TO: James L. App, City Manager

FROM: Dick McKinley, Director of Public Works

SUBJECT: 2014 Water Master Plan Adoption

DATE: June 2, 2015

NEEDS: For City Council to consider the adoption of the 2014 Water System Master Plan.

FACTS:

1. On February 4, 2014 City Council authorized a contract with Water Systems Consulting (WSC) for the preparation of a potable water system master plan.

2. The Master Plan was authorized to address development and other changes since the date of the previous system master plan.

3. WSC developed the 2014 Water System Master Plan which addresses water distribution system improvements necessary to meet current and projected future demand.

4. The Water System Master Plan differs from supply source planning in that it assesses the pipes, pumps, and storage tanks that convey water throughout the City.

5. A principal purpose of the plan is to develop a capital improvements plan for the water system, and to reference that updated capital plan while evaluating the sufficiency of water rates and connection fees.

6. The Water System Master Plan provides a capital improvement plan for the water system and identifies approximately $32.9 million of improvements to serve existing and projected future demands.

7. The Water System Master Plan recommends budgeting for $28.8 million over the next 30 years for asset management and replacement, in addition to the $32.9 million above.

ANALYSIS & CONCLUSION: A water system master plan seeks to:

- Evaluate the Condition and Capacity distribution system now and in the future.
- Quantify needs associated with General Plan growth.
- Provide budgeting information associated with water infrastructure to facilitate the development of water rates and connection fees.

A water master plan is not:

- A budget allocation – Supports development of capital improvement programs and rate studies.
- A supply analysis – Urban Water Management Plan serves that role.

Improvements to the City's potable water distribution system are necessary to meet existing and projected demands, and to guide long term planning and budgeting for water

system projects. Improvements to water pipelines, booster pump stations, and storage tanks were evaluated in terms of capacity and ability to reliably meet existing demands and to convey water for projected future demands.

POLICY REFERENCE: Integrated Water Resource Plan, 2010 Urban Water Management Plan.

FISCAL IMPACT: WSC recommends improvements to water pipelines, booster pump stations, and storage tanks to meet the needs of existing customers, with estimated project costs totaling $17.7 million.

For serving future demands, WSC recommends improvements to water pipelines and storage tanks with estimated project costs totaling $15.2 million.

In addition to the capital improvements and costs above, WSC recommends the City should budget between $0.76 million and $1.1 million annually for replacement of water distribution system assets, totaling $28.8 million over the next 30 years.

These estimated costs and replacement fund guidelines will be reflected in the City's water utility rate and fee study that is currently underway.

OPTIONS:

a. Adopt Resolution No. 15-xxx, thereby adopting the Water System Master Plan dated April 21, 2015.

b. Amend, modify, or reject the above option.

Attachments:

1) Proposed 2014 Water System Master Plan Executive Summary

2) Proposed 2014 Water System Master Plan Capital Improvement Projects Plate 1

3) Resolution 15-XXX

EXECUTIVE SUMMARY

The City of Paso Robles (City) operates a potable water delivery system that serves approximately 10,000 homes and businesses within City limits through a network of 174 miles of pipes, four storage reservoirs, booster stations, and water supply systems. This potable water system master plan assesses the ability of the existing water system to reliably meet the needs of current customers, as well as city-wide needs at buildout. The plan identifies improvements to the water distribution system that are necessary to meet existing and projected demands, and will assist the City in long term planning and budgeting for water system projects.

This plan differs from supply source planning in that it assesses the pipes, pumps, and storage tanks that move water throughout the City.

The hilly terrain and the natural divide between the east and west side of the City necessitates delivery of water using eight distinct pressure zones that regulate water pressure to customers, and dictate the layout of transmission mains and pipelines throughout the City.

Water demands are projected to increase as population increases from the current 30,450 residents to the projected 44,000 residents at buildout. The demand forecast in this Master Plan is within the range of demands forecasted in the 2010 Urban Water Management Plan for buildout.

IMPROVEMENTS FOR SERVING CURRENT DEMAND

The major findings of this master plan are that approximately 6.3 miles of transmission and pipeline improvements, estimated to cost $9.1 million, are recommended to reliably meet existing demands, in particular to reliably sustain fire flows. Approximately $8.6 million in booster station and storage tank improvements are also recommended to meet the needs of current customers. Storage on each side of the City and existing river crossings provide adequate redundancy and reliability for existing conditions and distribution of supply from the Phase 1 Nacimiento Water Treatment Plant.

Recommended improvements to meet current needs are focused in the west side of the system to improve fire flow for multiple land uses.

IMPROVEMENTS FOR SERVING FUTURE DEMAND

Increasing water demand coupled with the anticipated locations of potable water customers at buildout point to the need for an additional 4 miles of transmission and pipeline improvements estimated to cost $10.8 million. Transmission and pipeline improvements include installations to serve future single-family and multi-family residential developments at the eastern and southeastern areas of the system and the installation of a 16” main river crossing near the Thunderbird well field area to provide redundancy and reliability for distribution of Nacimiento water. An additional $4.4 million in storage tank improvements are also recommended to meet needs at buildout. These pipeline and storage improvements are within the City’s existing water distribution system and do not include new pipelines and facilities within planned developments necessary for providing service within those developments.

