Western Regional Water Commission

STAFF REPORT

DATE: August 11, 2016

TO: Chairman and Members, Western Regional Water Commission ("WRWC")

FROM: Jim Smitherman, Water Resources Program Manager

SUBJECT: Discussion and possible approval of a scope of work and budget, not to exceed $20,176 from the Regional Water Management Fund ("RWMF"), for the Truckee River Information Gateway ("TRIG") website program upgrades and annual maintenance; if approved, authorize the Chairman to execute an interlocal agreement with the City of Reno for that purpose; and possible direction to staff

SUMMARY
The City of Reno manages TRIG using annual support from the RWMF in the amount of $7,500 to cover the cost of website hosting and maintenance services. The version of the website framework used to create TRIG requires an upgrade because it is no longer supported. The City of Reno has retained Ecological Research Associates ("ERA") to develop and maintain the TRIG website, perform the required upgrades and make significant improvements to the site. The total cost for the proposed upgrades and maintenance for FY 2016-2017 is $20,176.

Support for TRIG began in 2010 and, with the proposed FY2016-2017 scope of work and budget, the cumulative cost will exceed the Program Manager's $50,000 spending authority. This item therefore requires WRWC approval.

On August 3, 2016, the NNWPC approved the proposed TRIG scope of work and budget, and recommended that the WRWC execute an interlocal agreement with the City of Reno for completion of the work.

BACKGROUND
As part of an ongoing effort to make information about the Truckee River more readily available, the TRIG website was developed to provide web-based access to data. The Truckee Meadows Water Reclamation Facility ("TMWRF"), the Nevada Division of Environmental Protection ("NDEP"), and Coordinated Monitoring Program ("CMP") partners have collected significant quantities of data, most of which is useful to water quality experts, researchers, and concerned protection groups. The TRIG website data portal has been serving as a repository for some of these data, providing convenient accessibility to the data and other resources such as reports and spreadsheets. ERA was contracted by the City of Reno to develop TRIG as a one-stop Truckee River data warehouse and resource repository, accessible over the Internet.

FISCAL IMPACT
Funding for the TRIG website upgrades, improvements and maintenance is included in the RWMF Routine Operating Expense budget in the “Website” budget category for FY 2016-2017.
Budget authority is located in Fund 7066, under Cost Center WP310707, Account Number 710100.

**RECOMMENDATION**
The NNWPC recommends that the WRWC approve the proposed TRIG scope of work and budget for website program upgrades and annual maintenance, and execute an interlocal agreement with the City of Reno for that purpose.

**POSSIBLE MOTION**
Should the Board agree with the NNWPC’s recommendation, a possible motion would be: “Move to approve the proposed TRIG scope of work and budget for website program upgrades and annual maintenance, and authorize the Chairman to execute an interlocal agreement with the City of Reno for that purpose.”

JS:df

Attachment: Reno - ERA TRIG agreement
AGREEMENT FOR CONSULTANT SERVICES

THIS AGREEMENT, made and entered into this 20 day of July, 2016, by and between the CITY OF RENO, hereinafter referred to as “CITY” and ECOLOGICAL RESEARCH ASSOCIATES, hereinafter referred to as “CONSULTANT.”

WITNESSETH

WHEREAS, the CITY wishes to secure continuing services for Truckee River Info Gateway (“TRIG”), hereinafter referred to as “PROJECT.”

NOW THEREFORE, the CITY and CONSULTANT agree as follows:

1. Objectives.

   The CONSULTANT shall serve as the CITY’s consultant of record and shall give advice to the CITY during performance of services to which this Agreement applies. All services shall be performed by the Consultant.

2. Basic Services.

   2.1 The CONSULTANT will perform the services as part of this agreement as set forth in Attachment A, consisting of 6 pages, which is incorporated herein by this reference as if set forth in full herein. The services performed are for FY 16/17 (Computer upgrade w/enhancements + maintenance) in the amount of $20,176. Further, should any term and condition in Attachment A contradict a term of this Agreement, the terms and conditions of this Agreement shall control.

