Community cohesion is considered to be small in the Sterling Spring neighborhood.

### **Smoke Ranch**

Smoke Ranch is united primarily by its concerns regarding Lilly and Wing Fong Elementary School which is centrally located. Situated within Census tract 34.06, Smoke Ranch has experienced a 70 percent increase in population from 1990 to 1996 and has an owner/renter ratio of one to one. Given its size, pace of growth and its minimal involvement in local politics, this community has a relatively low level of neighborhood cohesion.

### **Eastland Heights**

Eastland Heights lies within Census tract 34.01 which experienced a moderate 20 percent increase in population between 1990 to 1996. With 34 percent of its housing units owner occupied, few community facilities, and lack of political involvement, this neighborhood lacks criteria which help foster a strong sense of community cohesion.

### **West Desert Inn**

West Desert Inn, located in Spring Valley of Unincorporated Clark County, has experienced a moderate increase in population during the early 1990's. Though homes in this neighborhood were developed in the mid to early 90's, residents are developing a considerable sense of community cohesion through meetings that are held regularly and through involvement in county and city-wide politics. A sense of community is further fostered in this neighborhood by the array of community

facilities which include parks, schools and a youth organization. The western portion of the neighborhood, which is comprised of newer housing developments, is still want for community facilities. Given the moderate rate of growth, three to two owner/renter ratio, relatively low housing vacancy and the level of community involvement, the West Desert Inn neighborhood is considered to have a medium level of neighborhood cohesion.

## 5. Visual Character and Aesthetics

### a. Methodology and Terms Used

The analysis of existing visual resources follows FHWA DOT-FH-11-9694 and American Society of Landscape Architects guidelines for assessing the visual character of an affected area. Detailed field investigations and photographs were used to assess Las Vegas area's visual resources and visual character. The inventory focuses on landscape within which the study area corridors would be visible.

Visual analysis of landscape starts with *viewers* and the visual resources that appear within their *viewshed*, or angle of view. *Visual resources* consist of land form, such as mountains; and land cover including water, vegetation, and manmade development. Historic properties are important visual resources. Visual resources determine a landscape's *visual character*.

**Viewers:** Different viewer groups have differing levels of awareness and preconceptions of the visual environment. Viewers who are driving on a city street in heavy traffic would likely concentrate on driving conditions and foreground views of vehicles, street signs, and traffic signals and have low awareness of adjacent historic buildings or background mountains. Moving drivers' views of foreground visual resources would be brief. Residents of adjacent houses, who have stationary viewpoints, would be exposed to views of long duration and have a greater awareness of views beyond the immediate roadway than would drivers.

Viewer preconceptions also affect what is seen. The project area is not located adjacent to the "Strip" and therefore visitors traveling along the roadway would not experience a loss of visual attraction because of proposed sound barriers. However, residents traveling along the roadway may take more of an interest in non-tourist oriented residential and commercial areas and perceive a greater sense of loss if sound barriers are constructed.

**Viewshed:** Landscape elements have a viewshed from which they can be seen. For example, the Stratosphere Hotel and Tower and Mount Charleston, because of their height and large scale, can be seen from many near and distant points to the north, east, south and west and have a large viewshed. On the other hand, most of the real estate development surrounding the U.S. 95 and the arterials is a mix of residential and commercial uses of lower height that have a small viewshed.

**Visual Resources:** Visual resources consist of landform and landcover and vary with viewsheds. Visual resources for a viewer traveling along U.S. 95 and most arterial streets are principally a landcover of manmade development, while along one portion of Summerlin Parkway the landcover is vegetative from the golf course located on both sides of the highway.

**Visual Character:** The visual character of a landscape is described in terms of the prominence, scale, diversity, and continuity of landform and landcover. In the area along Martin Luther King Boulevard the area changes from one of high density in the southern portion to lower density as one travels north. The viewshed also changes when traveling along this road; the distant views of surrounding mountains becomes more apparent as the development in the foreground becomes less dense.

## **b. Landscape Context and Visual Resources**

The most striking visual characteristic from the project area is often the surrounding mountains that form the distant views. These mountains in many areas are hidden by landforms and landcover that obstructs these more distant views. The near views change depending on the location; views along U.S. 95 often consist of various types of real estate development as well as sound barrier walls. Along Industrial Road the views of various industrial and commercial enterprises are more immediate, some within 10 to 15 feet of the roadway. Overall, this area of Las Vegas is primarily fully developed. Development adjacent to U.S. 95 and the various arterials is of a mixed-use nature and can include: residential, commercial, recreation, parks, golf courses, and industrial. In most instances the development is one to two stories in height and only occasionally is higher, typically for commercial office uses. The visual environment can be characterized as typical suburban.

### **(1.) Distant Views of Natural Elements**

The project area is located in the Las Vegas valley where views of distant surrounding mountains could be considered a natural viewshed benefit. The average elevation of the valley is about 2,000 feet while the surrounding mountains are at elevations that range from 5,000 to the local high point of Mount Charleston at almost 12,000 feet to the west of the City of Las Vegas. Depending on the location, the major features on the horizon are:

- Mount Charleston, at 11,916 feet and part of the Toiyabe National Forest, to the west;
- The Spring Mountain Summit, at 5,493 feet, and the McCullough Range, to the south; and
- The Sheep Range to the north.

## (2.) Near Views of Man-Made Development

Most near views in the area are dominated by buildings that range from high density such as is adjacent to Industrial Avenue to lower density along some portions of Desert Inn Road near Durango to a golf course located adjacent to Summerlin Parkway.

- The residential communities range from multifamily condominiums and apartments to single family homes, developed in an urban/suburban rather than rural style with small lots and homes in close proximity. Many of the residential communities have an architectural character indicative of the southwest, with colorful tile roofs and light colored stucco exterior walls.
- Smaller neighborhood commercial centers—detached buildings with parking in front -- are a common type of commercial development. Big-box shopping centers on Martin Luther King Boulevard, south of US-95, also exist. From US-95, the Meadows Mall is a prominent commercial feature between Decatur and Valley View, as are office buildings at the Summerlin Parkway/Rainbow Boulevard area and the Rancho Drive interchange. The industrial corridor along Western Avenue and Industrial Road provides a more dense, less cohesive example of the built environment within the project area. There are more buildings at the sidewalk's edge, and little visual cohesion in terms of signage, setbacks, etc.
- The Strip and other concentrations of casino/resort development are the most prominent and unique features of the man-made environment in the Las Vegas Valley. Casino/resort development can be viewed only from limited sites within the project area.

## (3.) Natural Features

With the exception of the LVVWD North Well Field, the project area contains no locally important or sensitive water resources or vegetation (major plant communities) that serve as important visual resources. Because of the arid desert landscape few water features exist. The arroyos or dry drainage-ways do carry water during periods of rain, but may be devoid of water for the majority of the year. They are characterized by steep slopes and can range from between 10 to 50 feet wide.

Within the project corridor, natural viewsheds and viewscapes are limited to the distance views of the valley and nearby mountain ranges. However, within the immediate US-95 corridor, naturally occurring viewsheds include the LVVWD North Well Field, and to a lesser degree, large undeveloped parcels throughout the general project area. Within the LVVWD North Well Field, the viewshed is comprised of vast areas of desert terrain, representative of the Mojave Desert, and stands of cottonwood trees which comprise a large canopy along the immediate US-95 corridor. Desert terrain and areas of desert vegetation comprise the balance of the area, all of which contribute to the visual character which makes up this particular viewshed. In addition, the LVVWD North Well Field includes various standing structures, many of which are historic and contribute to the historic character of the North Well Field and which represent the past and current history of water supply

in the Las Vegas area. The LVVWD viewshed includes both cultural and natural visual resources along the US-95 corridor and it represents an important component of the overall visual character of the immediate project area. The LVVWD North Well Field is one of the few remaining areas in the project area which is representative of a Mojave Desert setting.

### c. Visual Character of the Affected Environment

The character of the project area can be presented in four categories: 1) developing areas; 2) suburban residential; 3) commercial/industrial road front; and 4) highway corridor. The following photographs provide examples of locations within the project area where these locations exist.

#### (1) Developing Areas

In the north and southwesterly portions of the project area, undeveloped tracts of land with road frontage will be quickly developed.

**View looking south along Martin Luther King Boulevard from Craig Road.** The northernmost section of the project area maintains the greatest amount of yet undeveloped open space. It is predominantly at the outer fringes of the project area that panoramic viewsheds wider than the right-of-way are available. Lack of development and vegetated landscape enables the panoramic view. A substantial number of construction announcements and real estate sale signs indicate that this area is likely to undergo redevelopment within a short period of time.



**View west along Carey Avenue at Clayton Street toward Simmons Street.** New large residential subdivisions are planned or beginning to be developed in the extensive open space bordering the Carey Avenue corridor in the project area. The result will be the loss of wider views of the undeveloped desert landscape.

**View east of the undeveloped ROW of Desert Inn Road from Durango Drive.** Open viewsheds are also available in other undeveloped fringe areas. At a few locations, the lack of dense development enables views of the casino-hotels, or even views of the mountain range. As development occurs adjacent to the extension of Desert Inn Road, these types of views will diminish.



**(2.) Suburban Residential**

Subdivisions of (zero lot line) “patio homes,” townhouses and apartment complexes are constructed right up against the road rights-of-way. As a result, perimeter or patio walls protect the majority of residential areas in Las Vegas, to the extent that they are commonplace and familiar landscape features. The walls provide an immediate separation from the highways and arterial roads. Seemingly, if a privacy/ security wall, foundation or sound wall does not already exist alongside a roadway corridor in suburban Las Vegas, the need for that level of visual and noise protection doesn’t appear to exist.

In terms of aesthetics, masonry is the preferred material for wall construction. In older neighborhoods the walls are also constructed of wood and a variety of other materials. Except when deteriorated, the walls in Las Vegas are visually unobtrusive elements of the landscape.

**View northeast along Rancho Drive toward Lake Mead Boulevard.** Low density development along the roadsides in the project area supports a wider viewshed, with less disappearing perspective. In such cases, views of the surrounding mountains are the key focal point in the landscape.



**View Northeast along Rancho Drive at Turquoise Drive.** Trees and walls create a visual “channeling” effect which constrict the extent of the viewshed to the space within the right-of-way roadway corridor.





### **View along Torrey Pines in walled development.**

In Las Vegas, sound, privacy, and patio walls are common elements of the architecture and landscape character of the suburbs. The combination of walls, the tops of buildings, and occasionally trees, does an effective job of restricting views of outlying areas. Development of existing open space for residential development suggests the continuation of the use of walls.

### **(3.) Commercial/Industrial Roadfront**

The non-residential areas are also built right up to the edge of the roads. In older areas, light industrial, warehousing, and commercial operations are often conducted at the right-of-way line. More recent strip centers, malls, health care and campus-type businesses are set back from the road by parking areas, but there is still a close physical relationship between the roads and these areas. Views of outlying mountain ranges are limited under these conditions.

**View south along Industrial Road.** This roadway is bordered by building fronts, parking areas, and storage areas. Additionally, billboards and large signage exists in the more industrial areas, drawing further attention from more distant views to the immediate right-of-way.



**View north along Rancho Drive at U.S. 95.** This arterial is but one of many of the main arterials in the project area which is bordered by extensive commercial development. These commercial areas exist primarily at highway interchanges and at locations nearer to the Strip. Bustling commerce, visually competitive signage and unlimited access to the arterial is commonplace throughout the project area along these main arterials.

**View north along Rancho Drive at Alta Drive.**

The character of some major arterial roads can change dramatically as distance from the downtown increases. For example, as Rancho Drive extends into suburban areas, trees and vegetation have a positive effect on the quality of the local viewshed.

**(4.) Highway Corridor**

Major roadways are constructed principally at-grade or in cut conditions having berms, landscaping and/or sound walls at the right-of-way in developed areas. Where the corridor passes through residential areas, walls and vegetation typically shield the existing subdivisions and apartment complexes from the highway corridor. Highway corridors considered include U.S. 95 and the Summerlin Parkway.



**Summerlin Parkway near Tenaya Way.** A combination of wide right-of-way, planted median strip and walled and vegetated borders of residential areas makes the portion of Summerlin Parkway in the project area compatible with its landscape setting.

**U.S. 95 toward Decatur.** U.S. 95 is constructed predominantly at or below normal grade and generally uses all of the available right-of-way. Walls and berms are an ever-present characteristic of the residential portions of the interstate corridor. However walls are less dominant in business, commercial, and industrial settings as enterprise seeks highway exposure. Where U.S. 95 passes through undeveloped tracts, few if any walls exist. On the south side of US-95 between the Valley View and Rancho Drive a stand of



cottonwoods exist on the Las Vegas Valley Water District Well Field.

## **6. Agricultural, Farm and Ranch Land**

The Farmland Protection Policy Act of 1981 protects farmland that contains soils which are classified by the Natural Resource Conservation Service (NRCS) as being prime or unique or as having statewide importance. Prime and unique farmland has the best combination of physical and chemical properties for agricultural production. Farmlands of statewide importance are important to agriculture but exhibit some characteristics that exclude them from the prime farmland classification.

The predominant soils in the project area are Las Vegas and Skyhaven which are not classified as prime, unique or as having statewide importance.

## **7. Infrastructure**

### **a. Transportation/Transit Services**

#### **(1.) Highways**

The project area is located in the Northwest region of the Las Vegas Valley and is served by a single freeway, US-95. US-95 is centrally located with respect to the most densely developed areas of the Northwest Region. US-95 extends westward from the downtown "Spaghetti Bowl" Interchange at I-15 a distance of five miles to the Summerlin Parkway/Rainbow Boulevard interchange, and then turns northward a distance of five-and-a-half miles to Rancho Drive, thence, US-95 turns northwestward as it proceeds out of the Las Vegas Valley towards Tonopah. From downtown Las Vegas to the Summerlin Parkway, US-95 is a six-lane controlled access freeway with service interchanges at major arterials located at roughly one-mile spacings. From the Summerlin Parkway to Rancho Drive, US-95 is a four-lane controlled access freeway with service interchanges at major arterials located at roughly one-and-a-half mile spacings.

US-95 provides access to I-15 and the Las Vegas Strip and to downtown Las Vegas via the "Spaghetti Bowl" interchange.

Since US-95 is centrally located with respect to residential development in the Northwest Region, is the only limited access freeway in the Northwest Region and provides direct access to the Resort Corridor. US-95 is the preferred commuter route between the Northwest Region and the Resort Corridor.

The Summerlin Parkway is a four-lane limited access arterial which links the Summerlin Master Planned Community to US-95. It extends westward a little over three miles from US-95 in the vicinity of Rainbow Boulevard. A complex, partly directional interchange connects US-95, the Summerlin Parkway and Rainbow Boulevard.

## (2.) Arterial Streets

The following major and minor arterial streets presently extend east-west across most of the Northwest Region:

- Desert Inn Road;
- Sahara Avenue;
- Oakley Boulevard;
- Charleston Boulevard;
- Alta Drive;
- Washington Avenue;
- Vegas Drive/Owens Avenue;
- Lake Mead Boulevard;
- Smoke Ranch Road/Carey Avenue;
- Cheyenne Avenue; and
- Craig Road.

Sahara Avenue, Charleston Boulevard, Lake Mead Boulevard and Cheyenne Avenue are generally fully improved. The remaining major east-west arterials either have sections which are unimproved or have not yet been fully extended into developing areas.

Desert Inn Road has not been fully improved west of Jones Avenue.

Oakley Boulevard has not been fully improved west of Decatur Boulevard and terminates at Durango Drive.

Alta Drive has not been fully improved between Martin Luther King Boulevard and Valley View Boulevard.

Washington Avenue has not been fully improved west of Rainbow Boulevard and terminates at the TPC Golf Course.

Vegas Drive has not been fully improved west of Michael Way.

Smoke Ranch Road/Carey Avenue has not been fully improved east of Rancho Drive or west of Rainbow Boulevard and terminates at Desert Shores.

Major east-west arterials north of Cheyenne Avenue are being improved in conjunction with development.

Desert Inn Road, Sahara Avenue, Oakley Boulevard, Charleston Boulevard, Alta Drive and Washington Avenue are the only east-west arterials which extend across the Northwest Region and also cross I-15, providing access to the Resort Corridor east of I-15. Bonanza Avenue, which

extends into the Northwest Region as an arterial street only as far west as Rancho Drive, is the only other east-west arterial which crosses I-15 and serves the Resort Corridor.

### (3.) North-South Arterial Streets

The following major and minor arterial streets presently extend north-south across most of the Northwest Region:

- Martin Luther King Boulevard;
- Rancho Drive;
- Valley View Boulevard;
- Decatur Boulevard;
- Jones Boulevard;
- Torrey Pines;
- Rainbow Boulevard; and
- Buffalo Drive.

Rancho Drive, Valley View Boulevard and Decatur Boulevard are the only north-south arterials in the Northwest Region which are generally fully improved. Valley View Boulevard, however, only extends as far north as Washington Avenue.

The remaining north-south major arterials have sections which are unimproved. In most cases, the unimproved sections correspond to undeveloped properties where infilling has not yet occurred even though much of the surrounding areas have been fully developed.

West of Buffalo Drive, most north-south arterials are planned as part of master planned developments.

None of the north-south arterials cross I-15 or provide any direct access to the Resort Corridor east of I-15. Rather, access to the Resort Corridor from the north-south arterials is via US-95 and the east-west arterials.

### (4.) Aviation

One of the region's airports, North Las Vegas Airport, is located within the project area. North Las Vegas Airport is located with the City of North Las Vegas, directly adjacent to Rancho Drive in the northern portion of the project area. The airport is situated on a site of about 559 acres, about five miles northwest of downtown Las Vegas. It is owned by the Clark County Department of Aviation.

The airport received about 400,000 passengers in the past year, and the number of passengers has been increasing at a rate of about 15 percent a year. As a general aviation facility, the North Las Vegas Airport accommodates small planes, such as private jets, that do not carry fare-paying customers and commercial sight-seeing businesses. The airport provides excess capacity to that

offered by McCarran Airport, the region's primary airport. The population and economic growth of the area has increased the amount of air traffic arriving to and departing from McCarran Airport. As a result, McCarran Airport is moving all general aviation to secondary facilities including North Las Vegas Airport.

Expansion is planned for North Las Vegas Airport in order to keep up with the increase in general aviation activity occurring at the airport. A third runway will be added to accommodate congestion that occurs during peak travel periods and special events. The expansion will take place within the existing site and will not require acquisition of additional land.

#### **(5.) Public Transit**

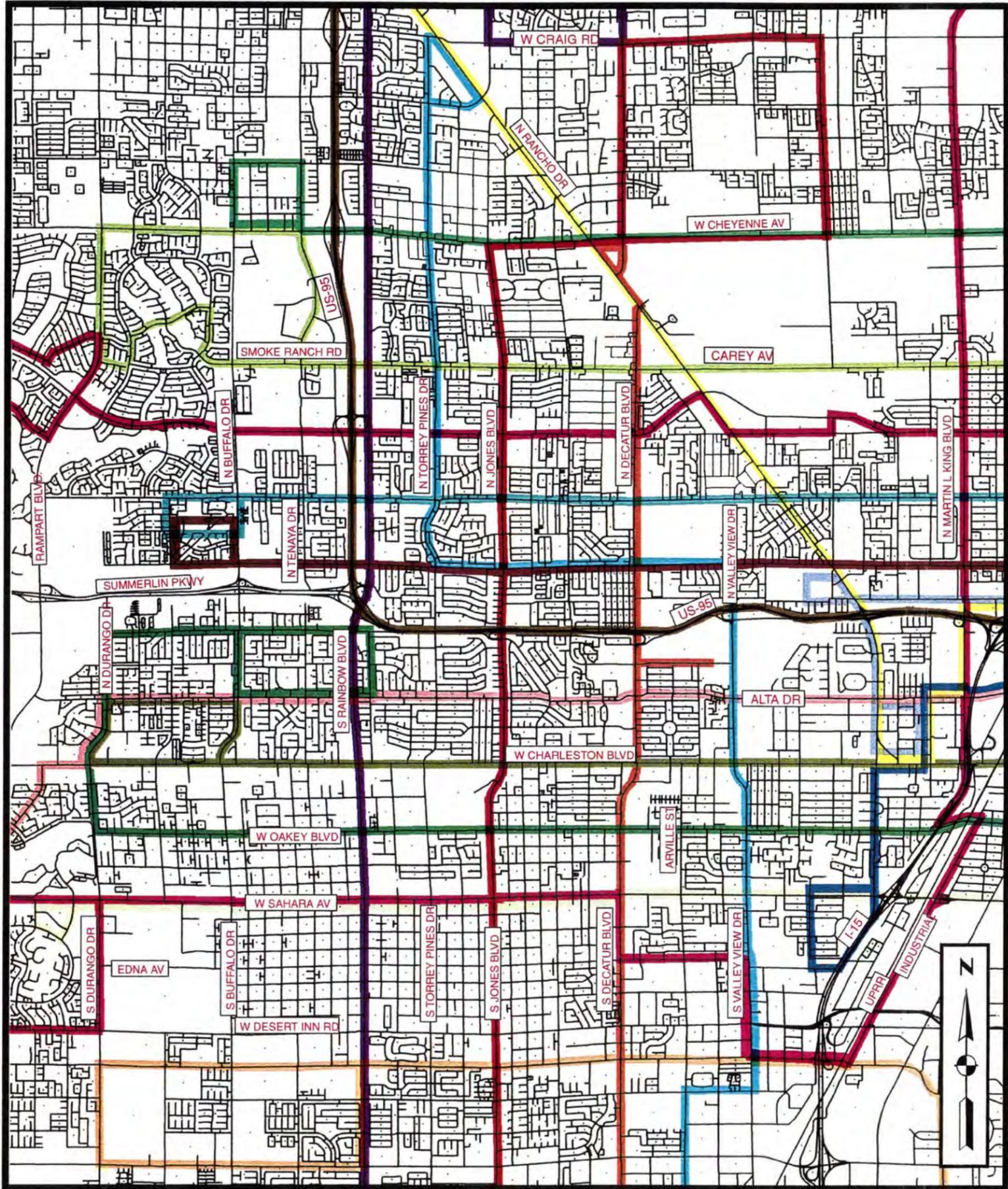
Citizens Area Transit (CAT) provides fixed route and paratransit public transportation within the urbanized region of the Las Vegas Valley. CAT currently operates 39 fixed bus routes, 19 of which are in the project area. Figure V-70 displays the bus routes that operate through the project area. All routes in the project area operate from 5:30 a.m. to 1:30 a.m.

#### **(6.) School Bus Routes**

An extensive network of school bus routes through the project area provides access for school children to the elementary, middle and high schools in the Clark County School District. School bus routes within the project area are numerous. All school children living two or more miles from school receive service within one-half mile of their home. This, coupled with the population growth within the Las Vegas Valley, can cause bus routes to vary on a weekly basis. On average, every high school is served by 14 buses, middle schools by 12 buses, and elementary schools by seven buses. This represents approximately 378 school buses operating within the project area.

#### **(7.) Emergency Service Routes**

All medical emergencies are responded to by local fire stations and American Medical Response. American Medical Response is the only emergency medical transportation service in the Valley and responds to calls within the City of Las Vegas and the City of North Las Vegas. More remote areas are served by Flight for Life which operates out of Valley Hospital. There are no specific emergency routes that have been identified by the medical emergency service organizations. American Medical Response maintains post locations within portions of the valley to service those areas that have a high incidence of medical emergencies. These posts vary based on historical data which indicate the times and places that have greater emergency service demand.



# Public Transportation (Citizens Area Transit) Routes

## LEGEND

- 101 - Rainbow
- 102 - Jones
- 103 - Decatur
- 104 - Valley View / Torrey Pines
- 105 - Martin Luther King / West Sahara
- 106 - Rancho
- 203 - Spring Mountain
- 204 - Sahara
- 205 - Oakey
- 206 - Charleston
- 207 - Alta / Stewart
- 208 - Washington
- 209 - Vegas Drive / Owens
- 210 - Lake Mead Blvd.
- 211 - Smoke Ranch / Carey
- 215 - Bonaza Road
- 218 - Cheyenne
- 401 - Downtown Circulator
- 402 - Cross Town Express

Source: Citizens Area Transit

**b. Utilities**

The project area is served by a number of utility companies including:

- Nevada Power
- Southwest Gas
- Las Vegas Valley Water District (LVVWD)
- Southern Nevada Water Authority (SNWA)
- Central Telephone/Sprint
- Prime Cable, and
- Clark County Sanitation District (CCSD) for sewer services
- City of Las Vegas Sanitation District for sewer services

The LVVWD, SNWA and CCSD are quasi-governmental organizations. All of these utilities have facilities which they own, operate, and maintain within the Impact Project Area.

Generally, most, if not all of the above utility companies have facilities located within the existing right-of-way of US-95 and each of the arterial streets included in the proposed project. These utilities are operated and maintained through franchise agreements, through intergovernmental agreements for quasi-governmental utilities and on utility easements which may or not be revocable.

Property owned by the utility companies within the Impact Project Area includes the Las Vegas Valley Water District North Well Field located south of US-95, east of Valley View Boulevard, several well sites, and electrical sub-station sites. The LVVWD North Well Field serves as a critical link in the potable water storage recovery and transmission system which is operated by the LVVWD and the Southern Nevada Water Authority. The North Well Field contains numerous facilities including ten ground-water production and artificial recharge wells, two pump stations, eight water level monitoring wells, disinfection facilities and pipelines. The North Well Field has a potable water storage capacity of 50 million gallons. Four large pipelines which are maintained by the Southern Nevada Water Authority extend beneath US-95 from the North Well Field. The facilities of the North Well Field are situated within a critical service zone where as it supplies potable water to much of the project area and downtown Las Vegas.

The various utility companies also operate and maintain distribution facilities on a myriad of utility easements located on private property within the Impact Project Area.

The following arterial streets included in the project area do not require additional right-of-way:

- Rancho Drive from Craig Road to Alta Drive;
- Carey Avenue from Rancho Drive to Clayton Street;
- US-95 from Craig Road to Rainbow Boulevard;
- Summerlin Parkway from Rainbow Boulevard to Rampart Avenue;
- Torrey Pines Drive from Craig Road to Washington Avenue;

- Tenaya Way from Westcliff Drive to Smoke Ranch Road;
- Arville Street from Charleston Boulevard to Sahara Avenue;
- Desert Inn Road from Durango Drive to Jones Boulevard; and
- Durango Drive from Edna Avenue to Desert Inn Road.

Utilities within the above streets were installed within the existing right-of-way and are consistent with the proposed improvements. Utilities within the existing US-95 right-of-way which will be in conflict with the proposed improvements include:

- Overhead electrical power facilities on the south side of US-95 from Westcliff Drive to Valley View Boulevard and from west of Rancho Drive to Martin Luther King Boulevard;
- Overhead electrical power facilities on the south side of US-95 from Rainbow Boulevard to east of Decatur;
- Overhead telephone facilities on the south side of US-95 from Westcliff to east of Jones Boulevard and from west of Decatur to Decatur;
- Overhead telephone facilities on the north side of US-95 from Rainbow to Michael Way and from Decatur to east of Decatur;

Utilities within the Valley View, Alta, Martin Luther King Boulevard and Industrial Road ROW which will be in conflict with the proposed project include:

- Overhead electrical power and telephone, underground telephone and water distribution facilities on the east side of Valley View Boulevard between Desert Inn and Sahara;
- Overhead electrical power facilities on the north side of Alta between Rancho Drive and Martin Luther King Boulevard;
- Overhead electrical power facilities on the west side of Martin Luther King Boulevard from Lake Mead to Owens and from Washington to Alta;
- Overhead electrical power facilities on the east side of Martin Luther King Boulevard from Wall Street to Palamino;
- Overhead electrical power facilities along Western Avenue and the UPRR along the proposed alignment on the Martin Luther King Boulevard/Industrial Connection;

- Overhead electrical power facilities along the east side of Industrial Road from Wyoming to Boston and along the west side of Industrial Road from St. Louis to Sahara; and
- An electrical substation on the west side of Industrial Road at Sahara.

Other major utilities located outside existing rights-of-way, but potentially in conflict with the proposed improvements include:

- A LVVWD well on the north side of US-95 east of Decatur Boulevard;
- Two LVVWD wells on the south side of US-95 east of Valley View Boulevard (located in the LVVWD North Well Field) (Alternative B only);
- A LVVWD/SNWA pumping station south of US-95 about one-half mile east of Valley View Boulevard (also located in the LVVWD North Well Field (Alternative B only);
- LVVWD/SNWA water pipelines crossing US-95 between Valley View Boulevard and Rancho Drive; and
- Overhead electrical power lines on the south side of US-95 on the Meadows Mall property.



## E. Air Quality

### 1. Introduction

The United States Environmental Protection Agency (USEPA) defines ambient air in 40 CFR, Part 50, as "that portion of the atmosphere, external to buildings, to which the general public has access." In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Amendments (CAAA), the USEPA has promulgated ambient air quality standards and regulations. NAAQS were enacted for the protection of public health and welfare. To date, the USEPA has issued NAAQS for six criteria pollutants; CO, sulfur dioxide (SO<sub>2</sub>), particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead (Pb).

The USEPA has recently established new NAAQS for ozone and fine particulate. For ozone, the current one-hour standard will eventually be supplanted by a new eight-hour standard. The standard for coarse particulate (PM<sub>10</sub>) will remain essentially unchanged, while a new standard for fine particulate matter less than or equal to 2.5 microns (PM<sub>2.5</sub>) is established. While these new standards were finalized by the USEPA in July 1997 (USEPA, 1997a; USEPA, 1997b) their impact will not be immediately seen since the USEPA must first classify regions as to their attainment of the new standards. Once regions are classified, states with nonattainment areas must submit for USEPA approval, a SIP that provides for the attainment and maintenance of the standards through control programs directed at sources of the pollutants. To date, the USEPA has not classified any regions for attainment to the new standards.

There are two types of standards: primary and secondary. Primary standards are designed to protect sensitive segments of the public from adverse health effects which may result from exposure to criteria pollutants. Secondary standards are designed to protect the public welfare from any known or anticipated adverse effects of a pollutant. Public welfare includes the natural environment (vegetation) and the man-made environment (physical structures). In some cases the secondary standards are more stringent than the primary standards.

Under the CAA and CAAA, state and local air pollution control agencies have the authority to adopt and enforce ambient air quality standards (AAQS) more stringent than the NAAQS. The state of Nevada has adopted the NAAQS. The national and state AAQS are presented in Table V-41.

**TABLE V-41  
NATIONAL AND STATE OF NEVADA AMBIENT AIR QUALITY STANDARDS**

Pollutant	Standard	
	Primary	Secondary
<u>Carbon Monoxide (CO)</u> 1-hour Average <sup>a</sup> 8-hour Average <sup>a</sup>	40 mg/m <sup>3</sup> (35 ppm) 10 mg/m <sup>3</sup> (9 ppm)	40 mg/m <sup>3</sup> (35 ppm) 10 mg/m <sup>3</sup> (9 ppm)
<u>Sulfur Dioxide (SO<sub>2</sub>)</u> 3-hour Maximum Average <sup>a</sup> 24-hour Maximum Average <sup>a</sup> Annual Arithmetic Mean	--- 365 µg/m <sup>3</sup> (0.14 ppm) 80 µg/m <sup>3</sup> (0.03 ppm)	1,300 µg/m <sup>3</sup> (0.5 ppm) --- ---
<u>Particulate (PM<sub>2.5</sub>)</u> 24-hour Average <sup>b</sup> Annual Arithmetic Mean <sup>c</sup>	65 µg/m <sup>3</sup> 15 µg/m <sup>3</sup>	65 µg/m <sup>3</sup> 15 µg/m <sup>3</sup>
<u>Particulate (PM<sub>10</sub>)</u> 24-hour Average <sup>d</sup> Annual Arithmetic Mean	150 µg/m <sup>3</sup> 50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup> 50 µg/m <sup>3</sup>
<u>Ozone (O<sub>3</sub>)</u> 1-hour Average <sup>e</sup> 8-hour Average <sup>f</sup>	235 µg/m <sup>3</sup> (0.12 ppm) 157 µg/m <sup>3</sup> (0.08 ppm)	235 µg/m <sup>3</sup> (0.12 ppm) 157 µg/m <sup>3</sup> (0.08 ppm)
<u>Nitrogen Dioxide (NO<sub>2</sub>)</u> Annual Arithmetic Mean	100 µg/m <sup>3</sup> (0.053 ppm)	100 µg/m <sup>3</sup> (0.053 ppm)
<u>Lead (Pb)</u> Maximum Arithmetic Mean Averaged Over a Calendar Quarter	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>

- a Not to be exceeded more than once per year.
- b Based on the three-year average of the 98th percentile of the 24-hour PM<sub>2.5</sub> concentrations at each population-oriented monitor within an area.
- c Based on a three-year average of annual arithmetic mean PM<sub>2.5</sub> concentrations from single or multiple community-oriented monitors.
- d Standard is revised to be based on the 99th percentile of 24-hour PM<sub>10</sub> concentrations at each monitor within an area.
- e The standard is attained when the expected number of days per calendar year with a average concentration above the standard is equal to or less than one. (Note: this standard will eventually be replaced by the new eight-hour standard).
- f Attainment is based on a three year average of the annual fourth-highest daily maximum 8-hour average O<sub>3</sub> concentration measured at each monitor within the area.
- (---) = No standard for this averaging period.

ppm = parts per million, mg/m<sup>3</sup> = milligrams per cubic meter, µg/m<sup>3</sup> = micrograms per cubic meter  
Source: 40CFR50.

## 2. Existing Air Quality

The project is located in Clark County, Nevada which is classified by the USEPA as serious nonattainment for the NAAQS pollutants; Carbon Monoxide (CO) and Particulate Matters (PM<sub>10</sub>). The county is in attainment of the remaining four NAAQS pollutants. Serious CO nonattainment areas are required to demonstrate attainment of the NAAQS by December 31, 2000 while serious PM<sub>10</sub> areas must demonstrate attainment no later than December 31, 2001. Clark County has petitioned the USEPA to extend the PM<sub>10</sub> attainment demonstration deadline to 2006 (Clark County, 1997).

The CO and PM<sub>10</sub> nonattainment areas coincide with Hydrographic Basin 212. This area is in excess of 1,500 square kilometers (932 miles) in size and includes the cities of Las Vegas, North Las Vegas, Henderson and the unincorporated areas of Clark County. Currently CO monitoring is maintained at fourteen monitoring sites and PM<sub>10</sub> at fifteen sites throughout the Las Vegas Valley.

The determination of attainment for both CO and PM<sub>10</sub> is based on an assessment of monitoring data over a continuous three-year period. In simplified terms, if no values are recorded that exceed the NAAQS at these monitoring sites during the most recent three-year period, the site is deemed to be in compliance with the NAAQS. Table V-42 presents the CO monitoring data collected at Las Vegas monitoring sites for the three-year period of 1996 through 1998 while Table V-43 presents the data for PM<sub>10</sub>.

**TABLE V-42  
HIGHEST CO MONITORING VALUES, CLARK COUNTY 1996-1998<sup>(a)</sup>**

Monitoring Site	Monitoring Year					
	1996		1997		1998	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
559 N. 7th Street (City Center)	10.4	6.6	8.0	5.5	8.3	4.4
4701 Mitchell Street (N. Las Vegas)	2.4	1.5	2.1	1.6	2.3	1.5
2850 E. Charleston Blvd	12.1	<b>10.1</b>	9.2	6.3	(c)	
2501 Sunrise Acres	10.8	8.1	12.2	<b>10.0</b>	<b>13.4</b>	<b>10.3</b>
130 Pauline Way	9.4	5.7	8.8	5.9	7.9	5.1
210 East Flamingo Road	7.8	4.5	6.6	4.3	8.0	4.4
3799 S. Las Vegas Blvd	8.2	4.6	8.5	4.9	8.7	5.1

**Bold values indicate an exceedences of the NAAQS**

- (a) Values are in parts per million (ppm)
- (b) The standard allows for one exceedence a year. It is the second exceedences which constitutes a violation.
- (c) Station not in operation

The one-hour and eight-hour NAAQS for CO are 35.0 and 9.0 respectively.  
Source: USEPA, 1997a.

**TABLE V-43  
HIGHEST PM-10 MONITORING VALUES, CLARK COUNTY 1996-1998.<sup>(a)</sup>**

Monitoring Site	Monitoring Year					
	1996		1997		1998	
	24-hour	Annual	24-hour	Annual	24-hour	Annual
Township 18s			105	17	191	19
1005 Industrial Road	191	20	91	16	69	14
4701 Mitchell St	385	52	198	45	208	45
559 N. 7th Street (City-Center)	267	47	135	38	135	39
210 E. Flamingo Road	339	54	160	49	281	44
248 Arroyo Grande	446	59	339	44	129	33
1301b E. Tonopah					130	51
1600 Lake Mead Blvd	388	58	397	65	169	39
4001 Sahara Ave	300	48	186	35	98	32
2801 E. Charleston	340	55	136	45	132	39
545 W. Lake Mead	152	35	155	35	76	28
1137 N. Boulder Highway	386	49	258	41	135	36
4525 New Forest Drive	264	50	152	39	161	37
7701 Ducharme Ave	256	33	108	23	59	20
Township 25S.R59E	180	19	93	16	43	13
3525 N. Valadez St.			111	33	94	28
333 Pavillion Center Dr.					119	25

**Bold values indicate an exceedance of the NAAQS**

(a) Values are in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )

(b) Station not in operation

Grayed cells indicate site not in operation that year.

The 24-hour and Annual NAAQS for PM10 are 150  $\mu\text{g}/\text{m}^3$  and 50.0  $\mu\text{g}/\text{m}^3$  respectively.

Source: Clark County Health District, 1999.

A review of the CO monitoring data for the years 1996 through 1998 indicates that the eight-hour NAAQS was exceeded once in each year. In 1996, the exceedance was recorded at the East Charleston Boulevard site with a recorded value of 10.1 ppm. The 1997 and 1998 exceedances were

both recorded at the 2501 Sunrise Acres site with recorded values 10.0 ppm and 10.3 ppm respectively. There were no recorded CO values that exceeded the one-hour NAAQS in any of the three years.

The PM10 monitoring data show that in 1996 the 24-hour NAAQS was exceeded at all 13 monitoring sites and the annual at five sites. The number of values recorded which exceeded the 24-hour NAAQS dropped to eight sites in 1997 with only one site exceeding the annual. 1998 showed a continuation of the 1997 trend with only five sites recording values greater than the 24-hour NAAQS and one of the annual NAAQS

The data in Tables V-42 and V-43 includes updated information not available in the Air Quality Technical Study, December 1998, revised March, 1999.

Section 182(a)(1) of the CAAA requires states to submit to the USEPA as part of the nonattainment area's STIP, a comprehensive, accurate, and current inventory of actual emissions from all sources in the nonattainment area. The initial inventory is known as the base year inventory and is used to establish the baseline for demonstrating reasonable further progress in reducing emissions as identified in section 182(c)(B) of the CAAA. The emissions inventory is required to be updated every three years. The base emissions inventory data for CO and PM<sub>10</sub> are presented in Tables V-44 and V-45 respectively.

**TABLE V-44  
LAS VEGAS VALLEY NONATTAINMENT AREA EMISSIONS INVENTORY**

CO Emission Source Category	1995 Base	1995 Base	1995 Budget
Stationary Sources	29.82	5.47	5.47
Area Sources	7.01	8.48	8.48
On-Road Mobile Sources	306.25	317.36	298.64
Off-Road Mobile Sources	18.09	21.15	21.15
<b>Total</b>	<b>361.18</b>	<b>352.46</b>	<b>333.74</b>

Source: CCBC, 1995.

**TABLE V-45  
PM<sub>10</sub> EMISSIONS INVENTORY FOR THE LAS VEGAS VALLEY**

PM <sub>10</sub> Source Category	Daily Emissions (Tons/Day)	Annual Emissions (Tons/Year)
Stationary Sources	5.08	1,855
Residential Wood Combustion	0.99	309
On-Road Exhaust, Brake and Tire	2.48	823
Paved Road Dust	20.37	6,759
Unpaved Road Dust	18.51	6,142
Construction Activities (Dust)	243.40	34,849
Disturbed Vacant Land (Dust)	176.91	4,944
Off-Road Racing	0.50	166
Natural Background (Dust)	89.19	31,414
<b>Total</b>	<b>557.43</b>	<b>87,261</b>

(1) March 11, 1994 PM<sub>10</sub> Emission Inventory

(2) Emission Inventory for 1995

Source: CCBC, 1997

Further detailed information regarding the affected environment, methodology and data sources for air quality is provided in the Air Quality Technical Study which has been prepared separate to the FEIS/Final Section 4(f) Evaluation.

## **F. Noise**

### **1. Introduction**

Noise is basically defined as unwanted sound. It is emitted from many sources including airplanes, factories, railroads, power generation plants, and highway vehicles. Highway noise, or traffic noise, is usually a composite of noises from engine exhaust and tire-roadway interaction.

The magnitude of noise is usually described by its sound pressure. Since the range of sound pressure varies greatly, a logarithmic scale is used to relate sound pressures to some common reference level, usually the decibel (dB). Sound pressures described in decibels are called sound pressure levels and are often defined in terms of frequency-weighted scales (A, B, C, or D).

The A-weighted decibel scale is used almost exclusively in vehicle noise measurements because it reflects the frequency range to which the human ear is most sensitive (1000-6000 Hertz). Sound levels measured using an A-weighted decibel scale are generally expressed as dBA. For this analysis, all noise levels are expressed in dBAs. Several examples of noise pressure levels in dBA scale are listed in Table V-46.

Table V-46 indicates that most individuals in urbanized areas are exposed to fairly high noise levels from many sources as they go about their daily activities. The degree of disturbance or annoyance of unwanted sound depends essentially on three factors:

- The amount and nature of the intruding noise;
- The relationship between background noise and the intruding noise; and
- The type of activity occurring where the noise is heard.

The sound level at a particular instant is not likely to be a good measure of a noise whose level varies with time over a wide range of frequencies, such as highway noise. To better accommodate and assess the time-varying noise levels typically associated with highway traffic patterns, a time averaged single number descriptor known as the "Level Equivalent" (Leq) is employed. The Leq is expressed in dBA and represents the averaged or mean energy content of sounds over a specified time period. Digital time averaging instrumentation can measure the Leq directly, over any time period.

TABLE V-46

**EXAMPLES OF COMMON SOUNDS**  
**A-weighted Sound Level in Decibels (dBA)**

EXAMPLES	dBA	SUBJECTIVE EVALUATIONS
Near Jet Engine	140	Deafening
Threshold of Pain	130	
Threshold of Feeling	120	
Accelerating Motorcycle at a Few Feet Away	110	
Loud Auto Horn at 10 Feet Away	100	Very Loud
Noisy Urban Street	90	
School Cafeteria Full of Students	80	
Near Freeway Auto Traffic	70	Loud
Average Conversation	60	
Average Office	50	Moderate
Soft Radio Music in Apartment	40	
Average Residential Home	30	Faint
Average Whisper	20	
Rustle of Leaves in Wind	10	Very Faint
Threshold of Audibility	0	

\* Source: Concepts in Architectural Acoustics, David Egan, McGraw Hill, 1972.

## 2. Identification of Noise Sensitive Areas

Generally, Noise Sensitive Areas (NSAs) correspond to existing or future planned noise sensitive developments (or groups of noise sensitive receptors as defined in 23 CFR Part 772), which are likely to be affected by changes in traffic volumes and design along US-95 and Summerlin Parkway, their interchanges and/or the various arterial streets where improvements are proposed.

A review of the topographic maps and aerial photographs of the project area was conducted in order to identify the areas where noise sensitive land uses exist. NSAs include schools, hospitals, churches, playgrounds and recreation areas, residential areas, Section 4(f) areas, etc. (i.e., Activity B land uses according to FHWA's NAC in 23 CFR, Part 772) in the project area. NSAs generally comprise clusters of these types of noise-sensitive land uses, and may sometimes include more than one of these uses. The boundaries of the NSAs are delineated based on the locations of existing and proposed land uses, major interchanges and overpass bridges, and terrain features. A total of 64 NSAs were identified within the project area. Of this total, 25 NSAs are located adjacent to US-95,

five NSAs are adjacent to Summerlin Parkway, and 34 NSAs are adjacent to the arterial roadways which are proposed to be improved. The locations of the Noise Sensitive Areas within the project area depicted on Figure V-71. Detailed descriptions of each NSA identified, including the type and number of noise sensitive receptors, such as residences, schools, churches, hospitals, libraries and parks as well as terrain features and boundary lines are presented in the Noise Technical Report which has been prepared separate to the FEIS/Final Section 4(f) Evaluation.

### **3. Location of Noise Receptors**

Based on review of aerial photos, engineering plans, and topographical maps, as well as site visits and input from NDOT and the general public, a total of 76 locations for existing noise level monitoring were identified along US-95, Summerlin Parkway, the proposed Martin Luther King Boulevard/Industrial Road Connector, the proposed Rancho Drive/Alta Drive Connector, and the various arterial streets where roadway improvements are proposed. These monitoring locations were selected as representative locations of each NSA, portion of each NSA, or group of NSAs located along the several corridors. The specific monitoring locations are identified on Figure V-72.

### **4. Noise Monitoring Program**

To establish baseline data, existing daytime noise levels were measured at the 76 locations within the 64 NSAs. These locations were selected as being representative of the variety of roadway-receptor configurations that exist in the project area. Traffic on US-95, Summerlin Parkway, and the arterial roadways is the primary noise source at all of these locations. Land use categories for the 76 measured receptor sites are distributed as follows: 68 residential sites, four schools, two churches, one park, and one golf course. Fifty-one of the 76 noise monitoring locations are along US-95 and Summerlin Parkway, while the remaining locations are along the arterial roadways that are proposed for improvements. The measured noise levels at the receptors along US-95 and Summerlin Parkway range from 52 to 73 dBA, with 17 receptors that either approach (within 1 dBA) or exceed FHWA's Noise Abatement Criterion (NAC) of 67 dBA. Similarly, the measured noise levels at the receptors along the arterial roadways range from 58 to 75 dBA, with 17 receptors that approach or exceed the NAC of 67 dBA.

During the field measurements, important events and site conditions were noted and a sketch was drawn for each receptor location showing important and permanent features of the area to aid locating microphone positions at a later date. If an unusual noise source interrupted the monitoring session, the measurement was temporarily paused until the noise source was out of range. Typical noise sources of this type included: occasional airplanes flying overhead, local idling of motorcycles, barking dogs, etc. The field measurements indicated that the existing major noise sources that affected residents in the project area on a regular basis included roadway traffic, aircraft overflights and construction.

The ambient noise levels were measured during morning, midday and evening periods between August 4 and August 15, 1997. Of the total 76 sites which were measured, 61 were measured for a total of three separate times. For those sites monitored three times, the measurements were conducted for 20-minute periods staggered across any of three week days to cover one measurement during each time period. The 20-minute noise measurements were conducted during a morning period between 7 a.m. and 10 a.m., a midday period between 10 a.m. and 2 p.m., and an evening period between 2 p.m. and 6 p.m. The remaining 15 sites, which were supplemental locations selected to provide additional neighborhood noise levels, were monitored for a single 20-minute period between 7 a.m. and 6 p.m.

The results of the measured ambient noise levels, which were conducted for each of the NSAs along US-95, Summerlin Parkway and the arterial roadways proposed for improvements are presented in Tables V- 47 and V-48. The existing noise levels presented in Tables V-47 and V-48 are based directly on the monitored noise levels. This information is presented only for the specific receptors which were monitored, rather than for the entire NSA.

Further detailed information regarding methodology, data sources and the baseline conditions of the affected environment for noise is provided in the Noise Technical Study which has been prepared separate to the FEIS/Final Section 4(f) Evaluation.





**TABLE V-47  
MONITORED SOUND LEVELS FOR NSAs (US-95 AND SUMMERLIN PARKWAY)**

NSA	Receiving Number	Receiving Location	Direction	Time Period	Measured Sound Level (dBA)
NSA 1	No Noise Monitoring for this Area				
NSA 2	38	6932 Delorean Circle	NB US-95	AM Midday PM	67 65 66
NSA 3	39	Mountain Creek Apts. 2451 N. Rainbow Boulevard	NB US-95	AM Midday PM	61 60 65
NSA 4-6	No Noise Monitoring for this area.				
NSA 7	37	Oasis Bel Air 7075 W. Gowan Road	SB US-95	AM Midday PM	68 66 69
NSA 8	No Noise Monitoring for this Area				
NSA 9	36	The Fountains 2300 Rock Springs Drive	SB US-95	AM Midday PM	64 67 62
NSA 10	35	Mountain Springs Apts. 1701 Rock Springs Drive	SB US-95	AM Midday PM	68 68 67
NSA 11	34	1108 Willowtree Drive	SB US-95	AM Midday PM	66 68 67
NSA 12	40	Angel Park Golf Course Property Line along Summerlin Parkway	WB Summerlin Parkway	AM Midday PM	64 64 65
NSA 13	43	San Moritz Apts. 7401 Washington Avenue	WB Summerlin Parkway	AM Midday PM	67 69 69
NSA 14-15	No Noise Monitoring for this Area				
NSA 16	41	Angel Park Apts. 6255 W. Tropicana	EB Summerlin Parkway	AM Midday PM	61 61 62
	76	La Rue Court	EB Summerlin Parkway	AM/PM	57
NSA 17	42	Pirates Cove Apts. 7200 Pirates Cove Road	EB Summerlin Parkway	AM Midday PM	63 61 60
NSA 18	No Noise Monitoring for this Area				

**TABLE V-47 (Continued)**  
**MONITORED SOUND LEVELS FOR NSAs (US-95 AND SUMMERLIN PARKWAY)**

NSA	Receiving Property	Address	Direction	Time of Day	Measured Sound Levels, dBA
NSA 19	26	6509 Mecham Avenue	WB US-95	AM Midday PM	62 65 62
	33	The St. Croix Apts. 6661 Silverstream Avenue	WB US-95	AM Midday PM	64 58 61
	75	Christ Lutheran Church 100 N. Wallace	WB US-95	AM/PM	61
NSA 20	23	6121 Aberdeen Lane	WB US-95	AM Midday PM	54 59 53
	24	Catalina Apts. 100 N. Wallace	WB US-95	AM Midday PM	61 59 61
	25	Catalina Apts. 100 N. Wallace	WB US-95	AM Midday PM	64 63 63
	74	Catalina Apts.	WB US-95	AM/PM	61
NSA 21	17	5520 Reba Avenue	WB US-95	AM Midday PM	57 58 57
	72	Property line of 5600 Tanaya Avenue	WB US-95	AM/PM	57
NSA 22	14	13 Tawnily Drive	WB US-95	AM Midday PM	61 63 62
	15	14 Princeton Street	WB US-95	AM Midday PM	62 64 64
	71	Property line of 5208 Dancer Way	WB US-95	AM/PM	57

**TABLE V-47 (Continued)**  
**MONITORED SOUND LEVELS FOR NSAs (US-95 AND SUMMERLIN PARKWAY)**

NSA	Receiver Number	Address	Direction	Time Period	Measured Sound Level (dBA)
NSA 23	13	320 Estella Avenue	WB US-95	AM Midday PM	64 67 62
	16	Ruth Fyfe Elementary School 4101 Bonanza Road	WB US-95	AM Midday PM	66 63 64
	32	Western High School 4601 W. Bonanza Road	WB US-95	AM Midday PM	69 67 66
	68	Property line between 220 & 217 Moller Ct.	WB US-95	AM/PM	60
	69	Back of Western H.S. near Bonanza Road	WB US-95	AM/PM	60
NSA 24	8	201 Ramsey Street	WB US-95	AM Midday PM	67 68 67
	9	204 Pomegranate Circle	WB US-95	AM Midday PM	56 56 56
	10	3029 Austin Avenue	WB US-95	AM Midday PM	64 67 66
	11	308 Twin Lakes Drive	WB US-95	AM Midday PM	62 57 56
	12	3616 Pyracantha Circle	WB US-95	AM Midday PM	71 65 66
	67	Property line of 2812 Austin Avenue	WB US-95	AM/PM	62
NSA 25	29	6517 Lowden Lane	EB US-95	AM Midday PM	57 62 56
	30	6616 Lowden Lane	EB US-95	AM Midday PM	60 61 60
	31	Adcock Elementary School Hyde Avenue	EB US-95	AM Midday PM	65 67 65
NSA 26	27	Azure Crest Town Homes 100 S. Crestline Drive	EB US-95	AM Midday PM	57 52 56

**TABLE V-47 (Continued)**  
**MONITORED SOUND LEVELS FOR NSAs (US-95 AND SUMMERLIN**  
**PARKWAY)**

NSA Number	Number	Location	Direction	Time	Measured Sound Levels (dBA)	
	28	Mirabelli Park Hargrove Avenue	EB US-95	AM Midday PM	73 69 71	
	NSA 27	18	5916 Harmony Circle	EB US-95	AM Midday PM	60 65 65
		19	5516 Harmony Avenue	EB US-95	AM Midday PM	65 65 66
73		Property line of 5705 W. Churchill Street	EB US-95	AM/PM	61	
NSA 28	20	5244 Harmony Avenue	EB US 95	AM Midday PM	61 59 61	
	21	120 S. Minnesota Street	EB US 95	AM Midday PM	57 55 60	
	22	4905 Harmony Avenue	EB US 95	AM Midday PM	62 58 57	
	70	Property line of 5009 Church Hill Road	EB US 95	AM/PM	57	
NSA 29	7	108 Hollyhock Lane	EB US-95	AM Midday PM	57 57 57	
NSA 30	5	10 Onyx Way	EB US-95	AM Midday PM	64 66 67	
	6	Racquet Club Apts. 98 S. Martin Luther King Boulevard	EB US-95	AM Midday PM	68 70 70	
	65	Between property line of 1913 & 1909 Granite Avenue	EB US-95	AM/PM	59	

Source: Louis Berger & Associates, Inc. 1998

**TABLE V-48  
MONITORED NOISE LEVELS FOR NSAS (ARTERIAL ROADWAYS)**

NSA	Station	Location	Direction	Time	Level (dBA)
NSA 31	No Noise Monitoring for this Area				
NSA 32	48	Corner of Rancho Drive & Riverside Drive	NB Rancho Drive	AM Midday PM	70 70 72
	49	Corner of Rancho Drive & W. Turquoise Road	SB Rancho Drive	AM Midday PM	74 72 72
NSA 33-38	No Noise Monitoring for these Areas				
NSA 39	64	Near corner of MLK Boulevard & Madison Avenue	SB MLK Boulevard	AM/PM	74
NSA 40-41	No Noise Monitoring for these Areas				
NSA 42	46	Corner of MLK Boulevard & W. Pontiac Avenue	NB MLK Boulevard	AM Midday PM	73 71 73
	47	Corner of MLK Boulevard & June Ave	SB MLK Boulevard	AM Midday PM	73 72 71
NSA 43-45	No Noise Monitoring for this Area				
NSA 46	60	Property Line of 7050 Desert Inn Road	WB Desert Inn Road	AM Midday PM	58 64 63
NSA 47	59	Corner of Desert Inn & S. Le Mann Circle	WB Desert Inn Road	AM Midday PM	72 70 72
	61	Corner of Desert Inn & Remuda Trail	EB Desert Inn Road	AM Midday PM	73 71 72
NSA 48	54	Corner of Durango Drive & W. Paddle Wheel Way	SB Durango Drive	AM Midday PM	73 73 75
NSA 49 (Cont'd)	57	Meadows Trailer Park	NB Valley View Boulevard	AM Midday PM	73 73 74
NSA 50	55	Corner of Arville Street & W. Mountain View Boulevard	NB Arville Street	AM Midday PM	67 68 68
	56	Corner of Arville Street & El Camino Avenue	SB Arville Street	AM Midday PM	68 70 71

**TABLE V-48  
MONITORED NOISE LEVELS FOR NSAS (ARTERIAL ROADWAYS)**

NSA 51	4	521 Parkway East	WB Alta Drive	AM Midday PM	60 61 65
	63	Corner of Deauville Street & Alta Drive	EB Alta Drive	AM/PM	71
NSA 52	No Noise Monitoring for this Site				
NSA 53	52	Corner of Tenaya Way & W. Calvado Street	NB Tenaya Way	AM Midday PM	60 61 63
NSA 54	53	Corner of Tenaya Way & W. Queen Palm Drive	SB Tenaya Way	AM Midday PM	62 63 67
NSA 55	No Noise Monitoring for this Site				
NSA 56	44	2631 Peaceful Hills Drive	EB Carey Avenue	AM Midday PM	65 62 64
	45	Property line of 2016 Carey Avenue	WB Carey Avenue	AM Midday PM	67 67 68
NSA 57	50	Corner of N. Torrey Pines Drive & W. Grove Hill Ln.	SB Torrey Pines	AM Midday PM	66 66 69
	51	Corner of N. Torrey Pines Drive & W. Carmen Boulevard	NB Torrey Pines	AM Midday PM	64 66 68
NSA 58-63	No Noise Monitoring for these Sites				
NSA 64	1	First Presbyterian Church West Charleston Boulevard	SB Route 15	AM Midday PM	65 65 60
	2	1221 Richard Court	SB Route 15	AM Midday PM	64 64 62
	3	1512 Hastings Avenue	SB Route 15	AM Midday PM	67 67 65
	62	Corner of Mercedes Circle & Ellis Avenue	SB Rt. 15	AM/PM	63

Source: Louis Berger &amp; Associates, Inc., 1998

## G. Hazardous Waste

The project area spans residential, commercial, and industrial developments as well as vacant lots. A hazardous materials screening study was conducted in the proposed project area by systematically reviewing information sources and performing visual inspections to develop a list of potentially contaminated sites. The three methods used for identifying properties of concern were: 1) review of federal, state and local environmental regulatory agency databases of known contamination sites; 2) historical use review; and 3) field inspections of properties within or near the project area.

The database search included properties with known groundwater contamination located within 250 feet of the proposed project right-of-way. This is the typical distance that a hydrocarbon plume migrates in groundwater from a site, potentially affecting neighboring properties. Within the search corridor, 21 sites known to be contaminated were identified (Table V-49). Many of these sites are contaminated as a result of leaking underground storage tanks.

Two of the sites, U-Haul and Unocal station #7313 are located along the US-95 Corridor, four are found along the arterial street connectors, and 15 sites are located along arterial streets proposed for improvements (Figure V-73, V-74 and V-75).

Golden Engine & Cylinder Head located at 1414 Industrial Road and Western Linen Service located at 1205 Western Avenue, which were included in the Nevada Division of Environmental Protection (NDEP) database in 1997, have been recently assessed by NDEP and closed with no further requirements for further assessment or remediation. This is updated information not included in the Hazardous Waste Technical Study, December 1998. Consequently, sites listed in the Technical Study as suspect due to their proximity to Golden Engine & Cylinder Head and Western Linen Service are no longer considered suspect.

Table V-49 Known Contamination Sites and Their Remediation Status Within 250 Feet of Proposed Right-of-Way.

Map ID	Site Name/Owner	Site Address	Parcel Number	Contaminant Type	Remediation Status
1	Unocal station #7313	101 N. Decatur Boulevard	138-25-812-204	Gasoline	In-situ soil and groundwater remediation. Performing quarterly monitoring, purge and trap and soil vapor extraction remediation systems. Building demolished 10/97.
2	U-Haul	2001 W. Bonanza Road	139-28-401-023 139-28-401-001	Gasoline	No record of contaminated soil removal or remediation. Required to continue monitoring groundwater for TPH, BTEX, and MTBE.
16	Grayline Tours	1550 Industrial Road	162-04-606-003 162-04-606-004 162-04-606-005	Diesel fuel, gasoline, motor oil	Remediation ongoing. Southern area: in-situ remediation, soil and groundwater monitoring ongoing.
17	American Coin	1901 Industrial Road	162-04-706-004	Gasoline	A 1995 Characterization Report identified contamination. No further record of activity.
18	Butler Crane Service	306 W. St. Louis Avenue	162-04-706-007	Gasoline, oil	No record of site assessment, well installation or soil excavation.
20	Nevada Power Company	2515 Industrial Road	162-09-104-002	PCE, DCE, MTBE	Nine wells installed, quarterly monitoring ongoing, no remediation.
100	Clark County Automotive Service	285 S. Martin Luther King Boulevard	139-33-501-009	Gasoline, oil	Contaminated soils removed. Performing quarterly groundwater monitoring. Remedial systems include P&T. Elevated BTEX levels currently reported in ground water
101	Joe's Auto	444 S. Martin Luther King Boulevard	139-33-202-004	Gasoline, diesel fuel	Contaminated soils removed. Performing quarterly groundwater monitoring and P&T remediation. Must install well in former pit area and monitor for MTBE.

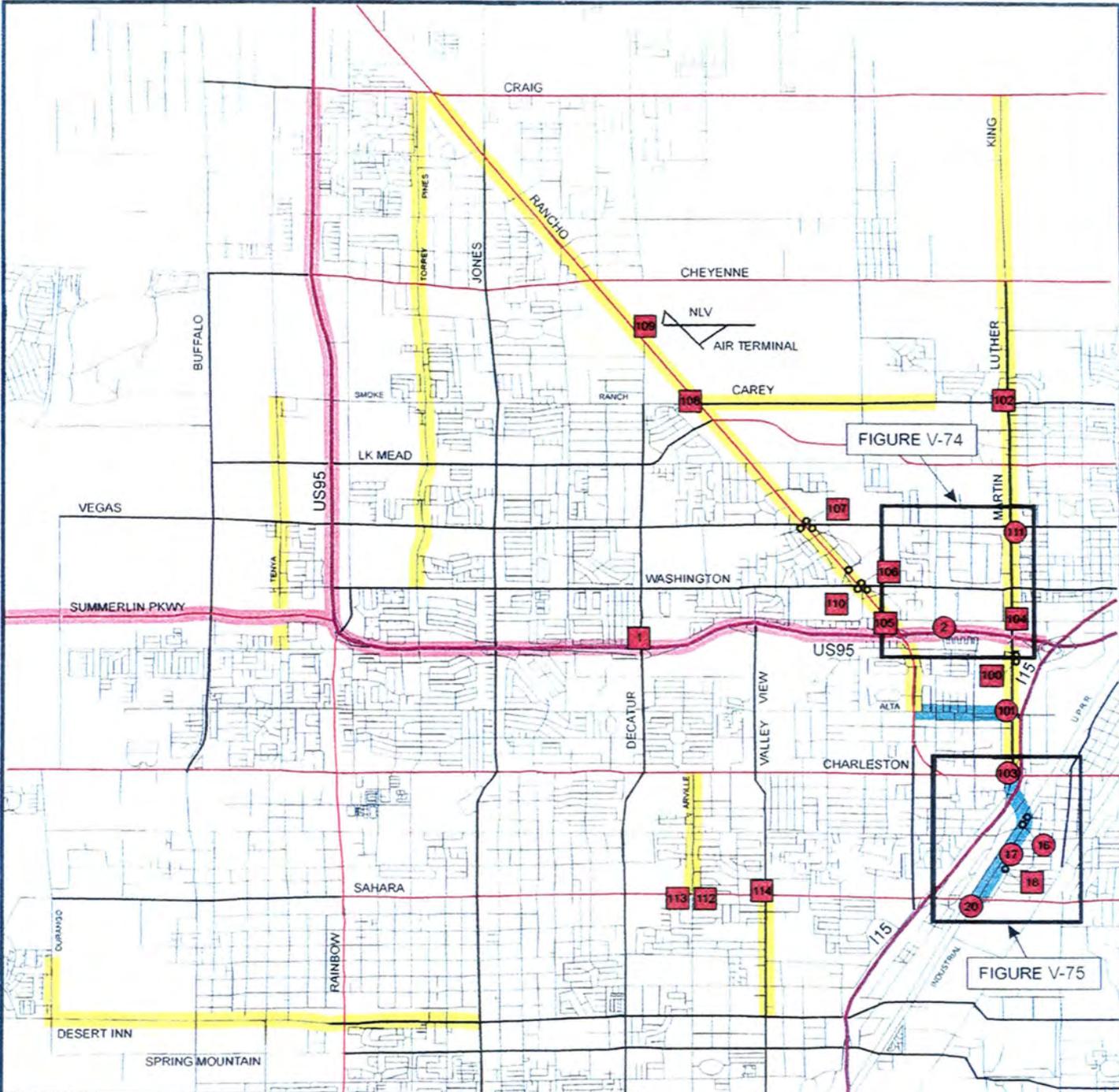
Map ID	Site Name/Owner	Site Address	Parcel Number	Contaminant Type	Remediation Status
102	Rudy's Auto	1501 W. Carey Avenue	139-21-102-004	Gasoline	No record of soil excavation. Performing quarterly ground water monitoring. Current BTEX levels below action levels.
103	Texaco station #0151	1500 W. Charleston Boulevard	139-33-411-019	Gasoline, diesel fuel	Partial removal of contaminated soils. Work plan currently under development to identify extent of plume and to develop a remediation system.
104	Conoco	1420 W. Bonanza Road	139-28-703-008	Gasoline	Contaminated soils removed. continued concern over source of ground water contamination and method of remediation.
105	7-Eleven	529 N. Rancho Drive	139-29-801-001	Gasoline, diesel fuel	Partial removal of contaminated soil. Performing quarterly ground water monitoring and ORC remediation.
106	Unocal station #3875	900 N. Rancho Drive	139-29-201-005	Gasoline, waste oil	Contaminated soils removed. Performing quarterly ground water monitoring and ORC remediation.
107	7-Eleven	1600 N. Rancho Drive	139-20-411-005	Gasoline	In-situ soil treatment planned. Performing quarterly monitoring to evaluate offsite plume. P&T and SVE remediation systems have been installed.

Map ID	Site Name/Owner	Site Address	Parcel Number	Contaminant Type	Remediation Status
108	V&V Automotive	2401 N. Rancho Drive	139-18-403-002	Gasoline	Contaminated soils removed. Began air sparge/vapor extraction remediation August, 1997
109	North Las Vegas Airport	2772 N. Rancho Drive	139-18-101-001	Gasoline	Contaminated soils removed. Performing quarterly ground water monitoring (passive remediation).
110	Arco station #1878	2801 W. Washington Avenue	139-29-301-001	Gasoline, oil	Partial removal of contaminated soil. Performing quarterly ground water monitoring and using natural attenuation (with ORC socks) to remediate ground water.
111	Day & Night Convenience store	1451 W. Owens Avenue	139-28-501-001	Gasoline	No record of soil excavation. FA VO issued- non-compliance (Sept 1997). Need to develop remediation plan and identify offsite contamination.
112	7-Eleven	4325 W. Sahara Avenue	162-07-501-001	Gasoline, chlorinated solvents	Contaminated soils removed. Performing quarterly ground water monitoring and ORC remediation.
113	Unocal station #5257	4401 W. Sahara Avenue	162-07-101-013	Gasoline, chlorinated solvents, waste oil	In-situ soil treatment planned. Quarterly ground water monitoring being performed
114	Payless Drug	3852 W. Sahara Avenue	162-06-813-006	Chlorinated solvents	In-situ soil treatment planned. Currently monitoring ground water and remediating with air sparging/SVE.

Source: Lahontan GeoScience, Inc. 1998

Note: Shaded sites refer to those at least partially within the proposed right-of-way.

Key: BTEX benzene, toluene, ethylbenzene, xylene  
 FAVO Finding of Alleged Violation and Order  
 MTBE methyl tert butyl ether  
 NDEP Nevada Department of Environmental Protection  
 ORC oxygen-releasing compound  
 P&T pump and treat  
 SVE soil vapor extraction  
 TPH total petroleum hydrocarbons  
 UST underground storage tank



**LEGEND**

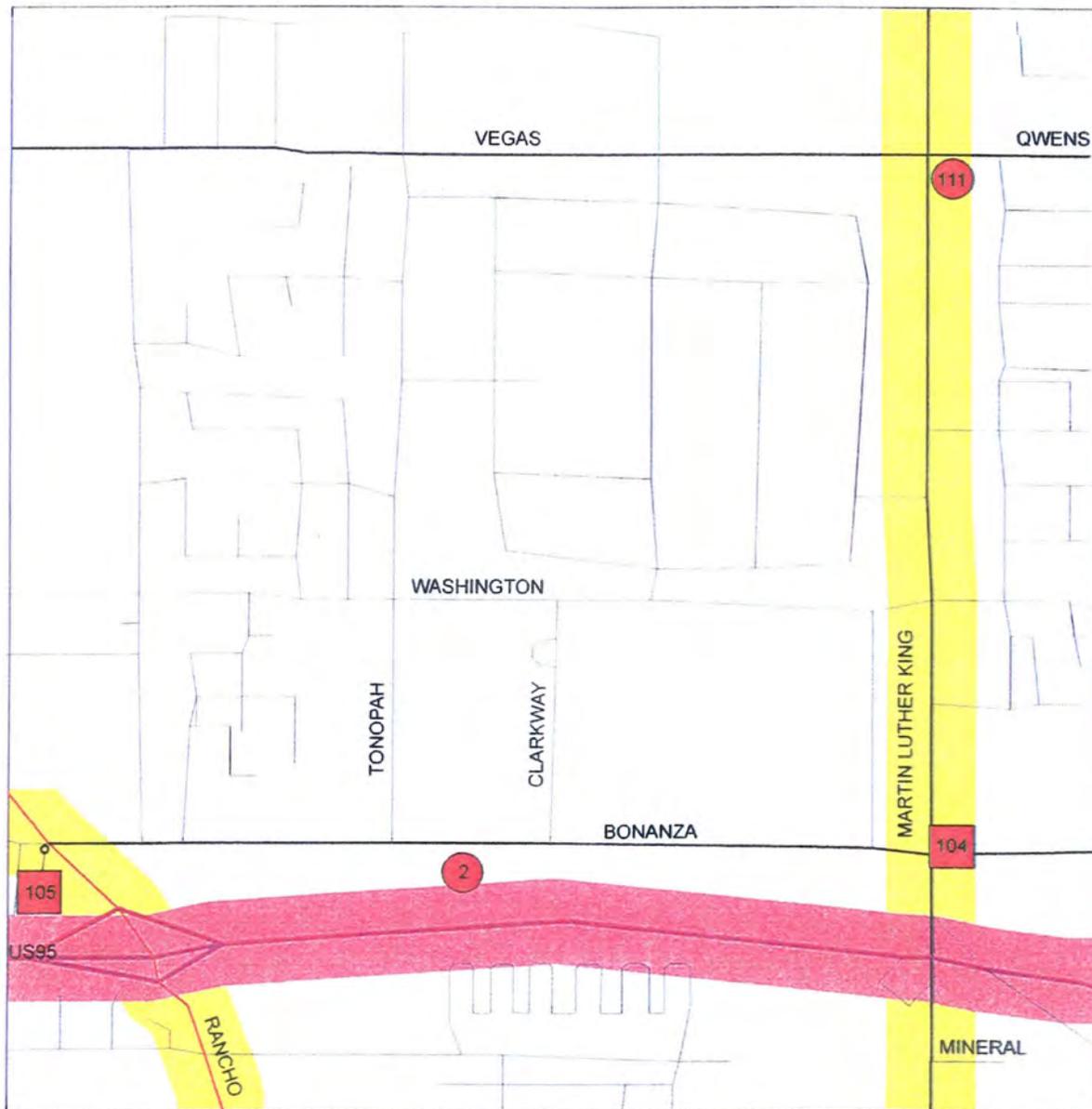
- US-95 IMPROVEMENTS
  - ARTERIAL STREET CONNECTORS
  - ARTERIAL STREET IMPROVEMENTS
  - FREEWAYS
  - US, STATE, COUNTY HIGHWAYS
  - ARTERIAL
  - STREET
  - CONTAMINATED SITE, FULL OR PARTIAL ACQUISITION
  - CONTAMINATED SITE, NON-ACQUISITION
- 0    2500    5000    7500  
SCALE IN FEET
- 2    MAP ID NUMBER (SEE TABLE II-1)

NEVADA DEPARTMENT OF TRANSPORTATION

US-95 EIS

All Sites Within Project Area

FIGURE V-73



**LEGEND**

- US-95 IMPROVEMENTS
- ARTERIAL STREET IMPROVEMENTS
- FREEWAYS
- US, STATE, COUNTY HIGHWAYS
- ARTERIAL
- STREET

- CONTAMINATED SITE, FULL OR PARTIAL ACQUISITION
- CONTAMINATED SITE, NON-ACQUISITION



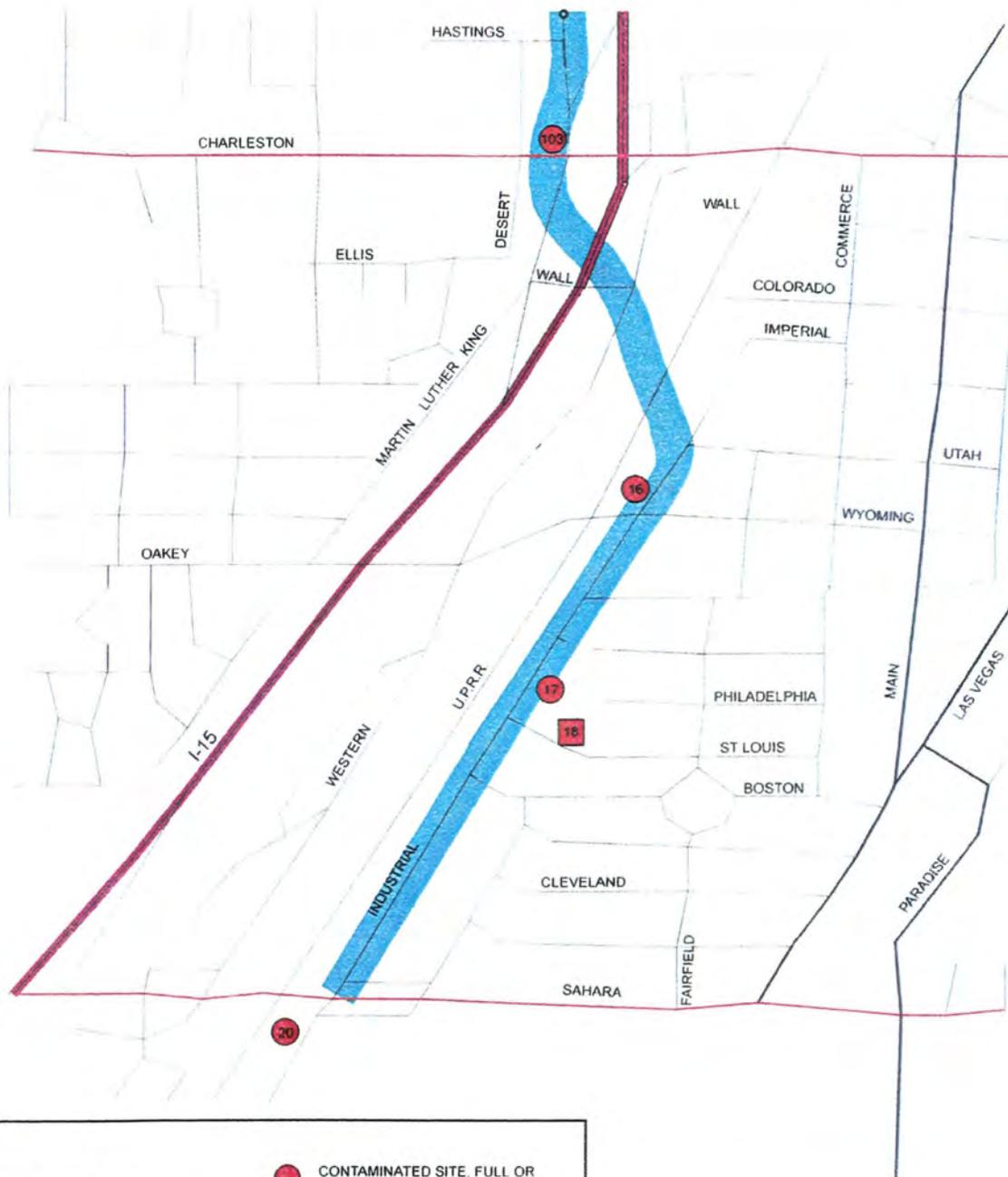
2 MAP ID NUMBER (SEE TABLE II-1)

NEVADA DEPARTMENT OF TRANSPORTATION

US-95 EIS

Detail of Bonanza / Martin Luther King  
Arterial Street Improvements

FIGURE V-74



**LEGEND**

- US-95 IMPROVEMENTS
- ARTERIAL STREET CONNECTORS
- ARTERIAL STREET IMPROVEMENTS
- FREEWAYS
- US. STATE, COUNTY HIGHWAYS
- ARTERIAL
- STREET

- CONTAMINATED SITE, FULL OR PARTIAL ACQUISITION
- CONTAMINATED SITE, NON-ACQUISITION



2 MAP ID NUMBER (SEE TABLE IV-9)

NEVADA DEPARTMENT OF TRANSPORTATION

US-95 EIS

Detail of Martin Luther King / Industrial Connector

FIGURE V-75

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**VI. ENVIRONMENTAL IMPACTS  
AND MITIGATION**

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## VI. ENVIRONMENTAL IMPACTS AND MITIGATION

### A. Natural Resources

#### 1. Geology, Soils, and Ground Water

##### a. Impacts

##### (1.) No Build Alternative

Under the No Build Alternative, the proposed roadway improvements would not occur. Therefore, construction period impacts from soil properties and geological conditions would not occur. However, along existing roadways at the sites of the proposed project, ongoing operational impacts from soil properties and geological conditions would continue to occur locally, e.g., differential settlement, corrosion. Similarly, roadway runoff would continue to be a nonpoint source of pollution to surface water and shallow ground water.

##### (2.) Alternative A

#### Geology and Soils

Soil properties and geological conditions can lead to construction and post-construction operational constraints and impacts. Construction period issues include: the presence of cemented horizons and desert pavement with large stones which can interfere with the operation of equipment and excavation; the presence of unstable soils that cave at cut banks and restrict excavation activities; flooding, and; blowing soils. Post-construction impacts include: structural damage and differential settlement of road surfaces, bridge foundations, and storm drain structures from localized corrosion and subsidence due to sulfate dissolution and position in a subsidence bowl; pavement damage due to the presence of collapsible or expansive soils; flooding; and, maintenance interference due to large stones.

US-95 crosses two mapped faults between Michael Way and Princeton and three faults at the LVVWD. Carey Avenue in the project area crosses four mapped faults, and Carey Avenue between Clayton Street and Simmons Street passes through a fissure zone where serious structural problems are occurring. The fault and fissure system at Windsor Park along Carey Road extends to Martin Luther King Boulevard in the project area near Maine Avenue. A mapped fault occurs at Torrey Pines Drive and Craig Road. These features would place constraints on construction and design of the proposed project. Roads in the project area proposed for improvement that cross subsidence bowls include portions of US-95, Valley View Boulevard, Carey Avenue, Martin Luther King Boulevard, Torrey Pines Drive, and Alta Drive.

#### Groundwater

Primary recharge to the groundwater system is from snowmelt and rainfall in the Spring Mountains. The project is not expected to result in any impacts to the recharge area.

Potential project-related impacts to groundwater resources include: loss of recharge area by the addition of impervious surfaces; loss of water supply wells, artificial recharge wells, and a pumping station; contamination of water supplies by the downward migration of pollutants during construction and post-construction surface sources. Surface nonpoint source pollution could infiltrate to the shallow aquifer zone. Storm water runoff and accidental spills are potential nonpoint surface sources of pollution during both construction and post-construction periods. Potential impacts from accidental spills would be primarily restricted to US-95. Transported material such as chemicals, petroleum, and radioactive nuclides from the Nevada Test Site are primarily transported on US-95 in the project area rather than city streets.

In addition, discharge of polluted shallow groundwater, if present, that is collected during construction period dewatering activities could lead to water quality impacts. Discharge methods that potentially could impact groundwater quality include infiltration and surface application for dust control. If discharged at off-site locations, the reintroduction of this pollution source would increase existing concentrations in the groundwater which may subsequently leak downward to the developed aquifer or discharge to Las Vegas Wash.

Portions of roads in the project area including US-95, Valley View Boulevard, Carey Avenue, Martin Luther King Boulevard, Torrey Pines Drive, and the Rancho to Alta Connector, lie within the boundary of the high total dissolved solids shallow aquifer. The discharge of dewatering could impact water quality.

The subsurface vertical and lateral migration of contaminants in the project area is facilitated by conduits provided by fractures, faults, and fissures. Highly-fractured material is likely to be found near the surface in the vicinity of faults exhibiting surface expression. Thus, areas of known faults and fissures are considered particularly vulnerable to groundwater quality impacts, such as along portions of US-95, Martin Luther King Boulevard, Carey Avenue and Torrey Pines Drive.

Current engineering plans indicate that this alternative would remove LVVWD Well 26 northwest of the North Well Field. Remaining public wells in the project area would not be affected.

### **(3.) Alternative B**

#### **Geology and Soils**

Impacts to soils and geological conditions from the proposed project would be the same as for Alternative A. Alternative B encounters an additional fissure zone on the south side of US-95 in the LVVWD North Well Field. This fissure zone would have the same constraints on project construction as those described for fissure zones in Alternative A.

#### **Groundwater**

This alternative would remove LVVWD Wells 15A and 79 on the North Well Field, Well 26 northwest of the North Well Field, and the Bonanza Pumping Station. Wells 13, 14, 17, and 34 at the North Well Field would be vulnerable to project-related nonpoint source pollution impacts. Other

public wells would not be affected. Other impacts to groundwater would be the same as described for Alternative A.

#### **b. Mitigation**

The project area lies within the boundaries of the Las Vegas Valley 208 Water Quality Management Plan. Best Management Practices (BMPs) are presented in the Las Vegas Valley 208 Water Quality Management Plan Amendment as the best means to manage nonpoint source pollution. Nevada's Nonpoint Source Pollution Control Program also stresses the implementation of BMPs to protect surface and groundwater resources. The State of Nevada's Handbook of Best Management Practices is intended to be a guidance document for the reduction and prevention of NPS pollution. Appropriate BMPs to minimize impacts identified with respect to geology, soils, and groundwater would be implemented during all phases of this project. Project-related activities would be in conformance with the 208 plan. Numerous BMPs and construction practices are available and appropriate to mitigate constraints and impacts with regard to geology, soils and groundwater resources. Those measures deemed appropriate to minimize impacts identified would be implemented during all phases of the proposed project. In addition, all project-related activities would be in conformance with the Las Vegas Valley 208 Water Quality Management Plan.

#### **Geology and Soils**

An important mitigation strategy would be to prevent the infiltration of runoff. This would reduce local subsidence from gypsum dissolution, inhibit fissure enlargement and development, and minimize clay expansion or collapse. This can be accomplished by constructing curb and gutter, and/or designing lined drainage facilities that rapidly convey runoff off-site, particularly in areas with excess gypsum, known fissure zones, and expansive or collapsible clays.

Elevation changes across faults should be closely monitored for the early detection of structural stress and of subsurface stresses that are conducive to the development of fissures and pipes. Shoring techniques may need to be implemented during construction to prevent slippage along failure-prone fault planes. Viaducts of elevated structures can be designed specifically to handle potential differential settlement. Construction specifications would be prescribed to deal with such impacts as protruding joints from differential compaction; excavation difficulties from the presence of caliche; and road surfaces that develop cracks, bumps, and low spots due to soil heaving from expansive clays.

The risk of concrete corrosion can be overcome by using sulfate resistant cements. Uncoated steel should not be used since all soils to be traversed are highly corrosive to uncoated steel. The use of protective coatings or cathodic protection can prevent steel corrosion.

Conventional excavation equipment may be adequate for the less well cemented caliche horizons that may be encountered. However, specialized excavation machinery or blasting may be needed for the thicker more highly indurated horizons. The potential interference of a desert pavement and/or large stones during excavation and site preparation during construction can be adequately handled with conventional excavating equipment.

Where the roadway improvement sites cross areas that tend to flood frequently, the potential for road hazards due to flooding and the deposition of stones on the roadway surface can be minimized by: 1) the adequate design of storm water control measures; 2) construction slightly above the grade of the surrounding landscape where appropriate; 3) clearing adjacent land free of stones. Where soils are subject to caving, standard slope stabilization techniques would be employed.

To minimize soil erosion by water, cut slopes and fill embankments would be protected. Slopes can be armored with a layer of gravel or crushed stone that would resist erosion from rainfall and runoff. The use of vegetation is possible with artificial watering. On cut slopes, a drainage system should be designed to prevent upper embankment surface water runoff from draining onto the cut slope. Other methods of slope stabilization include asphalt emulsion, chemical sprays, and an excelsior blanket with plastic net.

Wherever possible attempts would be made to minimize the amount of time erodible soils are exposed during construction. Mitigation measures to protect cut and embankment slopes, and the placement of the roadway surface to protect the roadway subgrade, should be initiated as soon as possible after the completion of final grading. Maintenance activities should minimize traffic on slopes wherever possible in order to prevent disturbances of the armor.

### **Groundwater**

The acquisition of LVVWD wells with Alternatives A and B and the Bonanza Pumping Station with Alternative B would require relocation of these facilities. These include costs for land acquisition, drilling, equipment, and the extension of pipelines and electrical services. The direct acquisition of wells would potentially affect the ability of LVVWD to maintain production at its current capacity. Thus, mitigation for the acquisition of a highly productive well (e.g., 15A) with Alternative B may require replacement by as many as four new wells. Any acquired wells will be properly abandoned according to existing regulations. This procedure includes installing a seal along the entire length of the well bore.

The potential water quality impacts to water supply wells along US-95 would be mitigated by the introduction of a closed system that collects and contains storm water runoff and residual accidental spills which would be conveyed to an on-site or adjacent off-site drainage system. Accidental spills would be cleaned up to the maximum extent practicable immediately prior to any discharge of residual material to storm drains.

The soil erosion/sedimentation and storm water management plans developed for this project would include measures designed to minimize the likelihood of infiltration. Temporary staging areas for construction equipment and supplies are potential sources of contaminants to groundwater. Accidental spills or leaks would be cleaned up immediately by the removal of contaminated soils. Equipment and parking areas would be paved or thoroughly compacted to be effectively impermeable. Mechanical repairs and the storage of fuel, oil, and cleansing agents would be in contained, paved areas.

## **2. Surface Water**

### **a. Impacts**

Impacts to surface water resources are related to water quality and the ability of the flood control system of the project area to accommodate flood flows. Potential construction period impacts are: increased sediment and pollutant loadings to surface waters from construction period storm water runoff and pollutant loadings from direct discharges to storm sewer systems of shallow groundwater collected during dewatering activities. Elevated sediment loadings are a concern because of potential erosion of unconsolidated material exposed at excavations and fill exposed during fill placement. Potential post-construction impacts are: pollutant loadings from storm water runoff; increases in flood flow discharge; impacts to existing and future flood control facilities.

The proposed project would not adversely impact flood control in the project area watersheds and is compatible with the Clark County Regional Flood Control District Master Plan (CCRFCDD). Concurrence by the CCRFCDD is required for all project roadways that are crossed by or abut a master planned drainage facility or regulatory flood plain.

#### **(1.) No Build Alternative**

Under the No Build Alternative the proposed roadway improvements would not occur. The hydrology of some drainages crossed by or immediately adjacent to proposed project sites of Alternative A and Alternative B are currently proposed to be altered with the implementation of the Clark County Regional Flood Control District Master Plan for Las Vegas Valley.

Due to plans for future development of Las Vegas Valley unrelated to NDOT activities, nonpoint source pollutant loadings to Las Vegas Wash and its tributaries within the project area would increase as the result of storm water runoff from new impervious surfaces and miscellaneous urban activities. There would be no construction period impacts.

#### **(2.) Alternative A**

Federal Emergency Management Act (FEMA) Flood Insurance Rate Maps indicate that the section of US-95 from Craig Road to Rainbow Boulevard lies outside of the regulatory flood plain. However, a Flood Insurance Restudy of US-95 from Gowan Road to Ann Road is currently being conducted by the city of Las Vegas and CCRFCDD. Preliminary analysis by the city of Las Vegas identified a 100-year flood zone along the west side of US-95 north of Gowan Road. The study indicates flow overtopping US-95 approximately 500 feet north of Alexander Road with a portion conveyed within the existing "V"-shaped median area. Loss of capacity in the median area due to widening, and construction of a sound wall and/or median barrier would affect the existing flow split. However, construction of the CCRFCDD Gowan North Channel System, which would reduce flooding along the US-95 corridor, is planned for completion in the next decade.

Las Vegas Creek flows parallel and adjacent to US-95 from Rainbow Boulevard to I-15. For most of its length flow is confined to a buried pipeline. Along the LVVWD North Well Field flow converts to a cement lined open channel. This alternative would encroach upon the area traversed

by Las Vegas Creek. The existing buried pipe does not have the capacity to convey the 100 year flow event. A pipe and reinforced concrete box facility are proposed in the CCRFCD Master Plan to parallel the existing pipeline. Adverse effects to the existing main pipeline due to roadway improvement are not anticipated. Extension and/or relocation of laterals and drop inlets may be required. Installation of the parallel facility should be considered during the design phase of the widening project which would require coordination with the CCRFCD. The parallel facility is not included in the CCRFCD 10 year construction program. In addition, alternatives for the redesign of open channel portions of Las Vegas Creek would need to be addressed during the design phase. The increase in impervious surface area and the loss of the infiltration capacity of existing embankment slopes and other pervious parcels would result in an increase in runoff discharge during storm events. The impact of the increase in impervious area is minor in comparison to the overall Las Vegas Creek (Central Basin) watershed. The relative increase in runoff would need to be assessed in the design phase.

