

NORTHERN NEVADA WATER PLANNING COMMISSION AGENDA

Wednesday, January 6, 2010
1:30 p.m.

Washoe County Commission Chambers
1001 East Ninth Street
Reno, Nevada

1. Roll Call and determination of presence of a quorum.
2. Approval of agenda.
3. Approval of the minutes from the December 2, 2009, meeting.
4. Public Comments. * (Three-minute time limit per person.)
5. Review and discussion of draft Water Resources chapter to be included in the 2011 Comprehensive Regional Water Management Plan, including sustainable water resources available in Washoe County and population that can be supported by sustainable water resources to address issues raised by Washoe County Ballot Question #3 (2008), and possible direction to staff, Jim Smitherman, WRWC Water Resources Program Manager.
6. Status report on development of the 2011 Comprehensive Regional Water Management Plan, including outline, timeline and contractual services, and possible direction to staff, Jim Smitherman.
7. Program Manager's Report, Jim Smitherman *
 - a. Status Report of Projects and Work Plan supported by the Regional Water Management Fund
 - b. Financial report on the Regional Water Management Fund
 - c. Truckee River Flood Management Project status report
 - d. Informational report from the NNWPC representative on the Truckee Meadows Water Authority Standing Advisory Committee
8. Discussion and possible direction to staff regarding agenda items for the February 3, 2010, Commission meeting and future meetings, Jim Smitherman.
9. Commission comments. *
10. Staff comments. *
11. Public Comments. * (Three-minute time limit per person.)

**NORTHERN NEVADA WATER PLANNING COMMISSION
MINUTES**

Wednesday, December 2, 2009

The regular meeting of the Northern Nevada Water Planning Commission (NNWPC) was held on Wednesday, December 2, 2009 in the Washoe County Commission Chambers, 1001 East Ninth Street, Reno, Nevada.

- 1. Roll Call and determination of presence of a quorum** – Chairman Seidel called the meeting to order at 1:33 p.m. There was a quorum present.

Voting Members Present:

Wayne Seidel, Chairman
George W. Ball, Jr., Vice-Chairman
Michael J. DeMartini
John Flansberg
Mickey Hazelwood
John Jackson
Rosemary Menard (left at 3:03 p.m.)
Jerry Schumacher (left at 2:55 p.m.)

Voting Members Absent:

John Erwin
Darrin Price
Stan Shumaker

Non-Voting Members Present:

Harry Fahnestock (arrived at 1:40 p.m.)

Non-Voting Members Absent:

John Bird
Kelvin Hickenbottom
David Noble
Jon Palm

Staff Members Present:

Jim Smitherman (left at 2:50 p.m.)
Chris Wessel
June Davis
John Rhodes, Legal Counsel

2. Approval of the agenda.

Commissioner Hazelwood made a motion to approve the December 2, 2009 NNWPC agenda as posted. Commissioner Flansberg seconded the motion, which carried unanimously.

3. Approval of the minutes from the October 7, 2009 meeting.

The minutes of the October 7, 2009 NNWPC meeting were submitted for approval. Commissioner Schumacher made a motion to approve the minutes as submitted. Commissioner DeMartini seconded the motion, which carried unanimously.

4. Public Comments.

Chairman Seidel called for public comments and hearing none, closed the public comment period.

5. Introduction of Mickey Hazelwood, the newly appointed Public at Large member to represent environmental, biological, conservation or public concerns.

Chairman Seidel welcomed Mickey Hazelwood, who was recently appointed to the NNWPC. He also welcomed John Flansberg, City of Reno, who recently replaced Neil Mann on the NNWPC.

6. Final report on the 2009 Certified Landscape Technician (“CLT”) testing program; request for funding in the amount of \$25,000 from the Regional Water Management Fund (“RWMF”) to support the program in 2010 and 2011; and, if approved, authorize the Program Manager to execute a contract with the Nevada Landscape Association (NLA) for that purpose, Jim Stanhouse, CLT Test Administrator, Nevada Landscape Association.

Jim Smitherman thanked Jim Stanhouse for attending today to provide an update on the CLT testing program. Mr. Smitherman explained that the NLA has been administering the program since 2003. He added that the program has been successful and has grown every year. He reported that the program has been supported by the RWMF for three seasons and this item includes a request for continued funding in the amount of \$25,000 for two years. He stated that the Advisory Committee on Conservation was always very supportive of the program.

Mr. Stanhouse thanked Commissioners for their past funding. He gave a brief overview of the 2009 program, in which two CLT programs were administered, with most applicants passing. He presented a short video, which provided a background on why the program is important based on the need to conserve water, which requires proper training of landscape technicians. The video also showed some of the testing modules and how they are administered.

Mr. Stanhouse reiterated that the funding request is for \$25,000, which is more than past requests based on the desire to purchase some equipment (i.e. tables, chairs and tents) that has been rented. He stated that the NNWPC also recommended in the past that additional advertising for the program be included.

Chairman Seidel stated that approximately 50% of water usage is for outdoor uses, such as irrigation of landscaping.

Commissioner Ball made a motion to approve the request for \$25,000 from the RWMF to support the CLT program in 2010 and 2011 and direct staff to execute a contract with the NLA for that purpose. Commissioner DeMartini seconded the motion, which carried unanimously.

7. Technical presentation and discussion concerning the Desert Research Institute (“DRI”) cloud seeding program including program history, results, current and future status, funding, beneficiaries of the program in the Truckee River and Tahoe basins; and possible direction to staff regarding development of a Truckee - Tahoe cloud seeding coalition, Dr. Kenneth Kunkel, DRI.

Chairman Seidel welcomed Dr. Kenneth Kunkel, Executive Director of the DRI Division of Math and Sierra Sciences. Dr. Kunkel reported that this Division is responsible for the cloud seeding program. Dr. Kunkel gave a PowerPoint presentation (copy on file), which provided a brief background of DRI, for which faculty are soft-money supported. He added that faculty is made up of entrepreneurs, who must be very competitive in order to secure funding. He explained that DRI reports to the Chancellor of higher education at the same level as the university and community colleges.

Dr. Kunkel provided a technical report on the cloud seeding process. He stated that an article in the National Academy of Science about five years ago was critical of weather modification science efforts, with the exception of the cloud seeding process used by DRI. He stated that DRI has noted increases of 5 to 10% in the snowpack over specific watersheds in the Sierra Nevada. He reported that the five cloud seeding generators in the Truckee-Tahoe area produce approximately 18,000 additional acre-feet per year of water on average.

Dr. Kunkel introduced Arlen Huggins, Associate Research Scientist Division of Atmospheric Sciences. He stated that Mr. Huggins, is responsible for monitoring the weather to make decisions on optimal timing for cloud seeding.

Dr. Kunkel reported that last year DRI's budget was cut approximately 15% (\$1.4 million reduction in state funding). He added that the state funding is currently about \$8.8 million, compared to other grants and sources (generated by faculty requests), which account for approximately \$40 million. Dr. Kunkel reported that Steve Wells, DRI President, communicated to the legislature that proposed cuts to the state funding would most likely result in elimination of the cloud seeding program. He explained that some of the Truckee River / Tahoe Basin sites were dismantled prior to August when some third-party funding opportunities were presented. He summarized that funding has been approved by TMWA and the Western Regional Water Commission (WRWC) for one year. He added that the Ruby and Tuscarora areas received funding from Southern Nevada Water Authority (SNWA).

Dr. Kunkel stated that for the long-term, a stable funding program is desired and currently plans are in progress for a statewide consortium, which would include representatives from the Tahoe-Truckee Basin. He summarized that DRI's cloud seeding program is nationally recognized. He reiterated that long-term stable funding is needed to continue the program.

Chairman Seidel thanked Dr. Kunkel and called for questions from Commissioners. Commissioner DeMartini asked Dr. Kunkel to clarify the benefits of the program as far as increased precipitation. He asked if there are numbers associated with the value of the water generated from the program. Dr. Kunkel reiterated that 18,000 acre-feet of additional water is estimated on average so at \$27/acre-foot the estimated benefit is over \$400,000. Commissioner DeMartini stated that based on his numbers the estimated benefit is approximately \$140,000 to \$280,000 using a 10% yield.

Dr. Kunkel asked Mr. Huggins for comments. Mr. Huggins stated that staff establishes the benefit by dividing the cost of the project by the number of acre-feet estimated, which results in a cost of approximately \$8 to \$15 per acre-foot per year.

Commissioner Menard asked who the beneficiaries of the snow are. Dr. Kunkel stated that the beneficiaries include the ski industry, Lake Tahoe users, and then all the users of water down the Truckee River. He added that the snow pack lasts longer so it benefits the ecosystem by lowering the risk of forest fires.

Commissioner Menard asked how an El Nino type year would impact cloud seeding based on warmer storms. Dr. Kunkel agreed the El Ninos tend to be warmer and might produce less snowpack based on warmer temperatures. Mr. Huggins stated that the program is set up to terminate cloud seeding when snowpack is estimated at 150% of normal at mid-winter or 140% of normal at the end of winter.

Commissioner Menard asked if there is an environmental downside to using silver iodide (which is used for cloud seeding). Mr. Huggins stated that in the Truckee-Tahoe Basin, there has been no sign that the silver iodide accumulates or is even detectable. He explained that only about 10 to 15 pounds of silver iodide are used for each generator per season, which is dispersed up to 1,000 square miles. He added that silver iodide is an insoluble compound so it does not dissolve into the water or snow. He summarized that environmental reports and environmental impact statements have been developed, which show no significant environmental impact based on the use of silver iodide.

Commissioner Ball asked if the generators are in place for this winter. Dr. Kunkel stated yes and that they have already been operated. He added that Mr. Huggins is a meteorologist and the Program Director of the program. Commissioner Ball asked how many visits to the sites are typically required. Mr. Huggins stated that sometimes breakdowns occur, which require a site visit; however, typically there are two visits per season. He added there are five generators located upwind of Tahoe and seven in the Ruby / Tuscarora areas.

Commissioner Flansberg asked if DRI has been in contact with ski resorts. Dr. Kunkel stated that some initial contacts have been made. He asked Greg Bortolin to provide further comment. Mr. Bortolin stated that DRI's President has been in contact with Squaw USA and others in the ski industry. He added that the President also met with the Cattlemen's Association in northeastern Nevada and some in Las Vegas.

Commissioner Menard asked when establishing a consortium, if representatives would be sought from the NNWPC. Mr. Bortolin stated that County Commissioner / WRWC Commissioner Breternitz has been very active in the process. He added that Commissioner Menard would also be asked for input as to the most appropriate representatives.

Chairman Seidel thanked Dr. Kunkel and staff for their presentation.

8. Status report on pending integration/consolidation of the Washoe County Department of Water Resources ("DWR") and the Truckee Meadows Water Authority ("TMWA"), Rosemary Menard, Director of DWR and Mark Foree, General Manager of TMWA.

Rosemary Menard reported that the TMWA Standing Advisory Committee (SAC) met yesterday, where the pending integration/consolidation was discussed. She reported that documentation provided at the September 8, 2009 joint Board meeting is available online and she also had copies. She added that the TMWA Board and Board of County Commissioners (BCC) gave the go-ahead to develop an interlocal agreement (ILA) on October 27, 2009. She reported that staff is working on the ILA, of which a complete draft will be presented at the joint Board meeting scheduled for December 9, 2009 at 10:00 a.m. She stated that the ILA proposes a framework for the integration of DWR and TWMA using one of two methods. The first method is a phased one that would involve a contract for operations in order to do a transition over one or more years. She reported that an alternative method developed over the last couple of weeks seeks to address the bond and financial considerations (that are preventing full consolidation) perhaps as soon as 12 to 15 months.

Commissioner Menard stated that by embarking on the accelerated process, the work associated with developing an operations contract would be eliminated. She added that both agencies would continue to operate separately until full consolidation occurs. She added that the accelerated path would take advantage of market conditions to defease or refinance the remaining approximately \$30 million of DWR financial obligations and bonds, possibly by transferring them to TMWA via State Revolving Funds. She stated that the accelerated method would require an affirmative action by both Boards.

Commissioner Menard stated that Barry Winzeler was present at the SAC meeting and invited him to provide a report under this agenda item rather than under item 12d. Mr. Winzeler reported that the members of the SAC represent community users, whose goal is to protect user fees. He stated that Jeff Tissier was asked how user rates would be protected.

Commissioner Menard stated that the ILA draft includes a number of provisions that have been designed to acknowledge the risks and liabilities that might be apportioned to individual parties. She added that TMWA currently has provisions to differentiate rates based on the benefit or liability received. She stated that TMWA has the SAC, which is raising the issue of rates, whereas the County does not have such a group although the issues are being examined. She stated that staff understands the need to balance the issues when moving forward.

Commissioner Schumacher asked how long the accelerated path would take. Commissioner Menard reiterated it would probably take 12 to 15 months, as opposed to the operations contract, which could take two to five years. She referred to South Truckee Meadows General Improvement District (STMGID)'s concerns related to the integration and stated that staff is preparing for a joint meeting with STMGID Trustees and Local Managing Board in January. She added that she spoke with Steve Cohen, who agreed the joint meeting was needed.