   2.2 The CONSULTANT will not change its Project Manager without written approval from the CITY.

3. CITY Responsibility.

   3.1 The CITY shall designate a Project Manager to act as the CITY’s representative with respect to the work performed under this Agreement.

   3.2 The CITY shall give prompt written notice to the CONSULTANT whenever the CITY observes or otherwise becomes aware of a problem with the project.


   By execution of this Agreement, the CITY grants to the CONSULTANT specific authorization to proceed, upon written notice, of the services as specified in Article 2 of this Agreement. All documents and materials shall be prepared per Attachment A.
5. **Compensation.**

5.1 Compensation for services performed as described in Article 2, for the duration identified in Article 4 of this Agreement shall be payable per Attachment A. The charge for services breakdown is as shown on Attachment A for a total not-to-exceed figure of $20,176.00 for FY 16/17. This total not to exceed figure includes costs as well as fees.

5.2 Invoices for services rendered shall be submitted monthly. Payment by the CITY will be made within thirty (30) calendar days of receipt.

6. **Special Services.**

No additional services shall be performed and no additional compensation shall be permitted without a CITY approved written “Supplemental Agreement”. This supplemental agreement must be approved by the authorized representative. Further, such supplemental agreement must be executed prior to the commencement or performance of any additional work.

7. **Records to be Maintained by Consultant.**

7.1 The CONSULTANT shall maintain records supporting requests for payment. Such records shall be available for inspection and audit by the CITY, and the CONSULTANT shall provide duplicate copies of all such records upon request by the CITY.

7.2 The information, conclusions and data generated during this Agreement by the CONSULTANT is for the exclusive use of the CITY. The CONSULTANT may not use this information, conclusions or data for any purpose other than to further the requirements of this Agreement. The CONSULTANT may not produce papers for professional journals or presentations for conferences without written permission and active participation by the CITY Project Manager.

8. **Ownership of Documents: Copyrights.**

8.1 The CONSULTANT shall furnish to the CITY all field notes, reports, data, and electronic or magnetic media, and original tracings of all drawings and plans, maps, photographs, and other materials (including, if requested by the Director, design computations, design sketches and review drawings) prepared pursuant to this Contract (hereinafter collectively referred to as “Documents”). The originals of such Documents shall be and remain the property of the CITY.
8.2 All of such Documents shall be deemed to be "works made for hire" prepared for the CITY. The ownership of all copyrights and all rights embodied in the copyrights in or to such Documents shall rest in the CITY when any such is subject to copyright. The CONSULTANT agrees that it, nor any of its employees, shall have any right to copyright any of such Documents. The CONSULTANT further agrees that neither it nor any of its employees shall exercise any of the rights embodied in the copyrights in or to such Documents, unless authorized to do so by the Reno City Council. The CONSULTANT shall place a conspicuous notation upon each Document which indicates that the copyright thereto is owned by the CITY.

8.3 Should it be finally determined, by a court or to her tribunal of competent jurisdiction, that any of such Documents is not a "works make for hire," it is agreed that the provisions of this section shall be termed an assignment, sale, and transfer of the copyright in or to such Documents to the CITY for the longest term allowed by law. Notwithstanding the foregoing, the CONSULTANT may retain copies of such Documents and such copies shall remain the property of the CONSULTANT. The CONSULTANT shall have the right to use such copies as it may desire, but the CONSULTANT may not sell, license, or otherwise market such Documents.

8.4 Documents, including drawings and specification prepared by CONSULTANT pursuant to this Contract, are not intended or represented to be suitable for reuse by CITY or others on extensions of the services provided for the Project or any other project. Any use of completed Documents for other projects and/or any use of uncompleted Documents without specific written authorization from CONSULTANT will be at the CITY's sole risk without liability or legal exposure to CONSULTANT.

