



PO Box 915
Zephyr Cove, NV 89448
775-586-1610 ext 21

September 6, 2013

10:00 AM (estimated 15 minute duration)

**SPECIAL MEETING AGENDA
Board of Supervisors**

NTCD Conference Room
400 Dorla Court
Zephyr Cove, Nevada

Agenda Items

1. Call to order 10:00am
2. Supervisor Roll Call
3. Approval of Agenda: This is the tentative schedule for the meeting. The Board reserves the right to take items in a different order to accomplish business in the most efficient manner. The Board may combine two or more agenda items for consideration. The Board may remove an item from the agenda or delay the discussion relating to an item on the agenda at anytime.
4. Public Interest Comments
5. For Possible Action: Review and Approval of Subgrant Agreement with Nevada Division of Environmental Protection (NDEP) for Road Maintenance and Operations Effectiveness Testing.
6. Supervisor Comments
7. Public Interest Comments
8. Motion to Adjourn

Due to short duration of meeting, use the following call in information:

218-339-4600

access code: 341249#

Posted: Nevada Tahoe Conservation District Administrative Office, Douglas County Clerk, Washoe County Clerk, NV Division of Conservation Districts.

Members of the public who are disabled and require special accommodations or assistance at the meeting are requested to telephone the NTCD Administrative Office at (775) 586-1610 x21 three days prior to the Board meeting. Please contact Mark Thorpe at PO Box 915, Zephyr Cove, NV 89448; or email mthorpe@ntcd.org; or phone 775-586-1610 #21 to obtain supporting material for the agenda. Supporting material may also be found at <http://ntcd.org/html/board.php>



Po Box 915
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ROAD MAINTENANCE AND OPERATIONS EFFECTIVENESS TESTING SUBGRANT AGREEMENT

NTCD Program: Road Maintenance and Operations Effectiveness Testing – Subgrant Agreement

Contractual Parties: Nevada Tahoe Conservation District (NTCD), Nevada Department of Environmental Protection (NDEP)

Contract Amount: \$87,500 (\$34,000 NTCD; \$43,060 2ND Nature; \$10,440 NCE)

Effective Dates: September 6, 2013 – September 30, 2015

Contract Summary of Deliverables: The Road Maintenance and Operations Practices Effectiveness Testing will produce standardized guidance for the Tahoe stormwater community to quantify the amount of expected water quality benefit of specific road operations and maintenance (RO&M) prescriptions implemented. The project will guide local jurisdictions on how to document and test the effectiveness of specific RO&M practices that could be implemented to achieve credit awards through the Lake Clarity Crediting Program. The final products will be the quantified effectiveness of up to eight prescriptions (based on available resources) and a detailed effectiveness testing methodology for others to follow as new prescriptions are developed and implementation for credit award is desired. NTCD staff will perform the bulk of the road condition observations and will enter and manage the data over the course of the study. 2ND Nature and NCE will be subcontractors to NTCD for this project.

Contract Summary of Scope of Services: Primary tasks include project administration and experimental design implementation.

SUBGRANT AGREEMENT

A Subgrant awarded by:

Department of Conservation and Natural Resources, Division of Environmental Protection
Bureau of Water Quality Planning
901 S. Stewart Street, Carson City, NV 89701-5249
Phone: (775) 687-9452 Fax: (775) 687-9561

and awarded to Subgrantee:

Nevada Tahoe Conservation District
hereinafter the "Subgrantee"
P.O. Box 915
Zephyr Cove, NV 89448
(775) 586-1610 ext. 33

WHEREAS, 40 CFR Part 31.37, NRS 445A.265 and NRS 445A.450 authorize the Division of Environmental Protection to award subgrants of federal financial assistance to local governments for the purposes set forth in authorizing statutes; and

WHEREAS, it is deemed that the project purposes hereinafter set forth are consistent with the federal grant agreement that provides support of the subgrant;

NOW, THEREFORE, in consideration of the aforesaid premises, the parties mutually agree as follows:

1. **REQUIRED APPROVAL.** This Subgrant shall not become effective until and unless approved by appropriate official action of the governing body of each party.
2. **DEFINITIONS.** "State" means the State of Nevada and any state agency identified herein, its officers, employees and immune contractors as defined in NRS 41.0307.
3. **SUBGRANT TERM.** This Subgrant shall be effective from **Nevada Division of Environmental Protection Administrator's approval to September 30, 2015**, unless sooner terminated by either party as set forth in this Subgrant.
4. **TERMINATION.** This Subgrant may be terminated by either party prior to the date set forth in paragraph (3), provided that a termination shall not be effective until **30** days after a party has served written notice upon the other party. This Subgrant may be terminated by mutual consent of both parties or unilaterally by either party without cause. The parties expressly agree that this Subgrant shall be terminated immediately if for any reason State and/or federal funding ability to satisfy this Subgrant is withdrawn, limited, or impaired.
5. **NOTICE.** All notices or other communications required or permitted to be given under this Subgrant shall be in writing and shall be deemed to have been duly given if delivered personally in hand, by telephonic facsimile with simultaneous regular mail, or mailed certified mail, return receipt requested, postage prepaid on the date posted, and addressed to the other party at the address set forth above.
6. **INCORPORATED DOCUMENTS.** The parties agree that the services to be performed shall be specifically described; this Subgrant incorporates the following attachments in descending order of constructive precedence:

ATTACHMENT A: SCOPE OF WORK (consisting of 8 pages)

ATTACHMENT B: ADDITIONAL AGENCY TERMS & CONDITIONS (consisting of 3 pages)

7. **CONSIDERATION.** Subgrantee agrees to provide the services set forth in paragraph (6) at a cost of **\$N/A** per **N/A** with the total Subgrant or installments payable: **Monthly** not exceeding **\$87,500.00**. In addition, the State does not agree to reimburse Subgrantee for expenses unless otherwise specified in the incorporated documents. Any intervening end to an annual or biennial appropriation period shall be deemed an automatic renewal (not changing the overall Subgrant term) or a termination as the results of legislative appropriation may require.

