Northern Nevada
Water Planning Commission

STAFF REPORT

DATE: December 28, 2016

TO: Chairman and Members, Northern Nevada Water Planning Commission

FROM: Jim Smitherman, Water Resource Program Manager

SUBJECT: Discussion and possible direction to staff regarding review and possible revisions to the "Cost and Financing" chapter for inclusion in the 2016 RWMP update.

SUMMARY

Hansford Economic Consulting (HEC) has completed the final revisions of the Cost and Financing chapter, including text edits and recalculated tables, as requested by the staff. Revisions shown in redline-strikeout format are attached for your review. In addition, the Cost and Financing chapter is now available in final draft form (without redline strikeout edits) at the following website: http://www.wrwc.us/draft.html . Final review for consistency with other chapters, including general page layout, use of terminology, acronyms, references, section numbers, figure numbers and other non-substantive matters has not yet been completed.

RECOMMENDATION

Staff recommends that the NNWPC accept the final draft Cost and Financing chapter for inclusion in the draft RWMP 2016 update, pending final editorial review, and provide direction to staff as appropriate.

CW:df

Attachment: Chapter 8 - Costs and Financing with redline strikeout

Chapter 8 – Cost and Financing

Purpose and Scope

This chapter presents a summary of the costs associated with planned and recommended major facility improvements for water, wastewater, storm drain, and flood management in the Planning Area. Facility cost data consists of a summary of the estimated costs identified in the City of Reno (Reno), City of Sparks (Sparks), Washoe County, Sun Valley General Improvement District (SVGID) and Truckee Meadows Water Authority (TMWA) Capital Improvement Plans (CIPs).

This chapter satisfies Section 42.7 of the Act. This chapter presents currently available data; some capital improvement projects and associated costs in the longer-term are not readily available. Plans for capital spending continually change as new information becomes available and new priorities are established.

Summary and Findings

This chapter briefly provides background that frames expectations for changes in costs and financing needs since the 2011 Regional Water Management Plan (RWMP), gives a financial summary of funding needs for years 2015 through 2020, and long-term capital improvement needs for years 2021 through 2035. Potential funding alternatives are described, and the impact on existing and future users of the water systems discussed. Note that the data collection for this chapter occurred over a period of more than one year. Some information may have changed over this time period.

The data provided by each of the water service agencies shows that approximately the same level of spending on existing system facilities will continue in the next five years as was planned for in the previous five years. Spending on infrastructure to serve new development however is projected to almost double due to increased new development activity. Spending on wastewater systems is anticipated to comprise 50%, and water systems 39%, of total CIP spending over the five-year period from 2015 through 2020. The Truckee River Flood Project (Flood Project) costs, which were included in the 2011 RMWP, have been excluded from the total costs in the 2016 RWMP; however, the Flood Project and its associated costs are described. The Project was removed due to the uncertainty of funding and timing of the Flood Project. It is estimated that about $90.1 million will be spent annually on capital improvement projects over the first five-year period, and at least $49.3 million will be spent annually through the following fifteen-year period. All costs are expressed in 2016 dollars. Costs over the fifteen-year period in this chapter are lower than actually expected for several reasons; first, the level of planning detail is low and costs are refined over time as the scope of improvements becomes better known; second, some cost data is not available at this time (although some idea of improvement needs are known, there has not been a scoping of budget conducted); and third, costs typically increase over time.

Impacts to the current users of the water systems cannot be estimated in this chapter because each agency employs different rate structure methodologies and has different philosophies in their approach to rate-setting. Impacts to future users of the systems similarly cannot be estimated; however, the impact of fees charged to new users is analyzed within context of the overall development fee and cost burden to evaluate the significance of water-related fees in development decisions. The analysis finds that water-related fees are relatively insignificant compared to the state of the general economy; however, the level of fees can encourage or discourage development in certain parts of the region.

Background

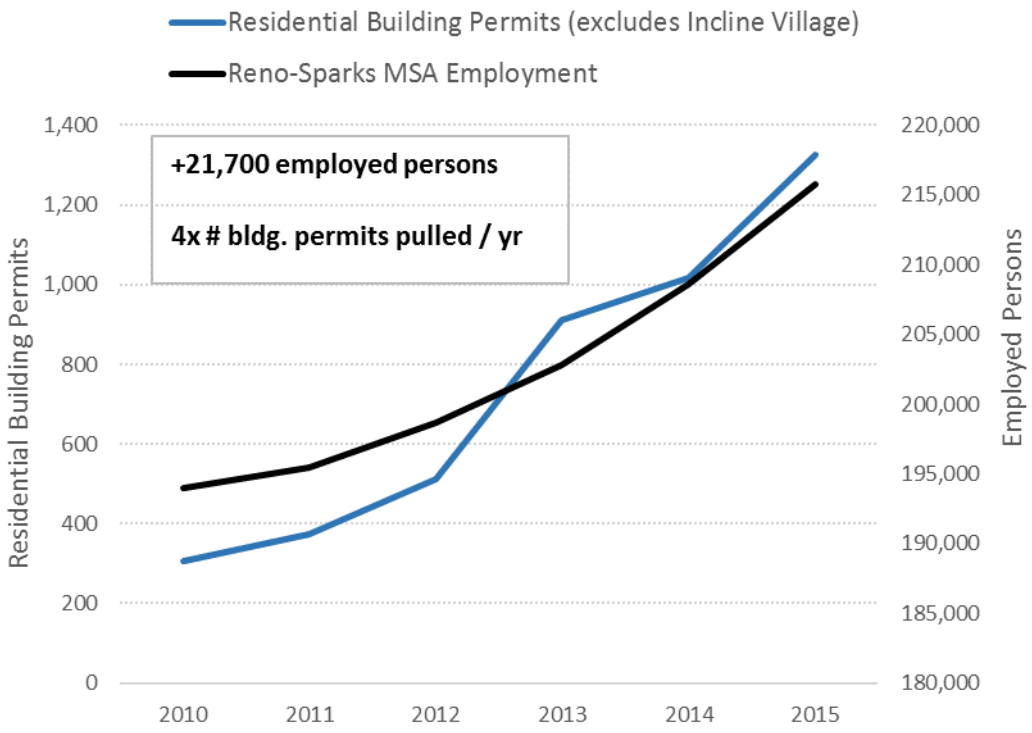
The January 14, 2011 RWMP documented the need to provide for on-going repair and replacement of existing infrastructure as a high priority. At that time, it was projected approximately $145 million per year would be spent on all water-related improvement projects in a five-year period (through 2015). It was anticipated that much of the funding would be for implementation of the Flood Project as well as existing system rehabilitation. Excluding the Flood Project, it was projected approximately $65 million per year would be spent 2011 through 2015.