9. **Skill Level of Consultant.**

Service performed by CONSULTANT will be conducted in a manner consistent with that level of care and skill ordinarily expected by members of the profession currently practicing in this area under similar conditions. CONSULTANT shall be responsible for the professional quality and technical accuracy of all services furnished by CONSULTANT.

10. **Insurance.**

The CONSULTANT shall maintain, during the term of this Agreement, an occurrence comprehensive general liability insurance for limits of not less than one million dollars ($1,000,000)
for bodily injury and property damages, per occurrence. As evidence of liability insurance coverage, the CITY will accept certification of insurance issued by an authorized representative of the insurance carrier. Coverage must be provided by an insurance company licensed to do business in the State of Nevada with an A.M. Best Rating of A – Class VII or better.

CONSULTANT shall maintain during the term of this Agreement and for six years after the completion of the project errors and omissions insurance, with each subsequent renewal having a retroactive date which predates the date of this Agreement, in the amount of not less that one million dollars ($1,000,000). As evidence of errors and omissions insurance coverage, the CITY will accept certification of insurance by an authorized representative of the insurance carrier.

Each certificate shall contain a 30-day written notice of cancellation to the certificate holder for any reason other than non-payment of premium and for non-payment of premium at least 10-day written notice and shall name the CITY as an additional insured, if the policy so allows and at the expense of the CITY, if there is a cost.

11. Indemnification.
   a. To the fullest extent permitted by law, the CONSULTANT shall defend, indemnify and hold harmless the CITY and its officers, employees and agents (collectively “Indemnitees”) from any liabilities, damages, losses, claims, actions or proceedings, including, without limitation, reasonable attorneys’ fees, that are caused by the negligence, errors, omissions, recklessness or intentional misconduct of the CONSULTANT or the employees or agents of the CONSULTANT in the performance of this Agreement.
   b. The CONSULTANT assumes no liability for the negligence or willful misconduct of any indemnitee or other consultants of indemnitee.
   c. The CONSULTANT’s indemnification obligations for claims involving “Professional Liability” (claims involving acts, error, or omissions in the rendering of professional services) and “Economic Loss Only” (claims involving economic loss which are not connected with bodily injury or physical damage to property) shall be limited to the proportionate extent of CONSULTANT’s negligence or other breach of duty.

   To the fullest extent permitted by law, CONSULTANT shall defend, protect, hold harmless, and indemnify CITY and the CITY related parties from and against any and all
liability, loss, claims, demands, suits, costs, fees and expenses (including actual fees and expenses of attorneys, expert witnesses, and other consultants), by whomsoever brought or alleged, for infringement of patent rights, copyrights, or other intellectual property rights, except with respect to designs, processes or products of a particular manufacturer expressly required by CITY in writing. If CONSULTANT has reason to believe the use of a required design, process or product is an infringement of a patent, CONSULTANT shall be responsible for such loss unless such information is promptly given to CITY. This Indemnity Covenant shall survive the termination of this Agreement.

13. **Taxes.**

CONSULTANT shall pay any and all Federal, State and local taxes, charges, fees, or contributions required by law to be paid with respect to CONSULTANT’s performance of this Agreement (including, without limitation, unemployment insurance, social security, and income taxes).

14. **Independent Contractor.**

The parties agree that CONSULTANT is an independent contractor and this Agreement is entered into in conformance with the provisions of NRS 333.700. The parties agree that CONSULTANT is not a CITY employee and there shall be no:

a. Withholding of income taxes by the CITY;
b. Industrial insurance provided by the CITY;
c. Participation in group insurance plans which may be available to employees of the CITY;
d. Participation or contributions by either the independent contractor or CITY to any public employees’ retirement system;
e. Accumulation of vacation leave or sick leave;
f. Unemployment compensation coverage provided by CITY if the requirements of NRS 612.085 for independent contractors are met.