ASSET MANAGEMENT AND REHABILITATION

In addition to the recommended capital improvements to address current or future capacity deficiencies, the City is proactively planning for the repair or replacement of water system assets as they reach the end of their useful lives. An anticipated replacement schedule for distribution system pipelines has been developed based on an analysis of pipeline age and useful life. Findings indicate that the City should budget $0.76 million to $1.1 million per year over the next 30 years for replacement of aging infrastructure in order to maintain reliable service to existing customers and reduce the likelihood of failures associated with aging infrastructure. Recommended annual replacement budgets for replacements recommended over the next 30 years are:

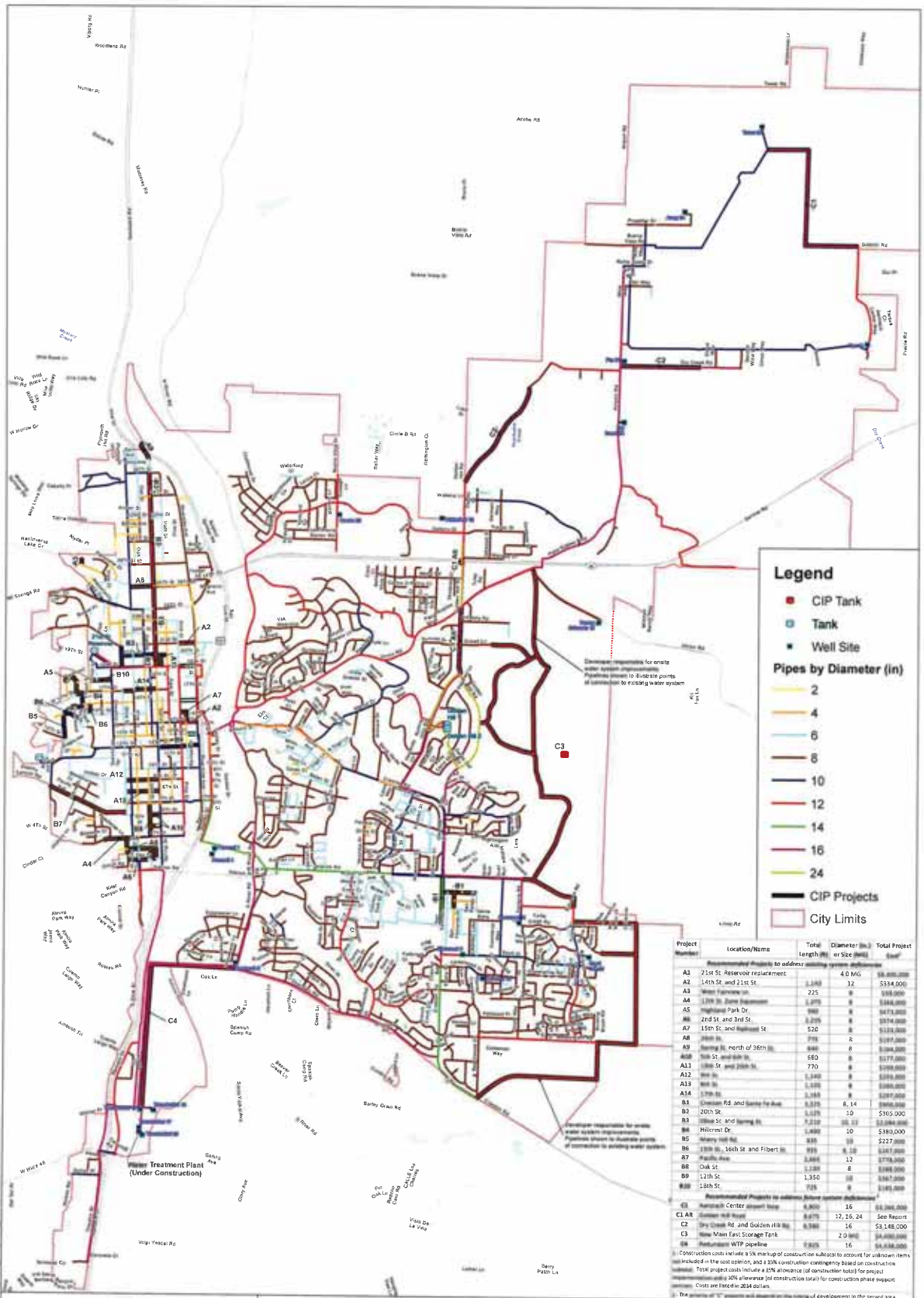
Pipeline Replacement Cost Summary

Planning Year	Straight Line Replacement Strategy	Phased Replacement Strategy Annual Costs[1]	Phased Asset Rehabilitation Cost Totals
Year 1-5	$ 2.7 M / year	$ 0.96 M / year	$ 4.8 M
Year 6-15		$ 0.76 M / year	$ 7.6 M
Year 16-30		$1.1 M / year	$ 16.4 M
		Year 1-30 Total	**$28.8 M**

[1]Phased replacement costs for years 1-5, 6-15, and 16-30 are included as capital projects in the CIP table (Table 9-4) as items A15, B11, and C5, respectively.
[2]Assumes asset replacement strategy is carried out to year 100.