There have been several changes in the region since the 2011 RWMP was completed, most notably the steady improvement of the regional economy. As shown in Figure 8.1, in 2015 there were 21,700 more employed persons than in 2010, and there were approximately four times as many building permits being pulled in 2015 as in 2010. The data indicates confidence in the region for continual growth; this is also corroborated by the EPIC report, completed in 2015, and TMWA's 2016 Resource Plan. The EPIC report gives particular attention to the growth of business activity in the Tahoe-Reno Industrial Center and estimates average annual growth of 1.7% per year for Washoe County through 2019. The Truckee Meadows Regional Planning Agency (TMRPA) 2016 Regional Housing Study projects growth at approximately 1.6% per year through 2035.

Another change has been the integration of Washoe County's water systems and South Truckee Meadows General Improvement District (STMGID) into TMWA on December 31, 2014. Operationally, the consolidation of the three water purveyors has enhanced efficiencies in water production and distribution of water throughout the Truckee Meadows. Additional benefits include consistent water management strategies, particularly enhancement of conjunctive use strategies already successfully used by TMWA, such as maximizing use of surface water and reducing use of groundwater (helping to improve aquifer conditions), as well as increased aquifer storage and recovery operations.

As a result of the change in the economy and continued optimistic outlook for the region, it can be anticipated that expenditures on water-related capital projects for new development will increase in the next 5-year period. Delayed capital improvement projects caused by a drop in revenues (increased building vacancies, and a drought period, among other factors) will likely be reincorporated into near-term improvement plans.

Figure 8.1



8.1 Financial Summary

Planned improvements for the water, wastewater and storm water programs in the region are developed through the utility and local government CIP process. These improvement programs are intended to accommodate planned growth, meet existing and anticipated regulatory requirements, and provide for on-going infrastructure repair and replacement projects to extend the useful life of existing facility assets. Although individual project implementation decisions remain at the discretion of the utilities and local governments, one priority of these entities is to strive to maximize the use of existing assets and minimize costs to keep utility rates and charges affordable.

8.1.1 Costs Included in the Financial Summary

A summary of the estimated costs identified in the Reno, Sparks, Washoe County, SVGID, TMWA, and Central Truckee Meadows Remediation District (CTMRD) 5-year CIPs is presented below (see Appendix J for detailed lists). Costs that have been included in this financial summary are generally limited to those costs that will affect the rates and charges levied by the utility service providers. The level of the analysis of alternatives for financing and funding described in Section 42.7 of the Act is extensive and much of the data required by the statute is not readily available due to the uncertain economic conditions; therefore this analysis is limited to a summary of available cost data provided by each of the service providers.

Costs ***included*** in this analysis are:

Water Infrastructure

- Water production facilities (surface water treatment plants and groundwater wells)
- Major water transmission and storage facilities
- Intertie pipelines between water providers (TMWA and SVGID)
- System reliability improvements

Reclaimed Water Infrastructure

- Effluent reuse storage and distribution facilities

Wastewater Infrastructure

- Major interceptors
- Treatment plant expansions and upgrades

Storm Water / Flood Control Infrastructure

- Major interceptors
- Storm water detention facilities
- Completion of the North Truckee Drain Realignment

Costs ***excluded*** from this analysis are:

- Developer-built infrastructure to serve new development
- Developer contributions to the meter retrofit fund
- Costs for purchase of water rights for new users
- Costs for local water distribution facilities
- Costs for local sanitary sewer collection facilities
- Costs for local reclaim distribution facilities
- The Truckee River Flood Project

Tables 8.1 through 8.5 summarize the planned water, wastewater, reclaim, flood and storm water CIP expenditures for the fiscal years 2016-2020 for each of the service providers and shows currently

identified funding sources. All costs are shown in millions of 2016 dollars (costs have not been inflated). The CIP for the CTMRD is presented in Table 8.3 under Washoe County; all of the CTMRD costs are for water remediation and they are all paid for with customer rates.

