

Appendix B-8

LAKE TAHOE RESTORATION PROJECTS ESTIMATED NECESSARY EXPENSES & KEY MILESTONE DATES

Project Name: Tahoe Integrated Information Management Systems (TIIMS) Agency: US EPA
 Prepared by: Marie Bledsoe for Jack Landy Phone: 775-589-5208 EIP #: 10154
 SNPLMA Project #: _____

Identify estimated costs of eligible reimbursement expenses:

1. Planning, Environmental Assessment and

Research Costs (specialist surveys, reports, monitoring, data collection, analysis, NEPA, etc.)

\$ 0 _____ %

2. FWS Consultation—Endangered Species Act

\$ 0 _____ %

3. Direct Labor (Payroll) to Perform the Project

\$ 271,746 _____ 83 %

4. Project Equipment (tools, software, specialized equipment, etc.)

\$ 29,900 _____ 6 %

5. Travel (including per diem where official travel status required to carry out project, such as serve as COR, experts to review reports, etc.)

\$ 0 _____ %

6. Official Vehicle Use (pro rata cost for use of Official Vehicles when required to carry out project)

\$ 0 _____ %

7. Cost of Contracts, Grants and/or Agreements to Perform the Project

\$ 57,600 _____ 11 %

8. Other Direct and Contracted Labor: Agency payroll for the Contracting Officer to do project procurement, COR, Project Inspector, Sec. 106 Consultation if required, NEPA Lead, Project Manager, Project Supervisor, and subject experts to review contracted surveys, designs/drawings, plans, reports, etc.; Also covered is the cost to contract for a Project Manager and/or Project Supervisor if contracted separately from other project contracts)

\$ 0 _____ %

9. Other Necessary Expenses (See Appendix B-11)

\$ _____ %

TOTAL: \$ 515,337 _____ 100 %

Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Begin project/kick-off meetings	09/1/2009
Implement data management strategy #4: AIS real-time database and map view.	01/31/2010
Implement data management strategy #1: Provide enhanced fuels map viewer	06/30/2010
Implement data management strategy #2: EIP project tracking and data management	06/30/2011
Implement data management strategy #3: TMDL project tracking and	03/31/2011

monitoring implementation	
Final Completion Date:	06/30/2011

COMMENTS:

**ROUND 10 LAKE TAHOE FEDERAL SHARE EIP CAPITAL
NOMINATION CRITERIA**
(Nomination Form begins on page 3)

Consistency with Lake Tahoe nomination criteria:

Project nominations must qualify as an Environmental Improvement Program (EIP) project and be the responsibility of the federal government (federal share responsibility); and have a willing and ready federal sponsor.

Projects identified as the responsibility of the federal government in the EIP must meet ONE or MORE of the following:

1. Does the project involve federal land?
 - If so, is the federal land involved important to successful implementation of the project?
2. Does the EIP identify the federal funding for the EIP project (project #)?
3. Does the project involve the conservation of a federal or regional threatened, rare, endangered, or special interest species?
4. Does the project involve an identified federal interest such as the detection and eradication of noxious aquatic or terrestrial invasive species?
5. Does the project otherwise directly support federal implementation of capital projects in the EIP (e.g. technical assistance, data management, resource inventories, etc.)?

Project nominations must be consistent with one of the focus areas in the June 2006 Federal Vision (pp. 8-9) and fit into at least one category.
<http://www.fs.fed.us/r5/ltbmu/documents/ltbec/revised-FV-Final.pdf>

Projects must meet a minimum of one category:

1. Continued emphasis on forest ecosystem health/fuels reduction projects considering the LTBMU Stewardship Fireshed Assessment and Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy.
2. Continued implementation of projects approved in Rounds 5 through 9 which implement the EIP. Project proposal should clearly describe the phase/product being produced along with the consequence of not completing the project phase proposed for Round 10.
3. Project is consistent with and contributes toward TMDL pollutant reductions within the four source categories (atmospheric, urban & groundwater, forested uplands, and stream channel). (*see attached TMDL references – page 6)
Consider and integrate the following in the project nomination:
 - a) Describe whether, and how, the project demonstrates advanced, alternative, or innovative practices.

b) If project includes project level monitoring, describe ability of proposed monitoring strategy to contribute to the state of TMDL knowledge. Also describe if purpose of the capital project is to conduct data collection and/or analysis related to Lake Tahoe clarity.

c) Describe treatment approach for reducing pollutants, and/or measures to address connectivity between pollutant sources and Lake Tahoe or its tributaries. Identify target pollutants, and, to the degree feasible, provide quantitative estimates of project effectiveness at reducing pollutant loads (and/or a commitment to provide post-project estimates).

d) If appropriate, describe whether, and how, the project can be combined or coordinated with other TMDL implementation projects.