Commissioner Schumacher stated that initially the GIDs were told they would not be impacted by a proposed integration or consolidation. Commissioner Menard agreed that is correct.

Chairman Seidel stated that TMWA's Joint Powers Agreement (JPA) was amended and has been approved by Washoe County and City of Reno. He added that Sparks City Council will hear the item at its December 14, 2009 meeting. He thanked Commissioner Menard for the update.

9. Status report and future plans for the satellite radar differential interferometry ("D-InSAR") project to measure ground subsidence and survey groundwater usage patterns, including discussion on completing the remainder of the three-year project, and possible direction to staff, Mike Widmer, DWR.

Mike Widmer, DWR Senior Hydrogeologist, gave a brief overview of the status of the three-year program. He stated that additional funding would be requested in order to complete the program. He reported which large wellfields were included in the study. He stated that the satellite radar has been in use for over 30 years. He reported that the program has been conducted under a three-year contract between Washoe County and University of Nevada, Reno (UNR). He explained that Dr. Gary Oppliger (formerly of UNR) was responsible for building the interferograms based on the data received.

Mr. Widmer reported that the hope was to be able to use the methodology for long-term monitoring of the County's wellfields. He stated that October 2009 was the third year of the contract. He stated that to date, 53 interferograms have been built and he would like to continue the program for one additional year, in order to determine the value to the community.

Mr. Widmer stated that Dr. Oppliger left UNR in March to work for a geothermal company, which intended to use the technique in its geothermal exploration programs (however, based on the high cost the program was postponed). He reported that Dr. John Bell, Nevada Bureau of Mines and Geology, does this type of work at a research academic level, very successfully. Mr. Widmer stated his request is to extend the contract to Dr. Bell to complete six additional interferograms. He explained that his hope is to finalize the program by the end of June 2010. He stated that he is requesting \$2,600 in additional funding (\$12,690 was originally approved, of which approximately \$10,000 remains).

Commissioner DeMartini made a motion to approve funding of an additional \$12,690 to complete the program. Chairman Seidel clarified this action is to increase funding by \$2,690 to the remaining \$10,000 left in the budget for this project. Mr. Smitherman suggested adding to the motion to direct staff to execute the required instrument to retain the Nevada Bureau of Mines and Geology to complete the scope of work. Commissioner DeMartini added that direction to his motion. Commissioner Ball seconded the motion, which carried unanimously.

10. Presentation of TMWA's 2010 Water Resources Plan, John Erwin, TMWA.

Shawn Stoddard, TMWA Resource Economist, stated that Mr. Erwin could not be present so he would provide the presentation. He referred to a PowerPoint presentation, which included graphs of some of TMWA's statistics related to population forecasts, water usage (past and projected), and other components. He stated that the Draft Water Resource Plan was presented to the TMWA Board in October. He added that it is available for download.

Mr. Stoddard reported that the Water Resource Plan is TMWA's planning document, which feeds into their Facility Plan, the Finance Plan and the Operations Plan. He provided a brief background of TMWA's facilities. He stated that in a drought year, TMWA can pump up to 22,500 acre-feet for up to three years. He referred to upstream storage under the Truckee River Operating Agreement (TROA) versus non-TROA conditions.

Mr. Stoddard referred to population projections, which included employment statistics and forecasts. He stated that going back to 1950 population projections (which were based on logistic population modeling) it was found that the projections came within approximately 99%. He reported that the previous Water Resource Plan projected a water demand in 2025 of approximately 110,000 acre-feet; the new Plan projects a demand of approximately 97,000 acre-feet. He stated that some decreased demands are based on customers using less water and new development, which is more water efficient.

Mr. Stoddard reported that as promised, when TMWA's system reached its goal of 90% metered systems, the twice a week watering restriction was lifted (currently the system is 98% metered). He stated that water users can now water three days per week.

Mr. Stoddard welcomed questions or comments. Hearing none, Chairman Seidel thanked Mr. Stoddard.

11. Status report on development of the 2011 Comprehensive Regional Water Management Plan ("WMP"), including 1) discussion and possible recommendation to the Western Regional Water Commission ("WRWC") concerning funding not to exceed \$49,000 from the RWMF to support a scope of work and Consulting Engineering Agreement with ECO:LOGIC Engineering for technical services, and 2) discussion and possible approval of a scope of work and Interlocal Agreement with Washoe County Department of Water Resources not to exceed \$17,000 from the RWMF for the development of maps and figures utilizing a Geographic Information System, and possible direction to staff, Jim Smitherman, Water Resources Program Manager.

Chris Wessel stated that an outline of the schedule and needs for the updated Regional Water Management Plan was previously presented to the NNWPC. He reported that approximately \$450,000 was budgeted for the Plan update; however, it most likely can be completed for under \$100,000 due to utilization of DWR staff resources. He stated that today he is requesting approval of two contracts; the first for DWR Geographic Information System (GIS) staff assistance in an amount not to exceed \$17,000. He explained that GIS staff previously developed maps and figures for the Plan that need to be updated.

Mr. Wessel stated the other contract would be with ECO:LOGIC Engineering in an amount not to exceed \$49,000. He explained that ECO:LOGIC has previously done extensive facility planning, cost analysis, and water balance work, which requires updating based on changes since the last Amendment. He reported that ECO:LOGIC has done work on regional reclaimed planning efforts, for which information needs to be included in the Plan update. Mr. Wessel requested that the NNWPC approve the funding requests.

Commissioner Flansberg stated that he did not receive ECO:LOGIC's scope of work in his agenda packet as referenced. June Davis reported that the scope was not included because it is being revised and has not been finalized. Mr. Wessel added that although the scope is being revised, the amount not to exceed \$49,000 is not anticipated to change. Chairman Seidel asked Commissioner Flansberg if he would like to see the scope before approving it, or if it is acceptable to recommend approval of funding to the WRWC with the final scope. Commissioner Flansberg agreed that the latter was acceptable.

Chairman Seidel called for discussion or a motion. Mr. Wessel confirmed that Mr. Smitherman is authorized to enter into the \$17,000 contract; however, approval for ECO:LOGIC's contract is required in order to move forward.

Commissioner Ball made a motion that the NNWPC 1) direct staff to execute an Interlocal Agreement with the WCDWR for GIS and drafting services in an amount not to exceed \$17,000 from the RWMF, and 2) recommend to the WRWC approval of an agreement with ECO:LOGIC Engineering for technical services to support the development of the 2011 RWMP in an amount not to exceed \$49,000 from the RWMF. Commissioner Flansberg seconded the motion, which carried unanimously.

12. Program Manager's Report

Mr. Wessel reported that the packet includes updates on the following topics. He stated that the purpose of this agenda item is for Commissioners to review the information included in the agenda packets and feel free to ask questions, make comments, or request additional information.

a. Status Report of Projects and Work Plan supported by the Regional Water Management Fund

The updated Status Report of Projects was provided in the agenda packets.

b. Financial report on the Regional Water Management Fund

The updated Status Report of Projects was provided in the agenda packets.

c. Truckee River Flood Management Project status report

A status update on the Truckee River Flood Project was included as an informational item.

d. Informational report from the NNWPC representative on the Truckee Meadows Water Authority Standing Advisory Committee (SAC)

Mr. Winzeler provided his update under agenda item 8.

Chairman Seidel reported that the last Plan update required additional meetings; he gave new members a heads up that may be the case in the near future. Mr. Wessel reported that Chapter Two on Sustainable Water Resources will be distributed in January for review. He added that it will be the most information-intensive and difficult portion of the updated Plan. He added that the target for completion and distribution to the NNWPC of the Draft Plan update is August 2010.

Commissioner Ball asked if the entities to review the Draft Plan update include the five entities represented on the NNWPC. Mr. Wessel stated that the various chapters will be sent to the appropriate agency for review based on the chapter contents.

Commissioner Ball asked if would be more appropriate to provide the entire Plan update to TMWA and DWR for review. Mr. Rhodes clarified that letters have already been distributed to those entities, as well as other purveyors. He added that it is required by Nevada Revised Statute that the document be made available to the purveyors with an opportunity to provide comments.

13. Discussion and possible direction to staff regarding agenda items for the January 6, 2010, Commission meeting and future meetings.

Mr. Wessel referred to the possible agenda items for the January 6, 2010 NNWPC meeting as follows:

- Review and discussion of draft Water Resources chapter to be included in the 2011 Comprehensive Regional Water Management Plan, including sustainable water resources available in Washoe County and population that can be supported by sustainable water resources to address requirements of Washoe County Question #3, and possible direction to staff, Jim Smitherman, WRWC Water Resources Program Manager.
- Status report on development of the 2011 Comprehensive Regional Water Management Plan, including outline, timeline and contractual services, and possible direction to staff, Jim Smitherman.
- Program Manager's Report, Jim Smitherman
 - Status Report of Projects and Work Plan supported by the Regional Water Management Fund

- Financial report on the Regional Water Management Fund
- Status report on possible integration/consolidation of the Washoe County Department of Water Resources and the Truckee Meadows Water Authority
- Truckee River Flood Management Project status report
- Informational report from the NNWPC representative on the Truckee Meadows Water Authority Standing Advisory Committee
- Discussion and possible direction to staff regarding agenda items for the February 3, 2010, Commission meeting and future meetings, Jim Smitherman.
- Other Informational Items

14. Commission Comments.

Commissioner DeMartini asked if future meetings would be held at the County Commission Chambers. Ms. Davis stated that with the exception of the February and March meetings, they would.

15. Staff Comments.

None

16. Public Comments.

Chairman Seidel called for public comments and hearing none, closed the public comment period.

17. Adjournment.

With no further business, the meeting was adjourned at 3:22 p.m.

Respectfully submitted by,

Niki Linn, Recording Secretary

Approved by Commission in session on _____ 2009.

Wayne Seidel, Chairman

12. Adjournment.

*Indicates a non-action item

Notes: Items on the agenda without a time designation may not necessarily be considered in the order in which they appear. The Commission may take action on any of the action items listed.

Facilities in which this meeting is being held are accessible to the disabled. Persons with disabilities who require special accommodations or assistance (e.g. sign language interpreters or assisted listening devices) at the meeting should notify the Washoe County Department of Water Resources, at 954-4665, 24 hours prior to the meeting.

In accordance with NRS 241.020, this agenda has been posted at the following locations: Reno City Hall (1 East First Street), Sparks City Hall (431 Prater Way), Sparks Justice Court (630 Greenbrae Dr), Sun Valley GID (5000 Sun Valley Blvd.), TMWA (1355 Capital Blvd.), Washoe County Administration Building (1001 E. 9th Street), Washoe County Clerk's Office (Court and Virginia Streets), Washoe County Central Library (301 South Center St.), Washoe County Department of Water Resources (4930 Energy Way), Galena Market (19990 Thomas Creek Rd.), Galena High School (3600 Butch Cassidy Way), South Valleys Library (15650A Wedge Parkway), the Northern Nevada Water Planning Commission (NNWPC) website: <http://www.washoecounty.us/water/nnwpc.htm>, and the Western Regional Water Commission's (WRWC) website: <http://www.wrwc.us/meetings.html>

Northern Nevada Water Planning Commission

STAFF REPORT

DATE: December 31, 2009
TO: Chairman and Members, Northern Nevada Water Planning Commission
FROM: Jim Smitherman, Program Manager
SUBJECT: Review and discussion of draft Water Resources chapter to be included in the 2011 Comprehensive Regional Water Management Plan, including sustainable water resources available in Washoe County and population that can be supported by sustainable water resources to address issues raised by Washoe County Ballot Question #3 (2008), and possible direction to staff.

SUMMARY

Staff has prepared a preliminary draft Water Resources Chapter for the Northern Nevada Water Planning Commission's ("NNWPC") review before it is presented to the Western Regional Water Commission ("WRWC") later this week. The primary purpose of this presentation is to show early in the plan development process how the 2011 Comprehensive Regional Water Management Plan will address sustainable water resources issues raised by Washoe County Ballot Question #3. At this time the preliminary draft chapter comprises two sections that consist of text only; maps and figures will be added later in the plan development process. Sections presently under development are noted. The attached preliminary draft chapter covers two main topics:

- *Sources of Water* This section focuses on the various water resources that are currently available within the planning area, including surface water, groundwater and reclaimed water. In addition, the section contains the water baseline table which identifies and quantifies water resources by appropriations and by current estimates of groundwater basin perennial yield. The table further elaborates on the potential for conversation of various water rights to municipal and industrial use.
- *Water Sustainability* This portion of the chapter discusses sustainability, describes how the identified water resources are related to population forecasts and the Truckee Meadows Regional Plan, and discusses factors that affect water sustainability. Factors include economic conditions; laws, regulations, decrees and agreements, and source-water reliability, which covers climate change, drought and water quality issues.

Chapter 2 - Water Resources

Purpose and Scope

This chapter describes the various sources of water that comprise the region's sustainable water resources and quantifies those resources with planning-level estimates consistent with the Nevada State Engineer's records. It also discusses sustainability and describes numerous factors that affect sustainability, including the economy, the Truckee River Settlement and TROA, and source water reliability.