15. **Workmen’s Compensation Insurance.**

It is understood and agreed that there shall be no Industrial Insurance coverage provided for CONSULTANT or any Subconsultant by the CITY and in view of NRS 616B.627 and 617.210 requiring that CONSULTANT complies with the provisions of Chapters 616A to
616D, inclusive and 617 of NRS, CONSULTANT shall, before commencing work under the provision of this Agreement, furnish to the CITY a certificate of insurance from the Worker’s Compensation Insurer certifying that the CONSULTANT and each Subconsultant have compiled with the provisions of the Nevada Industrial Insurance Act, by providing coverage for each and every employee, subconsultants, and independent contractors. Should the CONSULTANT be self-insured for Industrial Insurance, the CONSULTANT shall so notify the CITY and approve written approval of such self-insurance prior to the signing of a Contract. The CITY reserves the right to accept or reject a self-insured CONSULTANT and to approve the amount(s) of any self-insured retentions. The CONSULTANT agrees that the CITY is entitled to obtain additional documentation, financial or otherwise, for review prior to entering into a Contract with the CONSULTANT.

Upon completion of the project, the CONSULTANT shall provide the CITY with a Final Certificate for itself and each Subconsultant which is prepared by the State of Nevada Industrial Insurance System. If the CONSULTANT or Subconsultants are unlicensed and are a sole proprietor, coverage for the sole proprietor must be purchased and evidence of coverage must appear on the Certificate of Insurance and Final Certificate.

It is further understood and agreed by and between the CITY and CONSULTANT that CONSULTANT shall procure, pay for, and maintain the above mentioned industrial insurance coverage at the CONSULTANT’s sole cost and expense.

16. **Business License.**

CONSULTANT shall maintain in full force and effect throughout the term of this Agreement a current business license from the City of Reno.

17. **Compliance with Legal Obligations.**

CONSULTANT shall procure and maintain for the duration of this Agreement any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance law, or regulation to be held by CONSULTANT to provide the services required by this Agreement. CONSULTANT is solely responsible to pay assessments, premiums, permits and licenses required by law. Further, CONSULTANT agrees to comply with all applicable federal and state laws including, but not limited to, the Americans with Disabilities Act of 1990 and related standards, guidelines, and regulations (collectively “ADA”) in providing the
services identified in this Agreement. It is the responsibility of CONSULTANT to address in the performance of the services any and all access or other issues to assure compliance with the ADA.

18. **Employment Opportunity.**

CONSULTANT shall not discriminate against any employee or applicant for employment because of race, creed, color national origin, sex, sexual orientation or age. Sexual orientation means having or being perceived as having an orientation for heterosexuality, homosexuality or bi-sexuality. Any violation of this provision by consultant shall constitute a material breach of contract.

19. **Notices.**

Any notices provided for herein shall be given in writing by certified mail, return receipt requested, or by personal service to:

**CITY OF RENO:**
City of Reno
John Flansberg, P.E.
Director of Public Works
If by personal service
1 East First Street. 7th Floor
Reno, NV 89501
If by mail
P.O. Box 1900
Reno, NV 89505

**CONSULTANT:**
Ecological Research Associates
Attn. Charles R. Goldman, Ph.D.
PO Box 3845
Incline Village, NV 89450

20. **Assignment.**

This Agreement is binding on the heirs, successors, and assigns of the parties hereto. This Agreement is not to be assigned by either party without prior written consent of the other.

21. **Integration.**

This agreement represents the entire understanding of CITY and CONSULTANT as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may not be modified or altered except by written amendment thereto signed by both parties.
22. **Jurisdiction.**

This Agreement shall be administered and interpreted under the laws of the State of Nevada. If any part of this Agreement is found to be in conflict with applicable laws, such part shall be inoperative, null and void insofar as it is in conflict with said laws, but the remainder of this Agreement shall be in full force and effect.

23. **Suspension of Work.**

Either party may suspend, by written notice, all or a portion of the work under this Agreement, in the event unforeseeable circumstances, beyond the control of either party, make normal progress in the performance of the work impossible. The party desiring to suspend the work must request that the work be suspended by notifying the other party, in writing, of the circumstances which are interfering with normal progress of the work. The time for completion of the work shall be extended by the number of days the work is suspended. In the event that the period of suspension exceeds ninety (90) working days, the terms of this Agreement are subject to renegotiation and both parties are granted the option to terminate work on the suspended portion of the project in accordance to Article 24 of this Agreement.

