

NEVADA DEPARTMENT OF TRANSPORTATION

RESEARCH PROPOSAL GUIDE

(Proposal Elements)

1. **TITLE:** State the title of the research study as you think it should be stated.
2. **PRINCIPAL INVESTIGATOR:** Provide the title(s) and name(s) of the Principal Investigator(s).
3. **PROBLEM STATEMENT:** Provide a clear, concise summary of the problem to be studied.
4. **BACKGROUND SUMMARY:** Include background information on the research topic. Summarize the finding of a comprehensive literature search and state the relationship of the proposed study to prior research. The following questions must be directly answered in your literature search summary: 1) Has the problem/issue been studied (or is it being studied) elsewhere? 2) if there are existing research projects on the same topic, how is your proposed research different from them? The summary should also reveal your understanding of underlying principles and should clearly indicate your appreciation of the problem. A comprehensive background summary ensures that all aspects of the research topic have been adequately considered so new research can build upon prior work rather than duplicate it.
5. **PROPOSED RESEARCH:** Provide the specific tasks of the research that should be conducted. Include the major objectives upon which the staff will focus their attention, and upon which their efforts will converge. Fully describe the test methods to be used and specify how the study will be structured to address the objectives. Information should also be provided regarding sampling plans, number of test sections, statistical analysis methods, use of existing models or development of new models, expected survey techniques, criteria which will be used to judge acceptability, etc. List the products which will be delivered during the research project: reports, computer programs, manuals, guidelines, etc.
6. **ANTICIPATED BENEFITS:** Discuss the specific benefits anticipated as a result of this research. Include an estimate of the savings in terms of time, money, increased safety, improved service, or improved procedures. Explain how these benefits will be realized, and how they relate to solving the initial problem.
7. **IMPLEMENTATION PLAN:** Provide information pertinent to the following questions: Will the expected research findings be readily adoptable by NDOT? If not, will further work be necessary to develop or field test the findings? Will the findings be presented as a proposed specification, procedural manual or guide, etc.?
8. **DURATION/SCHEDULE:** Provide an estimate of total time to complete the project including a schedule for completion of major phases of the project, if applicable.
9. **FACILITIES:** Describe the facilities available to accomplish the research. Identify equipment necessary for completion of the research and specify any restrictions on its use.

Indicate any equipment which is necessary but not currently on-hand. If additional equipment is to be purchased with project funds, identify it in the budget estimate.

10. **BUDGET:** Provide a summary tabulation showing the staffing plan, person-hours, and total cost broken down by year and by each phase of the study. The budget should include salaries, overhead, and indirect costs; travel; computer time; equipment (purchases and/or rental); and special services (where applicable). For the specific requirements, please refer to the “Standard Budget Itemization for NDOT Research Projects” (Attachment A) and “Billing Invoice Requirements for NDOT Research Projects” (Attachment B).

11. **NDOT INVOLVEMENT (OTHER DIVISIONS):** Include the total amount of involvement that will be required from any NDOT division outside of the originating division. If significant, include specifics.

STANDARD BUDGET ITEMIZATION FOR NDOT RESEARCH PROJECTS⁶

PROJECT TITLE:
PROJECT DURATION:

ITEMS	Monthly Rate ¹	Man-Mo.	Sum of salary & fringe/(Fringe ²)
A. PERSONNEL			
Principal Investigator			
Co-PI ³			
Research Staff ³			
Graduate Student (indicate number)			
Undergraduate Student (indicate number)			
Other Personnel			
Total Personnel Costs			
B. Travel ⁴			
C. Materials and Supplies			
D. Publication and Communication			
E. Other Costs (if any)			
F. Subtotal Direct Costs (sum of A thru E)			
G. Total Indirect Cost (23% of F)			
H. Permanent Equipment Including Computers ⁵			
I. Student Tuition and Fees			
J. Subcontract			
K. TOTAL PROJECT COSTS(sum of F thru J)			

NOTES: 1.) Faculty pay rate should be based on their 9 month salaries; the standard pay rate for graduate student should be \$1,400-\$1,500/month and for undergrade student it should not exceed \$15.00/hr.

2.) Fringe benefits can not exceed rates established by current university policy.

3.) If there are more than one Co-PI or Research Staff, please list them separately.

4.) NDOT only pays travel that is essential for the completion of the project and all travel costs, per diem and mileage, are limited to employee rates.

5.) Permanent equipment includes anything purchased equal to or more than \$1,000. NDOT will retain ownership of equipment purchased for research and will provide disposition instructions at the conclusion of the project.

6.) Please attach detailed justification for equipment purchases, travel costs and materials/supplies.

Attachment B

Billing Invoice Requirements for NDOT Research Projects

Purpose:

In order to ensure adequate accountability to taxpayers, NDOT's Project Managers are required to verify that billed costs are accurate and properly supported. The purpose of cost support documentation is to allow NDOT to independently verify that all costs billed are valid and properly documented and that the billing invoice is mathematically correct.

If NDOT's review reveals any error or undocumented costs in the billed costs, a corrected billing invoice must be resubmitted.

Direct Labor Costs:

Invoiced labor and fringe must be supported by a *Balance and Activity Report* generated from the University Campus Administrative Information System that details the monthly project expenditures. Labor costs must be itemized separately from any multipliers and be verifiable using acceptable documentation. Fringe rates must be clearly indicated.

Billing for normal administrative personnel and Departmental Administrators included in the Universities Facilities and Administration (F&A) rate is not allowed as a direct cost.

Other Direct Costs:

Other Direct Costs must also be supported on the *Balance and Activity Report*.

Normal administrative costs are already recovered in the University's F&A rate and must not be included as direct project costs. It is the University's responsibility to ensure that its project budget estimates and subsequent billed costs are in compliance with the cost principles of OMB Circular A-21.

Materials and Supplies can be allowable if they are unique or specific to the project, i.e. a butterfly net for a butterfly related project. As stated above, normal administrative or clerical supplies are already factored into the F&A costs rate and therefore must not be directly billed unless a part of a major project or program.

Vehicle Reimbursement is limited to *either* the cost of the rented vehicle plus fuel costs (only if fuel is not included in the rental agreement) *or*, for State owned vehicles, the vehicle usage rate charged by the Nevada State motor pool or the University motor pool. The destination should be clearly noted on the individual's travel claim. A vehicle mileage log must support all mileage claimed.

Travel Costs:

Travel and Per Diem costs are limited to the rates and time limitations allowed State employees. Private vehicle use will be reimbursed in accordance with the terms of the State Administrative Manual.

Facility and Administrative Costs:

Twenty-three percent (23%) of modified total direct costs shall be applied as the Indirect Cost Rate for all NDOT research Agreements in the Research, Development, and Technology Transfer (R, D&T) program. The Indirect Cost Rate refers to the rate of facilities and administrative costs used for compensation of the expenses on building, equipment, operation & maintenance, library and administrative components. The modified total direct costs consist of all salaries and wages, fringe benefits, materials, supplies, services, and travel, but shall exclude equipment, capital expenditures, tuition remission, rental costs of off-site facilities, scholarships, and fellowships as well as subgrant or subcontract.

Audit:

All project costs are subject to a NDOT audit. Billed costs must then be supported by original source documentation that substantiates Balance and Activity Report costs. Documentation will be available for review from the research institution.