

CITY OF MONTEREY PARK

WATER SYSTEM FINANCIAL EVALUATION AND WATER RATE RECOMMENDATIONS



Submitted to:

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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1 EXISTING SYSTEM.....	1
2 CAPITAL IMPROVEMENT PROGRAM	6
3 WATER FUND.....	6
4 ALTERNATIVE FUNDING SCENARIOS.....	9

LIST OF TABLES

<u>Table No.</u>	<u>Page</u>
1 Pipe Length by Decade of Construction	1
2 Past 10 Year Pipe Breaks	4
3 Capital Improvement Program	7
4 Existing Water Rates	6
5 Existing Average Monthly Water Bills	8
6 Average Monthly Single Family Residential Water Bill Comparison	9
7 Monthly Meter charges for Monterey Park and Nearby Agencies.....	10
8 Recommended Monthly Meter Charges	10
9 Consumption Charges for Alternative 1	11
10 Funding Alternative 1 - \$8.3 Million Annual CIP, Pay-As-You-Go Funding	11
11 Consumption Charges for Alternative 2.....	12
12 Funding Alternative 2 - \$5.3 Million Annual CIP, Pay-As-You-Go Funding	12
13 Consumption Charges for Alternative 5.....	13
14 Funding Alternative 3 - \$20 Million Bond Issue, \$5.3 Million Annual CIP	13
15 Comparison of the 3 Alternatives for Single Family Residential 5/8" and 3/4" Meters	14
16 Comparison of Average Monthly Water Bills for Single Family Residential 5/8" and 3/4" Meters to Other Agencies.....	14

LIST OF FIGURES

<u>Figure No.</u>	<u>Page</u>
1 Existing System	2
2 Main Break Location	5

1. EXISTING SYSTEM

The City of Monterey Park provides domestic water service to a population of approximately 60,435 residents, as well as commercial, industrial, and public facilities. The water demand has declined from 10,947 acre feet per year (AFY) in 2006 to 8,447 AFY in 2010. This may be due to the recent economic climate and a very conscientious water conservation effort by the City and the customers.

The City of Monterey Park's water system consists of:

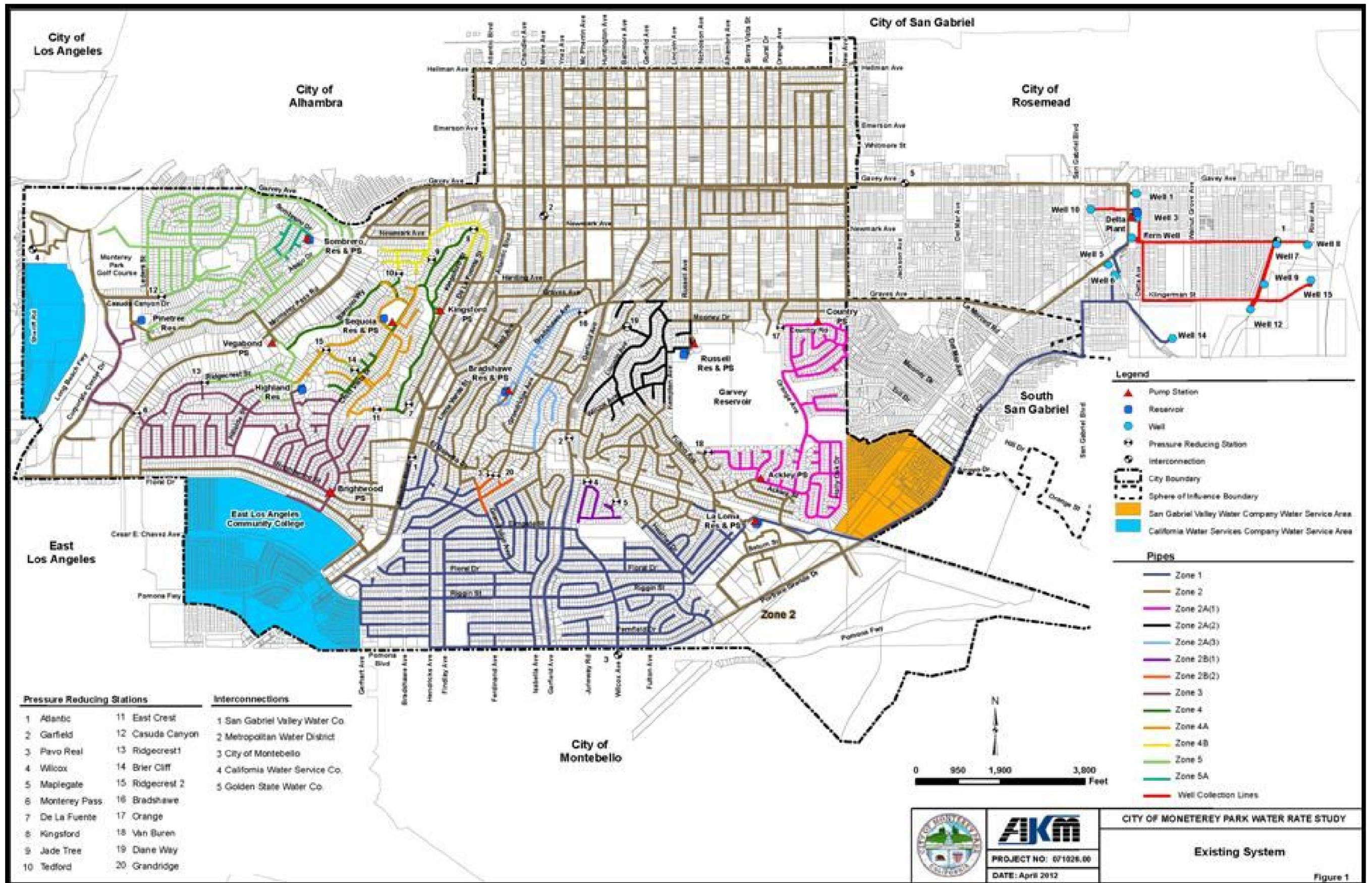
- 136.6 miles (721,250 feet) of transmission and distribution system pipe ranging from 2-inch to 36-inches in diameter
- 13 pressure zones - 5 open zones regulated by reservoir levels, and 8 closed zones without a regulating reservoir
- 8 active wells, 3 standby wells, and 1 inactive well
- 11 storage reservoirs and 2 settling tanks
- 11 booster pump stations
- 20 pressure reducing stations providing supply to closed zones
- Groundwater treatment facilities at the Delta Plant, and at Well 5 and Well 12
- 1 imported water supply connection
- 4 emergency interconnections
- 13,400 water meter connections (12,300 active)

