Report (For Possible Action): Approval of Consultant Agreement with Petty & Associates, Inc. For Phase 1 of the two phase Truckee Meadows Water Reclamation Facility (TMWRF) #1, #2 and #3 Water Systems Evaluation and Improvement Project at TMWRF in the amount of $319,560.00, with Reno's share being $219,314.03 (Sewer Enterprise Fund)

Summary: A comprehensive risk ranking of needed capital improvements at the Truckee Meadows Water Reclamation Facility (TMWRF) was conducted in 2012. TMWRF and City of Reno staffs have identified that the #1 water system, the #2 water system and the #3 water system at TMWRF are fundamental to the operations and maintenance of the facility. This agreement with Petty & Associates Inc. is for the first phase of the project to evaluate and design improvements. This phase will evaluate the existing facilities, recommend improvements, and provide budgetary estimates for the improvements. Additionally, for a portion of the most critical and high risk problem areas, Phase 1 will evaluate and provide designs that can be bid out for a construction contract, preceding the completion of Phase 2. Phase 2 will be directed through an amendment to this agreement and will provide final design for the selected alternatives based on the Phase 1 recommendations for the remainder of the facilities under consideration.

Background: TMWRF was constructed in the 1960's and is jointly owned by the Cities of Reno and Sparks. The City of Reno oversees the Capital Improvement Program for TMWRF, while The City of Sparks manages the operations. The #1 water system is the potable water system used at the plant for domestic applications such as sinks, toilets, eyewash stations, etc. The #2 system utilizes reclaimed water produced by TMWRF. The #2 water is used for cleaning as well as for the cooling of mechanical equipment related to the plant processes. The #3 water system is the same as the #2 system, except that it runs at higher pressures, and is used for cleaning and washing down equipment and plant infrastructure where higher pressures are required.A large portion of the existing water systems are from the original construction of the plant. Over the years there have been expansions and piping modifications resulting in concerns as follows:

1. Critical electrical and control components are at risk due to unforeseen water system failures.
2. Increasingly costly and time consuming to maintain aging #1/#2/#3 systems.
3. The potential that the #1 system has been inadvertently "cross connected" to the #2 and #3 systems resulting in a major health/safety concern.
4. Potential cross connections between the #2/#3 system and other plant process water.
5. Inability for plant staff to react quickly to emergency water systems issues at the plant since there is no "as built" map of all the water systems nor are these systems labeled or color coded according to current standard practice (The "10 States Standards").
6. Inability to properly operate and control the #2 and #3 system chlorine levels and pressure.
7. Failing valves, pumps and heat exchangers due to poor control of water chemistry, inappropriate use of #2 water or poorly configured systems.

8. Loss of ability to adequately clean equipment (loss of pressure, or inadequate service connections).
9. Significant precipitation (chemical build up) in #2/#3 systems, resulting in loss of capacity within the pipes.
10. Inappropriate piping materials for the application resulting in pipe failures.
11. Freeze/thaw concerns with the #2/#3 systems throughout plant.
12. Loss of #2/#3 system reliability, especially where the treatment process depends on it.
13. Replacement of infrastructure which has reached the end of its service life, including both piping and an evaluation of the #2 water tank on the hill to the south of TMWRF.
14. Water hammer in select locations, which subjects the system to premature failure.
15. Removal of abandoned portions of the #2 system.

Discussion: Due to the complexity of the #1/#2/#3 water systems, a significant amount of work will be required in Phase 1 to understand the existing systems, including mapping the systems and destructive/non-destructive testing to evaluate the existing condition. Improvements to the aging, failing and maintenance intensive #1/#2/#3 water systems will allow for maintenance staff to redirect efforts to other parts of the facility. The cross connection control as part of this work will address worker safety concerns. The creation of an updated plantwide #1/#2/#3 water systems schematic will allow for improved use and proper management of the system, including shutdowns in emergency situations, the ability to better isolate portions of the system, avoidance of cross connections, and removal of abandoned portions of the system. The control of chlorine levels and improved filters on the #2/#3 systems will prolong system life, reduce maintenance impacts due to sediment plugging nozzles and sprayers, help to ensure minimum chlorine levels in all portions of the system, and avoid adverse affects on piping caused by high chlorine levels.
Additionally, the Phase 1 work contains tasks that will allow for immediate design work in an effort to then advertise a construction contract to remedy the most critical risks to the control system and the electrical system according to a risk register created by TMWRF staff. This will serve to prevent further emergency failures, and improve plant operations.

Financial Implications: This work is recognized as a priority and funding is included in the Capital Improvement Project list approved by the Joint Coordinating Committee. The City of Reno will administer this agreement and will be reimbursed for a portion of the costs by the City of Sparks through the current cost sharing agreement for TMWRF operation and maintenance. The City of Reno and the City of Sparks share the cost of this project based upon their ownership of TMWRF, which is 68.63% for Reno and 31.37% for Sparks, as shown in Table 1.

Table 1 – Cost Sharing Between Reno and Sparks

Total Cost of Contract	Reno Share	Sparks Share

$319,560.00	$219,314.03	$100,245.97
Percentages	68.63%	31.37%

Legal Implications: None at this time.

Recommendation: Staff recommends Council approve an agreement with Petty & Associates Inc. for Phase 1 work pertaining to the Truckee Meadows Water Reclamation Facility's #1, #2 and #3 Water Systems Evaluation and Improvement Project in the amount of $319,560.00 and authorize the Mayor to sign.

Proposed Motion: I move to approve staff recommendation.