8. **ASSENT.** The parties agree that the terms and conditions listed on incorporated attachments of this Subgrant are also specifically a part of this Subgrant and are limited only by their respective order of precedence and any limitations expressly provided.

9. **INSPECTION & AUDIT.**

a. **Books and Records.** Each party agrees to keep and maintain under general accepted accounting principles full, true and complete records, agreements, books, and documents as are necessary to fully disclose to the other party, the State or United States Government, or their authorized representatives, upon audits or reviews, sufficient information to determine compliance with any applicable regulations and statutes.

b. **Inspection & Audit.** Each party agrees that the relevant books, records (written, electronic, computer related or otherwise), including but not limited to relevant accounting procedures and practices of the party, financial statements and supporting documentation, and documentation related to the work product shall be subject, at any reasonable time, to inspection, examination, review, audit, and copying at any office or location where such records may be found, with or without notice by the other party, the State Auditor, Employment Security, the Department of Administration, Budget Division, the Nevada State Attorney General's Office or its Fraud Control Units, the State Legislative Auditor, and with regard to any federal funding, the relevant federal agency, the Comptroller General, the General Accounting Office, the Office of the Inspector General, or any of their authorized representatives.

c. **Period of Retention.** All books, records, reports, and statements relevant to this Subgrant must be retained by each party for a minimum of three years from the date of final payment by the State to the Subgrantee, and all other pending matters are closed. Retention time shall be extended when an audit is scheduled or in progress for a period reasonably necessary to complete an audit and/or to complete any administrative and judicial litigation which may ensue.

10. **BREACH; REMEDIES.** Failure of either party to perform any obligation of this Subgrant shall be deemed a breach. Except as otherwise provided for by law or this Subgrant, the rights and remedies of the parties shall not be exclusive and are in addition to any other rights and remedies provided by law or equity, including but not limited to actual damages. If the court awards reasonable attorney's fees to the prevailing party, reasonable shall be deemed \$125 per hour.

11. **LIMITED LIABILITY.** The parties will not waive and intend to assert available NRS chapter 41 liability limitations in all cases. Subgrant liability of both parties shall not be subject to punitive damages. To the extent applicable, actual Subgrant damages for any breach shall be limited by NRS 353.260 and NRS 354.626.

12. **FORCE MAJEURE.** Neither party shall be deemed to be in violation of this Subgrant if it is prevented from performing any of its obligations hereunder due to strikes, failure of public transportation, civil or military authority, act of public enemy, accidents, fires, explosions, or acts of God, including, without limitation, earthquakes, floods, winds, or storms. In such an event the intervening cause must not be through the fault of the party asserting such an excuse, and the excused party is obligated to promptly perform in accordance with the terms of the Subgrant after the intervening cause ceases.

13. **INDEMNIFICATION.** Neither party waives any right or defense to indemnification that may exist in law or equity.

14. **INDEPENDENT PUBLIC AGENCIES.** The parties are associated with each other only for the purposes and to the extent set forth in this Subgrant, and in respect to performance of services pursuant to this Subgrant, each party is and shall be a Subgrantee separate and distinct from the other party and, subject only to the terms of this Subgrant, shall have the sole right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this Subgrant. Nothing contained in this Subgrant shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for one agency whatsoever with respect to the indebtedness, liabilities, and obligations of the other agency or any other party.

15. **WAIVER OF BREACH.** Failure to declare a breach or the actual waiver of any particular breach of the Subgrant or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other breach

16. **SEVERABILITY.** If any provision contained in this Subgrant is held to be unenforceable by a court of law or equity, this Subgrant shall be construed as if such provision did not exist and the nonenforceability of such provision shall not be held to render any other provision or provisions of this Subgrant unenforceable.

17. **ASSIGNMENT.** Neither party shall assign, transfer or delegate any rights, obligations or duties under this Subgrant without the prior written consent of the other party.

18. **OWNERSHIP OF PROPRIETARY INFORMATION.** Unless otherwise provided by law or this Subgrant, any reports, histories, studies, tests, manuals, instructions, photographs, negatives, blue prints, plans, maps, data, system designs, computer code (which is intended to be consideration under this Subgrant), or any other documents or drawings, prepared or in the course of preparation by either party in performance of its obligations under this Subgrant shall be the joint property of both parties.

19. **PUBLIC RECORDS.** Pursuant to NRS 239.010, information or documents may be open to public inspection and copying. The parties will have the duty to disclose unless a particular record is made confidential by law or a common law balancing of interests.

20. **CONFIDENTIALITY.** Each party shall keep confidential all information, in whatever form, produced, prepared, observed or received by that party to the extent that such information is confidential by law or otherwise required by this Subgrant.

21. **PROPER AUTHORITY.** The parties hereto represent and warrant that the person executing this Subgrant on behalf of each party has full power and authority to enter into this Subgrant and that the parties are authorized by law to perform the services set forth in paragraph (6).

22. **GOVERNING LAW; JURISDICTION.** This Subgrant and the rights and obligations of the parties hereto shall be governed by, and construed according to, the laws of the State of Nevada. The parties consent to the jurisdiction of the Nevada district courts for enforcement of this Subgrant.