Table 8.1: 2016-2020 CIP for City of Reno

	CUSTOMER RATES	CONNECTION FEES	GRANTS	5-YEAR TOTAL
	Millions of Dollars			
Sewer Collection	$70.0	$0.0	$0.0	$70.0
Sewer Treatment - Reno-Stead Water Reclamation Facility	$8.7	$0.0	$0.0	$8.7
Sewer Treatment - Truckee Meadows Water Reclamation Facility	$39.4	$3.7	$0.0	$43.2
Storm Water	$9.0	$0.0	$0.0	$9.0
Reclaim at RSWRF	$5.4	$0.0	$0.0	$5.4
Total City of Reno	**$132.6**	**$3.7**	**$0.0**	**$136.3**

Note: Further study of phased wastewater treatment plant expansions and effluent management options may lead to a revised CIP with changed~~future~~ amounts funded by rates and fee~~ revisions~~.

Table 8.2: 2016-2020 CIP for City of Sparks

	CUSTOMER RATES	CONNECTION FEES	GRANTS	5-YEAR TOTAL
	Millions of Dollars			
Sewer Collection	$3.8	$0.0	$0.0	$3.8
Sewer Treatment - Truckee Meadows Water Reclamation Facility	$18.0	$1.7	$0.0	$19.7
Reclaimed Water	$0.7	$0.0	$0.0	$0.7
Storm Water	$5.6	$0.0	$0.0	$5.6
Flood Water	$25.0	$0.0	$0.0	$25.0
Total City of Sparks	**$53.0**	**$1.7**	**$0.0**	**$54.7**

Table 8.3: 2016-2020 CIP for Washoe County

	CUSTOMER RATES	CONNECTION FEES	GRANTS	5-YEAR TOTAL
		Millions of Dollars		
Golden Valley Recharge (Water)	$0.4	$0.0	$0.0	$0.4
Sewer Collection	$4.8	$13.8	$2.5	$21.1
Sewer Treatment - South Truckee Meadows Water Reclamation Facility	$10.7	$38.5	$0.0	$49.3
Sewer Treatment - Cold Springs Water Reclamation Facility	$0.2	$0.2	$0.0	$0.4
Sewer Treatment - Lemmon Valley Water Reclamation Facility	$7.9	$0.0	$0.0	$7.9
Reclaimed Water	$3.5	$1.0	$0.0	$4.5
Total Washoe County	**$27.4**	**$53.5**	**$2.5**	**$83.4**
Central Truckee Meadows Remediation (Water)	**$5.0**	**$0.0**	**$0.0**	**$5.0**

Table 8.4: 2016-2020 CIP for Sun Valley General Improvement District

	CUSTOMER RATES	CONNECTION FEES	GRANTS	5-YEAR TOTAL
		Millions of Dollars		
Water Distribution	$1.9	$0.0	$0.0	$1.9
Sewer Collection	$1.1	$1.2	$0.0	$2.3
Total Sun Valley General Improvement District	**$3.0**	**$1.2**	**$0.0**	**$4.2**

Table 8.5: 2016-2020 CIP for Truckee Meadows Water Authority

	CUSTOMER RATES	CONNECTION FEES	GRANTS	5-YEAR TOTAL
	[1]	Millions of Dollars		
Raw Water Supply & Groundwater Development	$10.7	$4.1	$0.7	$15.5
Treatment	$11.1	$8.5	$0.0	$19.6
Distribution	$69.3	$25.8	$0.0	$95.1
Storage	$11.4	$1.6	$0.0	$12.9
Hydroelectric & Other	$18.7	$5.3	$0.0	$23.9
Total Truckee Meadows Water Authority	**$121.2**	**$45.2**	**$0.7**	**$167.1**

[1] Includes funding from STMGID reserves.

Total projected 5-year CIP costs are estimated at $450.8 million by the service providers. A summary of the total costs is presented in Table 8.6 on the following page. The largest expenditures are for sewer infrastructure (50% of total expenditures), and water (39% of total expenditures). Grants are secured to fund 0.7% of the total costs, existing customers will pay 75.9%, and new customers will pay 23.4% of the total costs.

Table 8.6: 2016-2020 Projected 5-Year CIPs for the Region

UTILITY TYPE	CUSTOMER RATES [1]	CONNECTION FEES	GRANTS	5-YEAR TOTAL	PERCENT OF TOTAL
WATER		Figures in Millions of Dollars			**2016 Dollars**
TMWA [1]	$121.2	$45.2	$0.7	$167.1	37%
WASHOE COUNTY	$0.4	$0.0	$0.0	$0.4	0%
SUN VALLEY GID	$1.9	$0.0	$0.0	$1.9	0%
CTMRD	$5.0	$0.0	$0.0	$5.0	1%
TOTAL WATER	**$128.5**	**$45.2**	**$0.7**	**$174.4**	**39%**
SEWER					
WASHOE COUNTY	$23.6	$52.5	$2.5	$78.6	17%
SUN VALLEY GID	$1.1	$1.2	$0.0	$2.3	1%
RENO	$118.1	$3.7	$0.0	$121.9	27%
SPARKS	$21.8	$1.7	$0.0	$23.5	5%
TOTAL SEWER	**$164.6**	**$59.1**	**$2.5**	**$226.3**	**50%**
RECLAIM					
WASHOE COUNTY	$3.5	$1.0	$0.0	$4.5	1%
SPARKS	$0.7	$0.0	$0.0	$0.7	0%
RENO	$5.4	$0.0	$0.0	$5.4	1%
TOTAL RECLAIM	**$9.6**	**$1.0**	**$0.0**	**$10.6**	**2%**
STORM					
RENO	$9.0	$0.0	$0.0	$9.0	2%
SPARKS	$5.6	$0.0	$0.0	$5.6	1%
TOTAL STORM	**$14.6**	**$0.0**	**$0.0**	**$14.6**	**3%**
FLOOD					
SPARKS	$25.0	$0.0	$0.0	$25.0	6%
TOTAL FLOOD	**$25.0**	**$0.0**	**$0.0**	**$25.0**	**6%**
GRAND TOTAL	**$342.2**	**$105.4**	**$3.2**	**$450.8**	**100%**
AVERAGE PER YEAR				**$90.15**	

[1] Includes funding from STMGID reserves.