The widening of Valley View Boulevard outside of the existing paved ROW would result in a negligible increase in the impervious area because adjacent properties which are currently classified in the CCRFCD Master Plan as industrial with high imperviousness. Underground drainage facilities may require minor alterations, such as storm drain lateral or culvert extension and reconstruction of drop inlets, due to widening outside the existing ROW. No adverse impacts to the Central Basin subwatershed are anticipated.

Surface runoff within the Carey Avenue ROW is currently conveyed within shallow earthen "V"-shaped ditches paralleling both sides of the paved roadway section or within the street section where curb and gutter improvements are present. A 54" RCP storm drain exists on the south side of the ROW under the drainage ditch. Widening of Carey Avenue to the south may require adjusting the manholes to match the final street grade. Drop inlets intercept flow carried in the ditch on the north side of the street. Widening of the roadway to the north would require extension of the laterals and

reconstruction of existing drop inlets. The widening project is not expected to affect the culvert crossing under the road near the Carey/Lake Mead Detention Basin. The increase in impervious area and the loss of infiltration capacity of the vacant land on portions of the north and south sides of Carey Avenue would increase runoff discharge during storm events. The increase would have a minor effect on flood control within the Central Basin subwatershed.

The increase in impervious surface area and the loss of the infiltration capacity of the vacant land on the east side of Durango Drive would increase runoff discharge during storm events. The increase would have a minor impact on flood control within the Flamingo/Tropicana subwatershed, and can be accounted for in the design of the future storm drain under Durango Drive. The storm drain is expected to be installed in the next 4 years. The anticipated time period for the roadway widening is 4 to 10 years.

The Martin Luther King Industrial Road Connector would cross three proposed CCRFCD drainage facilities: 1) the Freeway Channel System; 2) the Freeway Channel Bypass System; and 3) the West Charleston Drain. Construction of the overpass is expected in the next four to ten years may overlap the construction period for the Freeway Channel and Bypass System during the years 2001

to 2004. The connector would not affect the West Charleston Drain, which is not scheduled for construction within the next ten years.

Martin Luther King Boulevard from Craig Road to Charleston Boulevard crosses nine master plan drainage facilities, five existing and four proposed. An existing storm drain under Martin Luther King Boulevard from Bonanza Road to Lake Mead is not identified in the CCRFCD Master Plan. Laterals and drop inlets connecting to the existing storm drain would be impacted in sections where additional ROW is required. The project is not expected to affect the Washington Avenue storm drain which is planned to be installed before roadway widening. Proposed facilities include the Owens (Vegas) Avenue storm drain and two tributaries to the Western Tributary of the Las Vegas Wash. Roadway widening may overlap construction of facilities which are planned to be improved in the next five years. MLK crosses FEMA flood hazard zones at three locations at I-15, at Balzar Avenue, and between Ramble Ridge Way and Alexander. Construction activities in the flood hazard area are required to conform with the CCRFCD Uniform Regulations for Control of Drainage, and Regulations of the NFIP at these locations.

Construction of the Rancho to Alta Connector is not anticipated to appreciably affect drainage within the Central Basin subwatershed. Capacity of existing local drainage facilities and street flow conveyance should be addressed with respect to widening from a 60 to 100 foot wide street. The 10-year storm street flow criteria for roadways 80 foot wide and greater is more restrictive than for those less than 80 feet in width.

The increase in impervious surfaces throughout the project area as a result of widening various roads would result in an increase of roadway pollutant loadings to project area tributaries of Las Vegas Wash. The existing impact of roadway runoff from proposed improvement sites to the surface water quality of area drainages is small and not adverse. Similarly, the existing impact of roadway runoff from proposed improvement sites to lower Las Vegas Wash at the reach of concern to the state (between the wastewater discharge points and Lake Mead) is small and not adverse. The increased loadings from new impervious surfaces would not be large enough to alter this condition. Thus, there would be no adverse impacts to surface water quality from roadway runoff.

All unconsolidated material exposed to flowing water during construction would be eroded to some degree. The quantity that is actually transported and delivered to project area surface waters is a function of flow velocity, discharge, and sediment grain size. Water column turbidity would increase and sedimentation downstream would occur as flood flows decrease in strength. Chemical constituents associated with these sediments may be released to the water column. The storm event erosion potential in some locations would be exacerbated by the presence of soils that would cave at cut banks.

### (3.) **Alternative B**

Impacts to surface water resources are the same as for Alternative A.

### **b. Mitigation**

In conformance with the Las Vegas Valley 208 Water Quality Management Plan, appropriate BMPs would be implemented to ensure the continued protection of surface water quality throughout all phases of the proposed project. These are catch basin and inlet maintenance, storm drain maintenance, and street sweeping. Construction period permits would also ensure that no adverse impacts to surface water quality from construction activities would occur.

The project area lies within the boundaries of the Las Vegas Valley 208 Water Quality Management Plan. Best management practices (BMPs) are presented in the Las Vegas Valley 208 Water Quality Management Plan Amendment as the best means to manage nonpoint source pollution. Nevada's Nonpoint Source Pollution Control Program also stresses the implementation of BMPs to protect surface and groundwater resources. The State of Nevada's Handbook of Best Management Practices is intended to be a guidance document for the reduction and prevention of NPS pollution. Appropriate BMPs to minimize impacts to surface water resources would be implemented during all phases of this project.

For each proposed construction project, a site specific Storm Water Pollution Prevention Plan that describes how to control runoff from the construction site will be prepared. The Plan will include the following:

- The total area of land surface to be disturbed and the total area of the project site in acres.
- Identification of short and long term storm water BMP's (structural and non-structural).
- The relationship between air quality particulate matter Best Management practices (BMP's ) and storm water management BMP's.
- The dust generating operation(s) and/or activities to be carried-out on-site and off-site and the actual and potential sources of on-site and off-site fugitive dust emissions.
- A site plan showing the location of grading and/or earth moving activities, the location of ingress/egress points, and the location of on-site and off-site parking, staging, or storage areas (including storage piles) for equipment, supplies, and/or trailers.
- No oil or other chemicals or suppressants which may adversely impact groundwater quality by means of percolation or storm water runoff shall be used for dust suppression purposes.

## **B. Biological Resources**

A broad qualitative assessment was made of the potential effects on vegetation and wildlife habitat common to both alternatives, including arterial streets, connectors, Summerlin Parkway, and portions of US-95. Direct impacts are assumed to occur in the areas to be disturbed by construction of the project.

Additionally, for Alternative B, the LVVWD North Well Field was divided into two areas for the purpose of impact assessment. A strip of land extending from the existing US-95 alignment 200 feet into the LVVWD North Well Field was considered to be subject to direct impacts from construction of Alternative B. A second area, extending from the 200 foot line approximately 450-750 feet further into the LVVWD North Well Field was considered to be subject to indirect impacts from the proposed Alternative B.

Impacts to vegetation and wildlife were assumed to occur if a substantial portion of a key habitat would be directly or indirectly impacted by the proposed project. An impact was considered to be detrimental if it would lead to serious decline or loss of a rare plant species or key native habitat unique to the LVVWD North Well Field.

Proposed project design features were overlaid on mapped, delineated wetlands to determine how much area would be directly impacted by proposed construction alternatives. Proposed changes in drainage patterns were also assessed to evaluate indirect effects on wetland hydrology. Vegetation characteristics of potentially-affected wetland areas were described to assess the importance of the habitat affected.

## **1. Vegetation**

### **a. Impacts**

#### **(1) No Action Alternative**

This alternative would not directly affect vegetation, including special status plants, as no changes to the landscape would occur. Degradation of remnant plant communities along arterial streets would continue as remaining lots are developed or continue to be used as dumping grounds for construction waste and household trash. No mature trees would be removed along residential neighborhood streets. The Cottonwood community in the LVVWD North Well Field would be expected to remain stable. The bearpoppy population would remain protected within the fenced area.

#### **(2.) Alternative A**

Adding HOV lanes, installing a freeway management system, expanding the current bus transit system, and implementing TDM measures would not entail appreciable physical changes to the landscape that would affect vegetation. Widening Summerlin Parkway by adding two lanes in the median would require removal of some vegetation in the form of landscaping trees and shrubs.

Widening US-95 to 10 lanes, making arterial street improvements, and building new arterial street connectors would entail acquisition of new right-of-way in some locations. Along undeveloped lots, small portions of generally disturbed vegetation would be eliminated. Some mature trees and shrubs would be eliminated in residential neighborhoods where right-of-way would be required, such as on the north side of US-95 between Valley View Boulevard and Rancho Drive.

As no special status plant species or their habitats were identified in the project area for Alternative A, this alternative would have no effect on special status species.

### (3.) Alternative B

Effects of Alternative B from adding HOV lanes, installing a freeway management system, expanding the current bus transit system, and implementing TDM measures are inconsequential due to the very limited physical changes to the natural environment from this alternative.

Arterial street improvements and building new arterial connectors as part of Alternative B would eliminate small areas of previously-disturbed vegetation. Widening along most segments of US-95 would have similar effects as Alternative A with the exception of the area between Valley View Boulevard and Rancho Drive. Along this segment of US-95, impacts from widening would be within the LVVWD North Well Field rather than in the residential neighborhood on the north side of US-95.

A 14.5-acre strip along the northern edge of the LVVWD North Well Field would be directly affected by Alternative B. Approximately 9 acres (62%) of this area consists of desert riparian vegetation which is about one-third of all of the desert riparian vegetation found in the LVVWD North Well Field. Another 5 acres (35%) of the potentially-affected area consists of desert shrub vegetation, and 0.5 acres (3%) consists of invasive vegetation. This alternative, therefore, would result in a loss of 30% of the desert riparian and 8.6% of the desert shrub vegetation community types in the LVVWD North Well Field.

Direct impacts to the desert riparian habitat would include removing 92 of the 201 cottonwood trees (45.8%) and eight of the nine willow trees (89%) in the northern part of the LVVWD North Well Field as well as shrubs and forbs.

Indirect impacts to the remaining vegetation may be caused by changes in the microclimate and environmental stability of the remaining habitat. With a large portion (46%) of the cottonwood forest removed, the remainder of the channel will be exposed to hotter and drier environmental variables. For example, soil moisture, distribution and chemistry changes will affect the species that can occupy the altered habitat. It is likely that a major portion of the remaining 110 trees will be negatively affected.

The impact of the loss of vegetation on the North Well Field is exacerbated by the uniqueness of the site as the last natural desert riparian area in the Las Vegas Valley. Avoidance of the North Well Field by realignment of the freeway (i.e., Alternative A) would avoid impacts and eliminate the need for mitigation for vegetation.

The rare plant species that occur in the LVVWD North Well Field, the Las Vegas bearpoppy and Merriam bearpoppy, would not be directly affected by either Alternative. Individual plants are just outside the 200 foot proposed right-of-way and are protected by a fence which would serve to keep construction equipment from destroying or damaging the plants. The 1.35 acres of gypsum substrate that provide habitat for these two species would not be within the right-of-way required for either

alternative. However, this habitat may be directly affected by operation of construction equipment on the site during construction which could damage the seed bank or cause soil compaction. Gypsum habitat may be indirectly affected by changes in drainage patterns after construction is completed. Approximately five acres of desert shrub habitat that supports pollinators for bearpoppy population would be eliminated. This is roughly 8.6% of the desert shrub habitat found on the North Well Field, but is in close proximity to the bearpoppy population. Without the pollinators, health and reproduction of the bearpoppy site in the North Well Field will be negatively impacted. While not immediate, these impacts will likely cause this population to decline, with extirpation of the plants at this site expected to occur within a few years of construction.

According to the U.S. Fish and Wildlife Service, "A draft memorandum of agreement (MOA) has been prepared for the Las Vegas bearpoppy among Federal land management agencies, the Nevada Division of Forestry, the Nevada Department of Transportation, Clark County, the Las Vegas Valley water District (LVVWD), The Nature Conservancy, and the Service. The primary purpose of this draft MOA is to provide management direction that will conserve the species and lead to reduction or removal of threats. As an obligation in the MOA, the population of Las Vegas bearpoppy that occurs on the LVVWD North Well Field is specifically identified for conservation and protection. The Service considers the North Well Field population as one of three populations in the Las Vegas Valley that have unique genetic material considered essential for the long-term survival of the species. Irreversible adverse impacts to this important population of Las Vegas bearpoppy may become the basis for the need to list the species under the Endangered Species Act of 1973, as amended (ESA)." (FWS letter dated 11/10/98, see Appendix B).

In addition to those mentioned above, Nellis Air Force Base and the Nevada Natural Heritage Program are also included in the draft MOA.

#### **b. Mitigation**

Mitigation would not be necessary for the No Action Alternative or for Alternative A since no impacts to special status plant species or their habitats would occur with these alternatives.

With Alternative B, avoiding direct impacts to the bearpoppy population and its habitat would be accomplished through several measures. The fence that currently protects the two species of bearpoppy would be upgraded and strengthened to protect individual plants during and after construction activities. Similarly, a temporary fence would be constructed around sensitive, unoccupied habitat (e.g. gypsum substrate) to avoid damage to this habitat from construction equipment. Final design of the Valley View/US-95 interchange and US-95 across the LVVWD North Well Field would be coordinated with LVVWD personnel and USFWS staff to ensure that drainage patterns are not altered by the proposed project in such a way as to directly affect this sensitive species. Elimination of the proposed right-turn ramp from northbound Valley View Boulevard to US-95 eastbound and re-vegetation of disturbed areas with native plants in order to minimize the area of permanently disturbed desert shrub habitat will reduce impacts.

However, despite measures to avoid direct impacts, indirect impacts to the bearpoppy population are expected to be severe enough to cause a decline and loss of the bearpoppy population on the North Well Field with Alternative B. According to the U.S. Fish and Wildlife Service, "In recognition of the importance of habitat and populations on the North Well Field for the Las Vegas bearpoppy .... the Service believes that substantial impacts at this site cannot be adequately mitigated." (FWS letter dated 11/10/98, see Appendix B).

With Alternative B, the Mohave Yucca near US-95 and Valley View Boulevard will require plant salvage coordination with the appropriate regulatory agency.

## **2. Wildlife**

Frequently, habitat fragmentation and habitat degradation can contribute to extinction of local plant and animal populations, and they are considered the two most important causes of contemporary extinctions (Groombridge 1992). Loss and fragmentation of habitat reduces population sizes and increases the probability of extinction by demographic and environmental stochasticity. It is generally accepted that loss of habitat has greater negative population consequences than simply fragmenting the habitat (Fahrig 1997).

### **a. Impacts**

#### **(1.) No Build Alternative**

This alternative would not directly affect wildlife or wildlife habitats, including special status wildlife species, as no changes would occur to the landscape. Degradation of remnant habitats along arterial streets would continue as remaining lots are developed or continue to be used as dumping grounds for construction waste and household trash. No mature trees would be removed along residential neighborhood streets. Remaining wildlife habitat in the desert riparian community type in the LVVWD North Well Field would remain stable.

#### **(2.) Alternative A**

Adding HOV lanes, installing a freeway management system, expanding the current bus transit system, and implementing TDM measures would not cause any additional impacts to wildlife or its habitat beyond the existing condition. Removal of landscaping vegetation with the widening of Summerlin Parkway would eliminate some marginal habitat, but the net result would not be measurable in terms of effects to wildlife populations in the project area.

No special status animal species or their habitats would be affected by this alternative as none occur in the areas affected by this alternative.

#### **(3.) Alternative B**

Direct impacts to wildlife habitat in the LVVWD North Well Field include the elimination of approximately nine acres, or one-third of the desert riparian habitat at the property including 92 of

the 201 cottonwood trees and eight of the nine willow trees. Desert riparian vegetation is the most important habitat for birds using the LVVWD North Well Field. It is also important habitat for small mammals, some reptiles, a few species of bats, and the gray fox which use this area. The cottonwood and mesquite/acacia/saltbush habitats are the only remaining native habitats on the LVVWD North Well Field. Implementation of this alternative may cause a decline in the total number of individuals for each species using the area and a decline in species abundance in the area.

Removal of 92 cottonwood and eight willow trees would eliminate nesting, perching, and roosting sites for bird and bat species. A number of birds including verdin, bushtit, and Abert's towhee, are reported to be dependent upon the cottonwood canopy. It is unknown how much of the wildlife diversity is dependent upon the dead wood and standing snags found in the direct impact zone. However, negative effects on predatory and migratory birds are likely to be high if the cottonwood forest is destroyed. The acquisition of property on the south side of US-95 with Alternative B might also mean that the Woodhouse's toad could be completely eliminated from the North Well Field. Gray foxes may cease to use the area because the disturbance factor may become too great with a reduction in suitable cover and increased traffic. The desert pocket mouse population may be reduced to a level that is not sufficiently large to maintain a viable population over the long-term. The complete loss of some species from the area through diminished population viability would be anticipated. In particular, the desert pocket mouse population on the LVVWD North Well Field may be reduced to a level that is not sufficiently large enough to maintain a viable population over the long-term. According to the U.S. Fish and Wildlife Service, "The North Well Field contains the last population of the mouse in the Las Vegas Valley. The desert pocket mouse is known to occur in Clark County along a narrow band on the first lens of soil above the active drainage of the Virgin River and potentially along the Muddy River. Except for protection provided by the LVVWD on the North Well Field, no protection exists for the remaining population fragments. The loss of this population of desert pocket mouse may result in the need to list the species under the Endangered Species Act." (FWS letter dated 11/10/98, see Appendix B).

Additional indirect effects to wildlife habitat would result from remaining habitat being located closer to the widened US-95 highway, resulting in increased noise levels, air pollution, and trash. This degradation of remaining habitat would likely further reduce wildlife use of the area. Species that are currently present in low numbers (e.g. gray fox) may no longer use the area.

Loss of riparian habitat would reduce the availability of foraging and nesting sites for mourning doves. A decline in mourning dove population may lead to a decrease in the desirability of the LVVWD North Well Field as a foraging area for the peregrine falcon resulting in the displacement of the species from this site. Since the North Well Field represents the last remaining natural area within the central Las Vegas Valley, this could adversely affect the viability of the peregrine falcon within the Central Valley.

A single sighting of one western burrowing owl was made during an evening data collection survey in the North Well Field outside of the direct impact area. This occurrence may reflect transitory use of the North Well Field by this species at differing times of the year. Other surveys for burrowing owls in the Las Vegas Valley have shown that this species primarily winters in the Valley. It is

common in areas where numerous desert tortoise burrows are available. The burrowing owl found on the North Well Field property is not associated with the cottonwood riparian habitat and desert tortoise habitat (burrows) were not found in the direct impact area. Therefore, it is not likely that the project would have an effect on burrowing owl populations on-site or within the Las Vegas Valley.

#### **b. Mitigation**

Mitigation would not be necessary for the No Action Alternative or Alternative A since no impacts to special status animal species or their habitats would occur with these alternatives.

Alternative B will result in the loss of nearly half of the desert riparian habitat dominated by cottonwood trees on the LVVWD North Well Field and will contribute to the decline in wildlife population and species abundance. Avoidance of the North Well Field by realignment of the freeway (i.e., Alternative A) would avoid impacts and eliminate the need for mitigation for wildlife as well as for vegetation.

With Alternative B, mitigation for the loss of habitat in the North Well Field would require the development of suitable replacement habitat for the peregrine falcon.

At the present time, the Las Vegas Wash Desert Wetlands Park located in the southeast portion of the Valley is the only other natural habitat area in the Valley which will support large numbers of waterfowl and mourning doves. Contribution to the Desert Wetlands Park program to expand habitat suitable for foraging would be recommended as mitigation. However, acquisition of priority land in southern Nevada along the Virgin or Muddy Rivers for the purpose of restoring breeding and foraging habitat to compensate for the potential reduction in the Las Vegas Valley falcon population could also be considered an alternative form of mitigation.

In addition to the Peregrine Falcon, the U.S. Fish and Wildlife Service has expressed that impacts to the Desert Pocket Mouse with Alternative B "cannot be adequately mitigated." (FWS letter dated 11/10/98, see Appendix B). Since the Desert Pocket Mouse was found in all habitats on the North Well Field, the impact on the Desert Pocket Mouse with Alternative B can be reduced by revegetating portions of the North Well Field which are currently devoid of vegetation and classified as "disturbed". Replacement of the 14 acres of habitat lost on the North Well Field, with Alternative B, with revegetated areas of equal size selected from the 87 acres of the North Well Field with no permanent vegetation cover at the present time would provide some mitigation.

### **3. Waters of the United States**

#### **a. Impacts**

##### **(1.) No Build Alternative**

As no disturbance would occur with this alternative, there would be no affect on jurisdictional waters or wetlands in the project area.

**(2.) Alternative A**

With Alternative A, the jurisdictional waters of the United States which would be affected by the project are minor drainageways covered under the State of Nevada General Permit #006.

The wetland identified at Durango and Desert Inn Road would not be affected by proposed project features. The stream bed/channel located on the LVVWD North Well Field would not be affected by Alternative A. There would be no effects to known jurisdictional waters of the United States or wetlands from this alternative. Therefore, a §404 Clean Water Act permit other than the General Permit #006 would not be required for this project with Alternative A.

**(3.) Alternative B**

With Alternative B, all but one of the jurisdictional waters of the United States which would be affected by the project are minor drainageways covered under the State of Nevada General Permit #006.

With Alternative B, the northern approximately 325 ft. of the nearly 1/2 mile long relic stream bed/channel from the Las Vegas Springs to Las Vegas Creek would be filled in. This is a water of the United States located on a National Register Site. Fill of this section of streambed/channel can be performed under Nationwide Permit Condition 14, Roadway Crossings, but would be subject to Section 106 Consultation. The Section 106 Consultation required for the proposed project with Alternative B would fulfill Corps of Engineers requirements since filling of waters of the United States at this site would have no separate impact from the proposed project. (Kevin Roukey, Corps of Engineers, Personnel Communication 3/22/99.)

Along arterial streets and connectors, only one jurisdictional wetland was identified but, as described for Alternative A, it would not be affected by the proposed project.

A wetland determination and delineation has not been completed for the LVVWD North Well Field (see Section IV.C). However, based on available information, it is unlikely that a jurisdictional wetland is present in the property as it is doubtful that all three wetland parameters would be met. Wetland hydrology is not likely to be present due to the lowered water table and lack of surface flow in the relict channel. Likewise, without the wetland hydrology, only remnant hydric soils may be found (D. Merker, NRCS, pers. comm., 30 October 1997).

**b. Mitigation**

For Alternative A no mitigation would be required except as included in existing permits, for impacts to waters of the United States.

With Alternative B any mitigation for filling in accordance with Nationwide Permit Condition 14 on the National Register Site would be coordinated with the Corps of Engineers and State Historic Preservation Office.

## C. Cultural Resources

### 1. Impacts

#### a. No Action Alternative

This alternative would not affect cultural resources, including sites listed to or eligible for listing on the National Register of Historic Places. Degradation of all cultural resources located outside the North Well Field property of the LVVWD would continue. The archaeological sites identified within the North Well Field property would be expected to remain stable and protected.

#### b. Alternative A

Adding HOV lanes, installing a freeway management system, expanding the current bus transit system, and implementing TDM measures would not affect cultural resources. Widening Summerland Parkway would also have no affect on any cultural resources.

Widening US-95 to 10 lanes, making arterial street improvements, and building new arterial street connectors would entail acquisition of new right-of-way in several locations. The widening of US-95 to 10 lanes with Alternative A would have no affect on cultural properties that warrant preservation in place.

#### c. Alternative B

Adding HOV lanes, installing a freeway management system, expanding the current bus transit system, and implementing TDM measures with Alternative B would not affect cultural resources. Widening Summerland Parkway would also have no affect on any cultural resources. Arterial street improvements and new arterial connectors constructed with Alternative B would have the same affects as denoted for Alternative A.

Widening of US-95 would have similar effects to cultural resources for Alternative B as for Alternative A, with the exception of the area situated between Valley View Boulevard and Rancho Drive. With Alternative B, impacts from widening of this segment of US-95 would occur within the LVVWD North Well Field.

Approximately 18 acres located along the northern edge of the LVVWD North Well Field would be directly affected by Alternative B. The Las Vegas Springs National Register Site is located within the North Well Field and is being expanded to encompass all contributing features and artifactual materials associated with Site 26Ck948. Alternative B would have a direct impact on 14.1 acres of the Las Vegas Springs National Register Site. Acquiring a 200-foot-wide swath of property south of the current US-95 right-of-way will have an adverse affect on the Las Vegas Springs National Historic Site destroying two eligible resources including:

- Little Spring Springhouse (Inventory No. 16.1), c. 1917
- Clark Street Pumpstation (Inventory No. 1.1), 1929

The Little Spring Springhouse and the Clark Street Pumpstation are the two resources in the study area which have the highest integrity and significance. The close physical relationship between the Clark Street Pumpstation and the surviving Concrete Reservoir as integral components of a single water storage/delivery system will be lost. The Concrete Reservoir could be impacted along its northern most edge.

Four contributing resources would be destroyed including:

- Earthen Dam and Pond (Inventory No. 11.1), c. 1904
- Pipeline PL4 and Cleanouts (Inventory No. 8.1), c. 1917
- Well No. Three (Inventory No. 18.1), 1940
- Artifact Locus 11; a prehistoric and protohistoric artifact scatter

The destruction of the Earthen Dam and Pond would result in the loss of the earliest surviving method of historic water resource management found on the site, and the only architectural resource in the study area associated with either the Late Ranching Period or the Late Stewart Ranching Era.

A major portion of the unique historic riparian setting would be destroyed including:

- the eastern-most 326 feet (98 meters or 12.3 percent) of the last remaining 2,650 feet at the headwaters of the original Las Vegas Creek
- all 350 feet (approximately 105 meters) of the adjacent tributary channel from the Earthen Dam to its confluence with Las Vegas Creek
- Little Spring itself, one of the four remaining historic spring sites of the six to eight springs originally mapped in 1904 would be entirely destroyed
- approximately half of Middle Spring basin

A portion of the visual buffer between the freeway and the historic features (as afforded by the tall cottonwood tree canopy), and the smaller, lower trees and bushes would be destroyed. The loss of this vegetation and closer proximity of traffic may also adversely affect the feeling (an integrity component) of the remaining historic site by increasing the freeway noise level.

The right-of-way fence line will encroach within 10 feet of one eligible resource:

- Well No. Five and Derrick (Inventory No. 17.1), 1941

The US-95 freeway will be realigned 50 to 155 feet closer to five contributing resources including:

- Middle Spring Springhouse (Inventory No. 15.1), c. 1916
- Manhole and Pipeline PL5 (Inventory No. 15.2), c. 1927
- Wooden Bridge (Inventory No. 5.2), c. 1924
- Foot Bridge (Inventory No. 12.1), c. 1924
- Dam and Culverts (Inventory No. 26.1), c. 1924

## 2. Mitigation

### a. No Action Alternative

This alternative would not affect cultural resources and mitigation would not be required.

Native Americans interviewed during this study expressed a concern about the future of the Big Springs [Las Vegas Springs National Register] site, even if it is not impacted by the project. According to Native American consultants, the no-action alternative in this EIS study should consider the following:

- Tribal involvement in the ongoing management of the Big Springs site's cultural resources including those that are both known and perceived to be at this location.
- Tribal access to the site for ceremony as this is a sacred location defined by the Salt Song Trail.
- Tribal access to the site for cultural learning. It is especially important to remember that places are alive and contain cultural information designated by the Creator specifically for new generations of Southern Paiute youth. The youth must be prepared to receive this information and have access to the place in order for the lessons to come to them from the place.

### b. Alternative A

There are no historic properties that warrant preservation in place for Alternative A.

Under Alternative A, the widening of US-95 to 10 lanes will not result in any adverse impacts to the archaeological sites encompassed by the LVVWD North Well Field. The project elevations of the realigned and widened US-95, along with the proposed Valley View Boulevard overpass and interchange reconstruction, will remain at its approximate current elevation and distance from these cultural resources.

### c. Alternative B

The widening of US-95 under Alternative B will impact 14.1 acres of the Las Vegas Springs National Register Site. The realignment of US-95 into the North Well Field will impact numerous natural features which contribute to the historic and visual landscape of the National Register site. These features include the headwaters of Las Vegas Creek, Little Spring, half of Middle Spring, and the channel creek flowing out of Middle Spring. Approximately half of the existing cottonwood canopy would be removed. The loss of this vegetation and the increased noise level associated with the closer proximity of the traffic would result in an adverse affect on the remaining National Register site complex. Avoidance of the North Well Field (i.e., Alternative A) would be the best course of action.

With Alternative B, there are two possible mitigation approaches to the Las Vegas Springs National Register Site. These are (1) data recovery and documentation, and (2) relocate impacted historic architectural structures and undertake data recovery on cultural resources which cannot be relocated.

#### **Approach One: Data Recovery and Documentation**

If a portion of the Las Vegas Springs National Historic Site is impacted, mitigation by archaeologically investigating Locus 11 and additional potential archaeological deposits associated with the standing and collapsed historic architectural features can be implemented. Architectural documentation of the six (6) contributing historic architectural structures located within the APE to Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) standards, would be undertaken. Upon completion of the documentation process, the original documents are submitted to the Library of Congress in Washington, D.C. Copies are retained by the FHWA, NDOT, Nevada SHPO, and the private/public land owner/manager.

Archaeological data recovery efforts occur after the HABS/HAER photographic process is completed, but both before *and* after the once-standing historic structure is dismantled. Archaeological data recovery efforts would be required in areas defined by Seymour and Warren as containing either prehistoric or historic surface artifact deposits. Monitoring of the early stages of construction would ensure that buried artifactual deposits and/or buried features were not missed. Mitigation will require staging the work in order to test for subsurface features within the APE in the initial phase. Following consultation with the SHPO and FHWA, an agreement regarding levels of effort and the second phase of the mitigation will be implemented.

#### **Approach Two: Relocating the Structures**

If the FHWA finds that a contributing element of the 4(f) property will be impacted, relocating historic resources back onto the North Well Field property, or moving structures to a new site, would be technically possible. If 14.1 acres of the Las Vegas Springs National Historic Site is impacted, archaeologically and architecturally investigating and documenting the site and structures to Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) standards will be conducted, prior to relocating the affected above-ground structures.

If structures are moved to new locations within the North Well Field, their presence could adversely affect the historic integrity of the remaining eligible components which are in their original setting. The historic integrity and contextual associations of the relocated buildings and structures would be lost.

Native Americans interviewed during this study expressed concerns about impacts and subsequent mitigation activities that would occur to the Big Springs site if Alternative B were implemented. Concerns were expressed about all aspects of the site from the hydrological to the archaeological resources it contains. Native Americans perceive the site as being in a fairly intact condition, and have expressed their recommendation to protect it from further development. There is no appropriate mitigation that would be sufficient to offset the cultural damages that would occur if Alternative B is adopted. These recommendations are derived from statements by elders during the study and are subject to review and approval by each of the participating tribal governments.

## **D. Socioeconomic Resources**

### **1. Economic and Demographics**

#### **a. Economic**

##### **(1.) Construction Employment and Material Purchases Impacts**

Economic impacts would result from material purchases in the region, construction payrolls, and related indirect and induced spending, or “multiplier effects.” In assessing the economic impacts of the project, it is important to recognize that economic benefits associated with the construction phase would occur only during the construction period.

##### **(2.) Economic Assessment Methodology**

An input-output model developed by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) has been used to quantify the economic effects of the proposed project. The model provides the basic methodology for the assessment of potential economic impacts, with modifications to produce multipliers specific to the region of the proposed project. Quantification of the effects of material purchases, during both the construction and the operational phases of the project, relies upon the following:

#### **■ Estimates of Material Expenditures**

Projected material expenditures are derived from preliminary engineering estimates.

#### **■ Determination of Specific Goods and Services Required**

The particular goods and services needed for construction of the proposed roadway improvements are evaluated through analysis of “use” vectors for other roadway improvements in the region.

#### **■ Estimates of Local Purchases**

The degree to which materials are likely to be purchased in the local region is projected using a location quotient analysis, which measures the concentration of local activity in each major industrial sector. The location quotients are calculated to reflect the degree to which particular goods are likely to be available within a given region.

- **Application of Multipliers to Evaluate Potential Project Impacts on the Regional Economy**

Output multipliers derived from the BEA input-output model are used to evaluate indirect and induced impacts on the local economy. These output multipliers indicate the total increase in output that occurs in the local economy with each dollar of project expenditures, including respending of income derived by local businesses and individuals from direct project-related purchases. Similar employment multipliers are applied to analyze total job creation in the local area resulting from project-related direct expenditures.

Quantification of the effects of payroll-related impacts relies upon the following:

- **Estimates of the Payroll Expenditures**

These are based on typical Davis-Bacon (union) wage rates for a federal road construction project in Clark County, available from the U.S. Department of Labor, Bureau of Labor Statistics. Estimates reflect current wage rates; Davis-Bacon rates are revised periodically and may be different when construction commences.

- **Adjustments for Fringe Benefits, Taxes and Other Payroll Deductions**

Average fringe benefits for road construction workers in the project area are determined by using Bureau of Labor Statistics data.

- **Adjustment for Employment of Non-Local Labor**

The percentage of construction employees likely to be hired in the project area is estimated on the basis of an analysis of journey-to-work data. It is assumed that only construction employees living permanently in the project area would contribute to the local economy. Construction workers temporarily relocated into the region are assumed to continue making their major purchases in their home communities. Although they would make contributions to the local community through expenditures for temporary housing, meals and other temporary living expenses, these expenditures are relatively small and short-lived.

- **Application of an Appropriate Multiplier to Determine Total Impacts on the Local Economy**

As discussed, multipliers applied in this aspect of the analysis are derived from the BEA model, modified to generate regional multipliers relevant to the area of the proposed action.

### (3.) Impact Area

The impacts of material purchases and payrolls would occur primarily within Clark County. Payroll impacts in particular are likely to be centered primarily within Clark County, give the county's size and the proposed project's central location within Clark County.

### (4.) Employment and Materials Purchase Impacts

In determining the economic impacts of the proposed project's construction budget, the following assumptions were made:

- The model was run for the two US-95 alternative alignments (Alternative A and Alternative B) and considered the differences in the amount of labor and materials purchased in connection with construction of one or the other alternative;
- A construction budget of approximately \$322.4 million for the Alternative B and \$323.6 million for the Alternative A, expended over a 6.5-year period based on preliminary engineering estimates; and
- A labor-to-materials expenditure ratio of 20/80; i.e., 20 percent of the total project/construction budget is assumed to be expended on labor and 80 percent on materials, based on FHWA statistics.<sup>1</sup>

According to the U.S. Department of Labor, Wage and Hour Division, prevailing wage rates for construction workers in the county average approximately \$62,000 per year. This figure includes benefits and assumes a 40-hour work week as well as 48 weeks of annual employment.

The rapid growth of the Las Vegas economy has necessitated the development of a sophisticated building industry and a local labor market which has the managerial, supervisory and technical experience required for a construction project of the proposed project's size and complexity. Accordingly, nearly all of the labor necessary for the proposed project, including high-level management, is expected to be recruited locally. Ninety-five percent of workers are assumed to be local, i.e., Clark County residents, given the size of the local construction industry and the journey-to-work patterns of Clark County employees. This high percentage will mean that most of the positive employment and purchases impacts from the proposed project will benefit Clark County. These benefits are described below.

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<sup>1</sup> From the FHWA publication *Highway Statistics 1995*.

**■ Alternative A**

Application of the appropriate multipliers to both the direct labor and materials requirements for construction of Alternative A results in total estimated regional impacts of nearly \$324 million in local sales. The \$154 million in local materials purchases required for the proposed project will produce \$293 million in intermediate materials purchases; the \$30.9 in local labor expenditures, after taxes, benefits and savings, will generate \$36.8 million in purchases.

In addition, construction of the proposed project will require approximately 5,531 person-years of direct, indirect and induced employment, generating \$83.0 million in earnings. The 5,531 person-years of employment is equivalent to 850 persons employed annually throughout the 6.5 year duration of construction. The total impact includes the 992 person-years of local employment directly required for construction of the road improvements, as well as: a) 576 person-years of employment generated by the consumer expenditures resulting from this direct employment; and b) 3,964 person-years of employment generated by material expenditures (the direct purchases as well as intermediate purchase of goods) for the proposed project. Table VI-1 presents the economic impacts associated with Alternative A.

**■ Alternative B**

Construction of the proposed project under Alternative B will result in similar sales, employment and earnings impacts. The total sales impact of the construction alternative is expected to be approximately \$328.2 million. This impact consists of \$36.7 million in purchases generated from the \$30.7 million in take-home wages paid to construction employees (after taxes, benefits and savings); and \$291.5 million in total local material purchases generated from the \$153.4 million in direct, local purchases of materials required from the proposed project.

This alternative is expected to generate total employment impacts of approximately 5,510 person-years of employment—about 847 persons employed annually throughout the 6.5-year duration of the project—and \$82.6 million in earnings paid to these workers. These direct and indirect employment impacts consist of approximately 574 person-years of local employment hired to construct the Proposed Project; an additional 988 person-years of employment generated from the re-spending of the \$30.7 million in spendable earnings paid to the employees hired for construction; and 3,949 local employees hired to produce the intermediate and final products required for construction. The economic impacts of Alternative B are presented in Table VI-2.

**Table VI-1  
Construction Employment and Income Generation  
Associated with the  
Alternative A**

	(Dollar Totals are in Millions)
<b>Direct Effect</b>	
Total Project Budget	\$323.6
Payroll Expenditures	\$64.7
- Local Net Take-Home Wages After Taxes, Benefits and Savings	\$30.9
Material Purchases	\$258.9
- Local Material Purchases	\$154.0
Total Employment (Person-Years)	1,044
- Local Employment Capture (Person-Years)	992
<b>Total Local Multiplier Effect</b>	
<b>Total Sales (Output) Multiplier Impacts</b>	<b>\$329.5</b>
- Direct Labor Spending (Output) Multiplier Impacts	\$36.8
- Material Purchase Sales Multiplier Impacts	\$292.6
<b>Total Employment Multiplier Impacts</b>	<b>5,531</b>
- Direct Employment	992
- Direct Labor Employment Multiplier Impacts	576
- Material Purchases Employment Multiplier Impacts	3,964
<b>Total Income Impacts</b>	<b>\$83.0</b>
- Direct Labor Earnings	\$30.9
- Direct Labor Income Multiplier Impacts	\$5.4
- Material Purchases Income Multiplier Impacts	\$46.7

Source: Louis Berger & Associates, Inc., 1998.

**Table VI-2**  
**Construction Employment and Income Generation**  
**Associated with the**  
**Alternative B**

	(Dollar Totals are in Millions)
<b>Direct Effect</b>	
Total Project Budget	\$322.4
Payroll Expenditures	\$64.5
- Local Net Take-Home Wages After Taxes, Benefits and Savings	\$30.7
Material Purchases	\$257.9
- Local Material Purchases	\$153.4
Total Employment (Person-Years)	1,040
- Local Employment Capture (Person-Years)	988
<b>Total Local Multiplier Effect</b>	
<b>Total Sales (Output) Multiplier Impacts</b>	<b>\$328.2</b>
- Direct Labor Spending (Output) Multiplier Impacts	\$36.7
- Material Purchase Sales Multiplier Impacts	\$291.5
<b>Total Employment Multiplier Impacts</b>	<b>5,510</b>
- Direct Employment	988
- Direct Labor Employment Multiplier Impacts	574
- Material Purchases Employment Multiplier Impacts	3,949
<b>Total Income Impacts</b>	<b>\$82.6</b>
- Direct Labor Earnings	\$30.7
- Direct Labor Income Multiplier Impacts	\$5.4
- Material Purchases Income Multiplier Impacts	\$46.5

Source: Louis Berger & Associates, Inc., 1998.

**b. Local Fiscal Impacts**

As land is acquired for the proposed project's ROW, it is removed from the property tax rolls. The potential loss of tax revenues from ROW acquisition was analyzed using preliminary engineering drawings of the ROW overlaid on aerial photographs, along with current tax rates and assessed values provided by the Clark County Tax Assessor's Office. The assessed value of property to be acquired was calculated by estimating the portion of each parcel (both the land and the improvements) to be acquired and applying that percentage to the assessed value of the entire parcel. The analysis assumed that the loss of tax revenue is proportional to the percentage of the land and improvements acquired from the parcel. In other words, if 10 percent of the land is acquired from a parcel, the value of the land (and, by extension, the property tax revenue) is assumed to be reduced by 10 percent. The analysis does not include properties with negligible loss of land and no expected loss of buildings. Single-family residential parcels are assumed to be acquired in their entirety if the ROW requires a portion of the residential structure. Apartment complexes and commercial/industrial properties impacted by the ROW acquisition may lose some of the land and buildings contained on a parcel while other buildings not required for the ROW will remain in the ownership of the private property owner.

Project generated tax losses were calculated by applying the appropriate tax rate to the assessed value of property to be acquired. The acquisition of commercial and industrial property will result in an estimated annual loss of about \$161,000 in property taxes for both Alternative A and B. The fiscal impact of residential property acquisition is dependent upon the alignment alternative selected along US-95. Alternative A will result in the loss of approximately \$214,000 in annual property tax revenue, while Alternative B will result in approximately \$175,000 in lost property tax revenues annually. The greatest loss in tax revenues will result from the widening of US-95. This improvement alone will result in property tax losses of about \$89,000 from the commercial properties; tax losses from acquisitions of residential property along US-95 are estimated to be \$188,000 yearly under Alternative A and \$149,000 yearly under Alternative B. Table VI-3 provides additional detail on the assessed value of impacted property and the estimated yearly tax losses from ROW acquisition.

The loss of taxable property is not expected to pose a substantial impact to tax revenues, given the value of the tax base and the growth in the tax rolls for the City of Las Vegas and Clark County. All taxable property loss will occur within the boundaries of the City of Las Vegas. The total assessed valuation of property to be acquired by the proposed project is estimated to be about \$12.4 million under Alternative A and \$11.1 million under Alternative B. These losses are equivalent to about 0.20 percent and 0.18 percent, respectively, of the total assessed valuation of the City of Las Vegas (FY 1996-1997). The lost value of taxable property for each alternative equals less than one percent of the \$1.348 billion increase in the City of Las Vegas's assessed valuation between FY 1994-95 and FY 1996-97. Furthermore, two factors are likely to minimize the fiscal impacts of ROW acquisition. The business and residential displacement caused by the proposed project is likely to generate the building of new commercial and residential buildings on unimproved land within the city and county, thereby offsetting the loss of taxable property with a gain on the city and county's total assessed valuation. Additionally, the loss in tax revenues from residential properties is offset by a diminished need to provide services, such as public school education, to residents of these properties.

TABLE VI-3  
ASSESSED VALUE AND YEARLY TAX LOSS DUE TO ROW ACQUISITION

Improvement Area	Assessed Value of Impacted Properties			Assessed Value of Property To Be Acquired			Yearly Tax Loss		
	Land	Improvements	Total	Land	Improvements	Total	Land	Improvements	Total
MLK/Industrial Road Connector	\$707,110	\$911,140	\$1,618,250	\$707,110	\$911,140	\$1,618,250	\$21,402	\$27,578	\$48,980
Industrial Road Widening	\$1,086,760	\$1,587,400	\$2,674,160	\$232,137	\$273,692	\$505,829	\$7,026	\$8,284	\$15,309
Martin Luther King Jr. Blvd. Widening	\$1,547,920	\$2,878,660	\$4,426,580	\$100,964	\$0	\$100,964	\$3,056	\$0	\$3,056
US-95 Widening	\$4,321,340	\$11,296,710	\$15,618,050	\$663,727	\$2,280,342	\$2,944,069	\$20,090	\$69,021	\$89,111
Valley View Blvd. Widening	\$511,460	\$605,880	\$1,117,340	\$88,064	\$77,670	\$165,734	\$2,666	\$2,351	\$5,016
Total - All Improvements	\$8,174,590	\$17,279,790	\$25,454,380	\$1,792,002	\$3,542,844	\$5,334,846	\$54,239	\$107,234	\$161,473

II. RESIDENTIAL PROPERTIES

Improvement Area	Assessed Value of Impacted Properties			Assessed Value of Property To Be Acquired			Yearly Tax Loss		
	Land	Improvements	Total	Land	Improvements	Total	Land	Improvements	Total
MLK/Industrial Road Connector	\$222,580	\$338,070	\$760,650	\$153,280	\$313,320	\$466,600	\$4,639	\$9,484	\$14,123
US-95 Widening:									
Alternative A	\$2,295,230	\$7,571,120	\$9,866,350	\$1,613,413	\$4,592,825	\$6,206,238	\$48,835	\$139,016	\$187,850
Alternative B	\$1,904,150	\$6,662,950	\$8,567,100	\$1,222,333	\$3,684,655	\$4,906,988	\$36,998	\$111,527	\$148,525
Alta Connector	\$84,900	\$251,820	\$336,720	\$84,900	\$251,820	\$336,720	\$2,570	\$7,622	\$10,192
Valley View Blvd. Widening	\$2,195,720	\$1,822,510	\$4,018,230	\$50,079	\$13,460	\$63,539	\$1,516	\$407	\$1,923
Total - All Improvements:	\$4,798,430	\$10,183,520	\$14,981,950	\$1,901,671	\$5,171,425	\$7,073,096	\$57,560	\$156,529	\$214,088
Alternative A	\$4,407,350	\$9,275,350	\$13,682,700	\$1,510,591	\$4,263,255	\$5,773,846	\$45,723	\$129,040	\$174,763
Alternative B									

III. TOTAL - ALL PROPERTIES

Northern Alignment Alternative	\$12,973,020	\$27,463,310	\$40,436,330	\$3,693,673	\$8,714,269	\$12,407,942	\$111,799	\$263,763	\$375,562
Southern Alignment Alternative	\$12,581,940	\$26,555,140	\$39,137,080	\$3,302,593	\$7,806,099	\$11,108,692	\$99,962	\$236,274	\$336,236

Source: Clark County Assessors Office

**c. Displacements****a. Residential**

The preliminary engineering design plans for each of the proposed alternatives were examined with special attention given to the displacement of residential structures within the proposed right-of way. Block-level data from the 1990 U.S. Census of Population and Housing was used to estimate the number of people and households likely to be displaced by the proposed project.

**(1.) Impacts**

The acquisition of residential structures will be necessary to implement the following proposed improvements under Alternatives A and B.

- Widening US-95 to 10 lanes from Rainbow Boulevard to I 15;
- Widening Alta Drive for the Alta Connector;
- Building the Martin Luther King Boulevard/Industrial Road Connector;
- Widening Industrial Road to six lanes; and
- Widening Valley View Boulevard to six lanes.

The magnitude of residential displacement that will occur along US-95 will vary depending on the alternative alignment selected.

**■ Displacement of People and Households**

The preliminary engineering design plans call for the acquisition of approximately 334 residences under Alternative B, and about 396 residences under Alternative A. The bulk of the residential displacement necessary to implement the proposed project will occur within the proposed right-of-way associated with the widening of US-95. Along US-95, Alternative B will displace about 265 housing units, while Alternative A will displace about 327 units. The 62 additional units on the north side of US-95 necessary for the Alternative A are all single-family detached residences. Because the homes along Valley View Boulevard and Martin Luther King Boulevard generally have large setbacks from the existing ROW, only one residence is expected to be displaced along Valley View Boulevard, while no residential displacement is expected to occur due to the widening of Martin Luther King Boulevard north of US-95. However, 14 single-family residences fronting Alta Drive have narrow setbacks, making full takings of these properties necessary; a more recently-built apartment complex on Alta Drive has sufficient setback to make acquisition of these residential structures unnecessary. The construction of the Martin Luther King Boulevard/Industrial Road Connector will require the acquisition of about 17 single-family residences and 36 apartment units. Although no residential properties directly front Industrial Road, one of the business establishments to be displaced by the proposed road widening includes an apartment.

Using block-level Census data on the number of persons per housing unit, population displacement from the proposed project is estimated to be up to 942 persons with Alternative A and up to 772 persons with Alternative B. The relatively large average household sizes among the single-family residences along the ROW necessary for the Alternative A substantially increases the population displacement associated with Alternative A. The Alternative A contributes about 170 additional persons to the total displacement caused by the proposed project, or 2.74 persons for each of the 62 additional housing units to be displaced. Table VI-4 provides a breakdown of the housing units that will be acquired for the component improvements of the proposed project, and the estimated population displacement associated with those takings. Figure VI-1 graphically displays the location and number of displacements.

These displacements are further broken down in Table VI-5 which identifies number of residential displacements by Census tract. Census tracts likely to receive the highest percentage of displacements are Tract 30.01 with a 3.30 percent population displacement, Tract 2.02 with a 2.77 percent displacement, and, for Alternative A, Tract 1.01 would have 3.41 percent of its population displaced. Each of these three Census tracts has a lower percentage of minorities as compared to the project area as a whole.

Of all block groups identified as having minority or low income populations, three would likely experience residential displacement impacts (see Table VI-6). With 6.02 percent of its population displaced, block group two of Tract 2.02 would experience the greatest displacement impacts.

#### ■ Displacement of School Children

One indirect impact of residential displacement will be the potential changes in school enrollment caused by relocation of school age children. Given the large number of schools that students in the impacted areas attend, no substantial impact on school enrollment is expected. The school children living in impacted housing currently attend 20 different public schools: eight high schools, four middle schools, and eight elementary schools. Information provided by the Clark County School District regarding school enrollment on streets impacted by residential displacement indicates that 93 school children (grades Kindergarten through 12) currently reside on those blocks where residential displacement will occur under Alternative B; while about 130 school children live on those blocks where residential displacement will occur under Alternative A. It should be noted that these numbers reflect current school age population and school enrollment and do not necessarily represent the character of the school age population that will reside in this area when the proposed project is constructed.

#### ■ Housing Value

Estimates of the value of single-family housing impacted by the proposed ROW acquisition reveal that housing value varies considerably among the affected properties, but tends to include housing at the low end of the price scale in the Las Vegas Valley. The proximity of some of the affected residential properties to a limited access highway and high traffic arterial streets, as well as the age and size of the house, are some of the considerations affecting housing prices in this area. Using

TABLE VI-4  
Illustrative Profile of Potential Residential Displacement

Improvement Area	Total Units	Type of Units		Apartments	Other	Persons Per Unit	Total Persons	Total School Children
		Single-family	Det.					
U.S. 95 - Alt. A (Northern Alignment)	327	188	138	1.00	2.44	798	77	
U.S. 95 - Alt. B (Southern Alignment)	265	126	138	1.00	2.37	628	114	
Alta Connector	14	14	0	0.00	2.17	30	2	
Martin Luther King/Industrial Ave. Connector	53	17	36	0.00	2.04	108	13	
Valley View Blvd. Widening	1	1	0	0.00	2.5	3	1	
Industrial Road Widening	1	0	1	0.00	1.76	2	0	
Total - All Improvements	396	220	175	1.00	2.38	942	93	
Alternative A	334	158	175	1.00	2.31	772	130	

Note: Because of rounding, numbers do not always add up.  
Sources: 1990 Census of Population and Housing; Clark County School District; Business Impact Survey, Louis Berger & Associates, Inc.

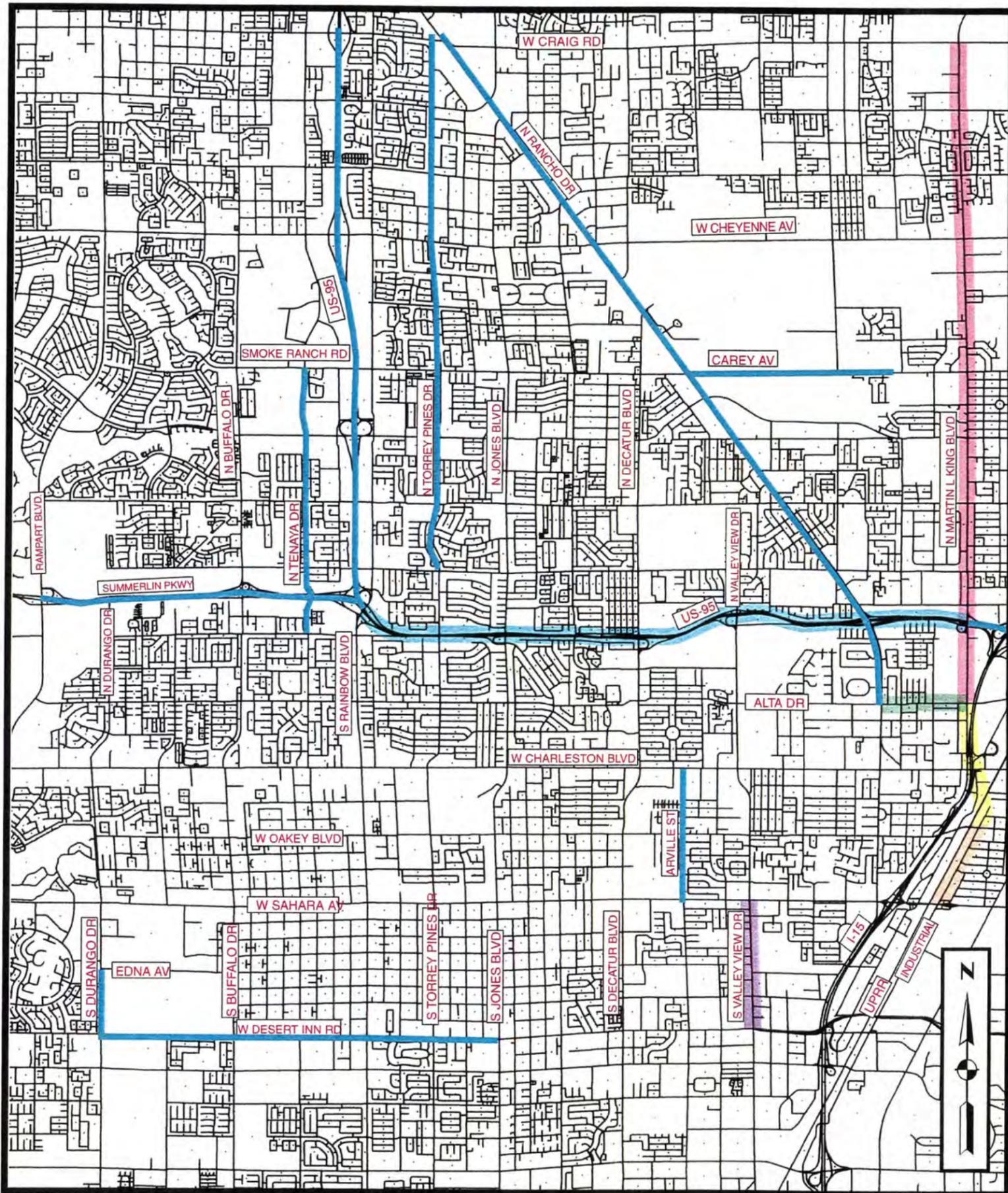
TABLE VI-5  
Displacements within Census Tracts

Tract	1996 Population	Single Family Displacements	Multi-Family Displacements	Avg. Persons Per Housing Unit	Total Persons Displaced	Percent Displaced
31	10,846	7	88	2.34	222	2.05%
1.02	6,604	51	16	1.76	118	1.79%
Northern Alignment 1.01	5,580	69	0	2.76	190	3.41%
Southern Alignment 1.01	5,580	7	0	2.81	20	0.35%
2.01	3,393	1	0	1.06	1	0.03%
30.01	3,779	10	34	2.83	125	3.30%
1.04	7,697	23	0	3.17	73	0.95%
10.98	6,070	26	0	2.49	65	1.07%
2.02	5,205	33	36	2.08	144	2.76%
11	4,215	0	1	1.76	2	0.04%
22.02	14,642	1	0	2.5	3	0.02%
Total Northern Align. (Alt. A)	68,031	221	175	2.38	942	1.38%
Total Southern Align. (Alt. B)	68,031	159	175	2.31	771	1.13%

TABLE VI-6  
Block Groups Having Disadvantaged Populations<sup>1</sup> and with Potential Residential Displacement Impacts

Tract	Total 1990 Population	Block Group	Total Persons in Block Group	% Racial Minorities	% 65 or Older	% Foreign Born	% in Poverty	Persons Displaced	% of Block Group Displaced	% of Tract Displaced
11	4,867	2	487	46.60%	less than 20%	26.10%	38.20%	2	0.41%	0.04%
2.02	5,735	2	1,793	22.00%	32.60%	less than 15%	less than 33%	108	6.02%	1.88%
22.02	13,559	3	7,114	31.30%	less than 20%	16.70%	less than 33%	3	0.04%	0.02%

<sup>1</sup> The term "disadvantaged populations" as used here refers to the following: racial minorities; persons 65 and older; foreign-born persons; and persons in poverty.



# Residential and Business Displacements

## LEGEND

- US-95 - From Rainbow Blvd. to Martin Luther King Blvd.  
 Businesses Displaced  
 18 Northern Alignment  
 18 Southern Alignment  
 Residences Displaced  
 327 Northern Alignment  
 265 Southern Alignment
- Martin Luther King Blvd. - From Craig Rd. to Charleston Blvd.  
 11 Businesses Displaced  
 0 Residences Displaced
- Alta Dr. - From Rancho Dr. to Martin Luther King Blvd.  
 0 Businesses Displaced  
 14 Residences Displaced
- Martin Luther King Blvd. / Industrial Rd. Connector  
 16 Businesses Displaced  
 53 Residences Displaced
- Industrial Rd. - From Wyoming Ave. to Sahara Ave.  
 8 Businesses Displaced  
 1 Residences Displaced
- Valley View Blvd. - From Sahara Ave. to Desert Inn Rd.  
 2 Businesses Displaced  
 1 Residences Displaced
- Proposed Roadway Improvements where no displacement is expected

NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
<b>RESIDENTIAL &amp; BUSINESS DISPLACEMENTS</b>
FIGURE VI-1

Source: Louis Berger & Associates, Inc., 1997  
 NOTE: Displacement refers to any business or residence that may need to be relocated due to a partial property taking.

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, AS AMENDED, provides guidelines for the relocation of displaced households. These guidelines are also described in the NDOT manual. Detailed information on relocation policy, beyond the summary provided here, is available in these two documents.

In addition to payments for acquisition of housing and property, and payment for moving expenses, homeowners and renters can receive additional payment to secure replacement housing. This payment compensates qualifying households for the cost of decent, safe and sanitary replacement housing, and includes payments to: 1) cover the difference between the acquisition price of the current housing and the cost of comparable replacement housing; 2) compensate for the cost of higher interest rates; and 3) cover closing and incidental costs. Eligibility for replacement housing payments is outlined briefly below:

- A displaced owner-occupant with at least 180 days of occupancy may be eligible for replacement housing payments of up to \$22,500. A calculation using three listings of comparable dwellings is prepared, and the qualification amount is based on the most comparable replacement dwelling.
- Displaced owner-occupants with at least 90 days, and not more than 179 days occupancy may be eligible for an amount up to \$5,250 on a down payment. The relocatee may also elect a rental payment with a ceiling of \$5,250.
- Tenant-occupants with a minimum of 90 days occupancy can qualify for an amount up to \$5,250 to use as: 1) a rental supplement to compensate between rent paid at current dwelling and market rent for a comparable dwelling; or 2) a down payment.

Under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, AS AMENDED, no household is required to move unless comparable replacement housing is made available to that household. When the existing housing within the financial capability of a displaced family is not available, and replacement housing payments fail to provide the household with the means to afford comparable replacement housing, a commitment to Last Resort Housing will be considered. Last Resort Housing payments are available on a case-by-case basis, depending on the availability of comparable replacement housing, the resources available to provide comparable replacement housing, and the individual circumstances of individuals to be displaced. Some general provisions of the guidelines on Last Resort Housing payments include the following:

- Last Resort Housing payments may be authorized to rehabilitate or add to an existing replacement dwelling, including the removal of barriers for handicapped persons, cost effective construction of a new dwelling, relocation of a dwelling, sale or lease of a dwelling by NDOT, and arrangement of a direct loan.

- Last Resort Housing payments may be authorized when replacement housing exceeds the \$22,500 maximum supplement for a 180-day owner-occupant, or when comparable replacement housing exceeds the \$5,250 maximum supplement available to 90-day owner- or tenant-occupant.
- Last Resort Housing can include both payment and/or construction of replacement dwelling.
- Tenants residing in displaced housing for less than 90 days and subsequent tenants will be eligible if necessary for Last Resort Housing funds if they will be required to pay more than 30 percent of their gross income for comparable replacement housing as set forth in the NDOT ROW manual.

Relocation assistance and advisory services will be provided by the NDOT ROW Division. The following advisory services will be provided to relocating households:

- Discuss and explain the various relocation services and payments, and explain the eligibility requirements.
- Provide current information on the availability of comparable replacement housing for sale or rent.
- Supply information concerning other federal and state housing programs, and other federal and state assistance programs.
- Supply mortgage information such as present interest rates, down payments and closing costs.
- Supply names of local licensed movers, building contractors and area real estate offices.
- Supply information on applicable laws concerning relocation assistance.

Coordination between the NDOT ROW Division and various state agencies and other local governments, organizations and groups such as local developers and realtors, the Clark County Department of Comprehensive Planning, and the Clark County and city of Las Vegas public housing authorities will serve to further the identification of replacement housing for those displaced families seeking assistance. Clark County and the City of Las Vegas may provide further assistance as needed in the identification of alternative sites, available loans and other sources of funds to offset moving and site purchase costs not provided by the state or federal government.

Although NDOT will be responsible for implementing the appropriate programs and assistance to displaced households, ongoing coordination with these various organizations and groups, pursuant to the procedures and practices of NDOT and the Uniform Relocation and Real Property Acquisition Policies Act of 1970, AS AMENDED, will commence as needed and when deemed appropriate upon

the development of final engineering design plans. At that time, the actual number of displaced households and the character of these households will be identified as well as any special assistance requirement that may arise as a result of household age, race, handicapped status or income level.

## **2. Business**

The preliminary engineering design plans for the proposed project were examined to identify the commercial and industrial properties that will potentially be displaced by the proposed ROW. A survey was distributed to all businesses potentially impacted by the ROW acquisition in order to further analyze the proposed project's impacts on business activity near the planned improvements, and to identify relocation issues. A copy of the survey, hereafter identified as the Business Impact Survey, can be found in Appendix E of the Socioeconomics Technical Report which has been prepared separately from the FEIS.

### **a. Impacts**

Acquisition of land for the ROW will impact business and industrial activity located adjacent to the following improvements.

- Widening US-95 to 10 lanes from Rainbow Boulevard to I 15; and
- Building the Martin Luther King Boulevard/Industrial Road Connector;
- Widening Martin Luther King Boulevard to six lanes;
- Widening Industrial Road to six lanes; and
- Widening Valley View Boulevard to six lanes.

Both Alternative A and B will have the same impact on business activity; therefore, no separate analysis of each alternative is included.

#### **(1.) Summary of Business Impact Survey**

Based on the results of the Business Impact Survey conducted with firms operating within the ROW of the proposed project, up to 55 businesses and 1,367 employees could be displaced by the proposed project. The majority of businesses potentially displaced are small businesses employing under 10 persons, but the bulk of employment at risk of displacement is found within the six largest firms, in particular the two largest firms which each employ 300 persons or more. Among the proposed improvements, the creation of a new north-south arterial street connection through the widening of Industrial Avenue and the building of the Martin Luther King Boulevard/Industrial Road Connector will have the greatest impact on business activity and employment. Up to 24 businesses and 1,220 employees could be displaced by the ROW acquisition necessary to implement this improvement. In addition, the bulk of high-wage employment impacted by the proposed project is found among businesses in this location, especially along the portion of Industrial Road where widening is proposed.

While 33 businesses within the proposed ROW will lose their principal business structure through ROW acquisition and thus experience a direct displacement impact, the results of the Business Impact Survey indicated that an additional 22 businesses could potentially or indirectly experience a displacement as a result of ROW acquisitions. Potential displacements could result from final modifications to the alignments for the proposed improvements, and indirect displacements could result from partial property acquisitions (i.e., those that do not affect the buildings on the property) which impair business operation. These 22 businesses account for 743 of the 1,367 employees at risk of displacement. Along the ROW for the proposed widening of Martin Luther King Boulevard, none of the businesses will experience a direct displacement impact. However, 11 businesses and 70 employees could lose a substantial amount of parking.

Most of the impacted businesses have good accessibility from the proximity of interchanges at their present location. Successful business relocations will therefore require sites with a similar or greater level of accessibility. Low cost sites and large buildings with on-site parking lots and access to Downtown Las Vegas and the Las Vegas Resort Corridor are prominent among the common relocation needs of businesses that will be, or could be, displaced by the proposed project. The majority of the impacted business owners indicated a preference to move within a few blocks of their present location. Many of these businesses indicated that they had a local customer base. A substantial percentage of the impacted business owners indicated that their employees lived less than 10 miles from their place of work.

## **(2.) Number of Businesses Impacted and Type of Impacts**

Preliminary design plans indicate that a total of 80 businesses are situated on property that is either partially or fully within the ROW required for the proposed project. All businesses were contacted regarding the proposed project and its likely impacts on business operation. Four of the businesses contacted did not respond or indicate that they plan to move before the proposed improvements are scheduled to commence; therefore, they are not included in any further analysis of business impact loss.

The remaining 76 businesses currently operating within the proposed ROW fall into one of the following three categories:

- ▶ **No Displacement Impact:** The ROW acquisition would acquire only a portion of the property and would allow the business to continue without being relocated.
- ▶ **Direct Displacement Impact:** The business structure falls within the planned ROW acquisition. Acquisition of the ROW will require the business to move in order to continue operation.

- ▶ Indirect or Potential Displacement Impact: The business activity impacts of the property acquisition are not certain. This category includes partial property acquisitions which could negatively impair business operation to the degree that the business will need to relocate or discontinue operation.

This category also includes businesses that may be able to continue operation at the impacted location if slight modifications to the project design can be accommodated.

Assessing both the direct displacement impacts and the indirect/potential displacement provides a conservative estimate of possible business activity loss and displacement, while an assessment of only direct displacement impacts provides a more optimistic estimate.

Up to 72 percent of impacted businesses, or 55 businesses in total, could be displaced by the proposed project. Twenty-one businesses owners or managers, representing about 28 percent of all impacted businesses, indicated that they would be able to continue operating at their present location. Two businesses chose not to respond to the survey, and therefore, the full impacts on these businesses could not be assessed. The widening of US-95 is expected to cause the most business dislocation: up to 18 businesses along US-95 will need to relocate. The Martin Luther King Boulevard/Industrial Road Connector will displace between 12 and 16 businesses; only one business along the Connector's planned route will be subject to a partial taking with no possible displacement impact. No full property acquisitions are necessary to widen Martin Luther King Boulevard. However, 11 out of the 18 business owners subject to a partial taking of their business property along Martin Luther King Boulevard indicated that the loss of parking associated with the partial taking would potentially force them to discontinue business operation at the impacted location. The widening of Industrial Road will displace between six and eight businesses, and the widening of Valley View Boulevard could displace one to two businesses. Table VI-8 identifies the number of businesses impacted by the type of impact. Figure VI-1 graphically displays the locations of the anticipated business displacements.

Businesses were classified as indirect or potential displacements for a variety of reasons. Most commonly, business owners/managers indicated that partial property acquisitions planned for their business properties would remove a substantial portion of the establishment's parking spaces. Business owners/managers identified other negative, indirect impacts from partial property takings, including the following: a change in the establishment's accessibility to arterial roads; a reduction in the amount of land outside the business structure that could be used for sale and display of products; and increased dirt entering the business establishment from the highway. In other instances, business displacement might be avoided depending on the final design of the planned improvements. The largest employer impacted by ROW acquisitions, American Medical Response, is located within the path of the Martin Luther King Boulevard/Industrial Road Connector (connector). This business may not require relocation if the design of the flyover allows for parking and existing business structures to remain underneath it, and if access to the highway and arterial roads is not compromised during or after construction of the flyover. Final design modifications to the connector may allow up to four businesses on Western Avenue to avoid displacement.

TABLE VI-8  
Businesses Impacted by Right-of-Way Acquisition

Type of Impact	ALL IMPROVEMENTS		MLK Blvd. Road Widening		MLK/Industrial Connector		Industrial Rd. Widening		US-95 Widening		Valley View Blvd. Widening	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
No displacement impact - partial property acquisition	21	27.6%	7	38.9%	1	5.9%	6	42.9%	4	18.2%	3	60.0%
Displacement impact:	55	72.4%	11	61.1%	16	94.1%	8	57.1%	18	81.8%	2	40.0%
Direct displacement impact	33	43.4%	0	0.0%	12	70.6%	6	42.9%	14	63.6%	1	20.0%
Indirect or potential displacement impact	22	28.9%	11	61.1%	4	23.5%	2	14.3%	4	18.2%	1	20.0%
Total Businesses Surveyed	76	100.0%	18	100.0%	17	100.0%	14	100.0%	22	100.0%	5	100.0%
No survey response - impact unknown	2	2.6%		0.0%		0.0%	1	6.7%	1	4.3%		0.0%
Total Businesses	78	100.0%	18	100.0%	17	100.0%	15	100.0%	23	100.0%	5	100.0%

Source: Business Impact Survey, Louis Berger & Associates, Inc., 1997.

### (3.) Business Size and Type

A majority of the firms subject to full or partial property takings have no other business sites besides the affected property. Twenty-five of the single location businesses will bear a direct displacement impact due to ROW acquisition and an additional 17 could experience an indirect or potential displacement impact. In other words, between 25 and 42 of the single location businesses will be displaced by the proposed improvements. An additional six businesses are not expected to experience a displacement impact; in total, 48 out of the 76 businesses subject to a full or partial property taking have only one business location.

Headquarters of multi-location businesses comprised eight of the 76 businesses, while seven and 12 of the businesses are franchise and branch locations, respectively.

Most businesses on properties that could be displaced by ROW acquisitions rent their property, indicating that they have limited control over the property but may have less difficulty relocating. Of the 55 firms that will experience a direct, indirect or potential displacement impact from the property acquisition, 41 (75 percent) rent their business property and 14 (25 percent) own their business property. The subset of 22 firms that could experience an indirect or potential displacement impact include six owners and 16 renters, equal to 27 and 73 percent of potential/indirect displacements, respectively. In total, 50 of the 76 businesses subject to full or partial property takings rent their business property, and 26 own their business property. Tables VI-9 and VI-10 provide a profile of all businesses that will be subject to a full or partial property taking.

### (4.) Business Displacement—Business Size

Most of the businesses that could experience displacement are small firms, but the six largest businesses account for the bulk of employment potentially affected by displacement. Fifteen out of the 55 businesses (about 27 percent) reported annual sales under \$250,000, and 32 (about 58 percent) reported annual sales under \$1 million. Thirty-five of the 55 businesses (nearly 64 percent) employed less than 10 people. Only four percent of businesses (two firms) employed 100 people or more, but these two firms accounted for 65 percent of employees impacted. The six largest firms, employing 30 or more workers each, accounted for about 76 percent of all employment among firms facing a possible displacement. Table VI-11 provides additional information on the size of businesses that will experience direct, indirect or potential displacement impacts as a result of the proposed project. A profile of these six firms is found in Table VI-12.

### (5.) Business Displacement—Impacts on Employment

The full impacts of the ROW acquisition on the employees of affected firms is difficult to foresee. However, all employees at each firm are potentially at risk of a range of negative impacts, including: 1) a decision by the business owner or manager to discontinue operation; 2) a relocation which impacts the business negatively and causes the business owner/manager to lay off employees; 3) a loss of business activity at firms able to remain at their present location, resulting in lay-offs; and 4) a relocation which makes existing employees' commutes difficult or impossible.

TABLE VI-9  
BUSINESS TYPE FOR BUSINESSES IMPACTED BY RIGHT-OF-WAY ACQUISITION

Type of Impact	ALL BUSINESSES			
	Single Location	Franchise	Head-quarters	Other
No displacement impact - partial property acquisition	21	6	2	4
Displacement impact:				
<i>Direct displacement impact</i>	55	42	5	4
<i>Indirect or potential displacement impact</i>	32	25	3	2
Total Businesses Surveyed	76	17	2	2
		48	7	8
				12
				1
				0

TABLE VI-10  
BREAKDOWN OF OWNER AND RENTER BUSINESSES IMPACTED BY RIGHT-OF-WAY ACQUISITION

Type of Impact	TOTAL		OWNER		RENTER	
	Number	Percent	Number	Percent	Number	Percent
No displacement impact - partial property acquisition	21	27.6%	12	46.2%	9	18.0%
Displacement impact:						
<i>Direct displacement impact</i>	55	72.4%	14	53.8%	41	82.0%
<i>Indirect or potential displacement impact</i>	33	43.4%	8	30.8%	25	50.0%
Total Businesses Surveyed	76	100.0%	26	100.0%	50	100.0%

Source: Business Impact Survey, Louis Berger & Associates, Inc., 1997.

**TABLE VI-11**  
**Business Displacement Impacts:**  
**Size of Businesses to be Displaced**

<u>Employees</u>	<u>Businesses</u>		<u>Total Employment</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
1-4	21	38.2%	44	3.2%
5-9	14	25.5%	93	6.8%
10-14	8	14.5%	98	7.2%
15-19	3	5.5%	53	3.9%
20-29	2	3.6%	47	3.4%
30-49	4	7.3%	147	10.8%
50-99	0	0.0%	0	0.0%
100 +	2	3.6%	885	64.7%
Not Reported	1	1.8%	--	
Total Survey Respondents	55	100.0%	1367	100.0%

<u>Annual Sales</u>	<u>Businesses</u>	
	<u>Number</u>	<u>Percent</u>
Less than \$250,000	15	27.3%
\$250,000 - \$1 million	17	30.9%
\$1 million - \$5 million	11	20.0%
Greater than \$5 million	3	5.5%
Not Reported	9	16.4%
Total Survey Respondents	55	100.0%

Source: Business Impact Survey,  
Louis Berger & Associates, Inc., 1997.

TABLE VI-12  
SIX LARGEST EMPLOYERS IMPACTED BY PROPOSED ROAD IMPROVEMENTS

Name	Improvement Area Location		Impact Type	Total Employees	Principal Business Operation	Customer Service Area
	MLK/Industrial Connector	Road				
Mercy Medical Services	Industrial Road Widening	Road	Potential Displacement	585	Emergency medical services	Regional
Desert Fire Protection	Industrial Road Widening		Direct Displacement	300	Fire sprinkler systems for hi-rise construction	Las Vegas Valley
Marshall Management Co.	Industrial Road Widening		Direct Displacement	45	Wholesale/retail clothing	Other
Rainbow Tax Service	US-95 Widening		Direct Displacement	36	Financial service/tax preparation	Las Vegas Valley
Carls Donuts	MLK/Industrial Connector	Road	Direct Displacement	34	Bakery/donut shop	Regional
Artistic Iron Works	Industrial Road Widening		Direct Displacement	32	Ornamental iron	Las Vegas Valley

Source: Business Impact Survey, Louis Berger & Associates, Inc., 1997.

TABLE VI-13  
BUSINESS DISPLACEMENT IMPACTS:  
CHARACTERISTICS OF EMPLOYEES AT BUSINESSES TO BE DISPLACED

	ALL IMPROVEMENTS		MLK Blvd. Road Widening		MLK/Industrial Connector		Industrial Rd. Widening		US-95 Widening		Valley View Blvd. Widening	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total Employees	1367	100.0%	70	100.0%	712	100.0%	408	100.0%	161	100.0%	16	100.0%
Direct Displacement	624	45.6%	0	0.0%	103	14.5%	395	96.8%	120	74.5%	6	37.5%
Indirect or Potential Displacement	743	54.4%	70	100.0%	609	85.5%	13	3.2%	41	25.5%	10	62.5%
Minority Employees	171	12.5%	35	50.0%	48	6.7%	49	12.0%	37	23.0%	2	12.5%
Direct Displacement	101	7.4%	0	0.0%	34	4.8%	47	11.5%	20	12.4%	0	0.0%
Indirect or Potential Displacement	70	5.1%	35	50.0%	14	2.0%	2	0.5%	17	10.6%	2	12.5%
Special Needs Employees:												
Handicapped	7	0.5%	0	0.0%	0	0.0%	3	0.7%	3	1.9%	1	6.3%
Direct Displacement	7	0.5%	0	0.0%	0	0.0%	3	0.7%	2	1.2%	1	6.3%
Indirect or Potential Displacement	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.6%	0	0.0%
Elderly	10	0.7%	0	0.0%	0	0.0%	5	1.2%	5	3.1%	0	0.0%
Direct Displacement	8	0.6% *	0	0.0% *	0	0.0% *	3	0.7% *	5	3.1% *	0	0.0%
Indirect or Potential Displacement	2	0.1%	0	0.0%	0	0.0%	2	0.5%	0	0.0%	0	0.0%
Other Special Need	20	1.5%	0	0.0%	0	0.0%	20	4.9%	0	0.0%	0	0.0%
Direct Displacement	0	0.0%	0	0.0%	0	0.0%	20	4.9%	0	0.0%	0	0.0%
Indirect or Potential Displacement	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

Source: Business Impact Survey, Louis Berger & Associates, Inc., 1997.

TABLE VI-14  
JOURNEY TO WORK AND MODE OF TRANSPORTATION  
TO WORK FOR EMPLOYEES OF BUSINESSES TO BE DISPLACED

Distance to Work:	ALL IMPROVEMENTS		MLK Blvd.		MLK/Industrial		Industrial Rd.		US-95		Valley View Blvd.	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Within 10 Miles	250	76.5%	33	100.0%	95	75.4%	24	77.4%	99	75.6%	9	56.3%
10 to 30 Miles	74	22.6%	0	0.0%	31	24.6%	7	22.6%	31	23.7%	5	31.3%
30 to 60 Miles	3	0.9%	0	0.0%	0	0.0%	0	0.0%	1	0.8%	2	12.5%
Over 60 Miles	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	327	100.0%	33	100.0%	126	100.0%	31	100.0%	131	100.0%	16	100.0%
Not Reported	1030	75.9%	37	52.9%	586	82.3%	377	92.4%	30	18.6%	0	0.0%
<b>Mode of Commutation:</b>												
By car	384	89.3%	33	100.0%	85	91.4%	331	91.2%	107	83.6%	8	80.0%
By Bus	16	3.7%	0	0.0%	7	7.5%	15	4.1%	3	2.3%	1	10.0%
Walking	25	5.8%	0	0.0%	1	1.1%	15	4.1%	16	12.5%	0	0.0%
Biking	5	1.2%	0	0.0%	0	0.0%	2	0.6%	2	1.6%	1	10.0%
Other Form of Transportation	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	430	100.0%	33	100.0%	93	100.0%	363	100.0%	128	100.0%	10	100.0%
Not Reported	927	68.3%	37	52.9%	619	86.9%	45	11.0%	33	20.5%	6	37.5%
Total Employees	1357		70		712		408		161		16	

Source: Business Impact Survey, Louis Berger & Associates, Inc., 1997.

TABLE VI-15  
BUSINESS DISPLACEMENT IMPACTS:  
OCCUPATION AND WAGE RATES OF EMPLOYEES AT IMPACTED FIRMS

Occupation:	ALL IMPROVEMENTS		MLK Blvd.		MLK/Industrial Connector		Industrial Rd.		US-95		Valley View Blvd.	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Managerial	67	9.5%	2	3.1%	16	27.6%	30	7.4%	16	9.9%	3	18.8%
Professional	33	4.7%	6	9.2%	0	0.0%	16	3.9%	11	6.8%	0	0.0%
Sales	26	3.7%	2	3.1%	0	0.0%	13	3.2%	11	6.8%	0	0.0%
Clerical	80	11.3%	2	3.1%	3	5.2%	25	6.1%	48	29.8%	2	12.5%
Service	115	16.2%	53	81.5%	8	13.8%	12	2.9%	37	23.0%	5	31.3%
Agriculture	40	5.6%	0	0.0%	40	69.0%	0	0.0%	0	0.0%	0	0.0%
Production	356	50.3%	0	0.0%	0	0.0%	312	76.5%	38	23.6%	6	37.5%
Total	708	100.0%	65	100.0%	58	100.0%	408	100.0%	161	100.0%	16	100.0%
Not Reported	659	48.2%	5	7.1%	654	91.9%	0	0.0%	0	0.0%	0	0.0%
Total Employees	1,367		70		712		408		161		16	

Wage or Salary:	ALL IMPROVEMENTS		MLK Blvd.		MLK/Industrial Connector		Industrial Rd.		US-95		Valley View Blvd.	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Up to \$10/hour	469	45.1%	27	60.0%	303	48.2%	65	16.0%	82	63.1%	8	50.0%
\$10.01 to \$15/hour	298	28.7%	2	4.4%	241	38.3%	36	8.8%	17	13.1%	6	37.5%
\$15.01 to \$20/hour	97	9.3%	10	22.2%	47	7.5%	37	9.1%	3	2.3%	2	12.5%
\$20.01 or more	110	10.6%	0	0.0%	2	0.3%	264	64.9%	10	7.7%	0	0.0%
Up to \$20,000/year	15	1.4%	6	13.3%	2	0.3%	3	0.7%	4	3.1%	0	0.0%
\$20,001 to \$50,000/year	31	3.0%	0	0.0%	18	2.9%	2	0.5%	11	8.5%	0	0.0%
\$50,000 to \$100,000/year	18	1.7%	0	0.0%	15	2.4%	0	0.0%	3	2.3%	0	0.0%
\$100,000/year or more	1	0.1%	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Total	1,039	100.0%	45	100.0%	629	100.0%	407	100.0%	130	100.0%	16	100.0%
Not Reported	318	23.4%	25	35.7%	83	11.7%	1	0.2%	31	19.3%	0	0.0%
Total Employees	1,357		70		712		408		161		16	

Source: Business Impact Survey, Louis Berger & Associates, Inc., 1997.  
Wages and Occupations of Affected Employees

Through the Business Impact Survey, employment information was gathered for firms that will be, or could potentially be, displaced by the proposed project. Tables VI-13 through VI-15 profile the employees of these impacted firms. Although the employment patterns of the affected businesses could change before the proposed project is implemented, the current employment information provided by the businesses represents an illustrative example of the jobs and employees that could be negatively impacted by business displacement and relocation.

Approximately 1,367 employees currently work at establishments where displacement may occur. Over half (712 employees) work at businesses within the Martin Luther King Boulevard/Industrial Road Connector ROW. An additional 408 employees work at businesses within the extended ROW required to widen Industrial Road south of the proposed connector. The remaining 247 employees work at establishments that will be impacted by the widening of US-95, Martin Luther King Boulevard, and Valley View Boulevard. Table VI-13 provides a breakdown on the number of employees affected by each proposed improvement.

Businesses classified as an indirect or potential displacement account for 743 or the 1,367 employees at impacted firms. The majority of employment that could potentially avoid displacement is located in the path of the Martin Luther King Boulevard/Industrial Road Connector: 609 jobs, or 85 percent of the employment dislocation in this area, may be averted. All 70 employees affected by the widening of Martin Luther King Boulevard work at establishments not subject to full property acquisition but potentially experiencing an indirect displacement impact due to a loss of parking on the business property.

▶ *Minority Employees*

Overall, survey respondents identified 171 minority employees, equal to 12 percent of the 1,367 impacted employees. The 171 impacted minority employees includes 101 employees working at firms subject to an indirect or potential displacement impact--displacement that can potentially be avoided. Current employment at establishments that will experience a direct, indirect or potential displacement impact indicates that the ROW acquisition will displace between 47 and 49 minority employees along Industrial Road, between 34 and 48 minority employees in the path of the Martin Luther King Boulevard/Industrial Road Connector, between 20 and 37 minority employees along US 95, between zero and 35 minority employees along Martin Luther King Boulevard north of US 95, and between zero and two minority employees adjacent to Valley View Boulevard improvements.

▶ *Special Needs Employees*

The survey results identified few current employees who have special needs relating to their employment or their commute to work. Current employment patterns at businesses that will experience a direct, indirect or potential displacement impact indicate that the proposed project will dislocate about seven handicapped employees, eight to 10 elderly employees, and about 20 employees with other special needs. No persons are currently employed by impacted firms as part of a welfare-to-work program.

▶ *Journey to Work and Mode of Commutation for Affected Employees*

According to survey responses, an overwhelming majority of employees live within 10 miles of their place of work and 89 percent commute to work by car. About 77 percent of all employees commute less than 10 miles to work; 99 percent live within 30 miles of their job. Some variation in distance to work was reported among the five proposed improvement areas: 56 percent of employees working at firms impacted by the Valley View Boulevard improvements live less than 10 miles from their workplace, while all employees working at firms impacted by the Martin Luther King Boulevard improvements live within a 10 mile radius. Nearly all employees--about 89 percent--commute to work by car. An additional six percent walk to work, four percent ride a bus and one percent bike to work. Non-response to this set of survey questions was common, especially among larger businesses. Overall, journey to work information was not provided for 76 percent of employees identified through the survey. The two largest employers were unable to provide this information. Therefore, the survey results may not accurately reflect the journey-to-work patterns of all impacted employees. Table V-14 provides information about the journey to work and mode of transportation to work by employees at businesses that will or may be required to relocate in order to implement the proposed project.

▶ *Wages and Occupations of Affected Employees*

The typical employee at businesses responding to this portion of the survey works in a service or production occupation: about 31 percent of employees work in service jobs and about 33 percent work in production jobs. The highest proportion of production jobs—and the highest wages—are found among the employers impacted by the widening of Industrial Road. Seventy-seven percent of jobs impacted by the Industrial Road widening are in production occupations, and 65 percent of jobs pay \$20 per hour or more. Along the section of Martin Luther King Boulevard where widening is proposed, service jobs constitute about 82 percent of employment at impacted firms. The mix of occupations at businesses impacted by the US-95 widening is more varied: about 30 percent of jobs are clerical, 23 percent are service, 24 percent are production, and 10 percent are managerial positions. The largest proportion of jobs at impacted businesses—45 percent—pay less than \$10 per hour; about 74 percent of jobs pay less than \$15 per hour. Table VI-14 provides information on the occupations and wage/salary levels of employees of firms that will be, or could potentially be, affected by ROW acquisitions.

**(6.) Business Displacement—Relocation Issues**

The unique relocation needs of displaced businesses and the availability of sites suitable for relocating firms will strongly influence the impact that ROW acquisition will have on business activity. Selection of relocation sites which do not meet the geographic, locational, and facilities requirements of displaced businesses are likely to negatively impair the business activity of these firms. Widening of Martin Luther King Boulevard at establishments not subject to a full property acquisition but potentially experiencing an indirect displacement impact due to a loss of parking on the business property.

▶ *Minority Employees*

Overall, survey respondents identified 171 minority employees, equal to 12 percent of the 1,367 impacted employees. The 171 impacted minority employees includes 101 employees working at firms subject to an indirect or potential displacement impact—displacements that can potentially be avoided. Current employment at establishments that will experience a direct, indirect or potential displacement impact indicates that the ROW acquisition will displace between 47 and 49 minority employees along Industrial Road, between 34 and 48 minority employees in the path of the Martin Luther King Boulevard/Industrial Road Connector, between 20 and 37 minority employees along US-95, between zero and 35 minority employees along Martin Luther King Boulevard north of US-95, and between zero and two minority employees adjacent to Valley View Boulevard improvements.

▶ *Special Needs Employees*

The survey results identified few current employees who have special needs relating to their employment or their commute to work. Current employment patterns at businesses that will experience a direct, indirect or potential displacement impact indicate that the proposed project will dislocate about seven handicapped employees, eight to 10 elderly employees, and about 20 employees with other special needs. No persons are currently employed by impacted firms as part of a welfare-to-work program.

▶ *Journey to Work and Mode of Commutation for Affected Employees*

According to survey responses, an overwhelming majority of employees live within 10 miles of their place of work and 89 percent commute to work by car. About 77 percent of all employees commute less than 10 miles to work; 99 percent live within 30 miles of their job. Some variation in distance to work was reported among the five proposed improvement areas: 56 percent of employees working at firms impacted by the Valley View Boulevard improvements live less than 10 miles from their workplace, while all employees working at firms impacted by the Martin Luther King Boulevard improvements live within a 10 mile radius. Nearly all employees—about 89 percent—commute to work by car. An additional six percent walk to work, four percent ride a bus and one percent bike to work. Non-response to this set of survey questions was common, especially among larger businesses. Overall, journey to work information was not provided for 76 percent of employees identified through the survey. The two largest employers were unable to provide this information. Therefore, the survey results may not accurately reflect the journey-to-work patterns of all impacted employees. Table VI-14 provides information about the journey to work and mode of transportation to work by employees at businesses that will or may be required to relocate in order to implement the proposed project.

Possible negative impacts associated with the relocation of displaced firms include: 1) scarcity or non-availability of sites properly zoned for the operation of the dislocated business; 2) scarcity or non-availability of sites with facilities appropriate to the business's operation; 3) relocation to a site

where business operation costs are higher; and 4) relocation to a site with diminished visibility or access to customers, employees and markets. The Business Impact Survey was used to obtain information on the site selection preferences and unique relocation needs of businesses that will experience a direct, indirect or potential displacement impact.

▶ *Customer Service Area*

In total, 18 businesses (about 33 percent of affected businesses) identified their customer base as local and would therefore require relocation within close proximity to their present site. Twelve businesses (about 22 percent of affected businesses) have a larger customer base within the Las Vegas Valley, and 16 (about 29 percent of affected businesses) have a regional customer base. Businesses in these two latter categories could, in general, relocate within a larger geographic area without affecting their accessibility to their customers. A higher percentage of businesses impacted by the Martin Luther King Boulevard widening have a local customer service area (46 percent) or a regional customer service area (36 percent). Among businesses in the path of the Martin Luther King Boulevard/Industrial Road Connector, a geographically larger customer service base is more common, while businesses affected by improvements to Industrial Road and US-95 are more likely to have a smaller geographic customer base. The subset of affected businesses subject to an indirect or potential displacement impact—those which may avoid displacement caused by ROW acquisitions—have a similar customer service profile as the entire group of business displacements. Table VI-16 displays detailed information on the customer service area of impacted businesses.