23. **ENTIRE AGREEMENT AND MODIFICATION.** This Subgrant and its integrated attachment(s) constitute the entire agreement of the parties and such are intended as a complete and exclusive statement of the promises, representations, negotiations, discussions, and other agreements that may have been made in connection with the subject matter hereof. Unless an integrated attachment to this Subgrant specifically displays a mutual intent to amend a particular part of this Subgrant, general conflicts in language between any such attachment and this Subgrant shall be construed consistent with the terms of this Subgrant.

Unless otherwise expressly authorized by the terms of this Subgrant, no modification or amendment to this Subgrant shall be binding upon the parties unless the same is in writing and signed by the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have caused this Subgrant to be signed and intend to be legally bound thereby.

SUBGRANTEE

By: _____
Signature – Nevada Tahoe Conservation District

Name: _____
Please Print

Title: _____ **Date:** _____
Please Print

DIVISION

By: _____
Signature

Name: Colleen Cripps, Ph.D.

Title: Administrator **Date:** _____

BUREAU

By: _____
Signature

Name: Sondra L. Neudauer

Title: Contract Manager **Date:** _____

Subgrant Control Number: DEP-S 14-012
Grant Number: 197933611
Division Number: 02
Grant Expiration Date: 09/30/2017
CFDA Number: 66.419

ATTACHMENT "A"

A. COVER PAGE

Project Title: Road Maintenance and Operations Effectiveness Testing

Contractor: Nevada Tahoe Conservation District

Address: Physical: 400 Dorla Court
Mailing: PO Box 915
Zephyr Cove, NV 89448-0915

Primary Contact: Karin Staggs
775.586.1610 x23
kstaggs@ntcd.org

Project Location: Lake Tahoe, HUC 16050101

Project Summary: The Road Maintenance and Operations Practices Effectiveness Testing will produce standardized guidance for the Tahoe stormwater community to quantify the amount of expected water quality benefit of specific road operations and maintenance (RO&M) prescriptions implemented. The project will guide local jurisdictions on how to document and test the effectiveness of specific RO&M practices that could be implemented to achieve credit awards through the Lake Clarity Crediting Program. The final products will be the quantified effectiveness of up to eight prescriptions (based on available resources) and a detailed effectiveness testing methodology for others to follow as new prescriptions are developed and implementation for credit award is desired.

Timeframe: Sept 2013 – Sept 2015

Fiscal Summary:

Total Project Cost:	\$169,696.50
NDEP (106):	\$ 87,500
US ACE:	\$ 82,196.50

Project Partners: Washoe County

B. SCOPE OF WORK

1. Background & Need

The Lake Tahoe Total Maximum Daily Load (TMDL) documents an estimated 72% of the < 16-micron sediment (fine sediment particles (FSP)) load to Lake Tahoe originates from the urban upland source category (i.e., urban stormwater). The urban stormwater source was also determined to be the greatest opportunity to achieve load reductions of FSP and associated phosphorus pollutants. Consequently, the TMDL implementation plan focuses on load reductions stemming from this source. Moreover, the TMDL and subsequent land use specific research (2NDNATURE 2010a, 2011a) suggests impervious roadways have the greatest FSP loading potential per unit area. Urban stormwater jurisdictions (jurisdictions) have the responsibility to implement on-the-ground controls that will enable them to meet load reduction targets and milestones contained in stormwater permits and Interlocal agreements. For this reason, jurisdictions continue to seek out simple, cost-effective practices that will assist them to meet these requirements.

The Lake Clarity Crediting Program (LCCP), developed and administered jointly by the Lahontan Water Board and Nevada Division of Environmental Protection, is an innovative program in which Lake Tahoe urban stormwater jurisdictions (i.e., local governments and state transportation agencies) will participate during implementation of the Lake Tahoe TMDL. The LCCP defines standardized protocols and tools to comprehensively and consistently quantify, track and report load reduction actions. The LCCP, therefore, provides the framework for increased transparency and accountability for the expenditures of public funds on these actions. The Pollutant Load Reduction Model (PLRM) is the LCCP's standard quantification tool. A catchment-scale continuous hydrologic and pollutant load generation model, it is used to estimate the FSP loading difference between existing and post-water quality improvement implementation scenarios. As such, the PLRM serves as an important alternatives evaluation tool.

While the PLRM currently includes the capability to estimate the benefits associated with roadway sweeping and abrasive control measures, this information was based on a relatively sparse number of studies that were not conducted locally, and consequently did not specifically test for benefits to FSP control. Nevertheless, in a recent investigation, the PLRM model was applied to develop a TMDL implementation strategy for Placer County (2ND NATURE 2011b). Results of the exercise indicate that the PLRM RO&M practices have the potential to be significantly more cost-effective than the implementation of traditional Lake Tahoe basin water quality improvement projects and private parcel best management practices (BMPs). The annualized unit cost (\$/#) of FSP removed was less than an order of magnitude lower for RO&M practices (\$4/#) versus the other implementation actions (\$80/# and \$30/#, respectively).

Several other recent or current studies have demonstrated the promise of other advanced RO&M practices. However, RO&M practices have yet to be implemented due very little available information regarding implementation feasibility, cost-effectiveness, and a lack of implementation guidance. Thus, there is a strong need to identify and document road operation and maintenance strategies that are feasible for jurisdictions to implement and provide measurable reductions in road FSP loads. Moreover, cost-effectiveness of various practices or "prescriptions" is critical information gap needed by stormwater managers to justify to their respective decision-makers the expenditure of public dollars. Therefore, stormwater managers and decision-makers desire reasonable assurance regarding the expected benefit from the implementation of specific actions as well as guidance to optimize RO&M pollutant controls for cost-effectiveness. Such information is critical to supporting policy change of water quality improvement funding mechanisms, which currently typically restrict RO&M activities from being financed.

