TRUCKEE MEADOWS WATER AUTHORITY

WATER FACILITY PLAN WORKSHOP

September 15, 2010

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Purpose & Objectives:

The objectives of the 2010-2030 Water Facility Plan (2030 WFP) are:

- Determine if modifications to the current water facility plan are necessary to meet the revised demand forecasts in the 2010-2030 Water Resource Plan.
- Identify revised in-service dates and update cost estimates for recommended facilities in order to update TMWA's funding plan and developer facility charges.

CURRENT SYSTEM DEMAND CHARACTERISTICS

PEAK DAY DEMAND

YEAR	PEAK DAY	DEMAND (MGD) [1]
2003	Wed. July 16	141
2004	Wed. August 11	143
2005	Wed. July 20	148
2006	Wed. July 26	141
2007	Wed. August 1	137
2008	Wed. July 9	133
2009	Sun. July 26	129
2010	Tues. July 20	123

DEMAND BY RATE CLASS

2008 – ADD of 69.9 MGD

Commercial	17%
SF Residential	48%
MF Residential	10%
Irrigation	10%
Wholesale	7%
Recharge	2%
Unaccounted	6%
Total	100%

- Currently 96,860 retail and 8 wholesale customer connections in a retail area of about 109 square miles

(1) MGD = Million Gallons per Day

OVERVIEW OF TMWA's WATER DISTRIBUTION SYSTEM

- Distribution system has become increasingly complex:
  - 200 pressure zones
  - 140 pressure reducing stations
  - 100 booster pump stations
- Major facilities include:
  - 42 tanks & 2 reservoirs with 131 MG of storage
  - 32 production wells (~63 MGD)
  - 2 surface water treatment plants (~108 MGD)
  - Over 1330 miles of water main ≥6" diameter

MAJOR FACILITIES COMPLETED SINCE 2005:

- Highland Canal Improvements (required due to 2008 earthquake damage)
  - Mogul Bypass, Railroad Concrete Box, Flumes 1 & 18, Chalk Canyon Parallel Siphon
  - 95 MGD gravity flow system, saves ~$400K/yr pumping costs
- Glendale Pumping Improvements
  - Required for Arsenic Compliance, reliability concerns
  - Reduces Sparks pumping costs (equivalent to one 700 hp unit)
  - Utilizes available treatment plant capacity
- Storage Addition at Hunter Creek
- Completion of Sparks 36” Feeder Main Phase 3
- Replace Stead Pumping System and completed Phase 1 of the Stead Main Replacement


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WFP FINDINGS:

- The previous (2005) WFP provided for a Max Day Demand (MDD) of 190 MGD, which was projected to occur in 2025. Current MDD projections do not exceed 172 MGD by 2030. Thus, the previously recommended facilities have not changed, but the timing of the improvements have been revised.

Year	2025 WRP MDD (MGD)	2030 WRP MDD (MGD)
2010	159.6	136.8
2015	171.0	146.9
2020	180.5	157.2
2025	189.5	166.8
2030	n/a	171.9

2010-2040 FACILITY COSTS & ALLOCATIONS

Facility Category	Total Estimated Costs	Costs Allocated to Existing Customers	Costs Allocated to Growth
Supply	$107.1M	$ 48.3M	$58.8M
Storage	$ 33.5M	$ 19.3M	$14.2M
Distribution	$239.4M	$179.4M	$60.0M
TOTALS	$380.0M	$247.0M	$133.0M

REPLACING AGING INFRASTRUCTURE

- Over $160 Million has been reinvested in the water system since 2001.
- Anticipated expenditures on rehabilitation in the next 30 years include $22 Million for pump stations and $144 Million on main replacements.
- TMWA Distribution system still contains:
  - Approximately 60,000 Lineal Feet (LF) of pre-1960 steel pipe
  - Approximately 12,000 LF of riveted steel pipe
  - Approximately 490,000 LF of cast iron pipe

Where will growth occur?

2010-2030 High Growth Areas

Service Area	Increase in Retail MDD (MGD)	Increase in Wholesale MDD (MGD)	Total Increase in MDD (MGD)
NW – Verdi	5.9	0.0	5.9
Spanish Springs	1.3	2.4	3.7
So. Truckee Meadows	0.9	5.5	6.4
No. Virginia-Stead	2.7	0.3	3.0
Totals	10.8	8.2	19.0

FUTURE MAJOR FACILITY ADDITIONS

Drought & Growth:

- Sparks Groundwater Treatment Plant ($36M)
- Glendale Diversion (under construction - $7M)

Reliability & Growth:

- Highland Zone Storage Additions ($10M)
- Completion of the Stead Main Replacement ($5M)

Growth:

- Sparks Feeder Main – Phases 4-7 ($15M)
- Chalk Bluff Phase 4 Expansion (2037 - $20M)
- Verdi Supply Improvements ($22M)

Rehabilitation:

- Plumb Lane 24” Main: 2017-2020 $11.2M
- Washington et. al. 30” & 24” Mains: 2036-2039 $9.9M

New Development Contributions at TMWA

- Supply/Treatment Facility Charges
  - Reimbursement needed for additional demands of growth. The current Supply/Treatment Facility Charge is $3,734 per Gallon Per Minute (GPM) of Maximum Day Demand (MDD).
- Storage Facility Charges
  - Reimbursement for emergency and operational storage requirements of growth. The current Storage Facility Charge is $1,217 per GPM of MDD. In many cases, new development designs, builds and dedicates new storage facilities (D'Andrea, Vista 3, The Ridges).
- Direct Facility Costs
  - New development pays all on- and off-site facilities required to provide the service including planning, design, materials, construction and inspection cost for pump stations, pressure regulating stations, generators, main extensions, services and meter facilities.
- Area Feeder Main Fees
  - Growth pays for all feeder main capacity to transmit the additional demand through the existing distribution system. These costs are recovered by collecting Area Feeder Main Fees, which currently range from $776 to $6864 per GPM of MDD depending on location.

SUMMARY – CURRENT FEEDER MAIN FEES

Area	Description	Fee ($/MDD GPM)
1	South Truckee Meadows	$ 971
2	Sparks-East Reno	$1,553
2A	Sparks-Inner McCarran Ring	$ 776
3	NW Reno-Northgate/Mogul	$1,472
4	Sparks-Pyramid/Spanish Springs	$2,697 (1)
5	Sparks-Vistas	$4,254 (1)
6	Sun Valley-Sullivan	$1,355
7	inactive	tbd
8	Sierra-North Virginia	$4,115 (1)
9	Lakeridge-Plumas	$1,474
10	Stead-Silver Lake	$6,864 (1)

(1) Fee includes a finance, or carrying charge