A comparison of total 5-year capital improvement plan costs between the 2011 Regional Water Master Plan (RWMP) and the 2016 update is shown in Table 8.7. The 2011 RWMP costs have been inflated to 2016 dollars to provide a current dollar comparison. As shown, total costs for repair and rehabilitation of the existing systems are fairly similar; however, the cost for new development projects has almost doubled. This data shows that water utility services plan to continue the same level of investment and work on systems maintenance as in the prior five years, but that growth is anticipated to pick up.

Table 8.7: Comparison of 2011 and 2016 5-Year CIP Funding Sources

Projects Funded by	RWMP 2011 [1]	RWMP 2011 in 2016 $	RWMP 2016
User Rates	$270.2	**$305.7**	**$345.4**
Percent of Projects - Existing Customers	*84%*	*84%*	*77%*
Connection Fees	$51.0	**$59.1**	**$105.4**
Percent of Projects - New Customers	*16%*	*16%*	*23%*
Total	$321.2	$364.8	$450.8

[1] Excluding the Truckee River Flood Project.

8.1.2 The Truckee River Flood Project

The Truckee River Flood Project (Flood Project) is the Truckee River Flood Management Authority's (TRFMA) major capital improvement project. The goal of the Flood Project is to reduce the impact of flooding in the Truckee Meadows, restore the Truckee River ecosystem, and improve recreational opportunities. A record of decision from the Army Corps of Engineers was issued March 27, 2015, completing the National Environmental Policy Act process. The decision approves construction of the Flood Project with the following features:

- Construction of 9,650 feet of floodwalls and 31,000 feet of levees along the north and south banks of the Truckee River;
- Construction of about 9,000 feet~~d~~ of floodplain terraces along the south bank of Truckee River from Greg Street to East McCarran Boulevard and planting with native vegetation;
- Construction of concrete box culverts south of Interstate 80, including a 200-foot extension and placement of caps on two junction structures for Peoples' Drain;
- Construction of under-seepage remediation and interior drainage management features;
- Construction of scour protection along the stream banks and around three bridges;
- Realignment of existing recreational trails, and construction of 18,600 feet of new trails with associated trail access, 4 kayak/canoe access points, 13 fishing access locations, 50 picnic areas, a parking area, a playground, restrooms, and two picnic shelters; and
- Monitoring of water quality and re-vegetation success on floodplain terraces.

TRFMA currently operates from a 1/8th cent Washoe County sales tax. This funding source has been leveraged with bond sales to enable some land acquisitions and small capital purchases; however, it is largely used for operations costs of the Flood Authority. At this time, it is uncertain how the costs of the Flood Project will be funded. The current cost estimate is at least $400 million in 2015 dollars; the cost should be borne by those who benefit from the flood protection resulting from completion of the project. Ideally, benefactors of the project would pay a fee that is placed on the tax roll, similar to the CTMRD fees. Passage of such a fee by local jurisdictions may be challenging; other funding options currently discussed include a sales tax override authorized by the State on recommendation from the Board of County Commissioners. Costs will be spread over the approximately 15 years it will take to complete the Flood Project.

8.1.3 CIP Needs 2021-2035

For most utilities, estimating capital improvement needs beyond five years can be very challenging because of unknown rates of growth, unknown standards of compliance for environmental and other public health regulations, the need to secure land purchases or easements, and many other reasons. Many utilities do not attempt to look beyond ten years. The 2016 RWMP timeframe is twenty years. Any developed estimates of CIPs in the ten to twenty-year period should be considered extremely preliminary.

Providers with CIPs through the twenty-year period include TMWA and the City of Sparks' Storm Water utility. A twenty-year sewer collection systems cost was developed for this chapter using TMRPA land use estimates and average cost data per lineal foot of new pipe. The sewer collection system cost was based on development in the areas shown in Figure 8.1.3 (prepared by TMRPA and shown on the following page).

CSome cost data was available for wastewater treatment plant costs for the time periodbeyond the next five years. The cost information for the fifteen-year period 2021-2035 is presented in Table 8.8. These costs should be considered an absolute minimum of investment necessary for capital infrastructure because not all known infrastructure needs have preliminary cost information. In addition, not all costs for effluent or reclaimed water facilities maintenance and expansion are not included. Support tables are provided in Appendix J.