Summary of Findings

The major findings of this chapter include:
(to be developed)

Introduction

(to be developed)

2.1 Sources of Water

For the purposes of regional water resources planning, water sources are grouped into three general categories: surface water, groundwater and reclaimed water.

2.1.1 Surface Water

The Truckee River system is the primary source of water supply for the Truckee Meadows. Originating at Lake Tahoe, the Truckee is fed by runoff from seasonal mountain snowpack carried by numerous tributary lakes and creeks. Regulated reservoir releases primarily from Lake Tahoe and from time to time Donner Lake, Independence Lake and Prosser, Boca and Stampede Reservoirs provide for most of the flows that enter the Truckee Meadows. Figure _ shows the Truckee River system with high, low and average flows at various locations. The Truckee River generally flows to the north from Lake Tahoe through California, crossing into Nevada at Verdi and flowing to the east through the Truckee Meadows to Wadsworth and then northerly to Pyramid Lake, about 116 miles by river from Lake Tahoe. Most of the water that flows to the Truckee River by Nevada tributaries comes from the east slope of the Carson Range to Steamboat Creek, while other tributaries flow directly to the Truckee from the north slope of the Carson Range, the Verdi Range and Peavine Mountain (see Figure _).

Figure _ Surface Truckee River System with Highest, Lowest and Average Recorded Flows (use TMWA WRP fig 2)

Steamboat Creek originates at Washoe Lake and flows fifteen miles to the north through Pleasant Valley and the eastern Truckee Meadows to the Truckee River. Along its course it is joined by six perennial creeks: Browns, Galena, Whites, Thomas, Dry and Evans that flow from the Carson Range, and one ephemeral stream (Bailey Creek) from the Virginia Range. Steamboat Creek is significant because of its water rights and those of its tributary creeks.

Water for various uses is diverted from the Truckee River into a number of ditches, such as the Highland Ditch which conveys water to the Chalk Bluff Treatment Plant. Water diverted for irrigation is conveyed several miles north to Spanish Springs Valley via the Orr Ditch, and to the south via Steamboat, Last Chance and Lake Ditches. Other

irrigation ditches serve localized areas of the central Truckee Meadows. Water is also diverted a short distance from the river for hydroelectric energy generation. In general, historical and current ditch uses are the same: municipal supply, irrigation and hydroelectric generation.

Figure _ Surface Waters Tributary to the Truckee River (use 2004-2025 RWMP fig 2-1)

2.1.2 Groundwater

The major hydrographic basins within the planning region that supply municipal and industrial (“M/I”) and/or domestic water include the Truckee Meadows, Truckee Canyon (Verdi/Mogul), Tracy Segment (East Truckee Canyon), Pleasant Valley, Washoe Valley, Sun Valley, Spanish Springs Valley, West Lemmon Valley, East Lemmon Valley, Warm Springs Valley and Cold Springs Valley, as shown in Figure _. Developments in the Truckee Meadows, Sun Valley, Lemmon Valley and Spanish Springs Valley rely on Truckee River water in addition to groundwater while the remaining basins rely on groundwater as the source of water supply. Development in the Red Rock, Antelope and Bedell Flat basins are supplied by domestic wells. The timing of groundwater importation to Lemmon Valley from the Honey Lake Valley hydrographic basin by way of existing infrastructure will depend on future land development projects.

Figure _ Hydrographic Basins (use 2004-2025 RWMP fig 2-3)

2.1.3 Reclaimed Water

Recent data show that more than 37,000 afa of reclaimed water is generated in the region of which approximately 6,000 afa are used for a small number of non-potable purposes such as irrigation, construction and dust control. The remainder is discharged to the Truckee River, Swan Lake wetlands or to the ground. Recent investigation of reclaimed water uses in other regions has shown that reclaimed water is not one product limited to a small number of uses, but multiple products where the water quality is tailored to the use. Advances in water treatment technology ensure that reclaimed water can meet the water quality requirements of virtually any need. Although Nevada reclaimed water regulations presently allow for non-potable uses only, reclaimed water service providers continue to investigate the feasibility of implementing groundwater recharge using reclaimed water as a long-term water resource management strategy.

NDEP administers reclaimed water regulations which delineate water quality requirements, buffer zones, signage, run-off capture, and other requirements. NDEP is developing amendments to its reclaimed water regulations that are anticipated to allow for groundwater recharge. The main local benefit in the use of reclaimed water is that it provides an efficient drought-resistant water source which helps to balance the regional water resources budget.

2.1.4 Water Baseline Table

Table _ (water baseline table) provides 20-year planning-level estimates for water resources considered to be sustainable using the best available information. The table identifies selected hydrographic basins within the region, and quantifies surface water and groundwater in two ways. Appropriations (water rights), including decreed rights and rights permitted or certificated by the State Engineer for M/I uses and those that

may be converted to M/I, are quantified separately from those that cannot be converted to M/I. The table also shows the quantity of groundwater in each basin consistent with the State Engineer's estimates of perennial yield. In basins where appropriations for M/I uses, or those that may be converted to M/I, are less than the perennial yield estimate, only those water rights actually appropriated are considered to be sustainable. In addition, the table estimates the annual amount of surface water, groundwater and reclaimed water transferred into, and out of, each basin, and estimates M/I and domestic commitments against the identified resources. Basins not listed are not expected to provide M/I water supplies within a 20-year planning timeframe. They are located in relatively undeveloped areas and only limited information exists.

Table _: Water Baseline Table for Selected Basins

2.2 Factors Affecting Water Resource Sustainability

This section discusses major trends, events and other factors affecting the sustainability of water resources in the Region. In addition, it describes a proposed procedure to ensure that local government land-use plans are based upon and in balance with the sustainable water resources identified in Table _ (water baseline table).

2.2.1 Sustainability

During the last two years, issues involving water resource sustainability and population growth have been the subject of significant public discussion. Public concern has focused on local government and regional land-use plans prepared during a four-year period of record growth in the Region. In November 2008, voters approved Washoe County Question #3, which read "Shall the Truckee Meadows Regional Plan be amended to reflect and to include a policy or policies requiring that local government land-use plans be based upon and in balance with identified and sustainable water resources available in Washoe County?" (Appendix _). With this in mind, it is important to understand the meaning of the term "sustainable" with respect to water resources.

Sustainability, in the context of resource planning, is usually defined as the ability to meet present needs while ensuring resource opportunities for future generations that provide optimal economic, social and environmental benefits.

Identification of sustainable water resources for 20-year planning purposes requires consideration of the practical availability of water for M/I purposes as well as for other community-supported values. Surface water and groundwater rights are generally established in Nevada by the appropriation system administered by the State Engineer. Most surface water rights, such as rights for waters of the Truckee River and its tributaries, have also been adjudicated through court decrees. The Truckee River is governed by several operating agreements, which will be superseded by the Truckee River Operating Agreement ("TROA") when it is fully implemented. TROA was negotiated over the course of several decades and was subject to an extensive environmental review based upon abundant historic hydrographic information. TROA is designed to provide long-term sustainable water operations for the multiple stakeholders on the Truckee River system.

The determination of sustainable groundwater supplies begins with the State Engineer's office. Before allowing appropriation of groundwater from a hydrographic basin, the State Engineer makes an assessment of the perennial yield based upon the best

available science. If a basin lacks a perennial yield estimate, the local government or water purveyor will work with the State Engineer to use the best available information, and may require or conduct additional studies as deemed necessary to make a decision. For planning-level estimates, if a basin is not fully appropriated (i.e., appropriations are less than the perennial yield) public water purveyors consider only the total water rights actually appropriated, including M/I rights and those that may be converted to M/I. This methodology forms the basis for water resources compiled in Table _ (water baseline table). In addition, public water purveyors may exclude water resources that have inadequate quality for municipal use.

Depending on the availability of water rights in the open market, local water purveyors or their customers may acquire water rights from willing sellers in the future as the need for additional water resources arises, prior to the purveyor committing to serve development. Before determining whether to make water service commitments based upon these resources, the water purveyors will, in the case of Truckee River rights, consider the priority and condition of the water right, and whether the right can be appropriately exchanged for municipal use or storage; in the case of groundwater, the purveyor will consider the priority and condition of the groundwater right, groundwater quality, and the long-term productive capacity of the basin.

The comprehensive plan will include the results of evaluations performed by water purveyors and others of the sustainability of water resources to be used to serve proposed developments contained within local government land-use designations. It should be noted that community values, as reflected in land-use decisions, will significantly influence the population projected to be served by the region's water resources. To adjust for potential variability over the long-term planning horizon, estimates of sustainable surface and groundwater resources will constrain the population estimates when calculating the total population that may be supported by the sustainable water resources identified in the comprehensive plan. The plan provides guidance on use and allocation of future water resources; however, the existence of a planning-level estimate of available resources should not be considered a commitment to, nor a guarantee of, the availability of a water allocation for any specific project or parcel.

In areas where the approval of commitments through the parceling or subdivision process would tend to create or exacerbate an imbalance between sustainable yield and commitments, the local governments and water purveyors will limit such approvals or may take affirmative actions to mitigate the deficits through mechanisms such as artificial recharge and recovery of groundwater, conjunctive use of available resources, or the use of alternative water resources.

2.2.1.1 Water Resources Sustainability and Population Forecasts

In response to Washoe County voters' concerns that the Regional Plan does not contain policies requiring that local government land use-plans be based upon and in balance with identified and sustainable water resources available within Washoe County, the Washoe County Board of Commissioners ("BCC") in October 2009, proposed certain amendments to the Truckee Meadows Regional Plan ("Regional Plan"). The amendments are intended to provide for a comparison between the Washoe County Consensus Population Forecast ("Consensus Forecast") and the estimated population that can be supported by the sustainable water resources as identified in Chapter _. The BCC further proposed that Regional Planning Governing

Board (“RPGB”) Regulations on Procedure be amended to designate the Northern Nevada Water Planning Commission (“NNWPC”) and the Western Regional Water Commission (“WRWC”) as the entities to perform a comparison prior to the Regional Planning Commission’s adoption of the Consensus Forecast, and make findings as to whether the Consensus Forecast is in balance with sustainable water resources. If the draft Consensus Forecast is greater than the estimated population that can be supported by the sustainable water resources, the Consensus Forecast would be constrained and the WRWC would investigate new or alternative water sources, and/or water demand management strategies. The proposed amendments implement the voters’ intent. The adopted Consensus Forecast will be incorporated into the Regional Plan and all local government land use plans must conform to the provisions of the Regional Plan. It is anticipated that the amended Regional Plan and RPGB regulations will be consistent with the decision tree shown in Figure _.

Figure _ Decision Tree: Regional Population Forecast based on Water Sustainability

2.2.2 Economic Conditions and the Cost of Water Rights

Development activity in the Truckee Meadows from 2003 to 2006 was approximately double the historic average, followed by a sharp decrease beginning in late 2006. The 2003-2006 period of unprecedented growth exerted upward pressure on the price of housing in addition to the price of water rights. The greatest increase in housing prices occurred between 2003 and 2005 when the median sales price of existing homes increased 103% from \$155,000 to \$315,000. Today the median sales price of existing single family homes is approximately \$170,000.

In the spring of 2006, the statewide unemployment was at a record low of 3.9%, in sharp contrast to a record high of 13.3% in September 2009. The Reno-Sparks area unemployment rate tracks very closely with the statewide rate. In addition, Nevada continues to rank in the top five states for the highest home foreclosure rate¹. The long-term effects of these fundamental changes to the region’s economy are incorporated into the population and water demand forecasts provided by TMWA and discussed in Chapter _.

The economic factors described above have had a direct impact on the water rights market, including water rights associated with the Truckee River system which is the region’s primary source of new water resources. The water rights market experienced a major disruption in 2005, which led to a temporary reduction in the availability of water rights for all buyers, including TMWA, which maintains a water rights inventory available for purchase by developers and other potential customers. Throughout 2005 developers and other buyers of water rights paid prices as high as \$60,000 per acre-foot at a time when market prices earlier in the year were averaging between \$4,000 and \$8,000 per acre-foot. The demand for water rights in the Truckee Meadows competed with other demands for Truckee River water rights. These other demands included rights purchased for historic agricultural uses or to improve lower-river water quality affected by water reclamation facility discharges to the Truckee River, M&I demands for Truckee River water rights in the Fernley area, and other in-stream-flow

¹ Source: RealtyTrac.com.

uses such as fisheries and wildlife. These competing interests along with the cost and time needed to determine a water right's ownership contributed to limited available supply and higher water rights prices.

TMWA maintains an inventory of water resources it has acquired from willing sellers at negotiated prices. In previous years, when there were fewer buyers and less demand for water rights, TMWA was very successful in acquiring water rights. Today, the water rights market is characterized by an increased number of buyers and a decreased number of willing sellers unless the seller achieves a high price for their water right. This, along with recent buyer's willingness to pay much higher prices than past or current market trends would have predicted, resulted in a 500% run-up in TMWA's Rule 7 price over a 6-month period in 2005. However, market corrections are occurring consistent with the recent decline in development activity and an associated decrease in demand for water rights, aligning the price of water rights closer to market conditions. Figure 7 shows that, although an increase in the cost of water rights as measured by TMWA's average annual price of Rule 7 water resource inventory generally lagged the rapid increase in housing prices; the magnitude of the price change was unprecedented.