24. **Termination of Work.**

The CITY may terminate, by written notice, the work under this Agreement. The CONSULTANT may terminate work in the event the CITY fails to perform in accordance with the provisions of this Agreement. Termination of this Agreement is accomplished by fifteen (15) working days prior written notice from the party initiating termination to the other. Notice of the termination shall be delivered by certified mail with receipt of delivery returned to the Sender. In the event of termination, the CONSULTANT shall perform such additional work, as is necessary for the ordinary filing of documents, and closing shall not exceed ten percent (10%) of the total time expended on the termination portion of the project prior to the effective date of termination. The CONSULTANT shall be compensated for the terminated portion of the work on the basis of work actually performed prior to the effective date of termination, plus the work required for filing and closing. Charges for the latter work are subject to the ten percent (10%) limitation described in this Article.
CONSULTANT expressly agrees that this Agreement shall be terminated immediately if for any reason local, federal and/or State Legislature funding ability to satisfy this Agreement is withdrawn, limited, or impaired.

25. **Dispute Resolution.**

All claims, counterclaims, disputes and other matters in question between the CITY and the CONSULTANT arising out of, or relating to, this contract or breach of it, unless otherwise settled, may be mediated before initiation of a judicial action.

Unless the parties mutually agree otherwise, mediation will be in accordance with the Construction Industry Mediation Procedures of the American Arbitration Association currently in effect. The American Arbitration Association will not be used to administer or facilitate the process or the selection of the mediators. Instead, the parties will attempt to mutually agree to the appointment of one mediator. If the parties cannot agree to one mediator, each party shall select one mediator and the two mediators will appoint a third mediator. The parties agree to split the mediator(s) fees and expenses. Each party shall bear their own attorney’s fees and other costs incurred for the mediation.

26. **Attorneys’ fees.**

If either party breaches this Agreement, the prevailing party in any litigation, including arbitration, concerning the Agreement is entitled to recover its court costs and reasonable attorneys’ fees.

27. **Severability.**

If any provision contained in this Agreement is held to be unenforceable by a court of law or equity, this Agreement 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 Agreement unenforceable.

28. **Due Authorization.**

Each party represents that all required authorizations have been obtained to execute this Agreement and for the compliance with each and every term hereof. Each person signing this Agreement warrants and represents to the other party that he or she has actual authority to execute this Agreement on behalf of the party for whom he or she is signing. A facsimile signature on this Agreement shall be treated for all purposes as an original signature. This
Agreement is executed in one duplicate original for each party hereto, and is binding on a party only when all parties have signed and received a duplicate original.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands and seals the year and date first above written.

CITY OF RENO

[Signature]
Andrew Clinger, City Manager

Ecological Research Associates

[Signature]
By: Charles R. Goldman, PhD, President

APPROVED AS TO LEGAL FORM:

[Signature]
Susan Ball Rothe, Deputy City Attorney
Truckee River Info Gateway (TRIG): Providing data rich resources and portal enhancements with ongoing maintenance

Scope of Work

Submitted to:
City of Reno

Cities Representative:
Lynell Garfield-Qualls, Hydrologist

Submitted by:
Ecological Research Associates
PO Box 8699  3845
Incline Village, NV 89452  89450