As important as the information above is a defensible and cost-effective protocol to quantify the benefits and cost-effectiveness of specific road maintenance prescriptions. Employing a standardized and repeatable protocol would facilitate an "apples-to-apples" comparison of various prescriptions. The protocol must be usable to inform the LCCP of the expected load reductions (and associated credits) that could be awarded for the implementation of these RO&M prescriptions. The Road Rapid Assessment Methodology (Road RAM) is the LCCP's standard and repeatable roadway condition assessment tool, the primary purpose of which is to rapidly determine and track the potential immediate downslope water quality threat of roads (2NDNATURE 2010). The Road RAM is a tool that balances the need to quickly assess large areas of roads while maintaining reasonable statistical defensibility. To accomplish this objective, simple and repeatable field observations are used to determine the condition of a specific road segment on a specific day. The condition is expressed as a road segment score ranging from 0 (worst) to 5 (best). The road segment score is correlated to a runoff FSP concentration expected from that road segment should a runoff event occur at the time of observation. The

Road RAM therefore may be adapted for the purpose of this study to inform maintenance practice effectiveness than performing more time-intensive and costly water quality sampling.

2. Goals, Objectives and Outcomes

This project seeks to test and evaluate the cost-effectiveness of RO&M prescriptions over the course of at least one complete water year. The results generated thru this project will inform stormwater managers in the planning and implementation of load reduction actions and will furthermore be used to inform the credit potential of specific actions.

The associated objectives to achieve these goals and outcomes include:

- a. RO&M prescriptions are screened for preliminary feasibility determination;
- b. Stakeholders are engaged and broadly support the selection of up to 8 prescriptions for testing;
- c. Experimental procedures and protocols facilitate consistent cost-effectiveness evaluation between prescriptions selected for testing through this project and in subsequent future investigations;
- d. Results are useful to inform that average annual Road RAM scores as well as the annualized cost that can be expected to be incurred from implementing the respective prescriptions.
- e. Operational guidance is provided to the stormwater community to implement the prescriptions in a manner appropriate to achieve the expected annual average Road RAM scores.

3. Team structure and roles

Project Team

The Project Team is preliminarily comprised of the Nevada Tahoe Conservation District (NTCD); 2NDNATURE, LLC (2N); Washoe County; and the Nevada Division of Environmental Protection (NDEP). The US Army Corps of Engineers (USACE) will be invited to participate on the Project Team if funding is awarded. Furthermore, other entities identified to implement prescriptions may be added to the Project Team as appropriate.

Consultant Team

The NTCD is the primary contractor for the project. 2NDNATURE is a subcontractor to the NTCD. Collectively referred to as the Consultant Team, NTCD and 2N will collaborate and coordinate to jointly administer and manage the project. 2NDNATURE will lead for the road prescription selection process; develop the technical guidance on the experimental design as well as provide oversight of its implementation; development data collection and management protocols; develop and provide the necessary training to implement a quality assurance plan to ensure collection of high quality data for the duration of the project; data analysis efforts to quantify the effectiveness of the tested prescriptions in a format directly applicable and consistent with the needs of the jurisdictions and regulators for the Crediting Program process; and documentation of approach and lessons learned in a recommended Road Maintenance Effectiveness Assessment Guidance which provides a standardized, easy-to-follow process for other jurisdictions and researchers to test and quantify the water quality benefits and expected credits of other road maintenance prescriptions in the future. NTCD will conduct the bulk of the road condition observations and will enter and manage the data over the course of the study. NTCD and 2NDNATURE will implement rigorous training and quality assurance processes and protocols that will ensure high quality data is collected and managed. NTCD will also be responsible for submitting progress reports and invoices over the course of the study. Additionally, road operation specialist Dick Minto will be retained to provide valuable insight and feedback which will aid in the screening and selection of the recommended prescriptions.

Implementation Team

Unless other jurisdictions "tag on" to the project, the project will take place within the Lake Tahoe portions of Washoe County. The Consultant Team will collaborate with Washoe County to select the final prescriptions to be tested and Washoe County stormwater managers, road operation crew staff must agree to implement the selected prescriptions and document, track and report all information necessary to perform cost-effectiveness assessments in a consistent and comparable manner. Examples of information that may need to be tracked include, but are not limited to: chronological documentation of practices, locations of applications, equipment used, sweeping and plowing frequency, operations and techniques, abrasives sources used, mass and frequency of application, road shoulder conditions, or others. Implementation Team staff will be trained on the experimental design prior to its finalization in order to ensure they understand their roles, duties and assignments prior to its implementation. Washoe County will be provided the opportunity to review and comment on all draft deliverables prior to their finalization.

Funders

NDEP and USACE are the prospective funders of this project. These agencies will be invited to participate in Project Team meetings and to review and comment on draft deliverables. Funders will retain approval authority over final deliverables. These agencies might also complete a minor portion of the road condition observations.

Stakeholders

Stakeholders are defined for the purposes of this project as the larger Tahoe stormwater community, specifically the urban stormwater jurisdictions that are responsible for achieving TMDL load reductions. It is the intent of this project that feasible and cost-effective road operations practices are considered and incorporated into jurisdictional load reduction plans. Input from the road prescriptions selection task will provide an opportunity for the Tahoe urban stormwater jurisdictions to contribute road maintenance prescriptions they would be interested in seeing tested. However, prescriptions may not be included in the project if the screening process reveals of if Washoe County determines they are infeasible to implement and/or track. Stormwater jurisdictions will have an opportunity to "tag on" to the project if suggested prescriptions cannot be implemented in Washoe County. Once the project technical report is finalized, it will be distributed and a presentation will be given to disseminate the results of the project.