Figure 7: Changes in Median Price of Existing Homes and TMWA's Annual Rule 7 Price

The Orr Ditch Decree, issued in 1944, established the number of water rights associated with the Truckee River and all its tributaries by reach, by priority, by owner, and by quantity. It is important to note that although surface water rights can be subdivided and/or converted from one use to another, for example from agriculture to M/I use, the overall total number of surface water rights available from the Truckee River has not changed from the amount defined in the Decree. A sufficient number of water rights is essential for issuing new will-serve commitments. New development must demonstrate that adequate water resources exist to serve a project. Will-serve commitments are only issued when, and if, water resources are available to service the estimated demand of a particular project and drought supplies can support the expansion of new demand. The needed water resources can either be purchased on the open market by an applicant for new water service and dedicated to a water purveyor or purchased directly from TMWA. Those purchasing will-serve commitments directly from TMWA are required to reimburse the utility for the costs it incurred in acquiring, processing and carrying the necessary water rights.

The primary water rights that applicants for new water service dedicate to TMWA are mainstem Truckee River water rights. Although the number of remaining Truckee River mainstem irrigation water rights available for conversion to M/I use continues to decrease, analysis in Chapter _ will show over 50,000 acre-feet of Truckee River mainstem rights are potentially available for dedication to TMWA to support future will-serve commitments, and this amount is more than enough to meet TMWA's future water rights requirements through the planning horizon.

In addition to Truckee River mainstem rights available to TMWA to meet its future water rights requirements, WCDWR may make new will-serve commitments by receiving dedication of irrigation water rights associated with other sources, such as south Truckee Meadows tributary creeks, groundwater basins other than the Truckee

Meadows and, in the Lemmon Valley and Cold Springs Valley area, groundwater rights associated with the Fish Springs Ranch project.

2.2.3 Laws, Regulations, Decrees and Agreements

2.2.3.1 Truckee River Settlement and the Truckee River Operating Agreement (“TROA”)

The Truckee River Settlement is important because it addresses decades of uncertainty with respect to Truckee River water uses and users. Before the late 1980s, parties with interests in Truckee River water had been largely unsuccessful in negotiating solutions to their issues and the community was unable to rationally plan for its future. Nevada’s U.S. Congressional Delegates and the Washoe Council of Governments were keenly aware that the community would be out of water and unable to grow unless many of these uncertainties were resolved.

Some of the historical uncertainties included: (1) whether the Truckee River reservoirs could be operated to accommodate the needs of the endangered and threatened species instead of providing water to water right holders; (2) the amount of water which California was entitled to use relative to the amount of water available for Nevada; (3) how California agencies charged with managing wildlife issues would implement their regulatory programs such as increasing minimum releases or in-stream flows, and whether those efforts would cause reservoirs to be depleted leaving less water available in a drought; (4) how a 60 year old court decree, dominated by agricultural uses, would adapt to changing uses or conversion of water uses from irrigation to municipal; (5) how pending litigation would be resolved; (6) how Tribal claims to water would be resolved and whether those claims to higher priority water rights would affect Truckee Meadows water rights; and (7) what impacts all these unsettled issues would have on the water utility’s ability to maintain existing water supplies, grow its water supplies and provide for the communities’ future demand for water.

Eventually, in 1989, the Sierra Pacific Power Company (“Sierra”) and the Pyramid Lake Paiute Tribe (“PLPT”) signed an agreement known as the Preliminary Settlement Agreement (“PSA”). The intent of the agreement was to settle numerous issues (some mentioned above), claims and counter-claims between these two parties and lay the foundation for a larger settlement to Truckee River issues that would include the five Mandatory Signatory Parties (United States, California, Nevada, Sierra [now TMWA], and PLPT) and other parties willing to participate.

In 1990, Congress passed and the President signed into law Public Law 101-618, the *Truckee-Carson-Pyramid Lake Water Rights Settlement Act* (“Settlement Act”). The Settlement Act, which incorporated and ratified the terms of the PSA; provided for the negotiation of a new operating agreement on the Truckee River; and preserved and protected the rights of all Orr Ditch water rights holders. The bill had provisions regarding other issues some of which were related to the settlement, such as economic development funds for PLPT; and some not related, such as the Fallon Tribe Settlement and the Newlands project reclamation reform provisions. Section 205(a) of PL101-618 directed the Secretary of the Interior to negotiate an agreement for the operation of Truckee River reservoirs. This agreement has become known as the Truckee River Operating Agreement (“TROA”).

Negotiations on TROA began in the 1990's leading to the final agreement in September of 2008. When implemented, TROA will allow for a congressionally authorized interstate allocation of water and change the operations of the Truckee River system to accommodate multiple beneficial uses for drought supply, endangered and threatened fish species, water quality, California water use, and storage. In addition, operations will enhance riparian habitat, reestablish river canopy, enhance reservoir releases, improve recreational pools in the reservoirs, and improve the process for emergency drawdown procedures for Lake Tahoe.

TROA was signed by the Mandatory Signatory Parties (TMWA, Pyramid Lake Paiute Tribe, California, Nevada, and the United States) and seven other parties on September 6, 2008. A number of conditions must be met before TROA can be implemented. Some of these have been satisfied since TROA's execution, others remain to be accomplished. These include:

- Publication of TROA in the Federal Register occurred on December 5, 2008 and its promulgation as a regulation occurred on January 5, 2009. The Truckee-Carson Irrigation District ("TCID"), Churchill County and the City of Fallon have initiated litigation in United States District Court challenging the regulation, including a challenge to the adequacy of the Final Environmental Impact Statement for the Operating Agreement. TCID, Fallon and Churchill County dismissed their lawsuit under CEQA and the time to bring that action has since run out.
- Modification of the Orr Ditch Decree to accommodate changes required by the Operating Agreement (submitted to the court in *United States v. Orr Water Ditch Company, et al.* for approval of modifications to the Orr Ditch Decree on November 17, 2008). The motion has been opposed by TCID, Churchill County and City of Fallon. Service of process on water right holders is to be completed by mid December with a full hearing on the merits projected for some time next year.
- The United States and the Truckee Meadows Water Authority submitted a joint motion to the court in *United States v. Truckee River General Electric Company* to modify the Truckee River General Electric Decree on November 20, 2008. The Court entered an order modifying the Decree on December 22, 2008 without objection from TCID Fallon or Churchill County. Now TCID has indicated that it intends to move to have this order vacated, but has not yet done so.
- Change petitions (filed in 2004) are pending approval by the California State Water Resources Control Board to change the water rights for Boca, Prosser Creek and Stampede Reservoirs, and for Independence Lake. A hearing date is expected in June 2010.
- Applications (filed in 2006 and 2007) are pending hearing and approval by the Nevada State Engineer to change the water rights in Nevada to allow Truckee Meadows Water Authority to hold the consumptive use component of certain of its water rights in storage. The hearing is scheduled for December 2009. In addition, changes to the Water Authority's water rights to generate single purpose hydroelectric power may also need to be approved; those change applications have been filed with the Nevada State Engineer, but no hearing date has yet been established.
- The Nevada State Engineer's ruling on unappropriated Truckee River water (granting the unappropriated Truckee River water to PLPT), State Engineer

- *Pyramid Lake Paiute Tribe v. California*, Civil S-181-378-RAR-RCB, and *United States v. Truckee-Carson Irrigation District*, Civil No. 4-2987-RCB, cases pending in federal courts in California and Nevada, respectively, must be finally resolved. The *United States v. Truckee-Carson Irrigation District* case was dismissed with prejudice on August 10, 2009. Work is underway to have the remaining action dismissed with prejudice.

Additional accomplishments of the TROA parties or TMWA toward implementing PL 101-618 and TROA include the following: United States Bureau of Reclamation (“USBR”) and TMWA executed a storage contract in 2008 and the referendum vote by PLPT held in 2008 was successful. TMWA has also completed the retrofit of its single family flat-rate services with meters. TMWA and the Mandatory Signatory Parties continue to work toward implementing TROA. Many or most of these accomplishments have or will be appealed by TCID, Fallon, Churchill County, or other parties. The effectiveness of TROA is conditioned upon all of these appeals being exhausted. It cannot be known with certainty when court rulings, regulatory or appeal processes will be complete.

TROA is now a signed document and binds PLPT, the United States, California and Nevada to move forward together to implement and make TROA effective. There are and always will be regulatory uncertainties surrounding the use the Truckee River. When TROA becomes effective there will be a new, more flexible framework for river operations which will provide parties additional opportunity to accommodate issues as they emerge. However, because TROA is not yet in place other water supply options to provide the drought reserves (if TROA implementation is delayed or halted) are discussed in Chapter 6.

2.2.3.2 Orr Ditch Decree

In 1902, the United States withdrew from public entry the lands required for the government’s first reclamation project, the Newlands Project located in and around the City of Fallon in Churchill County, Nevada. The following year, the United States posted an application to appropriate the water stored in Lake Tahoe. Recognizing that water released for the Newlands Project would be subject to a multitude of upstream diversions with very early priorities, the United States, first brought suit to condemn the operation of the Tahoe Dam and then filed to adjudicate all uses of Truckee River water within Nevada and to establish a firm water supply for the Newlands Project. The final decree in the water rights adjudication lawsuit is know as the Orr Ditch Decree and was entered in 1944.

The decree is administered by the U.S. District Court Federal Water Master. In combination with the 1935 Truckee River Agreement and the Floriston Rates (see below), the Orr Ditch Decree represents the basis for operation of the Truckee River between Lake Tahoe and Pyramid Lake. It incorporates the provisions of the Truckee River Agreement, which provides for operation of storage facilities, especially Lake

Tahoe, to satisfy Truckee River water rights. The Floriston rates constitute the chief operation objective on the Truckee River today and originated as a turn-of-the-century flow requirement for run-of-the-river users — hydropower and a pulp and paper mill. While the Orr Ditch Decree establishes water rights for entities within Nevada using the Truckee River’s waters, the Truckee River Agreement, as part of that Decree, determines the operational mechanisms to satisfy those rights. The Orr Ditch Decree and the incorporated Truckee River Agreement provides TMWA with its basic water rights for its M/I water system.

Floriston Rates (cfs)				
Lake Tahoe Elevations	October	November thru February	March	April thru September
Below 6223.00 feet (natural rim)	0	0	0	0
Below 6225.25 feet	400	300	300	500
Between 6225.25 and 6226.00	400	350	350	500
Above 6226.00 feet	400	400	500	500

2.2.3.3 Water Quality Agreement

During the winter of 1994-95, Nevada Senator Harry Reid initiated a series of multi-party negotiations to see whether resolution could be reached on the issues surrounding the lower Truckee-Carson Rivers that had not been solved in PL 101-618. Despite failure to reach an overall settlement of those issues, one portion of the discussion, that concerning water quality enhancement for the lower Truckee River, has continued forward and was approved by local governments and the Tribe in October 1996.

This agreement among the Cities, County, Tribe, United States, and NDEP provides in broad terms that the community and the United States would both buy water rights to be used for in-stream flows in the Truckee River in exchange for dismissal of lawsuits by the Tribe. It is expected that the augmentation of flows in the river will enhance its water quality.

2.2.3.4 Tribal Water Quality Standards

Although the Pyramid Lake Paiute Reservation is not physically within the boundaries of the regional water planning area, the Tribe does have regulatory authority on lower Truckee River water quality standards. The 1987 amendments to the Clean Water Act allowed federally recognized Indian tribes to apply to be treated as a “state” for certain Clean Water Act purposes, including the development of water quality standards. The Tribe applied for “treatment as a state” status (“TAS”) under these amendments in 1989, and received TAS status from EPA in 1990. Under this status the Tribe received grants to conduct a limnology study of Pyramid Lake and gathered other water quality data. Using the information from these studies the Tribe developed water quality standards for the lower Truckee River, from the Reservation boundary downstream to and including Pyramid Lake, which were approved by EPA on December 18, 2008. The Tribe, rather than the State of Nevada, is now responsible for meeting and enforcing these standards within the Reservation. The Tribe’s numeric water quality standards are generally similar to the State standards.

2.2.3.5 State Water Law

Laws, regulations, and policies adopted by the State of Nevada and administered by the State Engineer affect the appropriation and use of the region's surface water and groundwater. (to be developed)

2.2.4 Source Water Reliability

This section discusses the reliability of the region's primary water sources in terms of both quantity and quality for continued municipal purposes. The discussion explores weather-related factors, such as climate change and drought cycles, that can affect the availability of surface water resources seasonally, and groundwater on a longer-term basis, and water quality issues that can also affect the short- and long-term sustainability of the available water resources. The most imminent threats to the reliability of the region's water supply are weather and source water supply contamination, both of which may affect the quantity and quality of available water supplies.