Portions of the City territories are served by California Water Service Company, and San Gabriel Valley Water Company. The existing water system is shown on Figure 1.

The existing system dates back to the 1929s. Approximately 72 percent of the transmission and distribution system was constructed before 1960, and 35 percent of the system was installed during the 1950's. About 51 percent of the system pipes are made of cast iron and 33 percent are made of asbestos cement. Table 1 shows the system pipes by decade of construction.

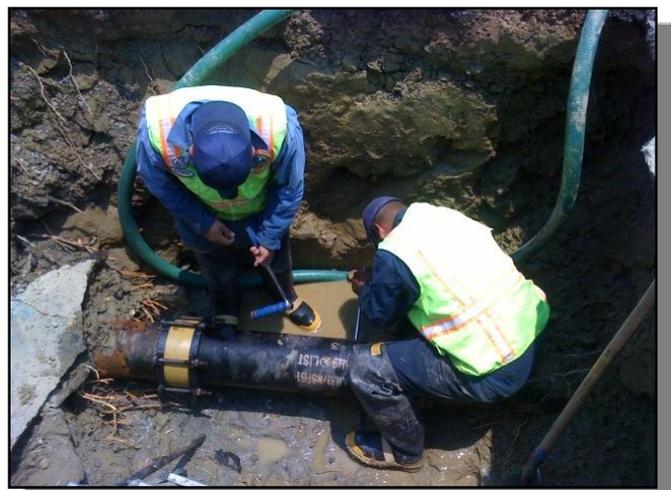
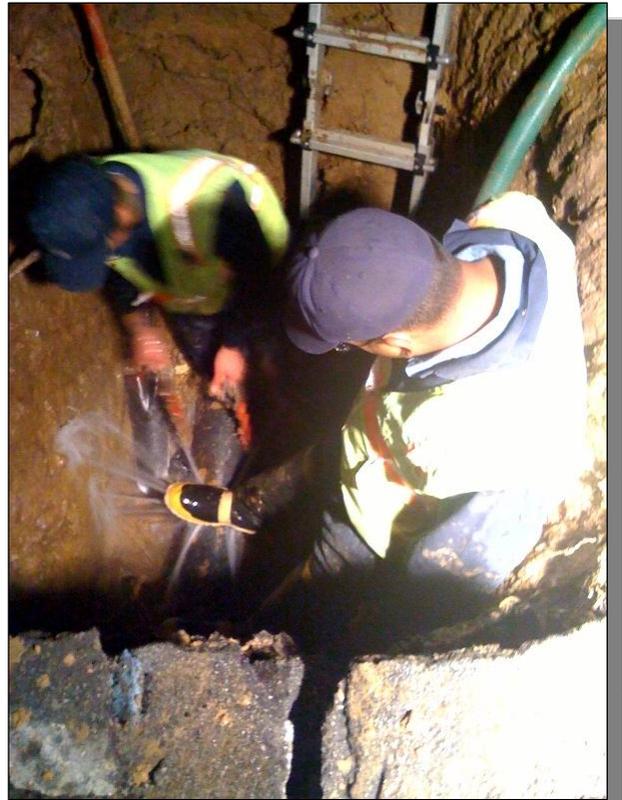
**Table 1
Pipe Length by Decade of Construction**

Year of Construction	Length (ft)	%
1920-1929	140,950	19.5
1930-1939	8,584	1.2
1940-1949	114,823	15.9
1950-1959	254,247	35.2
1960-1969	99,358	13.8
1970-1979	52,217	7.2
1980-1989	14,091	2.0
1990-1999	7,344	1.0
2000-2009	7,577	1.1
Unknown	22,226	3.1
Total	721,417	100.0



The majority of the distribution system was constructed before 1960 (518,604 ft or 72 percent). These pipes have reached or outlived their useful lives. The system experienced an average of over 25 pipe breaks per year since 2002, with 34 breaks in 2011, which is indicative of an aging system. Some of the pipe break repair work is illustrated in the photographs below.