4. Tasks

Task 1. Project Management and Administration

- (a) Provide all technical and administrative services as needed for contract completion; monitor, supervise, and review all work performed; and coordinate budgeting and scheduling to assure that the contract is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations. Communication between the Contractor team and the NDEP contract coordinator is critical to the success of this project. At the beginning of the contract Contractor and NDEP staff will develop simple and efficient communication protocols. Contractor shall promptly notify the NDEP Contract Coordinator of events or proposed changes that could affect the scope, budget, or schedule of work performed under this agreement.
- (b) Ensure that the contract requirements are met through completion of progress reports submitted concurrently with invoices (see (c) below). Reports shall describe the activities undertaken and the accomplishments toward achieving project goals and tasks. Reports shall be of sufficient detail to provide a basis for payment of invoices; if not, additional information as requested by the NDEP contract coordinator must be provided before reimbursement of expenditures.
- (c) Submit invoices on a monthly to quarterly basis for project related expenses on a reimbursable basis. Appropriate back-up documentation for costs incurred, including those related to match, must be provided prior to NDEP payment.

Task 2. Road Prescriptions Selection Process

- (a) Identify and compile a list of road prescriptions that appear to be feasible to implement and show promise to reduce the amount of FSP generated from roads on an average annual basin. The term "*feasible*" will herein be defined as relatively, practical and cost-effective to implement, and with no readily identifiable barriers to implementation.
- (b) Organize and lead a meeting with stakeholders to: present the preliminary screening results to; solicit input on the findings and contribute suggestions of additional/alternative prescriptions for consideration of testing; preliminarily discuss implementation feasibility of suggested prescriptions. Stakeholder input will be compiled and summarized in a meeting report.
- (c) Further screen suggested additional prescriptions for implementation and load reduction feasibility; develop recommendations for prescriptions to be implemented and tested.
- (d) Organize a Project Team meeting to: present recommendations; discuss feasibility of Washoe County and other "tag on" entities to implement, available resource to complete remaining tasks, expected FSP load reduction benefits and other critical experimental design considerations. The outcome of the meeting or subsequent follow up conversations will be a final list of up to 8 prescriptions (based on available resources) to be implemented and tested through this project.

- (e) Develop a technical memorandum that summarizes the inventory, screening and selection process. A tabular summary will be included of the prescriptions inventoried, stakeholder input, rationale for selection/non-selection for this study, and any insightful opportunities or constraints for future implementation or effectiveness testing as a viable prescription in the future. After NDEP approval of the final document, circulate the tech memo to stakeholders.

Task 3. Experimental Design Development

- (a) Craft a draft document that specifies the procedures and protocols to be carried out over the course of the project that will enable the goals and objectives to be achieved. Content of the document may include, but is not necessarily limited to, the following information:
 - i. Roadway operations and maintenance practices and protocols the Implementation Team will implement on specific road networks, as well as associated data and record-keeping protocols that will facilitate consistent cost-effectiveness evaluation between prescriptions;
 - ii. Communication protocols between and within the Implementation Team and the Consultant Team;
 - iii. Observation methods that will be used to evaluate road network condition over time;
 - iv. Data collection procedures and site locations;
 - v. Data entry and management protocols, formats and/or tools;
 - vi. Data analytical techniques that will be used to assess and facilitate comparison of the cost-effectiveness of the various prescriptions implemented;
 - vii. Quality control procedures/meetings to ensure that operational protocols are being followed and data meet minimum quality requirements.
 - viii. A detailed cost estimate necessary to implement the recommended prescriptions by the Project Team under this contract. Prioritizations will be made to include prescriptions in this effort that represent Stakeholder priorities and the best opportunity to obtain a dataset that is anticipated to provide the most applicable and relevant guidance to jurisdiction operations, PLRM estimates of expected road RAM scores and guide road operation effectiveness evaluations into the future. Funding or other resource options will be solicited to include prescriptions in the effort where Task 4 funding is not available prior to initiation.
- (b) Circulate the draft document to Funders, Implementation Team, and potentially Stakeholders, for review and address comments in production of a final document.

Task 4. Experimental Design Implementation

- (a) Prior to implementation, organize a meeting review the final experimental design document with the Implementation Team to ensure understanding of all participants' roles, responsibilities, and assigned duties and tasks.
- (b) In coordination with the Implementation Team, carry out the experimental design as described in the experimental design document. Periodically assess and review Project Team performance with respect to assigned duties and tasks. Identify any adjustments that may be necessary to ensure the project goals and objectives may be achieved and hold Project Team meetings as needed to review performance and implement needed adjustments. Document adjustments in meeting report(s).

Task 5. Technical Report and Road Maintenance Effectiveness Assessment Guidance

- (a) Upon completion of the data collection efforts, assemble and analyze data. Data analysis will consist of two components: cost to implement the prescriptions and annual roadway condition observed from implementing each prescription.
- (b) Produce a technical report that effectively summarizes the data obtained and the results of the data analysis. Summarize each road maintenance prescription including the average annual Road RAM score that can be expected from implementing the respective prescriptions, with consideration given to water year type (i.e. dry, average, wet)

total winter snow pack, frequency and distribution of storms, and/or other influential factors. Prioritize prescriptions according to cost-effectiveness.

- (c) Include a separate Road Maintenance Effectiveness Assessment Guidance as a component of the technical report; this will be a clear step-by-step framework for others to test the effectiveness of road maintenance prescriptions in the future.
- (d) Circulate the draft document to Funders, Implementation, and potentially Stakeholders, for review and address comments in production of a final document.