2.2.4.1 Weather

Weather is the primary determinant in establishing water supply for the Truckee Meadows. Precipitation replenishes the reservoirs and aquifers from which water is used and recycled. While the weather pattern consistently provides precipitation during the winter and spring months, the type of precipitation (snow versus rain), water content of snow, and speed of snowmelt vary from year to year. Water resources managers address water supply uncertainty depending on the source of water. TMWA manages uncertainty through storage of water in upstream reservoirs, conjunctive use of surface and groundwater supplies and continual assessment of the threats to water supply reliability from weather. Purveyors largely or solely dependent on groundwater are concerned more with the long-term effects weather has on aquifer recharge and storage. The key weather-related concerns with ensuring a continued adequate water supply are climate change and drought.

2.2.4.1.1 Climate Change

In 2006 and in 2009 (see Appendix _), TMWA partnered with the Desert Research Institute ("DRI") to assess the potential for climate change and global warming to affect the Truckee Meadows' water supplies. The results of the assessment show:

- historic data is the best data available for future planning at this point in time;
- scientific evidence remains inconclusive as to effect on the Truckee Meadows;
- the high variability in data and findings makes it difficult to detect long-term trends that may be due to climate change as a factor affecting regional water resources; and
- continued monitoring of research on this topic is warranted.

Specifically, DRI analyzed climate and hydrologic data in the Truckee Meadows region in order to reveal potential signs of environmental change that may be consistent and coincident with global warming. The analyses included investigations of temperature, precipitation, snow water equivalent, streamflow volume and timing, and reservoir volumes for the Lake Tahoe and Truckee River hydrographic basins.

Linear regression analyses were used to identify the following trends:

- Temperature data revealed a slight trend towards increased minimum and maximum temperatures at most gages. However, a few stations showed trends towards decreased temperatures and year-to-year variability was quite high at all stations.

- Annual precipitation showed very high variability with an overall trend towards slightly reduced winter precipitation.
- Snow water equivalent (“SWE”) showed very high variability with some stations reporting a trend towards increased snowpack and others showing reduced snowpack trends.
- The SWE trends were highly correlated with instrument elevation, where high elevation stations observed increased SWE and the low elevation stations observed reduced SWE.
- Mean annual streamflow data varied widely between water years.
- Long-term streamflow volume and timing trends were investigated through linear regressions of the cumulative streamflow volumes. The records revealed no consistent trends in streamflow volume or timing for the period of record.
- Cumulative-volume-linear-regression analyses were also used to investigate trends in reservoir volumes. The reservoir volumes displayed an obvious dependence on precipitation, as periods of drought strongly influenced reservoir volumes.

In order to investigate correlations between hydrologic variables and possible modifications in hydrologic processes, the following double-mass analyses were conducted:

- Relationships between streamflow and precipitation were studied at four paired stations. The results confirmed the expected high degree of correlation between these variables. The functions between precipitation and streamflow remained consistent throughout the records, indicating no observed modifications in large scale precipitation-runoff-streamflow processes at un-dammed gages.
- Double mass analysis of precipitation and reservoir volumes further demonstrated the high degree of correlation between these variables.
- Analyses of SWE and streamflow data revealed a slight deviation from historical trends over the past four water years.
- No consistent departures from long term patterns were observed between streamflow and reservoir volumes.
- Patterns between SWE and reservoir volumes remained consistent throughout the period of record.

As a result of these analyses, DRI concluded that no significant changes were found in the climatic and hydrologic variables over the period of record. Temporal trends in temperature, winter precipitation, and SWE were observed at some stations. However, very high year-to-year variability was observed for all stations and parameters.

2.2.4.1.2 Droughts

Consecutive years of low precipitation in the Lake Tahoe and Truckee River basins produce dry conditions and drought cycles for the Truckee Meadows. The length of a drought cycle is solely a function of climatic conditions over a period of years. A good indicator of an impending dry year is snowpack accumulation. Measured on April 1 of each year, the snowpack is used to forecast river flows through the year. Figure 10 shows snowpack for the Truckee River basin over the past 24 years. Annual snowpack accumulation in the Tahoe and Truckee River basins is the foundation for estimating the amount of water that will run-off and contribute to river flows during the year. In years of less than average snowpack, the risk of a continuing drought cycle with less than average river flows increases.

Figure 10: Snowpack for the Truckee River Basin

The most recent drought cycle in the Truckee Meadows occurred from 2000 to 2005. As shown in Figure 10, snowpack within the Truckee River basin was below average in 2000 and continued that pattern again in 2001. While there was an improvement over 2001 in the amount of snowpack and runoff in 2002-2004, it was not enough to end the drought. Although TMWA did not need to utilize any privately owned stored water (POSW) to meet customer demands during these five years, the reduced water availability made it difficult to sustain the required Floriston Rates in December 2002 and again from late 2003 into early 2004. In September 2004 Floriston Rate storage was exhausted and normal river flows were not met again until the end of February 2005 which ended up being a 125 % of average snowpack year in the Truckee River Basin. Due to heavy precipitation and flooding in late December 2005 and early January 2006 the elevation of Lake Tahoe rose significantly. In fact, almost 11 inches of precipitation was recorded at the USGS Farad gauging station over a two week period (Dec 21, 2005 to Jan 3, 2006). An above average snowpack was recorded again (126 % of average) in the Truckee River Basin in 2006. As a result, Lake Tahoe and all Truckee River Basin reservoirs filled as a result of the streamflow runoff that was produced the following spring. Those two consecutive above average snowpack years (2005 and 2006 respectively) effectively ended the five year drought cycle.

The severity of the 2000-2005 Drought as compared to prior droughts is illustrated by Lake Tahoe elevations in Figure 11, in which month-end elevations of Lake Tahoe during the 1928 to 1935 Drought, the 1987 to 1994 Drought, and the 2000-2005 Drought are compared. On November 30, 1992, Tahoe reached an historic low elevation of 6220.2, or 2.8 feet below its rim. As shown, the graph also illustrates that reservoir operations cause reservoir depletions to extend over a period of 5 to 6 years, whereas the reservoirs can refill completely with a year of nondrought year precipitation or wintertime flooding (e.g., 2005-2006).

The 1987 to 1994 Drought is still the most severe drought on record. Figure 11 shows that the Truckee River system is finishing the third year of an ongoing climatological drought cycle. It cannot be known whether the cycle will end with the 2009/2010 winter snowpack or continue on. Snowpack in the Truckee Basin was 51, 86, and 85 % of average for the years 2007, 2008, and 2009, respectively. In December of 2008 Floriston Rate storage ran out, and in 2009 Floriston Rates ran out on October 16 with Lake Tahoe at its natural rim and Boca Reservoir down to its minimum pool elevation.

As is typically the case, it took three consecutive dry years for Lake Tahoe to fall to its rim prior to November. By definition, the region in 2009 is in a Drought Situation but the loss of river flows will come after the prime irrigation season with no impact to TMWA's POSW or need to increase groundwater production. Should the 2009/2010 winter produce below average precipitation for a fourth year, the region will most likely be in a Drought Situation which could present an operational challenge for TMWA during Summer 2010.

Important observations to be drawn from reviewing the historical Truckee River hydrology and drought periods include:

- Water levels in all reservoirs are gradually depleted but refill rapidly following a drought, usually in a two to three year period.

- Truckee River supplies are available the majority of the year, whether climatological induced drought or non-drought year conditions persist.
- Donner and Independence Lakes typically fill each spring.
- Truckee River water supply provided by normal operation for Floriston Rates can diminish early in the summer of dry years.

Figure 11: Lake Tahoe Elevations during Drought Cycles

Climate change and drought are the most significant weather-related variables with potential to change the quantity and quality of the water supply. Studies completed by DRI indicate that while potential for climate change to alter the timing, type of, and quantity of precipitation should continue to be monitored, it should not be artificially imposed as a constraint on current and future water supplies for a 20-year plan at this time. Drought cycles on the other hand have established historical patterns, with the most severe drought on record lasting eight years. TMWA plans for drought cycles by utilizing a combination of natural river flows, groundwater pumping, POSW releases, and extraction of accumulated groundwater injections. Operation of TMWA's water production facilities to meet demands during drought cycles is discussed in detail in Chapter __.

2.2.4.1.3 Groundwater Recharge

The potential effects of drought and climate change are far less immediate on groundwater recharge and aquifer storage as compared to surface reservoir storage and stream flow. Groundwater recharge, however, is a long-term concern because the effects of development could exacerbate diminished recharge resulting from weather related changes in precipitation and runoff. Local development ordinances provide for the protection of groundwater recharge areas in most natural drainage ways, however conversion of irrigated land and conveyance ditches to urban uses remains a local concern. Studies have shown that surface irrigation serves as a source of secondary or incidental recharge to the groundwater system. Secondary recharge occurs as seepage from conveyance ditches and as deep percolation of water applied to fields and pastures. Groundwater level declines associated with diminished agricultural irrigation have been documented in the South Truckee Meadows by Yeaman and Broadhead (1988) and CES (1998).

Diminishing groundwater recharge is of greatest concern in the Spanish Springs Valley hydrographic basin, where as much as 67 % of the total groundwater recharge is from Orr Ditch leakage and irrigation practices (Hadiaris, 1988 and USGS, 1996). Washoe County DWR, working with TMWA and local land use planners, is implementing a water resource management strategy to increase TMWA wholesale water use and decrease reliance on groundwater to address this concern. This strategy and plans for water facilities to meet future demands in Spanish Springs Valley are discussed in detail in Chapter __.

2.2.4.1.4 Reclaimed Water

Weather-related factors have little long-term effect on reclaimed water as a source of water supply. Reclaimed water is drought resistant in that water reclamation facilities receive, treat and discharge relatively constant average annual flows. Winter storage may limit the amount of reclaimed water for irrigation in some areas of the region.

2.2.4.2 Source Water Quality

This section begins with an overview of source water quality and identified potential risks of water supply contamination. Source water refers to surface water and groundwater sources before diversion for municipal use.

2.2.4.2.1 Truckee River Water Quality

The water quality of the Truckee River is normally excellent. Surface water is of exceptional quality because base flows are composed of Sierra Nevada Mountain snowpack runoff and seepage or spring flow. Typical water quality data are shown in Table 1. Mineral concentrations are very low, and turbidity levels are typically less than five NTU². Higher than average turbidity events can occur in the Truckee River during periods of floods, storm runoff and/or algae growth associated with low flows and warm temperatures in summer.

Table 1: Typical Mineral Concentrations of Surface Water

The reliability of this source is governed by the ability of TMWA's surface-water treatment facilities to treat Truckee River water during possible events of high turbidity and chemical or biological contamination. Three types of contamination events are identified:

- Turbidity events – low frequency events that are flushed by river flows within hours.
- Non-persistent toxic spills – spills of substances that would be flushed by river flows, usually within an 8 hour period.
- Persistent toxic spills - spills lasting more than 2-4 days that do not flush through the river channel.

Turbidity at conventional filtration plants is removed through chemical stabilization (coagulation and flocculation), followed by sedimentation and filtration. All surface water is treated at CTP or GTP before distribution. The modern treatment facilities at CTP and GTP have greatly reduced the water supply risks associated with turbidity events. Both CTP and GTP are designed to operate during intermittent turbidity events as high as 4,100 NTU lasting 5-10 days, but, it is more practical to shut the plants down and let the turbid water pass by to avoid significant clean-up efforts and costs at the treatment plants. Should a turbidity event occur that exceeds TMWA's ability to treat the water to required standards, it is possible to operate the system with only wells to supply an average day demand, more than sufficient to meet current indoor or winter daily demands of approximately 35 MGD.

Few toxic spills have occurred on the Truckee River and none were of major proportion. The most recent event was a sewage spill near Truckee, California which occurred in the spring of 1991, resulting in the shutdown of Glendale Treatment Plant operations for a day. Major toxic spills that would render the Truckee River unusable have not been recorded. However, toxic spills into rivers throughout the United States do occur, some of which have rendered water supplies unusable for an extended period of time. In the event of an incident on the Truckee River the contaminant might be diluted and washed downstream within a day depending on the flow rate in the river at the time. TMWA might be able to increase river flows through release of its stored water. These steps are likely to mitigate any contaminant that does not readily adhere into the river bed.

² The term "turbid" or "turbidity" is applied to waters containing suspended matter that interferes with the passage of light through water. Turbidity is measured in nephelometric turbidity units or "NTU".

Past resource plans and a recent review of United States Department of Transportation data, resulted in the identification of several types of hazardous materials which are commonly carried through the Truckee River watershed. They include:

Ammonia perchlorate	Hydrogen sulfide	White phosphorous
Anhydrous Ammonia	Nitro cellulose (wet)	Propargyl alcohol
Chlorine	Propane	Sulfuric Acid
Cyanide	Petroleum naphtha	Sodium hydroxide
Hydrochloric acid	Phosphoric acid	

These chemicals represent ingredients used in the formation of products ranging from rocket fuel to pesticides. Although most are extremely toxic it is likely that all would be flushed past TMWA's treatment plant intakes within one day. Chemicals that would likely adhere to the river bed include manufactured pesticides, herbicides, and fungicides. Each chemical would require a specific response depending on location, duration, and other factors of the water quality emergency. In the event of a spill, it is currently possible to operate using distribution storage and wells while the water quality emergency is being assessed.