4. Control of aquatic invasive species and prevention and/or detection of new aquatic invasive species.

ROUND 10 CAPITAL PROJECT NOMINATION FORM
LAKE TAHOE FEDERAL SHARE EIP CAPITAL PROJECTS
APPENDIX K

Project Name: Tahoe Integrated Information Management System (TIIMS)

Federal Agency Sponsor: US EPA

Contact: Jack Landy

Threshold: Crosses all Thresholds

Phone Number:
(775) 589-5248

Threshold Standard: will vary based on data gathered

Email Address:
Landy.jacques@epa.gov

Funding Requested in this Round: \$515,337

Total Project Cost: \$515,337

Federal Share EIP rationale (select and describe appropriate EIP criteria from 5 items below – projects must meet one or more of these 5 items):

1. Does the project involve federal land? **Yes – see #5.**
 - If so, is the federal land involved important to successful implementation of the project? **No.**
2. Does the EIP identify the federal funding for the EIP project (project #)?
 - **EIP Project #: 10154**
3. Does the project involve the conservation of a federal or regional threatened, rare, endangered, or special interest species?
 - **Yes – see #5.**
4. Does the project involve an identified federal interest such as the detection and eradication of noxious aquatic or terrestrial invasive species? **Yes – see #5.**
5. Does the project otherwise directly support federal implementation of capital projects in the EIP (e.g. technical assistance, data management, resource inventories, etc.)?
 - **Yes. The production version of the Tahoe Integrated Information Management System (TIIMS) launched September 22, 2008. This newly updated and enhanced web site is ready to handle metadata, geospatial, and tabular data management and resource inventories that span disciplines like forest ecosystem health, fuels reduction; EIP project tracking, monitoring, and reporting; TMDL project tracking, monitoring, and reporting; and geospatial and mitigation project tracking of all Aquatic Invasive Species.**

List Capital Focus Area(s) (as described in the 2006 Federal Vision):

This project proposal crosses all four capital focus areas of Watershed and Habitat Improvement, Air Quality and Transportation, Recreation and Scenic, and Forest Health. TIIMS is specifically mentioned in the Science Goal described on page 7 of the June 2006 Federal Vision and this proposal will directly be related to the accomplishment of the Science Goal by utilizing available research and monitoring in environmental

protection activities, informing management activities, allowing for examination of cumulative impacts of proposed projects and programs, reviewing of EIP program-wide effectiveness, supporting collective project analysis, and improving project design over time.

Circle all that apply (must meet a minimum of one category):

1. Continued emphasis on forest ecosystem health/fuels reduction projects considering the LTBMU Stewardship Fireshed Assessment and Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy.
2. Continued implementation of projects approved in Rounds 5 through 9 which implement the EIP. Project proposal should identify the applicable project(s) from Rounds 5 through 9 and clearly describe the phase/product being produced along with the consequence of not completing the project phase proposed for Round 10.
3. Project is consistent with and contributes toward TMDL pollutant reductions within the four source categories (atmospheric, urban & groundwater, forested uplands, and stream channel). List source category being addressed and integrate into the project nomination the following TMDL considerations (*see attached TMDL references – page 6). Source Category:
 - a) Describe whether, and how, the project demonstrates advanced, alternative, or innovative practices.
 - b) If project includes project level monitoring, describe ability of proposed monitoring strategy to contribute to the state of TMDL knowledge. Also describe if purpose of the capital project is to conduct data collection and/or analysis related to Lake Tahoe clarity.
 - c) Describe treatment approach for reducing pollutants, and/or measures to address connectivity between pollutant sources and Lake Tahoe or its tributaries. Identify target pollutants, and, to the degree feasible, provide quantitative estimates of project effectiveness at reducing pollutant loads (and/or a commitment to provide post-project estimates).
 - d) If appropriate, describe whether, and how, the project can be combined or coordinated with other TMDL implementation projects.
4. Control of aquatic invasive species and prevention and/or detection of new aquatic invasive species.