C. SCHEDULE OF TASKS AND DELIVERABLES

Once contracts are in place the project schedule will be developed given key considerations that Task 4 assessment efforts must be implemented on a complete and continuous winter to spring series of road conditions to ensure the dataset meets intended objectives.

Task	Deliverable (frequency)	Start Month	End Month
1 Project Management & Administration	Progress Reports & Invoices (monthly)	1	26
2 Road Prescriptions Selection Process	Draft Tech Memo summarizing inventory of prescriptions considered; opportunities and constraints of each; recommendations for prescriptions to be tested	1	2
	Meeting Report summarizing urban jurisdiction's input and recommendations for prescriptions to be tested	3	
	Updated Draft Tech Memo that includes opportunities and constraints of additional prescriptions identified during meeting with urban jurisdictions	3	4
	Final Tech Memo that summarizes the information contained in Draft & Updated Draft Tech Memo's plus rationale for study selection	7	8
3 Experimental Design Development	Draft Tech Memo that specifies the operational procedures to be followed over the course of the project to achieve the project goals and objectives	5	6
	Project Team review comments	6	7
	Final Tech Memo that address Project Team review comments	7	8
4 Experimental Design Implementation	Consultant/Implementation Teams Review & Training Meeting	8	
	Performance assessments and adjustment meetings (as needed)	9	22
5 Technical Report and Road Maintenance Guidance	Draft Technical Report that summarizes the data obtained and the results of the data analysis	22	24
	RO&M Effectiveness Assessment Guidance Document		
	Project Team review comments	25	
	Final Tech Report and Effectiveness Assessment Guidance Document	25	26

D. BUDGET

The total existing effort budget is \$169,696.50. NDEP will provide \$87,500 in Federal Clean Water Act Section 106 funding and the US Army Corps of Engineers will provide the additional \$82,196.50. Additionally, Washoe County will provide up to approximately \$20,000 in untracked match through implementing and tracking the tested RO&M prescriptions. Available funds will be allocated in a manner that both agencies fund specific efforts and deliverables of a complete and unified effort to achieve this scope of work.

1. Reimbursable Budget

CATEGORY	RATE	QTY	AMOUNT
Labor	Hourly		\$34,000.00
Hydrologist	\$68.00	500	\$34,000.00
Operating	Actual Cost		\$521.00
Meeting materials & supplies			\$260.50
Field materials & supplies			\$260.50
Travel	NV state mileage rate		\$555.00
Vehicle Mileage	\$0.555	1000	\$555.00
Subcontracts	Actual Cost		\$52,424.00
2NDNATURE			\$41,984.00
NCE - Minto			\$10,440.00
TOTALS			\$87,500.00

2. Labor Budget Detail

TASK	NTCD	2NDNATURE					NCE	LABOR TOTAL
	Hydrologist	Principal	Sc Scientist III	Sc Scientist II	Sc Scientist I	Sci Assoc II	D. Minto	
Hourly Rate ->	\$68	\$158	\$133	\$128	\$110	\$85	\$145	
Task 1. PM and Admin	48	8	0	0	0	24	0	\$ 6,568
a,b,c	48	8	0	0	0	24	0	\$ 6,568
Task 2. Road Prescrip Selection	48	48	56	12	16	6	46	\$ 28,772
a.	0	8	16	6	8	0	16	\$ 7,360
b.	12	12	6	0	6	0	4	\$ 4,750
c.	4	4	2		2	0	2	\$ 1,680
d.	16	8	8	6	0	6	0	\$ 4,694
e.	16	16	24	0	0	0	24	\$ 10,288
Task 3. Exp Design Development	4	0	0	0	0	0	10	\$ 1,722
a.	4	0	0	0	0	0	10	\$ 1,722
b.	0	0	0	0	0	0	0	\$ -
Task 4. Exp Design Implementation	380	8	36	0	0	80	0	\$ 38,692
a.	40	4	20	0	0	40	0	\$ 9,412
b.	340	4	16	0	0	40	0	\$ 29,280
Task 5. Technical Report/Effectiveness Guidance	20	13	16	6	0	24	16	\$ 10,670
a.	20						0	\$ 1,360
b.	0						8	\$ 1,160
c.	0	12	12	6	0	12	8	\$ 6,440
d.	0	1	4	0	0	12	0	\$ 1,710
TOTAL HOURS - ALL TASKS	500	77	108	18	16	134	72	
TOTAL COST - ALL TASKS	\$34,000	\$12,166	\$14,364	\$2,304	\$1,760	\$11,390	\$10,440	\$ 86,424

3. Match Budget Detail (2NDNATURE)

LABOR						
TASK	2NDNATURE					LABOR TOTAL
	Principal	Sr Scientist III	Sr Scientist II	Sr Scientist I	Sci Assoc II	
Hourly Rate ->	\$158	\$133	\$128	\$110	\$85	
Task 1. PM and Admin	0	0	0	0	0	\$ -
a,b,c	0	0	0	0	0	\$ -
Task 2. Road Prescrip Selection	0	0	0	0	0	\$ -
a.	0	0	0	0	0	\$ -
b.	0	0	0	0	0	\$ -
c.	0	0	0	0	0	\$ -
d	0	0	0	0	0	\$ -
e	0	0	0	0	0	\$ -
Task 3. Exp Design Development	42	86	0	40	64	\$ 27,914
a	40	78	0	40	60	\$ 26,194
b.	2	8	0	0	4	\$ 1,720
Task 4. Exp Design Implementation	0	0	0	0	0	\$ -
a	0	0	0	0	0	\$ -
b.	0	0	0	0	0	\$ -
Task 5. Technical Report/Effectiveness Guidance	69	156	66	16	104	\$ 50,698
a	16	80	0	16	40	\$ 18,328
b.	40	60	60	0	40	\$ 25,380
c.	12	12	6	0	12	\$ 5,280
d.	1	4	0	0	12	\$ 1,710
TOTAL HOURS - ALL TASKS	111	242	66	56	168	
TOTAL COST - ALL TASKS	\$17,538	\$32,186	\$8,448	\$6,160	\$14,280	\$ 78,612