PIPE BREAKS / REPAIRS

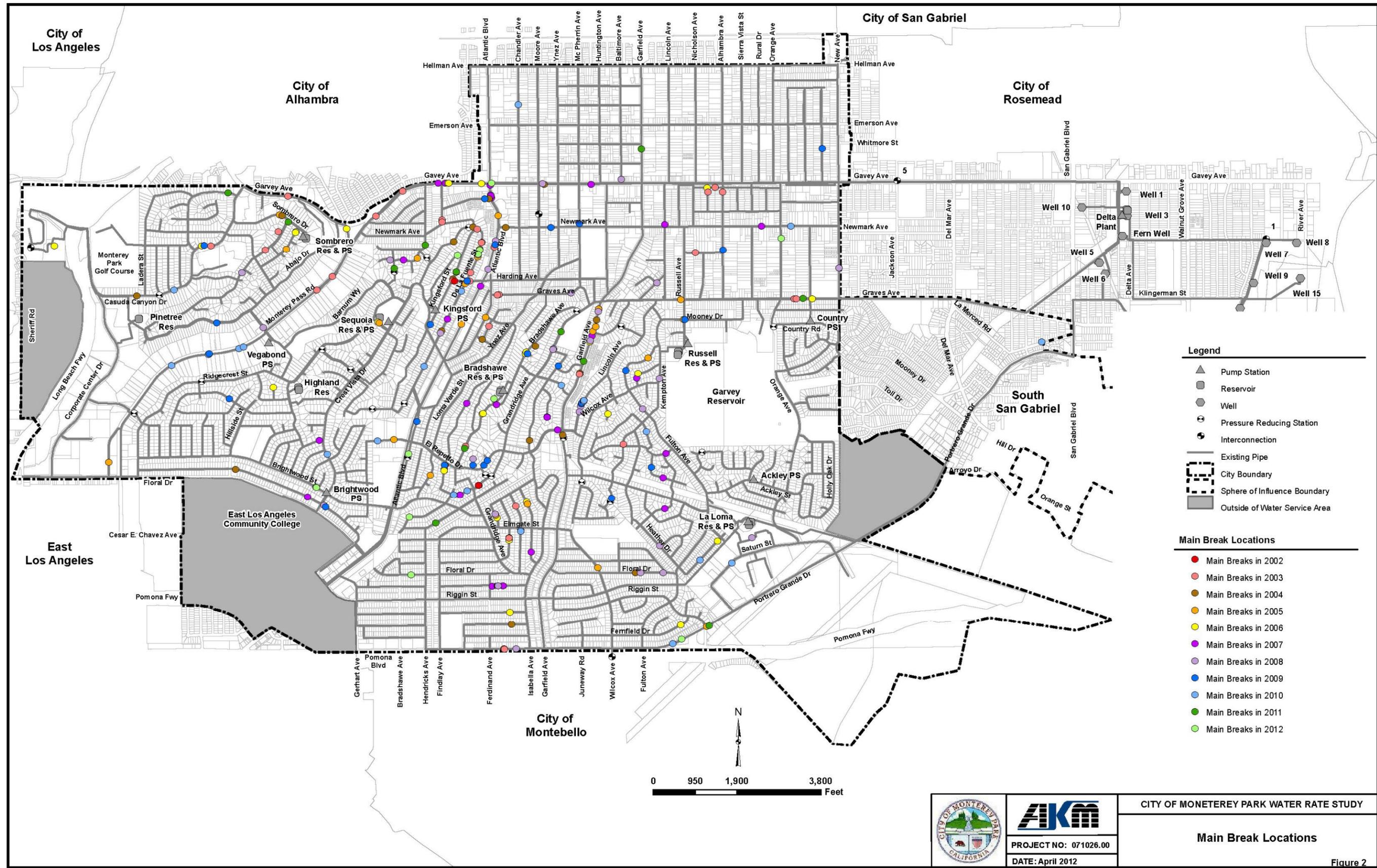


Unplanned pipe replacement/repair is significantly more costly than planned pipe replacement, and does not address the problem with the aging system. Pipe breaks cost the City between \$10,000 and \$70,000 for each repair, excluding the cost of significant lost water. The pipe breaks that occurred over the past ten years are listed in Table 2, and their locations are shown in Figure 2.

**Table 2
Past 10 Year Pipe Breaks**

Year	No. of Breaks	Years of Installation						Type of Main Break				Materials					
		1920s	1930s	1940s	1950s	1960 or later	Unk	C	L	PH	S	ACP	CIP	ML& CSP	SCCP	STL	Unk
2002	11	4		2	4	1		3	5		3	1	9		1		
2003	13	3	1	1	5	3		8	4	1		2	8				
2004	24	4		4	12	4		9	10	5		6	12		1	5	
2005	26	6	1	1	14	3	1	11	8	7		5	21				
2006	33	6		6	13	4	4	11	13	4	5	5	26			2	
2007	32	8	1	8	13	1	1	16	9	6	1	2	27	1		2	
2008	31	7	2	4	13	5		8	15	8		7	23			1	
2009	30	12	3	3	6	5	1	7	18	5		5	22			3	
2010	19	7	3	2	4	3		7	7	5		4	13			2	
2011	34	16	1	4	8	5		7	23	4		4	26	3			1
Total	253	73	12	35	92	34	7	87	112	45	9	41	187	4	2	15	

The City's existing potable water supply consists almost entirely of groundwater from the City's wells produced from the Main San Gabriel Basin (Main Basin). Currently, only eight wells are active. Water can also be imported from the San Gabriel Valley Municipal Water District (SGVMWD). The City of Monterey Park has prescriptive right to 3.39216 percent of the operating safe yield (OSY) of the Main Basin. The Main Basin is known to be the most contaminated basin in the nation. The groundwater contamination is from ground disposal of volatile organic compounds (VOCs), dating back to World War II, as well as perchlorates and 1,4-Dioxane. Because of the contamination of the Main Basin, all water pumped must be treated to meet the primary and secondary water quality standards prior to service to customers. The City has treatment facilities at Well 5, Well 12, and the Delta Plant.