Provide an overall Project Summary (maximum 200 words): (describe ONLY this Round 10 project):

This project assists with the accomplishment of all four Environmental Improvement Focus Areas cited on page 8-9 of the in the June 2006 *Federal Vision*. In addition, it assists *Federal Vision's* Science Goals (page 7) by acquiring, uploading and tracking monitoring data generated by capital projects. This project promotes the utilization of data in an easily accessible and meaningful format and makes it available to the general public and professionals working in the Lake Tahoe Basin including scientists, fire protection districts, land resource management staff, government employees, and elected officials. The primary goal of this project is to provide spatial data for planning, reporting, demonstrating project success, providing tools for decision making, and outreach and education. This goal will be accomplished through enhancing existing TIIMS tools and creating new tailored tools to meet specific needs identified by resource professionals in the areas of forest fuels, EIP projects, contributions to the TMDL, and prevention, monitoring and eradication of aquatic invasive species.

Please provide clear and concise written responses to each of the items below. Please state “not applicable” if you believe the item or question is not applicable to your project.

Is this project proposed as a multi-round project (previous or future)? (If yes, for previous or future projects describe in the Detailed Project Description below number of years or phases and which year the requested funding will cover).

No, this project was provided funding in SNPLMA Round 5; however, it was not requested as a multi-round project due to the unknown future of TIIMS. TIIMS has gained momentum through the Round 5 project and is ready to move into a new phase of providing more custom benefits to resource professionals. This proposal will fund the TIIMS team for 2 years.

Detailed Project Description (focuses on what Round 10 is funding; list the number of years the requested funding will cover; briefly describe how this project links into previous and future projects).

The *Lake Tahoe Watershed Assessment*, written in 2000, identified a need among partnering agencies in the Lake Tahoe Basin to collaborate and share data and resources. Year after year, organizations working in the Basin generate and use enormous quantities of information to accomplish a wide range of goals. These efforts generate information that is often sequestered to one person or a small group of people and can easily be lost with employee turnover. The Tahoe Integrated Information Management System (TIIMS) prototype web site was created through grant funds to address this need.

The SNPLMA Round 5 funding for the Tahoe Integrated Information Management System moved this web environment from prototype to production by upgrading, enhancing, and integrating all databases. Launched on September 22, 2008, these enhanced databases now lay the groundwork for comprehensive web-based information that is easy to use and accessible to all partners.

This project proposal will enhance the work completed under SNPLMA Round 5 and will further refine web-based tools to answer specific data management and resource inventory in four data management categories:

1. Forest ecosystem health and fuels reduction projects guided by the LTBMU Stewardship Fireshed Assessment and Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy.
2. Implementation of EIP projects approved in Rounds 5 through 9.
3. Project level monitoring contributing to the TMDL.
4. Detection, control, prevention, and eradication of aquatic invasive species in Lake Tahoe.

Data Management #1: Forest ecosystem health and fuels reduction projects guided by the LTBMU Stewardship Fireshed Assessment and Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy.

The Executive Summary (page v) of the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy* states the: “Multi-Jurisdictional Fuels Plan for the Lake Tahoe Basin (Basin) facilitates the strategic decisions that must be made by land management, fire, and regulatory agencies to reduce the probability of a catastrophic fire in the Basin. It builds upon fuel reduction projects that have already occurred on more than 13,000 acres and the efforts of community-based fire departments and fire safe chapters that are actively treating fuels around private parcels in the Basin.

The Fuels Plan incorporates approximately 208,800 acres, including portions of Placer, El Dorado, and Alpine Counties in northeastern California; and portions of Carson City, Washoe, and Douglas Counties in western Nevada. It includes nearly 42,000 homes or buildings in the communities of Incline Village, Crystal Bay, Sand Harbor, Glenbrook, Kingsbury, South Lake Tahoe, Homewood, Tahoe Pines, Sunnyside, Tahoe City, Dollar Point, Carnelian Bay, Tahoe Vista, Meeks Bay, Rubicon, Tahoma, and Kings Beach.”

Multiple agencies and jurisdictions are involved in implementing fuels treatments around the Basin which creates a problem for managing specific data and resource inventories on a Basin-wide scale. TIIMS is uniquely able to compile the data in one location. Multi-jurisdictional fuels reduction data management can be improved by enhancing the existing TIIMS Forest Fuels Map Viewer, continuing to populate this map view with relevant data, and further developing the Defensible Space Database.