▶ *Relocation Preferences and Needs*

The majority of businesses directly, indirectly or potentially impacted by the ROW acquisition (29 out of 55 businesses) would prefer a relocation within their immediate area, indicating that they have a tie to their local neighborhood through their customer base, their employees, or some other factor. An additional 19 indicated a preference for relocating within the city of Las Vegas; four of the 19 indicated specific geographic requirements within Las Vegas. Survey respondents chose criteria provided on the survey form that would be most important in selecting a relocation site. A tabulation of the top three criteria revealed that highway access was the most common factor chosen by affected businesses. Other important factors included low purchase or lease cost, a large site or a large parking lot, and proximity to Downtown Las Vegas or The Strip. Important locational requirements that survey respondents added to the list provided on the survey included high visibility, proximity to local customer base, and location on a major intersection. Site relocation requirements relating to the business facility included loading docks or delivery access and warehouse/storage space. Table VI-17 provides information on the relocation preferences and needs of affected businesses.

Several businesses identified relocation needs considered unique. Nine businesses indicated that their businesses required special zoning in order to operate their business. Auto repair facilities and gun stores both fall into this group. One business had a contractual restriction which prohibited relocation within a certain distance from a competitor. Accessibility to the US-95/I-15 interchange was particularly important to the operation of two businesses currently located in that area, and

TABLE VI-16  
BUSINESS DISPLACEMENT IMPACTS:  
CUSTOMER SERVICE AREA OF BUSINESSES TO BE DISPLACED

Customer Service Area	ALL IMPROVEMENTS		MLK Blvd.		MLK/Industrial Connector		Industrial Rd.		US-95		Valley View Blvd.	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Local	19	34.5%	5	45.5%	4	25.0%	3	37.5%	7	38.9%	0	0.0%
Direct displacement impact	12	21.8%	0	0.0%	3	18.8%	3	37.5%	6	33.3%	0	0.0%
Indirect or potential displacement impact	7	12.7%	5	45.5%	1	6.3%	0	0.0%	1	5.6%	0	0.0%
Las Vegas, N. Las Vegas, Henderson	12	21.8%	1	9.1%	4	25.0%	3	37.5%	4	22.2%	0	0.0%
Direct displacement impact	8	14.5%	0	0.0%	3	18.8%	2	25.0%	3	16.7%	0	0.0%
Indirect or potential displacement impact	4	7.3%	1	9.1%	1	6.3%	1	12.5%	1	5.6%	0	0.0%
Regional	16	29.1%	4	36.4%	6	37.5%	1	12.5%	4	22.2%	1	50.0%
Direct displacement impact	7	12.7%	0	0.0%	4	25.0%	0	0.0%	3	16.7%	0	0.0%
Indirect or potential displacement impact	9	16.4%	4	36.4%	2	12.5%	1	12.5%	1	5.6%	1	50.0%
National	3	5.5%	0	0.0%	1	6.3%	0	0.0%	2	11.1%	0	0.0%
Direct displacement impact	2	3.6%	0	0.0%	1	6.3%	0	0.0%	1	5.6%	0	0.0%
Indirect or potential displacement impact	1	1.8%	0	0.0%	0	0.0%	0	0.0%	1	5.6%	0	0.0%
Other	2	3.6%	0	0.0%	1	6.3%	1	12.5%	0	0.0%	0	0.0%
Direct displacement impact	2	3.6%	0	0.0%	1	6.3%	1	12.5%	0	0.0%	0	0.0%
Indirect or potential displacement impact	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No Response	3	5.5%	1	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Direct displacement impact	2	3.6%	0	0.0%	0	0.0%	0	0.0%	1	5.6%	1	50.0%
Indirect or potential displacement impact	1	4.3%	1	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	55	100.0%	11	100.0%	16	100.0%	8	100.0%	18	100.0%	2	100.0%
Direct displacement impact	32	58.2%	0	0.0%	12	75.0%	5	62.5%	14	77.8%	1	50.0%
Indirect or potential displacement impact	23	41.8%	11	100.0%	4	25.0%	3	37.5%	4	22.2%	1	50.0%

Source: Business Impact Survey, Louis Berger & Associates, Inc., 1997.

**TABLE VI-17**  
**Business Relocation Preferences**

<u>Geographic Relocation Preference</u>	<u>Number of Responses</u>
Within a few blocks of present location	29
Within City of Las Vegas - general	15
Within City of Las Vegas - specific location	4
Another location within Nevada	0
Outside Nevada	1
Do not know/no response	6
<u>Relocation Needs and Preferences:</u>	<u>Number of Responses</u>
Access to highway	28
Access to rail lines	0
Proximity to Downtown Las Vegas or Strip	10
Large site or large parking lot	15
Industrial location	6
Low purchase or lease cost	16
Other locational needs/preferences	34
Other facility needs/preferences	13
<u>Unique Needs Identified:</u>	<u>Number of Responses</u>
special zoning	9
legal restrictions on relocation	1
proximity to medical facilities	1
near US-95/I 15 interchange	2
special facility needs	2
Access to bus line	11

Source: Business Impact Survey, Louis Berger & Associates, Inc., 1997.

access to medical facilities would be a critical factor to the relocation of a health-related business. Eleven businesses also indicated that proximity to a bus stop would be important in order to retain employees who commute to work by bus.

### **b. Mitigation**

For employees who lose their jobs as a result of business displacement, their ability and ease in finding comparable employment depends in part on the type and nature of their job, and in part on the condition of the local economy at the time of the loss. All major industries are projected to experience growth in the years between 1995 and 2005. Average employment growth in the state for all industries during this time period is projected to be 25 percent. Manufacturing employment is expected to see slower than average growth for the state (about 13 percent growth), while retail and service sector employment is expected to grow at a higher than average rate (about 25 percent and 29 percent, respectively). The region's dependence on tourists from the rest of the United States has meant that the health of the region's economy depends upon the economic conditions of the United States as a whole. Accordingly, the region's unemployment rate has in the past closely followed the movement of the national unemployment rate.

Although the availability of comparable business sites may exist for displaced businesses, and/or the state of the local economy may allow for unemployed workers at displaced businesses to find work without difficulty, mitigation measures may be necessary to further minimize economic impacts associated with ROW acquisition. Where feasible, mitigation measures should be employed to minimize the impacts of business relocation, business activity loss and employment loss through the following:

- Minimize business takings to the extent possible through project design.
- Reimburse, at fair market value, any owner whose commercial property is fully or partially acquired as a result of implementing the proposed project.
- Provide for relocation assistance, including payments for moving expenses or in-lieu payment as authorized under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, AS AMENDED.

The location of the business displacement anticipated in connection with the proposed project is particularly concentrated in portions of the project area where high percentages of ethnic minorities, elderly persons and/or low income persons reside. The impacts of business displacement in these communities, and mitigation measures aimed at reducing these impacts, are discussed more specifically in the Environmental Justice section of this chapter.

## ■ Direct Displacement Impacts

Direct displacement impacts will result from acquisition of businesses structures for the proposed ROW. In cases where business displacement is necessary, NDOT will provide relocation support services to assist businesses in finding other suitable locations.

Mitigation measures to minimize business activity loss connected with relocation of full property acquisitions include the following recommended actions. These mitigation measures have been recognized by the FHWA as acceptable practice and will be implemented by NDOT:

- ▶ Provide for relocation assistance as authorized under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, AS AMENDED;
- ▶ Compensate owners and/or tenants for any direct loss of real property.
- ▶ Reimburse moving expenses for all businesses displaced by the proposed project.
- ▶ Compensate for reasonable expenses associated with the search for replacement facilities.
- ▶ Provide a payment in lieu of moving expenses to businesses.
- ▶ Provide advisory services to relocating businesses, including listings of comparable commercial properties and business locations, and information on loan programs and Small Business Administration programs.

Other governmental bodies (such as Clark County or the city of Las Vegas) may provide business assistance as well as employment counseling services and job training programs for employees who lose employment as a result of business displacement.

In addition to payments for property acquisition to owners of business property within the proposed ROW, businesses to be displaced by the proposed project will be entitled to additional types of monetary compensation through NDOT. Any business, farm or non-profit organization that qualifies as a displaced person and legally occupies the premises to be acquired on the date of initiation of negotiations for the purchase of property, and either moves or discontinues operation as a result of the acquisition may be eligible for the payments, described below, determined to be reasonable and necessary. These forms of compensation are more fully described in the NDOT brochure, *Relocation Assistance in Nevada*.

▶ *Moving Expenses*

Businesses can elect to use a commercial mover and have NDOT pay the mover directly for actual costs, or businesses elect a self-move option and receive a payment from NDOT in accordance with NDOT payment eligibility guidelines.

▶ *Reestablishment Expenses*

This payment, set at a maximum of \$10,000, may include:

- Modifications to replacement property required by law;
- Modifications to the replacement property necessary to accommodate the business and make it suitable for operation;
- Costs for exterior signing;
- Expenses for advertisement of replacement site;
- Provision of utilities to replacement site;
- Necessary redecoration and replacement; and
- Other items NDOT considers essential to the reestablishment of businesses.

The business owner may be reimbursed for reasonable storage bills considered necessary for relocation and expenses connected to the search for a replacement facility. Replacement search costs, limited to \$1,000 maximum, include payment of reasonable salary for actual time spent in search, actual travel, food, and lodging costs, and real estate agents or brokers fees. Business owners may be eligible for payment on losses of tangible personal property not moved with the business.

▶ *In-Lieu Payment*

The owner of a displaced business is eligible to receive payment equal to the average annual net earnings of the business, at least \$1,000 but not to exceed \$20,000, subject to proof of earnings. Eligibility requirements to receive this payment include:

- The displaced businessperson owns or rents personal property which must be moved in conjunction with the displacement.
- The business cannot be relocated without a substantial loss of its existing clientele or net earnings.

- The business contributed materially to the income of the displaced business owner over the previous two years.
- The business is not part of a commercial enterprise having more than three other entities not being acquired, and which are under the same ownership and engaged in similar business activities.
- The business is not operating at a displacement dwelling or site solely for the purpose of renting same to others.

Businesses selecting the in-lieu payment cannot be reimbursed for additional incidental or related moving expenses.

Coordination between the NDOT ROW Division and various state agencies and other local governments, organizations and groups such as local developers and realtors, the Las Vegas and Clark County Better Business Bureaus and Chambers of Commerce will serve to further the identification of replacement business sites for displaced business owners seeking assistance.

Although NDOT will be responsible for implementing the appropriate programs and assistance to displaced businesses, ongoing coordination with these various organizations and groups pursuant to the procedures and practices of NDOT and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, AS AMENDED, will commence as needed and when deemed appropriate upon the development of final engineering design plans. At that time, the actual number of displaced businesses and the character of these businesses will be identified as well as any special assistance requirements that may arise as a result of type of business operation, or the special needs of the business owner.

#### ■ Indirect and Potential Displacement Impacts

Additional firms could potentially suffer a loss of business activity and/or require relocation due to indirect or potential displacement impacts. Mitigation efforts should be directed at two types of impacted firms in order to avoid displacement of these firms. Mitigation will require that final design plans for alignments and ROW extensions be modified or refined to accomplish the following:

- ▶ Avoid the elimination of the business structure on the property; or
- ▶ Minimize partial property takings which restrict: 1) access to the building, 2) access to roads, and 3) available parking.

Potential and indirect displacement impacts are possible where businesses are found adjacent to the proposed improvements: 1) the construction of Martin Luther King Boulevard/Industrial Road Connector and the widening of Industrial Road; 2) the widening of Martin Luther King Boulevard; 3) the widening of US-95; and 4) the widening of Valley View Boulevard. Where feasible, the final

project design should be refined or modified to address the access and parking issues for individual businesses identified through the Business Impact Survey. More specific strategies for mitigation through project design for two improvement areas where potential or indirect impacts are most avoidable are described below.

▶ *Indirect Impacts Resulting From Martin Luther King Boulevard Widening*

The greatest number of firms where negative impacts to business activity are potentially avoidable are located on Martin Luther King Boulevard between Lake Mead Boulevard and Washington Avenue. Eleven firms will experience impaired business operation due to the loss of parking by the acquisition of a strip of land approximately 20 feet in width from four parcels of property on the eastern side of Martin Luther King Boulevard. Mitigation of these impacts could include one of the following:

- Modification of the alignment along this segment of Martin Luther King Boulevard so that land is acquired from the west side of the street and in order to avoid acquisition of the impacted parking areas; or
- Replacement of lost parking spaces through the purchase and improvement of a currently vacant parcel adjacent to the impacted business properties.

▶ *Potential Impacts to American Medical Response*

Preservation of nearly 600 jobs at American Medical Response at its present location may require refinement of final engineering design plans to allow the continued operation of the business under the Martin Luther King Boulevard/Industrial Avenue Connector, which is elevated as it passes over I-15. Plans will need to accommodate the building and vehicles under the flyover. Because the operation of this business is heavily dependent upon good vehicular access to major arterial roads, access to US-95 and I-15 must be maintained.

■ **Short-Term Construction Impacts**

Construction-related impacts on area businesses will be minimized to the greatest extent possible. The NDOT will notify all area businesses of construction schedules on road closings, identify any impacts on road-dependent businesses, and undertake construction in a manner which minimizes impacts. Adequate signage will be established, and coordination will be maintained with the local media in order to adequately inform businesses and motorists of detours or construction-impacted areas.

### **3. Land Use and Zoning**

Guidelines established by the National Environmental Policy Act require the assessment of two types of land use impacts—direct and indirect. Direct impacts refer to the actual lands acquired by

the state for the ROW corridor. Indirect impacts include 1) changes to current or proposed land uses, such as induced or accelerated development, that would likely occur as a result of the proposed project; 2) changes, as a result of the proposed project, that are inconsistent with the policies and objectives of adopted plans, such as increased density that causes increased traffic through residential neighborhoods; and 3) changes to zoning patterns including a) the specific zoning categories which are lost due to land acquired by the state; and b) incompatibilities with adjacent land which is zoned for a specific use.

**a. Impacts**

**(1.) Direct Impacts to Land Use**

Most of the improvements associated with the proposed project would occur within the current ROW; however, the proposed project would result in the acquisition of all or part of some properties along US-95, Martin Luther King Boulevard, Industrial Road, the proposed Martin Luther King Boulevard/Industrial Road Connector, Alta Drive, and Valley View Boulevard. The following section discusses the extent of these takings.

■ **US-95**

The widening of US-95, from Craig Road to I-15, would require the acquisition of properties between the Summerlin/US-95 interchange and I-15. Along this east-west portion of US-95, approximately 175 single-family residences, 114 multi-family apartment units, and 21 businesses would be acquired. The Adcock Elementary School property would be partially acquired requiring relocation and reconstruction of the school building and approximately 0.8 acre of land would be taken from Western High School, although existing facilities at the high school would not be adversely effected. The Torrey Pines Park would be reduced in area from approximate 7.6 to 6 acres. Approximately 62 fewer single-family homes would need to be acquired if the Alternative B were utilized.

The proposed project will result in direct impacts to several LVVWD well and pipeline facilities within and beyond the property limits of the North Well Field. These facilities include several wells, a pumping station and underground pipelines.

Under Alternative A, the proposed project will require the replacement of Well No. 26. Based on information provided by the LVVWD, the replacement cost of this well is estimated to be approximately \$2,420,000. This cost includes the abandonment of the existing well, land acquisition, construction costs, a new discharge pipeline and the construction costs for the new pipelines. It is estimated that the time needed to replace this well is 36 to 48 months.

Under Alternative B, the proposed project will require the replacement of Well Nos. 79, 15a and 26 as well as the Bonanza Pumping Station. The replacement cost of these wells and the pumping station is estimated to be approximately \$14,830,000. This cost includes the abandonment of the

existing wells, land acquisition, construction costs, new discharge pipelines and construction costs for new pipelines. It is estimated that the time needed to replace these facilities is 36 to 48 months

■ **Martin Luther King Boulevard to Industrial Road Connector**

The proposed connection between Martin Luther King Boulevard and Industrial Road would require the taking of approximately 16 single-family residences, 36 multi-family apartment units, and 24 businesses. The businesses are a mix of commercial and light industrial uses.

■ **Martin Luther King Boulevard**

In addition to the impacts involved with the connector between Martin Luther King Boulevard and Industrial Road, the widening of Martin Luther King Boulevard would require the full acquisition of two businesses located south of Alta Drive (adjacent to I-15), and partial takings of land from approximately 12 businesses and seven residences. The residential takings are, for the most part, from lots where the homes are set well back from the road. As a result, impacts to these properties would be minimal.

■ **Industrial Road**

The widening of Industrial Road, between Sahara Avenue and Wyoming Avenue, would require the full taking of approximately four businesses and the partial taking of approximately 27 commercial and/or light industrial businesses.

■ **Alta Drive**

The widening of Alta Drive from two lanes to six lanes, between Rancho Drive and Martin Luther King Boulevard, would require the taking of approximately 14 single-family residential properties.

■ **Valley View Boulevard**

The widening of Valley View Boulevard, between Desert Inn Road and Sahara Avenue, would require approximately 20 feet of additional ROW. Approximately seven commercial properties would be affected by a full or partial taking, and one residential property would be acquired in full.

**(2.) Induced or Accelerated Development Impacts**

Induced development refers to land use changes which can occur in the vicinity of a highway as a result of improvements in access. If changes in access (e.g., reductions in the time it takes to reach an area, and/or increases in the volume of traffic able to reach it) are sufficient to make it feasible to develop a property which otherwise would not have been developed, an induced impact can be said to have occurred. However, assessment of an induced development impact depends upon the relative prominence of the highway project in the context of all factors affecting the feasibility of

development. Many factors besides access/transportation can affect development feasibility, including population and employment growth (market factors), land availability, parcel configuration and environmental suitability (supply factors), availability of municipal services, zoning and land use plans, and local political considerations.

Most highway projects which are intended to address existing or foreseen traffic congestion problems in rapidly growing metropolitan areas are of the growth-serving type. If a highway project is planned to serve growth that would have occurred anyway without the project, induced development impacts would be limited to local development decisions influenced by proximity to the highway. Factors involved in these types of decisions might include proximity to interchanges, or frontage considerations that affect the development prospects of specific parcels. In these cases, development that is already occurring within an area's overall socioeconomic and geographic context would not be an important induced development issue.

On the other hand, if a highway is planned with the intention of altering development patterns, or to stimulate economic or land use growth, it can be categorized as growth-inducing. Such projects are usually undertaken in undeveloped or declining areas where the lack of transportation is seen as a decisive impediment to economic growth or land use change. Such a highway might, for example, be intended to serve a specific development project such as a tourist attraction or industrial park. In these cases, where the highway's principal purpose is to stimulate or make possible economic growth or development which probably would not occur without the project, associated land use development might be considered an important induced development issue.

US-95 and the other proposed improvements in the proposed project area is clearly in the first category — growth-serving. Las Vegas has been rapidly growing for decades, and is expected to continue to do so during the life of the project. Market forces associated with the growth of the Southwest, and the strategic position of Las Vegas relative to tourist destinations and open space, have been and will continue to be the principal drivers of this growth. Development has expanded outward from the center of Las Vegas into the Las Vegas Valley and Clark County, and is expected to add 45,000 housing units by 2020 as well as numerous commercial, office, and tourist-oriented land uses. The rapid development of the Las Vegas Valley region will likely continue unabated regardless of the proposed project.

It is clear that development trends operating in Las Vegas are powerful and long-term, and are influenced by many factors. These trends transcend the effects of the proposed project. Therefore, the principal influence of the highway will most likely be limited to the location and timing of specific developments. For example, if the highway were not to be built, an individual investor might decide that the market demand he intends to fulfill would be better served at a parcel not located near the highway, somewhere else in the area west of Las Vegas' Central Business District (CBD). Because of the intense market pressures that already exist in this area, the decision whether or not to move forward with a development project would in all likelihood not be affected by the proposed project. The development's specific property location would probably be the only decision related to the proposed project.

It is difficult to predict the location and timing of such micro-level development decisions. They will generally be of two types: decisions about vacant land; and, decisions about developed parcels which might be redeveloped or converted to different types of land uses.

Any development related to the proposed project is most likely to take place along the US-95 highway in the vicinity of interchanges between Craig Road, and I-15, and in the Martin Luther King Boulevard/Industrial Road corridor. These are the roadways in which the most substantial increases in traffic capacity will be implemented. The discussion below concentrates on these areas.

#### ■ Vacant Parcels

To help determine the location of vacant parcels and land development plans in the vicinity of the proposed US-95 improvements, land use maps and aerial photographs of the city of Las Vegas were reviewed, and field visits were conducted. Specific information about vacant parcels and development plans throughout the project area is contained in Section IV.C (Land Use and Zoning).

The largest vacant parcels between Craig Road and the Summerlin Parkway along US-95 are located within the city of Las Vegas Technology Center on the west side of US-95 between Cheyenne Avenue and Smoke Ranch Road. These properties are scheduled for development within the next several years. Residential and office projects are planned for three other large parcels in this area. Several large vacant properties remain along Lake Mead Boulevard on both sides of US-95 as well as some large parcels between Buffalo Drive and Tenaya Way, west of US-95. Much of the latter land is owned by the BLM. The area between Rainbow Boulevard and I-15 along US-95 is intensively developed, with the exception of vacant properties to the west of the US-95/Summerlin Parkway interchange, which are owned by the BLM.

The area of Martin Luther King Boulevard and Industrial Road is characterized by mixed land uses interspersed with mostly small vacant parcels, except on Martin Luther King Boulevard north of Carey Avenue in North Las Vegas, where there is more substantial vacant land. Several new residential and warehousing projects are planned near Martin Luther King Boulevard in the area between Carey Avenue and Cheyenne Avenue.

In total, land available for development is somewhat limited in the area of US-95 and Martin Luther King Boulevard/Industrial Road. Most of the land has been planned for development or is owned by public agencies. Except for a few large vacant parcels to the west of US-95 near Buffalo Drive, most of the remaining available parcels are smaller and scattered. Much of the remaining vacant land is in the form of individual building lots. Pressure to develop the remaining vacant land near US-95 might increase as a result of the project, but it is not possible to forecast which parcels would be developed and when because so many factors come into play in development decisions, such as parcel size and configuration, surrounding land uses, and ownership considerations.

## ■ Redevelopment/Land Use Conversion

In the older areas of Las Vegas near the downtown and in the Martin Luther King Boulevard/Industrial Road corridor, pressure has been growing for private redevelopment and land use conversion projects. These types of projects typically involve the conversion of lower-density, older properties to higher-density developments. Older areas such as the Martin Luther King Boulevard/Industrial Road corridor are potentially subject to these kinds of development pressures because land values are rising and owners of older properties may be offered attractive prices by developers. In the West Las Vegas neighborhood on Martin Luther King Boulevard north of US-95 and south of Lake Mead Boulevard, community residents have expressed increasing concerns about the potential for major land use changes in their area. This area is adjacent to the Las Vegas CBD, which has been expanding rapidly.

There are several land use conversion projects which have taken place or are expected in the Martin Luther King Boulevard/Industrial Road corridor. For example, the Stratosphere Casino, constructed in the early 1990s west of Las Vegas Boulevard and north of Sahara Avenue, used several blocks of a residential neighborhood near Industrial Road. This residential area will probably experience additional redevelopment pressure as a result of the Industrial Road Connector, which will provide a direct link to US-95 and I-15. The area west of Martin Luther King Boulevard and north of Charleston Boulevard has been designated as a medical services area in Las Vegas land use plans. Several hospitals and medical facilities have been built recently in this formerly residential area, and more are planned. There have been several proposals for apartment developments in the currently lower-density residential West Las Vegas neighborhood.

Redevelopment pressures in the Martin Luther King Boulevard/Industrial Road corridor have existed for some time and will continue to increase regardless of the status of the proposed project. The principal reasons for these pressures are the proximity and growth path of the Las Vegas CBD, and the existence of older properties whose owners may be offered high prices as inducements to sell. These market forces are by far the predominant factor in the changes taking place in the Martin Luther King Boulevard/Industrial Road area. It would be unreasonable to expect that these forces would be lessened if the proposed project were not to go forward.

Land use plans are another very important factor in the location of land development. Master plans reflect the intent of city and county leaders, and can direct development toward or away from large areas, irrespective of the location of transportation projects. Three master plans affect the general area of the proposed project: the city of Las Vegas, Clark County, and the city of North Las Vegas (see Section IV.C for a more detailed discussion of plans and zoning).

The City of Las Vegas General Plan, adopted in 1992, calls for increased land use density in the northern and western portions of the city. The plan states that circulation systems will need to be developed and coordinated to serve existing and future developments. The plan also establishes a policy to improve regional access to and from the downtown Las Vegas area.

The Clark County Comprehensive Plan, adopted in 1983, recommends measures to respond to the projected continuation of the county's rapid growth rate and provide a managed framework for growth into the twenty-first century. An important emphasis is placed on transportation systems in the Comprehensive Plan. The plan calls for integrated transportation systems, including mass transit, which support the growth and development goals of the community and protect the environment.

The City of North Las Vegas Master Plan Update of 1993 stresses the need to promote economic development and maximize the city's growth potential. The plan seeks to encourage growth in areas where infrastructure is already in place. It recommends that improvements be undertaken on Martin Luther King Boulevard, which is one of the major north-south connectors in the city.

Of the three master plans in force in the project area, all recognize the rapid growth which is taking place in Las Vegas and surrounding areas. The growth path to the north and west of Las Vegas' CBD is acknowledged, along with the need to continue to support and improve transportation systems in these areas. It is clear that land use plans in Las Vegas and North Las Vegas foster a climate in which continued rapid growth can take place in the vicinity of the proposed project.

### **(3.) Consistency with Adopted Plans**

The proposed project is generally consistent with the land use and transportation policies and objectives specified in the adopted plans of Clark County, the city of Las Vegas, the city of North Las Vegas, and the Regional Transportation Commission.

The City of Las Vegas General Plan establishes a policy to improve access, locally and regionally, to and from downtown Las Vegas. Improvements are seen as crucial in maintaining an adequate level of service throughout the city and distributing traffic efficiently.

Policies in the City of North Las Vegas Master Plan discuss the need for an efficient local traffic circulation system that connects to regional transportation facilities. However, the importance of protecting neighborhood areas from increased traffic is emphasized. The plan discusses the dual nature of Martin Luther King Boulevard as a major north-south access route and as a road with local neighborhood importance as it traverses residential areas.

The stated purpose of the Clark County Comprehensive Plan is to adequately respond to the county's intense growth rate, including the development of a safe, efficient circulation system. The proposed project is generally consistent with the policies and objectives of the Clark County Plan. Within the "Rural Neighborhood Preservation Area" along Desert Inn Road, Clark County is implementing neighborhood traffic calming measures which are compatible with the widening.

The proposed project is consistent with the policies and objectives outlined in the Regional Transportation Plan 1998 - 2020. The plan specifically identifies the improvements of the proposed

project including the widening of US-95 and Summerlin Parkway, the Martin Luther King Boulevard/Industrial Connector, and the improvements to the arterial streets in the project area.

#### **(4.) Zoning Impacts**

As described above in the discussion on direct impacts, the proposed project would result in the acquisition of all or part of some properties along US-95, Martin Luther King Boulevard, Industrial Road, the area between the Martin Luther King Boulevard/Industrial Road Connector, Alta Drive, and Valley View Road. These properties are zoned for a variety of uses including multi- and single-family residential use at various densities, office and retail commercial use, and light industrial use. Most of the properties are currently developed. From a zoning standpoint, these uses can, in large part, be relocated with minimal impact. Generally, the loss of land zoned for residential and commercial uses is not expected to have an adverse effect on the overall land use patterns due to the relatively small percentage of land being acquired relative to the amount of developable residential and commercial land in the region.

The relocation of industrial uses within the city of Las Vegas, however, may be more problematic. Because industrial uses are generally incompatible with residential, and some commercial uses, finding appropriate locations within the city boundaries may be difficult. Relocations of industrial uses to Clark County or the city of North Las Vegas may be easier due to more vacant land in these areas.

Areas with industrial and commercial zoning adjacent to the roadways which will be widened and improved are considered to be compatible. Generally, the widening of arterial roads adjacent to residential zones are considered to be an intensification of an existing incompatibility. However, the widening of Desert Inn Road, through an area zoned for rural residential development, could be considered incompatible.

#### **b. Mitigation**

##### **(1.) Direct Impacts**

Individual property owners, whose property would be acquired, either fully or partially, by the proposed project would be compensated, as described earlier in the business and residential displacement measures found in Sections B.1.a. and B.2.a. of this Chapter.

##### **(2.) Induced or Accelerated Development**

While areas near the proposed project may experience somewhat increased pressures for development of vacant parcels and conversion of existing land uses, it is not possible to identify specific properties which will be affected. The proposed project is intended to serve expected development, and is but one of many factors which will influence development decisions in the project area. Because of this, and because master plans for the area call for continued rapid growth,

it is not necessary to assess any impacts of the project related to induced development. Therefore, mitigation measures for induced development impacts will not be necessary.

### (3.) Consistency with Adopted Plans

The proposed project is consistent with the adopted plan of the Cities of Las Vegas and North Las Vegas and Clark County. Therefore no mitigation is necessary.

While the widening of Martin Luther King Boulevard, within the city of North Las Vegas, is not considered incompatible with adopted policies, an opportunity exists to comply with other master plan policies which discuss the need and desire for a unified landscaping scheme to be developed along this route.

### (4.) Impacts to Zoning

No direct mitigative measures are available for zoned land takings. The city of Las Vegas Planning Commission may, however, wish to determine other locations within the city that would be appropriate for industrial development.

## 4. Park and Ride Facilities

The impacts for each of the park and ride facilities vary by location and are discussed below. There are positive impacts that would be applicable to all of the park and ride facilities. These facilities provide an alternate mode of transport other than the private automobile. The use of park and ride facilities would likely decrease total traffic, noise, and pollution volumes than if these same commuters were to use a private automobile. Additionally, the park and ride facilities would be primarily located on existing and underutilized parking lots and therefore would not require additional paved areas.

### ■ US-95 (Rancho Drive) and Centennial Parkway

This lot would be the outlying park and ride facility to the northwest along US-95. Since there is currently a parking lot at this site and the rest of the land surrounding it is vacant, no negative impacts on this area would be expected. However, a major system interchange is proposed for this intersection to connect US-95 to the I-215 Western Beltway. Therefore, considerations must be made as to the exact location of the parking lot and its access to this interchange. A park and ride facility in this location would allow residents of the northwest section of town to save time and money by riding the buses from this lot to their Las Vegas destination.

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**■ Rancho Drive and Craig Road**

This location would provide many residents in the northwest side of town with a park and ride facility adjacent to many under-used commercial retail establishments. Although there is some residential development in this area to the west, residents could either walk or drive to this location's many available parking lots or currently vacant areas. Since many residents use Rancho Drive as an alternate route to US-95 to reach the central core of Las Vegas, a park and ride lot at this location would be expected to be heavily used and more have a positive effect on traffic and pollution levels on the Rancho Drive corridor.

**■ Rancho Drive and Smoke Ranch Road**

The most prominent feature of this location is the Texas Station Casino on the southeast side. Since many residents of this area patronize this establishment on a regular basis, a park and ride parking lot at this location would not disrupt the area's traffic patterns. However, it would be relatively easy to implement a park and ride system here since the casino provides an ample supply of free parking and encourages walk-in business. Bus riders could make use of restaurants, rest rooms, and telephones within the business when needed, and the casino could also provide all necessary parking.

**■ US-95 and Cheyenne Avenue**

Commercial retail businesses in this area, including Wal-Mart and Target stores, could provide daytime parking in their lots for commuters at this location, which has easy access to US-95. Bus riders could pick up any necessary items on their way to or from work, and fill up any normally unused parking. Since many automobile drivers use Cheyenne as a route east to access the highway, a park and ride lot facility at this location would help lessen the traffic on this particularly congested section of US-95.

**■ US-95 and Summerlin Parkway**

This major system interchange provides a connection to both the Summerlin master planned community area as well as other neighborhoods on the West Side. Therefore, this location, with its many potential park and ride sites, would be an ideal place to transfer commuters onto mass transit buses. By using buses provided at this location, riders will help ease traffic volumes, which in turn place less upward pressure on pollution levels in this area.

**■ Summerlin Parkway and Rampart Boulevard**

Since this area consists mainly of golf courses, any added traffic volumes could interfere with the quiet golf-oriented activities. The specific location of this park and ride has yet to be identified. This location will provide Summerlin residents with an alternative to driving their private automobiles to work.

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■ **Sahara Avenue and Fort Apache Road**

Providing a park and ride facility at this location would not only fill up unused parking during the week, but would also help alleviate traffic congestion and pollution along the heavily used W. Sahara Avenue. Early morning and late evening traffic in this area would not be likely to increase much due to the presence of park and ride.

■ **Sahara Avenue and Rainbow Boulevard**

This intersection is one of the busiest in the greater Las Vegas Valley area, and would provide an ideal location for commuters to park and ride. Many sites currently exist for such a facility, and drivers from the many new neighborhoods in the southwest could use this location to lessen traffic volumes. Since most of the land uses in this area are commercial, no adjacent neighborhoods would likely be impacted.

■ **Martin Luther King Boulevard and Cheyenne Avenue**

This location would provide a parking area for commuters who normally use Martin Luther King Boulevard as a direct route to Las Vegas. By opting to ride busses, traffic along Martin Luther King Boulevard will likely be decreased along with noise and air pollution levels. There are currently no residential neighborhoods near this intersection.

■ **Martin Luther King Boulevard and Ann Road**

Residents of the neighborhoods at the northern reaches of Martin Luther King Boulevard, could use this park and ride facility to avoid the traffic problems along this road. However, many single and multi-family residences are located at this intersection, so traffic in the early morning and late evening hours would likely increase somewhat.

## 5. Community Facilities

Direct impacts are those that result in the taking of either existing community facility buildings and/or land, or taking of land proposed for community facility development. Indirect impacts are those that result from changes in access to and from the facility, changes in safety for accessing motorists and pedestrians, changes in circulation, visual intrusion, and changes in noise levels. Temporary impacts are those that occur during construction.

Noise, air quality and visual impacts and mitigation have been analyzed in depth in the Visual Impacts section in the Air Quality Technical Study Report, and in the Noise Technical Study Report. While there could be some noise, air quality, and visual impacts on some community facilities, these determinations have been assessed in those reports.

Direct impacts to community facilities would result from the acquisition of existing community facility buildings or land. Both Alternative A and Alternative B will directly impact community facilities. Under Alternative A, the Ruth Fyfe Elementary School would have less than .1 acres of land acquired. Western High School would have less than one acre of land acquired and Adcock Elementary School would have about 2.4 acres of land acquired. In addition, approximately 1.6 acres of the Torrey Pines Park would be taken as well as a major section of the Las Vegas Pedestrian Path and Bikeway. Under Alternative B, in addition to those facilities directly impacted with Alternative A, the proposed LVVWD Mojave Desert Preserve would have approximately 14 acres of land acquired. An additional two community facilities, the Lorenzi Park and Nevada State Museum and Historical Society, would be indirectly impacted under Alternative A. These facilities are located north of US-95 between Rainbow Boulevard and Martin Luther King Boulevard. The following are the direct and indirect impacts of the proposed project on community facilities:

**a. Direct Impacts**

■ **Martin Luther King Boulevard From Craig Road to Charleston Boulevard**

The Adeliar D. Guy III Ambulatory Care Center is the only community facility that would be directly impacted by the proposed improvements along Martin Luther King Boulevard. Approximately 20 feet of frontage along Martin Luther King Boulevard would be acquired. This would displace landscaping between the sidewalk and parking lot of the hospital, and would not cause any operational impacts. Access to and from the hospital would not be changed, though traffic delays during construction could impede circulation.

■ **Martin Luther King Boulevard/Industrial Road Connector**

American Medical Response would either be fully displaced by the proposed project or partially displaced. Officials from American Medical Response would determine whether or not they could continue to operate at their current location based on engineering final design and on final construction agreements. Should American Medical Response continue to operate, pillars supporting the connector would displace one of their buildings and some parking space. Should the company not be able to operate at this location, they would likely move to another location in the immediate area.

■ **US-95 from Rainbow Boulevard to Martin Luther King Boulevard**

The O.K. Adcock Elementary School Building and land would be displaced. A portion of land, approximately 1.6 acres from a 7.6 acre parcel adjacent to the Adcock Elementary School that has been recently developed as the Torrey Pines Park by the City of Las Vegas would also be acquired. The proposed widening of US-95 will require a substantial portion (about one fifth) of the school property, but an alignment which utilizes this property avoids the taking of a Lutheran church, an electrical substation, a LVVWD well, about 25 single-family residences, and over 100 multi-family units on the northern side of US-95. The proposed ROW acquisition will require the acquisition of

approximately 2.4 acres of the 8.4 acre Adcock Elementary School property including the school building and outdoor recreation area.

Mitigation of the impacts to Adcock Elementary School and the Torrey Pines Park involves the consolidation of the recreational facilities available and planned for these two properties. This mitigation plan will involve the reconstruction of the Adcock Elementary School on the park property, and the construction of recreational facilities that will be shared between the school and the community surrounding the school. A preliminary design concept for a shared park and school site has been developed.

Less than one acre of land would be required from Western High School. This partial taking would occur at the southwestern and southeastern portions of the school's property. Though the school's race track is located at the southwest corner of the school, the track and the bleachers would not be directly impacted. The Prime Time Preschool and Child Care Center would not be partially or fully displaced, but approximately 0.05 acre to 0.10 acre of easement would be required. The Zelzah Shrine Temple would have less than 0.5 acre of land acquired for the on-ramp to US-95 South from Rancho Drive. Because this land is not landscaped nor used for any Temple operations, impacts would be minimal.

The extension of the ROW on the southern side of US-95 between Westcliff Drive and Jones Boulevard will also require the relocation of most of the existing Las Vegas Pedestrian and Bicycle Path. The affected segment of the path will be relocated on the extended ROW along a utility easement, and will be constructed and maintained in the same manner as it is currently.

Under Alternative A, the realignment of US-95 may encroach onto the southern extremity of the outdoor recreation field of the Ruth Fyfe Elementary School. Less than .1 acres of the Fyfe Elementary school property will be directly impacted. This portion of the school property is comprised of vegetated landscape frontage. This acquisition of school frontage property is considered to be negligible and it is not expected to result in any impacts to the intended function and operation of the outdoor recreational activities associated with the school.

Under Alternative B, no impacts to the Ruth Fyfe Elementary School property, including the outdoor recreation area, are expected.

Under Alternative A, the proposed project will not result in any direct impacts to the proposed LVVWD Mojave Desert Preserve. The proposed roadway and interchange improvements will however serve to enhance travel conditions to and from the proposed preserve.

Under Alternative B, the proposed project will result in direct impacts to the proposed LVVWD Mojave Desert Preserve. The widening of the US-95 mainline will require that the new right-of-way encroach approximately 200 feet into the North Well Field property, resulting in a taking of approximately 14 acres of this property. As a result, the proposed project under this alternative will directly impact several of the proposed trails and a portion of the Mojave Desert Preserve area as

identified in the Master Plan for the North Well Field. In addition, the proposed project under this alternative will also result in impacts to the existing viewshed associated with this property. The encroachment into this property by the realignment of US-95 will remove many (approximately half) of the existing Cottonwood trees and lower shrubs and trees which currently serve as a natural visual barrier between the North Well Field and the existing US-95 alignment. The following arterials have no additional ROW requirements and would therefore have no direct impacts on community facilities:

- ▶ Rancho Drive from Craig Road to Alta Drive;
- ▶ Carey Avenue from Rancho Drive to Clayton Street;
- ▶ US-95 from Craig Road to Rainbow Boulevard;
- ▶ Summerlin Parkway from Rainbow Boulevard to Rampart Avenue;
- ▶ Torrey Pines Drive from Craig Road to Washington Avenue;
- ▶ Tenaya Way from Westcliff Drive to Smoke Ranch Road;
- ▶ Arville Street from Charleston Boulevard to Sahara Avenue;
- ▶ Desert Inn Road from Durango Drive to Jones Boulevard; and
- ▶ Durango Drive from Edna Avenue to Desert Inn Road.

Though the following arterials would require additional ROW, there are no community facilities within these portions of the impact study area:

- ▶ Industrial Road from Wyoming Avenue to Sahara Avenue;
- ▶ Valley View Boulevard from Sahara Avenue to Desert Inn Road; and
- ▶ Alta Drive from Rancho Road to Martin Luther King Boulevard.

#### **b. Indirect Impacts**

##### **■ Martin Luther King Boulevard from Craig Road to Charleston Boulevard**

Widening Martin Luther King Boulevard from four to six lanes would reduce congestion and improve traffic flow thereby potentially increasing the emergency response time for the City of North Las Vegas Fire Station No. 53. For those facilities that serve children such as the Prentiss Walker Memorial Pool and Park, André Agassi Boys & Girls Club, and Kermit R. Booker Elementary School, widening Martin Luther King Boulevard could pose special safety concerns for pedestrian crossing.

Access to the Church of Christ would also pose a safety problem for those motorists that would access the church by taking a left turn as there are no other side roads from which it can be accessed. The Greater St. John's Missionary Baptist Church can be accessed from Hasse Avenue. No change in access or in safety of access would occur.

Desert Lane Care Center, Reach Out, Child Development Center, New Revelation Baptist Church, and Greater Evergreen Missionary Baptist Church do not abut Martin Luther King Boulevard and would not be affected by its widening. Temporary disruption of visitation to these facilities could be experienced due to construction. Should Alta Drive, between Rancho Road and Martin Luther King Boulevard, be constructed simultaneously with Martin Luther King Boulevard, circulation to Desert Lane Care Center, Reach Out, and the Child Development Center could be further affected.

■ **Martin Luther King Boulevard/Industrial Road Connector**

Should American Medical Response continue to operate, access to Martin Luther King Boulevard for northbound journeys would become more circuitous as Charleston Boulevard would have to be crossed from Desert Lane where there is currently no traffic light. All other access would not be impacted. This could reduce emergency response time for calls requiring northbound travel on Martin Luther King Boulevard. The First Presbyterian Church of Las Vegas would potentially experience greater visitation given the increased circulation that would occur with this north-south connector.

■ **US-95 from Rainbow Boulevard to Martin Luther King Boulevard**

Under Alternative A, The Lorenzi Park and the Nevada State Museum and Historical Society may experience reduced visitation due to the residential displacements along Rhododendron and Austin Avenues. However, because these two community facilities are not specifically neighborhood oriented but are considered to be destination facilities for all of the Las Vegas Valley, the loss of residences in this area is not likely to reduce visitation to any great degree. Additionally, these local visitation losses could be off-set by improved circulation to the area as a result of reduced congestion on US-95.

All other potential indirect impacts as a result of widening US-95 between Rainbow and Martin Luther King Boulevards are the same for both alternatives. These are discussed below.

The Christ Lutheran Church northwest of US-95 and Torrey Pines could experience a decline in membership given the loss of multiple-family residences from the adjacent Catalina Apartments and at the Azure Crest Town homes at the southeast corner of US-95 and Torrey Pines. Both the Metro Police Station Northwest Area Command and the Las Vegas Fire Station No. 6 would be positively impacted by the reduced congestion that would result from the proposed project. Because the Mirabelli Park is a neighborhood park, visitation would be somewhat reduced as a result of the displacement of apartment buildings at Azure Crest Town homes. These visitation levels would not likely decrease for the Mirabelli Community Center as it serves a larger area.

The Prime Time Preschool and Child Care Center would have a small portion of their lot taken for easement purposes. This would not pose any impact to the operation of this facility, though temporary construction related disturbances may occur. No change in access nor circulation would be expected.

Western High School would experience some decline in numbers of students from the residential displacements incurred along US-95. This loss in number of students would be minimal and would likely be offset by future relocations within the same service area of the high school. Those students that travel to Western High School along US-95 would experience longer commutes during the construction phase of the project.

The Ruth Fyfe Elementary School would likely experience only a very minor reduction in attendance from the displacements to the east of Valley View with this project. The school does not transport any children along or across US-95; thus, construction of the project would not pose any adverse impacts. The school will experience increased noise levels with the proposed project as well as with the No-Build Alternative. Noise levels are predicted to increase from 66 dBA at present to 79 dBA with the proposed project. The installation of noise barriers will provide mitigation.

Mirabelli park and Community Center abutting US-95 west of Jones Boulevard will experience increased noise levels with the proposed project as well as with the No-Build Alternative. Noise levels of 73 dBA at the present time are predicted to be 72 dBA with the proposed project. The installation of noise barriers will provide mitigation.

Several community facilities such as, The Frank Garside Jr. High School located southwest of Torrey Pines Drive and Hyde Avenue, First Christian Church, Las Vegas Indian Center, and the Doyné Medical Clinic, are located far enough from US-95 and would therefore not experience any adverse impacts by its widening. Positive impacts for these facilities could be increased circulation due to reduced congestion along US-95.

#### ■ **Rancho Drive From Craig Road to Alta Drive**

Neither the First Christian Church, nor the Zelzah Shrine Temple would be impacted by the proposed project as Rancho Drive is already six lanes between US-95 and Alta Drive. The City of Las Vegas Fire Station No. 3 would be better served by improved flow of traffic and reduced congestion along Rancho Drive. Because the Little Round-Up Pre School and Child Care Facility does not abut Rancho Drive, access to and from the facility would not be impacted. The Shadow Mountain Transitional Rehabilitation and Care Center primarily services the elderly. For southbound motorists, crossing three lanes could pose an increased safety risk as there are no traffic signals at the intersection of Duncan Drive and Rancho Drive.

#### ■ **Carey Avenue From Rancho Drive to Clayton Street**

Because the Gilbert Magnet School does not abut Carey Avenue, access to and from the school by motorists would not pose a safety problem. For school children that cross Carey Avenue by foot, widening Carey Avenue from two to four lanes could pose additional pedestrian crossing safety concerns.

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**■ US-95 From Craig Road to Rainbow Boulevard**

Widening this section of US-95 from four to six lanes within existing ROW would not affect access to and from the Columbia Sunrise Mountain View Hospital and Medical Center and Sierra Health Services. Circulation may be improved for these facilities as a result of reduced congestion along this section of US-95. Because the McMillan and Katz Elementary schools are not adjacent to US-95, they would not experience any changes in access. Circulation may be improved for these schools as a result of reduced congestion along US-95 as well. Because students of these schools are not bused across or along US-95, construction of US-95 would not cause any school bus transportation impacts.

**■ Summerlin Parkway From Rainbow Boulevard to Rampart Avenue**

The West Valley Preschool and Day Care and the West Valley Church are located on Westcliff Drive approximately 600 feet from the Summerlin Parkway. Predicted noise levels are not expected to exceed 66 dBA. The multiple medical offices facility, located south of Summerlin Parkway on Buffalo Drive is predicted to have future noise levels exceeding 71 dBA. Increased noise levels can be mitigated by the installation of noise barriers at this location.

The Angel Park Golf Course is located east of the Rampart Boulevard adjacent to the Summerlin Parkway. The golf course will experience increased noise levels with the proposed project. Noise levels at the closest point on the golf course are predicted to increase from 65 dBA at present to 77 dBA within the proposed project. The installation of noise barriers would provide mitigation.

**■ Torrey Pines Drive From Craig Road to Washington Avenue**

The Tobler Elementary School could experience greater pedestrian safety hazards from widening Torrey Pines Drive from two to four lanes. Motorist access to and from the school would not be impacted. Neither the Foothills Baptist Church nor the Calvary Community Church would experience any long-term impacts, though visitation to these churches could be reduced during construction. The Center for Vietnam Veterans does not abut Torrey Pines and would not be impacted.

**■ Tenaya Way From Westcliff Drive to Smoke Ranch Road**

Cimmeron Memorial High School would not experience any long-term impacts as Tenaya Way is already four lanes along its boundary. Construction along other portions of Tenaya Way could impose short-term circulation impacts. For those students that commute to Cimmeron Memorial High School along US-95, delays in transportation time to school during the construction of US-95 may be experienced. Because Tenaya Way is currently four lanes at the intersection of Westcliff, the Westcliff Medical and Dental Center would not experience any impacts.

**■ Arville Street From Charleston Boulevard to Sahara Avenue**

By eliminating the median turn lane on Arville Street, left turn access by northbound motorists to Shadow Hills Baptist Church may become more hazardous. Construction may impose short-term circulation impacts.

**■ Alta Drive From Rancho Drive to Martin Luther King Boulevard**

Because the Alta Care Home abuts Alta Drive and cannot be accessed by any other side roads, improved flow of traffic may impede access to this facility especially for westbound motorists making a left turn to access this facility. While the Child Development Center also abuts Alta Drive, Desert Lane can serve as an alternate point of access. No major access impacts would occur for this facility. Reach Out, and the Clark County Social Services Center would not likely have any access impacts from the proposed project; though, should the widening of Alta Drive and the widening of Martin Luther King Boulevard between Charleston Boulevard and Bonanza occur simultaneously, visitation to these facilities would likely decrease during the construction period.

**■ Desert Inn Road From Durango Drive to Jones Boulevard**

The U.S. Post Office Spring Valley Branch would likely experience a small increase in visitation due to improved flow of traffic along a widened Desert Inn Road.

The following arterials do not have community facilities within those portions of the impact project area:

- ▶ Industrial Road from Wyoming Avenue to Sahara Avenue;
- ▶ Valley View Boulevard from Sahara Avenue to Desert Inn Road; and
- ▶ Durango Drive from Edna Avenue to Desert Inn Road.

**c. Mitigation**

For those facilities that service either children or the elderly, and that are located on those portions of arterials that would be widened, traffic signals will be considered to improve the safety of motorists and/or pedestrians. These facilities are identified below.

**■ Martin Luther King Boulevard From Craig Road to Charleston Boulevard**

Pedestrian crossing signals will be considered at Martin Luther King Boulevard and Washington Avenue for the André Agassi Boys and Girls Club, as well as at Martin Luther King Boulevard and Balzar Avenue for the Kermit R. Booker Elementary School, and at Martin Luther King Boulevard and June Street for the Prentiss Walker Memorial Pool and Park. Alta Drive from Rancho to Martin

Luther King Boulevard, and Martin Luther King Boulevard from Charleston Boulevard to Bonanza should not be widened simultaneously.

■ **Martin Luther King Boulevard/Industrial Road Connector**

Negotiations with officials from American Medical Response will be conducted to attempt to meet their need for efficient access to major highways and roads both during and after construction. Should this facility not be able to operate at its current location, all efforts will be made to relocate this facility within the same general area. These efforts would include negotiation for a replacement land purchase east of I-15 and north of Charleston Boulevard.

■ **US-95 From Rainbow Boulevard to Martin Luther King Boulevard**

Adcock Elementary School will be reconstructed on the land of the adjacent Torrey Pines Park. The cost of replacement will be paid for by the proposed project. The Torrey Pines Park will be constructed on the existing site of the Adcock Elementary School. The new school will be opened before the old school closes so that no disruption to the school's operation will occur. The new school will provide a functional replacement of the Elementary School, constructed and equipped to current Clark County School District standards for an elementary school.

With the proposed project, the Las Vegas Pedestrian Path and Bikeway will be relocated adjacent to the southbound side of the widened and realigned US-95. This functional replacement of the pedestrian path and biking will serve as an appropriate mitigation to maintain the intended function of this recreation facility.

Appropriate screening and the planting of new trees and vegetation may serve to reduce impacts by Alternative B to the proposed LVVWD Mojave Desert Preserve. However, due to the sensitive nature of the visual landscape associated with this property, and the extent of impact due to the loss of mature trees and vegetation, mitigation such as this will not fully serve to mitigate the visual impacts to this property and the proposed master plan activities.

Revising the Master Plan Trails and Preserve Area to accommodate the US-95 realignment may need to be considered to mitigate the loss of the proposed trails within the North Well Field Preserve Area. The identification of candidate sites and properties outside of the North Well Field is not feasible or practical since the purpose for the Mojave Desert Preserve Master Plan is to preserve and enhance the lands and resources within the North Well Field property. No further mitigation is available.

The placement of noise barriers between the widened U-95 and the community facilities, schools and parks impacted by increased noise will serve to reduce the predicted noise levels and limit any adverse impacts.

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- **Rancho Drive From Craig Road to Alta Drive**

A traffic light will be considered at Duncan Drive and Rancho Drive to ensure safer access to the Shadow Mountain Transitional Rehabilitation and Care Center.

- **Carey Avenue From Rancho Drive to Clayton Street**

Because the Gilbert C V T Elementary School operates on a nine-month schedule, widening of Carey Avenue should take place during the summer months. Due to school rezoning, there are no students from the south attending the Gilbert CVT Elementary School so that mitigation is not needed.

- **US-95 From Craig Road to Rainbow Boulevard**

No mitigation is necessary along US-95 from Craig Road to Rainbow Boulevard as these facilities would not incur any impacts.

- **Summerlin Parkway From Rainbow Boulevard to Rampart Avenue**

The installation of noise barriers along the Summerlin Parkway will provide mitigation for increased noise levels.

- **Torrey Pines Drive From Craig Road to Washington Avenue**

Pedestrian crossing lights will be considered at Torrey Pines Drive and Buckskin Avenue to ensure safer pedestrian crossing for school children attending Tobler Elementary School. Because Tobler Elementary School operates on a nine-month schedule, construction should take place during the summer months.

- **Tenaya Way From Westcliff Drive to Smoke Ranch Road**

No mitigation is necessary along this portion of the proposed project as only restriping will occur in those places along Tenaya Way where community facilities are located.

- **Arville Street From Charleston Boulevard to Sahara Avenue**

No mitigation measures will be taken to reduce left turn hazards to the Shadow Hills Baptist Church.

- **Alta Drive From Rancho Road to Martin Luther King Boulevard**

The widening of this portion of Alta Drive and Martin Luther King Boulevard between Bonanza and Charleston Boulevard will not occur simultaneously. Access impacts to the Alta Care Home will not be mitigated.

**■ Desert Inn Road From Durango Drive to Jones Boulevard**

No mitigation measures are required along this arterial, as circulation impacts to the U.S. Post Office, Spring Valley Branch, would be considered beneficial.

The following arterials do not have community facilities within those portions of the impact project area, thus no mitigation measures are required:

- ▶ Industrial Road From Wyoming Avenue to Sahara Avenue;
- ▶ Valley View Boulevard From Sahara Avenue to Desert Inn Road; and
- ▶ Durango Drive From Edna Avenue to Desert Inn Road.

**6. Neighborhoods and Neighborhood Cohesion**

There are several neighborhoods which are either traversed or bordered by one or more of the roadways proposed for improvement. Some neighborhoods will be directly impacted by property takings within the neighborhood; and some will indirectly impacted by changes in access and circulation, or by noise and visual intrusions. Because all improvements, with the exception of the Martin Luther King Boulevard/Industrial Connector, are designed along existing arterials and highways, there would be no physical barrier impacts, nor re-routing or vacating of local streets. Visual and noise impacts of the proposed improvements can vary from section to section depending on elevation, roadway width, and structural design. These visual and noise impacts are discussed in greater detail in the visual analysis in the Socioeconomics and Noise Technical Studies which have been prepared separate to the FEIS.

The degree of disruption to neighborhood cohesion includes the proportion of the community that is displaced by the requirement for ROW; the proximity of other neighborhoods in relation to the affected community by virtue of circulation; impacts to the neighborhood's community facilities, the social fabric of the individual neighborhood; and the cohesiveness or physical character of the neighborhood.

The analysis of Environmental Justice, which is included in this section of the FEIS, indicates that there are enclaves of minorities, low-income groups, and the elderly that warrant special consideration for relocation service. Those neighborhoods identified as having high proportions of minorities are discussed in this section as well.

**a. Impacts**

The following is an analysis of the potential direct and indirect impacts to the various neighborhoods in the project area by each of the proposed improvements. There are no identifiable neighborhoods north of US-95 between Valley View and Wildrose Street, where Alternative A would displace an additional 47 single-family residences. However, 15 single-family residences east of Wildrose Street to Rancho Drive north of US-95 and south of Washington Avenue are considered part of the

Rancho South/Rancho Oakey neighborhood. Impacts related to Alternatives A and B are analyzed separately within this neighborhood.

### (1.) Neighborhoods Subject to both Direct and Indirect Impacts

#### Charleston Neighborhood Preservation

Of the estimated 32,240 residents within the Charleston Neighborhood Preservation, about 538 persons would be displaced by the widening of US-95 (see Table VI-18). This represents a 1.7 percent population loss within the neighborhood. These displacements would occur along the north and south sides of US-95 which already divides the neighborhood into subgroups. The loss of residents in this area would also likely be offset by displaceds relocating within the neighborhood which has an estimated 5.4 percent vacancy rate. Ten businesses located north of US-95 between Torrey Pines Drive and Jones Boulevard would be displaced (see Table VI-19). One business just east of Jones Boulevard would also likely be displaced due to a loss of access. Other improvements slated to occur in the Charleston Neighborhood Preservation are the widening of Summerlin Parkway, widening of Tenaya Way, and connecting of Tenaya Way over Summerlin Parkway. No direct impacts to the community are anticipated by these later improvements. Indirectly, however, these improvements are expected to improve access to and from the neighborhood and circulation within the community. The widening and connecting of Tenaya Way over Summerlin Parkway would likely increase the volume of traffic in the western portion of the neighborhood, but this is not expected to change the character of the community to any degree. With reduced traffic congestion on US-95, access to and from all community facilities will be improved, particularly for the Mirabelli Community Center, City of Las Vegas Northwest Police Substation, and City of Las Vegas Fire Station No. 6 which are located directly south of US-95. Noise levels will increase for residents in the community. These impacts and their mitigation are evaluated in detail in the Noise Technical Report. While the Charleston Neighborhood Preservation is one of the most cohesive communities in the project area, the loss of residences and businesses is not expected to incur any reduction in community cohesion. Indirect impacts are also not expected to pose any reduction in community cohesion.

#### Rancho South/Rancho Oakey

Rancho South/Rancho Oakey is the only neighborhood that would be differently affected by the two alternatives proposed on the eastern portion of US-95. Under Alternative A, an additional 15 single-family residences would be displaced between Wildrose Street and Rancho Drive just north of US-95. A total of 250 residents would be dislocated in Rancho South/Rancho Oakey under this alternative which represents 2.04 percent of the neighborhood's population. Under Alternative B, 209 residents would be displaced, representing 1.7 percent of the total population. Displacements for both alternatives include 14 single-family homes due to the widening of Alta Drive, two single-family homes on Onyx Way just south of US-95 due to its widening, and 17 single-family homes and 36 multi-family dwellings northwest of Martin Luther King Boulevard and Charleston Boulevard as a result of the Martin Luther King/Industrial Road Connector.

**TABLE VI-18**  
**Neighborhood Residential Displacement Impacts**  
**Estimated Percentage of Population as a Result of the Proposed Project**

<u>Neighborhoods</u>	<u>Total Housing Units</u>	<u>Total Population</u>	<u>Potential Housing Units Lost</u>	<u>Potential Population Loss</u>	<u>Percent Pop. Loss</u>
Charleston Neighborhood Preservation	12,969	32,239	229	538	1.67%
Rancho South/Rancho Oakey Alternative A	5,402	12,259	110	250	2.04%
Rancho South/Rancho Oakey Alternative B	5,402	12,259	95	209	1.70%
Clark High School Neighborhood	3,954	8,314	1	3	0.04%
Meadows Village and Las Vegas Business Owners Associations	2,452	4,867	1	2	0.04%
West Las Vegas	5,059	13,551	1	1	0.01%
<b>Total Alternative A</b>	<b>29,836</b>	<b>71,230</b>	<b>342</b>	<b>794</b>	<b>1.11%</b>
<b>Total Alternative B</b>	<b>29,836</b>	<b>71,230</b>	<b>327</b>	<b>753</b>	<b>1.06%</b>

Note: Neighborhood residential displacement numbers do not equal those in the project area as there are some displacements outside of designated neighborhoods. Persons per housing unit are calculated at the block level where displacements would likely occur.

**Table VI-19**  
**Neighborhood Business Displacement Impacts**

<u>Neighborhoods</u>	<u>Direct Displacement Impacts</u>	<u>Indirect Potential Displacement Impacts</u>
West Las Vegas	4 (Bonanza)	11 (MLK) 3 (Bonanza)
Rancho South/Rancho Oakey	8 (MLK/Industrial Connector)	3 (MLK/Industrial Connector)
Meadows Village/Las Vegas Business Owners	5 (Industrial Road)	3 (Industrial Road)
Charleston Neighborhood Preservation	10 (US-95 at Jones)	1 (US-95 at Jones)
Clark High School Neighborhood	1 (Valley View)	1 (Valley View)

Note: Not all business displacements within the project area occur in designated neighborhoods.

Indirect impacts anticipated in this neighborhood are an increase in traffic volumes at its eastern boundary along Martin Luther King Boulevard as a result of its widening and connection to Industrial Road. Traffic volumes are also likely to increase as a result of the widening of Rancho Drive and Alta Drive. While traffic volumes are expected to increase along these improved arterials, circulation within the neighborhood is expected to improve as a result of decreased traffic congestion. Access to and from Rancho South/Rancho Oakey is also expected to improve as a result of reduced congestion as well. These improvements to access and circulation bode well for the numerous medical facilities that are located within the neighborhood and for medical facilities that are proposed for development within the next several years.

While the loss of residents in the Rancho South/Rancho Oakey neighborhood are not negligible, housing vacancy within this community is at 8.6 percent which should provide considerable options for displacees to relocate within the community. Traffic volume increases along Martin Luther King Boulevard are not likely to alter the character of the community because this arterial already serves as the eastern boundary to the community. Rancho Drive and Alta Drive transect the northeastern portion of the community. Widening these arterials may serve to further isolate the northeastern corner of this neighborhood as traffic volumes are expected to increase. Visual impacts are also anticipated for those residing to the east of Rancho South/Rancho Oakey due to the Martin Luther King/Industrial Road Connector which will tower approximately 30 feet from the ground where Charleston Boulevard currently intersects Martin Luther King Boulevard. These visual impacts are further analyzed in Section V.E.1. With increased capacity on Martin Luther King Boulevard, Rancho Drive and Alta Drive, noise levels are also anticipated to increase in the northeastern portions of the neighborhood. These noise impacts are analyzed in detail in the Noise Technical Study.

While the net number of residential dislocations is not high within Rancho South/Rancho Oakey, the combination of these along with increased north-south traffic volumes, and noise and visual impacts will influence some loss to a sense of community. These impacts are not likely to be considered however, since community cohesion is already on the decline in this neighborhood despite these roadway improvements.

### **West Las Vegas Neighborhood**

Of the estimated 5,060 housing units in the West Las Vegas Neighborhood, only one single-family residence along Bonanza Road is anticipated to be displaced. Four businesses south of Bonanza Road would be directly displaced while three south of Bonanza and 11 northeast of Washington and Martin Luther King Boulevard would have some portion of their property acquired which may or may not cause them to close their businesses completely. Of the eleven businesses along Martin Luther King Boulevard north of Washington that could potentially be displaced, all are minority owned, serve local clientele predominantly, and are central meeting places for the community. These businesses also have strong ties with each other and have successfully rallied to fight crime and gang related problems in the community.

Indirect impacts to the West Las Vegas neighborhood include increased traffic volumes on Rancho Drive and Martin Luther King Boulevard as a result of their widening. Widening these arterials and US-95 will serve to improve access to and from the neighborhood and will also improve circulation within the community as traffic congestion would be reduced.

The residential displacement in West Las Vegas Neighborhood represents less than 0.01% of the total population and is therefore considered to be a very small impact. Business displacements in this community, particularly those potential business displacements northeast of Martin Luther King Boulevard and Washington, could pose more considerable impacts to community cohesion however, as these are central meeting places for the community. Increased traffic volumes along Rancho Drive are not expected to adversely impact community cohesion within the West Las Vegas Neighborhood though pedestrian access to the neighboring Twin Lakes Elementary School could be more hazardous. Increased traffic volumes along Martin Luther King Boulevard could act to further separate subgroups within the community and could make pedestrian crossing at the Booker Elementary School and André Agassi Boys and Girls Club more hazardous.

#### **Meadows Village/Las Vegas Business Owners**

Of the 2,450 housing units in Meadows Village/Las Vegas Business Owners neighborhood, one multi-family dwelling would be displaced as a result of the widening of Industrial Road. Five businesses would be fully displaced and three would have a partial taking of property which may cause these businesses to close. Increased traffic volumes are anticipated on Industrial Road through this community as it will be connected to Martin Luther King Boulevard which will serve as a major north-south connector for the Las Vegas Valley. Access to and from the community will be improved as traffic congestion will be reduced on Industrial Road. Circulation within the neighborhood is not likely to change to any great degree.

Impacts to community cohesion within the Meadows Village/Las Vegas Business Owners neighborhood are considered to be minimal for several reasons. The residential displacement represents less than a 0.05 percent population loss to the community. Given the housing vacancy rate of 8.6 percent and the high ratio of rental units in the neighborhood, the displacee could easily relocate within the same community. The businesses that would be displaced serve the greater Las Vegas Valley and are not focal meeting places for the community. As it already has an urban character, and the multi-family residential area is bordered on the west by a mix of commercial and industrial uses, increased volumes of traffic along Industrial Road would not change the character of the neighborhood. These impacts do not pose any threat to an already low level of community cohesion within this community

#### **Clark High School Neighborhood**

As a result of the widening of Valley View Boulevard, one single-family residence and two gas stations at the southeastern and southwestern intersection of Valley View Boulevard and Sahara Avenue would be displaced. Of the approximately 4,870 residents in this neighborhood, the

residential displacement represents less than 0.05 percent of the population. These displacements occur in the block group which has been identified as having a high percentage of foreign born people.

Widening Valley View Boulevard, which transects Clark High School Neighborhood is expected to reduce traffic congestion. Traffic volumes however are expected to increase to a small degree as this arterial will become a more desirable north-south connector. By reducing traffic congestion, access to and from the community is expected to improve. Circulation within the community will also be improved by reduced congestion, but this may be offset somewhat by the small increase in traffic volumes. Pedestrian crossing, which is common along Valley View as this street transects both residential areas and local commercial centers, may become more hazardous by the increase in traffic volumes as well.

Displacement impacts in this neighborhood pose no major concerns to community cohesion. The two businesses likely to be displaced serve Sahara Avenue and Valley View Boulevard commuters primarily. The potential adverse impacts to circulation and pedestrian crossing due to increases in traffic volumes along Valley View Boulevard could be magnified for the group of elderly residents of this community which largely reside at the mobile home park to the east of Valley View.

## **(2.) Neighborhoods Subject to Indirect Impacts**

### **Independent Northwest/The ACT**

Transected by US-95, Torrey Pines Drive, and Rancho Drive, which are all slated for widening, this large neighborhood will notice considerable improvement in access and circulation. With major housing developments taking place to the northwest, widening these arterials and US-95 will hinder projected traffic congestion and facilitate the larger volumes of traffic that are expected as a result of these developments. While US-95 and Rancho Drive currently facilitate heavy traffic volumes through predominantly commercial and industrial zones, Torrey Pines Drive primarily traverses residential areas. Increased traffic volumes along this street could impose pedestrian crossing problems, particularly at the Tobler Elementary School which is located on Torrey Pines Drive. Another community facility within the neighborhood which may experience adverse pedestrian and motorist access impacts due to increased traffic volumes is the Mountain Transitional Rehabilitation and Care Center located to the east of Rancho Drive. As centers within the neighborhood that promote community cohesion, increasing access hazards to these facilities could cause minor adverse impacts to the developing community cohesion within this neighborhood.

### **Sincerely Concerned/NFPC**

Bordered by Torrey Pines Drive to the west and Rancho Drive to the east, this neighborhood would experience considerable improvement in access. Because none of the proposed roadway improvements transect this neighborhood, no major change in circulation is expected. While widening Torrey Pines Drive could impose some access problems to Sincerely Concerned/NFPC's

western neighborhoods and to the Lilly and Wing Fong Elementary School due to an increase in traffic volumes, these changes are expected to be very minor as Torrey Pines is already at four lanes in most portions of this area.

### **Cheyenne/Del Prado**

Transected by Martin Luther King Boulevard, this neighborhood will experience greater volumes of traffic as northern portions of the Valley continue to grow and as Martin Luther King Boulevard becomes a major north-south connector for these newer northern communities. Circulation within the neighborhood will experience some adverse impacts as crossing Martin Luther King Boulevard is likely to become more hazardous for both pedestrians and motorists as a result of increased traffic volumes. Eastern residents who visit the Cheyenne Ridge Park will especially be affected by these traffic volume increases. Access to and from the central areas of the Las Vegas Valley will be improved for the residents of Cheyenne/Del Prado.

### **Sterling Springs**

Bordered to the east by Torrey Pines Drive, this community will likely experience improved access. No changes to circulation are expected.

### **Smoke Ranch**

This small neighborhood is bordered to the east by Torrey Pines Drive. No change to circulation within the neighborhood is anticipated. Motorist access is expected to improve to and from the core of the Las Vegas Valley as a result of reduced congestion on Torrey Pines, however access to its eastern neighbors, particularly pedestrian crossing may be made more difficult as a result of increased traffic volumes on Torrey Pines Drive.

### **Eastland Heights**

Bordered by Rancho Drive to the east, no impacts are expected to occur within this community. Access to and from the community will likely improve as congestion on Rancho Drive will be reduced. Circulation within the neighborhood would experience no change.

### **Twin Lakes**

Twin Lakes is also bordered by Rancho Drive to the east. No change in circulation is expected, as reduced traffic congestion on Rancho Drive due to its widening should improve access to and from this neighborhood. Increased volumes of traffic on this arterial could increase hazards in accessing its West Las Vegas neighbor to the east. This is especially a concern for pedestrians crossing Rancho Drive from the West Las Vegas Neighborhood to access the Twin Lakes Elementary School.

**Charleston Estates**

Just south of Charleston Estates is US-95 which is proposed to be widened. Associated with this widening are potential increases in noise levels and potential visual intrusions. These impacts are discussed in further detail in the Noise Technical Study and in Section V.E.1 of this report. Access to this community is expected to improve as a result of reduced congestion on US-95. There will be no change in circulation within this neighborhood as a result of the proposed project.

**Westcliff Property Owners**

This neighborhood is bordered by Summerlin Parkway to the north which is proposed to be widened. Access to and from this community will be improved as a result of reduced congestion on both Summerlin Parkway and US-95. No change in circulation is expected within the community.

**West Desert Inn Neighborhood**

Bordered and transected by Desert Inn Road, this neighborhood will likely experience higher volumes of traffic as Desert Inn Road would be widened to six lanes and would continue from Cimarron Road to Durango Drive where the land is currently undeveloped. Access to its western neighbors will be improved, though access to and from the central areas of the Las Vegas Valley is not expected to change. The proposed improvements to Desert Inn Road will increase traffic volumes along this arterial as it will serve as a major east-west connector within the Valley. With no sensitive community facilities immediately adjacent to Desert Inn Road, pedestrian crossing should not be impacted as a result of this increase in traffic. Circulation within the community will be improved by reduced congestion on Desert Inn, however this improvement will be offset by increases in traffic volumes.

**West Sahara**

This neighborhood will experience improved access by improvements to Durango Drive which borders this community to the east. Improvements to Desert Inn Road will also improve access to and from the central area of the Valley. No change to circulation within the community is expected.

**Buffalo Area/Charles Lam and Canyon Gates**

Neither of these two neighborhoods is either bordered or transected by any of the proposed roadway improvements in the project area. Access to and from the central area of the Las Vegas Valley should be improved for both these neighborhoods however as a result of widening Durango Drive to the south and Summerlin Parkway to the north.

**Sun City Summerlin, South Shores Community, Desert Shores and Presidio/Excel/Hobble Creek**

All four of these neighborhoods are neither transected or bordered by any of the proposed roadway improvements in the project area. Access to and from the central area of the Valley should be improved for all of these neighborhoods however as a result of the widening of US-95, Summerlin Parkway, and Tenaya Way. Connecting Tenaya Way over Summerlin Parkway is also expected to improve these neighborhoods access to the southwestern portions of the Las Vegas Valley. No change in circulation within these neighborhoods is anticipated.

**b. Mitigation**

The mitigation measures available to minimize impacts to the cohesion and disruption of the individual neighborhoods within the project area are the composite of the mitigative actions identified under the analysis of residential displacements, land use, Environmental Justice, community facilities, infrastructure, visual character in the FEIS, and in the Noise Technical Study which has been prepared separate to the FEIS. Given the information available, the analysis has not identified any residential acquisition which would substantially or severely impact community cohesion. Potential business acquisition in the West Las Vegas Neighborhood could impact community cohesion to a recognizable degree, however. Mitigation proposed to avoid this impact include redesign of Martin Luther King Boulevard in this area to avoid acquisition of these businesses' parking spaces. As these businesses are owned by minorities, employ a large number of minority employees and serve a large percentage of minority populations, impacts to them and mitigation are further discussed in the following section on Environmental Justice.

Relocation and displacement assistance will be conducted pursuant to the federal Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended, and the policies and procedures set forth by the NDOT.

Several neighborhoods would experience some impacts to their cohesion by increased hazards to pedestrians crossing to access community facilities or local commercial centers. Many of these indirect impacts can be accommodated as part of the local planning review process which includes adding signalized crossings if warranted. Pedestrian crossing studies will be conducted to determine whether these signalized crossings or other pedestrian design treatments are necessary for pedestrians crossing the following arterials: Torrey Pines Drive for pedestrians accessing the Tobler Elementary School and Lilly and Wing Fong Elementary School; Rancho Drive for pedestrians accessing the Twin Lakes Elementary School, and the Shadow Mountain Transitional Rehabilitation and Care Center; Martin Luther King for pedestrians accessing the André Agassi Boys and Girls Club, the Cheyenne Ridge Park, and Booker Elementary School; and Valley View Boulevard for pedestrians crossing to access local commercial centers and particularly at the mobile home park on the east side of Valley View where a large group of elderly citizens reside.

## 7. Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994, directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

The purpose of this environmental justice review is to determine if a disproportionate share of the proposed project's adverse socioeconomic impacts are borne by minority and low income communities. This review was prepared in accordance with FHWA Order 6640.23, "*FHWA Actions to Address Environmental Justice in Minority Populations and Low Income Populations*."

This review examines the extent to which readily identifiable groups of minority or low income populations occur in or immediately adjacent to land to be acquired for the right-of way extension:

- have historically received a disproportionate share of projects and land uses that have had an adverse effect on the surrounding environment; and/or
- will receive a disproportionate and high level of adverse environmental impacts as a result of the proposed project.

The environmental justice study is an extension of the socioeconomic impacts analysis presented in the preceding pages. It draws upon the Business Impact Survey and other data presented earlier regarding business and residential displacement, and provides further detail on displacement impacts as they relate to minority or low income populations that might be geographically grouped around the project area. The environmental justice analysis also draws upon work conducted for the US-95 project in land use, community cohesion, noise, and air quality.

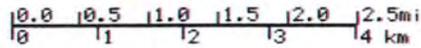
The geographic area under study in this review is the land within one-quarter mile of all improvements that will require acquisition of business or residential property. This area is referred to as the *Impact Study Area*. Figure VI-5 depicts the Impact Study Area. Included within the Impact Study Area are the following improvements that may require residential and/or business relocations.

- Widening Martin Luther King Boulevard to six lanes;
- Building the Martin Luther King Boulevard/Industrial Road Connector, and widening Industrial Road to six lanes;
- Widening US-95 to 10 lanes between Rainbow Boulevard and I-15;
- Widening Alta Drive for the Rancho/Alta Connector; and
- Widening Valley View Boulevard to six lanes.



**LEGEND**

- US 95 Project, Widening
- Census Block Grp
- Tract Bdy
- Lake/Pond
- Street
- Expressway
- Highway
- Impact Study Area**



<b>NEVADA DEPARTMENT OF TRANSPORTATION</b>	
<b>US-95 MIS/EIS</b>	
<b>Environmental Justice Studies</b> <b>Impact Study Area:</b> <b>Areas Within 1/4 Mile of Proposed Widening</b>	
<b>Louis Berger &amp; Associates, Inc.</b>	<b>FIGURE VI-5</b>

Within these areas, readily identifiable groups of minority and low income populations were delineated. These minority and low income communities were evaluated to determine if their populations were disproportionately subject to the effects of past project<sup>4</sup> as well as the proposed project, in relation to the overall population within the Impact Study Area. The methodology for delineating identifiable groups of minority and low income populations and analyzing disproportionate impacts is described below, and in more detail in the Socioeconomic Technical Study which has been prepared separate to this DEIS.

**a. Delineation of Readily Identifiable Groups of Minority or Low Income Population**

Figure VI-6 presents the portions of the Impact Study Area that have been identified as minority and low income communities. These areas include all blocks and block groups that have a high proportion of their population belonging to at least one of the following minority or low income populations, as identified in the criteria listed below:

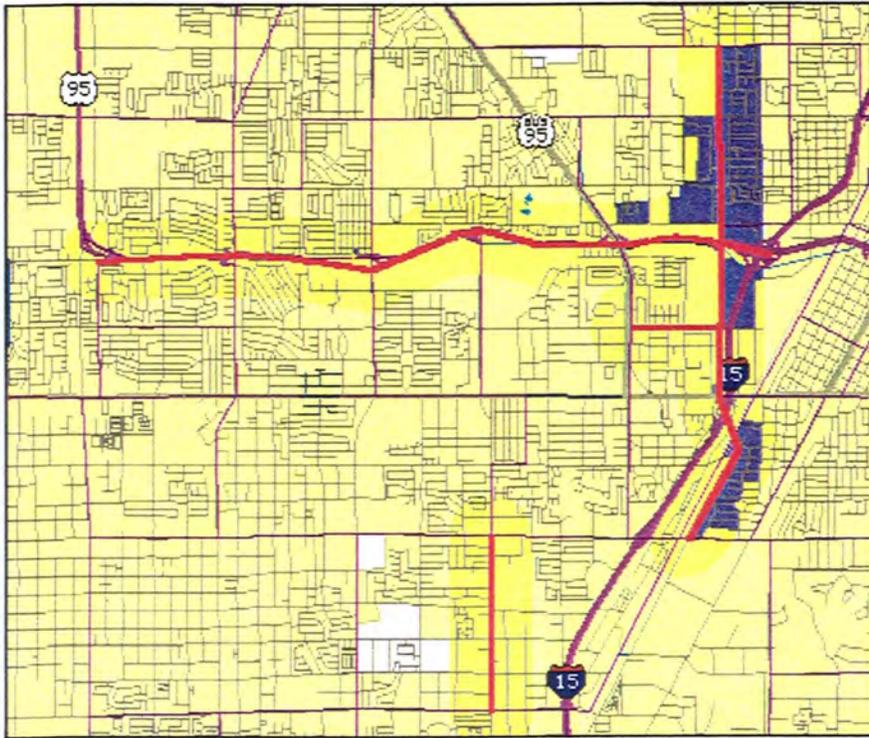
<b>Population</b>	<b>Criteria<sup>5</sup></b>
minorities: <ul style="list-style-type: none"> <li>• African Americans</li> <li>• Hispanics</li> <li>• Asian/Pacific Islanders</li> <li>• American Indians</li> </ul>	Greater than or equal to 50 percent of the population within the Census block.
low-income persons:	Number of persons in poverty is greater than or equal to 33 percent of the population within the block group.

Examination of the racial, ethnic and income characteristics of the Impact Study Area was performed at the smallest geographic level possible. From the 1990 Census, basic demographic data including race and Hispanic origin are available in summary form at the block level; income information is available only at the block group level. Given the growth of Las Vegas since the 1990 Census, population and demographic characteristics of these areas may have changed; however, the spatial relationships among Census-defined geographic areas with regard to the demographic characteristics under study can be reasonably assumed to have remained constant since 1990. See the Socioeconomic Technical Study for more detail on the delineation of minority and low income areas.

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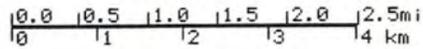
<sup>4</sup> FHWA Order 6640.23 does not require consideration of past histories of existing sources of environmental contamination as part of its analysis. In the interest of thoroughly covering the topic, NDOT has employed an in-depth analysis beyond the FHWA Order solely for this project.

<sup>5</sup> These criteria are not set in FHWA Order 6640.23. In the interest of thoroughly covering the topic, NDOT has employed an in-depth analysis beyond the FHWA Order solely for this project.



**LEGEND**

- US 95 Project, Widening
- Census Block Grp
- Tract Bdy
- Lake/Pond
- Street
- Expressway
- Highway
- Areas With High % Minority, Low Income Populations



<b>NEVADA DEPARTMENT OF TRANSPORTATION</b>	
<b>US-95 EIS</b>	
<b>Environmental Justice Studies</b> <b>Minority &amp; Low Income Pop. Within 1/4 Mile</b> <b>of Proposed Widening</b>	
<b>Louis Berger &amp; Associates, Inc.</b>	<b>FIGURE VI-6</b>

### ■ **Minority Populations**

According to 1990 Census data, 43 blocks in the Impact Study Area had minority populations totaling at least 50 percent of the block populations. The minority areas correspond with two neighborhoods as identified in the analysis of neighborhood cohesion. The area of Martin Luther King Boulevard between US-95 and Lake Mead Boulevard, known as the West Las Vegas neighborhood, is a minority community whose boundary coincides roughly with the delineation of minority blocks on Martin Luther King Boulevard. As previously noted, the West Las Vegas community shows some evidence of being cohesive because its neighborhood groups have become known for being active in community affairs and it is bonded by a common identity as well as common social and economic concerns.

The Meadows Village neighborhood, located east of Industrial Road and north of Sahara Avenue, was also delineated as a minority area. This area is largely transient in nature, and shows little evidence of cohesiveness.

### ■ **Low Income Persons/Persons In Poverty**

A review of 1990 Census data on the number of persons with a 1989 income level at or below the poverty line found five block groups with a poverty rate exceeding 33 percent. Four block groups are located on the eastern side of Martin Luther King Boulevard and one block group surrounds Western Avenue, and the proposed Martin Luther King Boulevard/Industrial Avenue Connector.

#### **b. Determination of Disproportionately High and Adverse Impacts on Minority and Low Income Populations**

The determination of whether minority and low income populations are subject to disproportionately high and adverse environmental impacts involves two principal considerations: evidence of previous disproportionate environmental impacts caused by past major projects or pre-existing sources of environmental contamination; and, a disproportionate distribution of impacts caused by the proposed project. The first consideration deals with projects or impacts which have occurred in the past and may still be affecting the minority and low income populations. One of the purposes of E.O. 12898 is to assure that minority and low income communities have not previously been "dumping grounds" for land uses that cause adverse environmental impacts. The second consideration involves a determination of whether plans for the proposed project have been directed toward minority and low income communities because of factors such as lower property values or expectations that there might be less effective citizen opposition.

Making a determination of whether or not minority and low income populations have been disproportionately impacted involves comparing the magnitude of impacts within and outside of the minority and low income communities. The impacts are inventoried and quantified to the extent possible within and outside of minority and low income communities. Then mitigation measures are recommended to address these impacts. After consideration of the mitigation measures, the magnitude of the post-mitigation impacts within minority and low income communities are

compared with those in the Impact Study Area as a whole, and a judgement is made to determine if the impacts to minority and low income populations are disproportionate.

It is also important to consider impacts which might affect these populations more severely than other communities because of the vulnerability of those populations. Such impacts could include, for example, the loss of jobs in low-income neighborhoods. These impacts are considered in the same manner as above.

More specifically, the following types of impacts were evaluated in this analysis:

- ▶ *Previous Environmental Impacts* Previous environmental impacts in a minority or low income community can arise from past projects which had major impacts, or an accumulation of land uses which cause adverse impacts.
- ▶ *The Proportion of Proposed Project Impacts Occurring in Minority and Low Income Communities* In analyzing the distribution of environmental impacts of the proposed project, five issues were considered:
  - residential displacement due to ROW acquisition;
  - business displacement;
  - noise impacts;
  - air quality impacts; and,
  - land use/socioeconomic impacts.

These represent the principal types of impacts that can occur with a suburban roadway project.

The Socioeconomic Technical Study includes detailed evaluations of each of the above areas of concern. The following is the conclusion to those evaluations.

Impacts related to environmental justice concerns were identified with respect to two of the above areas of concern: business displacement and land use/socioeconomic impacts. The impacts occur primarily to minority and low income populations located in the Martin Luther King Boulevard/Industrial Road corridor.

The West Las Vegas neighborhood on Martin Luther King Boulevard between US-95 and Lake Mead Boulevard is sensitive not only because of its minority/low-income status but because there is some evidence of community cohesiveness. Groups of neighborhood residents and businesses have become active in addressing community problems such as crime and gangs, and they are being assisted by local businesses. Impacts of the proposed project in this area include the possible displacement of up to 11 local businesses, and the potential for more difficult pedestrian access due to higher traffic volumes and widening of Martin Luther King Boulevard. These impacts are not considered disproportionate because there is no indication that the neighborhood has been treated differently from other areas either in the planning of the proposed project or previous land use

decision-making. However, because of the vulnerability of the neighborhood and the fact that it may possess social cohesion, these impacts should be addressed in mitigation planning.

Business displacement is a concern throughout the entire Martin Luther King Boulevard/Industrial Road area. The combination of the Martin Luther King Boulevard/Industrial Road Connector and the widening of Industrial Road, designed to create a new corridor for north/south traffic, could displace up to 24 businesses employing 1,120 persons in total, including nearly 100 minority employees. These improvements will primarily impact the industrial zone which runs along Western Avenue and Industrial Road. Much of the business loss will involve the displacement of production jobs, many of the jobs paying more than \$15 or \$20 per hour. The firms in this area are among the largest employers of all impacted businesses, and include the two largest impacted firms, employing about 885 persons between them.

Job losses could affect not only employees but nearby minority and low income communities as well. Loss of jobs in low-income areas can be a devastating blow, although this impact would probably not be as severe in the minority and low income communities as the total employment numbers indicate. There is some evidence that most employees at these firms do not live in the minority and low income communities, and that most of the potentially displaced businesses do not serve these areas. However, it is also important that businesses in West Las Vegas are actively involved in community life and contribute to addressing community problems. Given the vulnerability of the Martin Luther King Boulevard/Industrial Road corridor communities, mitigation measures will be considered to minimize job losses or the impacts thereof.

### c. Mitigation Measures for Environmental Justice Concerns

Mitigation measures to address impacts related to environmental justice concerns fall into two general categories (see the Socioeconomic Technical Study for more details):

- ▶ Business Displacement, and
- ▶ Pedestrian Access Concerns.

Business displacement impacts are primarily concentrated in the Martin Luther King Boulevard/Industrial Road corridor. Pedestrian access concerns occur primarily in the West Las Vegas neighborhood on Martin Luther King Boulevard between US-95 and Lake Mead Boulevard.

#### (1). Business Displacement Mitigation

Mitigation measures to specifically address environmental justice issues involve: 1) the identification of businesses that employ many local residents, and 2) a focus of mitigation efforts on businesses in the communities which have a local customer base and/or employ local residents.

Identification of business displacements that will have the greatest negative impact on local communities will require further investigation. In particular, the data currently available does not clearly identify businesses that rely on employees from the local community. Many businesses,

especially larger businesses, contacted through the Business Impact Survey could not provide information on the journey-to-work or mode-of-transportation to work used by their workers. In addition, data on employee addresses was not requested in that survey, which was intended to be broad and general in its scope. Criteria which would identify a business as one which has strong connections to the surrounding neighborhood include: 1) the extent to which it serves local residents, as opposed to a larger customer base that is city-wide, regional, or national in nature; 2) the extent to which the business utilizes the products and services or other local businesses—for example, through employees who patronize local establishments. Further information on a business's importance to a local community should be provided through more detailed surveys and/or through interviews with local community and business representatives.

Businesses in the minority and low income communities that have been determined to play an important role in the economic activity of an area should be the primary focus of mitigation efforts. Impacts felt within the minority and low income communities are best minimized through project design, as described in the business impacts section of this chapter. If displacement cannot be avoided through project design, relocation measures should emphasize the following:

- ▶ Displaced businesses that are located within minority and low income communities and serve an important role in the local community should receive priority in relocating to any available sites in or adjacent to the community.
- ▶ If a nearby relocation is not feasible for these businesses, relocation measures should address the specific negative impacts that relocation will have on the community.

## (2). Neighborhood Pedestrian Access Mitigation

Pedestrian access concerns result from widening and increased traffic volumes. As the analysis of impacts indicated, this could be a problem in West Las Vegas.

The West Las Vegas neighborhood shows signs of being socially cohesive. Cohesiveness in a modern neighborhood is an increasingly rare community resource that is being adversely impacted by economic, social, and environmental problems throughout the United States. A cohesive community can provide informal support networks that address such problems as crime, rides to work, child care, care of the elderly, and employment. A community with long-term family and friendship relationships and an established and respected leadership can effectively deal with such problems. This not only makes their community a better place to live, but can potentially reduce government expenditures that would otherwise have to be spent on additional social services.

In concert with community representatives, a plan will be established to address the impacts of the proposed project. This will include measures such as enhanced pedestrian crossings, as well as the business displacement mitigation measures addressed previously. Involvement of the community will be maintained throughout this effort.

#### **d. Community Outreach**

Public involvement in the identification and evaluation of alternatives is an important part of the processes promulgated by the National Environmental Policy Act (NEPA). For this project, a Major Investment Study was undertaken with the primary objective of obtaining broad public input as early as possible and throughout the period of alternatives identification, evaluation and comparison. During the Major Investment Study, several meetings were held with the West Las Vegas Neighborhood Association which represents much of the African-American community within the project area. Numerous alternatives for roadway improvements were presented in an attempt to identify potential impacts and benefits that may be realized by this particular community. For example, several major alternatives, which included making Washington Avenue and Bonanza Avenue one-way streets, received considerable opposition and were dropped from further consideration. The early design proposals for these roadway improvements within this community would have adversely affected the accessibility of many community facilities to this minority population and would have resulted in increased traffic through the many of the existing residential neighborhoods. However, through direct consultation with the West Las Vegas Neighborhood Association, design alternatives were developed that would limit any adverse impacts to this particular community.