Major facilities included in the cost estimates in Table 8.8 include:

- TMWRF nitrogen removal solution estimated at $48.0 million using enhanced coagulation (note that there are 3 alternatives outlined in the nitrogen removal study and enhanced coagulation is the mid-range in cost – it is not assumed to be the preferred alternative) – existing users cost,
- STMWRF tertiary treatment filters and screen 3 estimated at $7.7 million,
- CSWRF expansions phases 2 and 3 estimated at $30.0 million plus additional improvements of $17.5 million – existing and future users cost,
- LVMWRF expansion (2 phases) estimated at $22.5 million,
- RSWRF expansion estimated at $37.0 million – future users cost,
- Sewer collection new pipelines $119.2 million – future users cost,
- Storm water collection and improvements estimated at $159.1 million – mostly existing users cost (Sparks' list was developed in 2011, some of the improvements may be complete),
- Water supply improvements estimated at $62.8 million – existing and future users cost,
- Water treatment improvements estimated at $18.1 million – existing and future users cost,
- Water distribution improvements estimated at $204.6 million– existing and future users cost,
- Water storage improvements estimated at $50.6 million– existing and future users cost,

Table 8.8 excludes repair and replacement of existing facilities for all the sewer collection systems and SVGID's water distribution system. These costs are addressed through collection of rates for depreciation. Costs for the RSWRF beyond the 5 year planning horizon have not beenare high-level planning estimates provided by the City of Reno and are subject to change due to multiple factors including: uncertainties concerning expected growth patterns and type of growth, potential capital improvement projects/changes in the sanitary sewer collection system which would result in sewerage flows being treated outside of the North Valleys area, and constraints for effluent disposal which include a changing regulatory framework which has the potential to dramatically alter options for the plant effluent.