The TIIMS staff acquired Forest and Fuels datasets for the fuels seasons 2008 and 2009 from many agencies including: USGS National Hydrology Dataset, CalWater, California Tahoe Conservancy, Nevada Division of Forestry, California State Parks, Nevada Division of State Lands, and four fire protection district’s fuels reduction treatment layers for inclusion in a dedicated Forest Fuels Treatment map view:

<http://www.tiims.org/ForestFuels.aspx> enabling members of the general public to find detailed information about all forest ecosystem health/fuels reduction projects near a private parcel.

This proposal suggests enhancements to the existing Forest Fuels Map Viewer to create a reporting tool that can provide acres accomplished and funding spent by: watershed, fire prevention district, agency, or jurisdictional boundary. This tool should be able to further break down funding by year and project status. These enhancements will be

accomplished by gathering forest fuels treatment data from as far back as possible; continuing to collect data from all collaborating agencies; color coding data to sort projects by status: planned, in process, or complete; color coding data to sort by forest fuels projects in an area by year; and refining data configuration to sort by watershed.

The primary goal of implementing these enhancements is to provide members of the science and research community, land resource management staff, local, state, and federal government officials with quick and easy ways to access relevant data via spatial representation and interactive map views for planning, reporting, demonstrating, and decision making. Added to this need is the ability to create PDF versions of on-screen maps as well as export spatial and tabular data from TIIMS. Feedback from Forest Service and TRPA personnel have stated the following needs that will be met by implementing enhancements to the Forest Fuels Map Viewer discussed in this proposal:

1. The science and research community wants to be able to access detailed project level descriptions, documents, resource inventories and monitoring data for all forest ecosystem health/fuels reduction projects within a specific watershed to help with present and future planning and project tracking
2. Land resource management staff wants to be able to easily find data to learn about all other forest ecosystem health/fuels reduction projects being planned or conducted near other projects. They also want the ability to generate custom accomplishment reports to be used in making policies, reporting on grants and EIP projects, and tracking accomplishment units.
3. Local, state, and federal government officials want to be able to find out about the forest ecosystem health/fuels reduction projects in each jurisdiction and generate custom accomplishment reports. This type of reporting capabilities will insure agencies and jurisdictions are meeting the targets as they have been laid out in the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy*. In addition, the ability to generate these kinds of reporting numbers will reduce the administrative time required to update this strategy as well as create the annual legislative progress report.

As part of the *Findings and Recommendations* of the Lake Tahoe Blue Ribbon Fire Commission the parcel based defensible space database, hosted by TIIMS (<http://www.firesafetahoe.org/>), was created and is currently being used by three fire prevention districts: Lake Valley, Tahoe/Douglas, and Fallen Leaf, plus a representative from CalFire during the 2008 inspection season. These districts input parcel based Defensible Space Inspections into a common, web-based database.

This proposal further develops the defensible space database to create capabilities that don't currently exist. Specifically this will provide the following information and capability for an electronically generated PDF or Excel spreadsheets for printing, saving, or sharing:

1. Property owners will gain access to the inspections done on their private parcels as well as have access to a map view of their property and their neighborhood.
2. Fire prevention district and land resource managers will be able to:
 - a. See the status of all inspections done in a district. Maps will provide parcels that have been inspected, parcels in the process of completing their defensible space work, parcels with completed defensible space work.

- Users will also be able to filter data by year; map based and tabular reports could be generated.
- b. See which defensible space inspections have requested the assistance of a chipping crew or required a tree removal permit. Users will also be able to filter data by year; map based and tabular reports could be generated. This will require pulling tree permit information from TRPA's Accela database.
 - c. Defensible Space inspectors requested a web based tool that allows them to upload tree removal permits directly into TRPA's Accela program via the TIIMS web site.
3. Members of local, state, and federal government officials will be able to see all the work specified above within a jurisdictional boundary. Users will also be able to filter data by year; map based and tabular reports could be generated.

Developing, maintaining, and insuring this on-line database is populated with information works toward the primary goal of providing quick and meaningful data via spatial representation and web-based reporting tools for planning, reporting, demonstration, and decision making. This also assists in meeting the targets as they are set out in the *Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy* and the Lake Tahoe Blue Ribbon Fire Commission *Findings and Recommendations*.

Data Management #2: Implementation of EIP projects approved in Rounds 5 through 9.