The project area does possess several communities and neighborhoods with enclaves of Hispanic populations. However, direct impacts to these populations are considered minor. As part of the MIS Community Outreach Program, public meetings were held in locations convenient to these Hispanic populations. In addition, Spanish translators were available at these meetings. Possibly due to the negligible impacts to residential and community facilities with the proposed project within predominantly Hispanic neighborhoods, participation by residents of these neighborhoods was relatively light.

The public involvement effort began during the Major Investment Study and, continued through the environmental impacts study phase.

#### **e. Conclusion**

Based on the above impacts and proposed mitigation measures, the project will not cause disproportionately high and adverse effects on any minority or low income populations as discussed in E.O. 12898 regarding environmental justice.

### **8. Community Accessibility**

There are numerous community facilities, parks, schools and churches located in the project area. Travel patterns and access to these facilities by pedestrians and bicyclists will not change with the proposed project.

Physical improvements included in the proposed project primarily expand existing freeways and arterial street, and do not create new alignments which could interfere with pedestrian and bicycle routes.

The proposed freeway improvements will reconstruct and retain existing crossings and add one additional crossing at Tenaya Way over the Summerlin Parkway. With one exception, pedestrian and bicycle access to freeway crossings will remain available during the entire period of construction. The one exception is the Torrey Pines Bridge over US-95 which would be closed for construction for about nine months. During this period, residents north of US-95 would access parks and community facilities on the south side of US-95 via Jones and Rainbow Boulevards. This impact will be temporary. Children from Garside Middle School who cross the Torrey Pines bridge to get to school will be bused by the Clark County School District during the period of construction. School zoning does not require Adcock Elementary School children to cross the Torrey Pines Bridge.

Improvement of the arterial streets included in the proposed project will provide increased opportunities for pedestrian and bicycle travel along existing routes, since the project will provide shoulders and sidewalks for existing streets which are not fully improved at the present time. Widening of Alta Drive, Martin Luther King, Industrial Road, Valley View Boulevard and Durango Drive will increase the time required for pedestrians to cross the street, potentially reducing pedestrian safety. Decreased pedestrian safety due to the widening of these streets will be offset by the installation of traffic signals with protected pedestrian phases which will be installed in response to traffic growth. The streets included in the proposed project are signalized at minimum one-mile intervals with ½ and ¼ mile signals common in high density/high traffic volume areas.

The proposed project will directly impact only one designated pedestrian/bicycle trail. This trail, known as the City of Las Vegas Pedestrian Path and Bikeway, parallels US-95 on the south side between Westcliff Avenue and Jones Boulevard and provides access to Adcock Elementary School, Torrey Pines Park and the Mirabelli Park and Community Center. The trail will be relocated and reconstructed as part of the proposed US-95 widening to avoid permanent impacts. With proper construction staging, constructing the new trail prior to demolishing the old trail, temporary impacts during construction can be minimized.

The Martin Luther King - Industrial Connector will be elevated through a predominantly industrial area on a new alignment. A new road connecting Martin Luther King Boulevard and Charleston Boulevard will be constructed to maintain vehicular and pedestrian access between the two streets. Safe pedestrian access across Charleston Boulevard to the church on Desert Lane will be maintained by replacing the existing MLK/Charleston intersection traffic signal with a traffic signal on Charleston Boulevard at the new connecting road and closer to the church.

The enhanced bus element of the proposed project will encourage increased pedestrian volumes on the arterial streets to access bus stops. Street improvements will include sidewalks to facilitate pedestrian access to buses. Bus stops will be located near pedestrian crossings wherever possible.

Park-and-ride lots will include bicycle racks to encourage use by bicyclists.

## 9. Visual and Aesthetic Impacts

This section analyzes potential impacts to the typical visual character of the area. Impacts to the area were evaluated using the methodologies promulgated by the Federal Highway Administration Office of Environmental Policy (DOT-FH-11-9694) and the American Society of Landscape Architects (ASLA). Assessment of the existing environment relied upon field reconnaissance and photographs taken during field work. Impacts to the existing environment were evaluated using preliminary engineering designs of horizontal alignment and vertical geometry of proposed roadway improvements.

The analysis considers landform, water, vegetation and human-made components of near and distant views, how a potential roadway could alter these visual characteristics, and what viewers would see **of** and **from** the proposed improvements. Viewer groups would principally include drivers on existing roads and persons in buildings. It is anticipated that visitor traffic within the viewsheds would be concentrated on through routes.

**Views of the road:** In many instances the presence of a highway in an urban or busy suburban setting — as in the case of Las Vegas, especially when considering its fast-paced and sustained local economic expansion — is not wholly unexpected. Since the proposed improvements are planned expansions of *existing* roadways and not new roadways, visual impacts would be expected in those areas where acquisition is taking place and for occupants of residential or other types of buildings which previously viewed other structures, but may in the future face the roadway or proposed sound barriers.

**Views from the roadway:** Views from the roadways with proposed improvements could be expected to offer drivers the vistas typical in a rapidly-growing urban/suburban area: retail establishments, residential uses, commercial office and various types of small food and retail establishments such as fast foods and gas stations. One of the more notable changes of views from the roadway could be the increased use of sound barriers that would limit views into residential areas. Additionally, the proposed improvements to Martin Luther King Boulevard call for elevating a portion of the roadway above Interstate 15, allowing a “bird’s eye” view of that section of Clark County.

In some locations, highway construction could cause adverse visual impacts by altering existing near or distant views. These would typically happen in residential areas where displacements might occur and where either the expanded roadway or sound barrier would encroach upon individual homes that previously had views of other residential structures. In the future these homes may directly face the sound barrier. Additionally in certain locations such as Martin Luther King Boulevard and Industrial Road the roadways’ increased width would lessen the space between commercial and industrial structures and the roadway. This has implications for both the vehicle occupant and the building occupant. For the vehicle occupant a roadway with building structures immediately at the edge of the right-of-way may lend a more confined feeling to the drive. For the building occupant the presence of cars and trucks within close proximity may provide a more urban feel.

At locations where these adverse visual impacts are expected, an analysis of expected impacts is presented. Road improvements which will only require restriping within the existing ROW are not described, as no adverse visual impacts are expected. Other components of the proposed project -- enhanced bus service and transportation demand management -- are not described, as the current scope and definition of these improvements are not expected to result in any potential visual impacts.

**a. Widening of US-95 from Rainbow Boulevard to I-15**

**(1.) Views of the Road**

■ **Alternative A and Alternative B**

Property takings and residential displacements will alter views from residences that previously looked upon structures to be displaced. Once improvements are made, new views of the highway will exist where housing had once obstructed this view. These visual impacts will be mitigated by construction of noise/sound attenuation barriers, resulting in little or no exposure of the residential areas to views of the highway.

The visual effects of displacement along two areas of proposed ROW extension will potentially cause the greatest impacts: 1) the conversion of Reba Road to a frontage road; and 2) the replacement of Alaska Street with a new frontage roads. All housing on the southern side of Reba Road will be acquired; housing facing the highway on the northern side of the road will then be directly exposed to highway views. Similarly, the loss of housing along Alaska will expose housing along Casco Road to highway views in the post-construction environment. In both cases, sound walls will serve as an effective visual barrier between the remaining homes in the area and the expanded highway.



US-95 at Alaska Avenue: Existing



US-95 at Alaska Avenue:  
Post-construction Conditions

**Figure VI-7**

The sound walls along the frontage road replacing Alaska Street will only be seen from the back sides of the remaining housing along Casco Road. In contrast, views of the sound wall from the fronts of houses remaining on the north side of Reba Road will replace the views of housing on the

south side of the street. As a result, the sound barrier will diminish the visual quality of Reba Road to a much greater extent than the sound barrier along the frontage road replacing Alaska Road. Landscaping of the sound barriers would help to mitigate the visual impacts of the sound barriers. The Nevada Department of Transportation, in cooperation with the City of Las Vegas, will use public and community input during the design hearings to determine the locations where landscaping will be installed and maintained, as appropriate. \*

## (2.) Views from the Road

The expansion of US-95 along this segment will also require the reconstruction of the Torrey Pines Overpass, the Decatur Overpass and the Valley View Overpass. However, the proposed structure will be built close to the size and grade of the original structure, and no new adverse visual impact is anticipated.

### ■ Alternative A

Alternative A will result in visual impacts similar to those of Alternative B, but will also require the acquisition of an additional 62 single-family residences. Rhododendron Road will be eliminated, along with the cul-de-sacs accessed by Rhododendron. Housing on three cul-de-sacs accessed by Avalon Road will have new views of the highway as the result of residential takings. For housing on the north side of Austin Road, the acquisition of all housing on the road's south side will cause views of these houses to be replaced by exposure to the highway. Adverse impacts resulting from these changes can be mitigated by the construction of sound/visual attenuation walls along the length of the ROW boundary in this area.

Under Alternative A, the proposed project will not result in adverse visual impacts to the historic rural landscape district associated with the LVVWD North Well Field site. The US-95 roadway widening and re-alignment and the Valley View Boulevard overpass and interchange will remain at their present elevation levels and distance from the potentially effected properties.

### ■ Alternative B

Under Alternative B, the acquisition of lands from the area of project effect within the Las Vegas Springs National Register Site will result in an adverse visual effect. Currently, a visual buffer between the existing US-95 alignment and the historic district is afforded by the tall cottonwood tree canopy, plus by the smaller lower bush and trees which would be removed by this alternative. Therefore, the loss of this vegetation and the closer proximity of the roadway the integrity of the remaining historic site complex, both visually and by increasing the associated traffic noise levels.

The realignment of US-95 to within the LVVWD North Well Field would also directly impact several natural features which comprise the overall visual landscape of the property for which it's natural and cultural significance is based. These features include the Las Vegas Creek, the adjacent tributary channel to the creek, Little Spring and half of Middle Spring. In addition, approximately half of the existing Cottonwood canopy would also be eliminated from the site.

The introduction of sensitive “screening” design along the new right-of-way boundary and realigned roadway will serve to mitigate the intrusion and presence of the roadway from the Las Vegas Springs National Register Site. Coordination between the Nevada Department of Transportation, the Federal Highway Administration, the Las Vegas Valley Water District and the Nevada State Historic Preservation Officer will serve to identify appropriate “screening” design.

Further detailed discussion regarding visual resource issues as they relate to the Las Vegas Springs National Register Site are provided in the Cultural Resources Technical Studies which have been prepared separate to the FEIS.

## b. Summerlin Parkway

### (1.) Views from the Road

Currently, Tenaya Way terminates on both sides of Summerlin Parkway. The road is to be connected by the construction of an overpass. The ROW required for the improvement exists and the adjacent residential developments north and south of Summerlin Parkway have been constructed respective of that ROW. The proposed structure will be above the grade of Tenaya Way.



Summerlin Parkway:  
Existing Conditions at Tenaya Way



Summerlin Parkway: Post-construction Conditions  
with New Tenaya Way Overpass

Figure VI-8

The proposed structure will be fully visible to travelers using Summerlin Parkway. However, the structural design and appearance will be compatible with the existing Parkway. Summerlin Parkway has a wide ROW, landscaped median and, in areas, landscaped shoulders/berms. The design of the proposed overpass will be consistent with highway structures recently constructed in the Las Vegas area and, as such, no adverse visual impact is anticipated to occur to the corridors of either Summerlin Parkway or Tenaya Way. The photograph imaging illustrates the visual effect of the proposed improvement (to be provided).

### (2.) Views of the Highway

No adverse visual impact resulting from the improvements to Summerlin Parkway are expected. The Parkway will be widened from four to six lanes through construction of an HOV lane in the median, and as such, the proposed improvement occurs well within the existing ROW.

### c. Arterial Street Improvements and Connections

Potential visual impacts may result from the extension of the existing ROW along several arterial roads in the project area. These impacts are described below.

#### (1.) Martin Luther King Boulevard/Industrial Road Connector

The Martin Luther King Boulevard/Industrial Road Connector (the Connector) component of the proposed project has the capacity to affect the existing environment to a greater extent than any other component of the overall project. This improvement involves the construction of an elevated road structure beginning at Industrial Road at Wyoming, flying over Western Avenue, the UPRR, I-15 and Charleston Boulevard to join Martin Luther King Boulevard. The construction of the elevated roadway and improvement to existing portions of roadway will require the taking of industrial, commercial and residential property.

##### ■ Views of the roadway/connector

To the east of I-15, the introduction of the flyover is not expected to have an adverse impact on the visual quality of the area, as the elevated roadway is not inconsistent with the existing character of the area and activity that takes place within the industrial zone. West of I-15, however, the connector will create a visual intrusion into a predominantly residential area. As it flies westward over I-15 and joins the existing Martin Luther King Boulevard roadway, the Connector will require the acquisition of single-family, multifamily and commercial property, causing the local neighborhood to have full view of the structure. The Martin Luther King Boulevard overpass will also be fully exposed to viewers traveling on I-15, but it can be anticipated that the proposed flyover will have no adverse impact on the environment of the I-15 corridor, as it will present a similar experience as viewing other overpasses and structures on US-95 and I-15.

##### ■ Views from the roadway/connector

As the Martin Luther King Boulevard/Industrial Connector will serve as an alternative to the I-15 access to the Strip, new exposure to the more urban face of the Las Vegas environment would result. Additionally, major views of the outlying mountain ranges or the Strip from the elevated roadway will result.



Industrial Road (Facing North) at Wyoming Avenue: Existing Conditions

Industrial Road (Facing North) at Wyoming Avenue: Post-construction Conditions with I-15 Flyover

Figure VI-9

## (2.) Valley View Boulevard

Improving Valley View from Pennwood to Sahara will require additional ROW, requiring the taking of five to eight feet along the side-yards of homes within a subdivision adjacent to the southbound lanes of the road. The additional ROW will require demolition and reconstruction of patio perimeter/sound walls and reinstallation of landscaped strips. Approximately one home will be directly impacted by the proposed improvements. In the post-construction environment, no adverse visual impact, either from the roadway or of the roadway, is anticipated if conditions similar to those existing in the pre-construction environment are restored.

## (3.) Rancho/Alta Connector

This component of the proposed project is not expected to produce any adverse physical or aesthetic impact to the affected environment, from the perspective of viewers on the roadway or those viewing the roadway from adjacent properties. Widening Alta Drive for two to six lanes for about a half-mile from Rancho Drive to Martin Luther King Boulevard would require the taking of single-family residences. Residential screen walls and perimeter walls should provide adequate screening and buffering where they exist. Where residential receptors do not have existing walls, some negative visual impact can be anticipated. As no sound walls are proposed, mitigation would be achieved by the installation of private patio/perimeter screen walls.

### d. Noise Barriers

Noise barriers are recommended along various sections of US-95 and Summerlin Parkway where roadway widening is proposed. These recommended noise barriers will vary in height from 10 feet to over 18 feet, depending on the location and proximity to the adjacent sensitive receptors.

The location and height of the recommended noise barriers have been developed in order to protect the adjacent residential neighborhoods along US-95 and Summerlin Parkway, as well as those areas along both roadways where sensitive receptors, such as schools, hospitals, churches and parks are located.

Landscape enhancement of the noise barriers may not be possible in many areas where lateral clearances are not available, resulting in structures that, without careful design and planning, could be incompatible with their surroundings. These barriers may result in negative visual impacts as a result of their dominance, scale and inevitable loss of views of, as well as from, the adjacent communities. The loss of distant views of the regional landscape may result for travelers along each of these roadways. However, this loss of distant views is considered to be temporary, lasting only for the duration of the travel time. The loss of distant views from the adjacent residential areas along US-95 and Summerlin Parkway may also result. In particular, southern and northern distant views may be obstructed for those residential areas immediately adjacent to US-95 between I-15 and Summerlin Parkway and Summerlin Parkway between US-95 and Rampart Road. The loss of some western and eastern views may also result for those residential areas immediately adjacent to US-95

between Summerlin Parkway and Craig Road. No other noise barriers are recommended for the proposed project.

The design of the recommended noise barriers will include all practical measures to limit the potential for visual impacts on the adjacent residential neighborhoods and for travelers along US-95 and Summerlin Parkway. Such measures may include the introduction of transparent sections, special landscape and lighting treatments and material and color schemes that would best conform to the character of the adjacent community and residential areas. The introduction of these measures would be subject to the extent of their effectiveness in reducing noise levels and their per unit cost.

The location, design and need for noise barriers to mitigate predicted noise levels within the project area will be subject to further public and local agency review and comment during the final design phase of the proposed project. Through this process, local community groups and local officials will have direct input into the decision making process that determines the need, location and design of any noise barriers that may be recommended for noise mitigation.

Locations along the proposed US-95 and Summerlin Parkway widening where noise barriers are recommended are shown in the photographs below. These figures provide a graphic depiction of the location, design and type of noise barriers which may be recommended to reduce the predicted noise levels in these areas.



**Typical Noise Barrier**

**FIGURE VI-10**

Further detailed information regarding the need and location of the recommended noise barriers is provided in the Noise Technical study which has been prepared as a separate technical study.

## **10. Agriculture, Farmland and Ranchland**

The proposed project will not result in any impacts to prime or unique soils or soils of statewide importance, as these are not located in the project area.

## **11. Infrastructure**

### **a. Transportation Systems**

#### **(1.) Highways and Arterial Streets**

The proposed project is expected to improve circulation in the project area and could lead to improved response times for emergency vehicles. Specifically, the studies performed as part of the US-95 Major Investment Study (MIS) indicate that the proposed project will reduce travel by 37,000 miles and 2,900 hours region-wide during the peak hour in the design year. Assuming that half of all travel savings occur during six peak hours per day on weekdays (five days per week times 52 weeks per year) then the proposed project would provide a potential reduction of 114 million miles and 9 million hours of travel annually, region-wide, in the year 2020. These savings will result in benefits from the proposed project estimated to be worth \$1.187 billion in present value. The benefits of the project offset the present value of project costs, estimated to be \$446 million. Consequently, the proposed project has a benefit-cost ratio of \$2.6 (\$1.2 billion divided by \$446 million).

#### **(2.) Aviation**

No adverse impacts to the North Las Vegas Airport are anticipated as a result of the proposed project. Increased automobile capacity along Rancho Drive is expected to benefit travelers to and from the North Las Vegas Airport. No ROW extension, and therefore no acquisition of airport property, will be necessary to widen Rancho Drive. As with other businesses along routes impacted by the proposed project, construction-related impacts such as detours, travel delays and restrictions on access may affect temporary travel to and from the North Law Vegas Airport. Construction impacts will be minimized to the greatest extent possible. Adequate signage will be established and coordination with the local public safety officials and the local media will be maintained in order to adequately inform businesses and motorists of detours or other construction impacts to the airport.

#### **(3.) Public Transit**

In cooperation with the Regional Transportation Commission, an enhanced bus transit service plan has been prepared and is proposed as a component part of the proposed project. The proposed enhanced bus transit service is intended to provide a substantial increase in the level of bus service currently available or planned. The proposed enhanced bus service has three components:

- ▶ Reduced bus headways to 10 or 15 minutes on all existing routes during peak hours;
- ▶ Adding express non-stop bus routes; and
- ▶ Adding express limited-stop bus routes.

The Express Bus Service would provide express buses which travel between Northwest residential areas and the Resort Corridor without intermediate stops, using shoulders converted to “bus only” lanes where possible. This service would provide travel times similar to driving times in private vehicles and would operate with a 15-minute service frequency during peak commuter periods. Limited stop bus service routing would follow existing bus routes but would operate at higher speeds by stopping at fewer bus stops. These buses would “leapfrog” the local buses, operate at 15-minute service intervals, stop at high volume stops and provide a decreased commute time.

The enhanced bus alternative would provide a 240 percent increase in bus service in the Northwest Region, targeted at peak hour commuters.

In order to achieve a 240 percent increase in bus service with a proposed 100 percent increase in the number of buses, the Regional Transportation Commission plans to reallocate buses currently operating in the Resort Corridor to Northwest Region routes. The Regional Transportation Plan, 2000 to 2020, includes a Resort Corridor Fixed Guideway System which would replace a great number of buses currently operating in the Resort Corridor.

In conjunction with the enhancement of the bus transit service, the development of approximately 10 park-and-ride lots is proposed. The proposed park-and-ride lots would be located in commercial areas in close proximity to residential areas. The park-and-ride lots would be located around the community on the outer edges of the zone of congestion along the express/limited-stop bus routes. The proposed park-and-ride lots would share existing and future commercial parking lots through agreements with property owners and they would be located with direct access to major arterial streets, outside of congested areas, to avoid traffic impacts.

By using commercial parking lots, the taking of property and potential impacts associated with park-and-ride lot construction will be avoided.

The enhanced bus transit service, including park-and-ride lots, would not involve physical improvements.

The proposed project provides an improvement in public transit service. The proposed project is not expected to result in any substantial, long-term negative impacts to public transit services. Increased vehicle capacity on bus corridors such as Martin Luther King Boulevard, US-95, and Industrial Road may improve service and efficiency along these routes. Detours and increased traffic are likely to cause delays to routes impacted by construction.

Impacts to the Citizens Area Transit (CAT) services during the construction phase of the proposed project will be minimized to the greatest extent possible. At the time of construction, NDOT will identify impacts of specific construction sites on bus routes, and will notify the Regional Transportation Commission, which provides CAT service, of construction schedules that may have impact the service bus routes. Coordination with local public safety officials and the local media will serve to adequately inform transit riders of any potential delay in service or detours. Coordination of the construction schedules between officials from the Nevada Department of Transportation, the design engineer and the public safety offices of the cities of Las Vegas, North Las Vegas and Clark County will serve to limit the potential for or adverse disruptions to existing travel patterns during construction.

#### **(4.) School Bus Routes**

Construction of the proposed improvements will likely cause temporary impacts to school bus routes. Specific anticipated impacts to school transport services cannot be identified at this time because of the frequent change in school bus routes which serve the project area.

Construction-related impacts on the transport of school children in the project area will be minimized to the greatest extent possible through coordination with the Clark County School District. At the time of construction, NDOT will coordinate with the Clark County School District as to the anticipated construction sites and schedules and the potential for any disruption to existing school bus services. The long-term effects of the proposed project are expected to result in beneficial impacts to public transit services in the project area by means of improved local and regional access.

#### **(5.) Emergency Medical Services**

Because American Medical Response lies adjacent to the proposed Martin Luther King Boulevard/Industrial Road Connector, potential displacement and access impacts to this facility would hinder the ability to service the Las Vegas Valley's medical emergency transportation needs. NDOT will coordinate final design and construction details of the Martin Luther King/Industrial Road Connector with officials from American Medical Response to reduce impacts to this facility. Construction would be staged so that parking would become available from adjacent land. Should displacement of this facility be unavoidable, NDOT would work with the owner and operator of American Medical Response to find suitable facilities and/or land.

During the construction period, some coordination may be needed between NDOT and emergency service providers to provide advance notice of detours. When the improvements are in place, traffic flow is expected to substantially improve leading to improved emergency response times.

## 12. Utilities

Potential impacts include the displacement of the following utilities:

- overhead power and overhead telephone facilities along US-95 between Rainbow Boulevard and Martin Luther King Boulevard;
- one LVVWD well along the northside of US-95;
- two LVVWD wells and one (LVVWD/SNWA) pumping station along the south side of US-95 (Alternative B only);
- overhead power and telephone facilities along Valley View Boulevard between Desert Inn and Sahara;
- overhead power facilities along Alta Drive between Rancho Drive and Martin Luther King Boulevard;
- overhead power facilities along Martin Luther King between Lake Mead and Owens, Washington and Alta, and Palamino and Wall Street;
- overhead power facilities along Western Avenue and the UPRR along the proposed Martin Luther King Boulevard/Industrial Collector Alignment;
- overhead electrical facilities along Industrial Road between Wyoming and Sahara; and,
- an electrical substation on the west side of Industrial Road at Sahara (potential partial relocation).

The following are strategies to mitigate impacts to utilities:

- replacement easements can be provided where existing easements are required for the proposed improvements with utilities relocated to the new easements in accordance with the existing state or local government agreements;
- adjustment of manholes, covers and boxes and minor relocation can be included in the project plans and constructed in accordance with existing agreements;
- replacement facilities can be constructed with funding provided by the federal, state, or local government or the utility company in accordance with existing agreements or new agreements to be negotiated.

**a. Impacts to LVVWD Well Facilities**

The proposed project will result in direct impacts to several LVVWD well and pipeline facilities within and beyond the property limits of the North Well Field. These facilities include several wells, a pumping station and water ground pipelines.

Under Alternative A, the proposed project will require the replacement of Well No. 26. Based on information provided by the LVVWD, the replacement cost of this well is estimated to be approximately \$2,420,000. This cost includes the abandonment of the existing well, land acquisition, construction costs, a new discharge pipeline and the construction costs for the new pipelines. It is estimated that the time needed to replace this well is 36 to 48 months.

Under Alternative B, the proposed project will require the replacement of Well Nos. 79, 15a and 26 as well as the Bonanza Pumping Station. The replacement cost of these wells and the pumping station is estimated to be approximately \$14,830,000. This cost includes the abandonment of the existing wells, land acquisition, construction costs, new discharge pipelines and construction costs for new pipelines. It is estimated that the time needed to replace these facilities is 36 to 48 months.

No mitigation is available to avoid the taking of wells Nos. 79, 15a and 26 and their related facilities under Alternative B. As with Alternative A, the realignment of US-95 further to the south to avoid Well No. 26 is not practical or feasible since it would result in impacts to the Meadows Mall Complex and a commercial office building. The relocation of Well No. 26 to another candidate site would serve as appropriate mitigation.

Shifting the alignment of US-95 further to the north would avoid any direct impacts to Wells Nos. 79 and 15A and the pumping station. However, the shifting of the alignment to the north would result in the displacement of numerous residences. The relocation of Wells Nos. 15A and 79 to other candidate sites and reconstruction of the pumping station will serve as appropriate mitigation. The relocation of wells will be coordinated with the State of Nevada Bureau of Health Planning and Statistics.

Coordination of construction schedules and techniques between officials from the Nevada Department of Transportation, the design and construction engineer, the public works department of the cities of Las Vegas and North Las Vegas and Clark County, the LVVWD and the individual utility carriers will serve to limit the potential for or adverse disruptions to existing services. Specific mitigation techniques for each of the affected utilities will be identified during final design and during the initial construction phase.

## E. Air Quality

### 1. Methodology and Approach

The microscale air quality analysis studied the impacts of motor vehicle CO emissions on ambient air quality. The microscale (i.e., localized) impacts were assessed for both the Build and No-Build alternatives. The locations analyzed included the US-95 mainline between Rainbow Boulevard and Martin Luther King Boulevard and numerous intersections along the local and arterial roads that are proposed to be improved. Microscale refers to the region near the roadway, generally within 300 meters (1,000 ft.), where concentrations of pollutants from vehicles are their highest and contribute noticeably to background pollutant levels. In addition, each alternative was assessed for three analysis years: base conditions (2000), Interim Build Year (2015), and Design Year (2020). The emission factors utilized in the analysis were obtained by using the USEPA's emission factor program MOBILE5a\_h and the USEPA developed CAL3QHC (version 2) dispersion model which was used to estimate the hourly concentrations of CO within the microscale area.

Emission factors from the MOBILE5a\_h model were input into the CAL3QHC model to predict one-hour and eight-hour maximum CO concentrations at selected locations. The results of the CAL3QHC modeling were compared to the NAAQS to determine whether motor vehicle CO emissions attributed to the proposed project would cause or contribute to the exceedence of the NAAQS for CO.

The pollutant of concern in microscale analyses is CO for three reasons: it is indicative of trends in transportation pollutant emissions, it is a relatively non-reactive pollutant, and its dispersion can be accurately estimated with current models. For the analysis, an ambient temperature of 30°F was used to calculate CO emission rates during the winter season, since CO emissions increase dramatically in cold weather. This is due to cars needing more fuel to start at cold temperatures, and because certain emissions control devices such as oxygen sensors and catalytic converters operate less efficiently when they are cold.

#### a. US-95/Summerlin Parkway Improvements, Selection of Worst-Case Roadway Section for Modeling

The US 95/Summerlin Parkway widening consists of three distinct segments: the widening of U.S. 95 to ten lanes from Rainbow to I-15, the widening of U.S. 95 to six lanes from Craig to Rainbow, and the widening of Summerlin Parkway to six lanes from Rampart to Rainbow.

While all three of the segments will be widened by the addition of extra travel lanes, the segment of U.S. 95 from Rainbow to I-15 is the only segment in which lane widening will necessitate the acquisition of additional right of way through existing developed areas. The other two segments will add lanes by lessening the width of the roadway existing median. The acquisition of land in the developed areas along the Rainbow to I-15 segment will cause the existing roadway to be relocated nearer to existing sensitive receptors. Although the additional travel lanes of the other two segments

will be relocated in the median, and not closer to existing receptors, there are other variables such as traffic volume, congestion, topography and meteorological conditions that can effect CO concentrations along the roadway. In order to determine the segment which would be considered a worst-case scenario for modeling purposes, a screening analysis of the three segments was conducted.

The screening analysis reviewed and compared the traffic volumes, traffic speeds and congestion factors for each of the segments. It was assumed that the same worst case conditions for meteorology (wind speed, wind direction and temperature) and CO background concentrations would apply for all segments.

In order to present the worst case topography situation, it was assumed that all roadway sections were at an elevation of zero and that all receptors were located at the EPA recommended breathing height of 1.8 meters. This would allow that the highest CO concentration at breathing height be predicted at each receptor chosen for modeling. This approach was assumed for all the segments.

The same vehicle mix was assumed for all segments since they are contiguous. EPA recommended default mode of operation emission factors were used and assumed to be the same for all roadway sections.

Traffic volume, speed and congestion are all interrelated. Increases in traffic volume lead to congestion and congestion leads to lowered on-road speeds. The screening analysis indicates that the U.S. 95 segment between Rainbow and I-15 will experience the highest traffic volumes, lowest travel speeds, and highest traffic congestion. In addition, this segment of the widening project will relocate the roadway closer to potential receptors through the acquisition of land outside of the existing right of way. Based on these findings, the segment of U.S. 95 from Rainbow to I-15 was chosen for modeling to represent the worst case condition for potential CO impacts.

#### **b. Arterial Street Improvements: Selection of Intersections for Analysis**

Since most of the local arterial traffic in the Las Vegas Valley area will be affected in some way from the widening of US-95, a review of the intersections most affected was conducted for selection of intersections to be modeled for CO impact. The selection process was based on a ranking of the intersections by total-approach traffic volume and the intersection's overall volume to capacity (v/c) ratio. The V/C ratio is an indicator of the overall level-of-service (LOS) for the intersection. Traffic volume and V/C data were obtained from traffic mapping for the years 2015 and 2020.

The top five highest-volume intersections for the No-Build and Build Alternatives were identified. In addition, all intersections which indicated an increase in overall approach volume under the Build Alternative were identified. This initial ranking process identified thirteen intersections. A review of the thirteen intersections indicated that some were located along the same arterial and near to similar higher volume intersections. It was also noted that many of these intersections also shared a similar geometry with the higher volume intersections. Based on these observations the like intersections with the lower traffic volumes were eliminated from the analysis. This elimination is

based on the conclusion that the higher traffic volume intersections are more likely to produce elevated levels of CO. After the elimination of the like intersections, a total of eight intersections were chosen for analysis. These intersections are depicted on Figures V1-13 through V1-20. A CO microscale analysis was conducted for each of these intersections for each of the three years analyzed; 2000, 2015, and 2020. These intersections cover six of the proposed nine arterial improvements under the Build Alternative.

**c. Park-and-Ride Facilities: Selection of Intersection for Analysis**

Park-and-ride lots are proposed to be located near arterial intersections. The arterial streets are forecasts to have an increase or decrease in future traffic as a result of the proposed project. In addition, intersections near park-and-ride lots may experience an increase in traffic as motorists enter the area to drop off their cars or leave the area after picking up their cars. Of the 10 intersections located near 10 proposed park-and-ride lots, four intersections are forecast to experience a net increase in peak hour traffic volumes as a result of the above factors. The remaining six intersections are projected to have a net decrease in peak hour traffic volumes. The four intersections which are forecast to have an increase in peak hour traffic volumes were selected for analysis since only these intersections would be expected to experience a decrease in level of service as a result of the project and a potential decrease in air quality compared to the No-Build Alternative.

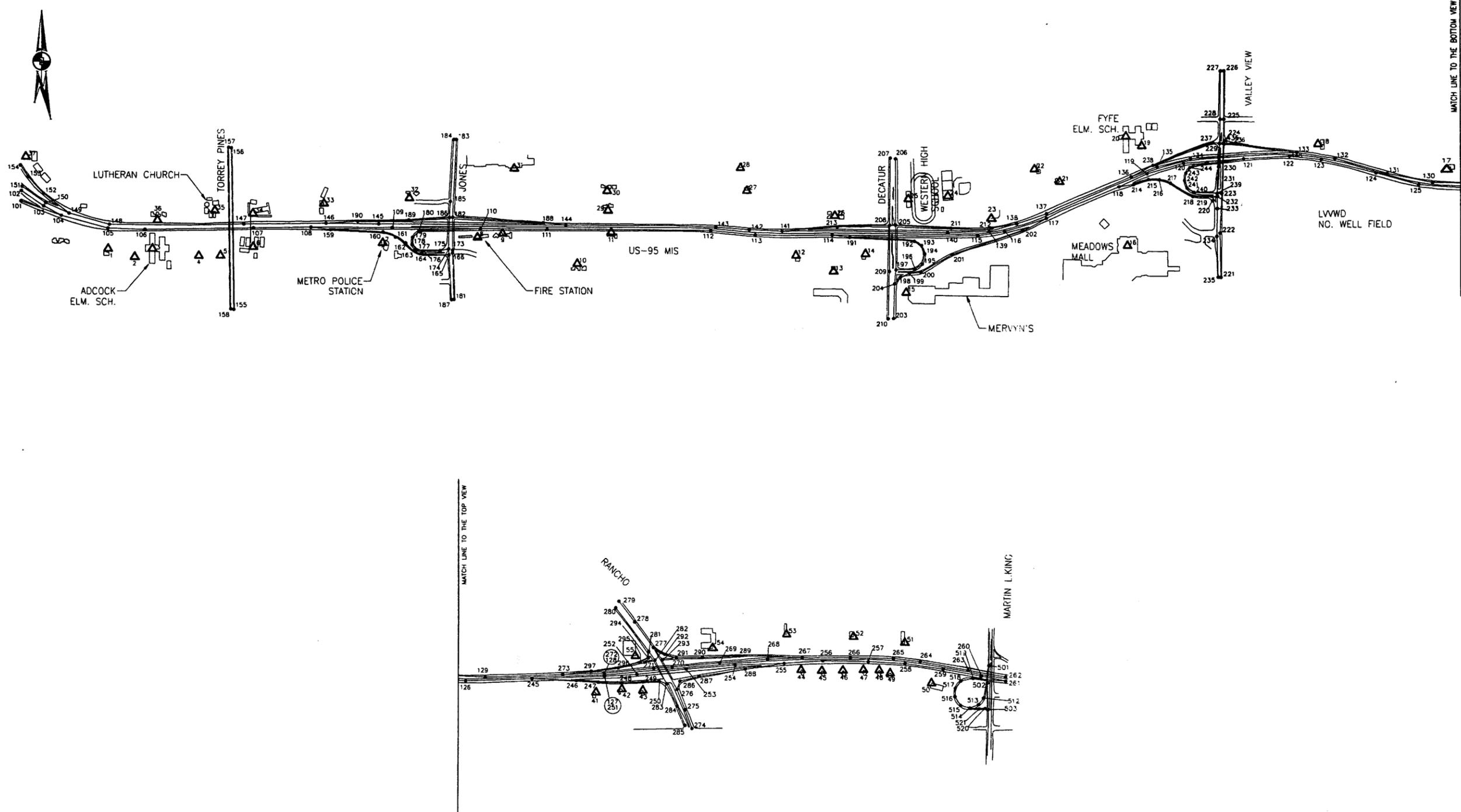
Table VI-20 shows the projected peak hour total approach volumes and estimated level of service at the intersections proposed for development of park-and-ride lots.

**TABLE VI-20**  
**Park-and-Ride Intersections: Peak Hour Approach Volume & Level of Service**

Intersection	2015 No-Build	2015 W/Project	Percent Change	2020 No-Build	2020 W/Project	Percent Change
	LOS/Peak Hour Volume			LOS/Peak Hour Volume		
MLK & Ann Road	D 3550	D 3675	3.40%	E 8333	E 8475	1.68%
MLK & Cheyenne	E 9150	E 8883	-3.01%	F 10233	F 12867	20.47%
US-95 Frontage & Centennial	C 2600	C 2800	7.14%	D 5800	D 6100	4.92%
Craig & Rancho	D 6900	D 6700	-6.10%	F 11100	F 10600	-8.15%
Rancho & Smoke	D 8460	E 9550	11.41%	F 11250	F 11950	5.86%
Tenaya & Cheyenne	D 5500	D 5550	0.90%	* 8850	* 8750	-1.14%
Rainbow Blvd. & Westcliff	D 7300	D 6750	-8.15%	F 11100	F 10400	-5.71%
Rampart & Westcliff	C 6800	C 6650	-2.26%	E 8400	D 8350	-0.60%
Durango & Sahara	D 7150	D 7150	0.00%	F 9250	E 7600	-21.71%
Rainbow & Sahara	F 12150	F 11050	-9.95%	F 18150	F 15200	-35.03%

Source: Louis Berger & Associates, Inc., 1999.

ALT.dwg 2/97.A.C



STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION

# US 95 EXISTING CONDITION

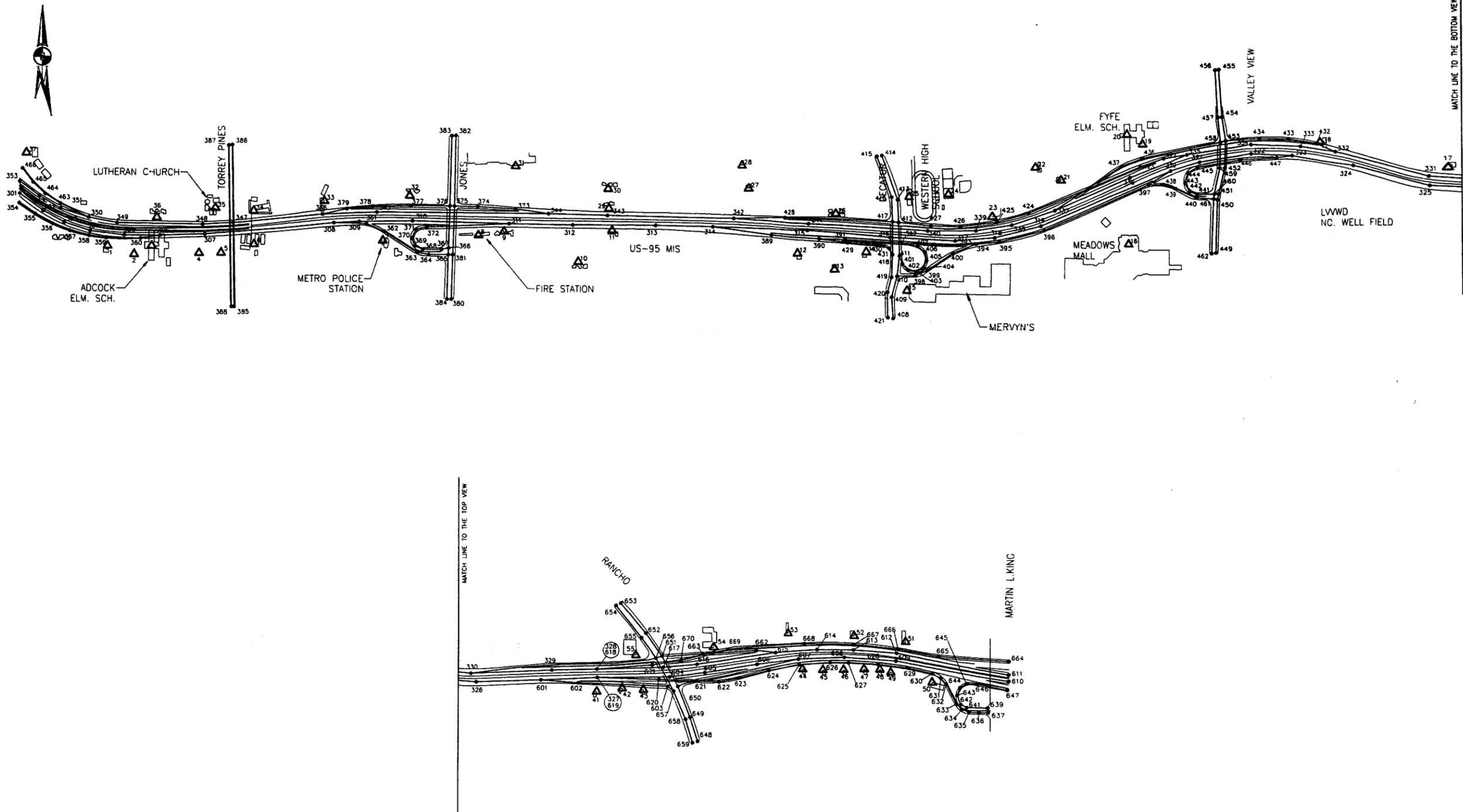
FIGURE VI-11

Source: LBA, Las Vegas, Nevada

Scale: 1" = 650'

File: LV95-1.dwg

March 1998



STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION

US 95 PROPOSED CONDITION

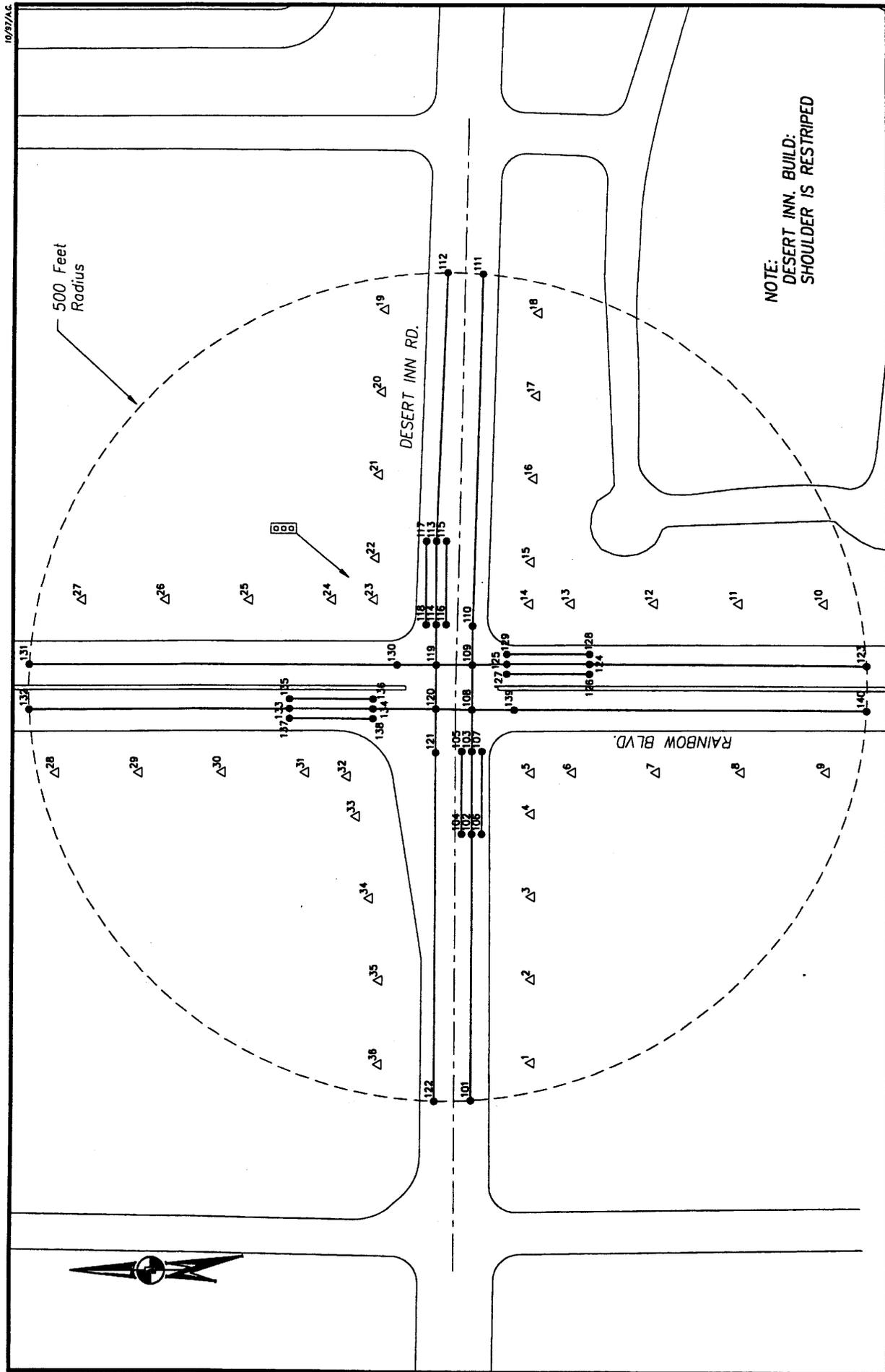
FIGURE VI-12

Source: LBA, Las Vegas, Nevada

Scale: 1" = 650'

File: LV95-1.dwg

March 1998



**Receptor Locations: Intersection # 1  
DESERT INN RD./RAINBOW BLVD.**

STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
US-95 WIDENING PROJECT

LOUIS BERGER & ASSOCIATES, INC.

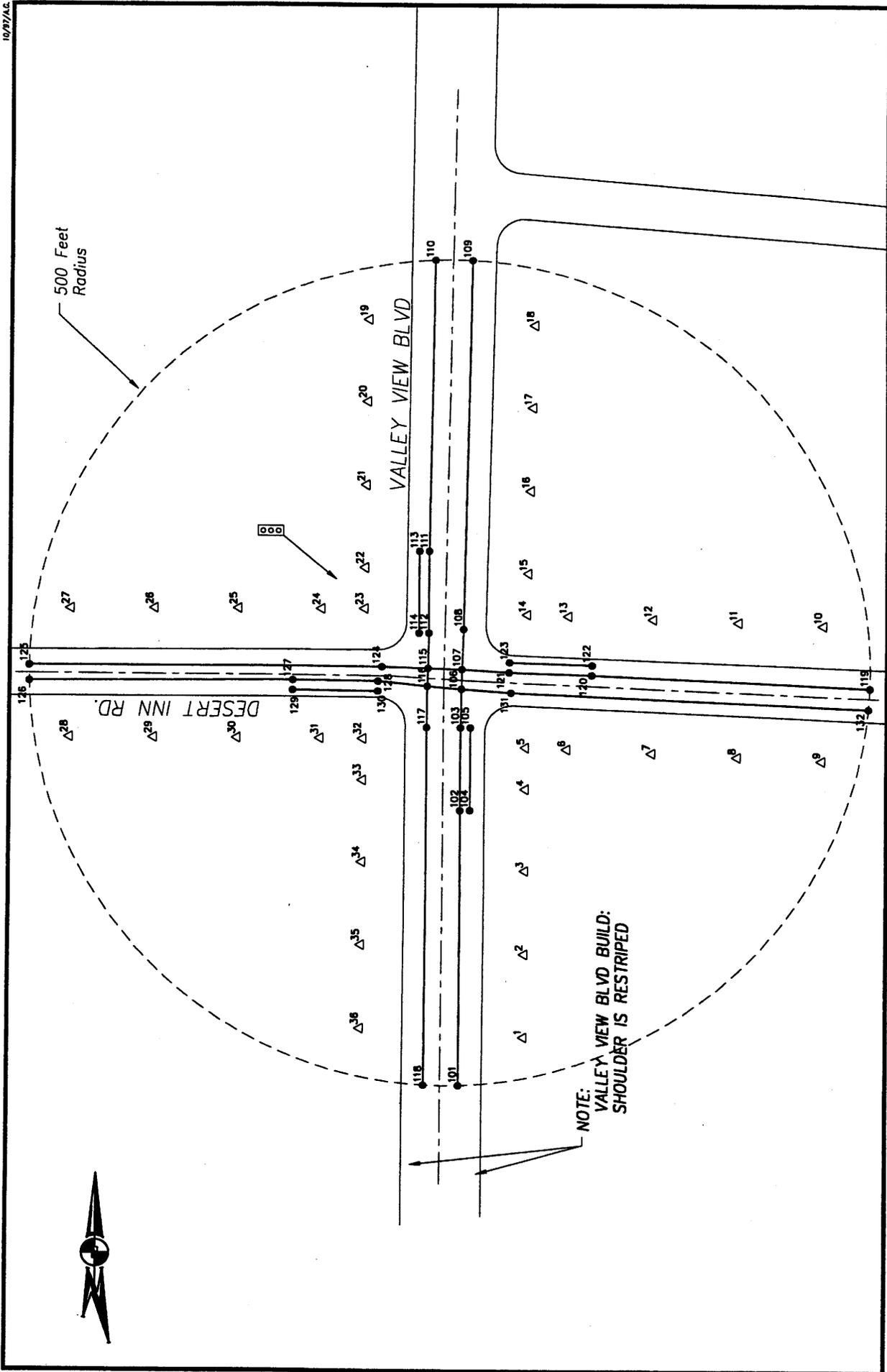
FIGURE VI-13

File: LV95-1E.dwg

March 1998

Scale: 1" = 160 Feet

Source: LBA, Las Vegas, Nevada



**STATE OF NEVADA**  
**DEPARTMENT OF TRANSPORTATION**  
 US-86 WIDENING PROJECT

**Receptor Locations: Intersection #2**  
**VALLEY VIEW BLVD/ DESERT INN DR.**

**LOUIS BERGER & ASSOCIATES, INC.**

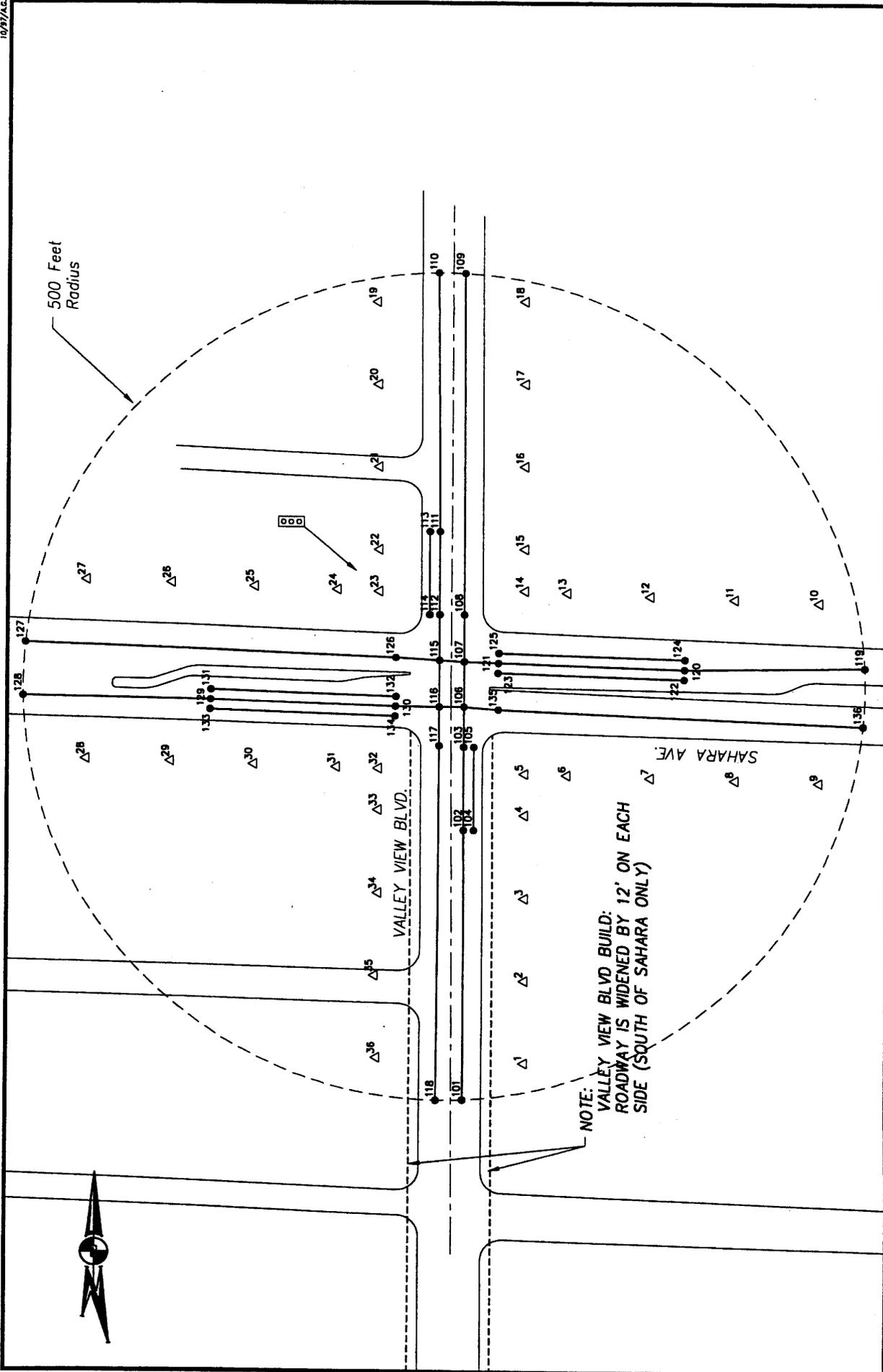
**FIGURE VI-14**

File: LV95-3E.dwg  
 March 1998

Scale: 1" = 160 Feet

Source: LBA, Las Vegas, Nevada





STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
US-96 WIDENING PROJECT

LOUIS BERGER & ASSOCIATES, INC.



### Receptor Locations: Intersection #3 VALLEY VIEW BLVD/ SAHARA AVE

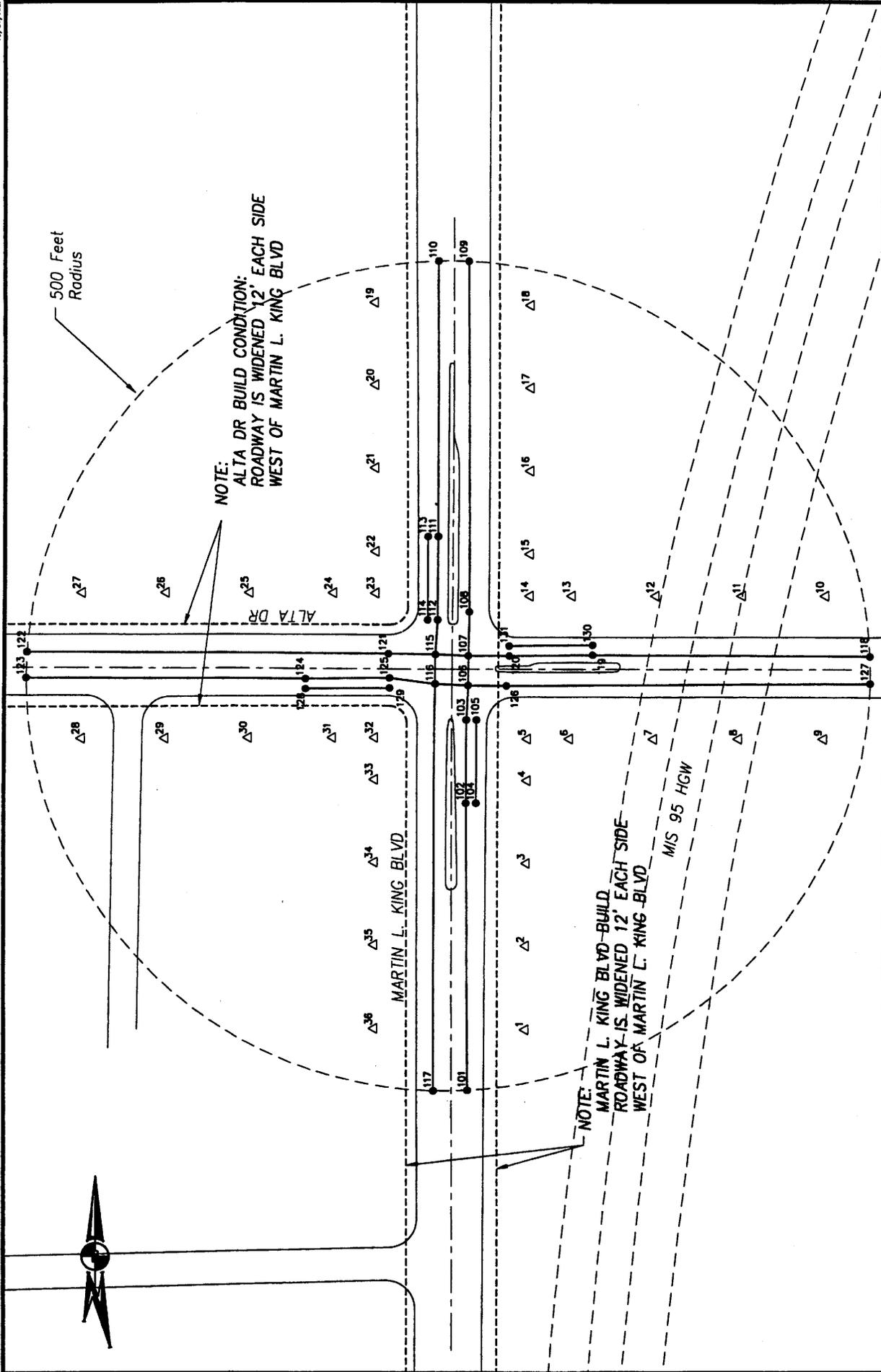
Source: LBA, Las Vegas, Nevada

Scale: 1" = 160 Feet

FIGURE VI-15

File: LV95-2E.dwg

March 1998



**STATE OF NEVADA**  
**DEPARTMENT OF TRANSPORTATION**  
US-95 WIDENING PROJECT

**Receptor Locations: Intersection #4**  
**MARTIN L. KING BLVD/ ALTA DR.**

**LOUIS BERGER & ASSOCIATES, INC.**

FIGURE VI-16

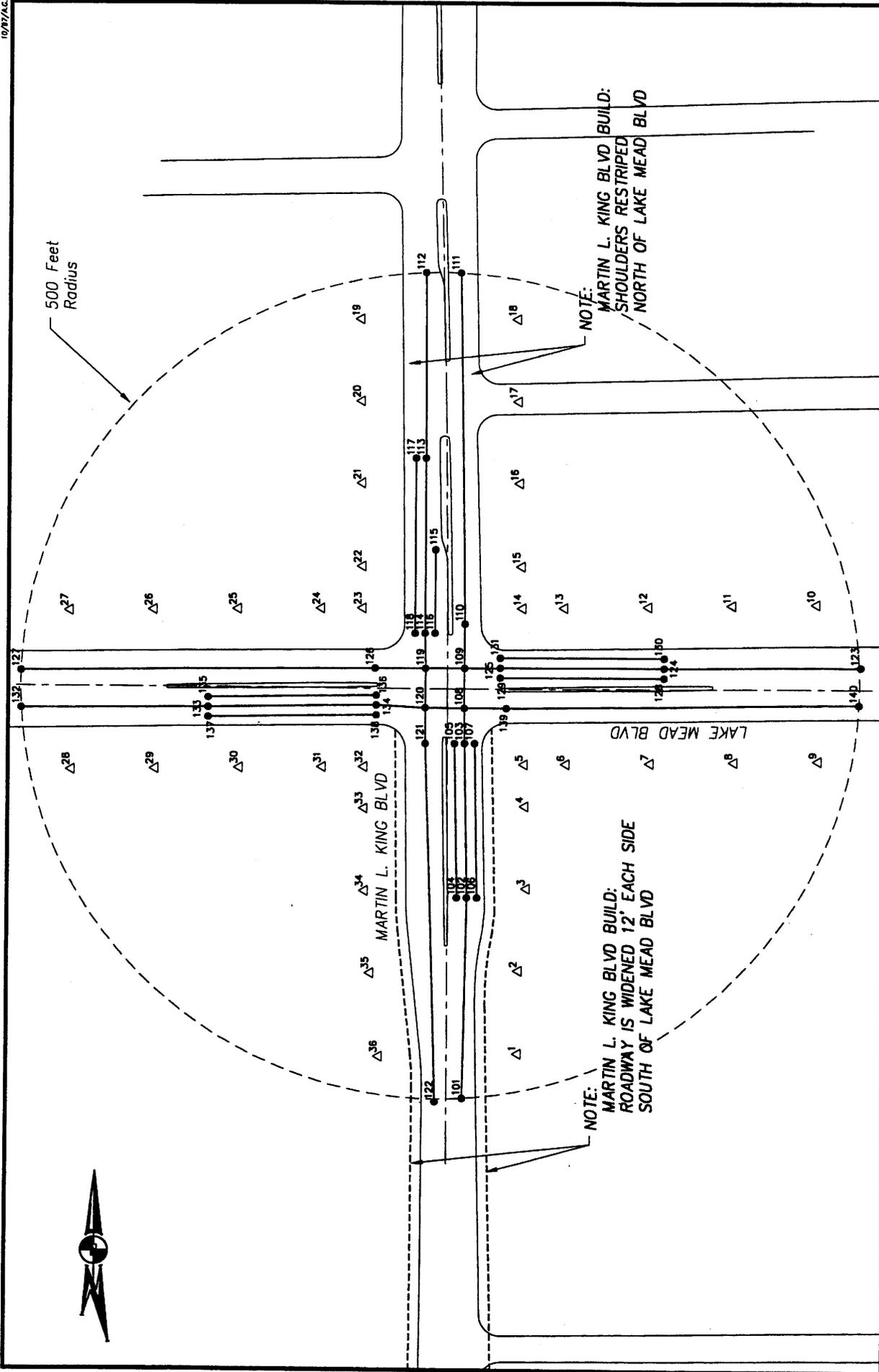
File: LV95-4E.dwg

March 1998

Scale: 1" = 160 Feet

Source: LBA, Las Vegas, Nevada





STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
US-95 WIDENING PROJECT

LOUIS BERGER & ASSOCIATES, INC.



# Receptor Locations: Intersection #5 MARTIN L KING BLVD/ LAKE MEAD BLVD

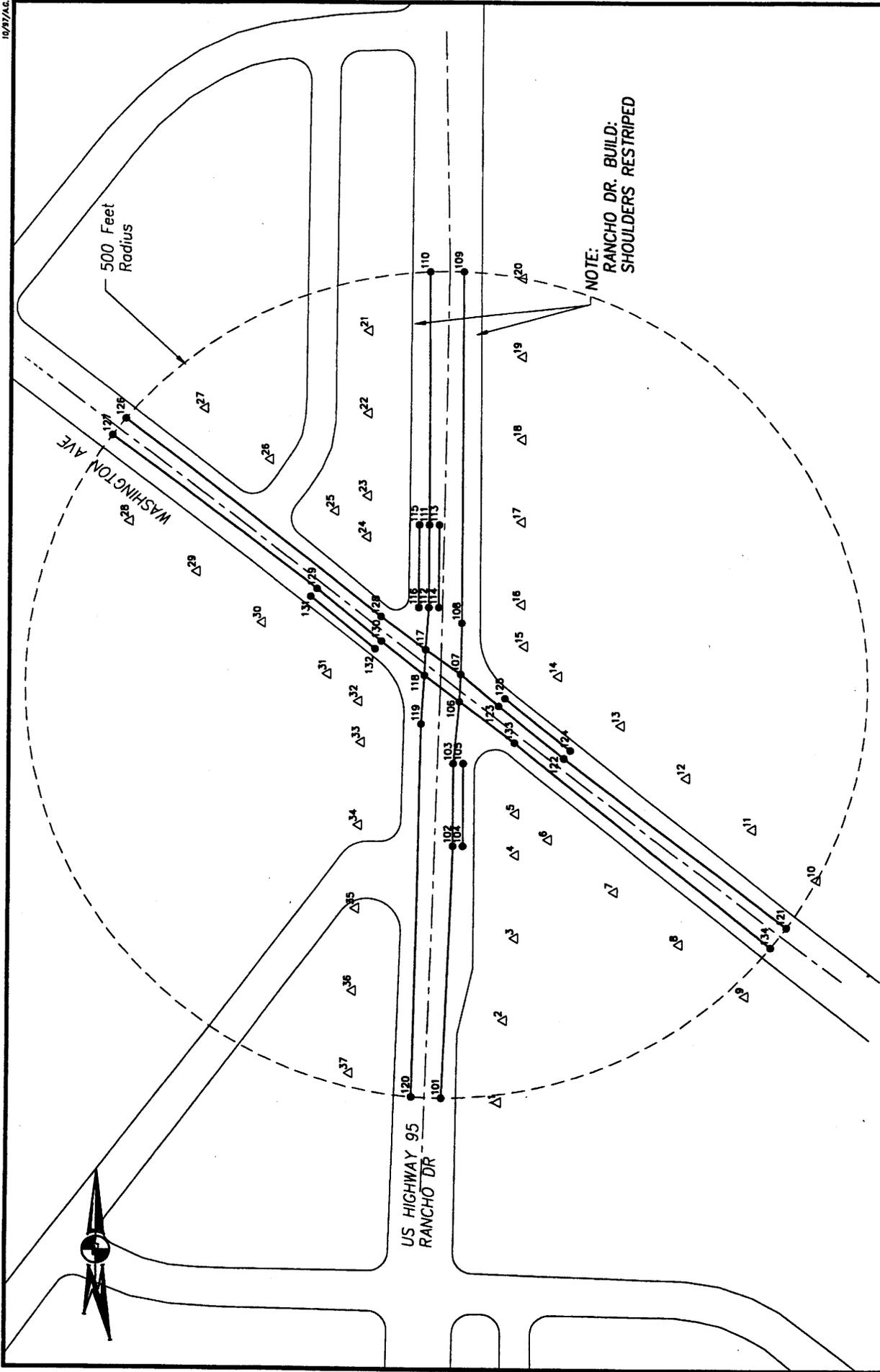
Source: LBA, Las Vegas, Nevada

Scale: 1" = 160 Feet

FIGURE VI-17

File: L195-SE.dwg

March 1998



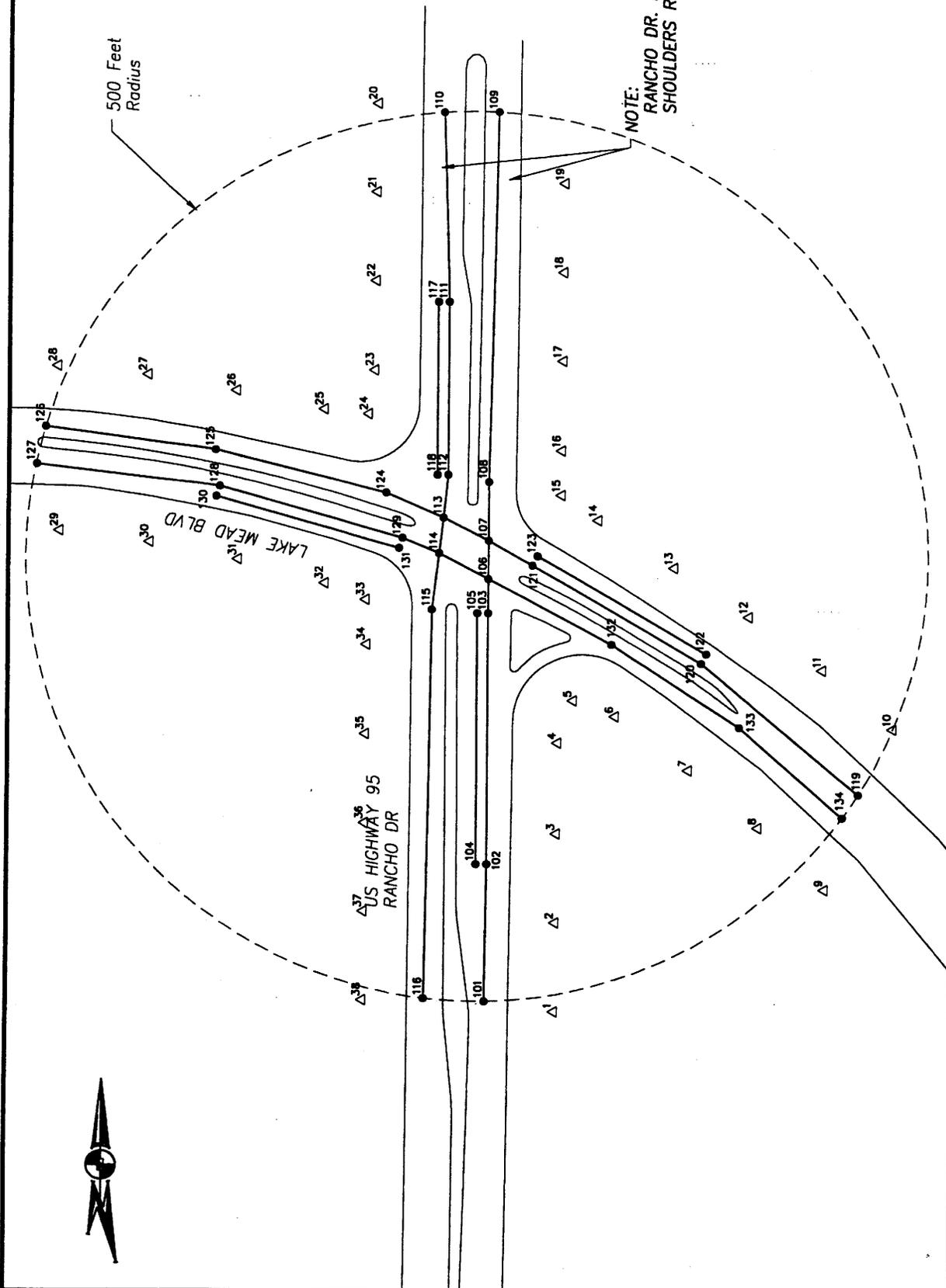
**Receptor Locations: Intersection #6**  
**RANCHO DR/ WASHINGTON AVE**

Source: LBA, Las Vegas, Nevada  
 Scale: 1" = 160 Feet

STATE OF NEVADA  
 DEPARTMENT OF TRANSPORTATION  
 US-95 WIDENING PROJECT

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DEPARTMENT OF TRANSPORTATION  
US-95 WIDENING PROJECT  
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Receptor Locations: Intersection #7  
RANCHO DR/ LAKE MEAD BLVD

FIGURE VI-19

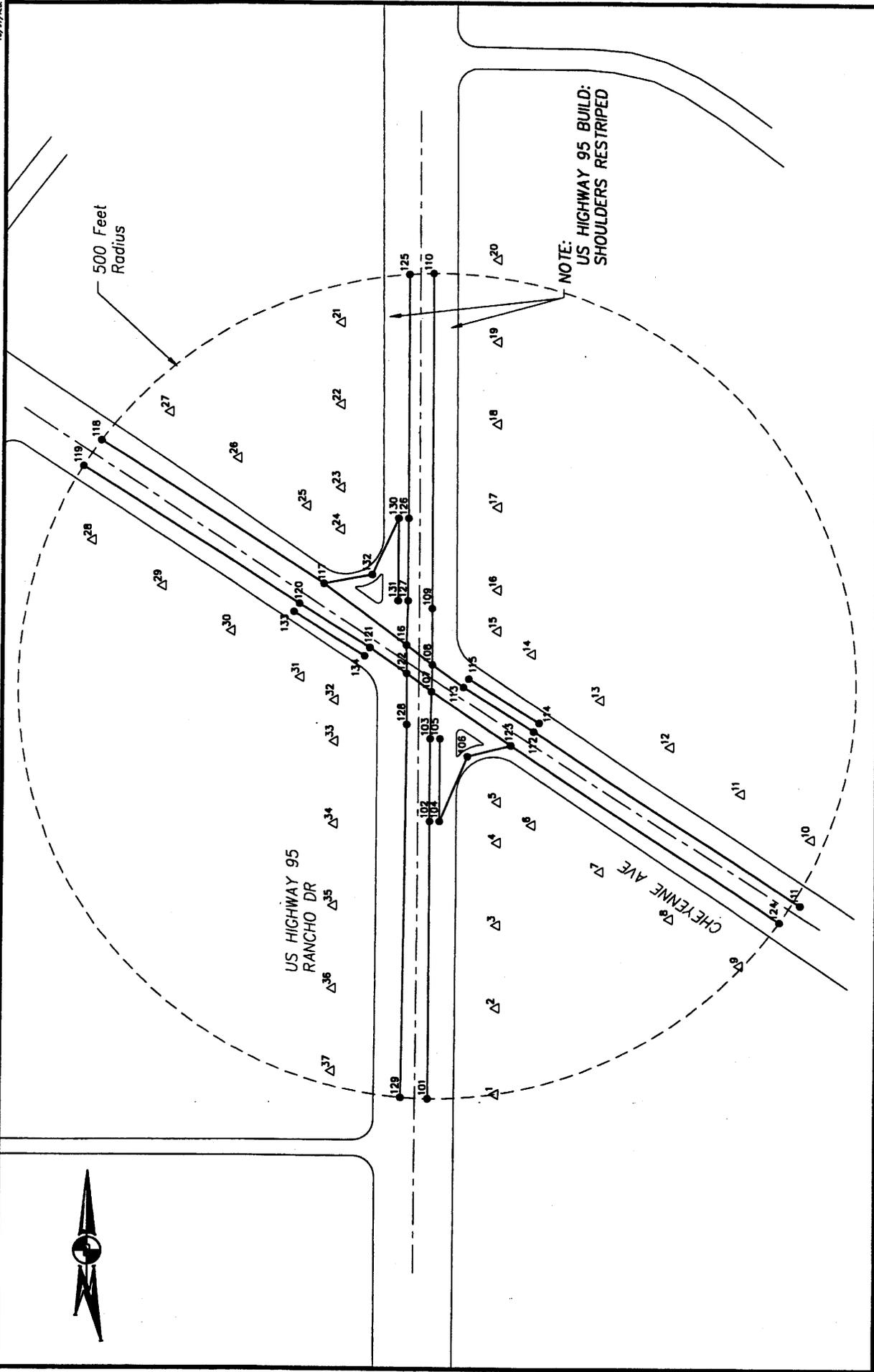
File: LV95-7E.dwg

March 1998

Scale: 1" = 160 Feet

Source: LBA, Las Vegas, Nevada





**Receptor Locations: Intersection #8**  
**RANCHO DR./CHEYENNE AVE.**

Source: LBA, Las Vegas, Nevada  
 Scale: 1" = 160 Feet

STATE OF NEVADA  
 DEPARTMENT OF TRANSPORTATION  
 US-95 WIDENING PROJECT

LOUIS BERGER & ASSOCIATES, INC.

FIGURE VI-20

File: L95S-8E.dwg

March 1998

Based on the data presented in Table V-I above, the following four park-and-ride intersections were chosen for quantitative CO analysis:

- Martin Luther King Blvd. And Ann Rd.
- Martin Luther King Blvd. And Cheyenne Ave.
- Frontage Rd. And Centennial Pkwy.
- Rancho Dr. & Smoke Ranch Rd.

## **2. PM<sub>10</sub> Impacts and Mitigation**

### **a. No-Build Alternative**

Under the No-Build Alternative there would be no PM<sub>10</sub> related impacts since there would be no construction activities.

### **b. Alternatives A and B**

#### **(1.) PM<sub>10</sub> Impacts Due to Construction Activities**

Demolition/Construction related activities can result in short-term impacts to ambient air quality. These impacts are typically related to fugitive dust emissions resulting from demolition and construction activities. Other potential air quality impacts from stationary activities are usually negligible when equipment is well maintained and operated in well ventilated areas. The potential for impacts will be short-term, occurring only while demolition or construction work is in progress and local conditions are appropriate.

Fugitive dust emissions typically occur during building demolition, ground clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and material transportation. Fugitive dust emissions are greatest during dry periods, periods of intense construction activity and during high wind conditions.

Impacts resulting from traffic disruptions during this period (i.e., decreased roadway capacity) could degrade air quality in the immediate surrounding environs. Traffic disruptions would be greatest at major roadway intersections, thus resulting in increased queuing and CO and PM<sub>10</sub> emissions.

#### **(2.) PM<sub>10</sub> Mitigation**

Mitigation techniques to limit particulate emissions during demolition and construction activities will include the following: where possible, use of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land; the application of asphalt, water or suitable chemicals on dirt roads, materials, stockpiles, and other surfaces which can give rise to airborne dusts; covering, at all times when in motion, open bodied trucks, transporting materials likely to give rise to airborne dusts; and the prompt removal of earth or other material from paved streets onto which earth or other material has been deposited. Deposition may occur by action of wind, storm water runoff, entrainment by

construction vehicles and re-entrainment of dust from construction sources and shall be removed by periodic sweeping of streets. The potential for fugitive dust emissions from these activities would cease once barren earth is covered or stabilized.

A site specific dust mitigation plan for each proposed construction project will be prepared and submitted to the Clark County Health District's Air Pollution Control Division for review and approval. Each site specific plan will include:

- The total area of land surface to be disturbed and the total area of the project site in acres.
- The dust generating operation(s) and/or activities to be carried-out at the site as well as the actual and potential sources of fugitive dust emissions on the site.
- A site plan showing the location of grading and/or earth moving activities, the location of ingress/egress points, and the location of parking, staging, or storage areas (including storage piles) for equipment, supplies, and/or trailers.
- Control measures to be applied for all sources of fugitive dust including plans or practices to be implemented during high wind events.
- No oil or other chemicals or suppressants which may adversely impact groundwater quality by means of percolation or storm water runoff shall be used for dust suppression purposes.

Construction contracts will specify the use of low sulfur diesel fuel for all diesel engines utilized for this project, and provide a mechanism to insure compliance with this requirement.

Each dust mitigation plan will include:

- A list of all grading and grubbing equipment (graders, scrapers, dozers, etc.) to be used on the project.
- The number and size of water trucks, water pulls and stand tanks to be employed and the distance and location of hydrants for refill.
- A requirement to pre-soak at least one day prior to beginning dirt work.
- A requirement for a separate water truck/water pull for each trencher used on the job.
- A requirement for a separate water truck/water pull for each powered soil screening operation.
- A requirement for a separate water truck/water pull for landscaping operations.
- Specifications for moisture control and dust control of stock piles including material imported to the job site.
- Specifications for asbestos removal prior to building demolition.
- Specification of blasting limitations.

Dust control measures will be used 24 hours a day, 7 days a week, even when there is no current activity on the site. All contractors and subcontractors will be provided a copy of the Dust Mitigation Plan and a copy will be available on-site at all times. The following dust control requirements will be incorporated into each Dust Mitigation Plan:

- The Contractor must take all reasonable precautions to minimize dust, even if additional measures beyond those listed in the Dust Mitigation Plan are necessary.

- All projects are required to set up a “gravel pad” at all site ingress and egress areas prior to commencing construction activities. The entrance/exit must be properly graded to prevent runoff from leaving the construction site.
- The Contractor shall not cause or permit fugitive dust to become airborne without taking reasonable precautions and shall not cause or permit the discharge of visible emissions of fugitive dust. Reasonable precautions may include, but are not limited to sprinkling, compacting, enclosure, chemical, or asphalt sealing, cleaning up, sweeping, reducing equipment operating speed or such other measures to accomplish satisfactory results.
- The Contractor shall not cause or permit the handling, transporting, or storage of any material in a manner which allows or may allow controllable particulate matter to become airborne.
- If the Contractor cannot provide satisfactory control of fugitive dust, or upon notification by the County Health District Control Officer, or his designated representative, the State Contractor shall suspend all or part of the construction activities (except water trucks) related to, or which may contribute to fugitive dust emissions.
- Paved ingress/egress and interior roads must be kept clean. Unpaved project ingress/egress and interior roads must be watered, covered with type II gravel or treated with a chemical dust suppressant.
- Stockpiles cannot exceed eight (8) feet in height (without County Health District Control Officer approval and irrigation access) or get within 100 feet of any occupied existing structures.
- The Contractor shall not conduct or allow any open burning at the site.
- The Contractor will be responsible for continuous dust control until a method of soil stabilization is implemented.
- If there is no continuing development for thirty (30) days after “cleaning”, “grading”, “final grade”, “demolition”, “trenching”, “stockpiling” and/or any other disturbance of the topsoil the Contractor shall stabilize disturbed areas within the construction site by the application of a chemical dust suppressant or Type II gravel to any and all disturbed areas.
- Trucks loaded with materials likely to be a source of fugitive dust shall be watered down and/or covered subsequent to leaving the site.
- Powered (motorized) crushing, screening or similar operations CANNOT BEGIN nor can the installation or startup of boilers, generators or similar emission units begin until the issuance of a Various Location Permit (VLP), Authority to Construct (ATC) and/or Operating Permit for each Emission Unit by the Clark County Health District.

- The Contractor shall install a sign prior to commencing construction activity, which is visible to the public and measures at least eight (8) feet wide by four (4) feet high. The Sign must conform to the Clark County Health District's policy on Posting of Signage.
- All on site Superintendents(s), Supervisor(s), Foreman, etc., (anyone on site in a supervisory position) prime and subcontractor, -must attend the Clark County Air Pollution Control Dust Control Class or possess a current Dust Control Class Certificate/Card (expires every 2 years).

The feasibility of requiring a snap acceleration test utilizing SAE J1667 test procedures and opacity limits of 55% for pre 1991 engines and 40% for 1991 and newer diesel engines will be explored for this project. The feasibility of requiring an inspection or certification program to insure that diesel engines used for this project are in good operating condition, with clean air filters, properly adjusted injection timing, unclogged injectors in good mechanical condition, properly operating smoke puff limiters, and proper fuel pump calibration will also be explored.

### **3. Carbon Monoxide Impacts**

#### **a. No-Build Alternative**

The analysis indicates potential violations of the eight-hour NAAQS for CO of 9 ppm during the years 2015 (11.1 ppm) and 2020 (18.3 ppm) with the No-Build Alternative.

In the year 2020 No-Build Alternative, there are two intersections that have the potential for predicted CO values higher than the eight-hour NAAQS: #2 - Valley View Boulevard/Desert Inn Road, and #6 - Ranch Drive/Washington Avenue.

#### **b. Alternatives A and B**

##### **(1.) Impacted Area Along US-95**

The findings of this analysis indicate that the air quality impacts of the proposed project on those areas along the proposed widening of US-95 are beneficial. Table VI-21 presents the highest predicted carbon monoxide concentrations for the US-95 mainline.

There is a single predicted violation of the CO NAAQS in the areas along the proposed widening of US-95 corridors during the year 2020 (9.6 ppm).

As modeled, the proposed project would lessen CO levels in this area and will conform to the State Transportation Improvement Plan (STIP). While it is predicted that a single violation of the eight-hour NAAQS for CO will occur in the year 2020 under the Build condition, the predicted concentration of 9.6 ppm represents a 16.5 percent decrease in the concentration predicted at the same receptor under the No-Build condition (11.5 ppm).

**TABLE VI-21  
HIGHEST PREDICTED CARBON MONOXIDE CONCENTRATIONS: US-95  
MAINLINE**

Alternative	Highest Predicted CO Concentration Concentration/(Receptor)		
	1-hr	8-hr	Receptor
2000 Base Year	9.8	6.9	11
2015 No-Build	15.8	<b>11.1</b>	11
2015 Build	10.5	7.4	41
2020 No-Build	26.1	<b>18.3</b>	11
2020 Build	13.7	<b>9.6</b>	18
<b>NAAQS</b>	35.0	9.0	

Values in **Bold** exceed the NAAQS.

Note: Since the eight-hour CO value is based on an average of one-hour values over a non-overlapping eight-hour period, a violation of the eight-hour NAAQS is considered to be a value of 9.5 ppm or greater.

Source: Louis Berger & Associates, Inc. 1997.

## (2.) Impacted Areas Along Arterials/Local Connectors

Table VI-22 presents the highest predicted carbon monoxide concentrations for the project area intersections. The findings of the analysis for the arterial and local street improvements is as follows:

- Base Year 2000—No intersections are predicted to have CO concentrations which exceed the eight-hour or one-hour NAAQS.
- Interim Build Year 2015—All eight modeled intersections are predicted to have CO levels below the NAAQS in the year 2015.
- Design Year 2020 - In the year 2020 under the No-Build condition, two intersections are predicted to exceed the eight-hour CO NAAQS of 9.0 ppm. All predicted one-hour CO concentrations are below (within) the standards:
  - ▶ #2 - Valley View Blvd./Desert Inn Rd (11.9 ppm), and
  - ▶ #6 - Rancho Drive and/Lake Mead (11.0 ppm), and

In the year 2020 under the Build Alternative, there is one intersection predicted to exceed the eight-hour NAAQS for CO. All predicted one-hour CO concentrations are below (within) the standards):

- ▶ #2 - Valley View Blvd./Desert Inn Rd (10.5 ppm).

The proposed project demonstrates an overall improvement in air quality by lowering the highest eight-hour CO concentration under the No-Build alternative of 11.9 ppm to 10.5 ppm under the Build alternative. The proposed project will not create any new violations. The next highest eight-hour CO value under the Build alternative is 9.2 ppm. Since the eight-hour NAAQS value is based on an average of one-hour values over a non-overlapping eight-hour period, a violation of the eight-hour NAAQS is considered to be a value of 9.5 ppm or greater. Since predicted CO violations under the No-Build condition will be lowered under the Build condition and no new violations will be created, no mitigation is warranted.

**TABLE VI-22  
HIGHEST PREDICTED CARBON MONOXIDE CONCENTRATIONS:  
INTERSECTIONS**

Intersection	2000	2015 No-Build	2015 Build	2020 No-Build	2020 Build
#1 - Desert Inn Rd/ Rainbow Blvd	7.6 / 5.3 (14)	7.9 / 5.5 (14)	9.1 / 6.4 (14 & 22)	10.1 / 7.1 (14)	11.7 / 8.2 (14)
#2 - Valley View/ Desert Inn Rd	8.8 / 6.1 (23)	10.3 / 7.2 (13)	9.9 / 6.9 (4)	17.0 / 11.9 (14)	15.0 / 10.5 (14)
#3 - Valley View/ Sahara Ave	12.9 / 9.0 (5)	9.8 / 6.8 (31)	11.9 / 8.3 (4)	11.7 / 8.2 (5)	13.2 / 9.2 (4)
#4 - Martin L. King Blvd/ Alta Dr	7.1 / 5.0 (30)	7.3 / 5.1 (23)	8.3 / 5.8 (30)	9.8 / 6.8 (23)	10.5 / 7.3 (4 & 5)
#5 - Martin L. King Blvd/ Lake Mead Blvd	8.3 / 5.8 (18)	9.5 / 6.6 (5)	8.9 / 6.2 (4)	9.5 / 6.6 (1)	12.8 / 8.9 (2)
#6 - Rancho Dr/ Washington Ave	7.9 / 5.5 (31)	8.8 / 6.1 (1)	8.2 / 5.7 (2)	15.7 / 11.0 (1)	10.1 / 7.1 (1)
#7 - Rancho Dr/ Lake Mead Blvd	9.9 / 6.9 (32)	9.3 / 6.5 (32)	9.0 / 6.3 (32)	11.7 / 8.2 (22)	9.7 / 6.8 (23 & 32)
#8 - Rancho Drive/ Cheyenne Ave.	9.0 / 6.3 (14)	8.0 / 5.6 (14)	8.4 / 5.9 (14)	10.9 / 7.6 (15)	10.3 / 7.2 (14 & 15)

Values in **Bold** indicate values which exceed the NAAQS.

NAAQS (1-hr / 8-hr) = 35.0 / 9.0

Note: Since the eight-hour CO value is based on an average of one-hour values over a non-overlapping eight-hour period, a violation of the eight-hour NAAQS is considered to be a value of 9.5 ppm or greater. (Source: Louis Berger & Associates, Inc. 1998.)

### (3.) Impacted Areas at Park-and-Ride Intersections

Table VI-22a provides the highest predicted carbon monoxide concentrations for the Park-and-Ride lot intersections where increases in traffic are projected compared to the No-Build Alternative. The findings of the analysis are as follows:

- The analysis indicates that no intersections will exceed the NAAQS for CO in the year 2000 or 2015.
- There is a single predicted exceedance of the eight-hour NAAQS at 11.0 ppm in the year 2020 under the No-Build alternative. This value is predicted to occur at the intersection of Rancho Dr./Smoke Ranch Rd.
- There are no predicted exceedances under the Build alternative in the year 2020.

Since the predicted CO violation occurs under the No-Build alternative, no mitigation is recommended for the Build alternative.

**TABLE VI-22a**  
**HIGHEST PREDICTED CARBON MONOXIDE CONCENTRATIONS:**  
**Park-and-Ride INTERSECTIONS**

Intersection	2000	2015 No-Build	2015 Build	2020 No-Build	2020 Build
Martin L.King Blvd./ Ann Rd.	3.1 / 2.2 (5)	6.9 / 4.8 (4)	6.3 / 4.4 (22)	8.7 / 6.1 (2)	8.9 / 6.2 (13)
Martin L. King Blvd./ Cheyenne	7.5 / 5.2 (13, 14, 23, 31)	10.8 / 7.5 (13, 22)	10.2 / 7.1 (13)	11.6 / 8.1 (22)	13.1 / 9.2 (13)
US-95 Frontage Rd./ Centennial	3.9 / 2.7 (5, 13)	5.7 / 4.0 (13)	5.8 / 4.0 (13)	6.9 / 4.8 (13)	7.3 / 5.1 (13)
Rancho Dr./ Smoke Ranch Rd.	7.0 / 4.9 (5, 23)	11.1 / 7.8 (22)	10.8 / 7.5 (2)	15.7 / <b>11.0</b> (23)	12.0 / 8.4 (13)

Values are in parts per million (ppm)  
"Bold" values indicate an exceedance of the NAAQS.