Figure 8.1.3

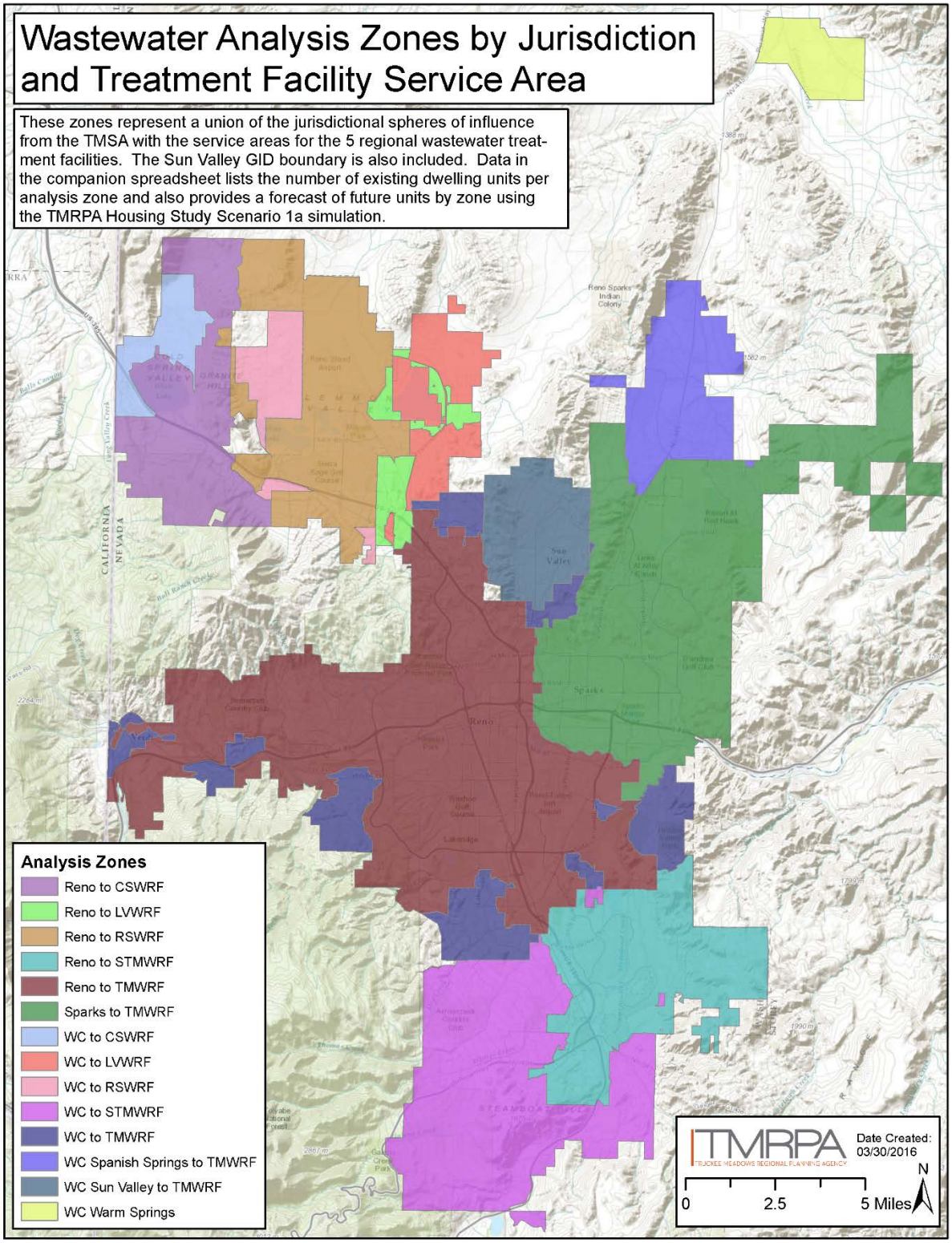

Wastewater Analysis Zones by Jurisdiction and Treatment Facility Service Area
These zones represent a union of the jurisdictional spheres of influence from the TMSA with the service areas for the 5 regional wastewater treatment facilities. The Sun Valley GID boundary is also included. Data in the companion spreadsheet lists the number of existing dwelling units per analysis zone and also provides a forecast of future units by zone using the TMRPA Housing Study Scenario 1a simulation.
Analysis Zones
Reno to CSWRF
Reno to LVWRF
Reno to RSWRF
Reno to STMWRF
Reno to TMWRF
Sparks to TMWRF
WC to CSWRF
WC to LVWRF
WC to RSWRF
WC to STMWRF
WC to TMWRF
WC Spanish Springs to TMWRF
WC Sun Valley to TMWRF
WC Warm Springs
TMRPA
TRUCKEE MEADOWS REGIONAL PLANNING AGENCY
Date Created: 03/30/2016
N
0
2.5
5 Miles

Table 8.8: Summary of Long-Term CIPs (2021-2035)

Improvement	2021-2025	2026-2030	2031-2035	TOTAL
TMWA - WATER	Figures in Millions of Dollars			**2016 Dollars**
Supply				
Surface Water	$2.58	$1.63	$1.38	$5.58
Groundwater	$33.25	$19.25	$4.75	$57.25
Treatment	$8.06	$5.00	$5.00	$18.06
Distribution				
Pressure	$19.55	$17.30	$16.00	$52.85
Water Mains/Services	$60.45	$41.44	$49.88	$151.77
Storage	$25.47	$17.45	$7.69	$50.61
TOTAL WATER	**$149.36**	**$102.07**	**$84.69**	**$336.11**
STORM WATER				
Sparks Comprehensive Plan				$129.08
Reno Annual Budget $2 million				$30.00
TOTAL STORM WATER				**$159.08**
SEWER COLLECTION				
Reno	$18.94	$19.77	$19.68	$58.39
Sparks	$8.86	$8.82	$8.06	$25.74
Washoe County	$0.22	$1.69	$0.71	$2.61
Sun Valley	$9.97	$10.29	$12.15	$32.41
TOTAL SEWER COLLECTION	**$37.98**	**$40.58**	**$40.60**	**$119.16**
WASTEWATER TREATMENT				
TMWRF				$47.99
STMWRF				$7.70
CSWRF				$47.50
LVWRF				$22.50
RSWRF				$37.00
TOTAL WASTEWATER TREATMENT				**$162.69**
TOTAL INFRASTRUCTURE 2021-2035				**$777.03**
TOTAL PER YEAR				**$51.80**

Improvement	2021-2025	2026-2030	2031-2035	TOTAL
TMWA - WATER	Figures in Millions of Dollars			**2016 Dollars**
Supply				
Surface Water	$2.58	$1.63	$1.38	$5.58
Groundwater	$33.25	$19.25	$4.75	$57.25
Treatment	$8.06	$5.00	$5.00	$18.06
Distribution				
Pressure	$19.55	$17.30	$16.00	$52.85
Water Mains/Services	$60.45	$41.44	$49.88	$151.77
Storage	$25.47	$17.45	$7.69	$50.61
TOTAL WATER	**$149.36**	**$102.07**	**$84.69**	**$336.11**
STORM WATER				
Sparks Comprehensive Plan				$129.08
Reno Annual Budget $2 million				$30.00
TOTAL STORM WATER				**$159.08**
SEWER COLLECTION				
Reno	$18.94	$19.77	$19.68	$58.39
Sparks	$8.86	$8.82	$8.06	$25.74
Washoe County	$0.22	$1.69	$0.71	$2.61
Sun Valley	$9.97	$10.29	$12.15	$32.41
TOTAL SEWER COLLECTION	**$37.98**	**$40.58**	**$40.60**	**$119.16**
WASTEWATER TREATMENT				
TMWRF				$47.99
STMWRF				$7.70
CSWRF				$47.50
LVWRF				$22.50
RSWRF			**RSWRF $37.00**	$0.00
TOTAL WASTEWATER TREATMENT				**$125.69**
TOTAL INFRASTRUCTURE 2021-2035				**$740.03**
TOTAL PER YEAR				**$49.34**

A good management practice for water utilities is to include the cost of depreciation in the rates. Depreciation is used as a proxy for the amount of money that should be collected each year so that existing facilities can be replaced when they reach the end of their useful life. While this is a good management practice it raises rates and can be politically difficult to do. In addition, without routine updates to rates (with a rate review at least every five years), the amount collected for depreciation can quickly become eroded. It is unknown exactly how much each agency is collecting in its rates; however, the comprehensive annual financial report for each agency shows how much depreciation is for each of the water-related utilities. Table 8.9 shows the total amount that would be collected if 100% of annual depreciation was included in the rates. Support tables are provided in Appendix J.

Table 8.9: Annual Depreciation by Agency

Agency	Annual Depreciation
	Figures in Million of Dollars
Reno (sewer)	$9.45
Sparks (sewer, storm, flood)	$6.03
Washoe County (sewer)	$6.07
Sun Valley (water, sewer)	$1.46
TMWA (water)	$27.90
Total Annual Depreciation	**$50.90**

8.1.4 Funding Alternatives

Water, wastewater, storm drain and effluent (reclaimed water) systems are funded through a combination of different sources. Water-related utility services are accounted for in enterprise funds. Enterprise funds are self-funding and are not intended to be supported by any other governmental fund. As such, water-related utility services are primarily funded by users of the system who pay user charges (rates or fees). Most systems have separate operating and capital funds. Operating funds pay for ongoing operations costs such as personnel costs, administrative costs, routine (small) repair and replacement, fleet, utilities, supplies, technology, security costs and so forth. Capital funds pay for larger repair and replacement of existing assets as well as new capital facilities, for example expansion of a treatment facility, new pumps, booster stations and so forth.