SNPLMA Round 5 provided funding to move TIIMS from a prototype to a production web site. This involved upgrading and enhancing the ability for TIIMS to track projects, documents, and bibliographic references. The mapping capabilities on TIIMS completely changed to map views that are theme driven. This means the TIIMS staff has done the work to pull together all datasets needed for a complete look at pre-determined datasets. For instance, with the Forest Fuels Treatments map view described in category #1, parcel datasets from Visual Earth were used as a base with hydrologic and fuels treatment datasets layered on top.

The TIIMS staff has completed many successful projects to improve the usefulness and availability of data through www.tiims.org. In implementing these projects and sharing data, TIIMS has identified a continued need to enhance the data available to provide the public and agency professionals with the data they are requesting.

Additionally, Round 5 SNPLMA funded efforts to populate the TIIMS website with EIP project information to work towards providing comprehensive project level information for EIP projects. Currently on TIIMS, the first 10-years of EIP projects can be located on TIIMS in four ways:

1. **By Threshold:** Each EIP project has been linked to a threshold and can be located via the "Projects | EIP 1997 – 2007" area on TIIMS:
<http://www.tiims.org/Projects/EIP-1997-2007.aspx>
2. **By Agency:** Each EIP project has been linked to it's primary and coordinating agencies and can be located via the "Lake Tahoe Agencies" area on TIIMS:
<http://www.tiims.org/Work-Groups/Lake-Tahoe-Agencies.aspx>

3. **By Map View:** Each EIP project has been linked to all watersheds that were touched by the projects and can be located via the “Watershed Map View on TIIMS: <http://www.tiims.org/WatershedMapView.aspx>
4. **By Metadata Search:** Each EIP project has metadata that is fully searchable now making it very easy to locate any EIP project via the “Projects” area of the TIIMS Metadata Search page: <http://www.tiims.org/Science-Research/TIIMS-Toolbox/TIIMS-Metadata-Explorer.aspx>

This effort has been met with two consecutive responses:

1. “It’s about time we finally have EIP information accessible in one place!”
2. “How do I find out more information about each of these EIP projects?”

This project proposes an EIP tool that would provide an identical way to provide map based project searches as described in the Forest Fuels Map Viewer. Implementing this enhanced version of the EIP information already on TIIMS will assist with these existing information gaps:

1. Members of the general public will be able to learn about Rounds 5 through 9 Environmental Improvement Program projects that were conducted near private parcels.
2. The science and research community will be able to access detailed project level descriptions, documents, resource inventories, monitoring data, and data analysis for each Round 5 through 9 EIP project.
3. Land resource management staff will be able to easily find data about other Rounds 5 through 9 EIP projects implemented near their own projects.
4. Local, state, and federal government officials will be able to learn about Rounds 5 through 9 EIP projects in their jurisdictions.

The EIP 10-year report identifies 365 projects that were complete or very-near completion in 2007. There are 95 “Science and Research Projects” and 267 “Capital Projects.” The capital projects span all thresholds and range from stream restoration, to BMP implementation, to wildlife studies. The majority of these projects should have associated project level documents, reports, monitoring data and resource inventories. The time has come to create a lasting legacy for these projects and assemble all known and available project level information on TIIMS. This proposal will provide us with the means to request, store, and track all reports, resource inventories, and monitoring data for the capital projects done between 1997 and 2007. Additionally, where appropriate, monitoring data will be uploaded into an on-line SQL database where the data can be analyzed and tracked for analysis.

Currently the EIP implementer reports data and accomplishment units to TRPA through a spreadsheet and TRPA re-enters the data into a Primavera database. This proposal would create an online reporting template in-line with the EIP Update and will be used by the EIP project implementers. A translation tool will be built into TIIMS to take the data provided by the implementer, make it available on TIIMS while at the same time converting the data for automatic entry into the Primavera database. This effort will create a stable reporting process for EIP projects, will assist in their reporting information to the funder of the project if necessary, put project level information together in one place, assist in writing the annual report for the federal event, and pave the way for

programmatic implementations that are coming in the next phase of the EIP. This process will be used for all projects beyond the 10-year accomplishment report.

Submitting a new EIP project to acquire an EIP number and start project tracking will also be automated via this grant proposal. EIP implementers will be able to submit an EIP project to the TIIMS web site. TIIMS will store this project till it can be reviewed by a member of the TRPA EIP Team. Once approved, it will be assigned a number and automatically entered into the Primavera database.