NAAQS (1 hr/8 hr) = 35 / 9.0

Note: Since the eight-hour CO value is based on an average of one-hour values over a non-overlapping eight-hour period, a violation of the NAAQS is considered to be a value of 9.5 ppm or greater.

#### 4. Project Conformity

The Clean Air Act Amendments (CAAA) of 1990 requires that each state submit to the USEPA a State Implementation Plan (SIP) for attaining and maintaining air quality standards for those pollutants for which a state is designated as nonattainment. The SIP must contain specific measures for controlling and reducing emissions from pollution sources to bring the state into compliance. To set forth the rules and procedures to control emissions resulting from transportation activities, the USEPA also promulgated the Transportation Conformity Rules (TCR) under the CAAA effective on December 27, 1993, and the Flexibility and Streamlining Amendments effective on September 15, 1997. The TCR provides criteria and procedures for determining conformity to the SIP of transportation plans, programs, and projects which are developed, funded or approved under Title 23 U.S.C., or the Federal Transit Laws (49 U.S.C. Chapter 53).

As indicated in Section 93.109 of the Conformity Rules, the conformity criteria for federally funded or approved transportation projects include: requirements of latest planning assumptions, latest emissions model, consultation procedures, currently conforming TP (Transportation Plan) and TIP (Transportation Improvement Program), hot spot analysis and control measures; and criteria for projects from a TP or TIP, or emission budget/reduction and TCM requirements set for projects not coming from a conforming Plan or TIP. In summary, the project must come from a conforming transportation plan or program (TIP), or the project must satisfy all criteria in Section 93.109(b), and in CO nonattainment areas, the project must eliminate or reduce the severity and number of violations of the NAAQS for CO. Transportation projects located in nonattainment and maintenance areas are required to demonstrate conformity to state and federal Implementation Plans.

This analysis was constructed to demonstrate compliance of the proposed project to the transportation conformity guidelines established in 40 CFR, Part 51 and 93 entitled: *Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act* (the rule). The rule applies to those actions located in areas of nonattainment and which are federally funded. Nonattainment areas are those areas which have been designated by the USEPA as not meeting the standard. The proposed project is located in a designated nonattainment area for the NAAQS pollutants CO and PM<sub>10</sub>. As a result, the proposed project must demonstrate compliance with the conformity criteria established in the rule.

Section 93.116 of the rule states that projects must not cause or contribute to any new localized CO violations or increase the frequency or severity of any existing CO violations in CO nonattainment areas.

This criterion is satisfied when it is demonstrated that no new local violations will be created and the severity of existing violations will not be increased as a result of the project.

The findings of the analysis indicate that total ambient CO concentrations within the project area will be reduced and overall air quality will be improved under the Build Alternative. The analysis finds

that the proposed project will not increase the number of CO violations and that it will lessen the severity of predicted CO violations.

The proposed project conforms to the SIP by eliminating and reducing the severity and number of violation of the NAAQS for CO. The Regional Transportation Commission amended the RTP and TIP on March 11, 1999 to include all the components of this project.

Further detailed information regarding air quality impacts and mitigation measures is provided in the Air Quality Technical Study which has been prepared separate to the FEIS/Final Section 4(f) Evaluation.

## **F. Noise**

Traffic noise impact and abatement analyses were conducted in accordance with the procedures as set forth in the FHWA's *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, Code of Federal Regulations 23 CFR Part 772, reissued FHWA Policy and Guidance document dated June 1995; and NDOT's *Traffic and Construction Noise Abatement Policy*, as revised in October, 1996. The FHWA Noise Abatement Criteria (NAC) in 23 CFR Part 772, and the substantial noise level increase over existing noise level criterion in the NDOT policy, were used to identify and evaluate any noise impact. The traffic noise level predictions and noise mitigation analyses were performed using FHWA's Highway Traffic Noise Prediction Model (Report No. FHWA-RD-77108) and the Stamina 2.0/Optima Noise Barrier Cost Reduction Procedure (Report No. FHWA-DP-58-1). The FHWA NAC are presented in Table VI-23.

The analysis of project related noise impacts and the potential feasibility of mitigation measures associated with the proposed project were based on design year 2020. The FHWA noise regulations "require the consideration of noise abatement when there is a noise impact. A noise impact occurs when the predicted traffic noise levels approach or exceed the noise abatement criteria (NAC) or when the predicted traffic noise levels substantially exceed the existing noise levels." NDOT policy considers an impact to occur when predicted noise levels exceed existing noise levels by 15 dBA or more due to a project's traffic noise. Mitigation measures were considered and evaluated, per FHWA regulations and NDOT policies, when an impact was determined to have occurred. Noise barriers were analyzed for Noise Sensitive Areas (NSAs) along US-95 and Summerlin Parkway.

In general, the traffic noise modeling is composed of a large number of variables that describe various types of vehicles operating at different speeds through a continuously changing highway configuration and surrounding terrain. Due to the complexity of the project and the project area, the following assumptions have been made to simplify the prediction of highway traffic noise:

- All vehicles have been divided into three categories: cars, medium trucks, and heavy trucks. Each of those categories has been assigned a Reference Energy Mean Emission Level (REMEL) based on the data collected from field traffic noise measurements.

- No wind or temperature effects have been considered in the computer modeling. However, wind and temperature can have substantial impact on propagation of sound over distances above 300 feet (i.e., noise levels at receptors located upwind are substantially (20 dBA) lower than noise levels at receptors located downwind).
- Ground cover along the sound propagation path has been assumed to be homogeneous, with a default propagation rate of 3.0 dBA per doubling of distance, thereby simulating an acoustically “hard” surface (i.e., surface pavement, desert ground, etc.).
- The additional sound reduction due to existing obstructions on the ground (such as rows of houses) has been assigned as a shielding factor for particular road-receptor pairs.

TABLE VI-23

**FHWA NOISE ABATEMENT CRITERIA (NAC)  
Hourly A-weighted Sound Level in Decibels (dBA)**

ACTIVITY CATEGORY	NOISE ABATEMENT CRITERIA		DESCRIPTION OF ACTIVITY CATEGORY
	L <sub>10</sub>	L <sub>eq</sub>	
A (Exterior)	60	57	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B (Exterior)	70	67	Picnic areas, recreation areas, playgrounds, active sports areas, and parks that are not included in Category A; and residences, motels, hotels, public meeting rooms, schools, churches, libraries and hospitals.
C (Exterior)	75	72	Developed lands, properties or activities not included in Categories A or B above.
D	—	—	Undeveloped lands.
E (Interior)	55	52	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

\* Source: Title 23 Code of Federal Regulations, Part 772.

Traffic conditions reflecting the No-Build and Build Scenarios in the year 2020 were reviewed and evaluated. A set of worst-case traffic volumes and speed data, corresponding to LOS D conditions was developed based on the Highway Capacity Manual, 1994 to avoid over predicting the noise

impact. Noise levels at selected sensitive receptors along US-95 were also modeled based on both LOS C and LOS D traffic conditions. The results further confirmed that LOS D would be the worst-case condition.

The future noise levels, predicted for the worst-case scenario, assumes that all existing privacy walls, which provide varying amounts of shielding of traffic noise levels at the receptor sites would not be in existence under the future Build alternatives. Traffic conditions on the project corridor are assumed at LOS D for both travel directions, which would generate the greatest noise emissions compared to other LOS conditions. Therefore, predicted future Build noise levels would generally be higher than existing monitored noise levels in the project area, especially when there were no other major noise sources (such as aircraft, train, lawn mowers, etc.) present during the noise measurement period. Such extraneous noise sources were generally filtered out during the field monitoring.

## 1. Impacts

Impacts to properties which are adjacent to proposed improvements and which are included in the FHWA Noise Abatement Criteria Activity Categories A and B were analyzed. These include residences, schools, parks, hospitals, churches, etc. Properties which are potentially affected by the proposed project and included in the FHWA Noise Abatement Criteria Activity Category C include commercial businesses and light industrial businesses. These properties rely on, and benefit from visibility and accessibility from the adjacent roadways. Potential impacts to these activity category C properties was considered, but were assumed to be outweighed by visibility and accessibility factors and therefore not analyzed in detail.

The number of activity Category A and B properties, single- and multiple-family residences, schools, parks, hospitals, and churches, etc., with future 2020 build noise levels approaching or exceeding the NAC of 67 dBA in each NSA were counted, and are presented in Tables VI-24 (US-95 and Summerlin Parkway) and VI-25 (Arterial Roads). The 66 dBA noise level contour line, which represents the approach standard, was prepared for each NSA along US-95 and Summerlin Parkway, and are presented in Figures VI-21 through VI-44, which are included in Volume 2 of the FEIS/Final Section 4(f) Evaluation. It should be noted that since all NSAs along US-95 and Summerlin Parkway are impacted as a result of noise levels approaching or exceeding the NAC of 67 dBA, the NDOT impact criterion of 15 dBA increase over existing is unnecessary to consider for this project.

### a. No-Build Alternative

The No-Build Alternative assumes that the proposed project is not constructed. Existing US-95, Summerlin Parkway and the various arterial roadways in the project study area already experience LOS D in the Existing condition. The LOS D condition represents the worst-case traffic situation from a noise perspective. The Future No-Build Alternative would result in an increase in traffic congestion; however, the traffic noise level, which is directly related to both traffic volume and speed, would not increase during the period of increased congestion, due to the decreased travel

**Table VI-24  
Noise Level Range and Number of Impacted Receptors Along US 95 and Summerlin Parkway  
(Future 2020 Build)**

Noise		Description	Non-Abated Leq (dBA)	Number of receptors with noise levels approaching or exceeding NAC of 67 dBA					Total NSA per	
Sensitive Area				Single-family	Multiple-family	Public Park	School	Church		Other*
US 95: Craig Road to Summerlin Parkway	1	Single-family and multiple-family residences	66-78	113	136					249
	2	Single-family and multiple-family residences	66-80	133	232					365
	3	Multiple-family residences	66-77		512					512
	4	Proposed Hotel	66-77						1	1
	5	Multiple-family residences	66-78		139					139
	6	Single-family and multiple-family residences	66-75	26	104					130
	7	Multiple-family residences	66-77		704					704
	8	Sunrise Mountainview Hospital and the Hampton Inn Hotel	66-77						2	2
	9	Multiple-family residences	66-79		248					248
	10	Multiple-family residences	66-78		352					352
	11	Multiple-family residences	66-80		640					640
14	Single-family and multiple-family residences	66-79	14	104					118	
Summerlin Parkway	12	Angel Park Golf Course	66-77						1	1
	13	Multi-family residences	66-77		120					120
	15	Angel Park Golf Course	66-73						1	1
	16	Single-family and multiple-family residences	66-77	44	328					372
	17	Single-family residences	66-74		376					376
18	Proposed Church	66-72					1			
US 95: Summerlin Parkway to Interstate 15	19	Single-family, multiple-family residences, and the Christ Lutheran Church	66-83	76	384			1		461
	20	Single-family and multiple-family residences	66-80	60	112					172
	21	Single-family and multiple-family residences	66-81	100	96					196
	22	Single-family and multiple-family residences	66-79	146	48					194
	23 (Alternative A)	Single-family residences, an Elementary School, and a High School	66-80	84			2			86
	23 (Alternative B)	Single-family residences, an Elementary School, and a High School	66-80	80			2			82
	24 (Alternative A)	Single-family residences	66-80	278						278
	24 (Alternative B)	Single-family residences	66-80	232						232
	25	Single-family residences, the Adcock Elementary School and park	66-79	97		1	1			99
	26	Single-family and multiple-family residences and a Public Park	66-75	35	136			1		172
	27	Single-family residences	66-82	170						170
	28	Single-family residences	66-81	139						139
29 (Alternative A)	Single-family residences	66-77	66						66	
29 (Alternative B)	Single-family residences	66-77	70						70	
30	Single-family and multiple-family residences	66-77	82	80					162	
<b>Total</b>	<b>for Alternative A</b>			<b>1863</b>	<b>4851</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>6525</b>
<b>Total</b>	<b>for Alternative B</b>			<b>1617</b>	<b>4851</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>6479</b>

Source: Louis Berger & Associates, 1998.

\* Other - Golf Course / Hotel / Motel / Hospital / Health Center

**Table VI-25  
Noise Level Range and Number of Impacted Receptors Along Arterial Roadways  
(Future 2020 Build)**

Noise Sensitive Area	Description	Number of receptors with noise levels approaching or exceeding NAC of 67 dBA						
		Single-family	Multi-family	Public Park	School	Church	Total per NSA	
Rancho Drive	31	Single-family residences	110					110
	32	Single-family residences	189					189
	33	Single-family residences	16					16
	34	Multi-family residences		56				56
	35	Single-family residences	8					8
	36	Single-family and multi-family residences	12	24				36
Martin Luther King Boulevard	37	Multi-family residences		32				32
	38	Single-family residences	6					6
	39	Single-family residences	53					53
	40	Single-family and multi-family residences	20	80				100
	41	Single-family and multiple-family residences and the Booker Elementary School	56	20		1		77
	42	Single-family residences	71					71
	43	Single-family residences	282					282
Desert Inn Road	44	Single-family residences	180					180
	45	Single-family residences	79					79
	46	Single-family and multi-family residences	78	24				102
	47	Single-family and multi-family residences	30	32				62
Durango Drive	48	Single-family and multi-family residences	67	48				115
Valley View Boulevard	49	Single-family and multi-family residences	97	104				201
Arville Street	50	Single-family homes, multi-family apartments and townhouses, all parallel to Arville Street	137	128				265
Alta Drive	51	Single-family homes, multi-family apartments and Shadow Quail Park	164	152	1			317
Tenaya Way	52	Single-family and multi-family residences	55	40				95
	53	Single-family and multi-family residences	143	16				159
	54	Single-family residences	83					83
	55	Single-family homes and a school	24			1		25

**Table V-25 (continued)**  
**Noise Level Range and Number of Impacted Receptors Along Arterial Roadways**  
**(Future 2020 Build)**

Noise Sensitive Area		Description	Number of receptors with noise levels approaching or exceeding NAC of 67 dBA					Total per NSA
			Single-family	Multi-family	Public Park	School	Church	
Carey Avenue	56	Single-family residences	69					69
Torrey Pines Drive	57	Single-family residences	185					185
	58	Single-family and multi-family residences	46	154				200
	59	Single-family and multi-family residences	3	278				281
	60	Single-family residences	155					155
	61	Single-family and multi-family residences	66	16				82
	62	Single-family residences and a school	19			1		20
	63	Single-family residences	150					150
Industrial Road Connector	64	Single-family homes, multi-family apartments First Presbyterian Church	3	178			1	181
<b>Total Amount of Sensitive Receptors along the Arterials:</b>			<b>2658</b>	<b>1382</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>4042</b>

Source: Louis Berger & Associates, Inc., 1998

speeds. Therefore, the traffic noise levels at the sensitive receptor locations in the No-Build scenario would essentially be the same as the traffic noise levels under the Existing condition. Therefore, no noise modeling was conducted for the No-Build Alternative.

**b. Build Alternatives**

The Build Alternative was modeled for the year 2020. The Build Alternative for US-95 includes consideration of two separate US-95 alignment scenarios between Valley View Boulevard and Rancho Drive. Build Alternative A consists of a widening along that segment which is primarily to the north, thereby displacing many of the existing front row of homes along the highway. In contrast, Build Alternative B consists of a widening along that segment which is primarily to the south, through the Las Vegas Valley Water District property. Therefore, impacts for the Build Alternative can be summarized and tabulated to reflect each of these two alignment scenarios. Of the 30 NSAs that are adjacent to US-95 and Summerlin Parkway, three exhibit a slightly different number of impacts, depending on which of these two alignment scenarios is constructed.

**(1.) US-95/Summerlin Parkway - Alternative A**

Build Alternative A exhibits modeled noise levels ranging from 66 to 83 dBA, with noise impacts approaching or exceeding FHWA's Noise Abatement Criterion of 67 dBA expected to occur at all 30 NSAs analyzed along US-95 and Summerlin Parkway. In total, this alternative would result in impacts to approximately 1,663 single-family residences, 4,851 multi-family residences, three schools (including the Adcock Elementary School, Fyfe Elementary School, and Western High School), two churches, one public park, Sunrise Mountainview Hospital, Angel Park Golf Club, and two hotels.

**(2.) US-95/Summerlin Parkway - Alternative B**

Build Alternative B also exhibits modeled noise levels ranging from 66 to 83 dBA, with noise impacts approaching or exceeding FHWA's Noise Abatement Criterion of 67 dBA expected to occur at all 30 NSAs analyzed along US-95 and Summerlin Parkway. In total, this alternative would result in impacts to approximately 1,617 single-family residences, approximately 4,851 multi-family residences, three schools (including the Adcock Elementary School, Fyfe Elementary School, and Western High School), two churches, one public park, Sunrise Mountainview Hospital, Angel Park Golf Club, and two hotels. Therefore, the only difference between Build Alternative A and Build Alternative B is that the latter results in impacts to 46 fewer single-family residences than the former.

**(3.) Arterial Roadway Improvements**

The Build Alternative for the various proposed arterial roadway improvements was also modeled for the year 2020. The analysis of noise impacts was conducted at the 34 NSAs which are located in the vicinity of these arterial roadways. Noise impacts approaching or exceeding FHWA's Noise Abatement Criterion of 67 dBA were predicted to occur at all NSAs analyzed. There would be impacts to approximately 2,656 single-family residences, 1,382 multi-family residences, three schools, a First Presbyterian Church, and Shadow Quail Park.

## 2. Mitigation

Traffic management measures which alter vehicle type, speed, volume, and/or time of operations can be effective noise abatement measures if they don't conflict with roadway capacity and safety requirements. For this project, traffic management measures are not considered to be appropriate noise abatement strategies. Since US-95 and Summerlin Parkway are both being designed to generally operate under a LOS D or E condition in future year 2020, reducing the volume and increasing the speed would actually tend to worsen the noise condition. It should be noted, however, that some traffic management techniques have been included as part of the overall Proposed Action, but not to a level where it would have any impact on noise levels. Therefore, this mitigation measure does not serve to reduce noise levels, and is not considered further for this project.

Highway alignment alterations, such as shifting the roadway away from sensitive receptors or depressing the roadway into the ground, can potentially reduce noise impacts. However, the selection of alternative alignments and profiles for noise abatement purposes must consider the balance between noise impacts and other engineering and environmental parameters. For this project, the highway alignment, as proposed, is considered to be the optimum configuration when all of these various parameters are considered. Also, with the exception of the two alternative alignments being considered between Valley View Boulevard and Rancho Drive, the potential to vary the alignment is limited due to the close proximity of noise-sensitive receptors on both sides of the proposed project. Alteration of the roadway profile (i.e., depressing the existing US-95 into the ground) would increase the cost substantially. Therefore, this design alternative is not considered feasible.

Acquisition of real property or interest therein to serve as a buffer zone is impractical and infeasible for this project, given the close proximity of noise-sensitive receptors to the highway right-of-way. In addition to the sizeable number of homes to be acquired in order to provide the proposed highway improvements, a substantial number of additional homes would also require acquisition in order to provide a noise buffer for the remaining homes. This additional acquisition would result in a substantial cost increase. Therefore, this mitigation measure is not considered feasible.

Noise insulation of public buildings, such as schools, provides an additional type of mitigation which is available for reducing noise levels attributed to traffic operations, although this method would only potentially reduce noise levels inside the building and would not benefit outdoor activities. Although several schools would be impacted along the proposed alignment, the impacts have been identified in the areas where outdoor activities occur. Therefore, noise insulation would not provide full benefit to these schools and their grounds, and this mitigation measure has not been considered further.

The most common type of designed mitigation is the construction of physical barriers, typically in the form of noise walls (noise barriers) and/or earth berms between the roadway (noise source) and the receiver locations. According to NDOT's *Traffic and Construction Noise Abatement Policy*, a 5-dBA reduction in highway traffic noise levels at the first row of receptors and a 3-dBA reduction at the second row of receptors classify as a "substantial" noise reduction. As discussed in Chapter III, Section B.5., mitigation is designed to achieve these levels of noise reduction rather than a specified absolute noise level. Therefore, mitigation may be appropriate even if the mitigated noise

level exceeds FHWA's NAC for a particular activity category. Barrier costs were estimated using a factor of \$20.00 per square foot of barrier panel. Any dwelling unit that receives 3 dBA or more of noise level reduction would be considered as having benefitted from the construction of such a barrier. A barrier is considered reasonable if it costs less than \$10,000 per benefitted resident. Based on NDOT policy and the local demographic profile, an average of 2.6 residents per dwelling unit was used in the project area.

**a. No-Build Alternative A and B**

With the No-Build Alternative, US-95 would not be improved and noise mitigation would not be provided.

**b. Build Alternatives**

**(1.) US-95/Summerlin Parkway**

Preliminary noise barrier locations with uniform heights between 10 and 26 feet were modeled and evaluated for the impacted NSAs along US-95 and Summerlin Parkway. The number of single- and multiple-family residences, schools, parks, and churches receiving various levels of noise reduction benefits (i.e., 3, 5, and 7 or more dBA reduction scenarios) were counted for each NSA. The number of benefits under each noise level reduction scenario was then used to evaluate the appropriateness of each noise barrier height analyzed.

The range of noise level reductions and number of benefitted receptors associated with each of the uniform barrier heights analyzed (i.e., 10, 14, 18, 22, and 26 feet) at each NSA for Alternatives A and B are presented in Table VI-26. As can be seen from that table, the amount of noise level reduction and number of benefitted receptors increase when the height of the barrier increases. Noise level reductions range from 3 to 17 dBA at individual receptors within the NSAs studied. For all but one area (NSA 29), future Build noise levels at a majority of the first-row receptors will be reduced by at least 5 dBA, while noise levels at most of the impacted receptors will be reduced by at least 3 dBA when a barrier of 18 feet in height is designed. Adding more height to a barrier beyond 18 feet will generally result in minimal additional benefit. Noise levels at more than half of the impacted receptors in NSA 29 would be reduced by at least 3 dBA, while the maximum noise level reduction in that NSA would be 12 dBA. It should be noted that only the NSAs along US-95 to the south of Summerlin Parkway were investigated for barrier heights up to 26 feet, while all NSAs along US-95 to the north of Summerlin Parkway and along Summerlin Parkway itself were investigated for barrier heights up to 18 feet only.

Table VI-26  
Noise Level Reductions at Barrier Heights of 10, 14, 18, 22 and 26 feet.  
Alternative A and B

Noise Sensitive Area	Receptor Type	Future 2020		10 Foot Barrier		14 Foot Barrier		18 Foot Barrier		22 Foot Barrier		26 Foot Barrier		
		Number of Impacted Receptors	Non-Abated Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)	
US 95: Craig Road to Summerlin Parkway	1	113	66-78	61-76	3-8	6	18	66	3-10	18	77	109	90	115
		136	66-78	61-76	3-8	0	0	72	3-10	32	104	39	48	104
		133	66-80	61-75	3-15	21	35	121	3-16	39	93	130	112	131
		232	66-80	61-75	3-15	24	96	192	3-16	40	152	208	144	176
		512	66-77	61-75	3-8	24	32	440	3-10	32	336	512	248	416
Summerlin Parkway	2	139	66-78	65-73	3-7	0	15	84	3-10	15	15	120	15	86
		28	66-75	61-73	3-4	0	0	13	3-5	0	0	29	0	42
		104	66-75	61-73	3-4	0	0	56	3-5	0	0	56	0	72
		704	66-77	60-72	3-11	24	80	576	3-11	192	360	616	304	564
		248	66-79	63-76	3-7	0	0	144	3-10	24	80	184	24	80
		352	66-78	63-73	3-9	16	104	280	3-12	32	224	312	128	280
		640	66-80	63-75	3-7	32	136	456	3-10	136	408	496	264	544
		104	66-79	66-74	3-7	8	24	89	3-9	8	24	112	16	25
		14	66-79	66-74	3-7	0	0	0	3-9	0	0	0	0	0
		1	66-77	60-75	3-6	0	1	1	3-7	1	1	1	3-8	1
		120	66-77	61-74	3-6	0	16	80	3-8	16	32	80	3-10	16
US 95: Summerlin Parkway to I-15	15	1	66-73	60-73	3-9	1	1	1	3-6	1	1	1	3-7	
		44	66-74	61-64	3-7	2	4	20	3-10	8	18	22	8	
		328	66-77	60-69	3-8	8	56	232	3-11	49	176	276	136	
		376	66-74	59-73	3-8	8	16	312	3-10	8	200	336	104	
		76	66-83	63-80	3-8	12	28	41	3-11	28	41	76	41	
		384	66-83	63-80	3-8	32	32	104	3-11	32	104	168	104	
		1	66-83	63-80	3-8	1	1	1	3-11	1	1	1	3-13	
		60	66-80	64-79	3-5	0	4	24	3-7	4	22	36	10	
		112	66-79	63-76	3-5	0	16	96	3-9	16	72	104	64	
		100	66-81	64-74	3-12	24	64	82	3-14	60	81	90	90	
		96	66-81	64-74	3-12	16	32	64	3-14	24	32	64	32	
	148	66-79	64-74	3-8	14	91	133	3-10	71	102	133	98		
	48	66-79	66-79	0	0	0	0	0	0	0	0	0		
	84	66-80	64-78	3-7	0	7	54	3-10	10	32	66	3-11		
	1	66-81	64-78	3-7	0	1	1	3-10	1	1	1	3-11		
	1	66-80	64-78	3-7	0	1	1	3-10	1	1	1	3-12		
	80	66-78	63-78	3-7	1	7	53	3-10	10	31	65	3-11		
	1	67-80	65-78	3-7	1	1	1	3-10	1	1	1	3-12		
	1	68-80	65-78	3-7	0	1	1	3-10	1	1	1	3-12		

Table V-26 (Cont'd)  
Noise Level Reductions at Barrier Heights of 10, 14, 18, 22 and 26 feet.

Noise Sensitive Area	Communities Impacted	Alternative A and B					Future 2020									
		10 Foot Barrier		14 Foot Barrier		18 Foot Barrier		22 Foot Barrier		26 Foot Barrier						
		Abated Leq (dBA)	Insertion Loss Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)	Abated Leq (dBA)	Insertion Loss Leq (dBA)					
24 ALT A	Single-family residences	66-80	3-7	63-76	3-10	62-76	3-12	91	120	232	3-12	62-76	3-12	91	120	232
24 ALT B	Single-family residences	66-80	3-8	63-76	3-11	62-76	3-14	179	211	244	3-16	59-77	3-16	199	229	259
25	Single-family residences The Adcock Elementary School	66-79 66-79	3-7 3-7	59-76 59-76	3-9 3-9	60-75 60-75	3-11 3-11	45 1	77	211	244	57-75 57-75	3-13 3-13	40 1	72 1	87 1
26	Single-family residences Multiple-family residences Public park	66-70 66-75 66-74	3-4 3-5 3-6	62-66 62-70 65-68	0 0 0	60-64 61-68 64-66	3-7 3-8 3-10	0 20 1	15 88 1	27 104 1	35 104 1	59-62 60-66 64-64	3-7 3-10 3-10	3 24 1	35 104 1	35 104 1
27	Single-family residences	66-82	3-8	63-76	3-10	62-74	3-13	56	107	120	147	61-71	3-13	125	147	151
28	Single-family residences	66-81	3-7	63-77	3-10	61-74	3-13	27	87	89	103	60-73	3-13	102	103	103
29 ALT A	Single-family residences	66-77	3-8	65-76	3-10	64-76	3-12	5	10	48	52	64-76	3-12	13	34	66
29 ALT B	Single-family residences	66-77	3-8	65-76	3-10	64-76	3-12	7	12	50	55	64-76	3-12	14	35	67
30	Single-family residences Multiple-family residences	66-78 66-78	3-6 3-6	64-72 64-72	3-9 3-9	63-72 63-72	3-11 3-11	16 8	43 32	79 64	79 64	62-72 62-72	3-11 3-11	27 32	57 48	79 64

Noise barrier cost, number of benefitted receptors, and cost-per-benefitted-receptor associated with each of the barrier heights analyzed at each NSA is presented in Table VI-27. Preliminary noise barrier locations are presented in Figures V1-21 through V1-44 in Volume 2. Typical cross-sections showing No-Build/Build relations are presented in Figures VI-45 through VI-48. All areas studied, with the exception of NSAs 12 and 15, which are entirely comprised of golf course property, would result in a cost-per-benefitted-resident value below the \$10,000-per-resident threshold for determining the feasibility of noise barrier construction. As a result of the noise mitigation analysis, a total of 25 barriers (including walls and/or combination walls and earth berms), with a total length of approximately 70,765 feet and costing \$25,475,400 (based on an average height of 18 feet), are recommended for consideration by the local community, final design and construction at 25 NSAs along US-95 and Summerlin Parkway. As shown in Table VI-24, an estimated 5,700 out of approximately 6,500 impacted receptors (homes, schools, etc.) would benefit from an 18 ft. High noise barrier while the actual height to be constructed at each proposed barrier will be determined by NDOT based on public comment. Table VI-28 presents the year 2020 build condition noise levels at noise monitoring locations along US-95 and Summerlin Parkway with and without noise barriers at varying heights of 18, 22 and 26 feet.

Approximately 90 percent of the impacted receptors in areas along US-95 and Summerlin Parkway where noise sensitive land uses have been identified would receive at least a 3-dBA noise level reduction as a result of noise barrier construction.

NSA's 12 and 15 represent the Angel Park Public Golf Course. While the golf course does not meet the \$10,000 per resident criteria, the golf course is considered to be a Section 4(f) resource (see Section VII) and noise barriers will be considered as a measure to minimize harm. 18 ft. noise barriers protecting the golf course would cost an estimated \$1.6 million and are also recommended for consideration by the local community.

## (2.) Arterial Roadways

Barrier construction was considered as a mitigation measure in those areas adjacent to the several arterial roads that are proposed to be improved as part of the proposed project. Arterial roadways are usually characterized by having local access driveways that serve businesses and residences, as well as numerous at-grade intersections. For a noise barrier to work, it must be high enough and long enough to fully block the view of the roadway from the adjacent noise-sensitive receptors. However, any noise barrier openings related to safety and sight distance considerations, as well as access to adjacent properties, would substantially degrade the effectiveness of a noise barrier. This is primarily due to the fact that these land-service roadways are not conducive to the provision of noise barriers because of the numerous driveway access points and at-grade cross-streets that exist. These conditions would preclude the construction of effective noise barriers. Where existing single family and multi-family residences abut the street, full improvements exist, including sidewalk, curb and gutter and lighting, up to the right-of-way line. Property acquisitions to construct and maintain barriers would require extensive residential property acquisition and would be cost prohibitive. Existing residences have 6 ft. high block walls at the back of sidewalk which provides a degree of noise protection. At most locations, the construction of a noise barrier higher than 6 ft. would cause visual impacts. Barrier construction as a mitigation measure was determined not to be feasible in those areas adjacent to arterial roads since the cost per protected resident would exceed NDOT's criteria of \$10,000 per resident.

### 3. Noise Barrier Design Considerations

The length, height, and location of the recommended barriers will be further optimized during the final engineering design phase to achieve the maximum effectiveness. For example, the heights of the barrier will be adjusted individually at each segment, and the alternative locations of the barrier with respect to the edge of roadway pavement or right-of-way will be studied. As appropriate, special design features, such as wrapping the barrier at ends, absorptive wall panel for parallel barriers, roadway pavement selection, etc., will be analyzed and incorporated into construction plans.

The feasibility, location and design of any noise barriers to be proposed in the project area will be determined only after receipt of public input and consideration of public safety, aesthetics and cost effectiveness.

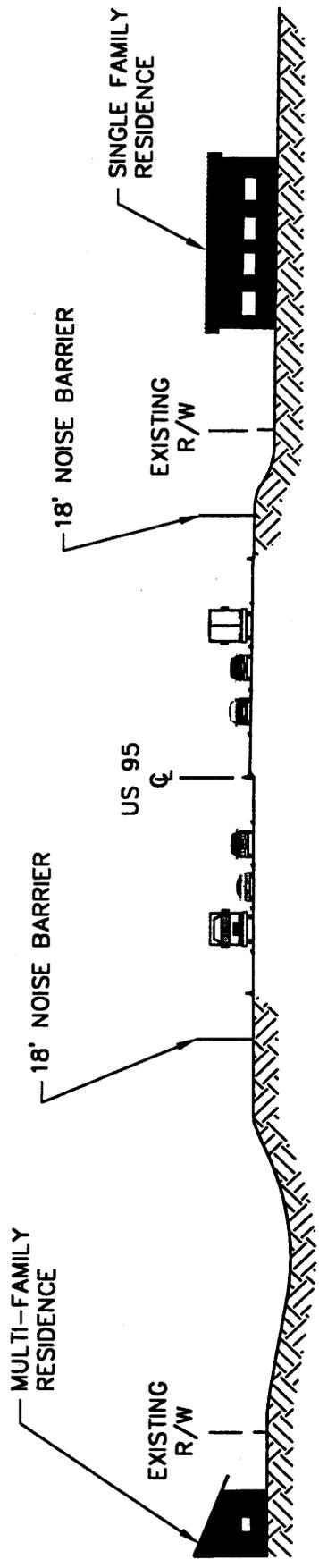
Further detailed information regarding the methodology of the impact analysis and the potential impacts associated with noise and appropriate mitigation is provided in the Noise Technical Study which has been prepared separate to the FEIS/Section 4(f) Evaluation.



Table VI-27  
Proposed Noise Barrier Locations, Dimensions, Costs and Benefits

		Alternative A and B																						
	NSA	10 Foot Barrier				14 Foot Barrier				18 Foot Barrier				22 Foot Barrier				26 Foot Barrier						
		Number of Impacted Receptors	Length of Barrier (feet)	Square Footage	Cost	Total Units Benefitted	Cost per Resident	Square Footage	Cost	Total Units Benefitted	Cost per Resident	Square Footage	Cost	Total Units Benefitted	Cost per Resident	Square Footage	Cost	Total Units Benefitted	Cost per Resident	Square Footage	Cost	Total Units Benefitted	Cost per Resident	
US 95: Craig Road to Summerlin Parkway	1	249	2,700	27,000	\$540,000	158	\$1,315	37,800	\$756,000	213	\$1,365	48,600	\$972,000	219	\$1,707	Data Not Available	Data Not Available	Data Not Available	Data Not Available	Data Not Available	Data Not Available	Data Not Available	Data Not Available	
	2	365	4,800	48,000	\$960,000	313	\$1,180	67,200	\$1,344,000	339	\$1,525	86,400	\$1,728,000	363	\$1,831									
	3	512	3,800	38,000	\$760,000	440	\$664	53,200	\$1,064,000	512	\$799	68,400	\$1,368,000	512	\$1,028									
	5	139	1,600	16,000	\$320,000	84	\$1,465	22,400	\$448,000	120	\$1,436	28,800	\$576,000	139	\$1,594									
	6	130	1,600	16,000	\$320,000	69	\$1,784	22,400	\$448,000	85	\$2,027	28,800	\$576,000	114	\$1,943									
	7	704	4,800	48,000	\$960,000	576	\$641	67,200	\$1,344,000	616	\$839	86,400	\$1,728,000	632	\$1,052									
	9	248	1,950	19,500	\$390,000	144	\$1,042	27,300	\$546,000	184	\$1,141	35,100	\$702,000	184	\$1,467									
	10	352	2,150	21,500	\$430,000	280	\$591	30,100	\$602,000	312	\$742	38,700	\$774,000	312	\$954									
	11	640	2,025	20,250	\$405,000	456	\$342	28,350	\$567,000	496	\$440	36,450	\$729,000	592	\$474									
	14	118	1,940	19,400	\$388,000	89	\$1,677	27,160	\$543,200	112	\$1,865	34,920	\$698,400	112	\$2,398									
	Summerlin Parkway	12	1	2,250	22,500	\$450,000	1	\$173,077	31,500	\$630,000	1	\$242,308	40,500	\$810,000	1									\$311,538
		13	120	1,600	16,000	\$320,000	80	\$1,538	22,400	\$448,000	80	\$2,154	28,800	\$576,000	80									\$2,769
		15	1	2,250	22,500	\$450,000	1	\$173,077	31,500	\$630,000	1	\$242,308	40,500	\$810,000	1									\$311,538
		16	372	5,700	57,000	\$1,140,000	252	\$1,740	79,800	\$1,596,000	298	\$2,060	102,600	\$2,052,000	306									\$2,579
17		376	3,700	37,000	\$740,000	312	\$912	51,800	\$1,036,000	336	\$1,186	66,600	\$1,332,000	336	\$1,525									
US 95: Summerlin Parkway to Interstate 15	19	461	2,650	26,500	\$530,000	146	\$1,396	37,100	\$742,000	245	\$1,165	47,700	\$954,000	357	\$1,028	58,300	\$1,166,000	421	\$1,065	68,900	\$1,378,000	421	\$1,259	
	20	172	2,600	26,000	\$520,000	120	\$1,667	36,400	\$728,000	140	\$2,000	46,800	\$936,000	168	\$2,143	57,200	\$1,144,000	168	\$2,619	67,600	\$1,352,000	168	\$3,095	
	21	196	2,200	22,000	\$440,000	146	\$1,159	30,800	\$616,000	154	\$1,538	39,600	\$792,000	162	\$1,880	48,400	\$968,000	162	\$2,298	57,200	\$1,144,000	162	\$2,716	
	22	194	2,200	22,000	\$440,000	133	\$1,272	30,800	\$616,000	133	\$1,781	39,600	\$792,000	140	\$2,176	48,400	\$968,000	140	\$2,659	57,200	\$1,144,000	140	\$3,143	
	23(A)	86	4,000	40,000	\$800,000	56	\$5,495	56,000	\$1,120,000	68	\$6,335	72,000	\$1,440,000	86	\$6,440	88,000	\$1,760,000	86	\$7,871	104,000	\$2,080,000	86	\$9,302	
	23(B)	82	4,000	40,000	\$800,000	55	\$5,594	56,000	\$1,120,000	67	\$6,429	72,000	\$1,440,000	82	\$6,754	88,000	\$1,760,000	82	\$8,255	104,000	\$2,080,000	82	\$9,756	
	24(A)	232	4,750	47,500	\$950,000	145	\$2,520	66,500	\$1,330,000	196	\$2,610	85,500	\$1,710,000	232	\$2,835	104,500	\$2,090,000	232	\$3,465	123,500	\$2,470,000	232	\$4,095	
	24(B)	278	4,750	47,500	\$950,000	188	\$1,944	66,500	\$1,330,000	238	\$2,149	85,500	\$1,710,000	244	\$2,695	104,500	\$2,090,000	259	\$3,104	123,500	\$2,470,000	266	\$3,571	
	25	98	2,500	25,000	\$500,000	40	\$4,808	35,000	\$700,000	46	\$5,853	45,000	\$900,000	78	\$4,438	55,000	\$1,100,000	88	\$4,808	65,000	\$1,300,000	88	\$5,682	
	26	172	2,350	23,500	\$470,000	42	\$4,304	32,900	\$658,000	116	\$2,182	42,300	\$846,000	140	\$2,324	51,700	\$1,034,000	140	\$2,841	61,100	\$1,222,000	140	\$3,357	
	27	170	2,700	27,000	\$540,000	118	\$1,760	37,800	\$756,000	120	\$2,423	48,600	\$972,000	151	\$2,476	59,400	\$1,188,000	151	\$3,026	70,200	\$1,404,000	151	\$3,576	
	28	139	2,700	27,000	\$540,000	89	\$2,334	37,800	\$756,000	89	\$3,267	48,600	\$972,000	103	\$3,630	59,400	\$1,188,000	103	\$4,436	70,200	\$1,404,000	103	\$5,243	
	29(A)	66	1,350	13,500	\$270,000	20	\$5,192	18,900	\$378,000	48	\$3,029	24,300	\$486,000	52	\$3,595	29,700	\$594,000	66	\$3,462	35,100	\$702,000	66	\$4,091	
	29(B)	70	1,350	13,500	\$270,000	22	\$4,720	18,900	\$378,000	50	\$2,908	24,300	\$486,000	55	\$3,399	29,700	\$594,000	67	\$3,410	35,100	\$702,000	67	\$4,030	
	30	162	2,400	24,000	\$480,000	143	\$1,291	33,600	\$672,000	143	\$1,807	43,200	\$864,000	143	\$2,324	52,800	\$1,056,000	143	\$2,840	62,400	\$1,248,000	143	\$3,357	
<b>Total (Alt A)</b>		6,473	70,765	707,650	14,153,000	4,451	48,087	990,710	19,814,200	5,201	51,570	1,273,770	25,475,400	5,713	56,609	712,800	\$14,256,000	1,900	\$41,390	842,400	\$16,848,000	1,900	\$48,916	
<b>Total (Alt B)</b>		6,519	70,765	707,650	14,153,000	4,495	47,139	990,710	19,814,200	5,244	51,083	1,273,770	25,475,400	5,724	56,587	712,800	\$14,256,000	1,924	\$41,361	842,400	\$16,848,000	1,931	\$48,785	

Note: Total barrier length and costs for the project does not include the barriers at NSAs 12 and 15, since these two barriers are not considered as reasonable and feasible.



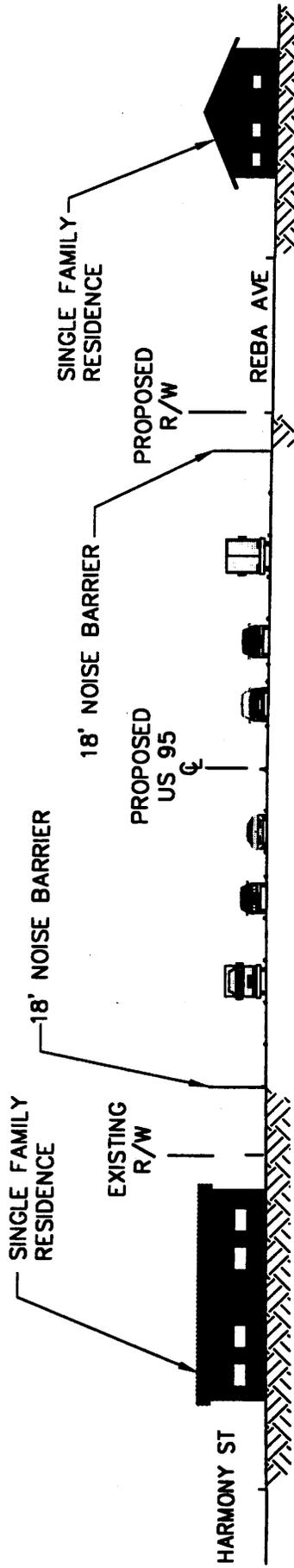
TYPICAL NOISE BARRIER LOCATION  
 ALTERNATIVE A & B  
 US 95 SOUTH OF ALEXANDER RD  
 LOOKING NORTH

FIGURE VI-45



**LOUIS BERGER  
 & ASSOCIATES, INC.**  
 LAS VEGAS, NEVADA

SCALE 1" = 50'



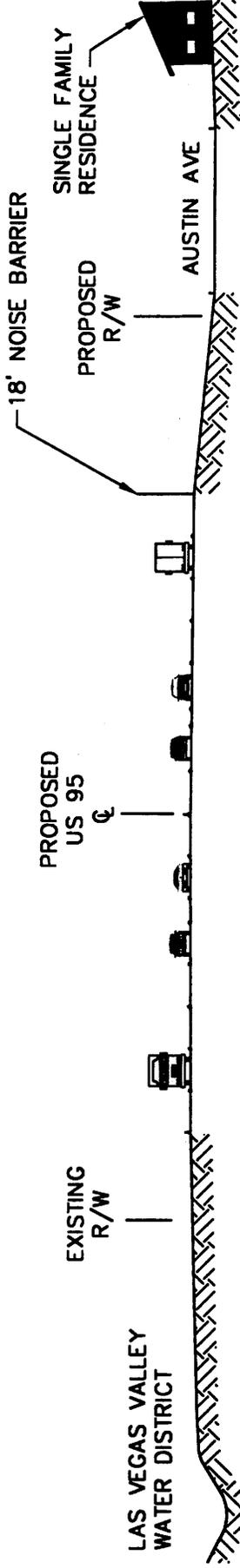
SCALE 1" = 50'



**LOUIS BERGER  
& ASSOCIATES, INC.**  
LAS VEGAS, NEVADA

**TYPICAL NOISE BARRIER LOCATION  
ALTERNATIVE A & B  
STATION 350+00 LOOKING WEST  
US 95 EAST OF JONES BLVD**

FIGURE VI-46



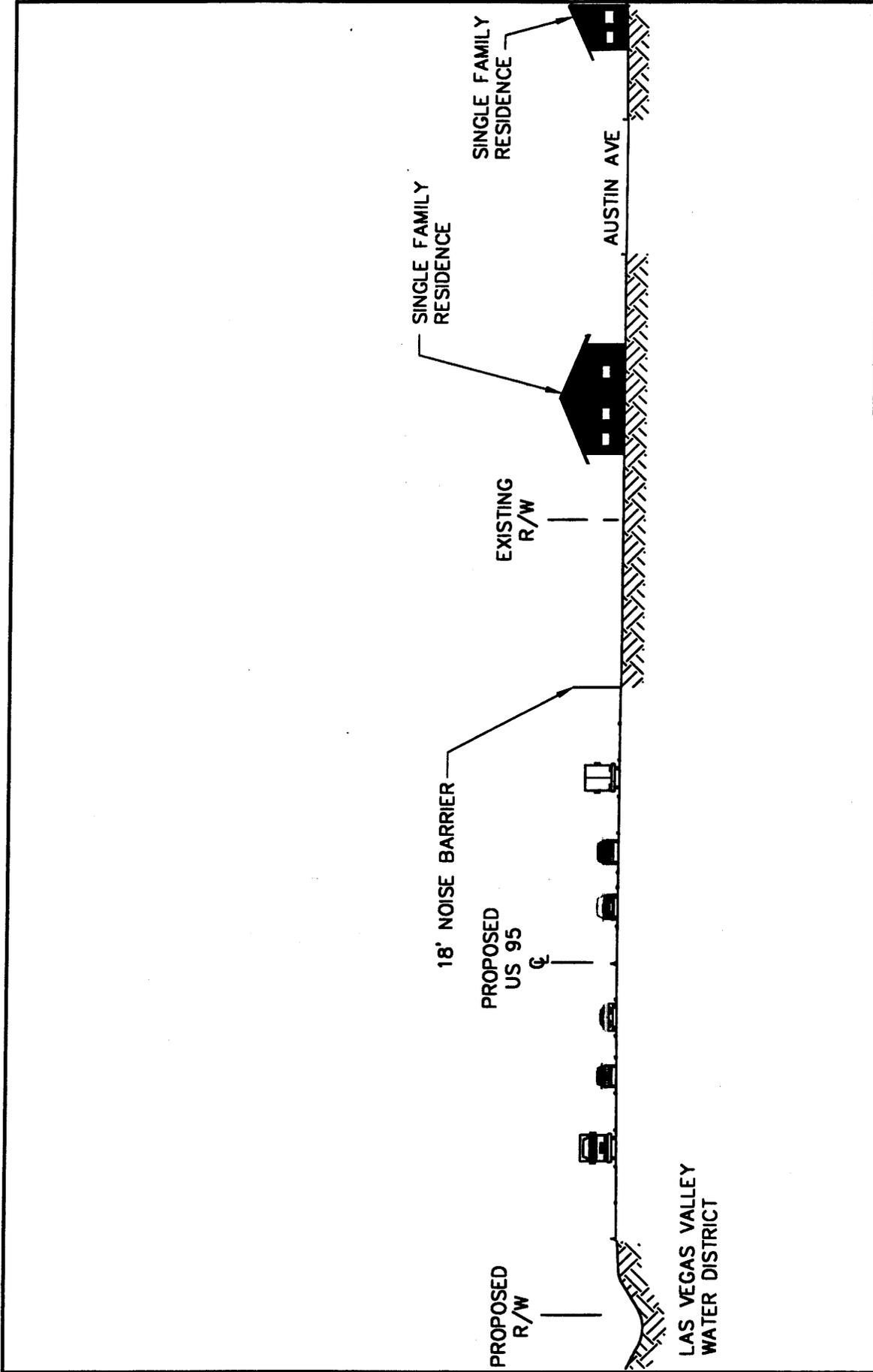
SCALE 1" = 50'



**LOUIS BERGER & ASSOCIATES, INC.**  
LAS VEGAS, NEVADA

**TYPICAL NOISE BARRIER LOCATION  
ALTERNATIVE A  
STATION 450+00 LOOKING WEST  
US 95 EAST OF VALLEY VIEW BLVD**

FIGURE VI-47



**TYPICAL NOISE BARRIER LOCATION  
ALTERNATIVE B  
STATION 450+00 LOOKING WEST  
US 95 EAST OF VALLEY VIEW BLVD**

FIGURE VI-48


**LOUIS BERGER  
& ASSOCIATES, INC.**  
 LAS VEGAS, NEVADA

SCALE 1" = 50'

**Table VI-28  
Year 2020 Modeled Noise Levels at Monitoring Locations along US-95 and  
Summerlin Parkway With and Without Noise Barriers**

NSA	Site Number	2020 Build Sound Levels, Without Abatement Leq, dBA	Monitoring Location	Adjacent To	1997 Measured Sound Levels, Leq9 dBA	2020 Build Sound Levels, with 18-foot Wall Leq, dBA	2020 Build Sound Levels, with 22-foot Wall Leq, dBA	2020 Build Sound Levels, with 26-foot Wall Leq, dBA
NSA 1	No Data Available							
NSA 2	Site 38	79	6932 Delorean Circle	NB US-95	67	67		
NSA 3	Site 39	76	Mountain Creek Apts. 2451 N. Rainbow Boulevard	NB US-95	65	65		
NSA 4-6	No Data Available		No Noise Monitoring for this area.					
NSA 7	Site 37	76	Oasis Bel Air - 7075 W. Gowen Road	SB US-95	69	69		
NSA 8	No Data Available		No Noise Monitoring for this Area					
NSA 9	Site 36	79	The Fountains - 2300 Rock Springs Drive	SB US-95	67	67		
NSA 10	Site 35	78	Mountain Springs Apts. - 1701 Rock Springs Drive	SB US-95	68	68		
NSA 11	Site 34	78	1108 Willowtree Drive	SB US-95	68	68		
NSA 12	Site 40	77	Angel Park Golf Course - Property Line along Summerlin Parkway	WB Summerlin Parkway	65	65		
NSA 13	Site 43	75	San Moritz Apts. 7401 Washington Avenue	WB Summerlin Parkway	69	69		
NSA 14-15	No Data Available		No Noise Monitoring for this Area					
NSA 16	Site 41	78	Angel Park Apts. 6255 W. Tropicana	EB Summerlin Parkway	62	62		
	Site 76	62	La Rue Court	EB Summerlin Parkway	57	57		
NSA 17	Site 42	75	Pirates Cove Apts. 7200 Pirates Cove Road	EB Summerlin Parkway	63	63		
NSA 18	No Data Available		No Noise Monitoring for this Area					

NSA	Site Number	2020 Build Sound Levels, Without Abatement Leq, dBA	Monitoring Location	Adjacent To	1997 Measured Sound Levels, Leq9 dBA	2020 Build Sound Levels, with 18-foot Wall Leq, dBA	2020 Build Sound Levels, with 22-foot Wall Leq, dBA	2020 Build Sound Levels, with 26-foot Wall Leq, dBA
NSA 19	Site 26	81	6509 Mecham Avenue	WB US-95	65	69	67	66
	Site 33	77	The St. Croix Apts. 6661 Silverstream Avenue	WB US-95	64	73	71	70
	Site 75	80	Christ Lutheran Church 100 N. Wallace	WB US-95	61	70	68	67
NSA 20	Site 23	78	6121 Aberdeen Lane	WB US-95	59	69	67	66
	Site 24	taken	Catalina Apts. 100 N. Wallace	WB US-95	61	taken	taken	taken
	Site 25	81	Catalina Apts. 100 N. Wallace	WB US-95	64	73	71	70
	Site 74	75	Catalina Apts.	WB US-95	61	65	64	63
NSA 21	Site 17	82	5520 Reba Avenue	WB US-95	58	71	70	69
	Site 72	75	Property line of 5600 Tanaya Avenue	WB US-95	57	66	65	64
NSA 22	Site 14	77	13 Tawnily Drive	WB US-95	63	67	66	64
	Site 15	76	14 Princeton Street	WB US-95	64	66	66	65
NSA 23	Site 71	67	Property line of 5208 Dancer Way	WB US-95	57	61	60	59
	Site 13	79 (79)	320 Estella Avenue	WB US-95	67	69 (69)	66 (66)	64 (64)
	Site 16	79 (79)	Ruth Fyfe Elementary School 4101 Bonanza Road	WB US-95	66	72 (72)	69 (69)	67 (67)
	Site 32	77 (77)	Western High School 4601 W. Bonanza Road	WB US-95	69	66 (66)	66 (66)	65 (65)
	Site 68	65 (65)	Property line between 220 & 217 Moller Ct.	WB US-95	60	60 (60)	60 (60)	59 (59)

NSA	Site Number	2020 Build Sound Levels, Without Abatement Leq, dBA	Monitoring Location	Adjacent To	1997 Measured Sound Levels, Leq9 dBA	2020 Build Sound Levels, with 18-foot Wall Leq, dBA	2020 Build Sound Levels, with 22-foot Wall Leq, dBA	2020 Build Sound Levels, with 26-foot Wall Leq, dBA
	Site 69	too far away	Back of Western H.S. near Bonanza Road	WB US-95	60	too far away	too far away	too far away
NSA 24	Site 8	76 (76)	201 Ramsey Street	WB US-95	68	71 (71)	71 (71)	70 (70)
	Site 9	77 (75)	204 Pomegranate Circle	WB US-95	56	67 (64)	66 (63)	65 (63)
	Site 10	taken (82)	3029 Austin Avenue	WB US-95	67	taken (65)	taken (64)	taken (63)
	Site 11	taken (77)	308 Twin Lakes Drive	WB US-95	62	taken (67)	taken (65)	taken (64)
	Site 12	taken (81)	3616 Pyracantha Circle	WB US-95	71	taken (70)	taken (67)	taken (65)
	Site 67	79 (76)	Property line of 2812 Austin Avenue	WB US-95	62	68 (68)	67 (66)	66 (65)
NSA 25	Site 29	78	6517 Lowden Lane	EB US-95	62	68	66	64
	Site 30	79	6616 Lowden Lane	EB US-95	61	69	68	67
	Site 31	taken	Adcock Elementary School Hyde Avenue	EB US-95	67	taken	taken	taken
NSA 26	Site 27	74	Azure Crest Town Homes 100 S. Crestline Drive	EB US-95	57	70	70	70
	Site 28	72	Mirabelli Park Hargrove Avenue	EB US-95	73	66	62	61
NSA 27	Site 18	83	5916 Harmony Circle	EB US-95	65	70	66	66
	Site 19	81	5516 Harmony Avenue	EB US-95	66	68	65	65
	Site 73	69	Property line of 5705 W. Churchill Street	EB US-95	61	63	62	61

NSA	Site Number	2020 Build Sound Levels, Without Abatement Leq, dBA	Monitoring Location	Adjacent To	1997 Measured Sound Levels, Leq9 dBA	2020 Build Sound Levels, with 18-foot Wall Leq, dBA	2020 Build Sound Levels, with 22-foot Wall Leq, dBA	2020 Build Sound Levels, with 26-foot Wall Leq, dBA
NSA 28	Site 20	81	5244 Harmony Avenue	EB US 95	57 55 60	68	65	64
	Site 21	78	120 S. Minnesota Street	EB US 95	62 58 57	66	65	64
	Site 70	72	4905 Harmony Avenue	EB US 95	57	65	65	64
NSA 29	Site 22	79	Property line of 5009 Church Hill Road	EB US 95	57 57 57	70	69	68
	Site 7	72 (73)	108 Hollyhook Lane	EB US-95	57	67 (68)	65 (68)	65 (67)
NSA 30	Site 5	81	10 Onyx Way	EB US-95	67	70	70	70
	Site 6	76	Racquet Club Apts. 98 S. Martin Luther King Boulevard	EB US-95	70	67	66	66
	Site 65	67	Between property line of 1913 & 1909 Granite Avenue	EB US-95	67	64	64	63

Note: Numbers in Parenthesis are for ALT B  
Source: Louis Berger & Associates, Inc. 1998

## **G. Hazardous Waste**

### **1. No Action Alternative**

As no construction would take place with this alternative, there would be no effect on hazardous waste sites.

### **2. Alternatives A and B**

Of the 21 properties with known contamination in the project area, seven are within the proposed right-of-way. They are further defined as follows:

- One of the two known properties with contaminated materials along US-95 and Summerlin Parkway is U-Haul on Bonanza Road which is within the currently proposed right-of-way required for widening US-95.
- Three of the six known properties with contamination within the arterial street connector corridors are within the currently proposed right-of-way. These sites, located in the largest industrial zone of the project area, are: Grayline Tours, American Coin and Nevada Power Company.
- Three of the 15 known properties with contamination located along arterial streets proposed for improvements are within the currently proposed right-of-way. These sites are Joe's Auto, Texaco, and Day and Night Convenience Store.

### **3. Mitigation**

Within the project area, 21 sites have been identified with environmental concerns, seven of which are located within the proposed right-of-way for both Alternatives A and B. The Nevada Department of Environmental Protection has been contacted to determine the status of these sites. In general, soil contamination in the shallow zone (0 to 10 ft.) is either not considered a major source of groundwater contamination or has been removed. Most of the seven contaminated sites proposed for acquisition are in some stage of remediation or clean up under the direction of the Nevada Department of Environmental Protection (NDEP). Three sites have remediation plans of soil and/or groundwater proposed or completed. Two sites are under the direct supervision of NDEP for non-compliance and have been ordered to submit remediation plans. Six of the seven sites have groundwater. Average clean up costs for the seven sites are estimated to range between \$200,000 and \$500,000.

Golden Engine & Cylinder Head located at 1414 Industrial Road and Western Linen Service located at 1205 Western Avenue, which were included in the Nevada Division of Environmental Protection (NDEP) database in 1997 have been recently assessed by NDEP and closed with no further requirements for further assessment or remediation. This is updated information not included in the Hazardous Waste Technical Study, December 1998. Consequently, sites listed in the Technical Study as suspect due to their proximity to Golden Engineer & Cylinder Head & Western Linen Service are no longer considered suspect.

Prior to and during construction, all guidelines and specifications as cited in the American Association of State Highway and Transportation Officials (AASHTO) Hazardous Waste Guide for Project Development, 1989, will be implemented by the Nevada Department of Transportation. These guidelines lay out the steps to determine if there is a hazardous waste present and the tasks involved if there is one present.

Asbestos surveys would be conducted for all buildings that would be acquired as part of right-of-way purchase. Buildings constructed prior to 1980 are likely to contain asbestos. If possible, residential housing to be acquired with asbestos present would be moved rather than demolished. Removal and disposal of asbestos or other contaminated materials identified prior to right-of-way acquisition would be conducted prior to the construction phase of the project. All contaminated materials will be disposed of properly.

If any previously-identified hazardous substances are encountered during construction, work will cease while corrective actions are undertaken in cooperation with the Nevada Division of Environmental Protection and Clark County Health Department. During excavations, OSHA guidelines for volatile organic compounds will be followed if encountered or suspected.

## **H. Energy Resources**

The construction and operation of the proposed project is not expected to adversely affect energy consumption. A short-term increase in energy consumption is expected during the construction phase due to roadway work and minor associated traffic delays or detoured re-routing. However, this increase will be offset by the long-term reduction of energy use stemming from reduced vehicle delays on the existing road network.

Both direct and indirect use of energy would be affected by the construction and operation of the proposed project and the No-Build alternative.

Direct energy is considered operational or long-term and related to the consumption and use of energy by vehicles utilizing the proposed project, and the subsequent maintenance and repair of the proposed project during the operational phase. Direct energy will also include the utilization of electrical energy consumed through the use of street lighting and signage and the operation of street signals.

In order to evaluate operational direct energy consumption associated with the No-Build and Build alternatives for the project, the Regional Transportation Commission's TRANPLAN Computer

Model of Las Vegas was used. The model distributes traffic over the entire Las Vegas roadway network based on projected valley-wide productions and attractions.

Table VI-29 shows the total peak hour vehicle-miles of travel, total peak hour vehicle-hours of travel and average peak hour travel speed for the entire Las Vegas roadway network as calculated in the US-95 Major Investment Study using the TRANPLAN model for the year 2020 for the Build and No-Build alternatives.

**TABLE VI-29**

**Summary of Year 2020 Projected Peak Hour Characteristics by Alternative**

<u>Alternative</u>	<u>Total Peak Hour Vehicle Miles of Travel</u>	<u>Total Peak Hour Vehicle Hours of Travel</u>	<u>Average Travel Speed</u>
No-Build	3,823,846	116,163	32.92
“A”	3,786,963	113,276	33.43
“B”	3,786,963	113,276	33.43

As a result of the construction of Alternatives A or B, the total valley-wide peak hour vehicle-miles of travel are expected to decrease by approximately 1.0%. Total valley-wide peak hour vehicle hours of travel are expected to decrease by nearly 2.5%. As a result, average valley-wide peak hour travel speeds are expected to increase by approximately 0.5 mph, from 32.9 mph for the No-Build alternative to 33.4 mph for the Build alternatives.

The decrease in total peak hour vehicle-hours of travel and increase in average travel speed can be attributed to reduced system-wide congestion as a result of construction of the Build alternatives.

In order to evaluate fuel (direct energy) consumption associated with the No-Build and Build alternatives, it was necessary to break-down TRANPLAN model output by class of arterial. Table VI-30 shows the total peak hour vehicle-miles of travel, total peak hour vehicle-hours of travel and average peak hour travel speed broken down by arterial class for the No-Build alternative for the year 2020 for the entire Las Vegas roadway network. Time spent at traffic signals on the arterial street system reflects the relative degree of congestion and results in average speeds which are less than normal operating speeds.

Total peak hour fuel consumption can be estimated by adding the calculated fuel consumption at normal operating speeds between traffic signals to the calculated fuel consumption at idle waiting at traffic signals.

Fuel consumption rates were taken from P. Claffey, Running Costs of Motor Vehicles as Affected by Road Design and traffic, National Cooperative Highway Research Program Report III (Washington, D.C. Highway Research Board, 1971). Fuel consumption rates vary with speed, however, values for level terrain were assumed because few streets in Las Vegas exceed 1.5% grade. A fuel consumption rate of 0.58 gallons per hour at idle was used.

TABLE VI-30

No-Build Alternative  
Year 2020 Estimated Peak Hour Fuel Consumption (Valley-wide)

ARTERIAL CLASS	NORMAL OPERATING SPEED	TOTAL PEAK HOUR VEHICLE MILES	TOTAL PEAK HOUR VEHICLE HOURS	PEAK HOUR AVERAGE SPEED (mph)	NORMAL OPERATING FUEL CONSUMPTION GAL/MILE	FUEL CONSUMPTION AT IDLE GALLONS	TOTAL ESTIMATED PEAK HOUR FUEL CONSUMPTION GALLONS
LOCAL	20	415,266	27,487	15.11	.044	3,900	22,172
MINOR	35	1,241,977	36,735	33.81	.045	725	56,614
MAJOR	45	1,138,271	32,026	35.54	.049	3,904	59,680
FREEWAY	55	1,028,326	19,915	51.64	.055	707	57,265
		3,823,846	116,163	32.92		9,236	195,731

TABLE VI-31  
Alternative A & B

Year 2020 Estimated Peak Hour Fuel Consumption (Valley-wide)

ARTERIAL CLASS	NORMAL OPERATING SPEED	TOTAL PEAK HOUR VEHICLE MILES	TOTAL PEAK HOUR VEHICLE HOURS	PEAK HOUR AVERAGE SPEED (mph)	NORMAL OPERATING FUEL CONSUMPTION GAL/MILE	FUEL CONSUMPTION AT IDLE GALLONS	TOTAL ESTIMATED PEAK HOUR FUEL CONSUMPTION GALLONS
LOCAL	20	413,657	27,502	15.04	.044	3,955	22,156
MINOR	35	1,221,576	35,604	34.31	.045	407	55,378
MAJOR	45	1,092,612	30,129	36.26	.049	3,392	56,930
FREEWAY	55	1,059,118	20,041	52.85	.055	455	58,706
TOTAL		3,786,963	113,276	33.43		8,209	193,170

As shown in Table V1-30, fuel consumption at normal operating speed was calculated by multiplying the total daily vehicle-miles by arterial class times the estimated fuel consumption rate. Fuel consumption at idle was calculated as follows:

$$0.58 \text{ gal./hrs.} \times (\text{total peak hour vehicle-hrs} - \frac{\text{Total peak hour vehicle-miles}}{\text{Normal operating speed (mph)}})$$

where the latter part of the equation represents the estimated time at idle waiting at traffic signals.

Total peak hour fuel consumption is calculated by adding the fuel consumption at normal operating speed and at idle for each arterial class. Total year 2020 peak hour fuel consumption for the No-Build alternative is estimated to be 195,311 gallons per hour.

Tables VI-31 shows year 2020 estimated fuel consumption for Alternatives A & B, based on total daily vehicle-miles, total daily vehicle-hours and average travel speeds broken down by arterial class. Total year 2020 peak hour fuel consumption for Alternatives A & B are estimated to be 193,170 gallons per hour. Therefore, peak hour fuel consumption is expected to decline by an estimated 2,100 gallons per hour in the year 2020 with the proposed project. While vehicle miles of travel and vehicle hours of travel are expected to increase for valley-wide freeways as a result of increasing the capacity of the US-95 freeway with the proposed project, vehicle miles of travel and vehicle hours of travel are expected to decline on the arterial street system, compared to the no-build alternative, resulting in a net decrease in total consumption. The net reduction in fuel consumption is expected in large part due to the enhanced bus transit and transportation demand management measures (HOV lanes, freeway management system and park-and-ride) included as part of the project.

Indirect energy is considered more short-term and related primarily to the use of energy during the construction period. Indirect energy requirements associated with the construction of the proposed project will involve the consumption of various forms of petroleum such as diesel and gasoline fuel for the operation of construction vehicles and equipment, asphalt and oils placed in the roadway prism, and fossil fuels and electrical energy for the manufacture of materials and products associated with the roadway construction as well as the operation of the on-site equipment maintenance yards and trailers. Indirect energy requirements will also be required for the maintenance and repair of the new roadway as well as sign posts, guard rails, road barriers and lighting.

The proposed project will result in a savings of operational energy compared to the No-Build alternative. This savings in operational energy is considered to offset any of the construction or other direct or indirect energy requirements which would result, in the long term, in an overall net savings in energy usage.

The proposed project is envisioned as complementing local and regional efforts to conserve energy resources and promote more direct and more efficient travel through the project area and region. As a result of the proposed project, traffic congestion on the existing road network will be eased and long circuitous travel through the area will be reduced. In addition, the proposed project will offer an alternative to high traffic flow along the existing and proposed arterial network which is predicted to exceed its capacity by the year 2000.

Because of the proposed project, the proposed arterial network, which will serve the project area and the Las Vegas region, will also function at higher and more acceptable levels of service and overall traffic patterns in the area will move more freely to where vehicles operating on these roadways and the proposed roadway will be able to travel the same distance in less time. As a result, greater efficiency of the existing arterial network is anticipated which will foster a more efficient consumption of energy.

## **I. Construction Practices**

### **1. Social**

Short-term minor impacts to the traveling public and businesses adjacent to the construction sites are anticipated during the various phases of construction. However, for the most part, motorized and pedestrian traffic should not experience undue hardship as a result of construction activities.

The proposed project will result in the acquisition and displacement of many residential and business properties and the relocation and reconstruction of some park and recreational facilities. Although the acquisition, demolition and relocation/reconstruction of these properties and facilities will occur prior to and during the construction phase, these impacts are considered to be long-term and permanent and associated with both the construction and operation of the proposed project.

Although public parks, playgrounds, schools and other outdoor and youth oriented recreational activities within the project area are located in close proximity but beyond the construction area of the proposed roadway widenings and other transportation improvements of the proposed project, most of these facilities are situated away from the immediate construction areas. With one exception, no substantial impacts to these facilities are anticipated although some minor traveling delays or temporary detouring of certain travel routes may be needed. Reconstruction of Adcock Elementary School on the site of the Torrey Pines Park, and redevelopment of the park on the site of the Elementary School, will interrupt the public's use of the park facilities for up to two years. Construction of the new school prior to demolition of the existing school will avoid impacts to students and faculty. The recent construction of a ballfield on the adjacent Garside Middle School property will reduce the temporary impact caused by the time required to redevelop permanent park facilities. Standard traffic control measures and the phasing of certain construction activities to off-peak hours will serve to insure that public safety is maintained. These same measures will also serve to provide adequate access, at all times, for emergency and public safety vehicles.

### **2. Air Quality**

Local air pollution in the project area would be affected by construction activity. Emissions from construction vehicles and equipment and from vehicles hauling materials to and from the construction areas may result in slightly higher concentrations of CO in the immediate area. However, these emissions are not expected to exceed standards. Many of the construction vehicles involved in construction will be diesel powered. Diesel emissions while very visible, are reactively innocuous in comparison to gasoline fueled vehicles or automobiles.

A more important impact would be windblown dust from construction including the movement of vehicles and equipment and any material pits that would be associated with the construction of the proposed project. The construction of the proposed project will have the potential to temporarily increase some dust emissions and PM-10 and total suspended particulates concentrations. The relatively high winds that are frequent within the project area would tend to lift soil particles from newly exposed soil surfaces. Dust would also be generated by excavation, grading, earth-moving activity and material processing as well as by stored fill material.

The combination of moderate wind gusts and dry soil conditions could aggravate the dust problem. Windblown dust can have minor adverse effects on some types of vegetation while to humans it is primarily a nuisance, except when extreme dust conditions can hamper safe driving conditions.

The potential for generated dust entering into the atmosphere could result in temporary impacts to the local vegetative community as well as to select forms of wildlife which are known to inhabit the project area near the construction sites. The fugitive dust and particulate matter could become an irritant for a select number of species. These impacts may become especially adverse for the Las Vegas bearpoppy and Merriam's bearpoppy population which would be in closest proximity to Alternative B.

To mitigate construction related air quality impacts, the Nevada Department of Transportation will require that contractors comply with all relevant local, state and federal air quality regulations, particularly the County Fugitive Dust Control Regulations and the Nevada State Air Quality Regulations. To limit the potential for adverse particulate emissions, mitigation will include; watering of exposed earth surfaces during excavation, grading and construction activities; watering of all active portions of the construction site to limit vehicular and wind blown dust; regular cleaning of adjacent streets to remove accumulated silt from construction activities; covering or watering material being transported off-site; measures to prevent the tracking of mud and other wet soils to the nearby streets and the periodic review and inspection of construction practices to ensure that particular mitigation strategies are properly implemented.

### 3. Noise

Construction noise differs from traffic noise in length, type, and duration of noise events. Construction noise is of a fixed duration and ceases at the completion of the construction phase. Construction-related noise is responsible for a variety of impulsive, discontinuous noise sources, such as jack-hammer and/or vibratory rollers. Traffic noise, although varying in level, is more continuous as a noise source. Temporary increase in noise levels will occur during the time period that construction takes place. Noise levels due to construction, although temporary, can impact areas adjacent to the proposed project.

Impacts due to construction noise are dependent upon the following criteria:

- Time and duration of construction activities;

- Equipment types; and
- Equipment usage cycle.

Typical construction phases for the proposed project may involve the following construction activities:

- **Demolition:** Removal of structures within the right of way.
- **Clearing and Grubbing:** Existing landscaping, along with unwanted earth and rock.
- **General Earthwork:** Site topography will be altered in order to prepare the area for the roadway design. Earth moving operations will be required to prepare the roadbed. Trenches will be excavated for drainage materials.
- **Foundations:** Preparation for, and construction of, foundation support systems for both bridge and other primary foundation structures.
- **Structures:** Construction of bridges, retaining walls and noise barriers.
- **Paving Operations:** Preparation of the base layer, such as roadbed compaction and the laying of substrata material as well as surface paving operations.
- **Finishing:** Cleanup and landscaping.

Equipment such as bulldozers, scrapers, pavers, backhoe, graders, loaders, cranes, trucks, compressors, vibratory compactors, generators, and pile driving operations are typically utilized during construction, and would be subject to NDOT Construction Noise Specifications.

Noise generated during construction can affect adjacent land uses and activities. Construction noise differs from traffic noise in several ways: (1) Construction noise lasts only for the duration of the construction contract; (2) Construction activities generally are of a short-term nature and, depending on the nature of construction operations, it could last from seconds (e.g., the movement of a truck or other heavy piece of equipment past a given point) to months (e.g., construction of a bridge structure); (3) Construction noise also is intermittent and depends on the type of operation, location and function of the equipment, and the equipment usage cycle. Traffic noise, on the other hand, is present in a more continuous fashion after construction activities are completed.

The proposed project will involve a variety of construction activities, including clearing and grubbing, excavation and embankment construction, sub-base preparation, paving, bridge construction and other miscellaneous engineering work. Depending upon the type of equipment used, construction noise levels could increase up to 20 dbA greater than the present noise levels at a distance of 50 feet, and 11 dbA greater at a distance of 200 feet assuming soft site conditions and a drop-off of 4.5 dbA/doubling distance. These estimates are derived from noise emission levels for

various pieces of construction equipment surveyed by the American Road Builders Association. Noise levels due to construction will impact certain areas of the project area more than others.

Construction of the proposed project may also result in potential impacts to a select number of wildlife species which are known to inhabit the project area. Construction related noise impacts could interfere with the ability of these species to forage, mate and reproduce successfully. This may be particularly true for those species which are known to inhabit those portions of the project area within the LVVWD North Well Field. However, these impacts are considered to be temporary and will occur only during the construction period.

Appropriate measures to mitigate potential construction related noise impacts will be incorporated into the NDOT contract documents. The following mitigation strategies will serve to limit the extent and potential for construction related noise impacts:

**a. Source Control**

- All exhaust systems in good working order, also using properly designed engine enclosures, and intake silencers.
- Regular equipment maintenance.

**b. Site Control**

- Placement of stationary equipment as far away from sensitive receptors as possible (i.e., pumps, compressors, aggregate crushers, AC plants, operettas, etc.).
- Choice of disposal sites and haul routes thereto.
- Employing shielding where possible.

**c. Time and Activity Constraints**

- Schedule of operations to coincide with periods when people would least likely be affected.
- Limiting working hours and work days to least noise sensitive times.

**d. Community Awareness**

- Public notification of construction operations.
- Methods to handle complaints.

Work adjacent to residential areas will be scheduled for 7:00 A.M. to 7:00 P.M. On arterial streets, in non-residential areas, work will be scheduled at night as much as practical to reduce impacts to motorists during peak hours. Along US-95, where work is proposed adjacent to residential neighborhoods, noise barriers will be constructed during early construction stages so that construction can proceed behind the barriers day or night.

#### **4. Energy**

Substantial quantities of energy will be required in the construction of the proposed project. This energy consumption will result from the use of heavy construction and earth-moving equipment which will consume diesel and other petroleum fuel products; the manufacture and placement of bituminous and concrete paving materials; the fabrication and installation of reinforcement and other types of steel in various structures; and the replacement, relocation and construction of utility service lines and facilities.

#### **5. Soils and Erosion**

Construction of the proposed project will result in some potential for soil erosion. The unique climatic conditions within the Las Vegas Valley are anticipated to result in considerable erosion of exposed soils along embankments and cut slopes. The erosion potential due to rainfall and surface water runoff will be limited to a few intense rainfall events during the summer months. During the remaining portion of the year, the erosion potential is anticipated to be low. Conversely, the erosion potential due to wind is anticipated to be high on a daily basis due to frequently occurring high wind velocities and the high percentage of fine grained particulates in the local soils. Areas particularly susceptible to wind erosion will be those having steep embankments and cut slopes.

In those areas subject to slope failure, standard slope stabilization techniques will be employed. Erosion of the proposed roadway embankments due to surface runoff can be minimized by reducing the amount of stormwater runoff directed to the embankments. This can be achieved through the use of drainage structures that would safely convey flows off the embankment. Slope stabilization measures such as asphalt emulsions, chemical sprays or excelsior blankets may be needed in some areas. Where toe embankment slopes come in contact with surface water drainage channels more erosion resistant materials such as matting, riprap or gabions may be required. Wherever possible, attempts will be made to minimize the amount of time that erodible soils are exposed during construction. The construction of temporary berms, sediment basins and drains where appropriate and necessary will also serve to limit soil erosion. The binding of soil particles together through the use of chemicals or natural binders such as clay can serve to further limit soil erodibility. These mitigation measures as well as those previously identified will need to be initiated soon after the completion of final grading.

Ongoing coordination between the Nevada Department of Transportation, the Nevada Department of Conservation and Natural Resources and the Clark County Regional Flood Control District, will serve to identify and develop specific mitigation measures and further limit the potential for any substantial or severe erosion impacts during the construction and operation phases of the proposed project.

Specific erosion mitigation measures as identified above and as promulgated by the state and county procedures and guidelines for Best Management Practices will be developed through the state and city coordination effort and based upon the final design of the selected alternative alignment.

## 6. Wildlife

Construction activities will temporarily and permanently remove some wildlife habitat from productivity, especially in those areas within the LVVWD North Well Field with Alternative B. The construction of the proposed project will result in the permanent loss of habitat within the construction zone while within portions of the proposed right-of-way area and in those areas adjacent of the construction zone where construction equipment and materials will be stored and where construction equipment will need to maneuver, habitat areas will not be productive until construction activity ceases. Within the construction zone, those species which cannot relocate to suitable alternative habitat areas will suffer high mortality rates. This may be particularly true for those species which depend on desert riparian vegetation (Alternative B only) within the construction zone and those which cannot relocate successfully. This impact may be especially adverse for those species with habitat within the LVVWD North Well Field with Alternative B. Prior to construction, the construction zone will be surveyed for the presence of Desert Tortoise burrows. Upon the discovery of any burrows or other evidence of the presence of the Desert Tortoise, measures will be taken in compliance with the directives of the U.S. Fish and Wildlife Service.

With Alternative B, there is the possibility that a threatened species, the peregrine falcon, may be present in the project area at the time of the proposed construction. Therefore, preconstruction surveys will take place to determine the presence of any such individuals. If any threatened or endangered animals are identified during the preconstruction surveys, NDOT will consult with the U.S. Fish and Wildlife Service, Nevada Division of Wildlife and where appropriate the Bureau of Land Management. The first option for mitigating the loss of these species is to avoid suitable habitats to the maximum extent possible (i.e., Alternative A). If the suitable habitats cannot be avoided, disturbance will be minimized to the extent possible, construction will be limited to the season of least activity for the species of concern and/or the most practical plan will be developed to mitigate for these losses at the time of construction.

As no aquatic wildlife species are known to exist in the project area, no impacts are expected and, therefore, no mitigation is necessary.

## 7. Vegetation

The construction of the proposed project will result in the temporary and permanent loss of habitat of some vegetative communities. Within the immediate construction area there will be a permanent loss of the vegetative community and habitat while in the right-of-way area and the areas immediately adjacent to the construction zone, where materials and construction equipment will be stored and maneuvered, there will be additional loss of vegetation. Of particular concern are the stands of cottonwoods and the Las Vegas and Merriam's bearpoppies which are in the LVVWD North Well Field and would be affected directly or indirectly with Alternative B

Prior to construction, the right-of-way area will be surveyed for the presence of the two species of bearpaw poppy and other sensitive vegetation species, particularly those which may exist in the LVVWD North Well Field. Mitigation will include fencing and avoidance during construction.

Mitigation for the loss of desert riparian species (cottonwoods) with Alternative B will include coordination with the U.S. Fish and Wildlife Service, Bureau of Land Management, and Nevada Division Department of Wildlife to revegetate, enhance or improve the desert washes off-site on at least a 1:1 basis. Sensitive species such as cacti and yuccas will be salvaged and replanted within the right-of-way and/or a preconstruction harvest in accordance with the State of Nevada, Division of Forestry and BLM permitting process will take place.

Although none of these species were observed during the initial surveys within the proposed right-of-way, preconstruction surveys will take place for threatened, endangered and candidate species of plants within the construction zone. If any threatened, endangered or candidate plants are found at the time of the preconstruction surveys, NDOT will consult with the BLM and USFWS. The first alternative to mitigate against the loss of these plants will be to avoid these plants to the extent possible. If these plants cannot be avoided, salvage, and revegetation on or off-site will be considered where practical, protection of the existing population off-site and/or the development of the most practical plan to mitigate at the time of construction will also be considered.

## 8. Cultural Resource Sites

All construction activities, including but not restricted to access roads, construction camps, staging areas, maintenance areas, pipe lines, detours, power lines, material storage areas and sources, waste and dump areas, etc., will be restricted to the cleared right-of-way area. Any areas outside of the cleared right-of-way, which may be used, will have cultural resource clearance prior to such use. This action is in keeping with the federal regulations which precludes the destruction of cultural resources when federal funds are involved. These actions shall serve to limit any potential impacts to cultural resources outside of the right-of-way.

## **9. Disposal and Borrow Pits**

The proposed project will require fill, particularly for the elevated portions of the roadway and roadway embankments. Some of the fill material will be borrowed from those portions of the roadway where excavation may occur. Sources of additional fill, which will not be available from excavation, will come from one or more borrow pits located to the south of the project area. Limited disposal of fill resulting from excavation is anticipated. Any borrow source which might be considered for the proposed project will be archaeologically surveyed, and surveyed for threatened and endangered species and cleared prior to such use.

## **10. Water Quality**

The construction of the proposed project is not expected to result in any severe impacts to surface and subsurface water quality in the project area. Special precautions will be undertaken during construction to limit the potential for any sediment flow into the nearby washes. The construction contractor will need to have prior knowledge of pending storms that may result in a major rain event that will cause runoff into the washes nearby the construction site. These precautions will include; the placement of straw bails in the appropriate locations along the wash and on the construction site where there exists the potential for sediment runoff, and the proper location of sediment storage on site to areas away from drainage channels and washes. Best Management Practices as developed by the state and county will also be used to control the sediment load during rainfall events.

Best management practices will be employed during the various phases of construction to limit any potential impacts to surface and sub-surface water quality. In addition, all project related construction activities will be in accordance with the Las Vegas 208 Water Quality Management Plan.

## **11. Hazardous Waste**

The construction of the proposed project is not expected to result in any impacts relating to hazardous waste. During construction, no hazardous waste will be stored on site. In addition, all appropriate measures will be taken to limit the potential for any seepage of petroleum products from construction equipment into the local wash and drainage areas. The construction of the proposed project will require the excavation and disturbance of surface and subsurface soils. Should any of the disturbed soils be identified as potentially containing hazardous waste, the soils will be surveyed and if contaminated, will be disposed of at a licensed or approved site or facility. All sites within the project area construction limits which are known to be or potentially contaminated will be surveyed investigated and remediated prior to any land disturbance.

## 12. Floodplains

During the construction phase there is a potential for erosion of unprotected embankments from surface runoff and a risk of damage to unfinished drainage structures should flooding occur. Increased sediment deposition in washes downstream is an associated impact.

Best management practices will be employed to limit any potential for impact to the local washes and surface water areas which flow into the Las Vegas wash and flood plains in the region. In addition, all project related construction activities will be in conformance with the Las Vegas Valley 208 Water Quality Management Plan.

Within the project area, FEMA regulatory floodplains have been identified crossing Martin L. King Boulevard at locations. Construction activities at these locations will conform to the CCRFCD Uniform Regulations for Control of Drainage and Regulations of the National Flood Insurance Program. No regulatory floodplains are impacted by the proposed project.

During the preparation of the Final Environmental Impact Statement/Final Section 4(f) Evaluation, no separate candidate Joint Development projects were identified in the project area and nearby Clark County region which would serve to preserve or enhance social, economic, environmental and visual values.

## J. Indirect and Secondary Impacts

Secondary impacts are a subset of indirect effects which are broadly defined by guidelines prepared by the Council on Environmental Quality (CEQ) for implementing the National Environmental Policy Act (NEPA) as "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40CFR 1508.8). In contrast, direct impacts "are caused by the action and occur at the same time and place". Secondary impacts of transportation projects may include changes in land use economic conditions, population density, and ecological resources. Cumulative impacts include the direct and secondary impacts of a project, together with the impacts of past, present, and reasonable foreseeable future non-project actions.

The methodology for assessing the secondary and cumulative development impacts of the proposed project involved the following five steps, as suggested by NCHRP report 403, *Guidance for Estimating the Indirect Effects of proposed Transportation projects* (Louis Berger & Associates, Inc., 1998).

- *Identification of the project area's directions and goals*
- *Inventory of the project area's notable (land use development and environmental) features*
- *Impact causing activities of the project*

- *Identification of potential secondary cumulative development impacts of the proposed project*

## **1. Zoning and Land Use**

The potential for secondary development is influenced by such factors as, availability of vacant and undeveloped land and infrastructure, appropriate zoning and land use regulations, absence of environmental or other constraining factors, supportive political climate and a growing regional economy.

The identification and analysis of local and regional land use and development goals and objectives determined that the proposed project is consistent with the current and future goals and objectives for development in the project area and greater Las Vegas Valley region. Although large developments are planned and programmed as part of the regions' overall growth, these developments are being programmed independent of the proposed project and these developments will occur with or without the proposed project.

All the vacant and undeveloped parcels which are located within the project area and adjacent to the roadway corridors with proposed improvements are currently zoned for commercial or residential development. In addition, some of these large vacant parcels are within the boundaries of regional agencies such as the LVVWD and the North Las Vegas Airport which is operated by the Clark County Department of Aviation. These properties are proposed for future development and/or continued operation under approved development plans. Absent the proposed project, these properties will be developed or maintained as suggested in their respective master plans or development plans.

Throughout the project area, development on vacant and undeveloped parcels that are adjacent to or in close proximity to the proposed roadway improvements is governed by existing land use regulations. These regulations will serve to limit uncontrolled and inconsistent development that may occur with and without the proposed project.

The purpose of the proposed project is to meet the short and long-term transportation needs of the project area, to provide improved transportation in response to regional growth, decrease future congestion on the existing roadway network and enhance mobility. The project need is based upon the projected limitations and inadequacies of the existing and proposed arterial road network to handle projected traffic growth through the year 2020. In this regard, the proposed project is being considered as a response to existing and proposed development and growth in the Las Vegas Valley region which has and will occur regardless of the implementation of the proposed project.

The proposed project has been included in the latest Clark County Regional Transportation Plan, Transportation Improvement Plan and the State Implementation Plan by the Clark County Regional Transportation Commission (RTC) and the Clark County Department of Comprehensive Planning. The RTC and the Clark County Department of Comprehensive Planning included the proposed project along with various other local and regional highway and transit improvements as part of the county's requirement to demonstrate conformity through the year 2020.

As a result, the proposed project is not expected to result in induced or generated land use development nor is the proposed project expected to impact the planning initiatives, goals and objectives of the City of Las Vegas, the City of North Las Vegas and Clark County for the project area. New development and growth in the project area and nearby Las Vegas Valley region, particularly residential development, is expected to occur at its current rate with or without the proposed project. However, the proposed project may only serve to accelerate the timing of such development whereas the proposed roadway, transit and related infrastructure improvements may only serve to support the development of these projects earlier in the planning process than original scheduled. Any acceleration of the construction schedule for these planned developments that may result, is not considered as being induced development. In this regard, the proposed project is not expected to result in any unanticipated induced development or growth.

## **2. Vegetation/Wildlife/Special Status Species**

Within the LVVWD North Well Field, the proposed project will result in direct impacts to the existing desert riparian habitat. This will include the removal of approximately 50 percent of the standing cotton-wood trees and 89 percent of the willow tree population as well as shrubs and forbs. Indirect or secondary impacts to the remaining vegetation may result from the changes in the microclimate and environmental stability of the remaining habitat. With a large portion of the cotton wood forest removed, the remainder of the channel will be exposed to hotter and drier environmental variables. It is likely that a major portion of the remaining trees will be affected. The indirect impacts to the vegetation of the North Well Field will contribute to the overall impact to the uniqueness of the site by the proposed project. The secondary or indirect impacts to the North Well Field will only occur under Alternative B. Avoidance of the North Well Field with Alternative A would eliminate any potential secondary impacts.

The proposed project may also result in secondary or indirect impacts to the Las Vegas Bearpoppy and Mirriam Bearpoppy plant species. These two special status plant species are also located within the LVVWD North Well Field. The gypsum substrate which provides habitat for these two species is located beyond the proposed right of way of Alternative B. However, this habitat may be indirectly affected by the operation of construction equipment which could damage the seed bank or cause soil erosion. Under Alternative B, approximately five acres of desert shrub habitat that supports pollinators for the bearpoppy population will be eliminated. Without the pollinators, the health and reproduction of the bearpoppy site will be negatively impacted and the population would ultimately decline. In addition, the gypsum habitat may be indirectly affected by the changes in the

drainage patterns. Avoidance of the North Well Field property with Alternative A would avoid these secondary and indirect impacts.