		CITY OF MONTEREY PARK WATER RATE STUDY	
		PROJECT NO: 071026.00	
		DATE: April 2012	

Main Break Locations

Figure 2

2. CAPITAL IMPROVEMENT PROGRAM

The City completed a Water Master Plan in 1996, which contained system improvement recommendations totaling \$26 million. The City implemented some of the recommended projects. The Water Master Plan was updated in 2012 (2012 Master Plan), which evaluated the system based on its ability to meet the established criteria, including proper water quality and providing fire flows at adequate pressures; and condition assessment of the system. The 2012 Master Plan recommended a comprehensive capital improvement program (CIP) that will improve the system to meet the established criteria, properly maintain the system's assets, and replace the facilities that have reached the end of their useful lives. The current estimated cost of the CIP is \$99.9 million, as detailed in Table 3. The recommended CIP will replace 18.2 miles (95,895 feet) of pipe for fire flow improvements, which includes some of the older pipe that has reached the end of its useful life. However, it will not address all the replacements needed, which currently total over 264,000 feet. Therefore, an aggressive pipe replacement program is recommended to mitigate the risk of having to tend to problems under emergency conditions and consequent very high costs.

3. WATER FUND

Existing Rate Structure

The water system's operation and maintenance, and capital improvement program are supported by a rate structure consisting of monthly meter charges and ascending scale consumption charges per 100 cubic feet (748 gallons) of water. The existing water rates, which have been in effect since October 1, 2009, are shown in Table 4.

Table 4
Existing Water Rates

Size of Meter and Service	Minimum 100 Cu. Ft. Per Month	Minimum Charge Per Month	Monthly Charge per 100 Cu. Ft. \$1.38	Monthly Charge per 100 Cu. Ft. \$1.81
5/8 or 3/4 inch	6	\$12.63	over 6-20	above 20
1 inch	0	\$13.67	0-20	above 20
1-1/4 inch	0	\$18.19	0-20	above 20
1-1/2 inch	0	\$21.53	0-20	above 20
2 inch	0	\$27.71	0-20	above 20
3 inch	0	\$55.48	0-20	above 20
4 inch	0	\$91.72	0-20	above 20
6 inch	0	\$280.07	0-20	above 20
8 inch	0	\$700.44	0-20	above 20
10 inch	0	\$1,480.32	0-20	above 20

Lifeline Water Rates:

Size of Meter and Service	Minimum 100 Cu. Ft. Per Month	Minimum Charge Per Month	Monthly Charge per 100 Cu. Ft. \$1.38	Monthly Charge per 100 Cu. Ft. \$1.81
5/8 or 3/4 inch	6	\$6.32	0-20	above 20

**Table 3
Capital Improvement Program**

CIP No.	Project	Justification	Recommended Facilities				Total Project Cost (\$)
			Minimum Firm Capacity (gpm)	Res Size (MG)	Pipe Size (in)	Pipe Length (ft)	
1	Expansion of Air Strippers at Well 5 Site or Advanced Oxidation Upgrade for Delta Plant	Water Quality					\$4,050,000
	Replace Delta Settling Tanks	Condition		2.0			\$6,075,000
	Replace Delta Booster Pump Station	Age / Condition	8,400				\$5,500,000
	Install Stand-by Generator(s) for New Delta Booster Pump Station	Criteria					\$1,080,000
2	Russell Reservoir Construction	Increase Storage		3.0			\$7,000,000
	Replace Russell Booster Pump Station.	Improve Fire Protection	Combined Firm Capacity of Zone 2A(2) and 2A(3) Pump Stations should be a minimum of 3400 gpm				
3	Replace Bradshawe Booster Pump Station	Improve Fire Protection	Combined Firm Capacity of Zone 2A(2) and 2A(3) Pump Stations should be a minimum of 3400 gpm				\$2,800,000
	Replace Bradshawe Reservoir 3	Age / Condition		1.0			\$2,700,000
4	New Booster Pump Station from Zone 2 to 5	Improve Fire Protection / Redundancy	4,000				\$4,150,000
5	Repair PRS valves from Zone 2 to 2B(2) and add pressure relief	Improve Fire Protection / Redundancy					\$270,000
6	PRS from Zone 5 to 3	Improve Fire Protection / Redundancy			8	500	\$526,500
7	Country Booster Pump Station Improvements	Improve Fire Protection	Combined Firm Capacity of Zone 2A(1) Pump Stations should be a minimum of 3800 gpm				\$2,800,000
8	Replace Ackley Booster Pump Station	Improve Fire Protection	Combined Firm Capacity of Zone 2A(1) Pump Stations should be a minimum of 3800 gpm				\$2,800,000
9	New Booster Pump Station from Zone 2 to 3	Improve Fire Protection / Redundancy	3,900		12	1,000	\$3,267,000
10	New Booster Pump Station from Zone 3 to 4	Improve Fire Protection / Redundancy	2,400				\$2,800,000
11	Replace Pinetree Reservoir 8	Condition		2.0			\$5,400,000
12	SCADA upgrades/improvements						\$675,000
13	Water Utility Office Building at Garvey Reservoir Upgrades	Condition					\$675,000
14	Replace Well No. 1	Age					\$3,375,000
15	Replace Well No. 3	Age					\$3,375,000
Fire Protection Pipeline Improvements							
16	Zone 1 Fire Protection Pipeline Improvements	Improve Fire Protection			8	7,492	\$2,831,976
17	Zone 1 Fire Protection Pipeline Improvements	Improve Fire Protection			12	6,988	\$3,962,196
18	Zone 2 Fire Protection Pipeline Improvements	Improve Fire Protection			8	33,030	\$12,485,340
19	Zone 2 Fire Protection Pipeline Improvements	Improve Fire Protection			12	13,701	\$7,768,467
20	Zone 2A(1) Fire Protection Pipeline Improvements	Improve Fire Protection			8	3,198	\$1,208,844
21	Zone 2A(1) Fire Protection Pipeline Improvements	Improve Fire Protection			12	764	\$433,188
22	Zone 2A(2) Fire Protection Pipeline Improvements	Improve Fire Protection			8	1,327	\$501,606
23	Zone 2A(3) Fire Protection Pipeline Improvements	Improve Fire Protection			8	6,318	\$2,388,204
25	Zone 4 Fire Protection Pipeline Improvements	Improve Fire Protection			8	2,158	\$815,724
26	Zone 4 Fire Protection Pipeline Improvements	Improve Fire Protection			12	2,416	\$1,369,872
27	Zone 4A Fire Protection Pipeline Improvements	Improve Fire Protection			8	7,326	\$2,769,228
28	Zone 4B Fire Protection Pipeline Improvements	Improve Fire Protection			8	4,469	\$1,689,282
29	Zone 5 Fire Protection Pipeline Improvements	Improve Fire Protection			8	3,204	\$1,211,112
30	Zone 5 Fire Protection Pipeline Improvements	Improve Fire Protection			12	2,005	\$1,136,835
Total							\$99,890,374
Annual Improvement Projects							
31	Reservoir and Booster Pump Station Improvements	Condition					\$675,000
32	Meter Exchange Program	Age					\$270,000
33	Pipe Replacement Program	Age					\$4,050,000
Total							\$4,995,000