In 2007 research was completed at the University of Nevada, Reno on behalf of TMWA (see Appendix _), to quantify the risk of a spill to the Truckee River using data that was previously not available. The analysis has shown no recorded contamination event from rail or highway transportation. The data also suggests that accidents tend to occur more frequently during the loading and unloading of trucks and rail cars. This suggests that the area of highest risk is downstream of TMWA's treatment facilities in the City of Sparks where there is a rail yard and a large number of warehouses and shipping companies.

Also completed by the University of Nevada, Reno in 2008 was a risk analysis and assessment accompanied by the development of a contaminant transport model of the Truckee River from Tahoe City to the Glendale Treatment Plant. The results of this research are provided in Appendix _ and include travel times for various classes of chemicals at different flow rates. The model is used to quantify the time periods required for the river to flush a spill from different possible locations.

While a toxic spill into the Truckee River is clearly a concern, this would be an extremely rare event and such an event has not occurred to this date. However, depending upon the time of year, TMWA is able to operate without the river for a period of hours to days using system distribution storage and its production wells. A detailed plan cannot be developed for a major emergency on the Truckee River that would anticipate all possible combinations of circumstances requiring emergency actions. Variables include location, size, and type of spill; time of year; levels of reservoirs and streams; customer demands; and other factors. The supply of water available from its 32 production wells enables TMWA to meet demands for average indoor water use throughout the year. In addition to relying on its wells, other steps to reduce water use during an extreme event and/or extended river outage could include:

- Call for voluntary, then mandatory water conservation, including watering restrictions (e.g., once per week during summer months), reduced laundry at commercial properties, use of paper plates in restaurants, no use of potable water for non-potable purposes, and other measures.

- Engage all wells on the TMWA system for full operation subject to Health Department approval. This would include the use of wells that do not meet drinking water standards.
- Modify flows in the Truckee River to either flush, dilute, or isolate the contaminant.
- Utilize extraordinary treatment processes in the pre-treatment section of the water plants. An example of this might be neutralizing pH through chemical additions in the pre-settling basin or addition of granular-activated carbon to filters. The likelihood of these steps being successful will depend on the type of contaminant and its concentration.
- Where possible, utilize and expand emergency interconnections with other water systems.
- Acquire the use of all water in local irrigation ponds, recreational lakes, etc., to the extent that water can be conveyed to the TMWA's treatment plants through ditches or other means.
- Use isolated portions of the storm drain system and ditch system for conveying water from unusual source locations to the water treatment plants. This might include installing sandbag check dams in certain ditches, along with low head pumps, in order to move water up-gradient in a ditch to a treatment plant. For example, the creeks in the South Truckee Meadows might be conveyed to the Glendale Treatment Plant by collecting the water in Steamboat Creek, pumping it into Pioneer Ditch, and thence through step pumping to Glendale.
- Temporarily pump the discharge from the Sparks Marina to the Glendale Water Treatment Plant.
- When TROA is in effect utilize the emergency worse than worst case water supply to flush the river of contaminants.

Events other than the types of spills described above, may interfere with the availability of Truckee River water. In April 2008 an earthquake triggered a rock slide destroying a 200-ft section of flume along the Highland Ditch in the Mogul area. This incapacitated the primary raw water supply for CTP just as customer demands were increasing with the onset of springtime temperatures. Raw water supply to CTP was restored that same day via the Orr Ditch Pump Station (“ODPS”) at a limited capacity of about 60 MGD, but more supply was required. The GTP was brought on-line early in order to help meet those increasing customer demands. Within a few weeks a temporary pumping station along the river was also set up to provide enough raw water in order for CTP to resume operating at its full capacity of 83 MGD. By July the damaged section of flume was bypassed with an aboveground pipe and flow from the river to CTP was restored at a limited capacity of about 26 MGD. The ODPS was used to supplement the additional 57 MGD or so that the CTP required to operate at full capacity. The earthquake event has fast-tracked the Mogul Bypass Project which will bypass or re-route a substantial portion of the Highland Ditch around and south of the Mogul area with a buried pipeline.

Though it cannot be predicted when a river interruption event will occur or what the nature of an event will be, TMWA plans for and practices scenarios to manage emergency events. The more extraordinary measures that can be engaged are believed to only apply in an extreme, worse-than-historic event that would occur in the peak of the summertime irrigation with contamination occurring between Boca and the Steamboat Ditch diversion. Most combinations of scenarios as to time, place, and nature of event are manageable with existing production facilities and management options without such

drastic measures. It must be emphasized that these are broad guidelines only. They are not intended as a definitive instruction list as to the response which should be taken in any given emergency situation. An event, should one occur, must be evaluated on its specific conditions, and a response plan devised accordingly.

2.2.4.2.2 Tributary Water Quality

Truckee River tributary streams that join the Truckee River upstream of water treatment plants have the potential to adversely affect raw water quality. Creeks that flow from the Carson, Verdi and Peavine Mountains contribute to Truckee River water quality upstream of the Glendale Water Treatment Plant. These streams are generally of the same pristine quality as the Truckee River. Stream flows are maintained by snowmelt runoff and snowmelt that infiltrates into the upper watershed and then provides base flows. One exception is Chalk Creek, which has become a perennial stream due to urban irrigation. Chalk Creek also carries heavy Nitrogen, Phosphorus, and Total Dissolved Solids (N, P, and TDS) loads, three pollutants of concern within the Truckee River system. The City of Reno has studied the creek and, with the help of the Truckee River Fund, will be constructing a small sulfate-reducing wetland to explore the removal of these pollutants on a pilot scale.

The Truckee Meadows Regional Stormwater Quality Management Program is concerned with the condition of Truckee River tributaries and collaborated with the University of Nevada Cooperative Extension and the Washoe Story Conservation District in 2002 to conduct baseline watershed assessments of many of those tributaries. The program has conducted annual assessments and published assessment reports since 2005. Results and recommendations are reported most recently in the "Truckee River Watershed Assessment:2008". A small number of these tributaries are included on Nevada's 2006 303(d) Impaired Waters List, although none are shown as high priority for TMDL development.

Mercury
(to be developed)

2.2.4.2.3 Groundwater Quality

The sustainability of the region's groundwater resources is dependent on its capturability and its quality. Groundwater quality degradation can be the result of naturally occurring constituents or contaminants introduced by human activities. As municipal well fields were developed over time in the region, portions of aquifers with poor water quality were identified and avoided. Today, the areas of good quality groundwater that can be easily or economically captured are fairly well defined and developed.

Anthropogenic Influences

Probably the most significant human-caused groundwater contamination in the Truckee Meadows was discovered when tests showed concentrations of PCE, and organic solvent, in municipal wells. Similar, but unrelated solvent contamination affects groundwater in the West Lemmon Valley hydrographic basin. In addition, hydrocarbon fuel and organic solvent contamination near the Sparks Tank Farm and adjacent rail yard affects groundwater underlying the southern-most part of Sparks.

Nitrate contamination in Spanish Springs Valley groundwater resulting from overly-dense septic systems further emphasizes the importance of source water protection efforts.

The well map in Figure 12 depicts rough outlines of the extent and nature of some of the current threats to groundwater that TMWA, WDWR, Reno, Sparks, Washoe County, and NDEP are monitoring and managing.

Figure 12: Production and Recharge Wells and Areas of Water Quality Concern

Solvent and Fuel Contamination

Water quality in a large portion of the aquifer underlying the central Truckee Meadows is affected by the presence of perchloroethylene, or PCE. This solvent was used extensively from the 1950s to the 1980s as a degreaser by various commercial establishments and is presently used by the dry cleaning, automobile service, and chemical manufacturing industries. In the 1980s the EPA identified PCE as a hazardous / toxic material and required municipal water systems to initiate water quality monitoring. In 1987, water quality tests on several of Sierra's (now TMWA's) production wells revealed the presence of PCE.

In 1995, the State Legislature passed Senate Bill 489 (NRS 540A) requiring the formation of a remediation district once a groundwater contamination problem is certified by NDEP and/or the WCDHD. Both agencies provided letters of certification in August of that year. In 1997, NRS 540A was amended to provide a funding mechanism to support groundwater remediation activities and the Central Truckee Meadows Remediation District (CTMRD) was formed later that year.

Groundwater near the Reno-Stead Airport in the West Lemmon Valley hydrographic basin is also affected by solvent contamination. This PCE plume, identified in 1994, is connected with US Air Force activities at the Stead Air Force Base, which was active during the 1940s and 1950s. The potential exists for this contamination to migrate to TMWA production wells; however, corrective actions are successfully controlling migration and cleaning up the contaminated groundwater. Remediation plans are being implemented by responsible parties under the direction and oversight of NDEP.

Hydrocarbon fuel and organic solvent contamination originating from the Sparks Tank Farm and adjacent rail yard affects groundwater underlying the southern-most part of Sparks. The contamination forms a plume that roughly parallels I-80, extending from the tank farm to Sparks Marina Lake. The plume is being hydraulically contained with extraction wells, and contaminated groundwater is treated onsite. NDEP is overseeing and directing the ongoing, onsite remediation of contaminated soils and groundwater.

Nitrate Contamination

Nitrate contamination from septic systems has been identified in a small number of isolated areas in the region. Elevated nitrate concentrations in groundwater have been documented in Spanish Springs Valley (Washoe County, 2002), and New Washoe City (McKay, 1989). In Spanish Springs, nitrate contamination affects municipal wells, which prompted NDEP to require corrective action involving mandatory sewerage to eliminate the nitrogen source.

A 2008 report to the Regional Water Planning Commission entitled Septic Nitrate Baseline Data and Risk Assessment Study for Washoe County reported the results of a literature review, data compilation and analysis of data gaps to identify potential areas of concern and prioritize areas for further study. The study identified 16 areas of concern in seven hydrographic basins: Truckee Meadows, Lemmon Valley, Cold Springs,

Spanish Springs, Truckee Canyon, Pleasant Valley and Washoe Valley. The report concluded that more than 18,000 septic systems exist in Washoe County and that 79% to 95% of all septic systems in a particular hydrographic basin are found within the individual areas of concern. Septic system densities ranged from 50 to 350 per square mile. The highest risks were attributed to high septic density, shallow depth to groundwater and the shortest distance to sensitive receptors. Of the areas having sufficient data, those ranked highest for management action are consistent with areas having known impacts, such as Spanish Springs Valley.

In 200_ Washoe County DWR began requiring Spanish Springs homeowners to connect to the municipal sewer in the areas of highest septic system densities. DWR's water resources management strategy and facility plan for Spanish Springs, mentioned earlier in this chapter, will help to address nitrate contamination in groundwater.

Natural Influences

The naturally-occurring groundwater geochemistry in portions of the region's aquifers influence the location of production wells and the level of treatment required for water that does not meet regulatory drinking water standards.

Geothermal Influences

Groundwater resource sustainability is constrained in part due to the influence of geothermal systems, most notably Moana Hot Springs in south-central Reno and Steamboat Springs in the southeast Truckee Meadows. A small number of South Truckee Meadows wells have concentrations of antimony exceeding the drinking water standard. It is speculated that the antimony is related to Steamboat Springs geothermal activity to the south. Smaller geothermal systems also exist in Spanish Springs Valley, Washoe Valley near New Washoe City, Warm Springs Valley and west Reno at the River Inn. Water derived from these geothermal systems is generally neither potable nor developed for municipal use. It is understood that large centers of municipal pumping peripheral to geothermal areas can induce geothermal water migration to the production wells. Consequently, consideration is given to the prevention of geothermal migration as a result of municipal well pumping.

Arsenic

(edit to current status) In 2001, the EPA changed the arsenic MCL from 0.050 mg/L to 0.010 mg/L and announced that public water systems have until January 2006 to comply with the new standard. Compliance with the arsenic standard will be determined through the analysis of water samples collected at the points of entry into the distribution system. Those systems with arsenic concentrations greater than 0.010 mg/L will be required to collect samples on a quarterly basis. Compliance will be determined by calculating the annual average of the quarterly samples. Systems required to increase monitoring will not be considered in violation until the annual average exceeds the MCL. TMWA reports that the new arsenic standard affects 11 of its 30 wells. Water from most of these wells is, or can be, piped to a treatment facility. WCDWR anticipates that 9 County wells and 2 STMGID wells will be affected. Water purveyors are currently evaluating strategies to comply with the 0.01 mg/L arsenic standard.

Radionuclides

(edit to current status) The EPA has taken a somewhat unique approach to regulating radon and has proposed two standards. The proposed radon MCL is 300 pCi/L with an alternative MCL (AMCL) of 4,000 pCi/L if there is a "multi-media mitigation" program

established to mitigate indoor air radon. The Nevada State Health Division is taking the lead in the establishment of a “multi-media mitigation” program acceptable to EPA. The EPA anticipates promulgation during 2005. New monitoring requirements for radionuclides have recently been promulgated. The EPA retained current MCLs for radium, 226 and 228, gross alpha particle activity and beta particle and photon radioactivity; however, new uranium MCL of 30 µg/L has been established. This regulation became effective December 8, 2003.