Under Alternative B, the proposed project may also result in the loss of riparian habitat that would reduce the availability of foraging and nesting sites for morning doves. A decline in morning dove population may lead to a decrease in the desirability of the LVVWD North Well Field as a foraging area for the Perigrine Falcon, resulting in the possible displacement of this species from the LVVWD North Well Field site. This secondary or indirect impact from the proposed project could adversely affect the viability of the Perigrine Falcon within the project area and Las Vegas Valley.

### 3. Surface Water/Wetlands

The proposed project is not expected to result in any indirect or secondary impacts to any wetlands, surface or subsurface waters in the project area since the proposed project is not expected to result in any development which will impact project area surface waters or wetlands

### 4. Cultural Resources

With Alternative B, the Las Vegas Springs Archeological site may experience increased vibration, reduced on-site accessibility and reduction of the visual buffer. With Alternative B, relocation of historical structures subject to vibration will be considered. In addition, restoration of the visual buffer with landscaping and/or noise barriers will be considered and an on-site accessibility plan will be prepared in cooperation with the Las Vegas Valley Water District.

## K. Cumulative Impacts

The National Environmental Policy Act of 1969 directs federal agencies to examine the consequences of proposed activities in the light of an overall goal to protect and enhance the human environment. As directed, agencies must examine direct and observable effects plus those that may be indeterminate and not easily recognized.

The Council on Environmental Quality Guidelines for implementing the NEPA rules and regulations broadly define cumulative impacts along with secondary impacts. Based on the CEQ guidelines, cumulative impacts or effects are *impacts which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions (40 CFR 1508.7)*

Essentially, cumulative impacts could result when the construction and/or operation of several independent projects or actions with limited individual impacts combine to produce significant impacts or conflicts in mitigation measures.

The cumulative effects of an action may be undetectable when viewed in the individual context of more obvious direct impacts. However, these cumulative effects can add to other disturbances and eventually lead to a measurable environmental change.

The evaluation of cumulative impacts is seen as an important component of the decision process for the implementation of major actions.

The following analysis considers the potential for cumulative impacts that may result from the construction and operation of the proposed project and those projects planned in the Northwest Region of the Las Vegas Valley as part of City and Clark County Five-Year Capital Improvement Programs. Some of these projects are supported to some degree by federal funds and therefore, for the purpose of this analysis, are considered to be federal actions.

The project area, which comprises northwest Las Vegas is one of the fastest growing areas in the country. The project area has been the subject of intense development since the 1980's, with the rapid pace of development expected to continue into the next decade. Residential and business developments are rapidly expanding the perimeter of the urbanized area and in-filling vacant parcels. State and local government agencies are engaged in an unprecedented effort to provide infrastructure support and facilities necessary for the safety and improvement of life within the project area.

The proposed project is viewed as an integral part of the efforts the Nevada Department of Transportation, the City of Las Vegas, the City of North Las Vegas and Clark County to provide the infrastructure to meet the demands imposed by growth.

The City of Las Vegas Five Year Capital Improvement Plan, 1999-2003 identifies on-going and planned projects by the City of Las Vegas. The project area encompasses roughly 80% of the land area of the City of Las Vegas, including nearly all of the new residential growth areas. Therefore, most of the City's capital improvements are targeted for the project area of northwest Las Vegas. The City of Las Vegas Capital Improvement Plan includes \$740.6 million in infrastructure improvements in the categories of general government, judicial, public safety, public works, sanitation, culture and recreation and economic development and assistance. A list of projects in the five year plan is included in Appendix C. During the 12 months ending December, 1998, the City of Las Vegas issued building permits for 5,687 single family homes, 31 duplex apartments, 260 commercial buildings, 8 hotels, 6 public buildings and 4 churches.

The purpose of the City of Las Vegas Capital Improvement plan is to accommodate the "burden placed on public services, facilities and systems" by burgeoning growth and is not viewed as an inducement to growth.

The City of North Las Vegas Capital Improvement Plan, January 1998 identifies ongoing and planned projects by the City of North Las Vegas over a five year period. The project area encompasses roughly one-fourth of the land area of the City of North Las Vegas, including areas of rapidly growing residential and business growth. The City of North Las Vegas' Capital Improvement Plan includes \$415.6 million in infrastructure improvements in the categories of roadways, street lights, traffic control, water utility, sewer utility, flood control, parks and recreation, building and fire department.

The purpose of the City of North Las Vegas Capital Improvement Plan is "to provide quality infrastructure in response to our quickly expanding area" and is not viewed as an inducement to growth.

The Clark County FY 1999-2003 Capital Improvement program identifies ongoing and planned projects by Clark County. Only a very small part of the project area is unincorporated. However, Clark County is responsible for the implementation of some projects of regional importance within the boundaries of the Cities of Las Vegas and North Las Vegas. The Clark County Capital Improvement Program includes \$2.6 billion in infrastructure improvements.

The proposed project is considered to be complementary to the capital improvement plan of the Cities and the County.

## 1. Air Quality

The proposed project along with the planned capital improvement projects of the Cities and the County have been included in the latest Clark County Regional Transportation Commission (RTC) Regional Transportation Plan, 1998-2020 and Transportation Improvement Program (TIP), 1998-2000 which was amended by the RTC on March 11, 1999. These projects have been programmed into the State Transportation Improvement Program (STIP) budget in an attempt to meet the short and long-term transportation and air quality needs of the region.

The proposed project is included in a conforming TIP. The air quality analysis in the FEIS indicates that the proposed project will not result in any exceedances of the state and federal air quality standards for the year 2020. Since the traffic forecasts and air quality forecasts developed by the Clark County Regional Transportation Commission incorporates projected future traffic volumes, based on predicted valley-wide development and population growth including the proposed project, the proposed project will not result in any cumulative air quality impacts.

## 2. Water Quality

The proposed project, the programmed capital improvement projects and private development will contribute in some measure to the loading of groundwater, washes, and nearby drainage areas with sediments and chemical pollutants. This impact will result from the paving of surface areas and increase in the impervious acreage in the area.

The project area lies within the boundaries of the Las Vegas Valley 208 Water Quality Management Plan. Best Management Practices (BMPs) are presented in the Las Vegas Valley 208 Water Quality Management Plan Amendment as the best means to manage nonpoint source pollution. Nevada's Nonpoint Source Pollution Control Program also stresses the implementation of BMPs to protect surface and groundwater resources. The State of Nevada's Handbook of Best Management Practices is intended to be a guidance document for the reduction and prevention of NPS pollution. Appropriate BMPs to minimize water quality impacts would be implemented during all phases of this project. Project-related activities would be in conformance with the 208 plan and will reduce

potential cumulative impacts to areas downstream of the project area where the Las Vegas Wash is a perennial stream. Conformance with the Las Vegas Valley 208 Water Quality Management Plan by all development entities, conformance with National Pollutant Discharge Elimination System permits for municipal storm water discharge and continued monitoring of flows in major tributaries to the Las Vegas Wash will ensure that potential threats to water quality in the Las Vegas Wash from cumulative sources can be planned for and remediated through a cooperative effort of the municipalities in the Las Vegas Valley assuring the long-term viability of this resource.

Ground water impacts will be localized, without cumulative impacts.

### **3. Floodplains**

All public and private projects in Las Vegas, including the proposed project are constructed in conformance with the Clark County Regional Flood Control District Flood Control Master Plan. Conformance with the Flood Control Master Plan ensures that the cumulative impacts from increased runoff due to development will be accommodated without adverse impacts.

Increased runoff in the Las Vegas Valley which results from an increase of impervious surfaces from all development activities is being countered by the construction of detention basins by the Clark County Regional Flood Control District to reduce flood flows. Flood conveyance facilities are included in all developments affecting flood plains and designed to accommodate Master Plan flood flows, ensuring the long-term effectiveness of the flood conveyance system.

### **4. Vegetation and Wildlife/Threatened and Endangered Species**

The proposed project will not adversely effect vegetation and wildlife and has no impact on threatened and endangered species except within the Las Vegas Valley Water District North Well Field with Alternative B. Since the North Well Field is planned as a preserve, (Mohave Desert Preserve), additional impacts to the site are unlikely, so that cumulative impacts to vegetation, wildlife and special status species on the North Well Field are not expected.

Continued development in the Northwest Region of Las Vegas will continue to reduce native vegetation and wildlife habitat. Two special status plants and one special status animal is known to occur in desert areas of Northwest Las Vegas. The Las Vegas Bearpoppy and Merriam's Bearpoppy and the Desert Tortoise (see Section V.5) will potentially be impacted by continued development. The bearpoppy populations in Northwest Las Vegas are addressed in a draft memorandum of agreement among Federal land management agencies, the Nevada Division of Forestry, NDOT, Clark County, the Las Vegas Valley Water District, The Nature Conservancy, The U.S. Fish and Wildlife Service, Nellis Air Force Base and the Nevada Natural Heritage Program, the purpose of which is to conserve the species and lead to a reduction and removal of threats. The Desert Tortoise is protected under a recovery plan, *The Desert Tortoise Mojave Population Recovery Plan*. Northwest Las Vegas is included in the *Northeast Mojave Desert Tortoise Recovery Unit*. These actions will assure the sustainability of these sensitive species.

## 5. Cultural Resources

The cultural resources study examined all archeological sites in the project area. Except for the proposed project, there are no currently planned projects which would affect these sites. Important historical resources affected by the project were only identified on the LVVWD North Well Field. Since the North Well Field is planned as a preserve cumulative impacts to the North Well Field are not expected. At the present time there are no other currently proposed projects which would impact cultural resource sites, so that there are no cumulative impacts which would affect the viability of these resources.

## 6. Major Capital Improvement Projects

**West Service Center.** The City of Las Vegas will be expanding their service center at 7500 Sauer Drive. The service center located near US-95 and Cheyenne Avenue reduces trips to the Downtown area by providing services to residents in the northwest nearer to their homes. This improvement will provide a complementary beneficial impact on traffic.

**Protective Services.** The City of Las Vegas will be installing traffic signals, school flashers, street lighting, neighborhood traffic control measures, optic-com systems, non-signal intersection improvements, video traffic detection systems, hazard elimination improvements, pedestrian push button retrofits, street sign upgrades and pavement markings to improve safety of the street network. These improvements will provide a complementary beneficial impact.

**Street Paving.** The City of Las Vegas and City of North Las Vegas will continue their program to pave and improve the arterial and collector streets in the project area. These projects are considered beneficial to the areas served providing improved traffic flow and accessibility and are generally paid for by property tax assessments based on the increased property values attributable to the projects. The City's capital street improvement projects are considered complementary to the proposed project since without these projects, the project areas capacity shortfall would exceed the capacity of the proposed project.

The Capital Improvement Plan street paving projects will cause travel delays during construction and could exacerbate traffic delays caused by the proposed project. Cumulative impacts will be temporary and can be reduced by coordinating construction schedules so that more than one street serving the same neighborhood is not under construction at the same time.

**Sewage Collection.** The City of Las Vegas will also continue its \$217 million sewer program which includes the installation of sanitary sewer lines under City Streets, including the US-95/Rancho Interceptor. Cumulative impacts to traffic during construction can be reduced by installing the sewer lines at the time of street construction and coordination of schedules with the projects.

**Walker Memorial Pool Park Improvement.** The City of North Las Vegas will improve Walker Memorial Pool Park on Martin L. King Boulevard south of Cheyenne Avenue. The improvements will include improving parking areas, adding benches and tables, fencing play areas, replacing play

equipment, improving ADA accessibility and planting a landscape buffer along Martin L. King Boulevard. The proposed project will improve the accessibility to the Pool Park while the landscape buffer will reduce the perceived impacts from increased traffic.

**Las Vegas Beltway.** Clark County will construct the Western and Northern Segments of the Las Vegas Beltway within the boundaries of the Cities of Las Vegas and North Las Vegas through the year 2003. The Las Vegas Beltway will be located in the western and northern extremes of the project area and will provide a circumferential route around the Valley, linking the project area to the southern and northeastern parts of the Valley. The Beltway will provide an alternative to US-95 for destinations in the southern part of the Resort Corridor.

The Las Vegas Beltway project is considered to be complementary to the proposed project since without the Beltway, the project area's capacity shortfall would exceed the capacity of the proposed project.

The planned Las Vegas Beltway and the improvements of the proposed project are not in proximity to one another and the impacts from the Beltway project will not affect the same threatened and endangered species, nor the same watershed areas as these from the US-95 project and therefore, will not affect the sustainability of these resources.

**North Las Vegas Runway.** Clark County is the owner and operator of the North Las Vegas Airport, located within the boundaries of the City of North Las Vegas. Clark County will be constructing a new Runway 12L/30R to meet growing demand for general aviation facilities.

The proposed project will increase the vehicular accessibility of the Airport and decrease travel times to the Airport. Construction of the new runway will be entirely on Airport property so that no cumulative impacts are anticipated except as noted above with respect to noise. Wells which could be subject to ground water impacts from the proposed project are not located near the Airport so that there would not be any potential for cumulative ground water quality impacts.

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**VII. SECTION 4(f) EVALUATION - PARKLANDS AND  
HISTORIC SITES**

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## **VII. SECTION 4(f) EVALUATION - PARKLANDS AND HISTORIC SITES**

### **A. Introduction**

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49U.S.C.303(c)) and 23 CFR 771.135(a) (1) states that “the Secretary of Transportation/Administration may not approve a transportation project requiring the use of any land from significant publicly owned public parks, recreation areas or wildlife and waterfowl refuges, or any significant historic sites. The final determination allowing this use must document that there is no feasible and prudent alternatives to its use and the action or proposed project includes all possible planning to minimize harm to the property resulting from such use.”

A Section 4(f) Evaluation has been prepared for the proposed project for those parklands, public recreational facilities and historic sites that will be impacted by the proposed project.

The word “use” as is stated in the evaluation occurs when:

- Land from a Section 4(f) property is acquired for a transportation project,
- The proximity impacts of the transportation project on the Section 4(f) site, without acquisition of land, are so great that the purpose for which the Section 4(f) site exists are substantially impaired, known as “constructive use”.

In general, a “use” of parkland or a historic site would occur where a portion of a Section 4(f) property is physically used for a new right-of-way, or where a Section 4(f) property is adjacent to or near a proposed transportation facility and is impacted by audible, visual or other secondary impacts. These impacts are referred to as “constructive use”. Constructive use does not occur when impacts are minor and/or mitigated or when impacts are such that they do not substantially impair the use of the site. The degree of impairment is determined in consultation with officials having jurisdiction over the Section 4(f) property.

A Final Section 4(f) Evaluation is prepared if the selected or preferred alternative results in direct or “constructive use” impacts to any of the Section 4(f) resources.

### **B. Section 6(f) Statement**

The federal Section 6(f) Parkland Conversion Process, in accordance with the U.S. Land and Water Conservation Process through the U.S. Land and Water Conservation Fund Act, applies to any parkland subject to Section 6(f) evaluation requirements. There are no properties within the project

area which are subject to Section 6(f) encumbrances, therefore, no Section 6(f) Statement is required for the proposed project.

### **C. Description of the Proposed Project and Project Alternatives**

The proposed project resulted from the US-95 Major Investment Study (MIS) which was prepared in April 1997 by the Nevada Department of Transportation. The MIS, entitled "US-95 Major Investment Study, Detailed Evaluation of Alternative Strategies" served to develop a program to meet the short and long term transportation needs for the Northwest Region of the Las Vegas Valley (Project Area). The MIS evaluated alternatives which would provide increased opportunities for enhancing mobility for local residents while at the same time, identifying technically sound and practical solutions in response to the need to relieve congestion and accommodate the continued and expanding growth of the region. The MIS also served to incorporate the needs and concerns of the local community through direct involvement in the identification of alternative strategies and the analysis of alternatives to be advanced for further review in the FEIS/Section 4(f) Evaluation.

The objective and purpose of the proposed project is to meet the short and long-term transportation needs of the project area and provide improved transportation in response to regional growth, decrease future congestion on the existing roadway network and enhance mobility. The project purpose and need is based on the projected limitations and inadequacies of the existing and proposed arterial road network to handle projected traffic growth through the year 2020.

The project area includes portions of the City of Las Vegas, the City of North Las Vegas and unincorporated urbanized areas of Clark County. The project area is defined as the area bounded on the south by Desert Inn Road and on the east by Interstate-15 and Martin Luther King Boulevard. On the north and west, the project area limits extend to Craig Road and Rampart Road respectively, while the balance of the project area in the north and west is unbounded but constrained by the limits of existing and planned development.

The proposed project is comprised of various transportation improvements which provide a coherent transportation improvement strategy to meet the short, intermediate and long-term transportation demands of the Northwest Region of Las Vegas (project area). These improvement projects include; improvements to US-95, new arterial street connections, arterial street improvements, transit system improvements and transportation demand management measures. The proposed project includes the following transportation improvement projects which have been grouped into five elements as follows:

**US-95 IMPROVEMENTS**

- Install a Freeway Management System on US-95
- Widen US-95 to 10 lanes from Rainbow to I-15
- Widen US-95 to 6 lanes from Craig to Rainbow
- Widen Summerlin Parkway to 6 lanes from Rampart to Rainbow
- Construct High Occupancy Vehicle Lanes on US-95 and the Summerlin Parkway

**NEW ARTERIAL STREET CONNECTIONS**

- Martin Luther King to Industrial Road Connector including widening Industrial to 6-lanes: Sahara to Wyoming
- Rancho to Alta Connector including widening Alta to 6-lanes: Rancho to Martin Luther King

**ARTERIAL STREET IMPROVEMENTS**

- Widen Desert Inn Road from 4 lanes to 6 lanes: Durango to Jones
- Widen Arville Street to 4 lanes: Charleston to Sahara
- Widen Martin Luther King to 6 lanes: Craig to Charleston
- Widen Valley View to 6 lanes, Sahara to Desert Inn
- Widen Carey Avenue to 4 lanes: Rancho to Clayton
- Widen Durango Drive to 6 lanes: Desert Inn to Edna
- Widen Rancho to 6 lanes: Craig south to US-95
- Widen Tenaya Way to 4 lanes: Westcliff to Smoke Ranch
- Widen Torrey Pines to 4 lanes: Washington to Craig

**TRANSIT SYSTEM IMPROVEMENTS**

- Adopt Enhanced *CAT* Bus Service
- Develop Park-and-Ride lots

**TRANSPORTATION DEMAND MANAGEMENT MEASURES**

- Adopt expanded rideshare program

The Northwest Region of Las Vegas, the project area, is defined to include the portion of the Las Vegas Valley north of Desert Inn Road and west of I-15 and Martin Luther King Boulevard.

The proposed project is intended to improve transportation in the Northwest Region of Las Vegas by increasing regional roadway capacity, improving regional level of service, improving the safety

and operational efficiency of the transportation system, and increasing the mobility options available to the traveling public.

Further description of the project and project alternatives is provided in Sections II and IV of the FEIS.

#### **D. Purpose and Need for the Proposed Project**

The proposed project is being designed to meet the short and long-term transportation needs of the project area. Its intended purpose is to provide improved transportation in response to regional growth, decrease future congestion on the existing roadway network and enhance mobility. The project need is based upon the projected limitations and inadequacies of the existing and proposed arterial road network to handle projected traffic growth through the year 2020.

Since 1970, the population of Nevada has nearly doubled in each decade, making it the fastest growing state in the United States. Since 1970, its population has grown from approximately 496,960 to over 1.6 million, a 240 percent increase which represents a 9.2 percent annual increase in population growth. Clark County has dominated the growth of population in Nevada. The latest available data for population indicates that by 1996, Clark County's population grew at an annual rate of 11.7 percent to about 1,115,940. This represents over 66 percent of the residents in Nevada.

The population of the project area was estimated to be approximately 243,000 in 1996, representing approximately 27 percent of the population of the Las Vegas Valley. The population of the project area is projected to increase by 67 percent to 407,000 persons by the year 2005, representing an estimated 35 percent of the population of the Las Vegas Valley. While the population of the project area is projected to grow disproportionately faster than the rest of the Valley, employment, as a percentage of population in the project area is expected to decline somewhat. It was estimated that in 1996, one person was employed in the project area for each 2.6 residents in the region. It is projected that by the year 2005, there will be one person employed in the project area for each 2.9 residents. As a result, demand for transportation services is expected to increase, due both to high population growth and a disproportionately lower employment growth, which will greatly increase the flow of traffic between the project area and the Resort Corridor, the primary employment area in the Las Vegas Valley.

Currently, 34% of all trips in the Las Vegas Valley either begin or end in the project area. 16% of all trips in the Las Vegas Valley occur entirely within the project area while 18% of all trips in the Las Vegas Valley have one trip end in the project area and one trip end outside the project area.

Currently, 32% of all trips in the project area, 435,000 daily trips, have their origin or destination in the Resort Corridor. These trips primarily utilize the seven major arterials: US-95, Rancho drive, Martin Luther King Boulevard, Washington Avenue, Charleston Boulevard, Sahara Avenue and Desert Inn Road. The 435,000 daily person trips between the project area and the Resort Corridor

also represents 32% of the total 1,340,000 person trips which are estimated to enter the Resort Corridor daily.

At the present time, there are approximately 18,000 daily bus passengers boarding and/or disembarking within the project area. Approximately, 7,500 daily bus passengers travel between the project area and the Resort Corridor. Presently, therefore, bus passengers represent only 1.7% of the total daily trips between the project area and the Resort Corridor.

The proposed project will provide sufficient capacity to accommodate project year 2020 transportation demand in the project area. US-95 and the arterial street network are presently operating at a very poor level of service with severe congestion during peak travel hours. Without improvement, US-95 and the arterial network is expected to experience increased congestion and lower level of service operations through the year 2020. The proposed project will address the purpose and need by the following:

- Improve the flow of traffic from the residential growth areas of the project area into the employment centers of the Resort Corridor.
- Increase the capacity of the roadway system linking the project area with the Resort Corridor.
- Improve roadway operations and levels of service.
- Improve overall mobility within the project area through enhanced transit service.
- Facilitate rideshare programs and regional efforts to implement TDM measures.
- Improve overall travel safety.
- Accommodate planned growth within the project area.
- Improve the operation efficiency of the US-95 corridor through the introduction of Freeway Management System operations.
- Improve the distribution and flow of traffic in the congested portions of the project area by improving the arterial street network.
- Decrease dependence on single-occupancy vehicles.
- Increase vehicle occupancy on the project area roadway network through the introduction of Transportation Demand Management Measures, constructed in conjunction with HOV lanes on US-95 and the Summerlin Parkway.

Further detailed discussion of the project purpose and need is provided in Section III of the FEIS.

## **E. Description of Section 4(f) Resources**

### **1. Parklands/Recreation Properties**

There are approximately 27 parks in the project area owned and operated by the City of Las Vegas Department of Parks and Leisure Activities and the City of North Las Vegas Department of Parks and Recreation. In addition, these agencies operate recreational programs at the elementary and middle schools throughout the project area by joint-use agreement with the Clark County School

District. The following describes the park and recreational facilities which are located near proposed project improvements and could potentially be affected by the proposed project.

**a. Torrey Pines Park**

Torrey Pines Park, a City of Las Vegas neighborhood park, is the only park which is proposed for acquisition, in part, with the proposed project.

Torrey Pines Park is approximately 7.6 acres in size and is owned, operated and maintained by the City of Las Vegas Department of Parks and Leisure Activities. The park has just recently been constructed and includes the following facilities:

- Two (2) outdoor soccer fields
- Playground area
- Restrooms
- Landscaped Areas
- Surface Parking
- Lighting for nighttime activities
- Jogging Trails

The park is bordered by Hyde Avenue, Torrey Pines Drive, Newcomer Street and US-95. The site is immediately adjacent to the Adcock Elementary School on the west and the Garside Middle School which is located to the south. The park has direct vehicle access off Hyde Avenue. Local access is provided to the property via local neighborhood streets. Although bordered by Newcomer Street on the west and Torrey Pines Drive on the east, these streets do not provide direct vehicular access to the park from the local road network. To the immediate north of the property, the park is bordered by a pedestrian path and bikeway which is operated and maintained by the City of Las Vegas. To the south, across Hyde Avenue from the park is an outdoor recreation field located on the Garside Middle School property which serves both the public and the Garside Middle School, which includes one 90 foot ballfield operated and maintained by the City of Las Vegas Department of Parks and Leisure Activities and open recreation fields operated and maintained by the Clark County School District.

There are no unusual or special features associated with this park.

Figure VII-1 depicts the site plan for Torrey Pines Park. The figure also depicts the proximity of the proposed right-of-way for the US-95 widening.

**b. Mirabelli Park and Community Center**

The Mirabelli Park and Community Center is a City of Las Vegas neighborhood park which abuts the existing US-95 right-of-way on the property's north edge adjacent to the US-95 southbound



Jones Boulevard exit ramp. The park and community center is located west of Jones Boulevard and includes passive recreational facilities, (i.e., picnic tables and toddler playground equipment) in addition to a community center building. The recreational facilities and the community center building are located within about 100 ft. of proposed improvements on US-95. No part of the park is proposed to be acquired for the proposed project. There are no unusual or special features or characteristics associated with this particular Section 4(f) resource.

**c. Lorenzi Park**

Lorenzi Park is a City of Las Vegas major urban park located on Washington Avenue north of US-95 and east of Valley View Boulevard. The park is located 500 to 800 feet north of US-95 and separated from US-95 by a single family residential neighborhood. The park includes the Nevada State Museum, Sammy Davis Jr. Festival Plaza, baseball and soccer fields, a man-made lake (fishing), two community recreation centers, tennis courts, a memorial garden and passive recreational facilities. No portion of the park is proposed for acquisition with the proposed project. Lorenzi park draws visitors from the entire valley and is not neighborhood oriented. Regional facilities including the Nevada State Museum and the Sammy Davis Jr. Festival Plaza are special features associated with this Section 4(f) resource.

**d. Heers Park**

Heers Park is a City of Las Vegas neighborhood park located on Zorro Drive, approximately 500 ft. east of Torrey Pines Drive and north of Smoke Ranch Road. The park includes a soccer field and playground. The park is separated from proposed improvements on Torrey Pines Drive by three rows of single family residences and no portion of the park is proposed for acquisition with the proposed project. There are no unusual or special features or characteristics associated with this particular Section 4(f) resource.

**e. Woofler Park**

Woofler Park is a City of Las Vegas neighborhood park located on the northwest corner of Vegas and Rock Springs about 700 ft. east of Tenaya Way. The park is separated from proposed improvements by a single family residential neighborhood and no portion of the park is proposed for acquisition with the proposed project. There are no unusual or special features or characteristics associated with this particular Section 4(f) resource.

**f. Meadow Street Park**

Meadow Street Park is a City of Las Vegas neighborhood park located on West Carmen Boulevard about 1000 ft. east of Torrey Pines Drive. The park is separated from proposed improvements by a single family residential neighborhood and no portion of the park is proposed for acquisition with the proposed project. There are no unusual or special features or characteristics associated with this particular Section 4(f) resource.

**g. Prentiss Walker Memorial Swimming Pool and Park**

Prentiss Walker Memorial Swimming Pool and Park is a City of North Las Vegas neighborhood park located on the west side of Martin L. King Boulevard about 1500 ft. north of Carey Avenue. The park includes a swimming pool, basketball court and passive recreational areas. The swimming pool facilities are located within 50 ft. of proposed improvements on Martin L. King Boulevard. No portion of the park is proposed for acquisition with the proposed project. There are no unusual or special features or characteristics associated with this particular Section 4(f) resource.

**h. James H. Anderson Memorial Park**

James H. Anderson Memorial Park is a City of North Las Vegas neighborhood park located on the southeast corner of West Street and Cartier Avenue about 700 ft. west of Martin L. King Boulevard. The park includes basketball courts and passive recreational facilities (playground equipment). The park is separated from proposed improvements by a single family residential neighborhood and no portion of the park is proposed for acquisition with the proposed project. There are no unusual or special features or characteristics associated with this particular Section 4(f) resource.

**i. Lubertha Johnson Park**

Lubertha Johnson Park is a City of Las Vegas neighborhood park located on Balzar Avenue about 1000 ft. east of Martin L. King Boulevard. The park includes playground facilities. The park is separated from proposed improvements by a single family residential neighborhood and no portion of the park is proposed for acquisition with the proposed project. There are no unusual or special features or characteristics associated with this particular Section 4(f) resource.

**j. City of Las Vegas Pedestrian Path and Bikeway**

The City of Las Vegas currently operates and maintains a one mile long pedestrian path and bikeway along southbound US-95 between Westcliff Drive and Jones Boulevard. This pedestrian path and bikeway is an 8 to 10 ft. wide paved path and is located within an existing overhead utility easement within the state and city right-of-way which is adjacent to southbound US-95. Constructed separate to the US-95 roadway, this pedestrian path and bikeway provides pedestrian and bike travelers with service between Westcliff Drive in the vicinity of Rainbow Boulevard and Jones Boulevard. It presently provides service to the Adcock Elementary School, Torrey Pines Park, Mirabelli Park, the Mirabelli Community Center and a Metro Police Sub-Station.

There are no unusual or special features or characteristics associated with this particular Section 4(f) resource.

Figure VII-2 depicts the alignment of the existing City of Las Vegas Pedestrian Path and Bikeway.

**k. School Recreational Facilities**

By joint use agreement with the Clark County School District, elementary and middle schools in the cities of Las Vegas and North Las Vegas are available for public recreational usage after school hours. The City of Las Vegas Department of Parks and Leisure Activities and the City of North Las Vegas Department of Parks and Recreation operate programs such as "Safe Key", "Summer Fun" and "Little League Baseball" on school grounds under a joint-use agreement. Schools which are affected by the project and which are used for public recreation after school hours are:

- O.K. Adcock Elementary School (Adjacent to US-95)
- Ruth Fyfe Elementary School (Adjacent to US-95)

Other schools which are near proposed improvements and which are used for public recreation after school hours are:

- Kermit Booker Elementary School (Adjacent to Martin L. King)
- R.E. Tobler Elementary School (Adjacent to Torrey Pines)

Kermit Booker Elementary School is located on the west side of Martin L. King Boulevard about 700 ft. south of Carey Avenue within the City of Las Vegas. The school buildings are setback over 100 ft. from the roadway with parking areas between the school building and Martin L. King Boulevard. The recreational areas are located behind the school building and shielded from the road.

R.E. Tobler Elementary School is located on the northwest corner of Torrey Pines Drive and Buckskin Avenue. The school building and recreational areas are located within 50 ft. of Torrey Pines Drive. Torrey Pines Drive has been fully improved next to Tobler Elementary School and no further physical improvements are proposed at this location.

The recreational facilities of Western High School adjacent to US-95 are fenced and posted to prohibit use by the public after school hours. In addition, the City of Las Vegas Department of Parks and Leisure Activities does not operate any public recreational programs at the school. Therefore, Western High School is not considered to be a Section 4(f) property.

**l. Angel Park Public Golf Course**

The Angel Park Golf Course is located on the east side of Rampart Boulevard and occupies the northeast and southeast quadrants of the Summerlin Parkway Interchange at Rampart Boulevard. The golf course, which is open to the public and located on land owned by the City of Las Vegas includes an 18 hole regular golf course and a 12 hole executive course. The fairways of the 18 hole course are setback an average of 400 ft. from the Parkway. The 12 hole course is located adjacent to the east bound on-ramp from Rampart Boulevard. No portion of the golf course is proposed for acquisition. There are no unusual or special features associated with this particular 4(f) resource.



**LEGEND:**  
 Existing Alignment City of Las Vegas Pedestrian and Bicycle Path  
 Proposed Realignment of City of Las Vegas Pedestrian and Bicycle Path

NEVADA DEPARTMENT OF TRANSPORTATION  
 US-95 EIS  
 EXISTING & PROPOSED CITY OF LAS VEGAS PEDESTRIAN AND BICYCLE PATH  
 FIGURE VII-2

## 2. Historic Properties

### a. Las Vegas Springs National Register Site

The Las Vegas Valley Water District (LVVWD) North Well Field contains the Las Vegas Springs National Register Site encompassing three numbered archaeological sites, 26Ck948, 26Ck949, and 26Ck3848. As listed by the Keeper of the Register to the National Register on December 14, 1978, the Las Vegas Springs National Register Site presently contains 33.5 acres and encompasses portions of two sites. Site 26Ck948 contains prehistoric, protohistoric, and historic materials/features, and Site 26Ck3848, the Mormon Road, was thought to have passed through this location.

As its boundaries are currently defined, Site 26Ck948 encompasses a large, flat area extending between the Big Springs Channel and Las Vegas Creek and measures approximately 725 meters east/west by 250 meters north/south (181,250 square meters, see Figure VII-3). The Federal Highway Administration (FHWA) has determined, and the Nevada State Historic Preservation Officer (NV SHPO) has concurred, that the existing boundaries of the National Register District be expanded to encompass all contributing features and associated artifactual materials (i.e., the full 181,250 square meters), and treated as a 4(f) property.

The Las Vegas Springs National Register Site is important for its prehistoric/historic archaeology and its historic architecture and engineering. The nomination for the Las Vegas Springs National Register Site identifies three periods of significance (prehistoric, 1800-1899, and 1900-1928). It also identifies three standard National Register areas of significance (Archaeology-Prehistoric, Agriculture, Exploration/Settlement) and two "other" specified areas (Spanish Trail, Water for Mormon Occupation).

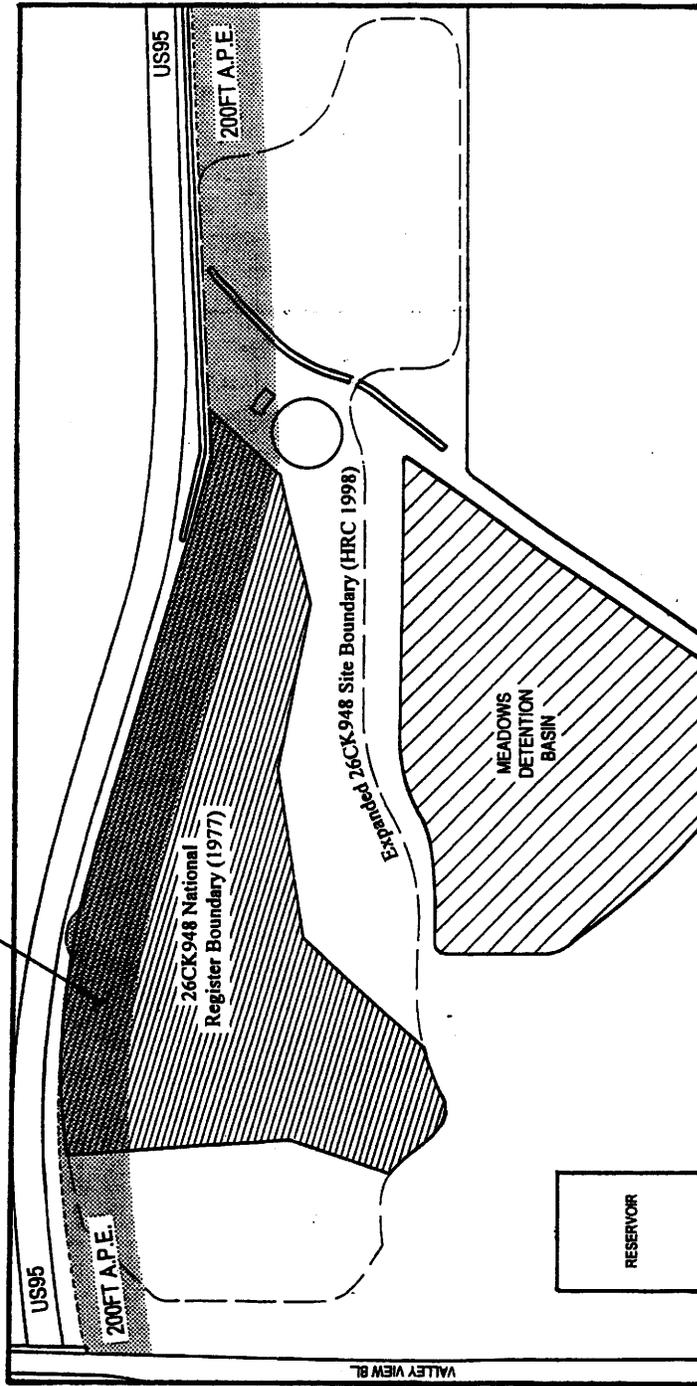
In 1937, William S. Park undertook archaeological excavations at what was then called the Big Springs Site (now Site 26Ck948). According to local historic accounts and catalog cards on file at the Lost City Museum, Park excavated five prehistoric rooms at this location which he attributed to the prehistoric Indian cultures of the southwest (i.e., the Anasazi). These five rooms were contiguous, above-ground structures composed of puddled adobe and displaying slightly rounded rectangular shapes. All of these prehistoric structures excavated at the site were destroyed by the construction of one of the LVVWD larger storage reservoirs.

Researchers at the University of Nevada at Las Vegas (UNLV) believe the earliest site occupation begins prior to 3,000 B.C., most likely dating to the Middle or Late Archaic Period. This is based on the discovery of characteristic projectile point types with a cluster of lithic materials whose style were typical of Archaic manifestations and which displayed a total absence of ceramic remains.

These studies indicate that the site complex was occupied between A.D. 500 and A.D. 1150 by prehistoric populations who are believed to be Virgin Anasazi people. This is based on the similarities in ceramic types and styles when compared to material collected within the Muddy River



PROPOSED US-95 R.O.W.  
WITH ALTERNATIVE B



Source: UNLV, The Las Vegas Springs Heritage Site  
Studies of a Cultural Landscape, 1998

NEVADA DEPARTMENT OF TRANSPORTATION
US-95 EIS
LAS VEGAS SPRINGS ARCHAEOLOGICAL NATIONAL REGISTER SITE
FIGURE VII-3

Valley where these prehistoric populations were known to occur. Paiutes subsequently utilized the site intermittently during the post-pueblo period (i.e., the Late Prehistoric into Protohistoric Period).

UNLV's initial Site 26Ck948 investigations also revealed historic EuroAmerican materials and features where they observed a large (approximately 30 foot in diameter), shallow depression located in the southeastern section of the site complex. Within this depression, UNLV recovered numerous historic period artifacts, plus discovered "charred limbs" of wood reflecting the remains of a burnt wooden roof. Based on associated artifactual material, especially a bullet, UNLV postulates possible house construction beginning between 1880 and 1890.

An architectural assessment of the Las Vegas Springs National Register Site resulted in the documentation of 22 historic structures/features (Table VII-1) of which six occur within the area of project effect (APE). The following summarizes the recommendations for the historic architectural features discovered within the Las Vegas Springs National Register Site.

**TABLE VII-1**  
**Historic Architectural Features Documented for the APE**

**Features Within the Area of Project Effect (APE)**

<b>Inv. No.</b>	<b>Feature Name</b>	<b>Date Built</b>	<b>NR Status</b>
1.1	Clark Street Pumpstation	1929	eligible/indiv.
8.1	Cleanout and Pipeline PL4	c. 1917	listed/contr.
11.1	Earthen Dam and Pond	c. 1904	listed/contr.
11.2	Perimeter Barbed Wire Fence	unkn (post-1925)	listed/not contr.
16.1	Little Spring Springhouse	c. 1911	listed/indiv.
18.1	Well No. Three	1940	listed/contr.

The ethnographic study addressed the roles of the 3-Springs Area in regional cultural landscapes, ecoscapes, and story/song scapes. Ethnographers have been studying American Indian cultural landscapes as a cultural phenomena for a number of years; however, this is the first time a cultural landscape form has been used. Based on an analysis of the Southern Paiute responses to these cultural landscape questions, the following points are known:

- ethnographers are confident that the cultural landscape questions elicited information regarding various dimensions of cultural landscapes and their relationship(s) to the Big Springs site [Las Vegas Springs National Register Site]
- the Southern Paiute cultural landscapes identified in this study are a distinct category of cultural resources and should be assessed regarding potential impacts deriving from the US-95 proposed improvements.

Native American consultants were retained to represent all concerned tribes or legally recognized groups. These studies conducted by University of Arizona ethnographers, who have extensive experience working with Southern Paiutes and their culture, and who have professional experience researching American Indian cultural landscapes, found that the 3-Springs Area is:

- perceived as one of a series of integrated springs bound by a common creation, a common water source, and a common role in the traditional lives of Southern Paiute people; and
- culturally important because it is located in a Southern Paiute ecoscape, a regional landscape, and a stop on a songscape which is called the Salt Song Trail.

## **F. Impacts to Section 4(f) Resources**

### **1. Parklands/Recreation Properties**

The following is an assessment of the Section 4(f) park and recreation impacts by the proposed project. In the vicinity of these Section 4(f) resources, except as noted, the design of the proposed project will be the same for both design Alternatives A and B.

#### **a. Torrey Pines Park**

Torrey Pines Park will be subject to a direct use by the realignment and widening of US-95 which will require the taking of approximately 1.6 acres of this 7.6 acre park. As a result, both of the proposed soccer fields in the northern portion of the park will be eliminated in addition to portions of the park's jogging trail.

The proposed project will result in an adverse impact to this park, whereby a portion of its size and its intended function will be either severely reduced or eliminated. As a result, the park will no longer be able to function as intended. The resulting project impact will require that the City of Las Vegas redesign the park as a passive recreational facility whereby only the playground, restrooms, parking area, open areas and the reduced length of the jogging trail would remain. Although the remaining portions of the park will be able to continue as neighborhood park, its intended function and purpose will be reduced by the proposed project.

#### **b. Mirabelli Park**

The proposed widening of US-95 will increase traffic volumes on US-95 but will move travel lanes about 40 ft. further away from Mirabelli Park. As a combined effect, noise levels are not predicted to increase above the current level of 73 dBA (see Figure VI-30). However, predicted noise levels

will be well above 66 dBA with both the No-Build and Build Alternatives. Consequently, the park meets the FHWA criteria for consideration of noise abatement measures. However, the adverse noise impact will not substantially impair the activities of the use of Mirabelli Park. Proposed improvements to US-95 at Mirabelli Park which will widen the existing highway, shifting travel about 40 ft. northward, will not affect access to the park. Visual changes would only result from the installation of noise barriers, (see Section H, below).

**c. O.K. Adcock Elementary School**

The proposed project will require the acquisition of approximately 2.4 acres of the 8.4 acre Adcock Elementary School site. This will result in the displacement of the school building and outdoor recreational areas. This use will adversely affect the recreational activities of the school as intended through the joint-use agreement between the City of Las Vegas and the Clark County School District.

**d. Ruth Fyfe Elementary School**

Under Alternative A, the proposed project will require the acquisition of a small portion of an outdoor recreational area which is also used for public recreation purposes. Only a very small portion of the landscaped area (0.1 acre) in the vicinity of a drainage ditch will be needed to accommodate the US-95 widening. This use of this property will not affect the recreational activities associated with this property as intended by the Clark County School District or the City of Las Vegas. Because the use of this property is considered to be minor (less than 10 percent) no functional replacement for this property is required.

Under Alternative B, the proposed project would not require the taking of any land from this property.

Under Alternatives A and B, the proposed widening of US-95 will increase traffic volumes on the freeway. As a result, increased noise levels are predicted at this property. Predicted noise levels will exceed 66 dBA with both the No-Build and Build Alternatives (see Figure VI-34). The predicted Build Alternative year 2020 noise level without mitigation is 79 dBA at the school. Consequently, the school meets the FHWA criteria for consideration of noise abatement measures. However, the recreational activities on the school playground are not considered to be adversely affected by noise with the proposed project.

Proposed improvements to US-95 at Ruth Fyfe Elementary school will widen the existing highway and will not affect access to the school. Visual changes would only result from the installation of noise barriers (see Section H, below).

**e. City of Las Vegas Pedestrian Path and Bikeway**

The proposed project will use approximately one-half mile of the existing City of Las Vegas pedestrian path and bikeway which extends approximately one mile along southbound US-95 on state and city right-of-way between Westcliff Drive and Jones Boulevard. This use will result in the elimination of approximately one-half mile of the path, in the vicinity of the Adcock Elementary School and the Torrey Pines Park.

**f. Angel Park Public Golf Course**

The proposed project will increase traffic volumes on the Summerlin Parkway. As a result, increased noise levels are predicted for the golf course. Predicted noise levels will exceed 66 dBA with both the No-Build and Build Alternatives. The predicted Build Alternative year 2020 noise level without mitigation is 77 dBA at the closest point to the Parkway. Consequently, the golf course meets the FHWA criteria for consideration of noise abatement measures. However, the activities of the golf course are not considered to be adversely affected by noise with the proposed project. Access to the golf course will not be affected with the proposed project. Visual changes would only result from the installation of noise barriers (see Section H, below).

**g. Other Parks and Schools**

Prentiss Walker Memorial Swimming Pool and Park is located on the west side of Martin L. King Boulevard about 1500 ft. north of Carey Avenue. While no property is required from the swimming pool and park, it will experience increased noise levels as a result of the project. Noise levels are predicted to increase from about 72 dBA at present to about 76 dBA with the proposed project. Consequently, the swimming pool and park meets the FHWA criteria for the consideration of noise abatement measures. However, the activities at the park which include swimming and basketball are not considered to be adversely impacted by noise with the proposed project. Views from the swimming pool and park and access to the swimming pool and park would not change.

Other parks, Lorenzi Park, Heers Park, Woofler Park, Meadow Street Park, James H. Anderson Memorial Park and Lubertha Johnson Park, are located 500 ft. or further from proposed improvements and are separated from proposed improvements by existing single family residential neighborhoods. The proposed project will not have direct impacts on these parks. Access to these parks will not be adversely affected and the parks are far enough from proposed improvements and buffered by residential neighborhoods so that there will be no adverse indirect impacts such as visual and noise impacts.

With the proposed project, beneficial impacts to the above parks are anticipated through reduced travel time, increased accessibility and enhanced safety as a result of roadway improvements.

Kermit Booker Elementary School is located on the west side of Martin L. King Boulevard about 700 ft. south of Carey Avenue. No property is required from the school with the proposed project. The school will experience increased noise as a result of the project. School buildings are setback

about 100 ft. from the roadway. At this distance, noise levels are predicted to increase from about 70 dBA at present to about 75 dBA with the proposed project. Recreational areas are located behind the school and are shielded from proposed improvements by the school buildings and would not experience noise impacts. There would be no visual impacts with the proposed project and access would be improved. The recreational use of the school therefore would not be impacted by indirect impacts.

R. E. Tobler Elementary School is located on the west side of Torrey Pines Drive at Buckskin Avenue. No property is required from the school with the proposed project. The current noise level is estimated to be about 65 dBA. Traffic volumes on Torrey Pines Drive are expected to decrease with the proposed project compared to the No-Build Alternative resulting in a reduction of noise compared to the No-Build Alternative. There would be no visual impacts with the proposed project and access to the school will be improved.

## **2. Historic Properties**

### **a. Las Vegas Springs National Register Site**

Under Alternative B, impacts from widening of this segment of US-95 would occur within the LVVWD North Well Field. Approximately 14.1 acres located along the northern edge of the LVVWD North Well Field would be directly affected. The Las Vegas Springs National Register Site is located within the North Well Field and is being expanded to encompass all contributing features and artifactual materials associated with Site 26Ck948. Alternative B would have a direct impact on 14.1 acres of the Las Vegas Springs National Register Site. Acquisition of a 150 to 200 foot-wide swath of property south of the current US-95 right-of-way will have an adverse affect on the Las Vegas Springs National Register Site destroying two eligible resources including:

- Little Spring Springhouse (Inventory No. 16.1), c. 1911
- Clark Street Pumpstation (Inventory No. 1.1), 1929

The Little Spring Springhouse and the Clark Street Pumpstation are the two resources in the study area which have the highest integrity and significance. The close physical relationship between the Clark Street Pumpstation and the surviving Concrete Reservoir as integral components of a single water storage/delivery system will be lost. The Concrete Reservoir could be impacted along its northern most edge.

Four contributing resources would be impacted including:

- Earthen Dam and Pond (Inventory No. 11.1), c. 1904
- Pipeline PL4 and Cleanouts (Inventory No. 8.1), c. 1917
- Well No. Three (Inventory No. 18.1), 1940
- Artifact Locus 11; a prehistoric and protohistoric artifact scatter

The destruction of the Earthen Dam and Pond would result in the loss of the earliest surviving method of historic water resource management found on the site, and the only architectural resource in the study area associated with either the Late Ranching Period or the Late Stewart Ranching Era.

A major portion of the unique historic riparian setting would be destroyed including:

- the eastern-most 326 feet (98 meters or 12.3 percent) of the last remaining 2,650 feet at the headwaters of the original Las Vegas Creek
- all 350 feet (approximately 105 meters) of the adjacent tributary channel from the Earthen Dam to its confluence with Las Vegas Creek
- Little Spring itself, one of the four remaining historic spring sites of the six to eight springs originally mapped in 1904 would be entirely destroyed
- approximately half of Middle Spring basin

A portion of the visual buffer between US-95 and the historic features would be destroyed. The loss of vegetation and closer proximity of traffic may also adversely affect the feeling of the remaining historic site by the increased freeway noise level. The right-of-way fence line will encroach within 10 feet of one eligible resource:

- Well No. Five and Derrick (Inventory No. 17.1), 1941

The proposed widening and realignment of US-95 will relocate the roadway 50 to 155 feet closer to five contributing resources including:

- Middle Spring Springhouse (Inventory No. 15.1), c. 1916
- Manhole and Pipeline PL5 (Inventory No. 15.2), c. 1927
- Wooden Bridge (Inventory No. 5.2), c. 1924
- Foot Bridge (Inventory No. 12.1), c. 1924
- Dam and Culverts (Inventory No. 26.1), c. 1924

Impacts to these resources from the relocation of the freeway closer to the resources include increased vibration, reduced on-site accessibility and reduction of the visual buffer.

## **G. Avoidance Alternatives**

### **1. Parklands/Recreational Properties**

#### **a. No-Build Alternative**

The No-Build Alternative assumes that the proposed project would not be implemented and that only routine emergency maintenance and repair would be conducted along US-95 in the project area. Although this alternative would not result in any impacts to the Section 4(f) resources, it is

considered the least appropriate because of the immediate need to eliminate existing traffic safety concerns, existing traffic congestion and to meet the future traffic demands that are projected for the project area and the Las Vegas Valley. The No-Build Alternative is also considered the least appropriate alternative due to the fact that it does not meet the project purpose and need.

**b. Design Alternative 1 - US-95 Widening to the North**

Widening of the US-95 roadway to the north was considered as an alternative to avoid any encroachment into the Torrey Pines Park and the Adcock Elementary School and the direct impacts to the City of Las Vegas pedestrian path and bikeway which currently extends along the southbound US-95 right-of-way between Westcliff Drive and Jones Boulevard. Under this alternative, the alignment and widening of US-95 would be shifted approximately 150 to 200 feet to the north from the Rainbow Boulevard curve to east of Torrey Pines Drive. Shifting the US-95 alignment to the north would avoid the Torrey Pines Park and the pedestrian path and bikeway. It would also avoid the O.K. Adcock Elementary School, nine single family residences and 34 multi-family residential units.

However, the alternative to shift US-95 to the north in this area would require the following actions:

- Reconstruction of the Rainbow Boulevard/Summerlin Parkway Interchange
- Relocation of a Nevada Power Substation
- Relocation of a Las Vegas Valley Water District Well
- Acquisition of a Lutheran Church
- Acquisition of approximately 25 single family residences and
- Acquisition of approximately 113 multi-family residential units.

Shifting the US-95 alignment to the north from the Rainbow Boulevard curve to the east of Torrey Pines Drive would require the realignment of US-95 through the Rainbow Boulevard/Summerlin Parkway Interchange. The realignment of US-95 would also require the reconstruction of the Rainbow Boulevard Bridge over US-95, the reconstruction of the US-95 northbound to Summerlin Parkway westbound third level ramp, extensive regrading of the interchange and extensive traffic control work. Traffic on Rainbow Boulevard and between US-95 and the Summerlin Parkway would be disrupted for approximately two years for the reconstruction.

The Nevada Power Substation on the north side of US-95 midway between Rainbow Boulevard and Torrey Pines Drive would require relocation. Two acres of land for relocation would have to be acquired between ½ mile to 2 miles from the existing site. Available areas are in residential and business areas and local zoning and building permits would be required. All transmission and distribution lines would have to be relocated to the relocated facility with new easements required. Approximately three years would be required for the relocation including two years for construction.

The Las Vegas Valley Water District production well on the northeast corner of US-95 and Torrey Pines Drive would have to be relocated. Approximately 1/3 of an acre of new property would be required in the vicinity of the existing well, along with new connection piping. Two to three years would be required to relocate the well.

The Lutheran Church on the Northwest corner of US-95 and Torrey Pines Drive includes an approximately 14,000 sf. main building and three auxiliary buildings which house a church operated daycare, pre-school and reception hall. The daycare, pre-school and reception hall are open to the public and not restricted to church members. Since appropriate land is not available near the existing church, it is likely that the church would have to be relocated 1 to 5 miles from the present site. The relocation and change in location would be disruptive to parishioners. It would also adversely impact the daycare, preschool and reception hall which serve the local community as well as the local neighborhood users of these facilities.

The shift to the north would result in the acquisition of approximately an additional 16 single family residences and approximately an additional 79 multi-family residential units within the Charleston Heights neighborhood.

The alternative to shift US-95 to the north from the Rainbow curve to east of Torrey Pines Drive would result in an estimated \$34 million in costs for acquisition, relocations and reconstruction. This would be approximately \$17 million more than for the design alternative to the south at this location.

The alternative to shift the widening of US-95 to the north is not considered a viable practical alternative for avoiding the park, the school and recreational pedestrian/bikeway due to the residential displacements that would occur as a result of the acquisition of 25 homes and 113 apartment units, the acquisition of a neighborhood church, the conflicts with two utility facilities operated by Nevada Power and the Las Vegas Water District and the necessity of reconstructing the Rainbow Boulevard/Summerlin Parkway Interchange. The costs, the social, economic and environmental impacts and the community disruption from the alternative to avoid the Torrey Pines Park, the Adcock Elementary School and the pedestrian path and bikeway are of such extraordinary magnitude to make the alternative not feasible and prudent.

### **c. Alternative B**

Under Alternative B, the widening of US-95 to 10 lanes (with all lanes moving to the south) would avoid Ruth Fyfe Elementary School and would not result in any impacts to the school's recreational area which is a Section 4(f) resource. Alternative B is being evaluated in the FEIS as a design alternative. Alternative B, however, will result in impacts to the Las Vegas Springs National Register Site, another Section 4(f) resource as described in Sections VII.E.2 and VII.F.2. There are no other prudent or feasible alternatives to avoid the impacts to the 0.1 acre of elementary school recreational area required with alternative A.

### **c. Conclusion**

The analysis of alternatives to avoid impacts to the Section 4(f) resources has determined that the No-Build or the avoidance alternatives do not satisfy the project purpose and need. Given the local communities' willingness to work together to mitigate the impacts to Adcock Elementary School and the Torrey Pines Park, the extensive acquisitions, relocations and reconstruction, with an estimated additional cost of \$17 million, to shift the alignment of US-95 to the north to avoid the school and the park are not considered feasible or prudent. As a result, there are no feasible or prudent alternatives to avoid the use or direct impacts to these park and recreation Section 4(f) resources. Proposed mitigation of the impacts to Adcock Elementary School and Torrey Pines Park involves the functional replacement of the Adcock Elementary School on the remainder of the park site and the replacement of Torrey Pines Park on the remainder site of the school site, with the construction of recreational facilities which will be shared between the school and the park. The functional replacement of the school and replacement of the park with shared recreational facilities will provide mitigation for the acquisition of land from the park and the school. The replacement of the pedestrian path and bikeway will provide mitigation for the impacts to the existing pedestrian path and bikeway. Through on-going coordination with officials from the City of Las Vegas Department of Parks and Leisure Activities and the Clark County School District, the proposed project includes all possible planning to minimize harm to these Section 4(f) resources resulting from their use.

While Alternative B would avoid the Ruth Fyfe Elementary School recreational area, Alternative B results in impacts to other Section 4(f) resources as discussed in Section VII.F.2 and there are no other prudent and feasible alternatives to avoid impacts to the school recreational area.

## **2. Historic Properties**

Alternative B would result in impacts to the Las Vegas Springs national Register Site, a Section 4(f) Resource as described in Section VII.F.2. The following avoidance alternatives have been considered.

### **a. No-Build Alternative**

The No-Build Alternative assumes that the proposed project would not be implemented and that only routine emergency maintenance and repair would be conducted along US-95 in the project area. Although this alternative would not result in any impacts to Section 4(f) resources, it is considered the least appropriate because of the immediate need to eliminate existing traffic safety concerns, existing traffic congestion and to meet the future traffic demands that are projected for the project area and the Las Vegas Valley. The No-Build Alternative is also considered the least appropriate alternative due to the fact that it does not meet the project purpose and need.

**b. Alternative A**

Under Alternative A the widening of US-95 to 10 lanes (with all lanes moving to the north) will not result in any adverse impacts to the archaeological sites encompassed by the LVVWD North Well Field. Avoidance of the Las Vegas Springs National Register Site with Alternative A will result in the acquisition of 62 residential properties. Alternative A is being evaluated in the FEIS as a design alternative. There are no other prudent or feasible alternatives available to avoid this historic property. The proposed project includes all possible planning to minimize harm to this Section 4(f) resource. The project elevations of the realigned and widened US-95, will remain at its current elevation and distance from these cultural resources. The configuration of the Valley View Boulevard Interchange will not change. The Valley View Boulevard Overpass will remain approximately at its present elevation but realigned somewhat to the east to facilitate construction.

Native Americans interviewed during this study expressed concerns about impacts and subsequent mitigation activities that would occur to the Big Springs (Las Vegas Springs) site if Alternative B were implemented. Concerns were expressed about all aspects of the site from the hydrological to the archaeological resources it contains. Native Americans perceive the site as being in a fairly intact condition, and have expressed their recommendation to protect it from further development. There is no appropriate mitigation that would be sufficient to offset the cultural damages that would occur if Alternative B is adopted. These recommendations are derived from statements by elders during the study and are subject to review and approval by each of the participating tribal governments.

**H. Measures to Minimize Harm**

Mitigation of potential impacts to Section 4(f) resources usually includes the following:

- avoidance alternatives; and/or
- design measures which reduce or eliminate impacts resulting from property acquisitions or "constructive use".

**1. Parkland/Recreational Properties**

The proposed project will result a direct use of the Torrey Pines Park, Adcock Elementary School and the City of Las Vegas pedestrian path and bikeway. This use will result from the acquisition of a portion of the park, a portion of the school and a portion of the pedestrian path and bikeway. The proposed project has been coordinated with the City of Las Vegas Department of Parks and Leisure Activities and the Clark County School District.

This coordination has resulted in a plan for the functional replacement of Torrey Pines Park and the Adcock Elementary School, and the relocation of the City of Las Vegas pedestrian path and bikeway, which will result in the replacement of parkland and recreational facilities of reasonably equivalent usefulness and location, and of comparable value.

**a. Torrey Pines Park and Adcock Elementary School**

The proposed project will result in the acquisition of approximately 2.4 acres from the approximately 8.4 acre Adcock Elementary School site, including the existing school building and outdoor recreation area. During the Major Investment Study, the conceptual plan for the school and Torrey Pines Park, which was developed through the cooperative efforts of the Clark County School District and the City of Las Vegas Department of Parks and Leisure Activities, focused on the exchange of land between the City of Las Vegas and the Clark County School District. This plan includes the exchange of land between the City of Las Vegas and the Clark County School District to facilitate the functional replacement of the Adcock Elementary School through its relocation and reconstruction to the remainder of the adjacent site of the Torrey Pines Park. Under this plan, the six acre remnant parcel of city land adjacent to the school would be transferred to the Clark County School District. In exchange, a portion of the remnant property currently occupied by the Adcock Elementary school would be transferred to the City of Las Vegas Department of Parks and Leisure Activities for the replacement of park facilities. The plan to relocate the school and park includes the shared use of recreational facilities between the reconstructed park and the newly constructed school. This sharing of recreational facilities is envisioned as a means to reduce the impacts from the proposed taking of land and the reduction in area of both the school and park site.

Under the shared plan for the school and park, the concept that has been developed allows both for the school and park to be located on smaller individual parcels, but to share facilities so that each would have available equal area dedicated to outdoor recreation activities. The proposed facilities will include outdoor ballfields which may include, soccer, softball, baseball, basketball, volleyball and tetherball. These outdoor ballfields comprise the shared facilities which are part of the conceptual plan for the replacement of the outdoor recreation fields for Torrey Pines Park and Adcock Elementary School. It is the intent of the Clark County School District and the City of Las Vegas Parks and Leisure Activities Department that these outdoor ballfields be available for use by both the school and the local community.

Figure VII-4 depicts a preliminary conceptual plan for the relocated Adcock School and the relocated Torrey Pines Park.

**b. Mirabelli Park**

The placement of an eighteen foot high noise barrier between the Mirabelli Park and Community Center and US-95 will serve as appropriate mitigation to address the predicted future noise levels. Under the proposed project, the introduction of an 18 ft. high noise barrier will serve to reduce the predicted noise levels to below 67 dBA.

With the proposed project, beneficial impacts to the park would be realized through the reduction of current traffic noise levels.



The introduction of a noise barrier would not be likely to cause visual impacts to the park. The view northward from the park is dominated by the highway which is somewhat elevated at this location. A noise barrier on the north side of the park would shield the view of the freeway from the park. Input from the community will be used to make a final decision regarding the installation noise barriers.

**c. Ruth Fyfe Elementary School**

Alternative A will result in the acquisition of approximately 0.1 acres of the recreational area of Ruth Fyfe Elementary School. Replacement of this acquisition with an equal sized remainder from the realignment of Valley View Boulevard as part of the project, contiguous to the recreational area, will provide mitigation subject to acceptance of the land exchange by the Clark County School District.

The project elevations of the realigned and widened US-95, will remain at its current elevation. The configuration of the Valley View Boulevard Interchange adjacent to the school will not change. The Valley View Boulevard overpass will remain approximately at its present elevation, but realigned somewhat to the east to facilitate construction.

The placement of an 18 ft. high noise barrier between the school and US-95 will serve as appropriate mitigation to address the predicted future noise levels.

The placement of a noise barrier will also result in a reduction in traffic noise levels. Therefore, as a result of the introduction of noise barriers, beneficial impacts to this property would be realized through the reduction of current noise levels.

The introduction of a noise barrier may cause visual impacts to the school. The view southward from the school includes the US-95 Highway, the cottonwood forest on the Las Vegas Springs National Register Site (southeast view) and the Meadows Mall (south and southwest view). A noise barrier on the south side of the school would shield the view of the US-95 Highway and the Meadows Mall from the school but would also impact the view of the cottonwood forest. Input from the community and the Clark County School District will be used to make a final decision regarding the installation of noise barriers.

**d. City of Las Vegas Pedestrian Path and Bikeway**

The proposed project will displace a portion of the existing City of Las Vegas pedestrian path and bikeway. As mitigation, the pedestrian path and bikeway would be relocated adjacent to the southbound side of the widened US-95. This functional replacement of the pedestrian path and bikeway will serve as appropriate mitigation to maintain the intended function of this recreational facility and its service to the adjacent community as planned by the City of Las Vegas Department of Parks and Leisure Activities. The realignment of the pedestrian path and bikeway will afford new opportunities for linking the Adcock Elementary School and Torrey Pines Park directly to this recreation facility.

Figure VII-2 depicts the location and alignment of the Las Vegas pedestrian path and bikeway which would result from the proposed project and the coordination efforts of the affected agencies.

**e. Angel Park Public Golf Course**

The placement of an 18 ft. high noise barrier between the Summerlin Parkway and the Angel Park Golf Course would serve as appropriate mitigation to address the predicted future noise levels.

The introduction of a noise barrier may cause visual impacts to the golf course. The Summerlin parkway at the golf course has been heavily landscaped. The landscaped Parkway provides a pleasing view from the golf course and provides visual continuity with the golf course. Noise barriers between the Summerlin Parkway and the golf course would block distant views of the mountains and near views of landscaping along the Parkway. Input from the community and the City of Las Vegas will be used to make a final decision regarding the installation of noise barriers.

**f. Prentiss Walker Swimming Pool and Park**

The City of North Las Vegas is currently planning improvements to the Prentiss Walker Swimming Pool and Park. These improvements include improved parking areas, adding benches and tables, fencing play areas, replacing play equipment, improving ADA accessibility and planting a landscape buffer along Martin L. King Boulevard. These improvements will enhance the recreational qualities of the swimming pool and park and by screening the park from the roadway provide will provide mitigation for indirect impacts.

The placement of a noise barrier between the swimming pool, the park and the roadway would provide mitigation for increased noise levels and will be considered. The introduction of a noise barrier may cause visual impacts. Input from the community will be used to make a final decision regarding the installation of noise barriers.

## 2. Historic Properties

### a. Las Vegas Springs National Register Site

Under Alternative B, there are two possible measures to minimize harm to the Las Vegas Springs National Register Site. These include (1) data recovery and documentation, and (2) relocate impacted historic architectural structures and undertake data recovery on cultural resources which cannot be relocated.

#### **Approach One: Data Recovery and Documentation**

If a portion of the Las Vegas Springs National Historic Site is impacted, mitigation by archaeologically investigating Locus 11 and additional potential archaeological deposits associated with the standing and collapsed historic architectural features can be implemented. Architectural documentation of the six (6) contributing historic architectural structures located within the APE to Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) standards, would be undertaken. Upon completion of the documentation, the original documents are submitted to the Library of Congress in Washington, D.C. Copies are retained by the FHWA, NDOT, Nevada SHPO, and the private/public land owner/manager.

Archaeological data recovery efforts occur after the HABS/HAER photographic are completed, but both before *and* after the historic structure is dismantled. Archaeological data recovery efforts would be required in areas defined as containing either prehistoric or historic surface artifact deposits. Monitoring of the early stages of construction would ensure that buried artifactual deposits and/or buried features were not overlooked. Mitigation will require staging the work in order to test for subsurface features within the APE in the initial phase. Following consultation with the SHPO and FHWA, an agreement regarding levels of effort and the second phase of the mitigation will be implemented.

#### **Approach Two: Relocating the Structures**

If the FHWA finds that a contributing element of the 4(f) property will be impacted, relocating historic resources back onto the North Well Field property, or moving structures to a new site, would be technically possible. If 14.1 acres of the Las Vegas Springs National Register Site is impacted, archaeologically and architecturally investigating and documenting the site and structures to Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) standards will be conducted prior to relocating the affected above-ground structures.

If structures are moved to new locations within the North Well Field, their presence could adversely affect the historic integrity of the remaining eligible components which are in their original setting.

The historic integrity and contextual associations of the relocated buildings and structures would be lost.

With Alternative B, relocation of historic structures which are outside the area of project affect but subject to potential deterioration due to increased vibration will be considered. In addition, restoration of the visual buffer with landscaping and/or noise barriers should be considered. An on-site accessibility plan, developed in conjunction with the Las Vegas Valley Water District would improve on-site accessibility.

## **I. Section 4(f) Coordination**

### **1. Parklands/Recreational Properties**

Coordination between the City of Las Vegas and the Nevada Department of Transportation has resulted in the following:

#### **a. City of Las Vegas Department of Parks and Leisure Activities**

The City of Las Vegas supports the proposed project and has coordinated the design of the proposed project with that of the relocated Torrey Pines Park and City of Las Vegas pedestrian path and bikeway. Correspondence between the City of Las Vegas Department of Parks and Leisure Activities and the Nevada Department of Transportation identify the city's understanding of the project related impacts to the park and the pedestrian path and bikeway and the measures for mitigation which include the replacement of the park and the pedestrian path and bikeway. The Section 4(f) coordination letters between the city of Las Vegas and the Nevada Department of Transportation are provided in Appendix A of the FEIS.

#### **b. Clark County School District**

The Clark County School District doesn't oppose the proposed project and has coordinated the design and relocation of the Adcock Elementary School as it relates to the relocation of Torrey Pines Park and the City of Las Vegas pedestrian path and bikeway. Correspondence between the Clark County School District and the Nevada Department of Transportation identify the County's understanding of the project related impacts to the Adcock Elementary School, Torrey Pines Park and the measures for mitigation which include the replacement of the park to the former site of the Adcock School. The Section 4(f) coordination letters between the Clark County School District and the Nevada Department of Transportation are provided in Appendix A of the FEIS.

Figure VII-4 depicts a preliminary conceptual plan for the proposed relocation of the Adcock Elementary School and Torrey Pines Park which resulted from the coordination efforts between the Nevada Department of Transportation, the Clark County School District and the City of Las Vegas Department of Parks and Leisure.

**c. Ongoing Coordination**

Coordination between the above agencies and groups has served to ensure that all reasonable planning has been accomplished to avoid, as much as possible, direct impacts to these Section 4(f) resources and their respective existing and proposed functions and services to the local community, and to minimize adverse impacts. Coordination between the City of Las Vegas Department of Parks and Leisure Activities, the Clark County School District and the Nevada Department of Transportation will continue as the proposed project is advanced through the environmental review process. This coordination will ensure that all practical measures to accommodate the proposed project with the least or minimal impact to the Section 4(f) resources will occur and that all available opportunities and mitigation measures, including the functional replacement of the park and the pedestrian path and bikeway, together with the Adcock Elementary School, will be considered and factored into final design.

**2. Historic Properties**

**a. Las Vegas Springs National Register Site**

Coordination between the above agencies and groups has served to ensure that all reasonable planning has been accomplished to avoid as much as possible, direct impacts to these Section 4(f) resources and their respective existing and proposed functions and services to the local community, and to minimize adverse impacts. Coordination between the State Historic Preservation Officer, Native American Tribes, and the Federal Highway Administration will continue as the proposed project is advanced to construction.

Appendix A presents the correspondence pertaining to agency and institutional Section 4(f) coordination regarding cultural resources and historic properties. In order of listing, Appendix A contains:

<b>Letter dated</b>	<b>From</b>	<b>To</b>	<b>Regarding</b>
Feb 19, 1999	A. Baldrice, SHPO	J. Price, FHWA	Concurrence of findings DEIS/Tech. Report
Sept 30, 1998	C. Barlow, FHWA	J. Hohmann, LBA	Using draft UNLV report
Sept 9, 1998	A. Baldrice, SHPO	J. Price, FHWA	Comments on draft UNLV rpt
Sept 1, 1998	C. Barlow, FHWA	A. Baldrice, SHPO	Submission of UNLV report
June 4, 1998	R. James, SHPO	C. Barlow, FHWA	Develop cultural resource PA
May 4, 1998	A. Baldrice, SHPO	J. Price, FHWA	Accept/use of LBA/UNLV rpts
April 28, 1998	R. Stoffle, U of A	J. Hohmann, LBA	Native American Studies
April 23, 1998	R. James, SHPO	C. Barlow, FHWA	Retract concurrence LBA plan
April 17, 1998	C. Barlow, FHWA	A. Stanfill, ACHP	Proj Update & April 21 meeting
April 1, 1998	R. Stoffle, U of A	Na American Tribes	US-95 Ethnographic Studies
March 2, 1998	R. James, SHPO	C. Barlow, FHWA	Acceptance of LBA test plan
Feb 23, 1998	C. Barlow, FHWA	R. James, SHPO	Submit revised LBA test plan
Feb 3, 1998	A. Baldrice, SHPO	C. Barlow, FHWA	Acceptance LBA Archt study
Jan 27, 1998	C. Barlow, FHWA	S. Brooks-Miller, SHPO	Submit LBA Archt study
Dec 8, 1997	R. James, SHPO	C. Barlow, FHWA	Request for Additional Studies
Sept 30, 1997	C. Barlow, FHWA	R. James, SHPO	Submit LBA Surv rpt/test plan

Agency comments and responses on the DEIS are included in Appendix D.

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**VIII. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED**

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## **VIII. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED**

### **A. Probable Adverse Impacts Which Cannot Be Avoided**

The construction and operation of the proposed project will result in unavoidable adverse impacts to the natural and man-made environments. While these impacts are considered adverse and for the most part unavoidable, appropriate mitigation measures will serve to limit the adversity of these impacts and the potential for any long-term or permanent impacts.

The following are the unavoidable adverse impacts that are anticipated for the proposed project.

- Adverse impacts to several wildlife and vegetation species are anticipated within the right-of-way and construction area. Construction will result in the permanent loss of habitat to both wildlife and vegetative communities. Vegetation within this area will be permanently removed and those species of wildlife that are associated with these vegetative communities that cannot relocate into other suitable habitat within the nearby areas will suffer high mortality. The proposed project will result in the permanent removal and degradation of approximately 6 acres of natural wildlife and vegetation habitat with Alternative A and approximately 20 acres of natural wildlife and vegetation habitat with Alternative B.
- The proposed project will result in adverse noise level impacts to several residential and other noise sensitive properties which are located adjacent to the proposed roadway right-of-way.
- The proposed project will result in adverse impacts to several community facilities including school properties, a pedestrian and bicycle path, outdoor parks and recreation facilities.
- Adverse impacts to the LVVWD North Well Field will result in the acquisition of approximately 14 acres of the property (Under Alternative B). This acquisition taking will adversely impact the Las Vegas Springs Archaeological Site, a listed National Historic site and the proposed LVVWD Mojave Desert Preserve Master Plan. The proposed project, under Alternative B, will also diversely affect areas of natural vegetation within the North Well Field which comprise sensitive desert riparian habitat and habitat area for the Merriam and Las Vegas bearpoppies, the Peregrine Falcon and the Desert Pocket Mouse.
- The proposed project will also adversely impact potable water wells and utilities which serve the project area.

- Wind and water erosion from graded areas will cause temporary sedimentation impacts to the nearby washes.
- The proposed project will result in the displacement of as many as 396 residential units under Alternative A, and 334 residential units under Alternative B. The proposed project will also result in the displacement of 55 businesses under Alternatives A and B.

While the proposed project will result in unavoidable adverse impacts, the public benefits of the project are considered to outweigh any such impacts. The most important benefits associated with the proposed project are the improvement of the overall travel conditions in the project area and throughout the general Clark County region; a general improvement in overall regional air quality in the project area; improved travel safety; improved transportation service to the project area and the region's major traffic generators such as McCarran International Airport and the Las Vegas Resort Corridor; improvements in travel time through the project area and region; and a general improvement in the efficient use of energy.

The proposed project is also envisioned as providing much needed service to the existing and emerging residential, commercial and industrial areas within the project area and adjacent areas as well as the various community service facilities which currently serve the project area.

Under Alternative A and B the proposed project will directly impact an archaeological site (Site 26Ck5444) which has the potential to be eligible for inclusion on the National Register of Historic Places.

The size and complexity of the proposed project dictates that some adverse impacts associated with the man-made and natural environments can be anticipated and thus, need to be addressed through appropriate mitigation measures.

## **B. Summary of Mitigation Measures**

The Nevada Department of Transportation will undertake a multitude of measures to avoid, minimize, and compensate for potential adverse and other project related environmental impacts. These measures to minimize and limit the adversity and extent of impacts are thoroughly identified and evaluated in Section VI, Environmental Impacts and Mitigation.

The following are mitigation measures for the proposed project to minimize the extent and degree of the identified adverse impacts.

- All residences and businesses displaced by right-of-way acquisitions will be offered relocation assistance pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, AS AMENDED. The acquisition of all private property

and the relocation of all affected residents and businesses will be conducted pursuant to the policies and practices of the Nevada Department of Transportation as provided in the right-of-way manual as published by the State of Nevada Department of Transportation. Last Resort Housing payments, and if necessary construction, will be available to eligible relocatees. Also, the relocation services provided by the Nevada Department of Transportation will be available to all residents and business relocatees without discrimination.

- The introduction of noise barriers of varying heights and lengths along portions of the proposed roadway where noise impacts have been predicated will serve to limit the extent of impact. The location, height and design of noise barriers will be determined through coordination with the affected neighborhoods. The introduction of noise walls along the widened US-95 right-of-way will serve to mitigate the predicted increased noise levels resulting from the US-95 widening at the outdoor recreation areas of Torrey Pines Park, Mirabelli Park, Adcock Elementary School and Fyfe Elementary School.
- Landscaping of the sound barriers along Reba Road and the relocated Alaska Street would help to mitigate the visual impacts of the sound barriers. The Nevada Department of Transportation, in cooperation with the City of Las Vegas, will use public and community input during the design hearings to determine the locations where landscaping will be installed and maintained, as appropriate.
- Work adjacent to residential areas will be scheduled for daytime hours. On arterial streets, in non-residential areas, work will be scheduled at night as much as practical to reduce impacts to motorists during peak hours. Along US-95, where work is proposed adjacent to residential neighborhoods, noise barriers will be constructed during early construction stages so that construction can proceed behind the barriers day or night.
- The incorporation of soil and erosion and sediment control measures to control the impact of eroded sediment will be implemented during the construction and operation of the proposed project. Such control measures will be developed by the Nevada Department of Transportation in cooperation with the Soil Conservation Service District Office in Las Vegas.
- Coordination between the Nevada Department of Transportation, the design engineer and the officials of the affected utilities services will serve to limit the potential for long term adverse impacts and utility service disruption during the construction phase. This coordination will also serve to identify appropriate relocation or reconstruction of the impacted utilities.
- Coordination between the City of Las Vegas Department of Parks and Leisure Activities, the Clark County School District and the Nevada Department of Transportation will serve to limit any long term adverse impacts to schools and recreation facilities. Mitigation of the

impacts to Adcock Elementary School and the adjacent Torrey Pines Park involves the consolidation of the recreational facilities for these two properties. This mitigation plan will involve the reconstruction and functional replacement of the Adcock Elementary School on the remainder of the park site, and the construction and functional replacement of the park recreational facilities on the remainder of the school site with recreational facilities shared between the school and the park.

- Mitigation for the City of Las Vegas pedestrian path and bikeway will involve the relocation of the path and bikeway along the southbound lanes of the widened US-95. This realignment and relocation of the path and bikeway will also serve the relocated O.K. Adcock Elementary School facility and Torrey Pines Park. The realignment of the path and bikeway will be undertaken through the cooperative efforts of NDOT, the City of Las Vegas Department of Parks and Leisure Activities and the Clark County School District.
- Business displacements in the West Las Vegas Neighborhood will be minimized by realigning of Martin Luther King Boulevard to the west in the area immediately north of Washington Avenue to reduce the likelihood of displacing these businesses' parking spaces.
- Displaced businesses that are located within minority and low income communities and serve an important role in the local community should receive priority in relocating to any available sites in or adjacent to the community. If a nearby relocation is not feasible for these businesses, relocation measures should address the specific negative impacts that relocation will have on the community.
- Pedestrian crossing studies will be conducted to determine whether pedestrian treatments are necessary for pedestrians crossing arterials proposed for improvement to access community facilities.
- Initial archaeological testing to determine the nature, extent, and significance of the resource will need to be conducted for the impacts to archaeological site 26Ck5444. Assuming that the site meets the criteria for the National Register of Historic Places, this testing effort would be followed by data recovery efforts.
- With Alternative B, there are two possible mitigation approaches to the Las Vegas Springs National Register Site. These are (1) data recovery and documentation, and (2) relocate impacted historic architectural structures and undertake data recovery on cultural resources which cannot be relocated.
- Little or no mitigation is available which can limit the degree of habitat loss within the construction zone or paved areas of roadway. However, the re-introduction of vegetation similar to those species removed along the new roadway embankments and adjacent areas

may serve to limit the overall long term impact to the vegetative community and associated wildlife habitat.

- Further detailed field investigations will be undertaken by the Nevada Department of Transportation in cooperation with the U.S. Fish and Wildlife Service (USFWS) to identify further, the potential presence of special status species of wildlife and vegetation such as the peregrine falcon, the desert pocket mouse, the desert tortoise, and the Las Vegas and Merriam bearpoppys, as well as any other species of wildlife and vegetation that may be of concern to the USFWS.
- Although no other state or federally listed candidate, threatened or endangered species of wildlife or vegetation were observed during surveys of the proposed roadway improvements, there is the possibility that one or more species may be present in the project area at the time of the proposed construction. Therefore, preconstruction surveys will take place to determine the presence of any such individuals or species. If any threatened or endangered species are found during the preconstruction surveys, NDOT will consult with the USFWS, Nevada Department of Wildlife and BLM, if warranted. The first option for mitigating the loss of these species is to avoid suitable habitats to the maximum extent possible. If the suitable habitats cannot be avoided: (1) disturbance will be minimized to the extent possible; (2) construction will be limited to the season of least activity for the species of concern; (3) where practical, salvage, transplanting, and revegetation will occur on or off-site; and/or (4) the most practical plan to mitigate for these losses will be developed at the time of construction.
- As no aquatic wildlife species are known to exist in the project area, no impacts are expected and, therefore, no mitigation is necessary.



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**IX. RELATIONSHIP BETWEEN THE SHORT-TERM USE OF  
THE ENVIRONMENT AND THE MAINTENANCE AND  
ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

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## **IX. RELATIONSHIP BETWEEN THE SHORT-TERM USE OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

The proposed project is being considered in order to address the future traffic demands of the northwest region of Las Vegas, and to relieve severe congestion which currently exists on the local arterial, collector and service road network which currently serves the project area and Clark County region.

The project area and the region which the proposed project is intended to serve, is considered to be one of the fastest growing regions in the United States with residential and commercial development as the leading growth activities. As a result of this growth, the previously built highway system and the local road network do not meet either the local or regional transportation needs for which they were intended and designed. If the proposed project were not to be constructed, the existing road network would remain the primary facilities utilized by local and regionally generated traffic. As a result, the levels of service which currently are at unacceptable levels along many of the area's roads would decrease and service to and from the area's traffic generators would continue to decline. In addition, the increase in traffic congestion would lead to a further deterioration of local and regional air quality an increase in traffic generated noise and a general lower quality of life.

Through the construction and operation of the proposed project, the overall quality of life in the project area and throughout the adjoining Clark County region will be enhanced through the following improvements:

- Reduction in congestion and time delays for normal traffic as well as emergency vehicles, particularly in the City of Las Vegas and in areas with established high density development.
- Provision of additional capacity and improved levels of service for traffic movements.
- Improved safety conditions for motorists, bicyclists, pedestrians and school children.
- Reduction in automobile related air pollution and noise.
- Improved and regional access through the widening and functional improvements to the arterial roadway network, US-95 and Summerlin Parkway.

- New economic input through the generation of new employment and increases in local expenditures.
- Introduction of freeway management operations along US-95.
- Improved mobility through enhanced transit service.
- Increased vehicle occupancy through the introduction of HOV lanes, rideshare programs and TDM measures.
- Increased residential and commercial property access.

For an estimated total of 6.5 years or 72 months, approximately 110 acres of land within the project area will be used as a construction site which would involve clearing and grubbing, cutting, the placement of fill, surfacing, paving, landscaping, fencing, lighting, signing, extension and placement of utilities and the erection of temporary and permanent roadway structures.

The construction of the proposed project will be phased and as a result, will require that only portions of the project area be committed as a construction site at any one given time. Therefore, the land area to be used during the various construction phases is considered as a short-term use of the environment while during the operation of the proposed project, this land is considered to be a long-term use of the environment which will support the maintenance and enhancement of the long-term productivity.

The productivity of this land, in terms of its ecological productivity as desert riparian areas and as habitat for wildlife (Alternative B only), its opportunity for select recreational activity and its economic productivity in generating property and sales taxes would be lost during this period and in the long-term as a result of the proposed project.

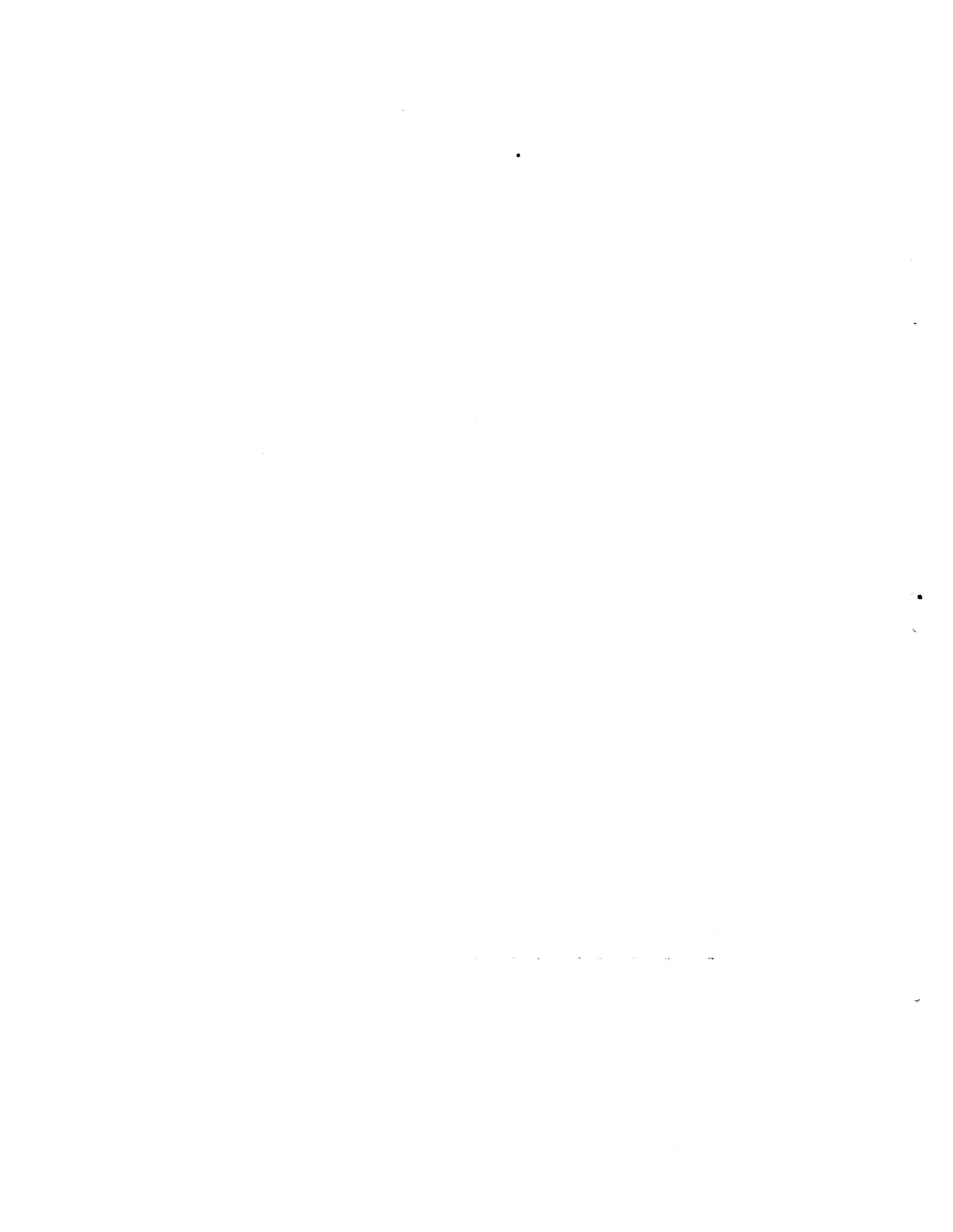
The construction period will however, also generate new productivity in terms of new construction related employment, new payrolls, induced personal income, and purchases of materials, supplies and services. The short-term generation of construction employment and the purchases of materials and supplies is considered to be an inducement to the long term productivity of the local and regional economy. As a result of the proposed project, non-construction related employment would also be generated along with the addition of new purchases both from construction related activity and the added expendable income resulting from the generated part-time and permanent employment.

The operation of the proposed project would have similar although long lasting productivity impacts. Although the ecological productivity of the land taken as part of the project would be lost, and the productivity of the adjacent land areas would be limited through the construction period, there would be beneficial impacts upon the land and regional productivity by virtue of the estimated 5,510 to slightly over 5,530 part-time and full time jobs which would be generated from the purchases and

take-home expendable income generated by the construction of the proposed project. These productivity gains would be, for the most part, long term given the projected life span of the facility.

The related infrastructure improvements and extensions are also viewed as major incentives for long-term productivity. The expansion and improvements to the project area as a direct result of the proposed project could act as an inducement for new economic activities within the project area and throughout the region. The operation of the proposed project is also considered as contributing to the overall enhancement of the quality of life in the project area and throughout the region. As a result, the project area and region would realize a long-term benefit by becoming a more desirable place in which to do business and/or reside.

The cumulative effect of the construction and operation of the proposed project would be to stimulate the nearby area and region to greater long-lasting productivity in terms of economic output, its improved perceived character by the business and residential community in reduced traffic congestion and traffic generating noise and an overall improvement to the environment through the reduction in local and regional concentrations of air pollution and traffic congestion.



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**X. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS  
OF RESOURCES**

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## X. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Construction of the proposed project will result in both direct and indirect commitments of resources. In many instances, the resource committed would be recovered within a relatively short period of time. In others, resources would be irreversibly or irretrievably committed by virtue of being consumed or by the apparent limitlessness of the period of their commitment to a specific use. Irreversible and irretrievable commitments of resources can sometimes be compensated for by the provision of other resources with substantially the same use or value.

Although the proposed project considers two design alternative alignments for the widening of US-95, it is recognized that the build alternatives would require similar commitments of natural, physical, human and fiscal resources with variations in commitments directly attributed to the individual design and location of each alternative.

Implementation of the proposed project will involve a commitment of a wide range of natural, physical, human and fiscal resources. A total of approximately 110 acres of land would need to be committed for the construction and operation of the proposed project. The land used in the construction of the proposed project is considered to be an irreversible commitment during the time period that the land is used for construction and during the operational periods. Should however, a greater need arise for the use of the land, or should the proposed project no longer be needed, the land can be converted and committed to another use, although at this time, there is no indication that such a need or conversion would be necessary or desirable.