The City adds 37.5 percent to the sum of the meter charges and consumption charges to support the operation and maintenance of the treatment facilities. The customers are billed once every two months. Table 5 shows the various customers by meter size, average water use, and average existing water bills. The existing rate structure generates approximately \$10.6 million.

**Table 5
Existing Average Monthly Water Bills**

Customer Type Meter Size	and	Average Daily Water Use (Gallons/Day)	Average Monthly Water Use (100 Cu. Ft.)	Average Monthly Water Bill
Single Family Residential				
3/4"		296	12.0	\$20.96
1"		337	13.7	\$24.33
1-1/2"		446	18.2	\$38.30
2"		446	18.2	\$44.48
Multiple Family Residential				
3/4-inch		761	30.9	\$51.74
1"		867	35.3	\$68.88
1-1/4"		1,349	54.9	\$108.91
1-1/2"		1,943	79.0	\$155.93
2"		3,894	158.3	\$305.72
3"		9,929	403.8	\$777.68
4"		15,167	616.7	\$1,199.41
Commercial				
3/4-inch		646	26.3	\$43.32
1"		1,153	46.9	\$89.93
1-1/4"		544	22.1	\$49.61
1-1/2"		2,058	83.7	\$164.43
2"		4,901	199.3	\$379.86
3"		7,562	307.5	\$603.44
4"		11,831	481.1	\$953.87
6"		35,118	1428.1	\$2,856.25
8"		2,094	85.2	
Institutional				
3/4"		1,939	78.8	\$138.45
1-1/2"		23	0.9	\$14.59
2"		2,147	87.3	\$177.16
3"		3,189	129.7	\$281.59
4"		5,428	220.7	\$482.65
Irrigation				
3/4"		328	13.3	\$23.77
1"		1,210	49.2	\$94.13
1-1/2"		1,857	75.5	\$149.58
2"		6,457	262.6	\$494.39
3"		4,465	181.6	\$375.49
4"		10,404	423.1	\$848.88

Table 6 shows the average monthly water bills of several nearby water agencies, as well as the City of Monterey Park customers. The average Monterey Park water customer bills are significantly lower than the water bills of the corresponding customers served by these purveyors.

Table 6
Average Monthly Single Family Residential Water Bill Comparison

Agency	Average Monthly Water Bill
Monterey Park	\$28.82
California Water Service Co.	\$53.52
Golden State Water Co.	\$54.05
San Gabriel Valley Water Co.	\$55.31
City of Covina	\$60.71
City of Alhambra	\$46.36

Expenditures

The water system’s expenditures are documented in two funds: Water Operations (0092) and Water Treatment (0093). Each fund’s expenditures consist of:

- Salaries and Benefits
- Supplies, including assessments
- Services
- Leases and Overhead
- Maintenance
- Capital Improvement Program
- Repairs

The 2010-2011 budgets for the two funds were \$9.3 million and 4.9 million, respectively, for a total of \$14.2 million. This budget included approximately 4.7 million in capital improvements. In order to implement the CIP recommended by the 2012 Master Plan in a reasonable schedule, the capital improvement expenditure needs to be increased. Since the existing rate structure generates only \$10.6 million, the difference has been made up from the fund reserves. As the reserves have nearly been used up, and the remainder has been committed to currently budgeted projects, the rates have to be increased.

4. ALTERNATIVE FUNDING SCENARIOS

Several funding scenarios were developed and evaluated, and three were selected for detailed review. Common to the all alternatives is updated monthly meter charges designed to recover the fixed costs of the utility. The funding scenarios consisted of the following, with analyses conducted assuming 3% annual inflation rate:

1. Construct \$8.3 million per year in capital improvements using a pay-as-you-go system
2. Construct \$5.3 million per year in CIP using a pay-as-you-go system
3. Issue \$20 million in bonds, construct \$5.3 million per year in capital improvements

Meter Charges

The existing rate structure has a monthly meter charge, and an ascending block consumption charge. The monthly meter charge includes the first 6 hundred cubic feet of consumption for 5/8-inch and 3/4-inch meters. Revenue generated by the existing meter charges (\$2.1 million) is approximately half of the fixed costs of the system. The existing meter charges for Monterey Park and five nearby agencies are shown in Table 7. Monterey Park's meter charges are significantly lower than the meter charges of the five agencies through 4-inch meters. Only the City of Alhambra's 6-inch and 8-inch and California Water Service Company's 8-inch meter charges are lower than Monterey Park's.

