

Pasadena 2020 Water System Resources Plan

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> City Council October 4, 2021 Item # 8





- 25 year road map updated every 5 years
- Establishes policy and strategic vision to meet projected future water demands

- City Council approval of WSRP is not approval of budget or any listed project
- Strategic guidance document
- Projects are indicative and may change
- Costs estimates are for planning purpose only









- Six meetings with 14 stakeholders
 > Oct 2018 to Oct 2020
- Three EAC meetings from
 - > Nov 2019 Oct 2020
- Two public meetings
 - > Nov 14, 2019 Jackie Robinson Center
 - > Nov 29, 2019 Victory Park
- Sep 21, 2020 draft report posted on PWP website for stakeholders review

WSRP Goals and Objectives

Pasadena Water and Power

• Develop sustainable water supplies

Improve Raymond Groundwater Basin

- Provide quality water reliably
- Foster watershed and environmental stewardship
- Support Pasadena's quality of life/community values

WSRP – Four CIP Categories

Pasadena Water and Power

- Water Supply
 - Imported water, wells, treatment & conservation

Water Distribution

- > Pipes, booster pumps, meters and services
- Water Storage
 - > Reservoirs and tanks

Other Water Facilities

New customer billing system, demonstration gardens, software, water quality lab, buildings, grounds, site security







A: Status Quo and Stormwater Capture

- PWP will continue operating as it has historically, meet conservation regulations, implement planned stormwater capture projects, **\$8M/year, rank 5**
- B: Maximize MWD Supply / Minimize Local CIP
- Gradually replace groundwater use with imported water, and don't replace groundwater wells as they reach the end of their life cycle, **\$14M/year, rank 6**

C: Maximize Local Supplies

 Implement projects that use local supply sources, increase distribution system and storage, \$21M/year, rank 2

D: Maximize Sustainable Sources and Practices

 Focus on low energy, local decentralized storm water projects and environmental water quality – green streets, aggressive conservation, \$20M/year, rank 3

E: Maximize Direct Use of Stormwater and Recycled Water

- Add local supply sources, re-open surface water treatment plant for drinking, use advanced treated recycled water for drinking, \$16M/year rank 4
- F : Sustainable Groundwater, Conservation , Stormwater Capture

Recommended

- Add a non-potable irrigation system, additional conservation
- Increase storage and use of water in the Raymond Basin, \$17 M/year, rank 1





Recommended Portfolio F

Pasadena Water and Power

Meet 50% of total demand with groundwater supplies

> Currently 30% to 40% local supply portfolio

- Build sustainable local supply
 - Increase groundwater recharge, storage, and treatment
- Store imported water for emergencies
- Additional water conservation
- Upgrade water delivery and pumping infrastructure for reliability
- Build an "irrigation" system with non-potable sources
 > High nitrate wells & stormwater

WSRP CIP Cost - \$430 M to 2045

- Average \$17.2M/year
- Approximately \$7M/year (70%) increase from current CIP
- Potential annual rate impact of 4%-6% (first 5 years)
- Future City Council actions
 - > Funding
 - > Schedule
 - > Rate impacts





Five-Year Financial Outlook Fiscal Years 2022 - 2026

FY 2022 Adopted Budget	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Water Sales Adjustment	0.5%	0.5%	0.5%	0.5%	0.5%
Projected Rate Impact	4%	5%	5%	5%	5%
Debt Issuance Amount (New Money)	\$15M	\$20M	\$0	\$0	\$0
FY 2022 - 2026 CIP Total - \$126.1 M					

2020 WSRP	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Water Sales Adjustment	0.5%	0.5%	0.5%	0.5%	0.5%
Projected Rate Impact	4%	5%	6%	5%	5%
Debt Issuance Amount (New Money)	\$15M	\$25M	\$0	\$0	\$0
FY 2022 - 2026 CIP Total - \$134.5 M					

2020 WSRP + Level 2 Water Conservation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Water Sales Adjustment	-10%	-5%	0.5%	0.5%	0.5%
Projected Rate Impact	8%	9%	9%	6%	5%
Debt Issuance Amount (New Money)	\$15M	\$25M	\$0	\$0	\$0
FY 2022 - 2026 CIP Total - \$134.5 M	<u>.</u>				

Total CIP amounts include finance & administration water funded projects



- Adopt the Water System and Resources Plan
- Approve recommended WSRP portfolio (F)
 - > Additional conservation
 - > Maximize groundwater storage
 - Store imported water in basin for emergencies and stabilize groundwater levels
 - > Develop non-potable irrigation system
 - Establish policy and strategic guideline for water system capital investment, supply planning, and programing







Recommended Portfolio F ...continued

Pasadena Water and Power

Source: RMBM, Draft Opportunities to Enhance Groundwater Levels in Pasadena Subarea,

- Increase stormwater capture
- Store MWD water in wet years
- Collaborate with Raymond
 Basin Management Board





New projects – Goal of increasing recharge over production in Raymond basin

- Regional collaboration
- Raymond Basin Management Board
- Regulatory
- Funding



- Arroyo Seco Canyon Project
- Groundwater Storage Program
- Pump Back Project
- Transfer stormwater water from Devil's Gate Dam to Eaton Canyon







Infrastructure in Portfolio F

- Wells and treatment systems
- Repair/ replace reservoirs
- Replace older pipelines, pumps, valves, etc.
- New technologies (CIS, AMI, SCADA, etc.)