The proposed project will require the use of various types of fossil fuels, electrical energy and other resources during the construction and operation of the proposed project. These resources are considered to be irretrievably committed to the project. At this time, these resources are not in short supply and considered to be readily available to the proposed project. As a result, the use of these resources is not expected to result in an adverse effect upon the continued availability of these resources. The proposed project will also require the commitment of various types of construction materials, including cement, aggregate, steel and asphalt (bituminous materials), electrical supplies, piping and other raw materials such as metal, stone, sand and fill material. Additionally, large amounts of labor and natural resources will need to be committed to the fabrication and preparation of these construction materials. This commitment of resources is considered to be irretrievable. However, these resources and materials are also not in short supply and their use will not result in any adverse effect upon their continued availability. Much of the material accumulated for construction may at some time be recycled or used for fill or for some other use. These resources should however, be viewed as irretrievably committed to the project.

The construction of the proposed project will require the commitment of an estimated 5,531 man-years of employment for Alternative A and 5,510 man-years of employment under Alternative B or approximately 850 workers per year for 6.5 years under Alternative A and 847 workers per year for

6.5 years under Alternative B. These workers will by necessity, not be available for other projects during the construction period and should be considered as irretrievably committed to the project.

Costs associated with the expansion, extension and provision of utility services to the project would be offset by the direct economic impact upon the area by the labor and material expenditures associated with the projects construction which is estimated to be approximately \$329 million for Alternative A and \$328.2 million for Alternative B.

Direct losses to the local and county governments as a result of the proposed project include property tax payments which will be lost due to the acquisition of developed and undeveloped taxable properties within the right-of-way. This loss is considered to be an irretrievable commitment associated with the project, however, this loss will be offset by the economic benefits to the local and county governments through the generated employment opportunities as well as the economic benefits resulting from the expenditures for construction and new development that may occur in and around the project area.

The construction and operation of the proposed project will require the commitment and expenditure of county, state and federal funds which will not be available for other projects and activities. This commitment of resources is considered to be irretrievable.

Alternative A is not expected to result in any non-beneficial impacts to pristine areas, wetlands or habitats. Although the commitment of land is considered to be an irreversible commitment, it is not expected to be adverse in light of the opportunity for appropriate mitigation and the availability of suitable alternative habitats in the nearby area. Alternative B is expected to result in the permanent loss of approximately 9 acres of desert riparian habitat and result in the decline and degradation of an additional 21 acres of desert riparian habitat, which habitat is unique to the project area and to Southern Nevada. With Alternative B, this loss is considered irreversible.

The operation of the proposed project could result in an increase in the pace of development and although not expected, some potential induced in the project area and nearby adjacent areas than would possibly occur if the proposed project were not constructed. Though the nature of this potentially accelerated and secondary development can be controlled through the application of appropriate land use regulations, acceleration of development projects or any unanticipated or induced development that may result is for all practical purposes an irreversible commitment of resources (land and materials).

The commitment of resources as a result of the proposed project is based upon the concept that residents and businesses in the project area and throughout the region will benefit by improved local and regional access and the overall improvement of the regional transportation road and transit network. These benefits would include improved regional and local accessibility and safety, savings in travel time and energy, improved access to many of the regions transportation, commercial recreational, residential and cultural facilities, and enhanced air and noise quality all of which are anticipated to outweigh the irretrievable and irreversible commitment of these resources.

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**XI. COMMENTS AND COORDINATION**

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## **XI. COMMENTS AND COORDINATION**

Public involvement in the identification and evaluation of alternatives is an important part of the processes promulgated by the National Environmental Policy Act (NEPA). For this project, a Major Investment Study was undertaken with the primary objective of obtaining broad public input as early as possible and throughout the period of alternatives identification, evaluation and comparison. The public involvement efforts began during the Major Investment Study and continued through the environmental impact study phase as described below.

### **A. Major Investment Study Public Involvement Program**

Public involvement was of critical importance to the successful completion of the US-95 Major Investment Study (MIS). It was the goal of the Public Involvement Program to maximize public participation in all phases of the Study. It was felt that early and continual public involvement would result in more comprehensive, supported, agreeable, and cost-effective solutions. This section summarizes the steps taken during the MIS to provide practice involvement opportunities for affected public officials, governmental agencies, residents of the area, and other stakeholders.

The MIS was conducted in two phases. During the first phase, the public involvement program was initiated, the purpose and need for the project was established, improvement alternatives were identified and screened, and an Early Action Program was developed and approved by local entities. Phase I began in December 1995 and was completed July 31, 1996. Details of the Phase I Public Involvement Program are documented in *the US-95 Major Investment Study, Technical Memorandum No. 3, Volumes, Volumes 1 & 2, Public Involvement Summary, Phase I*, dated October 1, 1996. During Phase II of the MIS, a detailed evaluation of alternative strategies was conducted and a "locally preferred alternative" which included design alternatives, was identified and adopted. The second phase work began in August 1996, and concluded with November 1996, Public Workshops. Details of the Phase II Public Involvement Program are documented in *Technical Memorandum No. 3, Volume 3, Public Involvement Summary, Phase II*, dated April 1997.

#### **1. Community Outreach**

A combination of methods was utilized to notify the public about the MIS and to encourage participation. The objective of the outreach efforts was to involve the public, disseminate information, and to receive and consider comments and concerns. Input from the public and governmental agencies also served as a check and balance to information derived from technical data. The MIS team performed community outreach by meetings with the public, local governmental leaders, government agencies, homeowner associates, neighborhood associations and community groups. Additional methods utilized to disseminate information included a telephone "Input Line," a Project Office, correspondence, direct mail such as newsletter/invitations, paid advertisements, workshops, transportation fairs, agency interaction, Technical Focus Group meetings, display of models and preliminary plans of proposed improvements, word-of-mouth, and media involvement.

**a. Meetings with the Public**

A wide outreach effort was undertaken utilizing meetings with area residents, homeowner associations, town boards, citizen committees, and neighborhood committees. Once a list for short, intermediate and long-term alternatives was developed for detailed analysis in Phase II, the outreach effort became more targeted, focusing on the areas potentially impacted by the projects under analysis. The following table depicts the number and types of meetings held throughout the MIS:

<b>US-95 MIS MEETING</b>	<b>PHASE I</b>	<b>PHASE II</b>	<b>TOTAL</b>
Governmental Bodies	29	23	52
Neighborhood/Citizens Advisory/ Town Advisory/Homeowner Assoc.*/ Businesses*/Media*	38	35	73
Elected Officials & Agency Staff Briefings	35	42	77
Technical Focus Group	10	6	16
Information Meetings	0	2	2
Workshops	4	3	7
Transportation Fairs	3 days	4 days	7 days

\* in addition to drop-in visits to the Project Office

**b. Project Office and Telephone "Input Line"**

Throughout the course of the MIS, a Project Office was staffed by NDOT personnel utilizing office space donated by the City of Las Vegas at 7551 Sauer Drive, near the corner of Buffalo Drive and Cheyenne Avenue. NDOT staff were available to receive public comment, to display and explain MIS information, and to distribute handout materials. The analysis of alternatives included construction of three models for the public to visualize the proposed projects. One large model was constructed depicting the possible widening of the US-95 to 10-lanes. Another model displayed a section of the US-95 as a double-deck option. A third model depicted a portion of the proposed Desert Inn Road/Rainbow Boulevard Super Arterial concept. The models were available for the workshops in November and were thereafter moved to the Project Office for public viewing. Preliminary plans were also available at meetings and at the Project Office. Copies of the preliminary plans were distributed to the public upon request.

A total of 266 calls and visits were made to the project office from the beginning of Phase II, through the end of the open comment period on December 10, 1996. Another 699 calls or visits were received following the public comment period from December 11, 1996 to March 19, 1997. The majority of the calls during the post-comment period pertained to information requests regarding possible right-of-way acquisition.

A 24-hour information line was activated at the outset of the MIS. This "Input Line" was manned by NDOT staff during normal business hours, Monday to Friday. In the evenings and on the weekends, the public could receive information about the MIS and leave suggestions and ideas through a voice mail system. The voice mail message was changed at regular intervals to inform the public about the workshops and other public meetings. Calls to the "Input Line" pertained to a variety of issues, some of which were unrelated to the US-95 MIS. Where appropriate, comments were forwarded to the agency responsible for resolution. The use of the "Input Line" was of critical importance once study material was disseminated for review and comments. The public was able to provide input and get concerns heard in a manner convenient to them.

### **c. Correspondence and Direct Mail**

A number of letters were received by NDOT during the MIS. Several letters were referred to NDOT by various elected officials. Correspondence received in the Project Office by the end of the comment period of December 10, 1996, was summarized for the government agencies and elected officials. The summary provided another method for these decision-makers to be informed of the opinions of the public prior to making a decision.

The Las Vegas Valley Water District and the Clark County School District both provided correspondence regarding possible impacts to their properties. NDOT staff and consultants met with the agencies to evaluate and mitigate impacts. Several modifications were made to the potential acquisition of two school properties to minimize impacts.

Encouraging participation in the MIS was achieved through the distribution of material to the public. A mailing list of interested parties was developed during the course of the MIS. As of August 1996, the mailing list totaled more than 1,100 names. By the end of Phase II, the number had grown to over 2,000. The Study Team utilized the list to distribute newsletter/invitations, correspondence, and media notifications. Categories of names on the list included:

- ▶ Local Elected Officials
  - Clark County
  - City of Las Vegas
  - City of North Las Vegas
  - Regional Transportation Commission
- ▶ State Senators\*
- ▶ State Assembly members\*

- ▶ Nevada State Agencies
- ▶ Nevada Elected Officials\*
- ▶ Federal Agencies
- ▶ Federal Elected Officials
- ▶ Local Agencies
- ▶ Technical Focus Group participants
- ▶ Regional Transportation Commission Citizen Advisory Committee members
- ▶ Individuals and businesses requesting to be placed on the mailing list or those attending previous workshops
- ▶ Citizens Organizations
- ▶ Homeowners Associations
- ▶ Libraries
- ▶ Shopping Malls and other major activity centers in the Study area
- ▶ Professional Organizations (groups with members who may have an interest)
- ▶ Media (TV, Radio, Newspapers, Community & Business Newspapers, Minority Newspapers, Radio & TV)
- ▶ Minority Organizations
- ▶ Senior Citizen Centers\*
- ▶ Town Advisory Board Members\*
- ▶ Citizens Advisory Committee Members\*
- ▶ Taxicab Companies
- ▶ Public and Private Transportation Companies
- ▶ Labor Unions

\* *indicates listings of those members representing the area included in the study boundaries*

Letters were mailed to several neighborhood representatives, homeowner associations, and other interested residents and businesses to encourage their participation in the MIS.

A newsletter-style invitation for the workshops was mailed to the full mailing list. The invitation included: general information about the MIS; times, dates, and locations for each workshop with workshop location map; an address for written comments; and a list of the proposed short-term, intermediate-term and long-term improvements. Residents in the areas of Desert Inn Road, Charleston Heights and Rancho Drive assisted in hand delivery to residences and businesses in those areas. Approximately 3,800 flyers were distributed by mail or in-person by NDOT, local government and consultant staff.

A door hanging service, All American Distributing, was contracted to deliver 9,000 workshop invitations within a ¼ mile radius on Desert Inn (from Valley View to Rainbow) on Rainbow (from Desert Inn to US-95) and in the vicinity of the US-95 (from the Spaghetti Bowl to Rainbow).

A number of the public requested to receive information regarding the dates and times of the presentation of MIS recommendations to the local governing bodies. Accordingly, on January 16, 1997, a 8 ½ inch by 5 ½ inch postcard, was mailed to nearly 1,300 businesses, residents, homeowner association leaders, and town advisory members on the updated mailing list.

**d. Public Workshops**

During the Major Investment Study, a total of seven workshops were held.

All workshops took place in an open-house type format. Individuals were greeted as they entered, asked to sign in and given an initial set of handout materials. There were several methods available for participants to give comments: completion of a comment form, discussion with MIS staff, and the utilization of a court reporter for additional comments. A Spanish-language interpreter was available at all times.

The initial handout material included a copy of:

- ▶ a four-page workshop introduction newsletter
- ▶ alternative descriptions
- ▶ a comment form
- ▶ a copy of the workshop newsletter/invitation

The workshop display boards included displays of all proposed alternative transportation improvements with comparisons.

**Workshop Attendance**

The seven workshops held during the MIS were attended by a total of 563 persons.

**Comment Forms Submitted**

Workshop participants were encouraged to complete and submit a Comment Form at the Workshop or to mail comments. A total of 247 comment forms were submitted during the Phase II workshops.

**Summary of Comments During Phase II**

The following summarizes responses to the questions asked on the Comment Forms during the Phase II Workshops.

**SHORT TERM ALTERNATIVES** - Participants were asked which of the Short-term Alternatives they would support or oppose. The following is a tabulation of the responses:

	<u>Support</u>	<u>Oppose</u>	<u>No Responses</u>
US-95 Freeway Management System	74%	15%	11%
TDM-iricentives to commuters	55%	23%	20%
Arterial Street Improvements	47%	18%	36%
MLK to Industrial Road Connector	63%	13%	25%
Rancho/Alta/MLK Connector	55%	24%	21%

INTERMEDIATE-TERM ALTERNATIVES - participants were asked which of the Intermediate-term Alternatives they would support or oppose. The following is a tabulation of the responses:

	<u>Support</u>	<u>Oppose</u>	<u>No Responses</u>
Extend US-95 north from Craig Rd. To the Beltway	74%	7%	19%
Transit-Enhanced CAT bus service	60%	16%	25%
TDM-Transit hubs @ UMC/Valley Hospital & Meadows Mall	54%	17%	28%
TDM-Bus only lanes on major arterial	43%	30%	27%
Arterial Street Improvements	28%	16%	53%

LONG-TERM ALTERNATIVES - Participants were asked which of the Long-term Alternatives they would support or oppose. The following is a tabulation of the responses.

	<u>Support</u>	<u>Oppose</u>	<u>No Responses</u>
US-95 - Widen to up to 10 lanes	64%	25%	10%
US-95 - Double Deck	24%	59%	16%
Super Arterial/Rainbow & D.I.	47%	35%	17%
Transit - Fixed Guideway into northwest	49%	25%	26%
TDM - Construct HOV lanes	44%	19%	33%

BEST LONG-TERM ALTERNATIVE - Participants were then asked which ONE of the Long -term Alternatives would best serve the transportation needs of the northwest region. Even though instructed to chose only one, some participants chose multiples. Percentages are thus based on the total number of responses to this questions, a total of 278.

Improving US-95	55%
Expanded bus service	12%
Rainbow/D.I. Super Arterial	19%

Fixed Guideway System 15%

US-95 - Participants were asked if US-95 was improved, should it be widened or constructed as a double-deck. The following summarizes the responses:

Widen to 10 lanes	59%
Double-deck	19%
No response	22%

FIXED GUIDEWAY ALIGNMENTS - participants were asked if a fixed guideway was constructed, which alignments would be preferred. They were to check as many as they could support. The response for this question was very low. The number of responses has been tabulated for each of the proposed alignments:

Alignment 1	23
Alignment 1A	15
Alignment 1B	9
Alignment 2	34
Alignment 3	31
Alignment 3A	18
Alignment 3B	14
Alignment 3C	10

Total Preferences 154 (A total of 1976 was possible)

FIXED GUIDEWAY POTENTIAL RIDERSHIP - Finally, participants indicated where they would travel on a fixed guideway system, if convenient. The following percentage of respondents indicated they would use a fixed guideway for the respective purposes:

To the airport	50%
To downtown	37%
To their jobs	26%
To the "Strip"	45%

**e. Paid Advertisement**

Timely notice is important to the turnout of any public function. Paid advertising is the only assured method of receiving-publication space or media broadcast. Quarter-page advertisements for the November workshops, with a listing of each alternative under consideration, were displayed in the following papers:

Sentinel Voice\*  
El Mundo\*  
Las Vegas Review Journal  
Las Vegas Sun

\* Sentinel Voice and El Mundo are publications reaching the minority community.

**f. Petitions and Form Letters Received**

A number of petitions and form letters were received in support or opposition to proposed improvements. As of December 10, 1996, the following had been received at the NDOT Project Office:

2303 - Signatures were received on "Northwest Resident's Petition to Alleviate Traffic" (125 of the signatures were submitted at one of the workshops. Another 2,178 signatures were received by NDOT staff subsequent to the workshops). The petition was worded as follows:

"TO ALLEVIATE AND MITIGATE TRAFFIC CONGESTION WE URGE ALL ELECTED OFFICIALS TO INCLUDE FOR CONSIDERATION ALL OPTIONS INCLUDING EXPANSION OF US-95 AND EXPANSION OF MAJOR ARTERIAL STREETS."

209 - Form letters were received opposing the Rainbow/Desert Inn Super Arterial. The letter was worded as follows:

"This letter is in regard to my opposition of the Rainbow/Desert Inn New Super Arterial"

"Due to the following reasons I/We do not support this proposal of the Rainbow/Desert Inn New Super Arterial:

3. The Arterial will cost more money than to widen US-95
4. The Arterial will carry less than half as many cars as US-95
5. Our money will be wasted because it will not solve the problem and eventually the US-95 will have to be widened or some other plan will have to be implemented.
6. We want to keep Desert Inn Road to the four/six lanes as planned."

28 - Form letters were received by residents of the Lindell Road neighborhood protesting the widening of Lindell Road to four lanes from Charleston Boulevard to Desert Inn Road.

9 - Form letters were received on Avante Homes letterhead to support "Option B" the widening of US-95 to 10 lanes and extending it north to the Northern Beltway.

Additionally, residents delivered the following petitions and form letters to the City of Las Vegas:

- ▶ Members of the Charleston Heights Neighborhood Association mounted a petition effort, which included setting up a petition table at the November 20, workshop location. 1,557 signatures were submitted to four Las Vegas City Councilmen and all Clark County Commissioners on December 2. The petition was worded as follows:

PETITION AGAINST; US-95 PROPOSED LONG-TERM PLAN FOR US-95 BETWEEN RAINBOW AND THE SPAGHETTI BOWL PLAN A - WIDEN TO (8) EIGHT LANES PLAN B - WIDEN TO TEN (10) LANES AND PLAN C - DOUBLE DECK THE FREEWAY.'

"PETITION FOR: A MONORAIL SYSTEM FOR: STUDIES TO INCLUDE, BUT NOT LIMITED TO, CHEYENNE, CAREY AND DESERT INN AS POSSIBLE EAST WEST HIGHWAY RELIEF."

- ▶ The Northwest Citizens Association reportedly encouraged their members to voice their opinion of the widening of US-95 to John Schlegel, City of Las Vegas. City staff informed NDOT that 68 form letters were received in support of the US-95 widening.

#### **g. Transportation Fairs**

NDOT staff manned booths at two Transportation Fairs. Two days were held at the Meadows Mall on September 21 and 22, 1996. Another two days were held at the Boulevard Mall on January 25 and 26, 1997. These events, held in cooperation with Clark County Public Works (CCPW), City of Las Vegas, and the Regional Transportation Commission (RTC) provided an opportunity for the public to receive information about the US-95 MIS and other transportation projects in the Las Vegas Valley.

## **2. Agency Interaction**

### **a. Technical Focus Group**

A Technical Focus Group was established to provide ongoing technical assistance from the agencies involved. The group was composed of public works and planning staff members from the NDOT, Federal Highway Administration, Clark County, City of Las Vegas, City of North Las Vegas, the Regional Transportation Commission, and the Las Vegas Area Computer Traffic System. MIS team members presented MIS information to allow the focus group to evaluate the alternatives, comment, and to provide other input.

### **b. Governmental Briefings**

Throughout the MIS, the Study team endeavored to provide two-way communication with local elected officials. Briefings were scheduled either by letter, or by phone call. MIS information was disseminated, questions answered, and key issues discussed in preparation for future decisions and/or questions or comments by constituents.

Assistance and support from the local governing bodies continued to be a critical part of the MIS. Letters were sent to the governing bodies to request placement of items on their agendas. Formal presentations were made at major milestones to the Las Vegas City Council, Clark County Commission, North Las Vegas Planning Commission and City Council, RTC, RTC Citizens and Executive Advisory Committees. These provided opportunities for elected officials, agency staff, and the public to provide input regarding the MIS.

## **3. Media Involvement**

### **a. Public Service Calendar Announcements, Press Releases and Media Advisories**

Information about the workshops was distributed to the media in three different formats: Public Service Calendar Announcements, Press Releases and Media Advisories. The Calendar Announcements provided a short "bulletin board" notice and were sent to several local news agencies to produce a general interest community calendar for the public. Press releases provided general information about the workshops and were broadly distributed to newspapers, radio stations and television stations. Finally, media advisories were sent to specifically invite news agencies to attend and cover the workshop events.

## **B. Public Involvement During the Environmental Impact Study**

Public involvement during the preparation of the Environmental Impact Study (EIS) was more focused than during the Major Investment Study (MIS). Public involvement during the MIS centered on developing public interest, involvement in the identification of improvements, and public input in the evaluation of alternatives and selection of preferred alternatives. During the Environmental Studies, the Public Involvement Program focused on public and agency input to environmental issues related to the alternatives under consideration.

A Notice of Intent was published in the Federal Register on April 23, 1997. On May 7, 1997, a public and public agency scoping meeting was held.

A combination of methods were utilized to keep the public informed during the EIS preparation phase. A Project Office and 24-hour message line was continued. NDOT and consultant staff made

a number of presentations to agencies, elected officials, and the public. A combination of video, paid radio spots, public service announcements, and cable television talk shows kept the public informed of the EIS process. NDOT staff presented information, project models, and written materials at a number of Transportation Fairs held at local shopping malls. As in the MIS, the methods utilized were chosen to facilitate a broad distribution of materials to the public, including minority and low-income populations. The Las Vegas City Council created a citizen oversight review committee to look at alignment issues, impact mitigation, property owner concerns and other environmental matters affecting the residents and businesses of the area.

The Federal Transit Administration (FTA) agreed to participate in the study as a cooperating agency (see correspondence in Appendix B).

## **1. Community Outreach**

### **a. Public Scoping/Information Meeting**

A Scoping Meeting/Public Information Meeting was held on May 7, 1997. The Scoping Meeting was held in a workshop format from 4:00 p.m. to 7:00 p.m. at the Charleston Heights Arts Center. A Notice of Intent was published in the Federal Register on April 23, 1997. Display advertisements were placed in the Las Vegas Review Journal, Las Vegas Sun, Sentinel Voice, and the El Mundo to announce the meeting. A newsletter announcing the meeting was sent in advance to everyone on the mailing list developed during the MIS. The Scoping Meeting covered the purpose and need, alternatives being studied, the scope of the EIS, partnering issues, the No-Build Alternative, and provided time for comments. Participants were given an agenda, meeting handout, and a comment form. Three comment forms were received by the comment closing period of May 23, 1997. One hundred three individuals signed in. Three individuals gave oral statements to the court reporter.

The following is a compilation of the comments received:

1. Add another east/west freeway on Smoke Ranch.
2. Close Martin Luther King on and off ramps to US-95 as unsafe.
3. Widening the highways is insensitive to the integrity of the neighborhoods and forces residents to move out, encouraging sprawl.
4. Consider bus turn-outs and separate right-turn lanes on arterials.
5. Concerned about right-of-way acquisition issues and the possibility of his home that may be left facing the freeway.
6. Would like right-of-way acquisition to be done as soon as possible due to hardships.
7. Concerned about pedestrian travel on widened arterial streets.

### **b. Citizens Review Committee**

The City of Las Vegas City Council created a Citizen's Review Committee (CRC) to review impacts of the proposed project and to assist in the development of mitigation measures. A seven-member

panel was appointed by the Las Vegas City Council. Of the seven appointments, two resulted from recommendations made by Clark County Commission members. The CRC began monthly meetings on December 16, 1997. Meetings are generally held in the City of Las Vegas Council Chambers. The CRC serves in an advisory capacity to the Las Vegas City Council to address issues such as landscaping, noise, alignment, accessibility, and the right-of-way process. Meetings are conducted in compliance with the State of Nevada "Open Meeting" regulations and are posted according to the same. Each meeting includes a public comment period during which the members of the public can make comments or pose questions.

A number of presentations relative to the Technical Studies and Preliminary Draft Environmental Impact Statement were made to the committee and members of the public. In addition to receiving presentations, committee members are able to discuss and ask questions and receive responses from NDOT and consultants about the studies. The following specific items were covered during the corresponding meetings:

- 12/16/98 - Public presentation providing a general project description.
- 1/21/98 - Public presentation regarding the Noise Studies.
- 2/18/98 - Public presentations regarding Noise and Air Quality Studies.
- 3/18/98 - Public presentations regarding Water Resources and Geology.
- 4/15/98 - Public presentations regarding the Mojave Desert Preserve, Water Resources/Geology, and Hazardous Materials.
- 5/20/98 - Public presentations regarding the Air Quality and Socioeconomic Technical Studies.
- 6/17/98 - Discussion regarding draft technical reports.
- 7/15/98 - Public presentations regarding the Right-of-Way acquisition process.
- 8/19/98 - Public presentations regarding Noise Study and issues in the Charleston Heights neighborhood.
- 9/16/98 - Public presentations regarding Noise Analysis, Wildlife and Vegetation Issues, and issues in the Charleston Heights neighborhood.
- 10/25/98 - Tour of various sites under study. Public comments periods were allowed at each location.
- 12/16/98 - Public presentations regarding the Cultural Resources Studies and the Preliminary DEIS.

**c. Transportation Fairs**

During the EIS Technical Study preparation period, The Nevada Department of Transportation took the opportunity to participate in several Transportation Fairs at shopping malls to provide information to the public. The following events were utilized to display project materials such as project models, maps, display boards, and to distribute material:

- May 16 and 17, 1997 - Meadows Mall (US-95 and Valley View)
- November 1 and 2, 1997 - Meadows Mall (US-95 and Valley View)
- November 8 and 9, 1997 - Boulevard Mall (Maryland parkway and Desert Inn)
- March 21 and 22, 1998 - Meadows Mall (US-95 and Valley View)

### **Project Office**

As in the MIS, NDOT continued the operation of a US-95 Project Office. The office, at 123 East Washington Avenue, is adjacent to the NDOT Right-of-Way offices, a convenience for the public with questions about potential acquisitions. The MIS Report, project models, and public information documents were available for public review.

#### **d. Project Hotline**

The 24-hour message line at 486-3540 continued during the EIS, thus providing a convenient method for the public to contact the NDOT. The majority of calls to the Project Office during the EIS pertained to questions about possible alignments of the US-95 widening or to Martin Luther King Boulevard. Copies of preliminary drawings were mailed to individuals desiring information.

#### **e. Project Newsletters**

Three newsletters were distributed during the EIS preparation phase. A combination newsletter/invitation was sent out on April 21, 1997 to over 3,000 properties adjacent to US-95 and Martin Luther King boulevard and to the prior mailing list, to announce the May 7, 1997 Scoping/Public Information meeting. The newsletter discussed the alternatives, property acquisition procedures, and the location of the Project Office.

A second newsletter was issued on September 29, 1997. Information included the Early Action Plan status, the process and schedule for the Environmental Impact Study, and right-of-way acquisition process. The mailing consisted of 3,116 individuals. The third newsletter was released on September 16, 1998 to over 4,500 individuals. Over 3,600 were mailed and the remainder were left at neighborhood libraries, community centers, and other public offices for distribution to the public. The September 1998 newsletter contained updated information about the EIS schedule, the alternatives being studied, an article about the Citizen's Review Committee activities and meetings, the Freeway Service Patrol, and the right-of-way acquisition process.

#### **f. Public Correspondence**

A small amount of correspondence was received during the preparation of the EIS. Written responses were sent in response to correspondence and in response to some phone calls.

## **2. Agency Interaction**

On July 31, 1997, a Partnering Session was held with twenty-eight involved agency representatives. The group included representatives from NDOT, the FHWA, the Las Vegas Valley Water District, the City of Las Vegas, the City of North Las Vegas, US Fish and Wildlife, Nevada Division of Wildlife, University of Nevada at Las Vegas, the US EPA, the Clark County Regional Transportation Commission and Consultants. The Partnering Session culminated in an informal partnering agreement among the agency representatives. During the EIS process, partnering agencies participated in the review of the Technical Studies prepared as part of the EIS.

Additionally, meetings were held with local governmental bodies, the RTC Citizens Advisory Committee, and individual elected officials to keep them informed of the EIS process being undertaken and to discuss possible impacts.

## **3. Media Involvement**

In July 1997 NDOT produced a 10-minute video and a 30-second video clip to be used as a Public Service Announcement (PSA). Fox 5 TV aired the 30-second PSA at least 22 times. Cable Channel 4 aired the 10-minute video at least 10 times. Paid commercial spots were also run on several other channels. A commercial radio spot was also produced and broadcast over 300 times on Skyview Traffic Reports (broadcast on over 24 channels) and four other radio stations in June and July 1997. While the video, video spots, and radio commercials primarily addressed the Early Action Plan implementation, a portion of the scripts covered the EIS

NDOT also sponsored a television interview and call-in program from 6:00-6:30 p.m., Thursday evenings on Cable Channel 42 (KTV) and Non-Cable Channel 63. This live, call-in format provided viewers extensive public information about NDO and other local road projects including the US-95 EIS. Viewers could call to ask questions and raise topics for discussion.

### **C. Public Involvement of Minority Groups**

The Federal Highway Administration and Federal Transit Administration enacted the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, adding increased emphasis to requirements for public involvement in any transportation project funded in full or part by the Federal Government. ISTEA requires that Metropolitan Planning Organizations (MP)s and State Departments of Transportation (DOTs) shall provide citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, other affected employee representatives, and other interested parties with reasonable opportunity to comment. ISTEA insures active public involvement in the decision making process.

Additional steps were taken to involve portions of the community generally under-represented in the planning process. Throughout the Study, meetings were held in the West Las Vegas area, a community with a large percentage of African American residents. A total of eight meetings were held with the West Las Vegas Neighborhood Association. Additionally, presentations were made to elected officials representing areas of high concentrations of minority residents. Workshops were advertised in both Las Vegas Sentinel and the El Mundo, targeting the African American and Hispanic populations, respectively. A Spanish interpreter was available at workshops Transportation Fairs.

Public involvement was performed in compliance with the intent of ISTEA. Early and continuous public involvement was promoted and reasonable opportunities were provided for comment in a effort to enhance the decision making process.



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**XII. AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM  
COPIES OF THE STATEMENT ARE PROVIDED**

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## **XII. AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE PROVIDED:**

### **A. Federal**

Office of Federal Activities (A-104)  
Environmental Protection Agency  
401 M Street, S.W.  
Washington, D.C. 20460

EIS Coordinator  
U.S. Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105

Director  
Office of Environmental Project Review  
U.S. Department of the Interior  
1849 C Street, NW  
Washington, D.C. 20242

Joyce M. Wood, Director  
Office of Ecology and Conservation  
National Oceanic and Atmospheric Administration  
U.S. Department of Commerce, Room 5813 (PP/EC)  
14th and Constitution Avenue, N.W.  
Washington, D.C. 20230

Mr. Kenneth W. Holt, MSEH  
Emergency & Environmental Health Services Division  
Department of Health & Human Services  
Public Health Service  
Centers for Disease Control & Prevention  
Atlanta, GA 30341-3724

Federal Power Commission  
555 Battery Street  
San Francisco, California 94102

U.S. Department of Agriculture  
Natural Resources Conservation Services  
5301 Longley Lane  
Building F  
Reno, NV 89511

John L. Pfeifer  
Federal Aviation Administration  
S.F. Airport District Office  
831 Miten Road  
Burlingame, California 94010

Bureau of Indian Affairs  
1677 Hot Springs Road  
Carson City, NV 89706-0646

U.S. Department of the Interior  
U.S. Geological Survey  
Water Resource Division  
Room 227, Federal Building  
705 North Plaza Street  
Carson City, NV 89701

U.S. Department of the Interior  
Chief, Environmental Impact  
Assessment Program  
U.S. Geological Survey, MS-760  
Reston, Virginia 20092

U.S. Department of the Interior  
Bureau of Land Management  
P.O. Box 12000  
Reno, NV 89520

U.S. Department of the Interior  
Chief, Western Field Operation Ctr.  
Bureau of Mines  
East 315 Montgomery  
Spokane, WA 99207

*US-95 Corridor*

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U.S. Department of Interior  
Office of Environmental Project Review  
18<sup>th</sup> and C Street NW  
Washington, D.C. 20240

Regional Director  
Federal Railroad Administration  
RAD-30 Mall Stop 50  
400 7<sup>th</sup> Street, SW  
Washington, DC 20590

Center for Disease Control  
Center For Environmental Health & Injury Control  
Special Programs Group, MAR STUP F-29  
1600 Clifton Road  
Atlanta, Georgia 30333

Mr. Steven Sachs  
Director, Office of Community  
Planning and Development  
U.S. Department of Housing and Urban Development  
Pacific/Hawaii Region  
California State Office  
450 Golden Gate Avenue  
Box 36003  
San Francisco, CA 94102

Regional Administration  
U.S. Department of Housing and  
Urban Development  
Environmental & Planning Review Office  
333 N. Rancho Drive  
Suite 700  
Las Vegas, NV 89106

Mr. Ruben Romero, Facilities  
Addeliar D. Guy Veterans Administration  
1700 Vegas Drive  
Las Vegas, NV 89106

U.S. Department of Housing and  
Urban Development  
Federal Housing Administration  
Nevada District  
P.O. Box 4700  
Reno, NV 89505

U. S. Department of the Interior  
Bureau of Reclamation  
705 North Plaza  
Carson City, NV 89701

U.S. Department of the Interior  
Regional Environmental Officer  
Pacific Southwest Region  
600 Harrison Street, Suite 515  
San Francisco, CA 94107

U.S. Department of the Interior  
Regional Director, Region 1  
Fish and Wildlife Service  
911 N.E. 11th Avenue  
Portland, OR 97232-4181

U.S. Department of the Interior  
U.S. Fish and Wildlife Service  
4600 Kietzke Lane, Bldg. C-125  
Reno, NV 89502

Mr. Leslie Rogers, Regional Administrator  
Federal Transit Administration  
201 Mission Street, Suite 2210  
San Francisco, CA 94105

Mr. Robert Hom  
Director of Office Programming, Planning and Development  
Federal Transit Administration  
201 Mission Street, Suite 2210  
San Francisco, CA 94105

Mr. Joseph R. Rodriguez  
Federal Aviation Administration  
831 Mitten Road, Room 210  
Burlingame, CA 94010-1303

Mr. Kevin Roukey  
U.S. Army Corps of Engineers  
Reno Regulatory Office  
300 Booth Street, Room 2120  
Reno, NV 89509

Regional Director, Western Region  
National Park Service  
600 Harrison Street, Suite 600  
San Francisco, CA 94107-1372

Mr. Michael Dwyer  
Bureau of Land Management  
4765 Vegas Drive  
Las Vegas, NV 89108

Mr. Dave Farrel (Mail Code: E-3-1)  
Chief, Environmental Review Section  
Office of Federal Activity  
U.S. Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105

U.S. Department of Agriculture  
Natural Resources Conservation Service  
1201 Terminal Way #222  
Reno, NV 89502

U.S. Department of Agriculture  
Regional Forester  
Forest Service, Region 4  
324 25<sup>th</sup> Street  
Ogden, UT 84401

U.S. Department of Agriculture  
Forest Service  
1200 Franklin Way  
Sparks, NV 89431

Director  
Division of NEPA Affairs  
Department of Energy  
Mail Station E-201, GTN  
Washington, D.C. 20545

U.S. Department of Health & Human Services  
Federal Office Building  
50 Fulton Street  
San Francisco, CA 94102

Office of Ecology & Conservation  
Nat'l Oceanic & Atmospheric Admin.  
U.S. Dept. Of Commerce, RM 13 (PP/EC)  
14<sup>th</sup> and Constitution Avenue, N.W.  
Washington, DC 20230

Regional Director  
Federal Emergency Management Agency  
Region IX, Bldg. 105  
Presidio of San Francisco, CA 94129

Ms. Shelley Berkley, Congresswoman  
US House of Representatives  
2340 Paseo Del Prado #D-16  
Las Vegas, NV 89102

U.S. Senator Harry Reid  
500 E. Charleston Blvd.  
Las Vegas, NV 89104

U.S. Senator Richard H. Bryan  
300 S. Las Vegas Blvd. #140  
Las Vegas 89101

U.S. Congressman Jim Gibbons  
850 S. Durango #107  
Las Vegas, NV 89128

Mr. H. Paul Friesema, Professor  
Institute for Policy Research  
Northwestern University  
2040 Sheridan Road  
Evanston, IL 60208-4100

## **B. State**

Documents Distribution Center  
Nevada State Library  
Carson City, Nevada 89710

Office of Community Services  
400 W. King Street, Suite 400  
Carson City, Nevada 89710

Mr. Ron James  
State Historic Preservation Office  
100 Stewart Street  
Las Vegas, NV 89710

Ms. Brenda Pohlmann  
Department of Conservation and Natural Resources  
Division of Environmental Protection  
Bureau of Corrective Action  
555 E. Washington, Suite 4300  
Las Vegas, NV 89101-1049

Mr. Michael Wickershaw  
Principal Planner  
Nevada Division of Wildlife  
4747 W. Vegas Drive  
Las Vegas, NV 89108

Ms. Julie Butler  
A-95 Clearinghouse  
209 East Musser #200  
Carson City, NV 89710

Mr. Bob Sully  
State Coordinator NFIP  
2525 S. Carson Street  
Carson City, NV 89710

Mr. James D. Morefield  
Nevada State Heritage  
Department of Conservation and Natural Resources  
1550 East College Parkway, Suite 145  
Carson City, NV 89706-7921

Mr. Terri Rodefer, Environmental Advocate  
Nevada State Clearing House  
Capitol Complex  
Carson City, NV 89710

### **C. Local/County**

Central Telephone  
330 S. Valley View Blvd.  
Las Vegas, NV 89152

Southwest Gas Corp.  
4300 West Tropicana Avenue  
P.O. Box 98512  
Las Vegas, NV 89193-8512

Ms. Tina Quigley  
Director of Planning  
McCarran International Airport  
P.O. Box 11005, Airport Station  
Las Vegas, NV 89111

Ms. Alfreda Mitre, Chairperson  
Las Vegas Tribal Council  
One Paiute Drive  
Las Vegas, NV 89106

Mr. Richard A. Nielsen, Executive Director  
Citizen Alert  
P.O. Box 1681  
Las Vegas, NV 89125

Mr. Jacob Snow  
General Manager  
Regional Transportation Commission  
600 South Grand Central Parkway  
Suite 350  
Las Vegas, NV 89106-4512

Mr. Kurt Weinrich, Director  
Regional Transportation Commission  
600 South Grand Central Parkway  
Suite 350  
Las Vegas, NV 89106-4512

Nevada Power  
P.O. Box 230  
Las Vegas, NV 89151

Ms. Sue Newberry  
Department of Motor Vehicles  
Office of Traffic Safety  
555 Wright Way  
Carson City, NV 89711-0999

Ms. Yvonne Atkinson-Gates  
Clark County Commission  
P.O. Box 551111  
Las Vegas, NV 89155-1111

Mr. Lance Malone  
Clark County Commission  
P.O. Box 551111  
Las Vegas, NV 89155-1111

Ms. Mary Kincaid  
Clark County Commissioner  
P.O. Box 551111  
Las Vegas, NV 89155-1111

Mr. Dario Herrera  
Clark County Commissioner and  
RTC Commissioner  
P.O. Box 551111  
Las Vegas, NV 89155-1111

Mr. Erin Kenny  
Clark County Commissioner  
P.O. Box 551111  
Las Vegas, NV 89155-1111

Ms. Myrna Williams  
Clark County Commissioner  
P.O. Box 551111  
Las Vegas, NV 89155-1111

Mr. Bruce L. Woodbury, Chairman  
Clark County Commissioner and  
RTC Commissioner  
P.O. Box 551111  
Las Vegas, NV 89155-1111

Mr. Michael L. Montandon, Mayor  
City of North Las Vegas  
2200 Civic Center Drive  
North Las Vegas, NV 89030

Mr. William E. Robinson, Councilman  
City of North Las Vegas  
2200 Civic Center Drive  
North Las Vegas, NV 89030

Mr. John K. Rhodes, Councilman  
and RTC Commissioner  
City of North Las Vegas  
2200 Civic Center Drive  
North Las Vegas, NV 89030

Ms. Paula L. Brown, Councilwoman  
City of North Las Vegas  
2200 Civic Center Drive  
North Las Vegas, NV 89030

Ms. Stephanie S. Smith, Councilwoman  
City of North Las Vegas  
2200 Civic Center Drive  
North Las Vegas, NV 89030

Mr. Jim Bell  
Public Works Acting Director  
City of North Las Vegas  
2266 Civic Center Drive  
North Las Vegas, NV 89030

Mayor Oscar Goodman  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. Larry Brown, Councilman  
and RTC Commissioner  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. Michael McDonald, Councilman  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. Lynette Boggs-McDonald, Councilwoman  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. Gary Reese, Councilman  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. Dave Kuiper, Director  
City of Las Vegas  
Department of Leisure Activities  
749 Veteran Memorial Dr.  
Las Vegas, NV 89101

Ms. Charity Fetcher  
City of North Las Vegas  
2200 Civic Center Drive  
North Las Vegas, NV 89030

Mr. Richard Goecke  
Public Works Director  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. Tim Chow  
Planning Director  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. O. C. White  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. Charlie Kajkowski  
City of Las Vegas  
400 Stewart Avenue  
Las Vegas, NV 89101

Mr. M.J. Manning  
Public Works Director  
Clark County  
P.O. Box 551601  
Las Vegas, NV 89155-1601

Mr. John Schlegel, Director  
Clark County Comprehensive Planning  
P.O. Box 551601  
Las Vegas, NV 89155-1601

Mr. Michael Naylor  
Clark County Health District  
Air Pollution Control Division  
P.O. Box 4426  
Las Vegas, NV 89127

Mr. Rob Steppke, Real Property  
Clark County School District  
4828 S. Pearl Street  
Las Vegas, NV 89121

Mr. Gale Wm. Fraser, II  
General Manager  
Clark County Flood Control District  
600 South Grand Central Parkway  
Suite 300  
Las Vegas, NV 89106-4512

Ms. Patricia Mulroy, General Manager  
Las Vegas Valley Water District  
1001 S. Valley View Blvd.  
Las Vegas, NV 89153

Ms. Kay Brothers  
Las Vegas Valley Water District  
2001 S. Valley View Blvd.  
Las Vegas, NV 89153

Ms. Kim Zukosky  
Las Vegas Valley Water District  
1001 S. Valley View Blvd.  
Las Vegas, NV 89153

Mr. David Wood, Commission Member  
Regional Transportation Commission  
600 South Grand Central Parkway  
Suite 350  
Las Vegas, NV 89106-4512

Mr. Crescent Hardy, Commission Member  
600 South Grand Central Parkway  
Suite 350  
Las Vegas, NV 89106-4512

Mr. Bryan Nix, RTC Commissioner  
401 California Street  
Boulder City, NV 89005

Mr. Frederick Brown  
Las Vegas Housing Authority  
420 N. 10th  
Las Vegas, NV 89101

Mr. Dave Brickey  
Sierra Club  
P.O. Box 19777  
Las Vegas, NV 89132

Mr. Chris Brown  
Citizen Alert  
P.O., Box 1680  
Las Vegas, NV 89125

Ms. Betty Burge  
Tort Group  
5157 Poncho Circle  
Las Vegas, NV 89119

Ms. Pat Battie  
Clark County Clearinghouse Council  
P.O. Box 551744  
Las Vegas, NV 89155-1744

Las Vegas Metropolitan Police Department  
400 Stewart Avenue  
Las Vegas, Nevada 89101

Ms. Juanita Clark  
Charleston Neighborhood Preservation  
137 S. Lorenzi  
Las Vegas, NV 89107

Ms. Barbara Roth  
112 Temple  
Las Vegas, NV 89107

Dr. Cathie Kelly  
Preservation Association of Clark County  
P.O. Box 96686  
Las Vegas, NV 89193-6686

Ms. Vicki Tripoli  
3225 Westwind  
Las Vegas, NV 89102

Ms. Judith Pixley  
5001 Churchill Avenue  
Las Vegas, NV 80107

Mr. Robert Hall  
10720 Buttonwillow  
Las Vegas, NV 89134

Mr. Monty Lochner  
Bonanza village Homeowners Assoc.  
1323 Comstock Drive  
Las Vegas, NV 89106

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### **XIII. LIST OF TECHNICAL STUDIES**

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### **XIII. LIST OF TECHNICAL STUDIES**

The technical reports and studies listed below form the basis for the DEIS/Section 4(f) Evaluation for the proposed project. The methodology, data sources and further detailed analysis of the affected environment and project related impacts and mitigation are contained within these reports. Each report includes a bibliography of resources and references.

- Technical Study, Air Quality, December 1998, revised March 1999
- Technical Study, Vegetation and Wildlife, December 1998
- Technical Study, Noise, December 1998
- Technical Study, Hazardous Waste, December 1998
- Technical Study, Soils, Geology and Water Resources, December 1998
- Technical Study, Socioeconomics, Land Use and Aesthetics, December 1998, revised March 1999
- Technical Study, Cultural Resources, March, 1999

The technical reports and studies have been prepared as separate supporting documents to the DEIS/Section 4 (f) Evaluation. These technical reports and studies are available for public review during normal business hours at the offices of the Nevada Department of Transportation, District I at 123 Washington Street, Las Vegas, Nevada (702) 486-3540.

The preparation of the US-95 DEIS/Section 4(f) Evaluation was also based on the findings of the US-95 Major Investment Study (MIS), Detailed Evaluation of Alternative Strategies, which was prepared by the Nevada Department of Transportation in April 1997. The MIS served to identify alternatives which were advanced for evaluation in the DEIS/Section 4(f) Evaluation.



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**XIV. LIST OF PREPARERS**

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## **XIV. LIST OF PREPARERS**

### **A. Nevada Department of Transportation Environmental Services Division**

Daryl N. James, P.E., Chief, Environmental Services  
B.S. Mechanical Engineering, Cal State University, Long Beach

Ted P. Bendure, Environmental Studies Manager  
M.S., Agricultural and Resource Economics, University of Nevada, Reno  
B.S., Agricultural Business, University of Nevada, Reno

Hal Turner, Chief Archaeologist  
M.A., Anthropology, University of Nevada, Las Vegas  
B.A., Anthropology, University of Nevada, Las Vegas

Michael Painter, Supervisor 3, Associate Engineer  
B.S., Education, University of Nevada, Reno

Michael D. Nollsch, Management Analyst 2  
B.A., Sociology, University of Nevada, Reno

Jody Sawaski, Environmental Scientist 3  
B.A., Biology, University of California, Santa Barbara

Russell Wilde, Supervisor 2, Associate Engineer  
B.S., Soil Science, University of Nevada, Reno

Kathi Brandmueller, P.E., Supervisor 2, Associate Engineer  
B.S. Geological Engineering, University of Nevada, Reno

Earl Case, Supervisor 2, Associate Engineer

### **B. Louis Berger & Associates**

Roger Patton, P.E. Project Engineer  
M.E.C., Structural Engineering, Cornell University  
B.S.C.E., Cornell University

Thomas P. DiChiara, AICP, P.P., Environmental Project Manager  
M.C.R.P., City and Regional Planning/Urban Design, Catholic University  
B.A., Geology/Environmental Sciences, Rutgers University

Kenneth J. Hess, AICP, P.P. Environmental Review - QA/QC  
M.C.R.P., City and Regional Planning, Rutgers University  
B.A., Geography, University of Delaware

Donald Free, AICP, P.P., Task Manager  
M.C.R.P., City and Regional Planning, Rutgers University  
M.B.A., Rutgers University  
B.S., Environmental Planning, Rutgers University

Teresa Engles, Economist/Environmental Analyst  
M.A., International Relations, Boston University  
B.A., Biology, University of New Mexico  
B.A., International Relations, University of Colorado

Nancy Fox, Planner  
M.U.P., Urban Planning University of Michigan  
B.A. Psychology, Vassar College

Kevin Twine, Senior Planner  
M.R.P. Regional Planning, University of North Carolina  
B.A., History, Wesleyan University

Sandy Trevathan, Environmental Planner  
M.L.A., University of Pennsylvania  
B.A., University of Maryland

John A. Hotopp, Archaeological Review, QA/QC  
Ph.D., Anthropology, University of Iowa  
M.A., Political Science, Marshall University  
B.A., Political Science and Economics, Morris Harvey College

John W. Hohmann, Principal Investigator and Chief Archaeologist  
Ph.D., Anthropology and Archaeology, Arizona State University  
M.A., Anthropology, Northern Arizona University  
B.A., Anthropology, University of Arizona

Margaret "Peg" Davis, Senior Field and Lab Director

M.A., Bioarchaeology, Arizona State University

B.A., Anthropology and Geology, University of Arizona

Timothy R. Sara, Field Director

M.A., Anthropology, City University of New York

B.A., Anthropology and Geography, State University of New York at Binghamton

Joel D. Irish, Archaeologist

Ph.D., Anthropology, Arizona State University

M.S., Anthropology, Mankato State University

B.S., Anthropology, Mankato State University

Karen Yori, Environmental Task Manager

B.S., Forestry, Iowa State University

B.A., Social Work, Simpson College

David Cotter, Environmental Task Manager

B.S., Mechanical Engineering, Wentworth Institute of Technology, MA

George Perng, Principal Environmental Scientist

M.S., Environmental Engineering, Stevens Institute of Technology, NJ

B.S., Civil and Environmental Engineering, Cheng Kung University, Taiwan

Alex C. Chen, P.E., Noise Task Manager

M.S., Civil and Environmental Engineering, Vanderbilt University

M.S., Acoustics, Tongji University, Shanghai, China

B.S., Physics, Tongji University, Shanghai, China

GIS Training Courses, Towson State University

Leigh Ann Von Hagen, Noise Analyst

B.S., Human Ecology, Cook College, Rutgers University

Dan Raine, Noise Analyst

B.S., Human Resource Management, Concentration in Environmental Studies, Ramapo College

Marjorie L. Zeff, Ph.D., P.G., Environmental Task Manager

Ph.D., Geology, Rutgers University

M.S., Geology, Duke University

B.A., Geology, University of Rochester

Syndi J. Dudley, Ph.D., P.E., Hydraulic/Hydrologic Engineer  
Ph.D., Civil Engineering, Colorado State University  
M.S., Civil Engineering, University of Nevada Las Vegas  
B.S., Geology, University of Nevada Las Vegas

Peilung Chu, P.E., Hydraulic/Hydrologic Engineer  
M.S., Civil Engineering, San Diego State University  
B.S., Civil Engineering, Chung Yuan University, Taiwan

### **C. Ryden Architects, Historical Architectural Assessments**

Don W. Ryden, Senior Architectural Historian  
Professional Registration, Architecture, Arizona 1997, Nevada 1997  
B. Arch., Architecture, Arizona State University

### **D. Bureau of Applied Research, University of Arizona, Ethnographic Studies**

Richard W. Stoffle  
Ph.D., Anthropology, University of Kentucky  
M.A., Anthropology, University of Kentucky  
B.A., Anthropology, University of Colorado

### **E. Lahontan GeoScience, Inc., Hazardous Waste Studies**

Carol E. Oberholtzer, Project Manager  
M.S., Hydrogeology, University of Arizona  
B.A., Biology, University of Indiana

James R. Humphrey, Data Acquisition Manager  
Graduate studies, Geology, University of Nevada, Reno  
B.S., Geology, University of California, Davis

Nancy Jackson, Senior Environmental Scientist  
Ph.D., Geochemistry, Colorado School of Mines  
B.S., Geology, University of Wisconsin, Oshkosh

## **F. Knight & Leavitt Associates, Biological Data Collection**

Dr. Kenneth C. Knight (K&LA Project Manager)

Ph.D. Sociology, University of Southern California, 1983

M.A. Sociology, University of Nevada, Las Vegas, 1977

B.A. Anthropology, University of Nevada, Las Vegas, 1975

Dr. Craig Knowles (K&LA Animal Biologist)

Ph.D. Zoology, University of Montana, 1982

M.S. Fish and Wildlife Management, Montana State University, 1975

B.S. Fish and Wildlife Management, Montana State University, 1973

Dr. Teri A. Knight (K&LA Plant Biologist)

Ph.D. Geography, University of Colorado, Boulder, 1990

M.S. Botany, University of Nevada, Las Vegas, 1981

B.S. Biology, University of Nevada, Las Vegas, 1978



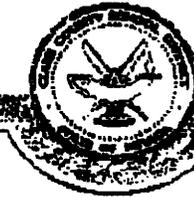
# **APPENDIX A**

## **SECTION 4(f) CORRESPONDENCE**



AN AFFIRMATIVE ACTION  
EQUAL OPPORTUNITY EMPLOYER

# CLARK COUNTY SCHOOL DISTRICT



1852 EAST FLAMINGO ROAD LAS VEGAS, NEVADA 89101 TELEPHONE (702) 799-501

October 14, 1999

Mr. Steve Henson  
Assistant Chief R/W Agent  
State of Nevada  
Department of Transportation  
123 E. Washington Avenue  
Las Vegas, Nevada 89101

**BOARD OF SCHOOL TRUSTEES**

Mrs. Ruth L. Johnson, President  
Mrs. Mary Beth Soren, Vice President  
Mr. Larry B. Mason, Clerk  
Dr. Lois Turkusina, Member  
Ms. Susan C. Berger, Member  
Mrs. Shirley Barber, Member  
Mrs. Sheila R. Moshman, Member  
Dr. Brian Cram, Superintendent

Dear Mr. Henson:

As you know, the reauthorization of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) was submitted to the House Transportation and Infrastructure Committee by the February 25, 1997 deadline.

The school district has been given a written commitment from NDOT that the O. K. Adcock Elementary School will be rebuilt, using the current school district prototype design and will include off site improvements. The school is to be constructed adjacent to the existing school site, on property that is currently owned by the city of Las Vegas. The district also understands that NDOT has made an offer acceptable to the city of Las Vegas to purchase the adjoining property.

Staff from the school district and city have had numerous discussions regarding the transition process and placement of school and park facilities. The result of these ongoing discussions is that the school district and the city are close to a mutually agreed upon site plan that would fully utilize the remaining area for both school and park purposes. The district and the city have an agreement in place that allows for scheduled use of the facilities for programmed school and park activities.

The purpose of this letter is to convey that the school district agrees in concept to the proposed new school-park facility built upon a portion of the existing school site and city property discussed above.

District staff will continue to work with staff from the city and NDOT to reach an agreement regarding the specifics of the transition and the new facilities.

Sincerely,

Brian Cram  
Superintendent of Schools

/rs/tg

C: Dr. Craig Kadhub  
Dr. Patrick Herron  
Fred Smith  
Dale Scheidman

Dusty Dickens  
Robert Steppke  
Tom Stephens

Post-It® Fax Note	7671	Date	10/18/99	# of pages	1
To	Cheryl	From	Steve Henson		
Co./Dept.		Co.			
Phone #		Phone #			
Fax #	736-1457	Fax #			





September 17, 1999

Steve Henson  
Asst. Chief Right-of-Way Agent  
NDOT - District 1  
P. O. Box 170  
Las Vegas, NV 89125-0170

Re: Purchase Offer  
Charleston Heights Neighborhood Preservation Park

Mr. Henson:

Please accept this letter as a response to your purchase offer addressed to Richard Goecke, Director of Public Works dated August 10, 1999. I would like to convey to your office that Public Works Staff believes the purchase offer is fair and I therefore offer conditional acceptance of your offer. Please note however that a formal action of the City Council is needed for the purchase offer to be formally accepted by the City of Las Vegas. Public Works will proceed with placing an item on the next available Real Estate Recommending Committee prior to sending the purchase offer to the City Council for formal action. Within both of these agenda items, Public Works will recommend approval of the current offer of \$3,670,000.00 (less any salvage items) as full payment for our existing property and park facilities thereon. Staff will also recommend approval of the proposed repurchase of a 2+acre site overlaying part of the present Adcock Elementary site at \$5.45 per square foot. At the time this repurchase site becomes available, the City will reestablish a neighborhood public park on such. Lastly, the City will work with the Clark County School District to utilize our Open Schools - Open Doors Agreement to share green space based on need and the final layouts of both the school site and the public park site.

CITY MANAGER  
OSCAR B. GOODMAN

CITY COUNCIL  
MICHAEL J. McDONALD  
MARGARET P. REESE  
GARY REESE  
LARRY BROWN  
ETHEL B. McDONALD

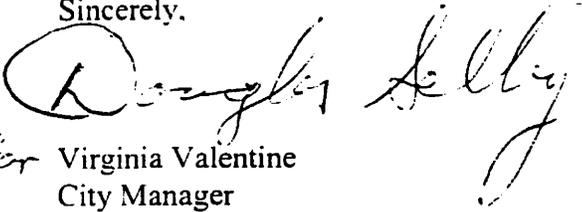
CITY MANAGER  
VIRGINIA VALENTINE

CITY OF LAS VEGAS  
1 STEWART AVENUE  
LAS VEGAS, NEVADA 89101

VOICE 702.259.8011  
TDD 702.366.3103  
WWW.LASVEGAS.NV.GOV

At present. I see no hurdles that can not be worked out. I appreciate the efforts that the NDOT has shown while working with city staff members and I look forward to bringing this portion of the US95 Widening Project to a successful conclusion. Please coordinate your efforts with John McNellis. Deputy Public Works Director. at 229-2141 for all ongoing needs.

Sincerely,

  
for Virginia Valentine  
City Manager

cc: Councilwoman Lynette McDonald  
Doug Selby, Deputy City Manager  
Barbara Jackson, Director, Leisure Services  
Richard Goecke, Director, Public Works  
John McNellis, Deputy Director, Public Works  
David Roark, Assets and Real Property Management



STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY DIVISION  
P.O. Box 170, Las Vegas NV 89125-0170  
August 17, 1999

KENNY C. GUINN, Governor

TOM STEPHENS, P.E., Director

Mr. Elton Dale Scheideman, AIA  
Director of Planning and  
Engineering Services  
Facilities and Transportation  
Services Division  
Clark County School District  
4828 S Pearl Street  
Las Vegas, NV 89121

In Response Reply To:  
Project SPF-095-2(034)  
EA 72463  
US 95 Widening  
Functional Replacement  
O K Adcock Elementary School

Dear Mr. Scheideman:

This letter is to confirm the content and direction of our meeting yesterday regarding the above referenced. As was discussed, the United States Department of the Interior has responded to the Nevada Department of Transportation's (NDOT) Draft Environmental Impact Statement for the proposed US 95 widening.

Of primary concern and importance, was the requirement of documented evidence of the mitigation measures to Torrey Pines Park, City of Las Vegas pedestrian and bikeway and the O K Adcock Elementary School. They are requiring such in the Final Section 4(f) Evaluation of the Environmental Impact Statement for this project.

As you are aware, the NDOT's position is to acquire the Torrey Pines Park from the City of Las Vegas and replace the O K Adcock Elementary School on a 10 acre site composed of the park and a portion of the existing school site. The School District would receive fee title to the 10 acre site. The replacement school would be a Clark County School District 1996 prototype. The site design, contract bid and award, and construction contract management would be done by the School District. All reasonable and necessary costs associated with this functional replacement would be borne by the NDOT.

In addition to the functional replacement of the Adcock Elementary School, the City of Las Vegas will build a passive park on 2.25± acres adjoining the school site at the west. It is the request of the NDOT to have the existing "OPEN SCHOOLS - OPEN DOORS COMMUNITY ACCESS AGREEMENT" (or a similar document) between the School District and the City of Las Vegas amended, to reflect the updated replacement facilities. The City of Las Vegas has been recently presented with the NDOT's proposal regarding their facilities and the shared recreational facilities with the Clark County School District. Although a signed agreement has not been executed, they are in favor of the NDOT's proposal.

In order to expedite the response to the Department of Interior requirement for the Final Section 4(f) Evaluation of the Environmental Impact Statement, we are requesting that the Clark County School District provide a letter endorsing or approving the "concept" for the functional replacement of the O K Adcock Elementary School and the shared recreational facilities with the City of Las Vegas.

We hope the Clark County School District agrees that the proposed plan to functionally replace the Adcock Elementary School will provide adequate mitigation for the impacts to the existing school caused by the proposed widening of US 95. Also, it is the request of the NDOT to have the School District provide a commitment to execute the amended agreement with the City of Las Vegas Department of Parks and Leisure Activities for the shared use of the recreational facilities of the reconstructed park and school. This would reduce the impacts to the neighborhood park facilities adversely affected by the proposed widening of US 95.

It is our understanding that the approval and commitment to such a "concept" for the functional replacement of the Adcock Elementary School and the shared use of recreational facilities with the City of Las Vegas would require the Clark County School District Board of Trustees action. Your indications were that the earliest endorsement of such by the Board of Trustees, would be at their September 9 meeting. As agreed in our meeting, we are requesting that you do all possible to present this approval and commitment to the "concept", to the Board on that date.

Your commitment to this endeavor is greatly appreciated and we wish to thank you in advance for your prompt and expeditious handling of our request.

Respectfully,



Joseph Freeman  
Supervisory Right-of-Way Agent

J./lf

c: Carson City R/W  
R. Steppke, Supervisor-Real Property Management, Clark County School District  
T. Klein, Engineering Specialist, Clark County School District  
J. Perkins, Coordinator-Facilities Planning, Clark County School District  
R. Patton, Louis Berger & Associates  
P. Anderson, Staff Specialist-Acquisition & Relocation, NDOT, CC  
S. Henson, Ass't. Chief R/W Agent, NDOT, LV  
P. Springer, R/W Agent III, NDOT, LV

# CLARK COUNTY SCHOOL DISTRICT



## FACILITIES AND TRANSPORTATION SERVICES DIVISION

"Yes, we can"

January 7, 1999

Mr. Steven R. Henson  
Asst. Chief R/W Agent  
State of Nevada  
Department of Transportation  
P.O. Box 170  
Las Vegas, NV 89125

Re: **E.A. 72189**  
**US-95 Widening**  
**Adcock Elementary School**  
**Functional Replacement**

### BOARD OF SCHOOL TRUSTEES

Ms. Susan C. Brager, President  
Mrs. Ruth L. Johnson, Vice President  
Mrs. Judy Witt, Clerk  
Dr. Lois Tarkenton, Member  
Mr. Larry P. Mason, Member  
Mrs. Shirley Barber, Member  
Mrs. Mary Beth Scott, Member  
Dr. Brian Gram, Superintendent

Dear Mr. Henson:

The following are answers to the questions on the attached letter from you dated January 5, 1999:

1. The size of the school prototype is determined by program and curriculum. As previously stated, this facility is no longer scheduled for an addition.
2. The five most recently constructed elementary schools in the Las Vegas Valley are:
  - Manuel Cortez E.S. - 4245 Tonopah, Las Vegas, 89115
  - Raul Elizondo E.S. - 4865 Goldfield St., No. Las Vegas 89031
  - Berkeley Bunker E.S. - 6350 Peak Dr., Las Vegas 89108
  - Edith Garehime E.S. - 3850 Campbell Rd., Las Vegas 89129
  - Paradise E.S. UNLV Campus - 900 Cottage Grove Ave., Las Vegas 89119

The student population is 660. These schools are 1996 prototype. Approximate constructed area is 60,664 sq ft. They were built on 10 acre parcels.

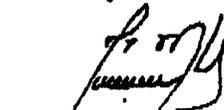
Mr. Steven R. Henson  
Dept. of Transportation  
State of Nevada

1/7/98  
- page 2 -

3. This item was discussed during our January 6th meeting held at the offices of JMA Architectural Studios.
4. This issue should be addressed to Mr. Robert Steppke, CCSD Real Property Management.

I hope this information will be of help to you. If you need additional information, please call me at 799-7729.

Sincerely,



Tete Klein,  
Engineering Specialist

TK:lc

Attachment

cc: Dale Scheideman, Facilities Planning - CCSD  
Jessica Perkins, Facilities Planning - CCSD  
Rob Steppke, Real Property Management - CCSD



STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY DIVISION  
P.O. Box 170, Las Vegas NV 89125-0170  
January 5, 1999

BOB MILLER, Governor

TOM STEPHENS, P.E., Director

Ms. Tete Klein  
Engineering Specialist  
Clark County School District  
4828 S. Pearl Street  
Las Vegas, NV 89121

E.A. 72189  
US-95 Widening  
Adcock Elementary  
Functional Replacement

Dear Ms. Klein:

As you know, I recently met with Nevada Department of Transportation (NDOT) employees in Carson City and a representative of the Federal Highway Administration (FHWA). The purpose of the meeting was to discuss the options shown in the preliminary site plans provided by your office. During the meeting, it was decided that the acquisition of additional residences to accommodate the functional replacement of Adcock Elementary School and the Torrey Pines Park, was not in the best interest of the public. As a result, we concentrated our efforts and comments on your plan which depicted the improvements upon the 12+/- acres which will remain after the freeway widening project.

Pursuant to our discussion on this date, I would appreciate any information and/or comments you can provide to answer the following questions:

1. When addressing the issue of new school construction, is the relevant unit of measurement based upon the maximum student capacity, or the building square footage? From our conversation, it is my understanding that the unit of measurement is the maximum student capacity of the school. You also mentioned that the Clark County School District (CCSD) was in the process of increasing the capacity of Adcock Elementary, but canceled the expansion project due to NDOT's plans.
2. NDOT needs a clearer understanding of what the "prevailing standard" is for elementary school design/construction in the Las Vegas area. In our conversation, you explained that the prototype elementary school has been designed, but the first prototype school is not scheduled for construction until summer, 1999. It would be helpful if you could provide me with the name, address, building square footage, acreage, and maximum student capacity of the five most recently constructed elementary schools in the Las Vegas valley.
3. We would like to explore the possibility of "tweaking" the site plan provided by your office in order to provide more space for the Torrey Pines Park relocation. The specific questions regarding the site plan will be set forth in our meeting scheduled for 10:30 AM, January 6, 1999, at the offices of JMA Architectural Studios.

4. The FHWA representative with which we met suggested that we approach the CCSD for a donation of the 2.4+/- acres of land needed for the freeway expansion. Although NDOT is obligated to offer just compensation for the land and improvements, there are federal provisions for the CCSD to waive said compensation. As a result, we would like your organization to consider waiving the appraisal and compensation for the specific area needed for the freeway expansion project. Even with this donation, the CCSD would benefit by millions of dollars through the construction of a modern elementary school. The approved items related to the new school construction would be sponsored by the functional replacement program. Please understand that donations are optional, and if the CCSD decides not to donate, it will not effect the benefits set by State and/or Federal law.

Your consideration and response to these questions would be appreciated. I look forward to seeing you at our meeting tomorrow, and at the meeting scheduled for 1:30 PM on Friday, January 8, 1999.

If you have any questions please call me at 385-6540.

Sincerely,



Steven R. Henson  
Asst. Chief R/W Agent

c: Heidi Mireles, NDOT R/W  
Patricia Anderson, NDOT R/W  
Joe Freeman, NDOT R/W  
Gen Kanow, NDOT Project Manager

# CLARK COUNTY SCHOOL DISTRICT



FACILITIES AND TRANSPORTATION SERVICES DIVISION

"Yes, we can"

BOARD OF SCHOOL TRUSTEES

- Ms. Susan C. Brager, Trustee
- Mrs. Ruth L. Johnson, Trustee
- Mrs. Judy Witt, Clerk
- Dr. Lois Turkaman, Member
- Mr. Larry B. Mason, Member
- Mrs. Shirley Barber, Member
- Mrs. Mary Beth Seow, Member
- Dr. Brian Gram, Superintendent

November 23, 1998

Mr. Steve Henson  
 Assistant Chief R/W Agent  
 State of Nevada  
 Department of Transportation  
 P.O. Box 107  
 Las Vegas NV 89125-0170

Dear Mr. Henson:

This petition is being submitted for consideration to be approved by FHWA for the "functional replacement" of Adcock Elementary School. This is a follow-up to your request by letter dated October 19, 1998.

Due to the tremendous growth of the surrounding community, this school was scheduled to receive an addition. Since this site is being impacted with the proposed US-95 widening project, this addition was canceled. Therefore, "functional replacement" with our 1998 prototype elementary school is necessary.

I also look forward to working with you and NDOT in completing this project. If you have any additional questions or require additional information, please call me at 799-7729.

Sincerely,

Tete Klein  
 Engineering Specialist

RECEIVED

24 NOV 1998

By: \_\_\_\_\_  
 LAS VEGAS RIGHT-OF-WAY  
 TELEPHONE (702) 799-7729 / FAX (702) 799-8445



MAYOR  
JAN LAVERTY JONES

COUNCILMEN  
ARNIE ADAMSEN  
MICHAEL J. McDONALD  
GARY REESE  
LARRY BROWN

CITY MANAGER  
VIRGINIA VALENTINE



# CITY of LAS VEGAS

November 19, 1998

Steve Henson  
Assistant Chief Right of Way Agent  
Nevada Department of Transportation  
P. O. Box 170  
Las Vegas, NV 89125-0170

Dear Mr. Henson:

In response to your letter of October 20, 1998, addressed to Dave Kuiper, I would like to thank you and the NDOT for the cooperative position that you have offered in your letter and in our past meetings. We hope by working together we can minimize the negative impacts to our park site at Torrey Pines Drive and the US95 Expressway.

With both the Clark County School District and the City of Las Vegas being neighbors in this impact scenario, it will be our desire and approach to end up with both entities as whole as possible after the needed NDOT acquisitions. We acknowledge the delicate public opinion and administrative positions that each of us may be put in throughout this effort and I pledge the City's efforts in working toward a functional and equitable solution.

Please accept this letter as our official notification that we would like to initiate and participate in the *functional replacement* program. The following paragraph will explain and detail why we feel it is in the public's best interest to use this approach in replacing the seven plus acres of fully developed park property. In the future, we will be able to provide cost data and any other type of information you may need to complete the functional replacement process.

This park site was developed in an area that desperately needed and wanted a community park that would enhance the quality of life for the area residents. After many neighborhood meetings, the City committed to developing a multi-purpose park. The existing components consist of certain neighborhood park venues (picnicking, playground, parking, restrooms,

400 E. STEWART AVENUE • LAS VEGAS, NEVADA 89101-2986  
(702) 229-6011 (VOICE) • (702) 386-9108 (TDD)  
[www.ci.las-vegas.nv.us](http://www.ci.las-vegas.nv.us) (WEBSITE)



passive areas) along with two community-use, lighted soccer fields. All facilities were constructed to help address the ever-increasing demand for youth facilities. In our previous meetings, we have heard your commitment to relocate the elementary school function with the least amount of disruption to the students. From our view, it is equally important that the City retains our ability to reestablish our park facilities without having to reduce our programmable space and without having to reduce the number of people our facilities currently accommodate. We are therefore requesting that as high a priority be placed on the functional replacement of our entire park, especially the lighted sports fields, as is being shown for the replacement of Adcock Elementary. We predict that we will be able to reestablish *some* park components on the site the school will vacate, but, we will not be able to incorporate the lighted fields because of the loss of acreage and because the west end of this joint site will be too close to the existing, abutting residential area. We will need to work together to functionally replacement these larger-impact park facilities.

It is our hope that the NDOT will be able to functionally replace the soccer fields and supporting components at another location prior to any demolition of the existing park. As we're all aware, the growth in our community causes and creates some very special and difficult problems. One of the biggest for us is providing enough park and recreational space; especially for the youth. It's vitally important that we do everything we can to provide all park users a functional replacement to the existing facilities being disrupted by the highway expansion project.

Thank you for this opportunity to request inclusion in the functional replacement process and we look forward to being able to work with you to reestablish these park facilities along with the lighted soccer fields.

Sincerely,



Virginia Valentine  
City Manager

cc: K. John McNellis, Deputy Director, Public Works  
Dave Kuiper, Director, Leisure Services



STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION

RIGHT-OF-WAY DIVISION  
P.O. Box 170, Las Vegas NV 89125-0170  
October 19, 1998

BOB MILLER, Governor

TOM STEPHENS, P.E., Director

Ms. Tete' Klein  
Engineering Specialist  
Clark County School District  
4828 S. Pearl Street  
Las Vegas, NV 89121

E.A. 72189  
US-95 Widening  
Adcock Elementary  
Functional Replacement

Dear Ms. Klein:

As discussed at our meeting on October 14, 1998, the Nevada Department of Transportation (NDOT) is working closely with your organization and the City of Las Vegas Parks Department to minimize the impacts of the proposed US-95 widening project on your respective facilities. Although the US-95 widening project is still in the planning stage, we are taking some preliminary steps to determine the feasibility of combining a newly designed and constructed Adcock Elementary School with the City of Las Vegas park which abuts to the east.

At the meeting, I explained the intent of the Federal Highway Administration (FHWA) program entitled "functional replacement" and expressed NDOT's willingness to consider implementing this program to benefit the Clark County School District, City Parks Department, and the public in general. NDOT's option of utilizing functional replacement is elective, not mandatory, and Mr. Tom Stephens, NDOT's Director, has expressed NDOT's willingness to take the extra steps to assist the Clark County School District and the City of Las Vegas by offering the functional replacement program to your agencies. Without this program, upon project approval, NDOT would appraise and acquire the land and improvements within the acquisition area, pay damages (if any) to the remaining property, and relocate the personal property from the building area which we acquired.

In order to initiate the functional replacement program, FHWA concurrence must be received. This will require a letter from your organization, to my attention, which gives a detailed explanation of why it would be in the best interest of the public to use functional replacement for your facility. Eventually I will need a cost estimate for the new school/park facility, but for now, your letter of request will provide enough information for NDOT to approach the FHWA for their conceptual approval.

I would like to re-iterate my previous statements regarding incurring costs for the proposed functional replacement of the public park and Adcock Elementary. The functional replacement program requires extensive approvals before federal funds can be committed. Once the funds are committed, NDOT must monitor the program to ensure that the costs stay within certain tolerances. Throughout the functional replacement process, it is imperative that your organization understands that all costs must be approved in advance, in writing, by NDOT. Any costs incurred by the Clark County School District which are not pre-approved, in writing, will not be eligible for reimbursement.

I look forward to working with you and the Clark County School District on this exciting new project. By working together, we can improve upon the facilities which currently exist, and keep the school and park within the Charleston Heights neighborhood.

Sincerely,



Steve Henson  
Asst. Chief R/W Agent

SH/lf

c: Heidi Mireles, NDOT  
Joe Freeman, NDOT  
Jeff Bast, NDOT  
Patricia Anderson, NDOT



STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
1263 S. Stewart Street  
Carson City, Nevada 89712

BOB MILLER, Governor

TOM STEPHENS, P.E., Director

In Reply Refer to:

October 8, 1998

Dr. Brian Cram  
Superintendent of Schools  
Clark County School District  
2832 E. Flamingo Road  
Las Vegas, NV 89121

**RE: US-95 EIS/SECTION 4(f) EVALUATION**

Dear Dr. Cram:

The Nevada Department of Transportation (NDOT) in conjunction with the Federal Highway Administration (FHWA) is proposing improvements to US-95 in the City of Las Vegas. NDOT is currently preparing an Environmental Impact Statement and a Section 4(f) Evaluation of the proposed freeway improvement project.

The project will widen US-95 from four lanes to six lanes from Craig Road to Rainbow Boulevard and from six lanes to ten lanes from Rainbow Boulevard to I-15. As previously discussed with School District representatives, the project, as proposed, will displace the O.K. Adcock Elementary School and will encroach upon open landscaped areas of Western High School and Ruth Fyfe Elementary School.

As proposed, the project will take approximately 2.4 acres from the approximately 8.4 acre O.K. Adcock Elementary School site, including the building. During the Major Investment Study for this project, a conceptual plan was developed in cooperation with the staffs from the Clark County School District and City of Las Vegas. This plan includes the exchange of land between the City of Las Vegas and the Clark County School District to facilitate the reconstruction of Adcock Elementary School. Specifically, it was proposed to construct a new elementary school on the site of the City's planned park at Hyde and Torrey Pines, east of the existing school, as a functional replacement for Adcock Elementary School. The approximately six acre remnant parcel of City land adjacent to the existing Adcock Elementary School would be transferred to the School District. The replacement school would be constructed and available for use prior to the closure and demolition of the existing school. At the present time, NDOT is considering the use of state or federal funds earmarked for the US-95 project to reconstruct the school. In exchange, the remnant property currently occupied by the existing Adcock Elementary School (approximately 6 acres) would be transferred to the City of Las Vegas Parks and Leisure Activities Department for the development of park facilities. The possibility of shared use of recreational facilities between the new park and the newly reconstructed school was discussed as a way to reduce the impacts from the proposed taking of land and reduction in area of both the school and park sites.

Dr. Brian Cram  
Superintendent of Schools  
Clark County School District  
Page 2  
October 8, 1998

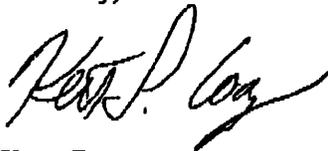
At Western High School the project, as proposed, would encroach upon the southwest and southeast corners of the property with a total area of less than one acre. Landscaped areas between Decatur Boulevard and the football field bleachers on the southwest corner and a landscaped area abutting US-95 behind the softball fields would be affected. Direct impacts to existing recreational facilities are not anticipated.

At Ruth Fyfe Elementary School, the project, as proposed, may encroach upon the extreme south end of the recreational fields (less than 0.1 acre) without directly affecting recreational facilities.

The purpose of this letter is to solicit the School District's position regarding the project's impact on school facilities. A representative from City of Las Vegas Parks and Leisure Activities, Stacy Allsbrook, will be contacting your staff to request a joint meeting with the City of Las Vegas and NDOT to discuss the possibility of land exchange and joint use of recreational facilities for Adcock Elementary School. Ms. Allsbrook's phone number is 229-4733.

If you have any questions regarding this letter, feel free to contact us at 486-3540. Thank you for your continued cooperation in this matter.

Sincerely,



Kent Cooper  
Program Development

KLC/RFP:cou

c: Robert Steppke  
Dusty Dickens  
David Kuiper  
Stacy Allsbrook  
Steve Henson  
Heidi Mireles  
Genishi Kanow  
Daryl James



STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
1263 S. Stewart Street  
Carson City, Nevada 89712

BOB MILLER, Governor

TOM STEPHENS, P.E., Director

September 10, 1998



Ms. Virginia Valentine, City Manager  
City of Las Vegas  
400 Stewart Avenue, 10th Floor  
Las Vegas, NV 89101

**RE: US 95 EIS/SECTION 4(f) EVALUATION**

Dear Ms. Valentine:

The Nevada Department of Transportation (NDOT) in conjunction with the Federal Highway Administration (FHWA) is proposing improvements to US 95 in the City of Las Vegas. NDOT is currently preparing an Environmental Impact Statement and a Section 4(f) Evaluation of the proposed freeway improvement project.

The project will widen US 95 from four lanes to six lanes from Craig Road to Rainbow Boulevard and from six lanes to ten lanes from Rainbow Boulevard to I-15. As previously discussed with City of Las Vegas (City) representatives, the project proposes the use of a portion of the land owned by the City and planned as a public park at the corner of Hyde Avenue and Torrey Pines Drive. The project is consequently subject to the requirements of Section 4(f) of the USDOT Act of 1966. The NDOT plan calls for widening US 95 into the northern portion of the property where it presently abuts the freeway. The project would take approximately 1.6 acres from the 7.6 acre property, leaving approximately 6.0 acres for development (including the Newcomer Street half-width).

During the Major Investment Study for this project, a conceptual plan was developed to exchange land between the City and the Clark County School District. Specifically, it was proposed to construct a new elementary school on the site of the City's planned park at Hyde and Torrey Pines as a functional replacement for Adcock Elementary School that will be demolished as part of the freeway widening project. The remnant property at Hyde and Torrey Pines would then be transferred to the Clark County School District. In exchange, the remnant property currently occupied by the existing Adcock Elementary School (approximately 6 acres adjacent to the park) would be transferred to the City for the development of park facilities. The possibility of shared use of recreational facilities between the new park and the newly reconstructed school was discussed as a way to reduce the impacts from the proposed taking of land.

In addition to the proposed park, the project will also displace an existing pedestrian/bicycle trail maintained by the City on the south side of US 95 between Westcliff Drive and Jones Avenue. The proposed project would relocate and reconstruct the pedestrian/bicycle trail adjacent to the south side of the widened US 95.

Ms. Virginia Valentine  
City of Las Vegas  
Page 2  
September 10, 1998

The purpose of this letter is to: (1) inform the City of NDOT's plans for the proposed park site and the pedestrian/bicycle trail, and; (2) solicit the City's position regarding NDOT's plans for the public lands.

The Section 4(f) regulations direct us to mitigate the impacts of affected parkland. Usually NDOT mitigates this use by replacing the parkland with land of reasonably equivalent usefulness, location and of comparable value, or by paying the fair market value of the land taken.

Please provide us with a letter explaining the current status of the proposed park including the layout of planned facilities, the time frame of planned development, plans for interim as well as permanent facilities, if appropriate, and confirm the total acreage of the property. Also, please let us know if there are any Federal encumbrances attached to this property.

We intend to continue discussions with the City and the Clark County School District regarding the aforementioned property exchange. In the meantime, I appreciate your input to our Section 4(f) evaluation and will answer any questions you may have.

Thank you for your continued cooperation in this matter.

Sincerely,



Kent Cooper  
Program Development Manager

KLC/RJP:cou

C:

Daryl James  
Heidi Mireles  
Steven Henson  
Ann Holland  
David Kuiper  
Richard Goecke  
Charles Kajkowski  
Gordon Derr  
Roger Patton



STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
1263 S. Stewart Street  
Carson City, Nevada 89712

BOB MILLER, Governor

TOM STEPHENS, P.E., Director

April 8, 1997

In Reply Refer to:

Arnie Adamson, Mayor Pro Tem  
City of Las Vegas  
400 East Stewart Avenue  
Las Vegas, NV 89101

RE: US 95 Major Investment Study

Dear Mr. Adamson:

I am writing in response to your letter dated March 24, 1997, concerning the mitigation of impacts to O.K. Adcock Elementary School and the proposed City Park at the corner of Torrey Pines and Hyde Road. I would also like to thank your staff and the Clark County School District staff for continuing the cooperative process with regards to the US 95 Major Investment Study.

The Nevada Department of Transportation is preparing to conduct environmental studies which will address the impacts and the mitigation required for the approved projects in the US 95 Major Investment Study. The Department is required to follow the National Environmental Policy Act (NEPA) process with regard to identifying impacts and the mitigation thereof. An Environmental Impact Statement (EIS) is proposed to be completed within a 2 year time frame. It will then be submitted to Congress for approval and a Record of Decision (ROD). The approved EIS will then direct NDOT in its mitigation efforts.

The Nevada Department of Transportation in meetings with the Clark County School District and the City of Las Vegas have identified the following mitigation measures with regard to O.K. Adcock Elementary School and the proposed park site. These mitigation measures, due to federal and state regulations, will be subject to the NEPA process and congressional approval. It is the Departments intent to work closely with the City of Las Vegas and the Clark County School District to insure that impacts to the school are mitigated and that park facilities are constructed equal to those that would have been constructed on the currently unimproved park site.

First, the expense of relocating, and the reconstruction of O.K. Adcock Elementary School has been factored into the preliminary costs of the proposed widening of US 95.

Second, a new school is proposed to be built adjacent to the existing school and the children moved into the new school prior to the demolition of the existing school facility.

Third, NDOT is committed to restoration of any park facility that would be damaged as part of the proposed widening.

To date the US 95 Major Investment Study recommendations have been approved by the necessary local entities and the Nevada Department of Transportation Board of Directors.

I look forward to continuing the partnering efforts between the City of Las Vegas, the Clark County School District and NDOT for the benefit of the community. To that end the Department has tentatively scheduled an EIS scoping meeting for Wednesday May 7, 1997.

The Project office staff will contact you following confirmation of time and location of the meeting. Kent Cooper, NDOT's Chief of Program Development will be coordinating NDOT's efforts. He can be contacted at P.O.Box 170, Las Vegas, NV 89125-0170 or (702) 888-7120.

Sincerely,



Thomas E. Stephens  
Director

cc: Kent Cooper, Chief Program Development  
Rob Steppke, Clark County School District  
Roger Patton, Louis Berger and Associates ✓

**ARNIE ADAMSEN**

MAYOR PRO-TEM

March 24, 1997



Tom Stephens, Director  
State of Nevada  
Department of Transportation  
1263 South Stewart  
Carson City, NV 89712

Dear Mr. Stephens:

Recently, the City of Las Vegas, Nevada Department of Transportation and the Clark County School District have held meetings regarding the I-95 widening project. The meetings were arranged specifically to address concerns regarding the elimination of Adcock Elementary School and the proposed City Park on the corner of Torrey Pines and Hyde Road. As a result of these meetings, the Clark County School District and the City of Las Vegas would request the following commitments from the Nevada Department of Transportation with regard to the affected property.

First, that NDOT must absorb all costs related to the relocation of the school buildings and grounds including land acquisition, design and construction costs.

Second, that the relocation and construction of the new school will be completed prior to the demolition of the existing school facility.

Third, that NDOT pay for relocation, design and construction of the City park site including the costs of creating a 90' baseball diamond with lights and restroom on the grounds of Garside Middle School.

Your prompt response to this request would be appreciated. We are committed to working with you on this project for the benefit of all involved.

Sincerely,

ARNIE ADAMSEN

AA:BD:g

cc: Dusty Dickens  
Kent Cooper

Routing slip with grid and handwritten notes: "Active" and "RECEIVED".





# CLARK COUNTY SCHOOL DISTRICT



## FACILITIES AND TRANSPORTATION SERVICES DIVISION

November 20, 1996  
SENT VIA FAX 486-8102

Kent Cooper, US 95 Project Manager  
Nevada Department of Transportation  
P. O. Box 170  
Las Vegas, NV 89125-0170

### BOARD OF SCHOOL TRUSTEES

Mr. Larry P. Mason, President  
Dr. Lois Tarkanian, Vice President  
Ms. Susan C. Brager, Clerk  
Mr. Howard Hollingsworth, Member  
Mrs. Judy Wirt, Member  
Dr. James B. McMillan, Member  
Mr. Jeffrey L. Burr, Member

Dr. Brian Cram, Superintendent  
FAX (702) 799-3505

RE: US 95 Widening Program  
Desert Inn Arterial Street Improvement

The school district recently met with representatives of NDOT to discuss the ramifications upon district property as a result of the proposed improvements on the above referenced arterials.

The widening of US 95 would severely affect two of the school district's properties; O.K. Adcock Elementary School and Western High School. Ruth Fyfe Elementary School would not be severely impacted as the existing right-of-way along the school's south boundary would be utilized.

The northern wing of O.K. Adcock Elementary School would have to be demolished if US 95 is expanded to either eight or ten lanes. As of 10/18/96, Adcock Elementary School has 777 students enrolled. While we oppose the expansion of US 95 that would result in the demolition, we also discussed the possibility of NDOT acquiring the vacant 10 acres directly to the east of the school. It has been confirmed that this property is owned by the city of Las Vegas. If this vacant property were acquired for the district, one mitigated solution would be to combine both parcels to effectively rebuild the school with funding from NDOT. The proximity to the existing Adcock facility would make this scenario a unique opportunity to address student population needs in the Adcock area.

The impact of widening US 95 on Western High School would require repositioning the entire recreational fields currently located south of the school. The district opposes this action as it would reduce the amount of usable land for program/school activities. If the fields were to be relocated, it is the district's understanding NDOT would provide the funding.

Kent Cooper  
November 20, 1996  
Page -2-

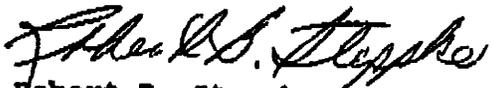
Expansion of the Desert Inn Arterial would affect the parking area in the front of Cashman Middle School. Currently, the parking is accessed by Desert Inn Road. The widening of the arterial would eliminate the only existing access to the school. For this reason the district opposes the expansion as planned. A mitigated solution would be to create a new access from either Warnock to the west or Cameron to the east of the school. The parking area would also need to be reconfigured. The district understands that NDOT would be the funding source for this project as well.

We appreciate the opportunity of having the advance meeting to acquaint the district of what is proposed for the future and giving us the opportunity to discuss our opinions and possible solutions.

We understand this program is currently in the planning stage and final acceptance is subject to completion of studies and identification of funding sources.

Please continue to keep the district informed as to progress of these proposals. If I can be of further help, please call me at 799-7576.

Sincerely,



Robert B. Steppke, Supervisor  
Real Property Management

/br

cc: Fred Smith  
Dusty Dickens



KENNY C. GUINN  
Governor

STATE OF NEVADA  
DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS  
STATE HISTORIC PRESERVATION OFFICE  
100 N. Stewart Street  
Carson City, Nevada 89701-4285

RONALD M. JAMES  
State Historic Preservation Officer

February 19, 1999

John T. Price, Administrator  
Federal Highway Administration  
Nevada Division  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015

Dear Mr. Price:

Thank you for the opportunity to review all of the documents pertaining to the US 95 Transportation corridor study. SHPO staff has the following comments on these documents and on FhWA determinations.

**Phase II Archaeological Investigations at Four Small Sites Situated along the US 95 Transportation Corridor, Clark County, Nevada:**

The FhWA has determined that the following four archaeological sites are not eligible for inclusion in the National Register under any of the Secretary of Interior's criteria of significance:

26CK1647

26CK1767

26CK2451

26CK5443

I have reviewed the report and concur with the determinations made by FhWA.

**Pah hu wichi (From Big Spring Running Down) Big Spring Ethnographic Assessment US 95 Corridor Study.**

SHPO staff reviewed the document and would like to express its concern that tribal members were not allowed access to the Big Springs site, especially since other people were allowed on site to conduct studies (please refer to pages 5 and 136 of the report). Interviews on site are a valued method for cultural practitioners to recall important information.