**Table 7
Monthly Meter Charges for Monterey Park and Nearby Agencies**

Meter Size	Monterey Park	California Water Service Company	Golden State Water Company	San Gabriel Valley Water Company	Covina	Alhambra
3/4"	\$12.63	\$20.45	\$22.35	\$30.06	\$32.19	\$19.29
1"	\$13.67	\$34.08	\$37.25	\$50.10	\$50.14	\$38.53
1.5"	\$21.53	\$68.16	\$74.50	\$100.20	\$80.04	\$57.82
2"	\$27.71	\$94.33	\$119.00	\$160.30	\$137.93	\$77.09
3"	\$55.48	\$178.97	\$224.00	\$300.60	\$258.62	\$96.36
4"	\$91.72	\$260.12	\$373.00	\$501.00	\$431.01	\$154.18
6"	\$280.07	\$431.22	\$745.00	\$1,000.00	\$861.87	\$192.72
8"	\$700.44	\$651.29	\$1,192.00	\$1,600.00		\$289.09

The City's meter charges should be re-structured to cover the water utility's fixed expenditures based on maximum capacity of the various size meters, with the 3/4-inch meter maximum capacity being the base unit without any allowance for consumption. The fixed costs of the water utility are estimated at \$4,230,000. Table 8 illustrates how this cost is distributed to the active meters in the system based on maximum meter capacity, and the resulting recommended monthly meter charges.

**Table 8
Recommended Monthly Meter Charges**

Meter Size	Maximum Capacity (gpm)	Ratio to 3/4-inch	Number of Meters	Number of Equivalent Meters	Recommended Monthly Meter Charge	Existing Monthly Meter Charge
3/4"	30	1.00	9,162	9,162	20.30	\$12.63
1"	50	1.67	2,150	3,583	33.83	\$13.67
1.5"	100	3.33	547	1,823	67.67	\$21.53
2"	160	5.33	336	1,792	108.27	\$27.71
3"	300	10.00	24	240	203.01	\$55.48
4"	500	16.67	25	417	338.34	\$91.72
6"	1000	33.33	4	133	676.69	\$280.07
8"	1600	53.33	4	213	1,082.70	\$700.44
Total			12,252	17,364		

Alternative 1. Construct \$8.3 million per year in CIP using a pay-as-you-go system

This alternative was developed to construct the recommended improvements in approximately 12 years, then start an aggressive pipeline replacement program. A 3-tier ascending block consumption charge is established for the single-family residential customers, and a constant rate is set up for all other customers as shown in Table 9. The consumption charges are the highest for this alternative.

**Table 9
Consumption Charges for Alternative 1**

Consumption (100 Cu. Ft)	Single Family Residential	All Others
0-6	\$2.75	\$3.05
6-12	\$2.95	\$3.05
Over 12	\$3.05	\$3.05

The proposed rate structure will generate approximately \$20.1 million in the first year, and will need to be increased at the rate of inflation. Table 10 shows the details of this alternative, as well as the average monthly bills for 5/8-inch and 3/4- inch single family residential customers. The average monthly bills include the meter charges, consumption charges, and water treatment charges.

**Table 10
Funding Alternative 1 - \$8.3 Million Annual CIP, Pay-as-You-Go Funding**

EXPENDITURES	2013	2014	2015	2016	2017	2018	2019	2020
0092								
1000 Salaries and Benefits	3,200,000	3,296,000	3,394,880	3,496,726	3,601,628	3,709,677	3,820,967	3,935,596
2000 Supplies	481,000	495,430	510,293	525,602	541,370	557,611	574,339	591,569
Water Assessment	500,000	515,000	530,450	546,364	562,754	579,637	597,026	614,937
3000 Services, Repairs	1,100,000	1,133,000	1,166,990	1,202,000	1,238,060	1,275,201	1,313,458	1,352,861
Electricity, Gas	615,000	633,450	652,454	672,027	692,188	712,954	734,342	756,372
4000 Leases & Overhead	1,030,000	1,060,900	1,092,727	1,125,509	1,159,274	1,194,052	1,229,874	1,266,770
8000 Maintenace	750,000	772,500	795,675	819,545	844,132	869,456	895,539	922,405
CIP	8,000,000	8,240,000	8,487,200	8,741,816	9,004,070	9,274,193	9,552,418	9,838,991
9000 Other Repairs	300,000	309,000	318,270	327,818	337,653	347,782	358,216	368,962
Subtotal Fund 0092	15,976,000	16,455,280	16,948,938	17,457,407	17,981,129	18,520,563	19,076,179	19,648,465
0093								
1000 Salaries and Benefits	1,020,000	1,050,600	1,082,118	1,114,582	1,148,019	1,182,460	1,217,933	1,254,471
2000 Supplies	860,000	885,800	912,374	939,745	967,938	996,976	1,026,885	1,057,692
3000 Services, Repairs	675,000	695,250	716,108	737,591	759,718	782,510	805,985	830,165
Electricity	560,000	576,800	594,104	611,927	630,285	649,193	668,669	688,729
4000 Leases & Overhead	450,000	463,500	477,405	491,727	506,479	521,673	537,324	553,443
8000 Maintenace	250,000	257,500	265,225	273,182	281,377	289,819	298,513	307,468
Subtotal Fund 0093	3,815,000	3,929,450	4,047,334	4,168,754	4,293,816	4,422,631	4,555,310	4,691,969
Total Expenditures	19,791,000	20,384,730	20,996,272	21,626,160	22,274,945	22,943,193	23,631,489	24,340,434
REVENUES								
Bi-Monthly Service Charges	4,220,000	4,346,600	4,476,998	4,611,308	4,749,647	4,892,137	5,038,901	5,190,068
Consumption + Treatment Charges	15,886,000	16,362,580	16,853,458	17,359,062	17,879,833	18,416,228	18,968,715	19,537,777
Total Revenue	20,106,000	20,709,180	21,330,456	21,970,369	22,629,481	23,308,365	24,007,616	24,727,844
Fund Balance	315,000	639,451	973,635	1,317,844	1,672,380	2,037,552	2,413,679	2,801,089
Annual Rate Increases	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Average Monthly Single Family Water Bill	75.01	77.26	79.58	81.97	84.43	86.96	89.57	92.26