The cost estimates and timing of recommended capital projects in this master plan will be used in the utility rate study that is currently underway by the City. The result will be an assessment of water rates and fees to fund the improvements.

As a final note, this plan addresses the City's potable water distribution system while the City's "Recycled Water Master Plan" dated March 2014 addresses improvements needed to make use of recycled water in and around the City. Financing of both systems are currently being evaluated such that the community may examine benefits and costs of both potable and recycled systems.



Project Number	Location/Name	Total Length (ft)	Diameter (in.) or Size (MG)	Total Project Cost[1]
	Recommended Projects to address existing system deficiencies			
A1	21st St. Reservoir replacement		4.0 MG	$8,300,000
A2	14th St. and 21st St.	1,140	12	$334,000
A3	West Fairview Ln.	225	8	$98,000
A4	13th St. Zone Expansion	1,075	8	$388,000
A5	Highland Park Dr.	940	8	$473,000
A6	2nd St. and 3rd St.	1,225	8	$574,000
A7	15th St. and Railroad St.	520	8	$123,000
A8	26th St.	775	8	$197,000
A9	Spring St. north of 36th St.	840	8	$384,000
A10	5th St. and 6th St.	680	8	$177,000
A11	13th St. and 26th St.	770	8	$199,000
A12	9th St.	1,140	8	$293,000
A13	8th St.	1,105	8	$280,000
A14	17th St.	1,165	8	$297,000
B1	Creston Rd. and Santa Fe Ave.	5,515	8, 14	$900,000
B2	20th St.	1,125	10	$305,000
B3	Olive St. and Spring St.	7,210	10, 12	$2,084,000
B4	Hillcrest Dr.	1,490	10	$380,000
B5	Cherry Hill Rd.	835	10	$227,000
B6	13th St., 16th St. and Filbert St.	935	8, 10	$247,000
B7	Pacific Ave.	1,845	12	$779,000
B8	Oak St.	1,130	8	$288,000
B9	12th St.	1,350	10	$367,000
B10	18th St.	725	8	$185,000
	Recommended Projects to address future system deficiencies[2]			
C1	Aerotech Center airport loop	8,800	16	$2,240,000
C1 Alt	Golden Hill Road	8,675	12, 16, 24	See Report
C2	Dry Creek Rd. and Golden Hill Rd.	8,380	16	$3,148,000
C3	New Main East Storage Tank		2.0 MG	$4,400,000
C4	Nacimiento WTP pipeline	7,925	16	$2,038,000

[1] Construction costs include a 5% markup of construction subtotal to account for unknown items not included in the cost opinion, and a 15% construction contingency based on construction subtotal. Total project costs include a 15% allowance (of construction total) for project implementation and a 10% allowance (of construction total) for construction phase support services. Costs are listed in 2014 dollars.

[2] The priority of "C" projects will depend on the timing of development in the served area.

Date: 4/10/2015 Name: PR_CIP_Projects_Plate1

City of Paso Robles
2014 Water Master Plan
CIP Projects
Plate 1

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WSC
WATER SYSTEMS CONSULTING, INC.

RESOLUTION NO. 15-xxx

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES
ADOPT THE POTABLE WATER SYSTEM MASTER PLAN

WHEREAS, in February 2014 after a competitive selection process, the City awarded a contract to the engineering firm Water Systems Consulting (WSC) to prepare an update to the City's Water System Master Plan; and

WHEREAS, WSC delivered the final report to the City in April 2015; and

WHEREAS, A Water System Master Plan is the primary tool used to identify water system infrastructure deficiencies; and

WHEREAS, A Water System Master Plan is necessary to develop a capital improvement plan; and

WHEREAS, A capital improvement plan is necessary to evaluate sufficiency of existing water rates; and

WHEREAS, the Water System Master Plan addresses changes since the date of the previous system master plan, provides a capital improvement plan for the water system, and will allow the City to reference the updated capital plan while evaluating the sufficiency of water rates.

THEREFORE, BE IT RESOLVED AS FOLLOWS:

SECTION 1. The City Council of the City of Paso Robles does hereby adopt the "2014 Water System Master Plan" dated April 2015 by WSC.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 2nd day of June 2015 by the following votes:

AYES:
NOES:
ABSENT:
ABSTAIN:

Steven W. Martin, Mayor

ATTEST:

Caryn Jackson, Deputy City Clerk