Investigators draw the conclusion that the Big Springs site is special and unique as the "mother of all springs" and "...is a place Southern Paiutes historically...conducted ceremonies..." (p.135). Your letter states that the groups and individuals interviewed voiced a "concern" for Big Springs. However, your agency does not determine whether or not the property is eligible for inclusion in the National Register of Historic Places as a traditional cultural property. If Alternative B is considered at all, further evaluation, including on-site interviews of elders, of the Big Springs site as a traditional cultural property must occur.

John T. Price  
February 19, 1999  
Page 2

**An Historical Architectural Survey and National Register of Historic Places Eligibility  
Recommendations for Structures Present Along a 24.5 Mile Corridor for the US 95 Study  
Las Vegas, Nevada**

This report appears to be a draft although information is sufficient for determining eligibility for eight of the resources. I note that your agency did not determine the eligibility of any of the resources identified in the report but assume you would like us to concur with the report's conclusions. Please note that the significance levels checked on the site forms do not correspond to those indicated in the body of the report. We are assuming that the conclusions of the report are your determinations.

We concur that the following resources are not eligible under any of the Secretary's criteria of significance:

US 95 F1	House	1250 Sharon Road
US 95 D4	House	2041 Bonanza Road
US 95 D10	Church Residence	2206 Bonanza Road
US 95 D11	Per. Pool Service	2110 Bonanza Road
US 95 D20	Doyne Residence	1706 Bonanza Road
US 95 D21	Lyles Residence	1700 Bonanza Road

We also concur that the following resources are eligible for inclusion in the National Register under criterion c although they may well be eligible under criterion b too:

US 95 D12	Binion Residence	2040 Bonanza Road
US 95 D18	Mahill LLC Rental	1808 Bonanza Road

We feel information is not sufficient to determine eligibility or ineligibility on the following resources and request the question of their eligibility be deferred until design development:

US 95 A1	New York Apts	220 New York Ave
US 95 A2	New York Apts	218 New York Ave
US 95 D24	House	700 Sunny Place
US 95 D1	Universal Tire	1527 Bonanza Road
US 95 D2	Rock City Aquar	1721 Bonanza Road
US 95 D3	House	1909 Bonanza Road
US 95 D5	Lenox Inc	2101 Bonanza Road
US 95 D22	Gray Residence	701 Sunny Place
US 95 D23	Young Residence	733 Sunny Place
US 95 F3	House	1077 Comstock Drive

John T. Price  
February 19, 1999  
Page 3

US 95 F2	Hogue Residence	1713 Ophir Drive
US 95 D8	Rodriguez Residence	708 Dike Lane
US 95 D13	Zampa Residence	2020 Bonanza Road
US 95 D15	DeMarco Residence	651 Clarkway Drive
US 95 D14	Jessup Residence	1920 W. Bonanza Road
US 95 D16	Travis Residence	612 Clarkway Drive
US 95 D17	Bigelow Residence	1812 Bonanza Road
US 95 D7	Jordan Residence	710 Dike Lane
US 95 D9	Wilkinson Residence	2222 Bonanza Road
US 95 D19	Ahern Rental	1724 Bonanza Road

Union Pacific Railroad Right of Way at Industrial Road and Wyoming

Because the report is a draft, we request that it be altered to include the following:

Original black and white photographs of the structures recorded. Photographs should be labeled on the back in pencil and not adhered to the form. Submit them in an envelope. We will attach them to the report. Was there a reason that associated outbuildings were not photographed?

When was the Ahern rental (US 95 D19) demolished? Do any outbuildings remain?

Would the Union Pacific Railroad grade, despite modernization, be eligible under criterion a?

Match the National Register recommendations within the report's conclusion with those made on Part 12e of the building survey forms. The survey forms indicate that most of the buildings are eligible as contributors to a historic district. These historic district boundaries were never identified in the report. Photographs of the neighborhood are lacking.

Match the architectural categories described in Item 12b of the buildings survey forms with the architectural categories described in the report. For example, the building at 220 New York Avenue is described as a Southwest Style building; however, the descriptive paragraph describes many sub-styles all at once -- Spanish Colonial Revival, Pueblo Revival and Mission (Monterey?) Revival. The authors need to identify the different style features especially since they are not readily visible on the copy of the photograph.

Explain the reasons for omitting themes other than the three listed in chapter 4. Did settlement in the area of potential effect (and visual effect) only begin in 1905?

Explain the reasoning behind the assignment of time spans for architectural categories identified within the report (pages 14 and 15). What bibliographic source was used to define categories and time spans?

Include a building plan or location map on each survey form. For example, even though several of the survey forms stated "See survey map for building footprint...", maps 4, 5 and 6 in Appendix A did not show a single building footprint within the surveyed lots. In addition, maps in the appendix were not labeled and some were missing streets. For example, US 95F was not identified on the "Key Map". Streets mentioned in the report as major boundaries of certain US 95 segments were not included. Also, please make map references more specific than "See Appendix A for map of area and architectural footprints..." There are seven maps in the report.

Provide a comprehensive list of all properties surveyed. This could be accomplished by a chart with the following information:

the names and addresses of all properties surveyed, whether it be windshield, reconnaissance or intensive;

maps on which the property is located/referenced;

location of property (is it in the APE or AVE?);

year of construction; and,

National Register eligibility (Note: each property should have one of the following listed: eligible, not eligible or unevaluated. If eligible, then list which National Register criteria it meets and justify. If not eligible, justify why it is not).

Map #	Name of Property	Address	Construction Year	APE or AVE	National Register eligibility

This list should be summarized in another succinct chart which lists total number of properties surveyed and a break down of properties eligible, not eligible and unevaluated.

Total Properties Surveyed	Eligible	Not eligible	Unevaluated

**The Las Vegas Springs Heritage Site Studies of a Cultural Landscape, Part I-Results and Recommendations and Part II-Historic Context and Site Descriptions**

Descriptions of test probes 13 and 14 are missing from the text of the document. Otherwise, staff is satisfied that the investigators were responsive to our comments of September 9, 1998. In answer to our inquiry regarding 26CK949, outside the APE, the report states that it is linked to 26CK948, the Big Springs Site and that the whole should be considered one complex multi-component site within a well-documented cultural landscape (p. 2.233). As SHPO commented in earlier correspondence, we agree with your that the boundaries of the National Register site be expanded and that a larger area of impact be considered that the 200 foot corridor.

**Cultural Resource Technical Study to EIS:** The SHPO recommends that site locations not be published in documents disseminated to the general public, regardless of the sites' eligibility status or protection. A specific location map was included for site 26CK5444 which has not yet been tested for National Register eligibility. Publishing its location jeopardizes its existence in the time between distribution of the EIS and its technical studies, and the actual testing of the site. Please note that the National Historic Preservation Act and the Archaeological Resources Protection Act permit the head of a federal agency to withhold information about the location of a resource if it determines that disclosure may risk harm to the historic resource. ✓

**Draft Environmental Impact Statement:**

FhWA still must consult with SHPO, and possibly the Advisory Council, regarding 26CK5444. The site needs to be test excavated to determine its eligibility for inclusion in the National Register under criterion d. The investigators also mention that it might be eligible under criterion a (see page v-49). This needs to be a consideration in the treatment plan because data recovery might not be sufficient to mitigate damage to this resource. Additional consultation with the tribes and the Advisory Council will be necessary should this site be determined a traditional cultural property.

The public has expressed concern that elements of the Big Springs National Register site extend under the freeway and subdivision to the north of US95. We understand that fill was placed on the original surface before the freeway was constructed. However, excavation and construction may necessitate disturbing the original surface. Therefore, it is appropriate that a testing and monitoring program be developed in the event that artifacts and associated features be exposed.

Regarding proposed mitigation (see page vi-19), if alternative B is considered and the Big Springs Site will be affected, then public meetings and consultation with the Advisory Council will be necessary to identify remedies other than the data recovery and documentation presented in the text of the EIS. For example, the Las Vegas Valley Water District might request sound walls for

John T. Price  
February 19, 1999  
Page 6

the remainder of the site and revegetation to replace cottonwoods and other vegetation to be removed as part of this project. FhWA should also consult with tribes since it appears that Big Springs may be a traditional cultural property.

When NDOT and FhWA enter the design development phase, please consult with us again as per our comments on the draft EIS. At that time it would be appropriate for the FhWA to request that this agency concur with a determination of effect. It would be helpful if the investigators responsible for the historical architectural survey contact Rebecca Ossa, the SHPO's architectural historian before responding to our comments. Her telephone number is (775) 687-3441. If you have any questions regarding these comments please call me at (775) 687-6361.

Sincerely,



ALICE M. BALDRICA, Deputy  
State Historic Preservation Officer

cc: Jeff Fontaine, NDOT  
Hal Turner, NDOT  
Alan Stanfill, Advisory Council  
Kay Brothers, Las Vegas Valley Water District  
Friends of Big Springs



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
Nevada Division  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015  
September 30, 1998

IN REPLY REFER TO  
HEP-NV

Subject: US 95 Transportation Corridor  
Las Vegas Valley, Nevada

John W. Hohmann, Ph.D.  
Cultural Resource Group  
Louis Berger & Associates, Inc.  
1500 East Tropicana, Suite 215  
Las Vegas, Nevada 89119

Dear Dr. Hohmann:

Based on your inquiries, the FHWA has reviewed the various elements of the cultural resource work being done for the US95 EIS. From that review the FHWA has concluded the following:

1. After consultation with Ms. Alice M. Baldrica, Deputy State Historic Preservation Officer, the FHWA and Nevada SHPO agree that for the purposes of review and evaluation of potential 4(f) impacts specifically to the Las Vegas Springs National Register Site; the artifacts and features located within the 200-foot APE contribute to the eligibility of the Las Vegas Springs National Register Site and should be considered during any 4(f) evaluation.

Although Ms. Baldrica was comfortable with this, she very pointedly stressed that the issue of "Historic Viewshed" had been raised and she thought it should also be considered under 4(f) impacts.

2. Based on a discussion with Ms. Linda Blair, UNLV-HRC, there will be no substantive changes in the conclusions between UNLV's draft report and their final report. Additionally, when a geomorphological report is forthcoming, it would not contain information that would substantively change UNLV's conclusions. Consequently, it is appropriate to complete the cultural resource analysis section of the EIS based on the information contained in UNLV's draft report.

If you wish to discuss this project, please do not hesitate to call me (687-5334).

Sincerely yours,

  
Conway C. Barlow

Environmental Program Manager





**BOB MILLER**  
*Governor*

**JOAN G. KERSCHNER**  
*Department Director*

STATE OF NEVADA  
DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS  
STATE HISTORIC PRESERVATION OFFICE  
100 N. Stewart Street  
Carson City, Nevada 89701-4285

**RONALD M. JAMES**  
*State Historic Preservation Officer*

September 9, 1998

John T. Price  
Federal Highway Administration  
Nevada Division  
705 N. Plaza St., Suite 220  
Carson City, NV 89701-4015

Dear Mr. Price:

The Nevada State Historic Preservation Office has reviewed "The Las Vegas Springs Heritage Site Studies of a Cultural Landscape." The report was prepared following studies to characterize the geomorphology of the Big Springs National Register site in a way that would not affect the National Register qualities of the site. The Federal Highway Administration requested the study to assess effects of a proposed widening of U. S. 95 to satisfy provisions of the National Environmental Policy Act. The investigators also re-evaluated the Big Springs Site under the National Register criteria to include considerations under criterion b and the site's significance as a cultural landscape.

At your request, this agency reviewed the document to comment on its meeting the Secretary of Interior's Standards for Archaeology and Historic Preservation. Overall, the document provides: 1) evidence that subsurface remains exist; 2) new documentation for the National Register nomination recommending the site be considered eligible under criterion b and as a cultural landscape; 3) demonstration that integrity is sufficient to continue considering the property eligible under all the criteria; and, 4) justification for extending the boundaries of the National Register site to include 26CK949. We concur with your conclusions.

I did not review the scope of work therefore the following comment may be inappropriate. The report contains a large amount of information that should appear in an identification/survey report. If the FHWA has not incorporated the Las Vegas Water District's cultural resource inventory into its planning and compliance documentation, the present report's background material is appropriate. If, however, the FHWA did accept this work, the current report should be broken into two separate documents: 1). Site background and National Register eligibility, and 2). Archaeological testing and geomorphological characterization.

**John T. Price**  
**September 9, 1998**  
**Page 2**

The report needs serious editing. I have the following comments on specific parts of the document:

**Executive Summary:** The last paragraph should be more objective and briefly describe the National Register values, using the criteria of significance, that would be affected by the undertaking.

**Page 1 and 5:** The introduction should include an explanation that this is part of a much larger project and reference the Hohmann report that describes the results of the archaeological survey of the corridor to be affected. For example, the cold reader might be interested to know the scale of the project and whether or not a possibility exists that the Big Springs site extends to the northern side of U. S. 95 (also under consideration for widening).

**Chapter 2** is a fine discussion of Isabel Kelly's notes on Southern Paiute use of Big Springs and similar sites in Las Vegas Valley at the time of contact. This chapter provides a good model of land usage prior to Euroamerican use of the springs.

**Chapters 3 and 4:** These chapters contain an excellent history of Big Springs; the information is primary documentation that adds a great deal to what is known about the site. However, these two chapters need editing. Some of the information on tribes in chapter 3 seems better suited for inclusion in chapter 2. On page 40, the author should explain how the Utes caused the creation of the Moapa Reservation. Discussion of historic land use in chapter 3 seems less about the site and more a history of Las Vegas Valley and Mormon Fort. Many of the figures are blurry and difficult to read or view.

**Chapter 6** also needs editing and the inclusion of the results of pollen sample studies.

In chapter 7, on page 111, second paragraph, the author states that site 26CK949 would not be directly impacted but that the intrinsic value would be affected. Currently, 26CK949 is not included in the boundaries of the National Register site; has there ever been an official determination of eligibility on this property, naming the criteria under which it would be found eligible? If site 26CK949 is eligible under all the criteria or to be included within expanded National Register boundaries, effects due to changes in setting should be addressed, just as it would be for the Big Springs Site. As part of the NEPA analysis, the FHWA needs to consider the impact of the southern alternative upon the visual setting and cultural landscape of the Big Springs site as outlined in the architectural/historic report prepared by Ryden.

**Chapter 9** should be the heart of the report, where investigators were to have assessed the potential for finding significant, buried, prehistoric archaeological deposits within the 200 foot wide area of potential effect. Unfortunately, an estimate of these deposits is lacking. The investigators, with minimal subsurface disturbance and relying heavily upon the expertise of an

John T. Price  
September 9, 1998  
Page 3

archaeological geomorphologist, were to have estimated the location and size of the archaeological deposits within the 200 foot wide corridor based on the geomorphological study. The investigators need to expand this chapter to be useful for the purposes we agreed upon in our April 21, 1998 meeting with representatives of the Advisory Council, the Las Vegas Valley Water District, this agency, NDOT and the FHWA. Areas of suspected intact archaeological deposits should be mapped and distinguished from areas of complete disturbance where subsurface deposits are lacking.

There are descriptions of archaeological test pits that had been assessed for geomorphology. Why weren't all the pits assessed?

Also regarding chapter 9, the authors should avoid confusion in separate descriptions of activities at test pits. For example, what is the distinction between Archaeological Test Probe Number 1 (page 222) and Test Pit 1 (page 260)? If these are the same, then why not combine the soil description with the descriptions of the archaeological components? What are the results from the limited auger testing that was completed on the site?

We also recommend that the report include specific details concerning the subsurface stratigraphy and the geomorphology. The figures lack adequate captions of the stratigraphic units depicted. The plan maps lack complete descriptions of the surface units represented. These plan descriptions should further be distinguished by indicating if the surface contributes to the site's landscape integrity. All of the profile and plan map units must also be discussed in the text where appropriate.

In chapter 11, the synthesis, the author needs to address whether or not artifacts and features are sufficient to address the problem domains identified in chapter 5. Should the focus of questions be narrowed in future research? For example, one research domain regards prehistoric settlement and subsistence theory. To test a hypothesis for foraging or collecting, one would need data from other sites in the valley. Is there sufficient data in reports and the site files to make addressing this question meaningful? Lastly, is there any way of testing hypotheses concerning the trade of ceramics? On page 285, the author concludes that the use of particular kinds of ceramics at Big Springs indicates occupation by a specific group of people; could trade have accounted for some pottery at the site?

John T. Price  
September 9, 1998  
Page 4

In conclusion, I concur with your determinations, particularly that the boundaries of the National Register site be expanded. Additionally, consideration of effects to an area larger than the 200 foot corridor seems warranted in light of the Ryden and HRC reports.

If you have any questions regarding these comments, please call me at (702) 687-6361. With your permission, I would like to return this document to your consultants; I have made a number of editorial comments on the pages of the report.

Sincerely,



ALICE M. BALDRICA, Deputy  
State Historic Preservation Officer

cc: Jeff Fontaine, NDOT  
Hal Turner, NDOT  
Alan Stanfill, Advisory Council  
Kay Brothers, Las Vegas Valley Water District  
Lynda Blair, HRC  
Friends of Big Springs



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
Nevada Division  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015  
September 1, 1998

IN REPLY REFER TO  
HEP-NV

Subject: US 95 Transportation Corridor  
Las Vegas Valley, Nevada

Ms. Alice M. Baldrica, Deputy  
State Historic Preservation Officer  
Historic Preservation Office  
100 S. Stewart Street, Capitol Complex  
Carson City, Nevada 89710

Dear Ms. Baldrica:

Earlier a copy of UNLV's Big Springs report *The Las Vegas Springs Heritage Site, Studies of a Cultural Landscape* was informally delivered to your office. At this time the Federal Highway Administration (FHWA) is asking that you review the draft report and provide us with your comments.

As previously discussed, under provisions of the National Environmental Policy Act an Area of Potential Effect (APE) 200 feet wide was identified for study as a possible alternative for the expansion of the existing US 95 facility. After reviewing the work to date, including UNLV's draft report, the FHWA has determined:

- 1) The Las Vegas Springs National Register Site is listed on the National Register of Historic Places.
- 2) Areas north of the localities addressed by Warren's work in 1972, contain prehistoric and historic artifacts and features. These artifacts and features contribute to the National Register site and/or are eligible in their own right.
- 3) Based on the available information, the functional boundary of the National Register site has been expanded to include a large portion of the APE.

Further determinations regarding possible project impacts will require the completion of the Environmental Impact Statement currently in preparation. Once an alternative alignment for the project has been chosen, the FHWA will address project impacts as appropriate.

Once we have your comments regarding UNLV's draft report, we will forward them directly to UNLV. If you wish to discuss this project, please do not hesitate to call me (687-5334).

Sincerely yours,

*1/4 C. C. Barlow*  
Conway C. Barlow  
Environmental Program Manager



BOB MILLER  
Governor

JOAN G. KERSCHNER  
Department Director

STATE OF NEVADA  
DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS  
STATE HISTORIC PRESERVATION OFFICE  
100 N. Stewart Street  
Carson City, Nevada 89701-4285

June 4, 1998

RONALD M. JAMES  
State Historic Preservation Officer

Mr. Conway C. Barlow  
Federal Highway Administration  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015

RE: NEPA Cultural Resources Characterization Plan at the Las Vegas Springs National Register Site for the US 95 Transportation Corridor, Las Vegas Valley, Clark Co.

Dear Mr. Barlow:

The State Historic Preservation Office (SHPO) acknowledges receipt of the "Plan for Geomorphological Characterization, Archaeological Probing and Ethnographic Studies within the Proposed Area of Potential Effect along the US 95 Corridor at the Las Vegas Springs Site." This characterization plan is acceptable, and it minimizes any impacts to the historic property. We are also attaching comments to supplement this plan.

At a meeting on April 21, 1998, between the Federal Highway Administration (FHWA), Nevada Department of Transportation (NDOT), Advisory Council on Historic Preservation (ACHP), Las Vegas Valley Water District (LVVWD), and the SHPO, all parties agreed to pursue emplacement of a programmatic agreement (PA) for the proposed US 95 corridor, including site characterization at the Las Vegas Springs National Register Site. It was also agreed, at this meeting, that this site characterization for NEPA documentation would continue during discussions leading to a PA, with interim FHWA oversight provided by the NDOT, LVVWD, ACHP and SHPO. Of special concern is any ground disturbance from proposed characterization activities at the Las Vegas Springs National Register Site. We realize that some of the work within the historic property boundaries has occurred and some will be on-going during PA preparation. Furthermore, SHPO staff is participating in technical aspects of this project phase to facilitate its completion.

Because of the unusual circumstances associated with this undertaking and the agreement reached at our April 21st meeting, we do not believe that it is necessary to comment on project effect for the subject portion of the undertaking as we are in the process of drafting a PA that encompasses the entire undertaking. Please contact Eugene Hattori at 687.6362 or me at 687.6360, if you have any questions concerning this correspondence.

Sincerely,

Ronald M. James  
State Historic Preservation Officer

cc: Kay Brothers-LVVWD; Jeff Fontaine-NDOT



BOB MILLER  
Governor

JOAN G. KERSCHNER  
Department Director

STATE OF NEVADA  
DEPARTMENT OF MUSEUMS, LIBRARY AND ARCHIVES - 6 '98  
STATE HISTORIC PRESERVATION OFFICE

100 N. Stewart Street  
Carson City, Nevada 89701-4285

May 4, 1998

John T. Price, Administrator  
Nevada Division  
Federal Highway Administration  
705 N. Plaza St., Suite 220  
Carson City, NV 89701-4015

ACT	INFO	NEVADA	INT
	✓	DA	DA
	✓	ACA	
		ADM MGR	
		POE	RONALD M. JAMES
	✓	RW	State Historic Preservation Officer
		P&H	
		AF 1	
		AF 2	
		CA SEC	
		U-C	

Dear Mr. Price:

This letter regards your agency's submission of a report titled A Phase I (Class III) Archeological Survey of 24.5 Miles for the U. S. 95 Transportation Corridor, Las Vegas, Clark County, Nevada, final revision dated October 30, 1997. State Historic Preservation Office (SHPO) staff previously reviewed the report and concurred with your determination that the report met the Secretary of Interior's Standards of Archeology and Historic Preservation, partially based on the consultant's assertion that the entire corridor had been intensively surveyed. Following SHPO staff visits to the Big Springs site, located within the 24.5 mile corridor, and a later meeting between your agency, the Nevada Department of Transportation (NDOT), Advisory Council and the Las Vegas Water District, all parties agree that information within this report was insufficient for making decisions about the Big Springs Archaeological Site, a property listed on the National Register of Historic Places.

As discussed at the April 21, 1998 meeting, the Las Vegas Water District survey report on the Las Vegas Springs Site (Big Springs) contains the information needed, locating archaeological and architectural/historic features. As a result, the report produced by your agency can only be considered complete and meeting the Secretary's Standards with the addition of the Water District's survey report.

I have attached a memorandum that will be added to the FhWA report to alert future readers that they should also consult with the Water District's report. Also, for decision making purposes, the FhWA should also reference this document in future correspondence.

If you have any questions regarding this letter please call me at (702) 687-6361.

Sincerely,

ALICE M. BALDRICA, Deputy  
State Historic Preservation Officer

Bureau of Applied Research in Anthropology  
Anthropology Building, Room 316

THE UNIVERSITY OF  
**ARIZONA.**  
TUCSON ARIZONA

P.O. Box 210030  
Tucson, Arizona 85721-0030  
Phone: (520) 621-6282  
FAX: (520) 621-9608

April 28, 1998

John Hohmann  
Cultural Resource Group  
Louis Berger and Associates  
1500 E. Tropicana Ave, Suite 215  
Las Vegas, NV 89119

Dear John,

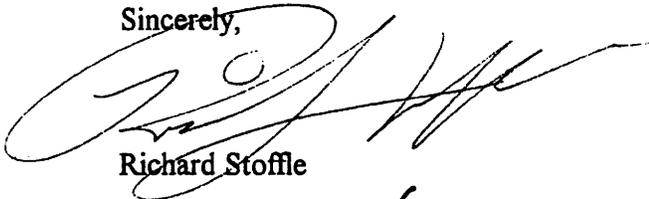
Enclosed please find a copy of the letters we have sent out to the tribes regarding the planned site visits. Although you and I discussed a tentative May date for the site visits, we were awaiting confirmation from the tribes before posting a definitive site visit schedule. I apologize for not sending you copies of these letters earlier.

The first letter, dated April 1, was sent out on April 6 to the Tribal Chairs along with the study design we received from you. Copies were sent to the Cultural Resource Contact of each tribe, whenever applicable. The second and last letter, sent out early this morning, was intended to confirm phone conversations which have occurred in the last week. We have obtained tribal approval and full participation from all involved tribes.

We are adjusting our site visit strategies to the present circumstances and are confident that these adjustments will provide information relevant to determining the significance of the sites and associated resources, assessing potential impacts, and eliciting recommendations for mitigation.

Should you require further information on our plans do not hesitate to contact me.

Sincerely,



Richard Stoffle

cc: Peg Davis ✓  
Spring letter file





BOB MILLER  
Governor

JOAN G. KERSCHNER  
Department Director

STATE OF NEVADA  
DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS  
STATE HISTORIC PRESERVATION OFFICE  
100 N. Stewart Street  
Carson City, Nevada 89701-4285

RONALD M. JAMES  
State Historic Preservation Officer

April 23, 1998

Mr. Conway C. Barlow  
Nevada Division  
Federal Highways Administration  
705 North Plaza Street Suite 220  
Carson City, NV 89701-4015

RE: US 95 Transportation Corridor, Phase II Archaeological Testing Plan for NEPA information at the Las Vegas Springs National Register Site, Las Vegas, Clark Co. (Dated 12/24/97)

Dear Mr. Barlow:

The Nevada State Historic Preservation Office met in Las Vegas, Nevada, on April 21, 1998 with representatives from the Federal Highways Administration (FHWA), Advisory Council on Historic Preservation, Nevada Department of Transportation (NDOT), and the Las Vegas Valley Water District (LVVWD) concerning the proposed testing plan at the Las Vegas Springs National Register site. After a tour of the National Register site and ensuing discussion, it was obvious to all parties that the proposed testing plan would have a major effect on the site. Mr. Jeff Fontaine (NDOT) stated in the meeting following the site tour that the testing plan should be reconsidered. I am in agreement with his sentiments, and, therefore, I am retracting our concurrence with the subject testing plan (SHPO correspondence dated March 2, 1998) because of the sensitivity of the National Register site and the desire of the landowner (LVVWD) to minimize impacts to the historic property. As you know, we reviewed the testing plan at the request of the FHWA, and we have no authority to require or prohibit the proposed NEPA testing.

Alice Baldrice, Deputy State Historic Preservation Officer, is working with representatives from your agency and the other parties on possible remedies to the FHWA's desire to test the National Register site in order to determine archaeological values and yet minimize impacts to the site. We continue to recognize the importance of the project to the transportation needs of the State and also the importance of the Las Vegas Springs National Register site to residents and visitors to the State. Please call me at 702.687.6360, if you have any questions concerning this correspondence.

Sincerely,

Ronald M. James  
State Historic Preservation Officer

cc: Jeff Fontaine - NDOT  
Kay Brothers - LVVWD



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
Nevada Division  
705 N. Plaza St., Suite 220  
Carson City, NV 89701  
April 17, 1998

IN REPLY REFER TO  
HEC-NV

Subject: US 95 Transportation Corridor  
Las Vegas, Nevada

Mr. Alan Stanfill  
Historic Preservation Specialist  
Advisory Council on Historic Preservation  
Wester Office of Planning and Review  
12,136 West Bayaud Avenue, #330  
Lakewood, Colorado 80226

Dear Mr. Stanfill,

We are in receipt of your April 6, 1998 letter requesting information on the US 95 Transportation Corridor Study in Las Vegas, Nevada.

At this time, a Major Investment Study (MIS) has been completed for the US 95 Transportation Corridor. From that MIS, many alternatives were identified as possible solutions for transportation problems in the Las Vegas Valley. One of those identified alternatives is a 200 x 3,920 foot study area, area of project effect (APE), along the northern edge of the 188 acre Las Vegas Springs National Register Site (NRS).

Initially, it was known that the NRS was listed on the National Register of Historic Places. Although the entire Las Vegas Valley Water District (LVVWD) property was included in the listing, the listing was based on surface survey, and limited subsurface testing that focused on an area to the south of our present APE. In the APE study area, very little information was available regarding the existence, extent, or nature of any possible subsurface cultural components. Consequently, we found it necessary to develop this information for the purposes of the EIS analysis of the identified alternative. Additionally, we believe that it would be worthwhile to determine if possible buried cultural components are contributing and/or noncontributing to the NRS vis-a-vis possible 4(f) issues.

In an ideal situation, it would be preferable to not even consider using a portion of a NRS. However, the other available alternatives dictated that including the NRS as a legitimate alternative in the EIS process would be prudent.

To that end, the project consultant met with the Nevada SHPO and discussed what would be an appropriate effort to determine the extent and nature of possible contributing cultural resources within the APE study area. Subsequent to that meeting, the

consultant began a Phase I survey of the alternatives and prepared a proposal for Phase II testing of located sites which included the APE study area on the north edge of the NRS.

Although we would have preferred to conduct a formal Phase I survey prior to Phase II testing, the consultant was refused adequate access to the APE study area. After consideration of this situation, it was decided that a testing plan could be developed based on the generalized information available for the Las Vegas Valley and the APE study area. The intention was to run the time frames for development and review of the testing plan concurrently with the effort/time necessary to gain access to the APE study area.

At approximately this point in the process, the LVVWD employed archaeologist of its own to "oversee" the work being done by our consultant, and began a campaign to thwart data gathering on their property.

Under intense pressure directed at all participants in the process, the initial testing plan moved through various revisions, a historical architectural survey was concluded and a review of Native American concerns was completed.

Ultimately, after equally intense negotiations with the SHPO, the testing plan was revamped to reflect a significant reduction of subsurface testing to only 0.05% of the overall NRS and 0.45% of the 18 acre study area. Along with minimizing the area of subsurface testing, we have also agreed to place each test trench so as not to disturb any historic feature and/or any significant vegetation on the property. In other words, the test trenches will be placed in areas of existing fill, clear dirt or existing gravel roads.

Consequently, given this minimal effort in the north edge of the NRS, and that the APE area may not even contain any subsurface features, and our commitment to avoid all impacts to known surface features, a formal determination of project effect was not considered.

It now appears that you will be part of an on the ground review of the project April 21, 1998. If after that review, you believe that a formal determination of project effect would be appropriate, we will be happy to assemble one for your review.

If you need additional information regarding this project please call me (702/687-5334).

Sincerely yours,

*/s/ C. C. Barlow*

Conway C. Barlow

Environmental Program Manager

Bureau of Applied Research in Anthropology  
Anthropology Building, Room 316

THE UNIVERSITY OF  
**ARIZONA.**  
TUCSON ARIZONA

*Sent w/ Trip Report*  
*4/6/98*

P.O. Box 210030  
Tucson, Arizona 85721-0030  
Phone: (520) 621-6282  
FAX: (520) 621-9608

April 1, 1998

TO: The Chairs of

Colorado River Indian Tribes  
Chemehuevi Indian Tribe  
Las Vegas Indian Tribe  
Pahrump Paiute Tribe  
Moapa Paiute Tribe  
Kaibab Paiute Tribe  
Paiute Indian Tribe of Utah - 5 tribes

FROM: Richard Stoffle  
Nieves Zedeno  
Genevieve Dewey

University of Arizona

RE: Southern Paiute Ethnographic Studies of Big Springs Complex,  
Highway 95 Project Corridor, Las Vegas, Nevada

Greetings:

This is the second letter you have received regarding this project. The initial announcement came some months ago from Dr. John Hohmann, Cultural Resource Group of Louis Berger & Associates. The University of Arizona has now been contracted to facilitate elder interviews at the Big Springs Complex and associated locations in Las Vegas, Nevada. Big Springs is the current name for what was historically one of the major springs in the Las Vegas valley.

The purpose of this letter is to inform each tribal government of the project schedule, to provide specific information about the project itself, and to begin to sign up tribal elders for visits to the site.

This study design was developed with the help of three American Indian people and staff at the University of Arizona (please see Appendix A). Basically, the study involves bringing elders from each of the seven tribes who have traditional ties to the Las Vegas valley in general and this spring site in particular. The study contributes to an Environmental Impact Assessment which is being used to evaluate the impacts to the site that potentially would derive from expanding Highway 95.







BOB MILLER  
Governor

STATE OF NEVADA  
DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS  
STATE HISTORIC PRESERVATION OFFICE  
100 N. Stewart Street  
Carson City, Nevada 89701-4285

JOAN G. KERSCHNER  
Department Director

March 2, 1998

RONALD M. JAMES  
State Historic Preservation Officer

Mr. Conway C. Barlow  
Nevada Division  
Federal Highways Administration  
705 North Plaza Street Suite 220  
Carson City, NV 89701-4015

RE: US 95 Transportation Corridor, Phase II Archaeological Testing Plan for NEPA information at the Las Vegas Springs National Register Site, Las Vegas, Clark Co. (Dated 12/24/97)

Dear Mr. Barlow:

The Nevada State Historic Preservation Office (SHPO) received the third draft of the subject testing plan on February 23, 1998. In meetings between the Federal Highway Administration (FHWA), Nevada Department of Transportation and SHPO on December 2, 1997 and February 24, 1998, the three parties agreed to certain stipulations regarding proposed archaeological testing at the Las Vegas Springs National Register site to obtain information for National Environmental Policy Act documentation. To recap the applicable points of agreement and understanding contained in the FHWA's submissions or discussed at our meetings:

The historic architecture and structures report was received and accepted into the statewide inventory;

A letter report documenting Native American consultation was received, and additional information concerning consultation is contained in the testing plan;

The total amount of hand excavations will not exceed a maximum of 3m<sup>2</sup> (m=meter) or 25% of the total area of any feature, area or surface, whichever is the smaller;

The area of potential effect will be divided into 60m<sup>2</sup> grid units with a total of no more than 20 continuous or non-continuous linear meters X 1m wide of backhoe trenches per grid unit;

Project archaeologists will ensure that significant architectural, structural, and engineering features identified in the historic architecture and structures report are avoided by project activities;

A project geomorphologist will assist in trench placement and be present during back-hoe excavations.

Conway Barlow  
March 2, 1998  
Page Two

The stipulations are met in the latest testing plan. Please note, as per our discussions, no additional excavations beyond the initial, limited back-hoe trenching and hand-dug units (3m<sup>2</sup>/25% max.) is authorized. We have no further comment on this plan.

Please contact me at 702.687.6360 or Eugene Hattori at 702.687.6362, if you have questions .

Sincerely,

A handwritten signature in black ink, appearing to read "Ron James", written in a cursive style.

Ronald M. James  
State Historic Preservation Officer

cc: Kay Brothers - LVVWD



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
Nevada Division  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015  
February 23, 1998

IN REPLY REFER TO  
HEC-NV

Subject: US 95 Transportation Corridor  
Las Vegas Valley, Nevada

Mr. Ronald M. James  
State Historic Preservation Officer  
Historic Preservation Office  
100 S. Stewart Street, Capitol Complex  
Carson City, Nevada 89710

Dear Mr. James:

Enclosed, please find the revised research design and scope of work for the US 95 corridor project in Las Vegas. Also enclosed is a report on the Native American review of the purposed testing at Big Springs.

The report on architectural history was previously reviewed and accepted by your staff and is on file in your office.

Additionally, the Federal Highway Administration has agreed to specific procedures to minimize impacts during testing at Big Springs. We understand the importance of these procedures and are taking measures to ensure that this project will result in no significant impacts to Big Springs. As agreed, we will ensure that:

1. No significant historic features, or objects, will be impacted.
2. No significant vegetation or animals will be impacted.

We believe that the concerns raised in your previous letter have been satisfactorily addressed in this revised research design.

Please review this revised research design. If you find the design satisfactory, please communicate that to us and we will implement the proposed program as soon as possible.

If you need additional information regarding this project please call me 687-5334.

Sincerely yours,

*/s/ C. C. Barlow*  
Conway C. Barlow  
Environmental Program Manager





STATE OF NEVADA  
DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS  
STATE HISTORIC PRESERVATION OFFICE  
100 N. Stewart Street  
Carson City, Nevada 89701-4285

BOB MILLER  
Governor

JOAN G. KERSCHNER  
Department Director

RONALD M. JAMES  
State Historic Preservation Officer

February 3, 1998

Mr. Conway C. Barlow  
Environmental Program Manager  
Federal Highway Administration  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015

RE: US-95 Transportation Corridor, Big Springs Survey.

Dear Mr. Barlow:

The Nevada State Historic Preservation Office (SHPO) has reviewed your submission for the Big Springs component of the US-95 Transportation Corridor road widening. This architectural survey was reviewed in accordance with the Secretary of the Interior's Standards for Survey and Inventory as well as eligibility criteria for listing in the National Register of Historic Places.

We concur with the project consultants and FHWA's determination that the following properties:

1. Clark St property - Inventory No. 1.1
2. Pipeline PL4 and cleanouts - Inventory No. 8.1
3. Earthen dam and pond - Inventory No. 11.1
4. Little Spring Springhouse - Inventory No. 16.1
5. Well No. 3 - Inventory No. 18.1
6. Concrete Reservoir - Inventory No. 1.2
7. Creek Ford and Culvert - Inventory No. 3.1
8. Well No. One - Inventory No. 4.1
9. Siltation Basis No. One - Inventory No. 4.2
10. Guard Shack - Inventory No. 4.3
11. Earlier House - Inventory No. 5.1
12. Wooden Bridge - Inventory No. 5.2
13. Later House - Inventory No. 6.1
14. Chicken House - Inventory No. 10.1
15. Shed - Inventory No. 10.2
16. Foot bridge - Inventory No. 12.1
17. Middle Spring Springhouse - Inventory No. 15.1
18. Manhole and pipeline PL5 - Inventory No. 15.2

19. Well No. Five and Derrick - Inventory 17.1
20. Dam and Culverts - Inventory No. 26.1

meet the eligibility criteria for inclusion in the National Register of Historic Places. The following two properties:

1. Perimeter barbed wire fence - Inventory No. 11.2
2. Internal barbed wire fence - Inventory No. 11.3

do not meet National Register eligibility criteria.

We would also like to take the this opportunity to compliment the consultants in the preparation and submission of a excellent report.

Please contact Rebecca Ossa at 702/687-3441 if you have any questions concerning this correspondence.

Sincerely,



Alice M. Baldrice, Deputy  
State Historic Preservation Officer

AMB/SB-M



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
Nevada Division  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015  
January 27, 1998

IN REPLY REFER TO  
HEC-NV

Subject: US-95 Transportation Corridor  
Las Vegas Valley, Nevada

Mr. Scott Brooks-Miller  
Architectural Historian  
Historic Preservation Office  
100 S. Stewart Street, Capitol Complex  
Carson City, Nevada 89710

Dear Mr. Brooks-Miller:

The Federal Highway Administration (FHWA) in cooperation with the Nevada Department of Transportation (NDOT) plans to use a combination of federal and state funds to make numerous improvements to the US 95 corridor and associated arterials in the Las Vegas Valley, Nevada.

To comply with applicable laws and regulations for a Federal undertaking, the NDOT has employed Louis Berger & Associates, Inc. to complete the environmental review process for the project. As a part of that process, a phased historical architectural survey has been undertaken. The first phase of that survey (enclosed) covers the Big Springs complex to the south of existing US 95, and the second phase will cover the various corridor alternatives beyond the Big Springs complex. The survey of the Big Springs complex covered an area of project effect which includes a 200 foot wide corridor which could be directly affected by construction. Additionally, the area beyond the 200 foot corridor was also surveyed to take into account potential viewshed impacts.

Based on the enclosed survey report and consultation with your office, the FHWA has determined that 20 of the 22 evaluated historic features are eligible to the National Register of Historic Places as contributing to the existing historic district, with 5 of those features being eligible as individual features. Further, the FHWA considers the existing historic landscape as a contributing feature of the existing historic district.

As you know, the FHWA/NDOT is engaged in preparing an Environmental Impact Study (EIS) for the overall US-95 Transportation Corridor, and this architectural survey is only one element of that process. Consequently, the determination of all impacts and effects will not be known until the Draft EIS is complete. However, we recognize that the historic district at the Big Springs complex is a sensitive area and that any impacts to this area could potentially be adverse.

At this time, the FHWA is requesting that you review our determinations of eligibility and the supporting documentation. If they are satisfactory, please concur with them.

It is the FHWA's intention that once these determinations are accepted, that a final report including original photos will be submitted with the testing proposal.

If you need additional information regarding this project please call me (702)687-5334.

Sincerely yours,

*/s/ C. C. Barlow*

Conway C. Barlow  
Environmental Program Manager

cc: H. Turner

SHPO-7.LTR  
CCBarlow



STATE OF NEVADA  
DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS  
STATE HISTORIC PRESERVATION OFFICE  
100 N. Stewart Street  
Carson City, Nevada 89701-4285

BOB MILLER  
Governor

JOAN G. KERSCHNER  
Department Director

December 8, 1997

RONALD M. JAMES  
State Historic Preservation Officer

Mr. Conway C. Barlow  
Nevada Division  
Federal Highways Administration  
705 North Plaza Street Suite 220  
Carson City, NV 89701-4015

RE: US 95 Transportation Corridor, Phase II Archaeological Testing at the Las Vegas Springs National Register Site, Las Vegas Valley, Clark Co.

Dear Mr. Barlow:

The Nevada State Historic Preservation Office (SHPO) reviewed your follow-up letter dated December 8, 1997 regarding the proposed archaeological testing within the boundaries of the Las Vegas Springs National Register site from our meeting on December 2, 1997. Based on our discussions from that meeting and the information supplied in your letter, the FHWA and the SHPO agree on the following three major points from our November 24th correspondence:

- 1). The FHWA will submit the inventory of historic architectural and engineering features along with the next draft of the Phase II research design;
- 2). The FHWA will submit a letter report from the consultant's ethnographer concerning Native American consultation along with the next draft of the Phase II research design;
- 3). We agree that the total amount of hand excavations will not exceed a maximum of 3m<sup>2</sup> or 25% of the total area of any feature, area or surface, whichever is the smaller. These sample sizes will allow archaeologists an opportunity to sample the site while preserving material for future data recovery efforts or for long-term conservation.

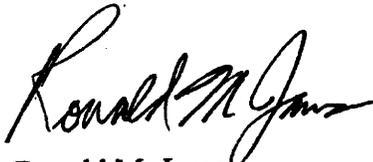
These three outstanding items were of principal concern in our previous reviews of the plan and will be satisfactorily addressed in the next draft.

We also agree with the following testing plan amendment proposed by NDOT in our December 2, 1997 meeting: The trenching plan proposed in the October 31, 1997, Phase II testing plan will be redesigned to further minimize impacts to the historic property. The new testing plan will consist of blocking the area of potential effect into 60m<sup>2</sup> grid units and placing a total of no more than 20 continuous or non-continuous linear meters of trench per grid unit. A project geomorphologist will assist in trench placement and be present during back-hoe excavations.

Conway C. Barlow  
December 8, 1997  
Page Two

We appreciate FHWA's cooperation with our agency, and we will expedite review of the next draft. Please contact me at 687.6360 or Eugene Hattori at 687.6362, if you have questions concerning this correspondence. Dr. Hattori is the technical lead for this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Ronald M. James". The signature is written in a cursive style with a large initial "R" and a long, sweeping underline.

Ronald M. James  
State Historic Preservation Officer



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
Nevada Division  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015  
September 30, 1997

IN REPLY REFER TO  
HEC-NV

Subject: US 95 Transportation Corridor  
Las Vegas Valley, Nevada

Mr. Ronald M. James  
State Historic Preservation Officer  
Historic Preservation Office  
100 S. Stewart Street, Capitol Complex  
Carson City, Nevada 89710

Dear Mr. James:

The Federal Highway Administration (FHWA) in cooperation with the Nevada Department of Transportation (NDOT) plans to use a combination of federal and state funds to make numerous improvements to the US 95 corridor and associated arterials in the Las Vegas Valley, Nevada.

To comply with the various laws and regulations that are applicable to a Federal Undertaking, the NDOT has employed Louis Berger & Associates, Inc. to complete the environmental review process for the project. As a part of that process, a cultural resource site (CR) survey was completed by the consultant for the proposed project area. During that survey, nine historical sites were located in the project area. That CR survey report is enclosed for your review.

Based on the results of the CR survey, the FHWA determined that additional data was necessary to ascertain the extent and significance of the located sites. To that end, a research design for testing and evaluating those sites has been prepared for your review (enclosed).

Please review the enclosed research design. If you find the design satisfactory, please communicate that to us and we will implement the proposed program as soon as possible.

If you need additional information regarding this project please call me (702/687-5334).

Sincerely yours,

*/s/ C. C. Barlow*

Conway C. Barlow  
Environmental Program Manager



## **APPENDIX B**

### **ADDITIONAL CORRESPONDENCE**





KENNY C. GUINN  
Governor

STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
1263 S. Stewart Street  
Carson City, Nevada 89712

MAR 31 1999

March 26, 1999

TOM STEPHENS, P.E., Director

In Reply Refer to:

Mr. Robert Horn  
Director of Office Programming  
Planning and Development  
Federal Transit Administration  
201 Mission Street, Suite 2210  
San Francisco, CA 94105-1839

**RE: US-95 ENVIRONMENTAL IMPACT STATEMENT, LAS VEGAS, NEVADA**

Dear Mr. Horn:

The Federal Highway Administration (FHWA) in cooperation with the Nevada Department of Transportation is preparing an environmental impact statement for improvements to the transportation system serving the Northwest Region of Las Vegas. Since the project includes enhanced bus service which will be administered by the Clark County Regional Transportation Commission under the auspices of the Federal Transit Administration, we are requesting you to be a cooperating agency.

The proposed project is comprised of various transportation improvements which provide a coherent transportation improvement strategy to meet the short, intermediate and long-term transportation demands of the Northwest Region of Las Vegas (project area). These improvement projects include; improvements to US-95, new arterial street connections, arterial street improvements, transit system improvements and transportation demand management measures. The proposed project includes the following transportation improvement projects which have been grouped into five elements as follows:

**US-95 IMPROVEMENTS**

Install a Freeway Management System on US-95  
Widen US-95 to 10 lanes from Rainbow to I-15  
Widen US-95 to six lanes from Craig to Rainbow  
Widen Summerlin Parkway to six lanes from Rampart to Rainbow  
Construct High Occupancy Vehicle Lanes on US-95 and the Summerlin Parkway

**NEW ARTERIAL STREET CONNECTIONS**

Martin Luther King to Industrial Road Connector including widening Industrial to six lanes: Sahara to Wyoming  
Rancho to Alta Connector including widening Alta to 6-lanes:  
Rancho to Martin Luther King

Mr. Robert Horn  
Federal Transit Administration  
March 26, 1999  
Page 2

#### **ARTERIAL STREET IMPROVEMENTS**

Widen Desert Inn Road from four lanes to six lanes:  
Durango to Jones  
Widen Arville Street to four lanes: Charleston to Sahara  
Widen Martin Luther King to six lanes: Craig to Charleston  
Widen Valley View to six lanes, Sahara to Desert Inn  
Widen Carey Avenue to four lanes: Rancho to Clayton  
Widen Durango Drive to six lanes: Desert Inn to Edna  
Widen Rancho to six lanes: Craig south to US-95  
Widen Tenaya Way to four lanes: Westcliff to Smoke Ranch  
Widen Torrey Pines to four lanes: Washington to Craig

#### **TRANSIT SYSTEM IMPROVEMENTS**

Adopt Enhanced CAT Bus Service  
Develop Park-and-Ride lots

#### **TRANSPORTATION DEMAND MANAGEMENT MEASURES**

Adopt expanded rideshare program

The project area includes portions of the City of Las Vegas, the City of North Las Vegas, and unincorporated Clark County north of Desert Inn Road and west of I-15 and Martin Luther King Boulevard.

The proposed project is intended to improve transportation in the Northwest Region of Las Vegas by increasing regional roadway capacity, improving regional level of service, improving the safety and operational efficiency of the transportation system, and increasing the mobility options available to the traveling public. The project need is based upon the projected limitations and inadequacies of the existing and proposed arterial street network to handle projected traffic growth through the year 2020.

Two build alternatives are under consideration and include alternative alignments for the widening of US-95. All other proposed project elements, including transit system improvements, are common to both build alternatives.

Potential environmental impacts include residential and business relocations, noise, air quality, Section 4(f) resources, cultural resources and biological resources impacts primarily associated with the proposed widening of US-95.

Your agency's involvement should entail those areas under your jurisdiction (transit system improvements) and no direct writing or analysis will be necessary for the document's preparation. The following are activities we will take to maximize interagency cooperation.

1. Invite you to coordination meetings.

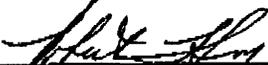
Mr. Robert Horn  
Federal Transit Administration  
March 26, 1999  
Page 3

2. Provide you with project information, including study results.
3. Encourage your agency to review the DEIS and express your views on subjects within your jurisdiction or expertise; and
4. Include information in the project environmental documents that cooperating agencies need to discharge their National Environmental Policy Act (NEPA) responsibilities and any other requirements regarding jurisdictional approvals, permits, licenses, and/or clearances.

You have the right to expect that the EIS will enable you to discharge your jurisdictional responsibilities. Likewise you have the obligation to tell us if, at any point in the process, your needs are not being met. We expect that at the end of the process the EIS will satisfy your NEPA requirements including those related to project alternatives, environmental consequences and mitigation.

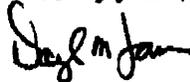
On behalf of the Federal Highway Administration, we look forward to your response to this request and your role as a cooperating agency on this project. If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of this EIS, please contact Conway Barlow, USDOT, Federal Highway Administration, Nevada Division, 775-687-5334 (office), 775-687-3803 (FAX). To speed your response, please sign below and return this letter by FAX to Conway Barlow at the FAX number shown above.

- Yes, the Federal Transit Administration will be a cooperating agency for this project.

  
\_\_\_\_\_  
Signature

ROBERT HORN  
\_\_\_\_\_  
Printed Name

Sincerely yours,



Daryl N. James, P.E., Chief  
Environmental Services Division





## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
NEVADA FISH AND WILDLIFE OFFICE  
1340 FINANCIAL BOULEVARD, SUITE 234  
RENO, NEVADA 89502-7147

November 10, 1998  
File No. 1-5-99-TA-018

Roger J. Patton, P.E.  
Louis Berger and Associates  
1500 East Tropicana Avenue, Suite 215  
Las Vegas, Nevada 89119

Dear Mr. Patton:

Subject: Comments on Draft Technical Study Report for U.S. Highway 95 Project,  
Las Vegas, Nevada

The U.S. Fish and Wildlife Service (Service) received a copy of the draft *US 95 Environmental Impact Statement Section 4(f) Evaluation, Vegetation and Wildlife Technical Study*. The Service reviewed the document for potential impacts to vegetation and wildlife that may result from construction of the proposed roadway project in the Las Vegas Valley. Following review of the draft document, the Service is concerned with potential impacts to the Las Vegas bearpoppy (*Arctomecon californica*) and the desert pocket mouse (*Chaetodipus pencillatus sobrinus*) that may result from construction proposed under Alternative B.

A draft memorandum of agreement (MOA) has been prepared for the Las Vegas bearpoppy among Federal land management agencies, the Nevada Division of Forestry, the Nevada Department of Transportation, Clark County, the Las Vegas Valley Water District (LVVWD), The Nature Conservancy, and the Service. The primary purpose of this draft MOA is to provide management direction that will conserve the species and lead to reduction or removal of threats. As an obligation in the MOA, the population of Las Vegas bearpoppy that occurs on the LVVWD North Well Field is specifically identified for conservation and protection. The Service considers the North Well Field population as one of three populations in the Las Vegas Valley that have unique genetic material considered essential for the long-term survival of the species. Irreversible adverse impacts to this important population of Las Vegas bearpoppy may become the basis for the need to list the species under the Endangered Species Act of 1973, as amended (ESA).

Roger P. Patton, P.E.

File No. 1-5-99-TA-018

As stated in your draft document, the desert pocket mouse population on the LVVWD North Well Field may be reduced to a level that is not sufficiently large enough to maintain a viable population over the long-term. The North Well Field contains the last population of the mouse in the Las Vegas Valley. The desert pocket mouse is known to occur in Clark County along a narrow band on the first lens of soil above the active drainage of the Virgin River and potentially along the Muddy River. Except for protection provided by the LVVWD on the North Well Field, no protection exists for the remaining population fragments. The loss of this population of desert pocket mouse may result in the need to list the species under the ESA.

In recognition of the importance of habitat and populations on the North Well Field for the Las Vegas bearpoppy and desert pocket mouse, the Service believes that substantial impacts at this site cannot be adequately mitigated.

We appreciate the opportunity to review the draft technical report and look forward to review of the draft environmental impact statement for the project. If you have questions, please contact Janet Bair, Assistant Field Supervisor, in our Las Vegas Office, at (702) 646-3499.

Sincerely,



*FOR* Robert D. Williams  
Field Supervisor

cc:

Director, Science and Stewardship, The Nature Conservancy, Las Vegas, Nevada  
Supervisor, Resources Department, Southern Nevada Water Authority, Las Vegas, Nevada  
(Attn: Janet Monaco)

Desert Conservation Plan Administrator, Department of Comprehensive Planning, Clark County,  
Nevada

Resource Manager, Nevada Division of Forestry, Las Vegas, Nevada

Regional Manager, Nevada Division of Wildlife, Las Vegas, Nevada

California/Nevada Operations Manager, Fish and Wildlife Service, Sacramento, California



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

RENO FISH AND WILDLIFE OFFICE  
4600 KIETZKE LANE, SUITE 125C  
RENO, NEVADA 89502-5055

December 15, 1997  
File No. 1-5-98-026

Ms. Karen Yori  
Louis Berger & Associates, Inc.  
1500 East Tropicana, Suite 215  
Las Vegas, Nevada 89119

Dear Ms. Yori:

**Subject: Species List for the Proposed US 95 Transportation Corridor**

In response to your letter dated November 7, 1997, we have enclosed an updated list of endangered and threatened species that may be present within the vicinity of or be affected by the proposed US 95 Transportation Corridor (Enclosure A). This list fulfills the requirement of the Fish and Wildlife Service to provide information on listed species pursuant to section 7(c) of the Endangered Species Act of 1973, as amended.

Included in Enclosure A is a list of other species of concern to the Service which may occur within the project area. The Service has used information from State and Federal agencies and private sources to assess the conservation needs of these species. Determination of the conservation status of these taxa will require further biological research and field study. By considering these species and by exploring management alternatives early in the planning process it may be possible to provide long-term conservation benefits for these species and avoid future conflicts that could otherwise develop. We recommend that you contact the Nevada Natural Heritage Program [1550 East College Parkway, Suite 145, Carson City, Nevada 89710, (702) 687-4245] and the appropriate regional office of the Nevada Division of Wildlife, as well as other local, State, and Federal agencies for distribution data and information on the conservation needs of these and other species of concern.

Ms. Karen Yori

File No. 1-5-98-SP-026

If wetlands or streams are in the vicinity of the proposed project, we ask that you be aware of potential impacts the project may have on these areas. Discharge of dredged or fill material into wetlands or waters of the United States is regulated by the Army Corps of Engineers pursuant to section 404 of the Clean Water Act. We recommend you contact the Regulatory Section of the Army Corps of Engineers' Reno Field Office [300 Booth Street, Room 2120, Reno, Nevada 89509, (702) 784-5304] regarding the possible need for a permit.

Should the proposed project necessitate the removal of vegetation, we recommend either that vegetation removal be done outside the avian breeding season or that surveys be conducted prior to vegetation removal to ensure that bird nests are not harmed or that exploration activities do not result in nest failures. Such destruction and/or harassment may be a violation of the Federal Migratory Bird Treaty Act.

Please reference File No. 1-5-98-SP-026 in future correspondence concerning this project or species list. If you have questions or require further information, please contact Service biologist Chris Mullen at (702) 784-5227.

Sincerely,



RS Robert D. Williams  
Field Supervisor

## ENCLOSURE A

### ENDANGERED, THREATENED, AND OTHER SPECIES OF CONCERN THAT MAY OCCUR IN THE VICINITY OF OR BE AFFECTED BY THE PROPOSED US 95 TRANSPORTATION CORRIDOR, CLARK COUNTY, NEVADA

(File Number: 1-5-98-SP-026; December 12, 1997)

#### ENDANGERED (E) OR THREATENED (T) SPECIES

##### **Birds**

(E) Southwestern willow flycatcher      *Empidonax traillii extimus*  
(E) American peregrine falcon      *Falco peregrinus anatum*

##### **Reptile**

(T) Desert tortoise      *Gopherus agassizii*

#### OTHER SPECIES OF CONCERN

##### **Mammals**

Spotted bat      *Euderma maculatum*  
Greater western mastiff-bat      *Eumops perotis californicus*  
Allen's big-eared bat      *Idionycteris phyllotis*  
California leaf-nosed bat      *Macrotus californicus*  
Small-footed myotis      *Myotis ciliolabrum*  
Long-eared myotis      *Myotis evotis*  
Fringed myotis      *Myotis thysanodes*  
Long-legged myotis      *Myotis volans*  
Yuma myotis      *Myotis yumanensis*  
Big free-tailed bat      *Nyctinomops macrotis*  
Pale Townsend's big-eared bat      *Plecotus townsendii pallescens*

##### **Bird**

Western burrowing owl      *Athene cunicularia hypugea*

##### **Reptiles**

Banded Gila monster      *Heloderma suspectum cinctum*  
Chuckwalla      *Sauromalus obesus*

##### **Plants**

Las Vegas bearpoppy      *Arctomecon californica*  
White bearpoppy      *Arctomecon merriamii*  
Alkali mariposa lily      *Calochortus striatus*  
Catseye      *Cryptantha insolita*  
Yellow twotone beardtongue      *Penstemon bicolor ssp. bicolor*



SENSITIVE PLANT AND ANIMAL SPECIES RECORDED ON OR NEAR  
THE US 95 CORRIDOR PROJECT AREA  
Compiled by the Nevada Natural Heritage Program  
28 January 1997

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	NNMPS STATUS	PREC	TOWNSHIP RANGE	SECTION	LAT	LONG	LAST OBSERVED
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	05	361422N	1151019W	1980-03-25
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S061E	34	361523N	1150833W	1993-11
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	10	361307N	1150835W	1969-04-25
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S061E	22, 27	361645N	1150822W	1994-04-19
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	31	361023W	1151123W	1994
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	05	361357N	1151049W	1989-09-07
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S061E	33-34	361514N	1150927W	1994-04-20
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	7-8, 17-18	361252N	1151051W	1994-04-20
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S061E	32-33	361523N	1151006W	1993-12
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	2	360850N	1150705W	1938-05-08
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S060E	23	361140N	1151332W	1995-04-15
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	M	020S061E	09	361344N	1150942W	1990-04-26
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	08	361336N	1151051W	1994-04-20
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S061E	15	361818N	1150853W	1993-11
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	32	361000N	1151037W	1994-04-21
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S060E	14	361223N	1151330W	1994-04-20
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S061E	07	361908N	1151143W	1994-04-21
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S060E	25	361613N	1151228W	1993-12
						019S061E	30			
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	4, 9	361352N	1150920W	1994-04-19
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S061E	8	361842N	1151037W	1994-04-21
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	31	360947N	1151118W	1994
Arctomecon merriamii	WHITE BEARPOPPY	<C2		W	S	020S060E	36	360943N	1151246W	1980-04-10
Arctomecon merriamii	WHITE BEARPOPPY	<C2		W	M	020S060E	04	361449N	1151548W	1980-05-06
Arctomecon merriamii	WHITE BEARPOPPY	<C2		W	S	020S060E	14	361223N	1151330W	1993-04-03
Calochortus striatus	ALKALI MARIPOSA LILY	<C2		W	G	020S061E	30	361030N	1151117W	1905-04-29
Cryptantha insolita	UNUSUAL CATSEYE	<C2	CE	PE	G	020S061E	33	361010N	1150941W	1905-05-04
Cryptantha insolita	UNUSUAL CATSEYE	<C2	CE	PE	G	020S061E	24	361157N	1150643W	1942-05-01
Oporornis formosus	KENTUCKY WARBLER		YES	NA	M	019S060E	22	361658N	1151452W	1989-05-20
Phacelia parishii	PARISH PHACELIA	<C2		D	M	020S061E	18	361303N	1151124W	1979-04-25
Rana fisheri	LAS VEGAS LEOPARD FROG	3A			S	019S060E	04	361932N	1151557W	1942-01
Rhinichthys deaconi	LAS VEGAS DACE				S	020S061E	29	361045N	1151105W	1940-07-30
Xyrauchen texanus	RAZORBACK SUCKER	LE	YES	N/A	S	019S060E	04	361923N	1151602W	1995

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Precision, or radius of uncertainty around latitude/longitude coordinates:

- S = Seconds: within a three-second radius.
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- U = Unmappable.

**STATE STATUS:**

- Fauna: State protection under NRS 501(Yes /No)
- Flora: State protection under NRS 527
- CE: Critically endangered
- CY: Cactus and Yucca Law
- #: Recommended for critically endangered, pending formal listing

**NNMPS STATUS:**

Northern Nevada Native Plant Society Sensitive Species List:

- PE - Possibly extinct
- W - Watch
- D - Deleted
- E - Endangered
- T - Threatened

**FEDERAL STATUS:**

The standard abbreviations for federal endangerment status as published in the Federal Register by the USFWS, Office of Endangered Species. The status for candidates and their meanings are discussed in each Federal Register notice. The following are the standard USFWS abbreviations that pertain to the project area.

- LE =Listed endangered
- <C2 =Former candidate, now Species of Concern
- 3A =Former candidate, rejected because presumed extinct



PETER G. MORROS  
Director

STATE OF NEVADA  
BOB MILLER  
Governor

L. H. DODGION  
Administrator



(702) 486-2850

FAX (702) 486-2863

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES  
**DIVISION OF ENVIRONMENTAL PROTECTION**

(Las Vegas Office)

555 E. Washington, Suite 4300

Las Vegas, Nevada 89101-1049

January 21, 1999



Mr. Roger Patton  
Louis Berger & Associates, Inc.  
1500 E. Tropicana Ave., Suite 215  
Las Vegas, Nevada 89119

RE: US-95 Draft EIS/Section 4(f) Evaluation

Dear Mr. Patton:

The Nevada Division of Environmental Protection - Bureau of Corrective Actions (NDEP-BCA) has reviewed the December 1998 DRAFT "US-95 Environmental Impact Statement Section 4(f) Evaluation" Soils/Geology/Water Resources and Hazardous Waste Technical Studies. The following comments focus on known contamination sites which are under the purview of NDEP-BCA. These include leaking underground storage tank facilities and other soil and groundwater contamination sites subject to the corrective action requirements of Nevada Administrative Code chapters 445A and 459, and the federal Resource Conservation and Recovery Act (Public Law 94-580).

Of particular concern to NDEP-BCA are contamination sites listed in the Hazardous Waste Technical Study. The document indicates that some portions of these properties will be acquired by the Nevada Department of Transportation (NDOT). (Nine sites are designated for partial or total acquisition.) As each acquisition occurs, NDOT will become the responsible party (unless indemnified by the prior owner) for corrective action under NDEP purview.

Also, non-acquired sites may be of concern where offsite plumes of contamination are encountered by road and utility workers. During excavation activities in such areas, OSHA guidelines for volatile organic compounds and other substances will be important.

The Soils/Geology/Water Resources Technical Study describes various environmental effects typical of roadway projects, such as surface water and groundwater impacts from stormwater runoff, dewatering activities, and water application for dust control; increased nonpoint source pollution and reduced groundwater recharge due to an increase in paved area; and accidental spills of petroleum products and other substances. The document states that accidental spills will be cleaned up to the maximum extent practicable immediately prior to any discharge of residual material to storm drains, presumably during both construction and operation of the roadways. NDEP notes that the responsible party for such cleanups is not specified, and requests a central point of contact for environmental matters during this US-95 project.



SENSITIVE PLANT AND ANIMAL SPECIES RECORDED ON OR NEAR  
THE US 95 CORRIDOR PROJECT AREA  
Compiled by the Nevada Natural Heritage Program  
28 January 1997

SCIENTIFIC NAME	COMMON NAME	FEDERAL	STATE	NNMPS	TOWNSHIP		LAT	LONG	LAST OBSERVED	
		STATUS	STATUS	STATUS	PREC	RANGE				SECTION
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	05	361422N	1151019W	1980-03-25
Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	019S061E	34	361523N	1150833W	1993-11
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Arctomecon californica	CALIFORNIA BEARPOPPY	<C2	CE	T	S	020S061E	4,9	361352N	1150920W	1994-04-19
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# **APPENDIX C**

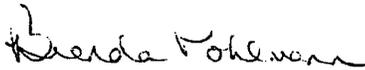
## **CITY OF LAS VEGAS FIVE YEAR CAPITAL IMPROVEMENT PLAN PROJECTS 1999 - 2003**

Mr. Roger Patton  
RE: US-95 EIS - Comments on 12/98 Draft  
January 21, 1999  
Page 2 of 2

Regarding the two proposed alternatives for highway widening between Valley View Boulevard and Rancho Drive, from the standpoint of resource conservation NDEP-BCA recommends Alternative "A". (Alternative "B" would "take" three drinking water production wells and the Bonanza Pumping Station, requiring replacement by as many as four new wells, and would make four additional production wells vulnerable to project-related nonpoint source impacts. NDEP notes that alternative "B" would also take 14 acres of the Big Springs Archeological District.)

If you have any questions, please do not hesitate to call me at 702/486-2857.

Sincerely,



Brenda Pohlmann  
Bureau of Corrective Actions

BLP:ar

cc: Doug Zimmerman, Bureau of Corrective Actions, NDEP, Carson City, NV

## PROTECTIVE SERVICES

Fiscal Year	Priority	Project Title	Estimated Cost
1999	1	Traffic Signals	2,853,122
	2	School Flashers	60,000
	3	Street Lighting Upgrade	79,203
	4	Neighborhood Traffic Control Measures	306,545
	5	Opticom Upgrade	85,747
	6	Non-Signal Intersection Improvements	150,000
	7	Video Detection System	50,000
	8	Hazard Elimination Improvement Program	350,000
	9	Pedestrian Push Button Retrofit	88,832
	10	Traffic Improvement Program	640,000
	11	Summerlin Traffic Signals	536,000
<b>Subtotal Fiscal Year 1999</b>			<b>5,199,449</b>
2000	1	Traffic Signals	2,983,167
	2	School Flashers	60,000
	3	Street Lighting Upgrade	533,797
	4	Neighborhood Traffic Control Measures	500,000
	5	Opticom Upgrade	35,000
	6	Non-Signal Intersection Improvements	150,000
	7	Video Detection System	50,000
	8	Hazard Elimination Improvement Program	150,000
	9	Pedestrian Push Button Retrofit	211,168
	10	Traffic Improvement Program	640,000
	11	Street Sign Upgrade	486,977
	12	Pavement Markings	60,000
<b>Subtotal Fiscal Year 2000</b>			<b>5,860,109</b>
2001	1	Traffic Signals	1,600,000
	2	School Flashers	60,000
	3	Street Lighting Upgrade	405,000
	4	Neighborhood Traffic Control Measures	500,000
	5	Non-Signal Intersection Improvements	150,000
	6	Video Detection System	50,000
	7	Hazard Elimination Improvement Program	150,000
	8	Traffic Improvement Program	640,000
	9	Street Sign Upgrade	350,000
	10	Pavement Markings	60,000
<b>Subtotal Fiscal Year 2001</b>			<b>3,965,000</b>



## PAVED STREETS

Fiscal Year	Priority	Project Title	Estimated Cost
1999	1	Pavement Management Program	10,970,474
	2	Pavement Continuity Program	575,000
	3	Summerlin Phase 2	9,200,000
	4	Mojave Road - Owens to Stewart	3,873,000
	5	Jones Boulevard - Centennial to Rancho	3,187,000
	6	Craig Road - Buffalo to US 95	2,571,000
	7	Durango Drive - Alexander to Cheyenne	2,848,000
	8	Durango Drive - Alexander to US 95	2,024,000
	9	Rancho/Sahara Intersection	2,850,000
	10	Valley View Boulevard - Desert Inn to Sahara	1,700,000
	11	Washington Ave. - D Street to Martin Luther King	3,527,000
	12	Summerlin Pkwy. - Town Center to West Beltway	4,000,000
	13	Alta Drive - Rancho to Union Pacific Railroad	4,862,000
	14	Buffalo Drive - Cheyenne to Lone Mountain	654,000
	15	Westcliff Drive - Cimarron to Rainbow	2,513,000
	16	Harris Avenue - Lilly to Paniflow	289,000
	17	Lone Mtn. Detention Basin Street Improvements	300,000
	18	Smoke Ranch Road - Buffalo to Tukumcari	324,000
	19	Hualpai Way - Charleston to Town Center	410,000
	20	Marion Drive - Bonanza to Washington	341,000
	21	Rainbow Boulevard - Silver Stream to Smoke Ranch	401,000
	22	Rainbow Boulevard - Centennial to Rancho	493,000
	23	Ann Road - Decatur to US 95	734,000
	24	Downtown Entry Corridor	5,544,667
	25	Oakey Boulevard - Las Vegas Boulevard to I - 15	1,407,000
Subtotal Fiscal Year 1999			65,598,141
2000	1	Pavement Management Program	13,050,000
	2	Pavement Continuity Program	575,000
	3	Summerlin Phase 2	9,200,000
	4	Jones Boulevard - Centennial to Rancho	4,005,000
	5	Craig Road - Buffalo to US 95	1,577,000
	6	Durango Drive - Alexander to US 95	5,596,000
	7	Summerlin Pkwy. - Town Center to West Beltway	1,000,000
	8	Buffalo Drive - Cheyenne to Lone Mountain	2,864,000
	9	Rainbow Boulevard - Centennial to Rancho	723,000
	10	Ann Road - Decatur to US 95	1,443,000
	11	Vegas Drive - Rancho I - 15	561,000
	12	Charleston / I-15 Interchange	500,000
	13	Alley Improvement Program	826,000
Subtotal Fiscal Year 2000			41,920,000

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
2002	1	Traffic Signals	1,600,000
	2	School Flashers	60,000
	3	Street Lighting Upgrade	76,000
	4	Neighborhood Traffic Control Measures	500,000
	5	Non-Signal Intersection Improvements	150,000
	6	Video Detection System	50,000
	7	Hazard Elimination Program	150,000
	8	Traffic Improvement Program	640,000
	9	Pavement Markings	60,000
		<b>Subtotal Fiscal Year 2002</b>	<b><u>3,286,000</u></b>
2003	1	Traffic Signals	1,600,000
	2	School Flashers	60,000
	3	Street Lighting Upgrade	76,000
	4	Neighborhood Traffic Control Measures	500,000
	5	Non-Signal Intersection Improvements	150,000
	6	Hazard Elimination Program	150,000
	7	Traffic Improvement Program	640,000
	8	Pavement Markings	60,000
		<b>Subtotal Fiscal Year 2003</b>	<b><u>3,236,000</u></b>
		<b>Five Year Total - Protective Services</b>	<b><u>21,546,558</u></b>

## STORM DRAINAGE

Fiscal Year	Priority	Project Title	Estimated Cost
1999	1	Neighborhood Stormwater Program	1,646,514
	2	Washington Avenue Upper System	3,495,000
	3	Flood Control Maintenance Program	1,200,000
	4	Gowan North Channel - Durango Branch	500,000
	5	Washington Conveyance - Martin Luther King/I-15	1,000,000
	6	Gowan North Channel - Buffalo to Durango	3,510,000
Subtotal Fiscal Year 1999			<u>11,351,514</u>
2000	1	Neighborhood Stormwater Program	2,363,000
	2	Flood Control Maintenance Program	1,200,000
	3	Gowan North Channel - Buffalo to Durango	252,000
	4	Owens Avenue System - I-15/Rancho	200,000
	5	Gowan Outfall - Lone Mountain Branch	1,000,000
Subtotal Fiscal Year 2000			<u>5,015,000</u>
2001	1	Neighborhood Stormwater Program	2,018,000
	2	Flood Control Maintenance Program	1,200,000
	3	Gowan North Channel - Buffalo Branch	2,366,000
	4	Colorado Avenue System - I-15 to Las Vegas Wash	500,000
Subtotal Fiscal Year 2001			<u>6,084,000</u>
2002	1	Neighborhood Stormwater Program	1,755,300
	2	Flood Control Maintenance Program	1,200,000
	3	Freeway Channel - Alta to Wall	6,000,000
Subtotal Fiscal Year 2002			<u>8,955,300</u>
2003	1	Neighborhood Stormwater Program	2,995,800
	2	Flood Control Maintenance Program	1,200,000
	3	Owens Avenue System - I-15/Rancho	2,963,000
	4	Colorado Avenue System - I-15 to Las Vegas Wash	900,000
	5	Freeway Channel - Sahara to Wall	500,000
	6	Lone Mountain Outfall - Basin to Durango	1,767,000
	7	Rancho Road - Decatur to Lake Mead	300,000
Subtotal Fiscal Year 2003			<u>10,625,800</u>
Five Year Total - Storm Drainage			<u>42,031,614</u>

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
2001	1	Pavement Management Program	13,350,000
	2	Pavement Continuity Program	575,000
	3	Summerlin Phase 2	6,100,000
	4	Durango Drive - Alexander to US 95	4,437,000
	5	Buffalo Drive - Cheyenne to Lone Mountain	3,221,000
	6	Smoke Ranch Road - Buffalo to Tucumcari	2,863,000
	7	Marion Drive - Bonanza to Washington	2,615,000
	8	Rainbow Boulevard - Silver Stream to Smoke Ranch	3,866,000
	9	Rainbow Boulevard - Centennial to Rancho	3,002,000
	10	Ann Road - Decatur to US 95	4,867,000
	11	Vegas Drive - Rancho to I-15	5,259,000
	12	Charleston / I-15 Interchange	3,500,000
	13	Alley Improvement Program	590,000
	14	Spaghetti Bowl	3,250,000
	15	Alexander Road - Durango to Rancho	615,000
<b>Subtotal Fiscal Year 2001</b>			<b><u>58,110,000</u></b>
2002	1	Pavement Management Program	14,350,000
	2	Pavement Continuity Program	575,000
	3	Alley Improvement Program	354,000
	4	Spaghetti Bowl	2,377,000
	5	Alexander Road - Durango to Rancho	1,184,000
	6	Durango Drive - Vegas to Westcliff	2,046,000
	7	Owens Avenue - Eastern to Pecos	250,000
	8	Sandhill Road - Cedar to Owens	188,000
<b>Subtotal Fiscal Year 2002</b>			<b><u>21,324,000</u></b>
2003	1	Pavement Management Program	14,600,000
	2	Pavement Continuity Program	575,000
	3	Alley Improvement Program	354,000
	4	Alexander Road - Durango to Rancho	2,865,000
	5	Durango Drive - Vegas to Westcliff	4,131,000
	6	Owens Avenue - Eastern to Pecos	1,750,000
	7	Sandhill Road - Cedar to Owens	913,000
	8	Cimarron Road - Charleston to Sahara	1,058,000
	9	Tenaya Way - Charleston To Sahara	326,000
<b>Subtotal Fiscal Year 2003</b>			<b><u>26,572,000</u></b>
<b>Five Year Total - Paved Streets</b>			<b><u><u>213,524,141</u></u></b>

## SEWAGE COLLECTION AND DISPOSAL

Fiscal Year	Priority	Project Title	Estimated Cost
1999	1	Pecos / Owens to Sahara / Arden Relief Sewer	18,200,000
	2	Nitrification Expansion	4,000,000
	3	Water Resource Center	14,100,000
	4	Line Digesters	400,000
	5	Gowan Basin to WRC Influent Sewer	458,000
	6	Rampart to WRC Influent Sewer	1,446,000
	7	East Bonanza Water Reclamation Facility	5,678,000
	8	Expansion 2000	21,100,000
	9	Odor Control Projects	1,115,000
	10	Centennial / Lone Mountain Interceptor	1,738,000
	11	US 95 / Rancho Interceptor	340,000
	12	Sloan Lane Sewer Repair / Replacement	5,847,000
	13	Sewerlines in Conjunction with RTC Road Projects	180,000
	14	Collection System Oversizing	773,000
	15	Collection System Rehabilitation	400,000
	16	Permanent Flow Monitoring System	195,000
	17	Jones Blvd - El Campo Grande to Centennial	734,000
	18	Vegas Valley to WPCF Relief Sewer	230,000
	19	Craig Road Sewer	19,000
	20	Compliance Directed Projects	500,000
Subtotal Fiscal Year 1999			77,453,000
2000	1	Water Resource Center	14,100,000
	2	Line Digesters	500,000
	3	Expansion 2000	21,100,000
	4	US 95 / Rancho Interceptor	4,897,000
	5	Sewerlines in Conjunction with RTC Road Projects	160,000
	6	Collection System Oversizing	500,000
	7	Collection System Rehabilitation	400,000
	8	Vegas Valley to WPCF Relief Sewer	3,072,000
	9	Craig Road Sewer	259,000
	10	Nellis Relief Sewer	36,000
	11	Buffalo Drive Sewer	40,000
	12	Compliance Directed Projects	500,000
Subtotal Fiscal Year 2000			45,564,000



# PARKS

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
1999	1	Heritage Park	878,000
	2	AnSan Sister Park	300,000
	3	Oakey & Redwood Park	750,000
	4	Regional Sports Park	1,907,500
	5	Ann Road Park	680,000
	6	Community School Offices	200,000
	7	Doolittle Community Center	1,391,004
	8	Tennis Court Construction	146,000
	9	Jaycee Park	35,000
	10	Hills Park	80,000
	11	Fountain Park	537,000
	12	Park Facilities Lighting	467,000
	13	Northwest Park	700,000
	14	Swimming Pool Rehabilitation	308,734
	15	Park Restrooms	350,000
	16	Cheyenne/Durango Park	953,750
	17	Cheyenne/Gowan Park	500,000
	18	Charleston Heights Arts Center Renovation	175,000
	19	Reed Whipple Renovation	393,700
	20	Sammy Davis Jr. Festival Plaza Theatre	100,742
	21	Municipal Pool	3,570,797
	22	Ballfield Renovation	110,000
	23	Torry Pines Park	1,600,000
	24	Library Park	500,000
	25	Park Construction	998,156
	26	Park Equipment & Amenities	110,906
	27	Freedom Park	399,700
	28	Computerized Fertilization / Irrigation / Lighting	54,877
	29	Park Equipment Replacement	354,952
	30	Cheyenne/Durango Recreation Center	4,704,755
	31	Summerlin Recreation Center	5,285,268
		<b>Subtotal Fiscal Year 1999</b>	<b><u>28,542,841</u></b>

<b>Fiscal Year</b>	<b>Priority</b>		<b>Estimated Cost</b>
2001	1	Expansion 2000	21,100,000
	2	US 95 / Rancho Interceptor	3,985,000
	3	Sewerlines in Conjunction with RTC Road Projects	200,000
	4	Collection System Oversizing	500,000
	5	Collection System Rehabilitation	400,000
	6	Permanent Flow Monitoring System	210,000
	7	Nellis Relief Sewer	440,000
	8	Buffalo Drive Sewer	540,000
	9	Decatur Parallel Relief Sewer	48,000
	10	Torrey Pines Sewer Interceptor	62,000
	11	Vegas Drive Relief Sewer	455,000
	12	Compliance Directed Projects	500,000
<b>Subtotal Fiscal Year 2001</b>			<b>28,440,000</b>
2002	1	Expansion 2000	19,350,000
	2	Decatur Parallel Relief Sewer	642,000
	3	Torrey Pines Sewer Interceptor	831,000
	4	Sewerlines in Conjunction with RTC Road Projects	160,000
	5	Collection System Oversizing	500,000
	6	Collection System Rehabilitation	400,000
	7	Durango / Rancho Sewer Interceptor	259,000
	8	Ann Road Water Resource Center	16,000,000
	9	Compliance Directed Projects	500,000
<b>Subtotal Fiscal Year 2002</b>			<b>38,642,000</b>
2003	1	Ann Road Water Resource Center	16,000,000
	2	Durango / Rancho Sewer Interceptor	3,472,000
	3	Sewerlines in Conjunction with RTC Road Projects	160,000
	4	Collection System Oversizing	500,000
	5	Collection System Rehabilitation	400,000
	6	Permanent Flow Monitoring System	210,000
	7	Satellite Yard Water Resource Center	5,249,000
	8	Compliance Directed Projects	500,000
<b>Subtotal Fiscal Year 2003</b>			<b>26,491,000</b>
<b>Five Year Total - Sanitation</b>			<b>216,590,000</b>

**FIRE**

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
1999	1	Fire Training Center Improvements	548,539
	2	Communications Center Expansion	2,151,580
	3	Radio Communication System	1,372,118
	4	Fire Station Renovations	958,950
	5	Fire Station #41	2,200,000
	6	Paramedic "On Scene" Computer System	252,091
	7	Communications Center Improvements	60,000
	8	Fire Station Equipment	223,000
Subtotal Fiscal Year 1999			<u>7,766,278</u>
2000	1	Fire Training Center Improvements	5,320,745
	2	Fire Station Renovations	123,000
	3	Rescue Bay Additions	1,057,500
	4	Warehouse Conversion	39,000
	5	Children's Fire Safety House	80,000
	6	Fire Station #43	2,736,000
	7	Fire Station #10	2,503,500
	8	Training Center West	3,500,000
Subtotal Fiscal Year 2000			<u>15,359,745</u>
2001	1	Fire Training Center Improvements	4,710,496
	2	Fire Station Renovations	41,000
	3	Fire Station #5 Replacement	2,283,025
	4	Fire Station #6 Replacement	2,873,025
Subtotal Fiscal Year 2001			<u>9,907,546</u>
2002	1	Fire Station #44	2,283,025
Subtotal Fiscal Year 2002			<u>2,283,025</u>
2003	1	Fire Station #45	2,780,320
	2	Fire Station #46	2,780,320
Subtotal Fiscal Year 2003			<u>5,560,640</u>
Five Year Total - Fire			<u>40,877,234</u>

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
2000	1	AnSan Sister Park	560,000
	2	Oakey & Redwood Park	2,400,000
	3	Regional Sports Park	3,815,000
	4	Doolittle Community Center	5,884,726
	5	Ballfield Lighting	283,000
	6	Swimming Pool Rehabilitation	667,946
	7	Park Restrooms	150,000
	8	Park Construction	629,100
	9	Park Equipment and Amenities	69,900
	10	Cultural Capital Equipment	125,000
	11	Bonanza / Honolulu Park	1,765,700
	12	Angel Park	2,200,000
	13	Dog Fanciers Park	100,000
	14	Harris / Mojave Park	900,000
	15	Artist's Demonstration Court	460,000
	16	BLM - Kyle Canyon / Rancho	6,000,000
	17	Multi-use Park	2,125,500
<b>Subtotal Fiscal Year 2000</b>			<b>28,135,872</b>
2001	1	Regional Sports Park	3,815,000
	2	Community School Offices	350,000
	3	Doolittle Community Center	5,810,000
	4	Cheyenne/Gowan Park	3,950,000
	5	Park Construction	631,800
	6	Park Equipment and Amenities	70,200
	7	Angel Park	3,522,500
	8	BLM - Kyle Canyon / Rancho	5,000,000
<b>Subtotal Fiscal Year 2001</b>			<b>23,149,500</b>
2002	1	Doolittle Leisure Service Center	1,098,100
	2	Cheyenne/Gowan Park	3,950,000
	3	Reed Whipple Renovation	50,000
	4	Park Construction	2,105,598
	5	Park Equipment and Amenities	233,955
	6	BLM - Kyle Canyon / Rancho	6,000,000
	7	Buffalo/Oakey Recreation Center	6,540,000
<b>Subtotal Fiscal Year 2002</b>			<b>19,977,653</b>



# COURTS

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
1999	1	Municipal Court Auto-Cite Program	339,600
	2	Municipal Court Automated Case Tracking System	133,516
		<b>Subtotal Fiscal Year 1999</b>	<u><b>473,116</b></u>
2000	1	Municipal Court Voice Response System	160,000
		<b>Subtotal Fiscal Year 2000</b>	<u><b>160,000</b></u>
2001	None		
		<b>Subtotal Fiscal Year 2001</b>	<u><b></b></u>
2002	1	Regional Justice Center	3,271,771
		<b>Subtotal Fiscal Year 2002</b>	<u><b>3,271,771</b></u>
2003	None		
		<b>Subtotal Fiscal Year 2003</b>	<u><b></b></u>
		<b>Five Year Total - Municipal Court</b>	<u><u><b>3,904,887</b></u></u>

# **CORRECTIONS**

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
1999	1	Control Center Upgrades	810,431
	2	Dictaphone Recording Equipment	65,000
	3	Training Facility Expansion	380,000
	4	Housing Unit Renovations	53,500
	5	Video Surveillance Cameras	146,500
	6	Detention Center Equipment	96,379
	7	Air Purification System	175,000
		<b>Subtotal Fiscal Year 1999</b>	<u><b>1,726,810</b></u>
2000	1	Housing Unit Renovations	30,000
	2	Detention Center Equipment	51,519
	3	Parking Lot	85,000
	4	Electronic Fingerprinting	49,500
		<b>Subtotal Fiscal Year 2000</b>	<u><b>216,019</b></u>
2001	1	Video Surveillance Cameras	90,000
		<b>Subtotal Fiscal Year 2001</b>	<u><b>90,000</b></u>
2002	None		
		<b>Subtotal Fiscal Year 2002</b>	<u><b></b></u>
2003	None		
		<b>Subtotal Fiscal Year 2003</b>	<u><b></b></u>
		<b>Five Year Total - Corrections</b>	<u><u><b>2,032,829</b></u></u>

## **ECONOMIC DEVELOPMENT AND ASSISTANCE**

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
1999	1	Industrial Park Development	10,950,000
	2	East Las Vegas Social Services Center	150,000
	3	Neighborhood Renaissance	1,000,000
<b>Subtotal Fiscal Year 1999</b>			<u><b>12,100,000</b></u>
2000	1	Industrial Park Development	4,100,000
	2	East Las Vegas Social Services Center	500,000
<b>Subtotal Fiscal Year 2000</b>			<u><b>4,600,000</b></u>
2001	1	Industrial Park Development	2,250,000
	2	East Las Vegas Social Services Center	500,000
<b>Subtotal Fiscal Year 2001</b>			<u><b>2,750,000</b></u>
2002	1	Industrial Park Development	530,000
<b>Subtotal Fiscal Year 2002</b>			<u><b>530,000</b></u>
2003	None		
<b>Subtotal Fiscal Year 2003</b>			<u>                    </u>
<b>Five Year Total - Economic Development</b>			<u><u><b>19,980,000</b></u></u>

**OTHER**

Fiscal Year	Priority	Project Title	Estimated Cost
1999	1	City Hall Renovations	1,815,198
	2	Technology Inner Look	1,515,706
	3	West Service Center	1,396,793
	4	City-wide Renovations	290,243
	5	Roof Replacement and Repair	118,432
	6	Fire Alarm and Sprinkler Installation	227,125
	7	City Facilities Energy Reduction Initiatives	290,347
	8	Automated Fuel System	400,000
	9	City Parking Lot Improvements	279,600
	10	ADA Facility Improvements	1,939,785
	11	Satellite Facilities Carpet Replacement	75,000
Subtotal Fiscal Year 1999			<u>8,348,229</u>
2000	1	City Hall Renovations	1,013,111
	2	Technology Inner Look	4,593,237
	3	West Service Center	9,187,510
	4	City-wide Renovations	2,257,170
	5	Roof Replacement and Repair	181,568
	6	Fire Alarm and Sprinkler Installation	292,625
	7	City Facilities Energy Reduction Initiatives	290,347
	8	City Parking Lot Improvements	250,000
	9	Satellite Facilities Carpet Replacement	150,000
	10	Parking Enforcement Autocite System Upgrade	38,800
	11	Future City Hall Site	5,200,000
	12	Child Care Facility	2,000,000
	13	National Guard Armory	1,500,000
2001	Subtotal Fiscal Year 2000		<u>26,954,368</u>
2001	1	City Hall Renovations	24,000
	2	West Service Center	200,711
	3	City-wide Renovations	1,374,250
	4	Roof Replacement and Repair	150,000
	5	City Facilities Energy Reduction Initiatives	100,000
	6	City Parking Lot Improvements	250,000
	7	Satellite Facilities Carpet Replacement	50,000
2002	Subtotal Fiscal Year 2001		<u>2,148,961</u>
2002	1	City-wide Renovations	97,500
	2	Roof Replacement and Repair	150,000
	3	City Facilities Energy Reduction Initiatives	50,000
	4	City Parking Lot Improvements	250,000
	5	Satellite Facilities Carpet Replacement	50,000
Subtotal Fiscal Year 2002			<u>597,500</u>

<b>Fiscal Year</b>	<b>Priority</b>	<b>Project Title</b>	<b>Estimated Cost</b>
<b>2003</b>	<b>1</b>	<b>City-wide Renovations</b>	<b>72,500</b>
	<b>2</b>	<b>Roof Replacement and Repair</b>	<b>150,000</b>
	<b>3</b>	<b>City Facilities Energy Reduction Initiatives</b>	<b>50,000</b>
	<b>4</b>	<b>City Parking Lot Improvements</b>	<b>250,000</b>
	<b>5</b>	<b>Satellite Facilities Carpet Replacement</b>	<b>50,000</b>
		<b>Subtotal Fiscal Year 2003</b>	<b><u>572,500</u></b>
		<b>Five Year Total - Other</b>	<b><u><u>38,621,558</u></u></b>