Administration	
2N Per diem (\$172/day; 16 days)	\$ 2,752.00
2N Mileage (1500 mi)	\$ 832.50
Total Admin	\$3,584.50

Labor Total	\$ 78,612.00
Admin	\$ 3,584.50
TOTAL	\$ 82,196.50

**ATTACHMENT B:
ADDITIONAL AGENCY TERMS & CONDITIONS
SUBGRANT CONTROL #DEP-S 14-012, Nevada Tahoe Conservation District (NTCD)**

1. The Nevada Division of Environmental Protection shall pay no more compensation than the federal Executive Service Level 4 (U.S. Code) daily rate (exclusive of fringe benefits) for individual consultants retained by the Subgrantee or by the Subgrantee's contractors or subcontractors. This limitation applies to consultation services of designated individuals with specialized skills who are paid at a daily or hourly rate. The current Level 4 rate is **\$74.50** per hour.
2. ***NDEP shall only reimburse the Subgrantee for actual cash disbursed.*** Original invoices (facsimiles are not acceptable) must be received by NDEP no later than forty (40) calendar days after the end of a month or quarter except at the end of the fiscal year of the State of Nevada (June 30th), at the expiration date of the grant, or the effective date of the revocation of the Subgrant, at which times original invoices must be received by NDEP no later than thirty-five (35) calendar days after this date. Failure of the Subgrantee to submit billings according to the prescribed timeframes authorizes NDEP, in its sole discretion, to collect or withhold a penalty of ten percent (10%) of the amount being requested for each week or portion of a week that the billing is late. The Subgrantee shall provide with each invoice a detailed fiscal summary that includes the approved Subgrant budget, expenditures for the current period, cumulative expenditures to date, and balance remaining for each budget category. If match is required pursuant to paragraph 3 below, a similar fiscal summary of match expenditures must accompany each invoice. The Subgrantee shall obtain prior approval to transfer funds between budget categories if the funds to be transferred are greater than ten percent (10%) cumulative of the total Subgrant amount.
3. The Subgrantee shall, as part of its approved scope of work and budget under this Subgrant, provide third party match funds of not less than: **\$87,500.00**. If match funds are required, the Subgrantee shall comply with additional record-keeping requirements as specified in 40 CFR 31.24 and Attachment ***N/A*** (Third Party Match Record-Keeping Requirements) which is attached hereto and by this reference is incorporated herein and made part of this Subgrant.
4. Unless otherwise provided in Attachment A (Scope of Work), the Subgrantee shall submit quarterly reports or other deliverables within ten (10) calendar days after the end of each quarter.
5. All payments under this Subgrant are contingent upon the receipt by NDEP of sufficient funds, necessary to carry out the purposes of this Subgrant, from either the Nevada Legislature or an agency of the United States. NDEP shall determine if it has received the specific funding necessary for this Subgrant. If funds are not received from either source for the specific purposes of this Subgrant, NDEP is under no obligation to supply funding for this Subgrant. The receipt of sufficient funds as determined by NDEP is a condition precedent to NDEP's obligation to make payments under this Subgrant. Nothing in this Subgrant shall be construed to provide the Subgrantee with a right of payment over any other entity. If any payments that are otherwise due to the Subgrantee under this Subgrant are deferred because of the unavailability of sufficient funds, such payments will promptly be made to the Subgrantee if sufficient funds later become available.
6. Notwithstanding the terms of paragraph 5, at the sole discretion of NDEP, payments will not be made by NDEP unless all required reports or deliverables have been submitted to and approved by NDEP within the schedule stated in Attachment A.
7. Any funds obligated by NDEP under this Subgrant that are not expended by the Subgrantee shall automatically revert back to NDEP upon the completion, termination or cancellation of this Subgrant. NDEP shall not have any obligation to re-award or to provide, in any manner, such unexpended funds to the Subgrantee. The Subgrantee shall have no claim of any sort to such unexpended funds.
8. The Subgrantee shall ensure, to the fullest extent possible, that at least the "fair share" percentages as stated below for prime contracts for construction, services, supplies or equipment are made available to organizations owned or controlled by socially and economically disadvantaged individuals (Minority Business Enterprise (MBE) or Small Business Enterprise (SBE)), women (Women Business Enterprise (WBE)) and historically black colleges and universities.

	MBE/SBE	WBE
Construction	12%	10%
Services	07%	25%
Supplies	13%	28%
Equipment	11%	23%

The Subgrantee agrees and is required to utilize the following seven affirmative steps:

- a. Include in its bid documents applicable "fair share" percentages as stated above and require all of its prime contractors to include in their bid documents for subcontracts the "fair share" percentages;
- b. Include qualified Small Business Enterprises (SBEs) Minority Business Enterprises (MBEs), and Women Business Enterprises (WBEs) on solicitation lists;
- c. Assure that SBEs, MBEs, and WBEs are solicited whenever they are potential sources;
- d. Divide total requirements, when economically feasible, into small tasks or quantities to e. permit maximum participation of SBEs, MBEs, and WBEs;
- e. Establish delivery schedules, where the requirements of the work permit, which will encourage participation by SBEs, MBEs, and WBEs;
- f. Use the services and assistance of the Small Business Administration and the Minority Business Development Agency, U.S. Department of commerce as appropriate; and
- g. If a subcontractor awards contracts/procurements, require the subcontractor to take the affirmative steps in subparagraphs a. through e. of this condition.