2.2.4.2.4 Reclaimed Water Quality

Reclaimed water generated at the region’s major water reclamation facilities is among the cleanest in the nation. The various water reclamation facilities provide different levels of treatment depending on permit limitations and the intended use of the reclaimed water. For example, reclaimed water produced at TMWRF, by far the largest facility, is of adequate quality for discharge to the Truckee River, and for use as irrigation water with minimal restrictions. NDEP regulates the use of reclaimed water, including minimum treatment levels in addition to requirements for bacteriological quality and buffer zones for spray irrigation.

DRAFT

Northern Nevada Water Planning Commission

STAFF REPORT

DATE: December 31, 2009

TO: Chairman and Members, Northern Nevada Water Planning Commission

FROM: Jim Smitherman, Water Resources Program Manager

SUBJECT: Status report on development of the 2011 Comprehensive Regional Water Management Plan, including outline, timeline and contractual services, and possible direction to staff

SUMMARY

Staff is in the process of developing the 2011 Comprehensive Regional Water Management Plan (“RWMP”) elements listed in the attached outline which was presented to, and approved by the Western Regional Water Commission at the November 13, 2009 meeting. Staff has made progress on the following plan elements since the approval of the plan outline:

- As required by statute, staff solicited information from water purveyors within the planning area for documentation related to their operations and facility plans. Based on new and existing information staff has developed a preliminary draft of Chapter 2 - *Water Resources* for the 2011 plan for the commission’s review.
- Staff has begun assembling information for Chapter 3 - *Water Purveyors* and Chapter 4 - *Wastewater*. Review drafts of these chapters are anticipated to be completed within first quarter of 2010.
- In coordination with the Truckee Meadows Flood Management Project, staff has developed a revised outline for the Flood Project section of Chapter 5 - *Background on Flood Control /Storm Drainage*. The development of this chapter remains on-schedule for the second quarter of 2010.
- Staff has negotiated a scope of work with Washoe County Department of Water Resources to provide GIS services related to the production of maps and figures for the plan. The approved budget, not to exceed \$17,000, is for up to 200 labor hours which is based on the time expenditure for the development of the 2004 – 2025 RWMP.
- Staff has negotiated a scope of work and budget, not to exceed \$49,000, for Eco:Logic Engineers to provide engineering services to revise facility cost estimates, revise a regional water balance using current population estimates and provide a regional wastewater analysis. The contract will provide for work products to satisfy several legislatively required elements of the RWMP.

BACKGROUND

As required by the Western Regional Water Commission (“WRWC”) Act (the “Act”), the Northern Nevada Water Planning Commission (“NNWPC”) must develop a new comprehensive plan by January 1, 2011. In early 2009, staff began the process of reviewing the existing 2004-2025 Water Management Plan, and amendments, to assess how well elements of the current plan satisfy the statutory requirements outlined in the Act. Following staff’s initial review to ensure compliance with statutory requirements, WRWC member agencies were asked to provide input on elements they felt needed to be addressed.

Following the compilation of the required elements and member agency needs, staff began the process of organizing the plan subjects into an outline. The intent is to provide the reader with the appropriate background information, follow with descriptions and analyses of current and possible future conditions and conclude with an assessment of needs and requirements for moving forward.

The outline, in its current format, is provided as an attachment for your review. The outline provides the main chapters and subheadings along with an anticipated schedule for completion. Staff is working with various member agency staff members and consultants to compile the information necessary to complete the plan.

It is anticipated that the WRWC will hold a public hearing in December 2010 in order to comply with the January 1, 2011, statutory deadline for development of the plan. A draft plan will be available for the NNWPC to review at its August 2010 meeting. The NNWPC will need to hold a public hearing at its November 2010 meeting to consider recommending the plan to the WRWC.

**Draft - Comprehensive Regional Water Management Plan
2011 Update Proposed Table of Contents and Schedule**

Table of Contents	Timeline in Months														
	2009			2010											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Executive Summary															
Introduction															
<i>Purpose</i>															
<i>Background</i>															
<i>Responsibility</i>															
<i>Implementation</i>															
<i>Format</i>															
<i>Application</i>															
<i>Directions for Future Revision of the Plan</i>															
<i>Abbreviations</i>															
<i>Glossary</i>															
Chapter 1 - Regional Water Planning Policies and Criteria															
<i>Background</i>															
<i>Policies and Criteria</i>															
<i>Goal 1: Plan for the Development of Sustainable Water Supplies</i>															
<i>Goal 2: Plan for Regional Wastewater Treatment and Disposal Requirements</i>															
<i>Goal 3: Plan for the Protection of Human Health, Property, Water Quality and the Environment through Regional Flood Plain and Storm Water Management</i>															
<i>Goal 4: Support the Implementation of the Regional Plan</i>															
Chapter 2 - Water Resources															
<i>Purpose and Scope</i>															
<i>Summary of Findings</i>															
<i>Introduction</i>															
2.1 Sources of Water															
2.2 Factors Affecting Water Resource Sustainability															
2.3 Watershed Management Programs to Protect the Availability and Quality of Water Resources for Municipal and Industrial Use															
<i>References Cited</i>															
Chapter 3 – Water Purveyors															
3.1 Public Water Purveyors															
3.2 Non-Public Water Purveyors															
3.3 Reclaimed Water Purveyors (Reno, Sparks, WC)															
3.4 Water Resources Available for Municipal Uses															
3.5 Water Demand and Supply Management															
3.6 Water Rights Dedication Requirements															
<i>References Cited</i>															
Chapter 4 - Wastewater															
<i>Purpose and Scope</i>															
<i>Summary and Findings</i>															
4.1 Service Providers (Reno, Sparks, WC, SVGID)															
4.2 Water Reclamation Facilities															
4.3 Wastewater Planning for Other Areas															
4.4 On-site Disposal Systems															
<i>References Cited</i>															
Chapter 5 – Background on Flood Control / Storm Drainage															
<i>Purpose and Scope</i>															
<i>Summary of Findings</i>															
5.1 Flood Damage															
5.2 Flood Types															
5.3 Flood History and Regional Setting															
5.4 Storm Water Drainage Planning															
5.5 Flood Plain Management and Regional Flood Control Master Plan															
5.6 Legislation and Programs to Address Flood Issues															
5.7 Truckee River Flood Control Efforts															
5.8 Flood Control Overview by Hydrographic Basin															
<i>References Cited</i>															

**Draft - Comprehensive Regional Water Management Plan
2011 Update Proposed Table of Contents and Schedule**

Table of Contents	Timeline in Months														
	2009			2010											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chapter 6 – Population Forecast and Projections of Water Demand, Peak Day Requirements and Wastewater Flow															
<i>Purpose and Scope</i>															
<i>Summary of Findings</i>															
6.1 <i>Population Projections (Consensus Forecast)</i>															
6.2 <i>Water Demand Projections</i>															
6.3 <i>Population that May be Served by Identified Sustainable Water Resources</i>															
6.4 <i>Needs Beyond 20-Year Plan Horizon</i>															
6.5 <i>Wastewater Flow Projections</i>															
<i>References Cited</i>															
Chapter 7 – Water Conservation - Efficient Use of Water															
<i>Purpose and Scope</i>															
<i>Introduction</i>															
<i>Summary of Findings</i>															
7.1 <i>Regional Benefits of Conservation</i>															
7.2 <i>Overview of Progress</i>															
7.3 <i>Measuring Progress</i>															
7.4 <i>Laws, Ordinances, Agreements and Plans Facilitating Conservation</i>															
7.5 <i>Ongoing Measures to Conserve Water</i>															
7.6 <i>Future Water Conservation Initiatives</i>															
7.7 <i>Drought</i>															
7.8 <i>Recommendations for Future Action</i>															
<i>References Cited</i>															
Chapter 8 – Issues Identification and Proposed Alternatives															
<i>Purpose and Scope</i>															
<i>Background</i>															
8.1 <i>Municipal Water Resources</i>															
8.2 <i>Reliability of Water Service in Response to Contamination Event on Truckee River or Tributaries</i>															
8.3 <i>Water Conservation (Delete?)</i>															
8.4 <i>Wastewater Management</i>															
8.5 <i>Reclaimed Water Management</i>															
8.6 <i>Septic Tanks and Water Quality</i>															
8.7 <i>Watershed Based Water Quality Planning/TMDL</i>															
8.8 <i>Groundwater Resource Development and Impact to Domestic Wells</i>															
8.9 <i>Integrated Use of Water Rights</i>															
8.10 <i>Water Resource and Land Use Planning</i>															
8.11 <i>Consistency in Local Government Drainage Standards</i>															
8.12 <i>Regional Flood Plain Management and Flood Control</i>															
<i>References Cited</i>															
Chapter 9 – Cost and Financing Analysis															
<i>Purpose and Scope</i>															
9.1 <i>Water Supply</i>															
9.2 <i>Wastewater Treatment</i>															
9.3 <i>Reclaimed Water</i>															
9.4 <i>Flood /Drainage</i>															
9.5 <i>Public Water Purveyor Consolidation</i>															
<i>References Cited</i>															
Chapter 10 – Action Plan															
<i>Purpose and Scope</i>															
<i>Introduction</i>															

Northern Nevada Water Planning Commission

STAFF REPORT

DATE: December 31, 2009
TO: Chairman and Members, Northern Nevada Water Planning Commission
FROM: Jim Smitherman, Water Resources Program Manager
SUBJECT: Program Manager's Report

Attached are the following updated reports for your review:

- a) Status Report of Projects and Work Plan supported by the Regional Water Management Fund
- b) Financial report on the Regional Water Management Fund
- c) Truckee River Flood Management Project status report
- d) Informational report from the NNWPC representative on the Truckee Meadows Water Authority Standing Advisory Committee

**Status Report of Projects and Work Plan
Supported by the Regional Water Management Fund**

Approved by Water Planning Commission	Approved by WRWC	Project Name	Contractor/Provider	Amount	Balance Remaining	Percent Complete	Target Completion Date	Notes
	By BCC on 9/26/06	(DinSar) Groundwater Monitoring Program Using Satellite Radar Images	Previously Dr. Gary Oppliger	42,000	10,086	76%	12/31/09	Contract terminated in Oct 2009; Gary Oppliger left UNR
12/03/09	N/A	D-InSAR	Bureau of Mines & Geology	12,690	12,690	0%	12/31/10	Awaiting Vendor Application from Contractor
8/15/07	N/A	Washoe Evapotranspiration (ET)	DRI (Desert Research Institute)	20,745	12,159	41%	10/31/2010	Work is in progress
6/4/08	7/11/08	North Valleys Initiative	City of Reno (ECO:LOGIC)	172,448	0	100%	11/01/09	Work is in progress
4/1/09	4/10/09	North Valleys - Amendment to include Regional Integrated Wastewater System Planning	City of Reno (ECO:LOGIC)	96,000	7,954	92%	6/30/10	Work is in progress
6/4/08	7/11/08	TMDL Facilitation w/ Dave Ceppos	Cal State University Sacramento	142,500	99,552	30%	8/01/10	Work is in progress
6/4/08	7/11/08	TMDL Phase I	City of Reno (LimnoTech)	197,500	0	100%	11/01/09	Work continues with Amendment for \$400,000 (see next row)
N/A	7/10/09	Amendment to TMDL Phase I	City of Reno (LimnoTech)	400,000	356,034	11%	7/31/10	Work in Progress
3/4/09	4/10/09	2009 Water Usage Review Program	TMWA	64,100	64,100	0%	6/30/10	Work in Progress
N/A	3/13/09	TMDL Legal Services	Somach Simmons & Dunn	50,000	14,303	71%	6/30/11	Work in Progress
1/7/09	3/13/09	Marlin Drain - Hydro/Hydraulic analysis of tributary watershed to Swan Lake	Washoe County Public Works (Manhard)	50,000	34,276	31%	4/1/10	Work in Progress
3/4/09	4/10/09	2009 Water Usage Review Program	TMWA	64,100	64,100	0%	6/30/10	Work in Progress
N/A	7/10/09	Fernley Reimbursement Agreement	Fernley	71,000	71,000	0%	12/31/09	Work completed; awaiting invoice
N/A	11/13/09	Cloud Seeding Program	(DRI) Desert Research Institute	45,000			3/31/11	Contract in review process
10/7/09 (JS)	N/A	GIS Maps & Figures in the Water Management Plan	Washoe County Dept Water Resources GIS Services	17,000			6/30/11	Contract in review process
12/2/09		Technical Services on the Water Management Plan	ECO:LOGIC Engineering	49,000			6/30/11	Contract in review process
N/A	11/13/09	Clean Water Act Grant Regional Integrated Wastewater System Planning	Nevada Division of Environmental Protection (NDEP)	40,000	40,000	0%	6/30/10	Work in Progress
12/2/09	N/A	Certified Landscape Technician Program	Nevada Landscape Association (NLA)	25,000	25,000	0%	12/31/10	Awaiting detailed scope & budget from NLA