Alternative 2 . Construct \$5.3 million per year in CIP using a pay-as-you-go system

This alternative was developed to construct the recommended improvements in approximately 19 years. A 3-tier ascending block consumption charge is established for the single-family residential customers, and a constant rate is set up for all other customers as shown in Table 11.

**Table 11
Consumption Charges for Alternative 2**

Consumption (100 Cu. Ft)	Single Family Residential	All Others
0-6	\$2.16	\$2.35
6-12	\$2.36	\$2.35
Over 12	\$2.40	\$2.35

The proposed rate structure will generate approximately \$16.9 million in the first year, and will need to be increased at the rate of inflation. Table 12 shows the details of this alternative, as well as the average monthly bills for 5/8-inch and 3/4-inch single family residential customers. The average monthly bills include the meter charges, consumption charges, and water treatment charges.

**Table 12
Funding Alternative 2 - \$5.3 Million Annual CIP, Pay-as-You-Go Funding**

EXPENDITURES	2013	2014	2015	2016	2017	2018	2019	2020
0092								
1000 Salaries and Benefits	3,200,000	3,296,000	3,394,880	3,496,726	3,601,628	3,709,677	3,820,967	3,935,596
2000 Supplies	481,000	495,430	510,293	525,602	541,370	557,611	574,339	591,569
Water Assessment	500,000	515,000	530,450	546,364	562,754	579,637	597,026	614,937
3000 Services, Repairs	1,100,000	1,133,000	1,166,990	1,202,000	1,238,060	1,275,201	1,313,458	1,352,861
Electricity, Gas	615,000	633,450	652,454	672,027	692,188	712,954	734,342	756,372
4000 Leases & Overhead	1,030,000	1,060,900	1,092,727	1,125,509	1,159,274	1,194,052	1,229,874	1,266,770
8000 Maintenance	750,000	772,500	795,675	819,545	844,132	869,456	895,539	922,405
CIP	5,000,000	5,150,000	5,304,500	5,463,635	5,627,544	5,796,370	5,970,261	6,149,369
9000 Other Repairs	300,000	309,000	318,270	327,818	337,653	347,782	358,216	368,962
Subtotal Fund 0092	12,976,000	13,365,280	13,766,238	14,179,226	14,604,602	15,042,740	15,494,023	15,958,843
0093								
1000 Salaries and Benefits	1,020,000	1,050,600	1,082,118	1,114,582	1,148,019	1,182,460	1,217,933	1,254,471
2000 Supplies	860,000	885,800	912,374	939,745	967,938	996,976	1,026,885	1,057,692
3000 Service, Repairs	675,000	695,250	716,108	737,591	759,718	782,510	805,985	830,165
Electricity	560,000	576,800	594,104	611,927	630,285	649,193	668,669	688,729
4000 Leases & Overhead	450,000	463,500	477,405	491,727	506,479	521,673	537,324	553,443
8000 Maintenance	250,000	257,500	265,225	273,182	281,377	289,819	298,513	307,468
Subtotal Fund 0093	3,815,000	3,929,450	4,047,334	4,168,754	4,293,816	4,422,631	4,555,310	4,691,969
Total Expenditures	16,791,000	17,294,730	17,813,572	18,347,979	18,898,418	19,465,371	20,049,332	20,650,812
REVENUES								
Bi-Monthly Service Charges	4,220,000	4,346,600	4,476,998	4,611,308	4,749,647	4,892,137	5,038,901	5,190,068
Consumption + Treatment Charges	12,695,721	13,076,592	13,468,890	13,872,957	14,289,145	14,717,820	15,159,354	15,614,135
Total Revenue	16,915,721	17,423,192	17,945,888	18,484,265	19,038,792	19,609,956	20,198,255	20,804,203
Fund Balance	124,721	253,183	385,499	521,784	662,158	806,744	955,666	1,109,057
Average Monthly Single Family Water Bill	65	67.20	69.22	71.30	73.44	75.64	77.91	80.25

Alternative 3. Issue \$20 million in bonds, construct \$5.3 million per year in capital improvements

This alternative is formulated to keep the average monthly bill for customers with 5/8-inch and 3/4-inch meters similar to those of the nearby agencies. A 3-tier ascending block consumption charge is established for the single-family residential customers, and a constant rate is set up for all other customers as shown in Table 13.

**Table 13
Consumption Charges for Alternative 5**

Consumption (100 Cu.Ft)	Single Family Residential	All Others
0-6	\$1.55	\$1.75
6-12	\$1.65	\$1.75
Over 12	\$1.75	\$1.75

The proposed rate structure will generate approximately \$14 million in the first year. Based on an annual inflation rate of 3%, all charges will need to be increased at 3% for two years, 10% for four years, and 6% thereafter. Table 14 shows the details of this alternative, as well as the average monthly bills for 5/8-inch and 3/4-inch single family residential customers. The average monthly bills include the meter charges, consumption charges, and water treatment charges.