Where appropriate, permit information for EIP projects is currently stored in the Accela permit tracing system at TRPA. This proposal will link Accela permit information with EIP projects on TIIMS. In this way, complete permit information will be available to implementers, partners, and members of the public.

All documents, reports, resource inventories, and monitoring data for new EIP projects can be attached to project information on TIIMS where it can be tracked and stored. Where appropriate, monitoring data will up-loaded into an on-line database where it can be analyzed and tracked for analysis.

Finally, spatial data for all projects will also be tracking on TIIMS. On-going spatial and project data collection will be needed to insure project information for the EIP map view and project metadata remains current.

Data Management #3: Project level monitoring contributing to the TMDL.

The TIIMS program is an active player in the implementation of the Tahoe Monitoring & Evaluation Information Management System currently being created by Shane Romsos at TRPA and his contracted partner Environmental Incentives. Mr. Romsos is working to create conceptual models for tracking trend monitoring. The goal is to standardize monitoring efforts and data collection, and create the ability to upload populated Excel datasheets into a common web-based database. Once this raw data is loaded into the web-based database, it can be analyzed and integrated into a system that can display trend information for any desired condition or aggregate this information into an over-all trend rating for lake clarity.

The Integrated Water Quality Management Strategy Project Report offers many strategies and discusses in detail pollutant controls and scenarios for urban run off, atmospheric deposition, stream channel erosion and stream restoration, and forested uplands. The *Lake Tahoe TMDL Pollutant Reduction Opportunity Report* stresses on page 15 that “Load reductions related to projects and programs will be tracked and project effectiveness will be monitored” while “A formal, continual improvement and adaptive management process will be used to focus implementation on the most effective and appropriate pollutant controls.” As the TMDL moves forward, methods will be created to track the volume of projects, monitoring data, load reductions and credits that will be generated on the path to achieving measureable improvements in lake clarity based on meaningful load reductions. TIIMS is uniquely positioned as a multi-agency, web-based solution for all TMDL tracking.

Specifically, both reports (Ex: page 13 of the *Lake Tahoe TMDL Pollutant Reduction Opportunity Report*) describe Phase Two: “Pollutant Reduction Analysis and Planning”

and Phase Three: “Implementation and Operation” for the TMDL. In an effort to answer specific load reduction questions, several elements will need to be tracked according to the *Lake Tahoe TMDL Pollutant Reduction Opportunity Report*:

- Integrated strategies to control pollutants from all sources
- Load reduction allocations
- Implementation milestones
- Monitoring plans
- Implemented projects
- Load reductions
- Project effectiveness
- Environmental status monitoring
- A continual improvement and adaptive management system
- Targeted research

Finally, all of these efforts will require the writing of “Periodic Milestone Reports.”

Writing of the Final TMDL report is in process, making this the perfect time to start planning work with Lahontan, NDEP, and any contracting firms to create a strategy for TMDL data management and resource inventory tracking. This proposal is requesting the funding to implement a TMDL tracking system that is anticipated to be a requirement of the TMDL. It is also anticipated that small, local jurisdictions may not have the resources or infrastructure to take on this task.

In addition, immediate steps can be taken to assist all partners by building on and enhancing the efforts already underway by NDEP and Lahontan to create an expanded web presence on TIIMS for the TMDL. Included in this web presence should be the four datasets already used to develop the baseline load estimates by jurisdiction as described in chapter 4 of *The Integrated Water Quality Management Strategy Project Report*. Finally, already created reports can be used to generate meaningful web content to introduce and intrigue members of the public into understanding both the TMDL program and the process being used to achieve success. For instance, people who are intimately involved in the TMDL process know the Tahoe TMDL fits into a much larger Environmental Protection Agency strategy. Yet many people in Lake Tahoe assume the Tahoe TMDL is a pilot program unique to Lake Tahoe; it is unknown that this is a national effort. A robust web presence would help to de-mystify the complex nature of this program and address the education element that is critical to the Watershed and Habitat Improvement Focus Area.

Data Management #4: Detection, control, prevention, and eradication of aquatic invasive species in Lake Tahoe.