Existing customers pay for operations and replacement of existing facilities with rates. Other sources of revenue include interest income, late charges, and small sources of miscellaneous income. For capital facilities rate revenue alone is often insufficient to pay for large facility costs and maintain adequate cash flow for operations. Capital facilities are often bond-funded, or funded with other mechanisms such as a commercial paper program. Low-cost financing is available through the Nevada Department of Environmental Protection (NDEP)'s water and wastewater State Revolving Fund (SRF) programs for projects necessary to meet the Safe Drinking Water Act, and for other projects that primarily benefit existing users. Another lower-cost financing source as an alternative to general obligation or revenue bond funding is to sell bonds through the State Bond Bank. By selling bonds for multiple agencies in an offering the State Bond Bank is able to reduce the costs of the bond sale (bond counsel, underwriting costs and so forth) to each agency, and because the bonds are backed by the State of Nevada, preferential interest rates are also passed along to each agency.

Payments by users of the system may also be in the form of a self-imposed tax or assessment such as a Special Assessment District (SAD). SADs are established when there is a need for work (i.e., installation/repair of sidewalks, installation of sewer systems, paving of streets) that would be considered to benefit a specified group of parcels. The cost of the work done is apportioned to the benefited property on a pro-rata basis, and becomes a lien against that property until the assessment amount is paid in full.

Grant funding and principal forgiveness is occasionally available for capital projects. Sources of grant funding include USDA Rural Utilities, Community Development Block Grant (CDBG) funds, U.S. Army Corps of Engineers, and the Bureau of Reclamation. Some projects may qualify for principal forgiveness under the SRF programs.
Capital facilities benefiting new users of the system are recovered in system development charges, otherwise known as connection fees. When facilities are built to serve specific new development areas they may be funded by impact fees.

8.2 Potential Impacts to Existing User Rates and Developer Fees

Incremental developer connection fees and changes to monthly rates charged to single family residences in the planning area cannot be calculated with precision from the information summarized for this plan. Actual rates and fees will vary by utility provider, depending on, but not limited to the following:

- Actual costs of infrastructure and distribution of costs among utilities when applicable
- Cost sharing agreements between participating service providers
- Costs of financing instruments
- Board decisions on rate and fee setting

In the 2011 RWMP the impact of the estimated 5-year CIPs was incorporated into a cost calculation per Equivalent Residential Unit (ERU). Under this approach the demand for services by different land uses can be compared to one another more easily. This approach makes a single family home an ERU and all other land uses have a multiplier, or factor, that compares demand from that land use to demand from a single family home. For example, a multi-family unit might have a water demand factor of 0.80 compared to a single family home because multi-family units have less persons per unit on average, and they do not irrigate. While this approach is very convenient it is not always good for comparisons in a wide and varied geographical area where demands by single family homes may differ greatly (as is the case in the Truckee Meadows).

Costs of water-related utilities services are shared by existing and future users. Existing users' costs include the operating costs of the existing system, rehabilitation and repair of existing assets in the CIP, debt service on infrastructure, and collection for depreciation or future system rehabilitation needs. Existing users' costs are captured in their rates, fees or charges for services in monthly bills. Future users' costs are collected in connection fees or impact fees. Future users' costs include costs incurred to expand capacity specifically to serve new development and/or future users' buy-in to existing capacity that is currently not utilized.

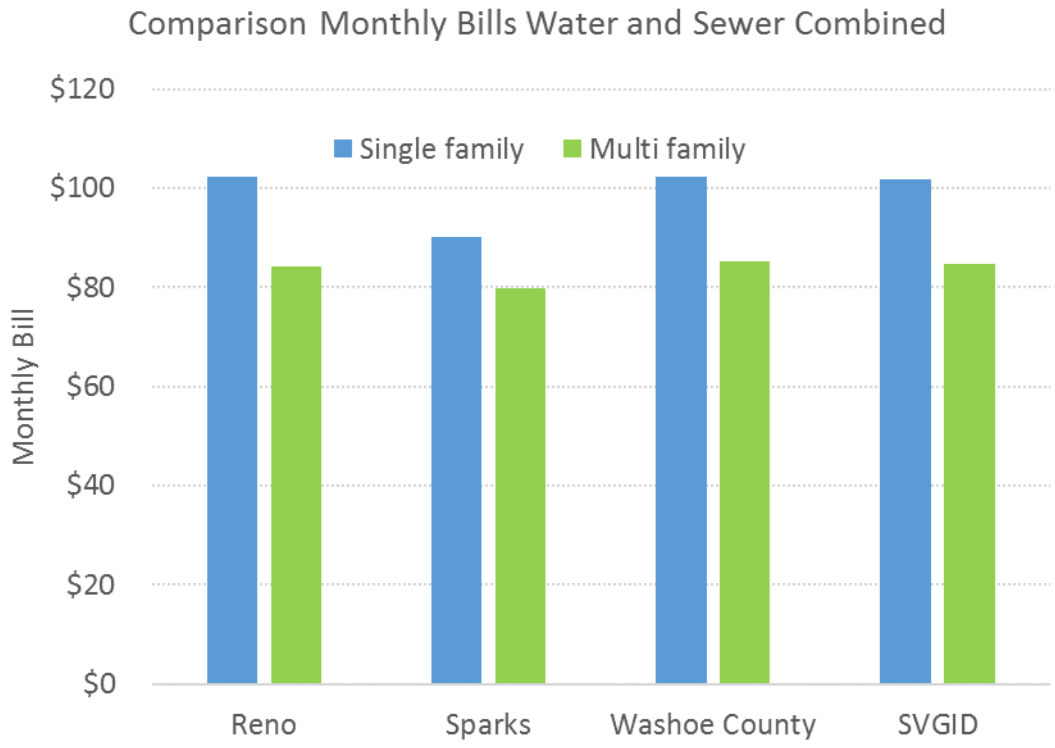
8.2.1 Estimated Incremental Changes to Rates (Existing User Fees)