**Status Report of Projects and Work Plan
Supported by the Regional Water Management Fund**

Approved by Water Planning Commission	Approved by WRWC	Project Name	Contractor/Provider	Amount	Balance Remaining	Percent Complete	Target Completion Date	Notes
Administration Projects:								
N/A	3/13/09	External Financial Auditor for Fiscal Year ending 6/30/09	Schettler, Macy & Silva	7,800	3,800	51%	6/30/10	Completed; awaiting final invoice
N/A	5/21/09	Website Design WRWC / NNWPC FY 08-09	Washoe County	10,594	10,594	0%	6/30/10	Work in progress
N/A	5/21/09 (JS)	Website Design - First Scope of Work	Washoe County Community Relations	4,400	3,905	11%	6/30/10	Work in progress
N/A	12/10/09 (JS)	Website Design - Second Scope of Work	Washoe County Technology Services	17,850	17,850	0%	6/30/10	Work in progress
6/3/09	6/10/09 (JS)	NNWPC Minutes WMHB Minutes	Niki Linn	20,000	19,200	4%	6/30/10	Work in progress
6/3/09	7/2/09 (JS)	SNCAT Televising of WRWC & NNWPC FY 09-10	SNCAT	7,200	6,756	6%	6/30/10	Work in progress
6/3/09	7/2/09 (JS)	G3 Productions - NNWPC FY 09-10 County Chambers	G3 Productions	2,040	1,845	10%	6/30/10	Work in progress
10/7/09	10/9/09	WRWC and NNWPC Legal Counsel	Rhodes Law Offices, LTD	285,300	276,000	3%	10/31/11	Work in progress

Financial Report on the Regional Water Management Fund

Run Date 12/30/09
Fund 766
Period 1 thru 6 2010
Report 400/ZF15

Accounts	Plan Budget	Actual (Revenue & Expenses)	PO Commit (Remaining PO Balance)	Actual + PO	Available (Budget minus Actual + PO)	Avail%	PreCommit (PO's Requested)	Available (Budget minus PO Requisitions)	Avail% (of Budget minus all Commitments)
481000 Interest-Pooled Inv.	30,180.00-	29,417.89-		29,417.89-	762.11-	3-		762.11-	3-
482100 RGL Pooled Inv.		3,093.40-		3,093.40-	3,093.40			3,093.40	
482200 URGL Pooled Inv.		19,476.44-		19,476.44-	19,476.44			19,476.44	
491060 Water Surcharge 1.5%	1,446,000.00-	736,729.63-		736,729.63-	709,270.37-	49-		709,270.37-	49-
** REVENUE	1,476,180.00-	788,717.36-		788,717.36-	687,462.64-	47-		687,462.64-	47-
701150 Contractual Wages	334,532.00	118,130.25		118,130.25	216,401.75	65		216,401.75	65
* SALARIES AND WAGES	334,532.00	118,130.25		118,130.25	216,401.75	65		216,401.75	65
710100 Professional Services	2,010,083.00	156,994.87	666,697.19	823,692.06	1,186,390.94	59	12,600.00	1,173,790.94	58
710120 Legal Fees	144,000.00	72,712.55	290,303.22	363,015.77	219,015.77-	152-		219,015.77-	152-
710139 Fin Consult Services	22,000.00				22,000.00	100		22,000.00	100
710149 Invest Pool Alloc Ex		1,176.54		1,176.54	1,176.54-			1,176.54-	
710200 Service Contract		1,579.47	12,158.80	13,738.27	13,738.27-			13,738.27-	
710509 Seminars and Meetings	10,000.00				10,000.00	100		10,000.00	100
710512 Auto Expense	2,400.00				2,400.00	100		2,400.00	100
711210 Travel	10,000.00				10,000.00	100		10,000.00	100
711508 Computers nonCapital		169.16		169.16	169.16-			169.16-	
* SERVICES AND SUPPLIES	2,198,483.00	232,632.59	969,159.21	1,201,791.80	996,691.20	45	12,600.00	984,091.20	45
** EXPENDITURES	2,533,015.00	350,762.84	969,159.21	1,319,922.05	1,213,092.95	48	12,600.00	1,200,492.95	47
*** Total	1,056,835.00	437,954.52-	969,159.21	531,204.69	525,630.31	50-	12,600.00	513,030.31	49-



WASHOE COUNTY

"Dedicated To Excellence in Public Service"

www.co.washoe.nv.us

CM/ACM KS
Finance N/A
DA N/A
Risk Mgt. N/A
HR N/A
Other N/A

STAFF REPORT BOARD MEETING DATE: December 8, 2009

DATE: November 18, 2009
TO: Board of County Commissioners
FROM: Naomi Duerr, P.G., Director, Truckee River Flood Management Project,
850-7420 nduerr@washoecounty.us
SUBJECT: **Acknowledge Receipt of Truckee River Flood Management Project
Status Report for October 2009. (All Commission Districts.)**

SUMMARY

A status report on the activities related to the Truckee River Flood Management Project for the month of October 2009 is provided herein.

County Priorities/Goals supported by this item: Preserving natural resources. Promoting quality economic development; managing intermittent flooding events along the Truckee River, thereby protecting property, restoring habitat, improving water quality and promoting recreational uses.

PREVIOUS ACTION

The most recent status report for September 2009 was presented to the Board of County Commissioners at the October 27, 2009 meeting.

BACKGROUND

Below is a list of the primary activities that were accomplished in the month of October 2009 keyed to the Board's strategic priorities.

Local Sponsors/Collaborative Efforts

Property Management - At the October 9th meeting, the Flood Project Coordinating Committee (FPCC) approved staff recommendations for disposition of Truckee River Flood Project real property as follows: Within one year, demolish 125, 105, and 85 Edison Way properties; Maintain (up to three years) 195, 185 and 155 Edison Way properties, maintain the agricultural properties under lease or through a maintenance agreement; Continue with the evaluation of the Excel, Bristlecone and Cooperative Extension buildings with an analysis of these properties being brought back to the FPCC in the near future for further consideration.

Civil Air Patrol Lease - At the October 27th meeting, the Board of County Commissioners authorized the Chairman to execute and deliver a lease for the property located at 185 North Edison Way, Units 1, 2, 3, 4, 14, 15, and 16 to the Civil Air Patrol

AGENDA ITEM # 7R(1)

for their daily operations, training, and education for the next three years. The timeframe runs October 27, 2009 through October 31, 2012 with a consideration of \$1.00 per year rent and payment of all operating expenses. The Flood Project Infrastructure Sales Tax (NRS 377B) will not be used to pay for the lease or operating expenses.

Recreation Plan – At the October 9th meeting, the FPCC approved an amendment to the Locally Preferred Plan (LPP) to include the Recreation Plan as presented by Danielle Henderson, Natural Resource Manager. This agenda item provided an update on recreation planning efforts related to the Truckee River Flood Management Project. Since March 2008, the local sponsors have been working with stakeholders and the U.S. Army Corps of Engineers (Corps) to develop and refine a feasible, cost-sharable recreation plan for the Flood Project that will significantly enhance recreational opportunities (an original goal set forth by the Community Coalition) along the Truckee River for our community. Estimated costs for the recreation plan significantly dropped during this phase of plan development from \$120 million for the conceptual plan to \$46 million for the feasibility level plan.

Home Elevation Project Tour – Director Duerr and senior staff members visited Tehama, California on October 16th to view and discuss the home elevation program currently underway in this Northern California community. Under this program, 38 homes have already been elevated with a few others still “in the works.” Photos of the Tehama project are posted on the Flood Project website at www.truckeeeflood.us

Working Group – The Working Group met October 28th and discussed a variety of subjects including a presentation by Paul Urban on the proposed amendment to the Locally Preferred Plan (LPP) to include fish passage, floodplain acquisition, flood proofing/home elevation, bank stabilization and bridge elements. This amendment was presented to the Flood Project Coordinating Committee at the November 13th meeting as a possible action item. Other topics included an update by Deputy Director Jay Aldean on the home elevation program planned for the Eastside Subdivision and Hidden Valley area. Members were provided with the latest Corps schedule which Mr. Aldean reported contained no changes from the previous version. Future meetings for the 2009 year will be on an as needed basis. The updated National Economic Development Plan (NED) is expected late this year and will need input from the Working Group so a meeting will be scheduled according to the timeframe associated with the delivery of that information from the Corps.

Technical Advisory Committee (TAC) – The TAC met Thursday October 29th, and discussed a variety of topics. Of note, a new Vice Chair, Wayne Seidel of Sparks, was elected to replace Neil Mann of Reno who has left the city. Additional discussion included the possible drafting of strategies to vet the information on the NED that is expected from the Corps in late December. Other informational items included an update on formation of a Joint Powers Authority for the Flood Project, update on the proposed NRS 377B plan, and a presentation on the amendment to the LPP to include Fish Passage, Floodplain Acquisition, Non-structural project elements (such as floodproofing, home elevation, relocation and buyout), Bank Stabilization and Bridge Improvements. Any action items will be carried forward to the Flood Project Coordinating Committee for review and approval.

Improve Government Efficiency and Financial Stability

NRS 377B Plan – At the October 9th meeting, the FPCC discussed the proposed second amendment to NRS377B regarding Flood Project expenditures from proceeds of the 1/8% Infrastructure Sales Tax first adopted by the Board of County Commissioners in November 1998. The second amendment expands the project list on which infrastructure tax money may be spent, updates cost estimates and financing methods, and makes certain administrative changes. A public hearing on the proposed plan took place on October 13th in the Washoe County Commission Chambers. Next steps include a second discussion and possible approval at the November FPCC meeting, followed by a second public hearing at the December 8, 2009 FPCC meeting.

Washington D.C. Trip October 21st and 22nd – FPCC Chair Bob Larkin, Vice-Chair Ron Smith and Director Duerr met with the Offices of Senator Harry Reid, Senator John Ensign, Congresswoman Dina Titus, Congresswoman Shelley Berkley, and Congressman Dean Heller, staff from the Energy and Water Appropriations Committee, Ken Zwickl, Senior Planner, Civil Works Division U.S. Army Corps of Engineers, Tommy Williams, Program Examiner for the Office of Management and Budget and Terry Breyman, Associate Director for Natural Resources, Council on Environmental Quality. The Flood Project is seeking \$10 million in funding for General Investigations to complete the General Re-evaluation Report (GRR) and initiate design work for the project in FY 2011.

Provide Excellent Public Services

International Right of Way Association (IRWA) - Danielle Henderson, Natural Resource Manager was the invited guest speaker for the October 21st meeting of the International Right of Way Association (IRWA). Ms. Henderson's presentation included an overview of the Flood Project encapsulating current projects, future projects and plans for the restructuring of the Flood Project based on 2009 legislative changes related to funding.

Truckee River Symposium – The Flood Project was an in-kind sponsor of the 2009 Truckee River Symposium taking place November 3-5 at the Desert Research Institute. The conference is a bi-annual event hosted by the Nevada Water Resources Association. Flood Project personnel staffed a booth, made technical presentations, and conducted a tour of the Truckee River Flood Project. More information can be found at www.nvwra.org

FISCAL IMPACT

No fiscal impact - for information only.

RECOMMENDATION

Staff recommends that the Board acknowledge receipt of the Truckee River Flood Management Project Status Report for October 2009.

POSSIBLE MOTION

Should the Board agree with staff's recommendation, a possible motion would be: "Move to acknowledge receipt of the Truckee River Flood Management Project Status Report for October 2009."

Northern Nevada Water Planning Commission

STAFF REPORT

DATE: December 30, 2009
TO: Chairman and Members, Northern Nevada Water Planning Commission
FROM: June Davis, Administrative Secretary
SUBJECT: Informational report regarding the Truckee Meadows Water Authority Standing Advisory Committee

The Northern Nevada Water Planning Commission representative on the Truckee Meadows Water Authority Standing Advisory Committee (“TMWA SAC”) will update the Commission with a verbal informational report on the TMWA SAC.

Northern Nevada Water Planning Commission

STAFF REPORT

DATE: December 29, 2009
TO: Chairman and Members, Northern Nevada Water Planning Commission
FROM: Jim Smitherman, Water Resources Program Manager
SUBJECT: Agenda items for the February 3, 2010 Commission Meeting

1. Status Report on "State of the Science" for the Central Truckee Meadows (Groundwater) Remediation District, Chris Benedict, Washoe County Department of Water Resources *
2. Program Manager's Report, Jim Smitherman *
 - a. Status Report of Projects and Work Plan supported by the Regional Water Management Fund
 - b. Financial report on the Regional Water Management Fund
 - c. Status report on possible integration/consolidation of the Washoe County Department of Water Resources and the Truckee Meadows Water Authority
 - d. Truckee River Flood Management Project status report
 - e. Informational report from the NNWPC representative on the Truckee Meadows Water Authority Standing Advisory Committee
3. Discussion and possible direction to staff regarding agenda items for the March, 3 2010, Commission meeting and future meetings, Jim Smitherman.
4. Other Informational Items