**Table 14
Funding Alternative 3 - \$20 Million Bond Issue, \$5.3 Million Annual CIP**

EXPENDITURES		2013	2014	2015	2016	2017	2018	2019	2020
0092									
1000	Salaries and Benefits	3,200,000	3,296,000	3,394,880	3,496,726	3,601,628	3,709,677	3,820,967	3,935,596
2000	Supplies	481,000	495,430	510,293	525,602	541,370	557,611	574,339	591,569
	Water Assessment	500,000	515,000	530,450	546,364	562,754	579,637	597,026	614,937
3000	Services, Repairs	1,100,000	1,133,000	1,166,990	1,202,000	1,238,060	1,275,201	1,313,458	1,352,861
	Electricity, Gas	615,000	633,450	652,454	672,027	692,188	712,954	734,342	756,372
4000	Leases & Overhead	1,030,000	1,060,900	1,092,727	1,125,509	1,159,274	1,194,052	1,229,874	1,266,770
8000	Maintenance	750,000	772,500	795,675	819,545	844,132	869,456	895,539	922,405
	CIP	5,000,000	5,150,000	5,304,500	5,463,635	5,627,544	5,796,370	5,970,261	6,149,369
9000	Other Repairs	300,000	309,000	318,270	327,818	337,653	347,782	358,216	368,962
	Subtotal Fund 0092	12,976,000	13,365,280	13,766,238	14,179,226	14,604,602	15,042,740	15,494,023	15,958,843
0093									
1000	Salaries and Benefits	1,020,000	1,050,600	1,082,118	1,114,582	1,148,019	1,182,460	1,217,933	1,254,471
2000	Supplies	860,000	885,800	912,374	939,745	967,938	996,976	1,026,885	1,057,692
3000	Service, Repairs	675,000	695,250	716,108	737,591	759,718	782,510	805,985	830,165
	Electricity	560,000	576,800	594,104	611,927	630,285	649,193	668,669	688,729
4000	Leases & Overhead	450,000	463,500	477,405	491,727	506,479	521,673	537,324	553,443
8000	Maintenance	250,000	257,500	265,225	273,182	281,377	289,819	298,513	307,468
	CIP								
	Subtotal Fund 0093	3,815,000	3,929,450	4,047,334	4,168,754	4,293,816	4,422,631	4,555,310	4,691,969
	Debt Service	1,261,440	1,261,440	1,261,440	1,261,440	1,261,440	1,261,440	1,261,440	1,261,440
	Total Expenditures	18,052,440	18,556,170	19,075,012	19,609,419	20,159,858	20,726,811	21,310,772	21,912,252
	REVENUES								
	Bi-Monthly Service Charges	4,230,000	4,356,900	4,487,607	4,622,235	4,760,902	4,903,729	5,050,841	5,202,366
	Consumption + Treatment Charges	9,667,227	9,957,244	10,255,961	11,281,558	12,409,713	13,650,685	15,015,753	15,916,698
	Total Revenue	13,897,227	14,314,144	14,743,568	15,903,793	17,170,616	18,554,414	20,066,594	21,119,065
	Bond Revenue	20,000,000							
	Fund Balance	17,106,227	14,125,641	11,055,638	8,611,452	6,883,649	5,972,692	5,989,954	6,458,207
	Annual Rate Increases	1.03	1.03	1.03	1.10	1.10	1.10	1.10	1.06
	Average Monthly Single Family Water Bill	\$54.39	\$56.03	\$57.71	\$63.48	\$69.82	\$76.81	\$84.49	\$89.56

Table 15 illustrates the comparison of the three alternatives over a 10 year period. Alternative 1 will allow construction of \$95.15 million in capital improvements, while Alternatives 2 and 3 will only construct \$60.76 million over the same period. Although the average monthly bills are lower for Alternative 2 than the bills for Alternative 3, for the first six years, the debt service payments require larger increases for Alternative 3 to implement the same capital improvement program.

**Table 15
Comparison of the 3 Alternatives for Single Family Residential 5/8" and 3/4" Meters**

Alternative	Exist. MP	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	Total CIP
\$8.3 M/Yr CIP, 3% Per Yr Increase	\$28.29	\$75.01	\$77.26	\$79.58	\$81.97	\$84.43	\$86.96	\$89.57	\$92.26	\$95.02	\$97.87	95,150,198
\$5.3 M/Yr CIP, 3% Per Yr Increase	\$28.29	\$65.25	\$67.20	\$69.22	\$71.30	\$73.44	\$75.64	\$77.91	\$80.25	\$82.65	\$85.13	60,758,560
\$5.3 M/Yr CIP; \$20M Bond - 3-3%, 4-10%, 3-6% Incr.	\$28.29	\$54.33	\$55.96	\$57.64	\$63.40	\$69.74	\$76.71	\$84.38	\$89.45	\$94.81	\$100.50	60,758,560

Comparison to Other Agencies

Table 16 shows the comparison of the average monthly water bills for single family residential customers to the bills of other nearby agencies, including California Water Service Company and San Gabriel Valley Water Company, who provide service to portions of Monterey Park.

**Table 16
Comparison of Average Monthly Water Bills for
Single Family Residential 5/8" and 3/4" Meters to Other Agencies**

Agency	Average Monthly Water Bill
Monterey Park Alternative 1	\$75.01
Monterey Park Alternative 2	\$65.25
Monterey Park Alternative 3	\$54.33
California Water Service Co.	\$53.52
Golden State Water Co.	\$54.05
San Gabriel Valley Water Co.	\$55.31
City of Covina	\$60.71
City of Alhambra	\$46.36