The estimated cost per single family home for each of the jurisdictions is very approximate. It is usual for utility operating costs to increase each year at a rate greater than consumer price indices, or other indices such as the Engineering News Record (ENR) Construction Cost Index (CCI). The long-term average annual increase for the ENR CCI is 3.0%, and the long-term West Region Consumer Price Index average annual increase is 2.5%. Most utilities' operating costs increase in the range of 3.0% to 5.0% each year. Just as the price of other goods increase over time, utility customers should expect their utility bills to increase over time.

When utilities do not adequately fund the costs to repair or replace major assets in the system user bills may see a spike outside of the typical 3% to 5% range of annual increase. Other factors that may cause greater than typical increases may include pass-through of wholesale costs, new Federal, State, or local, health and safety or environmental regulations, addition of personnel or higher-qualified personnel, such as a grade 3 rather than a grade 2 operator, necessary to meet operating requirements, and other costs out of control of the local agency, such as changes to insurance or retirement plans that the utility has to absorb.

The rate schedules include both the costs to be borne by existing users and potentially costs to be borne by future users when the existing users pay for increased capacity to serve new development up-front. Because each agency's rate structures are different, and because their funding preferences differ (pay-as-you-go with cash versus bonding for example) it is impossible to estimate future rates based on the CIPs presented in this chapter. Each agency needs to evaluate its financial needs, financing strategy, and in particular, determine the level of depreciation to include in their rates. Figure 8.2 shows the difference in monthly bills by jurisdiction for residential units (single family and multi-family) under current rate structures. In the figure a single family unit uses 15,000 gallons of water and a multi-family unit uses 8,000 gallons of water. Bill comparisons only show a snapshot in time; since service providers are on different cycles for rate updates, the combined water and sewer bill might be higher in one jurisdiction one year and higher in another jurisdiction in the next year. Support tables showing rate schedules for each agency are provided in Appendix K.

Figure 8.2



8.2.2 Estimated Incremental Changes to Connection Fees (New User Fees paid by Development)

As previously described, water-related utilities charge connection fees or impact fees to new development so that growth pays for itself and existing customers are not burdened with the cost of growth. The water-related utility can either collect the fee and build the facilities or alternatively require the new development to install all the facilities to their standards and specifications and contribute (or turn over) the facilities to

the water utility. Both approaches are used in the Truckee Meadows. For a development that builds all the required facilities a connection fee is not applicable.

Connection and/or impact fees will increase or decrease over time depending on the planned facilities needed to accommodate new growth and the number of units that the costs are spread over. The cost burden memorandum in Appendix L shows total fees paid by a single family unit to develop in Reno, Sparks, and Washoe County. Fees paid are dependent not only on location but also potential demand for service as measured in gallons per minute for TMWA. Each of the service providers will incorporate their CIPs presented in this chapter to update their connection and impact fees. Since the change will be different for each agency no attempt has been made to calculate update fees in this chapter. The level of water-related fees, however, is not the primary driver of development in the region; moderate increases to the current level of fees should not have a major impact on the pace or location of new development. This conclusion is based on a separate memorandum that was prepared, and is provided in Appendix L, to analyze the total cost burden to new residential development of water-related costs in the context of all other costs paid by new residential development.

The analysis provided in Appendix L is a very high-level analysis. It does not provide details as to how each of the fees were determined by their respective agencies, nor does it provide any recommendations for change. The analysis finds that single family development is financially feasible for all greenfield and likely most infill development in the TMSA; multi-family is not currently feasible in most areas unless sales prices per unit improve or developer's costs are lower than represented in the analysis. Overall, the level of water utility fees represents a small portion of total development costs. The level of development fees may be a factor for a developer in selecting one site over another, but it is not the primary factor; the general state of the economy has greater influence over whether to develop and where. In addition, the analysis found that TMWA water fees, which reflect the cost of infrastructure by service area, encourage infill development. Sewer connection fees, however, do not vary by sub-area, therefore ~~T~~the current structure of sewer connection fees does not encourage infill development.

References Cited

The Truckee River Flood Project

South Truckee Meadows Water Reclamation Facility Effluent Reuse Planning Update, CH2MHill, January 2016

Truckee Meadows Water Authority 2016 Resource Plan

Truckee Meadows Regional Planning Agency 2016 Regional Housing Study

Washoe County Utility Services Lemmon Valley Sewer Technical Study, April 2016

TMWRF Enhanced Nitrogen Removal Planning Study, December 2013.