Working with the Tahoe Conservation Resource District and the Aquatic Invasive Species working group, TIIMS would like to build on the excellent work already in progress. A dedicated map view will be created on TIIMS that answers the data management question:

- Where are the aquatic invasive species located in Lake Tahoe? This map view will utilize existing data to display in inventory and location information for all species of concern:
 - Eurasian watermilfoil
 - Curlyleaf pondweed
 - Asian Clam

- Large mouth bass
- Smallmouth bass
- Black crappie
- Bluegill
- Zebra mussel
- Quagga mussel
- New Zealand mudsnail

The boat inspectors have been plagued by boat owners who fail inspection and immediately traveling down the road to launch at a new location and thus evade invasive species prevention measures. A real-time boat-inspection database is needed that can be accessed and updated via cell phones. Using this type of on-line database will insure a failed boat will stay out of Lake Tahoe. It will also act as a deterrent for unscrupulous boat owners to attempt this type of launch hopping.

This database should be built as quickly as possible and allow inspectors to access this information in an on-line, real time database. This database should include:

- Vehicle license number and state of origin
- Boat trailer license number and state of origin
- Boat owner information
- Boat launcher information (if different than boat owner)
- Inspection tag: yes or no
- Inspection tag number
- Date and time of inspection
- Where boat has most recently been
- Reason boat failed inspection
- Comments

Many of these things are already collected by boat inspectors in paper format. Reporting tools can be built to provide resource managers with the ability to learn how many boats have been inspected, how many have passed or failed, where these boats have been, and why boats are failing inspections. Additionally, the tool will provide the ability to generate a PDF report for saving, printing, and sharing.

Describe the specific goals and objectives of the project and describe how fulfilling those objectives will contribute to the achievement of one more environmental thresholds (air quality, water quality, soil conservation, vegetation, fisheries, wildlife, scenic, noise, recreation).

Goals and Objectives:

1. Provide members of the science and research community, land resource management staff, local, state, and federal government officials with quick and easy ways to access existing and relevant spatial data and interactive map views for planning, reporting, decision making, and assisting with outreach and education by populating, developing, maintaining, and insuring the on-line database.

2. Standardize monitoring efforts and data collection, and create the ability to import populated Excel datasheets into a common web-based database and as well as export desired data.
3. Use the on-line database to analyze and integrate data into a system that can display trend information for any desired condition or aggregate this information into an over-all trend rating for lake clarity.

The data gathered to populate the TIIMS database and meet the goals listed will be directly related to improving the nine environmental thresholds.

Describe the anticipated project accomplishments (i.e. products or identifiable environmental benefits being produced or implemented under this project):

This proposal will implement critical elements identified in the June 2006 Federal Vision in the areas of outreach and education related federally funded EIP projects and provide analysis and decision making tools using existing data where the information is needed most, but not readily available in a meaningful format.

Data Management #1: Forest ecosystem health and fuels reduction projects guided by the LTBMU Stewardship Fireshed Assessment and Lake Tahoe Basin Multi-Jurisdictional Fuel Reduction and Wildfire Prevention Strategy.

- Enhancement the existing Forest Fuels Map Viewer on TIIMS to create a reporting tool that can provide acres accomplished and funding spent by: watershed, fire prevention district, agency, or jurisdictional boundary. This tool should be able to further break down funding by year and project status.
 - Color code data to sort projects by status: planned, in process, or complete.
 - Color coding data to sort by forest fuels projects in an area by year.
 - Refining data configuration to sort by watershed.
- Gather forest fuels treatment data from as far back as possible.
- Continue to collect data from all collaborating agencies.
- Create detailed project level descriptions; attach documents, resource inventories, and monitoring data.
 - Where feasible, upload monitoring data into an on-line database for analysis.
- Create reporting tools for printing, saving, and sharing PDF generated reports of TIIMS map views and SQL data.
- Create reporting tools that allow for tabular data export from TIIMS to Excel spreadsheets.
- Property owners will be able to access defensible space inspections done on their private parcels as access a map view of their property and their neighborhood.
- Fire prevention district and land resource managers will be able to access status information for:
 - Defensible space inspections
 - Chipping and
 - Tree Permits
- Fire prevention districts will be able to upload tree removal permits via a web-based tool on TIIMS.

Data Management #2: Implementation of EIP projects approved in Rounds 5 through 9.