http://www.ecologicalresearchassociates.com

Consultant Representative:
Charles R. Goldman, Ph.D.
Introduction

Over the years, the water quality and aquatic habitats of the Truckee River have been closely monitored by the Cities of Reno and Sparks. The Truckee Meadows Water Reclamation Facility (TMWRF), Nevada Division of Environmental Protection (NDEP), and Coordinated Monitoring Program partners (CMP) have collected significant quantities of data, most of which need to be accessible to water quality experts, researchers, and concerned protection groups. The Truckee River Info Gateway (TRIG) website/data portal has been serving as a repository for some of these data, including other resources such as reports and spreadsheets. Importantly, the version of the website framework used to create TRIG, Drupal 6, will soon become "unsupported" (February 24, 2016) as all development efforts in the Drupal community is now geared toward maintaining Drupal 7 and developing enhancements to the newly released Drupal 8. We are proposing to make significant improvements to the TRIG website, migrating the site to Drupal 8, continuing to maintaining the site, and providing additional resources for its various audiences, including the Truckee Meadows NPDES Stormwater permit program and local TMDL stakeholder group.

Ecological Research Associates (ERA) built TRIG to be a one-stop, data warehouse and resource repository on the Truckee River (and its tributaries) accessible over the Internet. The website currently serves data and metadata for various datasets from the NDEP, TMWRF, Truckee Meadows Storm Water Permit Coordinating Committee, Tahoe-Truckee Sanitation Agency (TTSA), and the Truckee River Watershed Council (TRWC). There are also important documents and resources related to the TMDL process, water quality standards review, the coordinated monitoring program, and other planning efforts, which the cities of Reno and Sparks have contracted TRIG for maintaining. Other resources that are available and hosted on TRIG include a list of collection sites along with a mapping interface to the individual locations, digital images, geographic data, bibliography of articles, and online documents and reports.

The mission of TRIG, as stated on the homepage, is to be "an invaluable resource for Truckee River basin studies". To fully actualize this, we need to make upgrades to the website so that the data hosted can be accessed in additional ways. Also, the website needs to become a mobile first website, so that people can use tablets and smartphones to view the information hosted on the site. We would also like to continue to improve participation from individuals who want to add content to the site, and to support watershed management efforts while maximizing utilization of resources.
About Ecological Research Associates (ERA)

ERA is an environmental consulting company with over 50 years of experience focused on water related research and consulting in the Sierra Nevada, High Desert, Lake Tahoe, and Pyramid Lake, as well as extensive reservoir and lake consulting assignments throughout the world. ERA was founded in 1959 by the current President, Dr. Charles R. Goldman, Emeritus Distinguished Professor of Limnology at the University of California in Davis. The Company performs specialized consulting and planning work on small and large lakes as well as reservoirs, rivers and estuaries.

Summary of Tasks and Estimated Timelines

ERA will embark on several significant improvements and developments to the TRIG website. This includes a redesign of the user interface to make access easier and more logical. Graphics will be standardized to ensure the same look and feel throughout the online experience. Below are a summary of tasks and an estimate of when they will be completed, although working versions could certainly be available before these dates.

- **Upgrade TRIG from Drupal 6 to Drupal 8**
  The framework will be upgraded and the site will be more modern in appearance and design. The underlying technology provides more capability to add web services which will provide other ways of accessing the data hosted. We plan to bypass Drupal 7, as Drupal 8 is currently the recommended platform to use for new sites. *(Completed before September 30, 2016)*

- **Mobile-First design**
  The new design will support smartphones and tablets, while desktop computers will function even more effectively. *(Completed before September 30, 2016)*

- **Online training guide**
  We will develop a short training guide which will be hosted online, providing help for those who are going to be adding and maintaining the site's content. *(Completed by November 30, 2016)*

- **Maintain existing website for the duration of this contract**
  Even with the new Drupal 8 framework, there will be periodic security updates and enhancements. We'll ensure that the latest version of Drupal 8 is secured to prevent hackers and crackers from damaging the site. Regular meetings will also help determine some priorities for other minor enhancements. *(Ongoing)*
Proposed Objectives

Upgrade TRIG from Drupal 6 to Drupal 8

TRIG is built with the content management system (CMS), Drupal. This powerful (and popular) open source web framework has one of the strongest communities on the web, and has many developers and participants who help support the CMS. The current version of TRIG was constructed using Drupal 6, and this version will no longer be supported by the community in the near future. As the community moves on to Drupal 8, support for Drupal 6 will cease. It is important that the site follow an upgrade path so that it can properly utilize the security features and internal enhancements and offer the best possible experience to the end user. Now is the time to upgrade to Drupal 8, and this is one of the primary activities of this proposal. We estimate a total of 100 hours of work to complete the migration with additional enhancements, including the ones listed below.