- Current reserves
 - > Capital reserves at 6/30/21 = \$46M
- Grants & other outside funding
 - Concept proposals submitted for state's Proposition 1 grant for two projects and federal infrastructure grant for two other projects
- Pay-go funding
 - > Estimated \$10M annually from CIC and D&C rates
 - > Dependent on volume of water sold
- Water revenue bonds
- Future rate increases



Completed / Anticipated Water Fund Debt Issuances

- December 2020 2020A Water Bonds completed
- December 2021 2021A Water Bonds in progress
- December 2022 2022A Water Bonds anticipated

	FY 2021	FY 2022	FY 2023
Refunding Amount	\$25,425,000	\$12,645,000	\$0
New Money Amount	15,000,000	15,000,000	25,000,000
Total Debt Issuance Amount	\$40,425,000	\$27,645,000	\$25,000,000

CIP 1095 – FY 2021 - 2025 Budget

Pasadena Water and Power

FY 2021 - 2025 Capital Improvement Program Water System Local Non-Potable Water Project 1095

Priority 18	Project No. 1095	Description Local Non-Potable Water Project	Total Estimated Costs	Appropriated Through FY 2020	Adopted FY 2021	Proposed FY 2022	Proposed FY 2023	Proposed FY 2024	Proposed FY 2025 and Beyond
	CIC Funding	1	3,330,000	0	580,000	500,000	750,000	700,000	800,000
	Total		3,330,000	0	580,000	500,000	750,000	700,000	800,000

Non-Potable Water Use



DESCRIPTION: The project includes the evaluation and conversion of existing abandoned drinking water pipelines to non-potable water irrigation and water recharge for parks, schools and other public landscape uses. This project is to distinguish itself from former non-potable water. This water supply is local surface and groundwater not the purple pipe recycled water.

JUSTIFICATION: Future water supplies are limited. Non-potable water can augment fresh water supplies through irrigation of schools, parks, public spaces, and groundwater recharge.

SCHEDULE: In FY 2021, the local Non-Potable Water Project (LNPWP) will be constructed and tested from Windsor Well to the John Muir High School irrigation system. The LNPWP connection to the Arroyo Seco stream will be installed and the Brookside Park golf course connection will begin construction.

RELATIONSHIP TO THE GENERAL PLAN: This project supports the Water Section of the Open Space and Conservation Element by increasing the efficiency of water use among Pasadena residents, and commercial and industrial organizations. The project is also consistent with the Land Use Element Policy 10.16 (infrastructure) by designing, constructing, maintaining, and improving Pasadena's infrastructure to conserve and reduce impacts to the natural environment.

IMPACT ON THE NORTHWEST: Portions of this project may be located in Northwest Pasadena which is an area that has been targeted for revitalization.

HISTORY: This project was created and initially funded in FY 2021.

CIP 1095 – FY 2022 - 2026 Budget

FY 2022 - 2026 Capital Improvement Program Water System Local Non-Potable Water Project 1095

Priority	Project No.	Description	Total Estimated	Appropriated Through	Recommended	Proposed	Proposed	Proposed	Proposed FY 2026
17	1095	Local Non-Potable Water Project	Costs	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	and Beyond
	CIC Funding]	4,910,000	710,000	1,500,000	700,000	900,000	800,000	300,000
	Total		4,910,000	710,000	1,500,000	700,000	900,000	800,000	300,000

Non-Potable Water Use



DESCRIPTION: The project includes the evaluation and conversion of existing abandoned drinking water pipelines to non-potable water for irrigation and water recharge for parks, schools, and other public landscape uses. The project also includes improvements and connection of inactive wells to the irrigation system, installation of approximately 4,600 feet of a new 12" diameter pipeline on Rosemont Avenue, and installation of storage on PWP sites.

JUSTIFICATION: Future water supplies are limited. Non-potable water can augment fresh water supplies through irrigation of schools, parks, public spaces, and groundwater recharge.

SCHEDULE: In FY 2022, the irrigation system will be connected to Brookside Golf Course, Brookside Park and Area H. Approximately 4,600 feet of 24" pipeline will be installed from Devil's Gate Dam to PWP spreading basins for the Pump Back Project.

RELATIONSHIP TO THE GENERAL PLAN: This project supports the Water Section of the Open Space and Conservation Element by increasing the efficiency of water use among Pasadena residents, and commercial and industrial organizations. The project is also consistent with the Land Use Element Policy 10.16 (infrastructure) by designing, constructing, maintaining, and improving Pasadena's infrastructure to conserve and reduce impacts to the natural environment.

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Future Conservation Regulations

Pasadena Water and Power

Residential Indoor Water Use

- > 55 gallons per capita per day (gpcd) by 2025
- > 50 gpcd by 2030, minimum for health & safety
- > 57 gpcd current water use
- Commercial indoor use
- Outdoor Use
 - Estimated 12% reduction by 2030 based on existing water use efficiency standards
 - > Goal of additional 10%

Conservation levels

- > 18% reduction from current water use by 2030
- Currently 20% of residential properties have drought tolerant landscaping
- Need to double it by 2030 to meet the regulations and the WSRP goal









- For current water use (~151 gpcd), and to meet regulations, the City's existing supply can serve ~195,000 people
- PWP supports the General Plan for open space, commercial/industrial development
- New regulations for outdoor water use will reduce daily per capita use
- Regional water supplies programs, including recycled water, will further enhance water resources



- 14 Reservoirs & tanks
 - > 8 need significant repairs or seismic work (\$42 million)
 - > 4 need minor repairs
 - > 2 seismic upgrades done
- Sunset Reservoir two units built in 1888 & 1900
 - > 15 million gallons
 - In design to replace reservoir, install treatment & disinfection









- Sep 30, 2020 Stakeholders meeting
- Oct 13, 2020 Draft WSRP report posted for public review
- Oct 27, 2020 EAC
- Dec 23, 2020 Final report posted on PWP's website
- September 28, 2021 MSC
- October 4, 2021 City Council