9. The Subgrantee shall complete and submit to NDEP a Minority Business Enterprise/Woman Business Enterprise (MBE/WBE) Utilization Report (Standard Form 334) within fifteen (15) calendar days after the end of each federal fiscal year (September 30th) for each year this Subgrant is in effect and within fifteen (15) calendar days after the termination date of this Subgrant.

10. The books, records, documents and accounting procedures and practices of the Subgrantee or any subcontractor relevant to this Subgrant shall be subject to inspection, examination and audit by the State of Nevada, the Division of Environmental Protection, the Attorney General of Nevada, the Nevada State Legislative Auditor, the federal or other funding agency, the Comptroller General of the United States or any authorized representative of those entities.

11. All books, reports, studies, photographs, negatives, annual reports or other documents, data, materials or drawings prepared by or supplied to the Subgrantee in the performance of its obligations under this Subgrant shall be the joint property of both parties. Such items must be retained by the Subgrantee for a minimum of three years from the date of final payment by NDEP to the Subgrantee, and all other pending matters are closed. If requested by NDEP at any time within the retention period, any such materials shall be remitted and delivered by the Subgrantee, at the Subgrantee's expense, to NDEP. NDEP does not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, report or product of any kind that the Subgrantee may disclose or use for purposes other than the performance of the Subgrantee's obligations under this Subgrant. For any work outside the obligations of this Subgrant, the Subgrantee must include a disclaimer that the information, report or products are the views and opinions of the Subgrantee and do not necessarily state or reflect those of NDEP nor bind NDEP.

12. Unless otherwise provided in Attachment A, when issuing statements, press releases, requests for proposals, bid solicitations and other documents describing projects or programs funded in whole or in part with funds provided under this Subgrant, the Subgrantee shall clearly state that funding for the project or program was provided by the Nevada Division of Environmental Protection and, if applicable, the U.S. Environmental Protection Agency. The Subgrantee will insure that NDEP is given credit in all official publications relative to this specific project and that the content of such publications will be coordinated with NDEP prior to being published.

13. Unless otherwise provided in Attachment A, all property purchased with funds provided pursuant to this Subgrant is the property of NDEP and shall, if NDEP elects within four (4) years after the completion, termination or cancellation of this Subgrant or after the conclusion of the use of the property for the purposes of this Subgrant during its term, be returned to NDEP at the Subgrantee's expense.

Such property includes but is not limited to vehicles, computers, software, modems, calculators, radios, and analytical and safety equipment. The Subgrantee shall use all purchased property in accordance with local, state and federal law, and shall use the property only for Subgrant purposes unless otherwise agreed to in writing by NDEP.

For any unauthorized use of such property by the Subgrantee, NDEP may elect to terminate the Subgrant and to have the property immediately returned to NDEP by the Subgrantee at the Subgrantee's expense. To the extent authorized by law, the Subgrantee shall indemnify and save and hold the State of Nevada and NDEP harmless from any and all claims, causes of action or liability arising from any use or custody of the property by the Subgrantee or the Subgrantee's agents or employees or any subcontractor or their agents or employees.

14. The Subgrantee shall use recycled paper for all reports that are prepared as part of this Subgrant and delivered to NDEP. This requirement does not apply to standard forms.

15. The Subgrantee, to the extent provided by Nevada law, shall indemnify and save and hold the State of Nevada, its agents and employees harmless from any and all claims, causes of action or liability arising from the performance of this Subgrant by the Subgrantee or the Subgrantee's agents or employees or any subcontractor or their agents or employees. NDEP, to the extent provided by Nevada law, shall indemnify and save and hold the Subgrantee, its agents and employees harmless from any and all claims, causes of action or liability arising from the performance of this Subgrant by NDEP or NDEP's agents or employees.

16. The Subgrantee and its subcontractors shall obtain any necessary permission needed, before entering private or public property, to conduct activities related to the work plan (Attachment A). The property owner will be informed of the program, the type of data to be gathered, and the reason for the requested access to the property.

17. This Subgrant shall be construed and interpreted according to the laws of the State of Nevada and conditions established in OMB Circular A-102. Nothing in this Subgrant shall be construed as a waiver of sovereign immunity by the State of Nevada. Any action brought to enforce this Subgrant shall be brought in the First Judicial District Court of the State of Nevada. The Subgrantee and any of its subcontractors shall comply with all applicable local, state and federal laws in carrying out the obligations of this Subgrant, including all federal and state accounting procedures and requirements established in OMB Circular A-87 and A-133. The Subgrantee and any of its subcontractors shall also comply with the following:

- a. 40 CFR Part 7 - Nondiscrimination In Programs Receiving Federal Assistance From EPA
- b. 40 CFR Part 29 - Intergovernmental Review Of EPA Programs And Activities.
- c. 40 CFR Part 31 - Uniform Administrative Requirements For Grants And Cooperative Agreements To State and Local Governments;
- d. 40 CFR Part 32 - Governmentwide Debarment And Suspension (Nonprocurement) And Governmentwide Requirements For Drug-Free Workplace (Grants);
- e. 40 CFR Part 34 - Lobbying Activities;
- f. 40 CFR Part 35, Subpart O - Cooperative Agreements And Superfund State Contracts For Superfund Response Actions (Superfund Only); and
- g. The Hotel And Motel Fire Safety Act of 1990.

18. The Subgrantee shall neither assign, transfer nor delegate any rights, obligations or duties under this Subgrant without the prior written consent of NDEP.