The upgrade to Drupal 8 will provide many enhancements and improvements. There are many subtle usability improvements which make the administration of the sites easier. There are also performance improvements as well as many security improvements. TRIG has been plagued with spam in the past, which we have had to remove. There are new tools to help prevent spam and automated account creation by web-bots. Other enhancements are listed below.

Mobile-First Site Design

A responsive design will be implemented for the sites theme, making it possible to navigate the site with a smartphone and tablet more easily. Studies show that many people are using their mobile devices to conduct business, and it is, therefore, important to have a site design which can work on these devices. This task is linked to the task above, and will be built from the beginning to support mobile devices.

The new design will be both elegant and more functional, improving the user interface and "usability" for those individuals who will login and add content. The site will also become a little easier to use, based on the improvements Drupal 8 has made from Drupal 6.

Website Maintenance

Managing a Drupal website requires that new security updates are applied to production websites immediately. For example, when the frameworks moves from 8.0 to 8.1, it is important to apply this change to minimize the risk of a security incident to the website. Leaving an open security hole is an invitation to hackers and crackers. The website administrator—in this case ERA—has a responsibility to adhere to this schedule to help prevent unwanted intrusion.
Beside upgrading the Drupal Core framework, there are also third party modules to support. Third party modules provide additional functionality to a website. As there modules are updates with security fixes and functional improvements, the site incorporates these enhancements also.

**Various ways to Access Data**

The World Wide Web Consortium (W3C) has devised a set of standards for the exchange of information across the Internet. Implementing these open standards has a lot of advantages in the context of the Truckee River, where various agencies and organizations hold disparate data. Researchers can go to a single website to collect an inventory of the available data, query the metadata for precise search results, and even access data from these sources through the portal. We will discuss our strategy, experiences, and interim results as we collaborate in this effort.

**Web Mapping of Collection Sites**

The use of web mapping tools has become a standard way of accessing spatial information that for TRIG includes location of collection sites and data (and metadata) from those sites. TRIG has collected a fair amount of data (over 3.25 million records) since we started, and some of the context of these data is lost without an online site map to visualize their location. The ability to click a point on a map that links to a description, image, and available data, is very important in understanding the “big picture”, and how these data are related in the Truckee River basin.

**Backups**

Ongoing backups of the web framework, the database, and the associated linked files are essential. The backup procedure needs to be tested and there needs to be a high degree of assurance that this procedure will work in the event of an incident, such as a disk crash, site compromise, or natural disaster.

We will outline the website's backup and restore procedures including its fault tolerant capability. Major improvements in this area would likely increase the overall costs of the project, as adding redundancy to the system will increase the costs, but we will clearly document the procedure and have discussions as to the level of fault tolerance required.
Budget

This budget is for one and a half (1.5) years of maintenance and support. Initial development to upgrade the framework would be a one time cost, after which we would hold regular (monthly) meetings to make additional enhancements (as budget permitting). We would maintain the site length of this contract. Please see the tasks, amount, and payment schedule below.

<table>
<thead>
<tr>
<th>Task</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Programming based on approximately 80 hours of work</td>
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<tr>
<td>Web Hosting + SSL Certificate / for 1.5 years</td>
<td>$300</td>
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<tr>
<td>Ongoing Maintenance and Support / for 1.5 years</td>
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<td>Grand Total</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>FY 15-16 / Start upgrade and maintenance</td>
<td>$7,500</td>
</tr>
<tr>
<td>FY 16-17 / Complete upgrade w/ enhancements + maintenance</td>
<td>$20,176</td>
</tr>
<tr>
<td>Grand Total</td>
<td>$27,676</td>
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</table>