- Create an EIP map view modeled after the Forest Fuels Treatment map view on TIIMS. This will allow property owners to locate EIP projects via an address search; project implementers to locate projects via a project search; and legislators to locate EIP projects via a jurisdictional search.
- Locate, upload, track and store as many documents, reports, resource inventories, and monitoring data as can be located for the 267 Capital Projects created in the first 10 years of the EIP.
 - Where appropriate, upload monitoring data into a common on-line database where this data can be analyzed.
- Create an online reporting template in-line with the EIP Update that will be used by the EIP project implementers to upload data into TRPA's Primavera program.
- Automate the EIP submittal process allowing on-line project submission, number assignment, and project tracking.
- TRPA's Accela permit tracking system will also be linked to TIIMS thus providing complete project tracking.
- On-going maintenance of the EIP data and information will be key to the on-going success of an on-line EIP tracking system.

Data Management #3: Project level monitoring contributing to the TMDL:

- Create a strategy for tracking project, monitoring, monitoring data, load reductions and credits created during the Pollutant Reduction Analysis and Planning phase plus the Implementation and Operations phases of the TMDL.
- Immediately create a geospatial representation of the baseline load estimates by jurisdiction proposed in the TMDL.
- Using already created TMDL reports, create a robust web presence for the TMDL that will help to de-mystify the complex nature of this program.

Data Management #4: Detection, control, prevention, and eradication of aquatic invasive species in Lake Tahoe goals:

- Create a dedicated map view that will display in inventory and location information for all aquatic invasive species of concern.
- Create an on-line, real-time database for boat inspectors which include detailed reporting capabilities.
- Explore the ability to link our inspection database with other planned or existing databases at other locations.

Describe the “readiness” of this project to move forward (urgency, capacity, capability, environmental documentation, interagency agreements, etc.):

The TIIMS team is ready for immediate implementation of this project. Round 5 funding has provided the staff and knowledge base to front load the research for the momentum into this next phase of TIIMS.

The goals and objectives for each category of this project address specific needs that have been identified and are uniquely suited for a multi-agency, on-line presence like TIIMS. The urgency is that many of the issues addressed in this proposal are necessary and needed for reducing administrative costs across the board for all agencies. Providing

more streamlined processes and the ability to quickly report on accomplishments will lower reporting costs and increase employee productivity.

The updated and enhanced TIIMS web site now has the tools to handle metadata, geospatial, and tabular data management and resource inventories that span disciplines and thresholds like forest ecosystem health, fuels reduction, and EIP project tracking, monitoring, and reporting; TMDL project tracking, monitoring, and reporting; and geospatial and mitigation project tracking of all Aquatic Invasive Species.

Describe partnerships for this project. (if applicable, project should identify committed/secured partner funding and/or other partner contributions (describe) and how it is integrated into the project):

This proposal is being submitted as a partnership with the TRPA. The TIIMS Program is administered through a Project Team that includes representatives from: TRPA, US EPA, USGS, USDA Forest Service, Nevada Division of Environmental Protection, California Tahoe Conservancy and the Tahoe Science Consortium. In addition, the Pathway 2007 Executives signed an agreement to work cooperatively to develop and use TIIMS as a means of supporting the Pathway 2007 planning process. No other funding exists for TIIMS to implement these projects.

Describe the estimated environmental risks from unintended consequences of the proposed project:

Not applicable.

Describe the project monitoring that will be implemented as part of this project including:

Not applicable.

Describe how the project results will be communicated and made available to the public.

TIIMS will provide publically available information for all goals and objectives.

If applicable, include an 8 ½ X 11 map depicting the project.

Not applicable.

*** TMDL References**

Contributions of Project to Lake Tahoe Sediment and Nutrient Total
Maximum Daily Load (TMDL)

Project nominations that fit the category of being consistent with and contributing to TMDL pollutant load reductions should provide additional rationale under items 3a – 3d of Appendix K. Supporting documentation to assist in providing responses to these items may be found at:

1. Lake Tahoe TMDL Pollutant Reduction Opportunity Report

(http://www.swrcb.ca.gov/rwqcb6/water_issues/programs/tmdl/lake_tahoe/docs/presentations/pro_report_v2.pdf), and

2. Integrated Water Quality Management Strategy Project Report

(http://www.swrcb.ca.gov/rwqcb6/water_issues/programs/tmdl/lake_tahoe/docs/iwqms_poj_report.pdf).

[These reports may also be accessed at Nevada Division of Environmental Protection's website, <http://ndep.nv.gov/bwqp/tahoe.htm>]