EAST PALO ALTO CITY COUNCIL
SPECIAL MEETING
STUDY SESSION AGENDA

January 30, 2020, 6:30 p.m.
EPA Government Center
2415 University Ave, First Floor
East Palo Alto, CA 94303

Members of the public have the right to address the City Council on any item on the Agenda, before or during its consideration [G.C. §54954.3(a)]. In order to speak, you must fill out a speaker card and submit it to the City Clerk. You will have no more than two (2) minutes to speak.

I. Call to Order

II. Study Session

1. City of East Palo Alto Water Safety Strategy Blueprint
Recommendation: Receive informational report and presentation on the status of City Water System and the immediate need to upgrade the distribution system to address water flow and pressure in connection with impending new developments and increased water demand in the City; and provide feedback.

III. Adjournment

This AGENDA is posted in accordance with Government Code Section 54954.2(a)

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DECLARATION OF POSTING

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POSTED: January 27, 2020

ATTEST:

Walfred Solorzano
City Clerk

EAST PALO ALTO CITY COUNCIL
STAFF REPORT

DATE: January 30, 2020

TO: Honorable Mayor and Members of the City Council

VIA: Jaime Fontes, City Manager

BY: Kamal Fallaha, Public Works Director

SUBJECT: City of East Palo Alto Water Safety Strategy Blueprint

Recommendation

Receive informational report and presentation on the status of City Water System and the immediate need to upgrade the distribution system to address water flow and pressure in connection with impending new developments and increased water demand in the City; and provide feedback.

Alignment with City Council Strategic Plan

This recommendation is primarily aligned with:

Priority No. 2: Enhance Economic Vitality
Priority No. 4: Improve Public Facilities and Infrastructure
Priority No. 6: Create a Healthy and Safe Community

Purpose of the Study Session

The purpose of this Study Session is to provide the City Council a comprehensive overview and assessment of the City's water supply, distribution systems, and propose a Blueprint to follow; it also includes prioritization of projects, potential revenue enhancements, financing strategies, discussion of policy issues related to water system governance, and a preliminary draft schedule to meet the range of water needs mentioned in this report.

Background

On December 16, 2014, the City Council held a study session to review and discuss the Water Safety Strategy Blueprint. The Water Safety Strategy Blueprint outlined a comprehensive systematic approach to address the following three challenges:

1. The City needs to expand its water supply and water storage capacity to provide emergency water supply, diversify the water portfolio, and adequately meet future water

demands.

2. The City needs to repair and upgrade its water distribution system, which has significant damage and is continually deteriorating. Approximately 70% of the water distribution system, or 25.6 miles of pipe, are below minimum standards.
3. The average age of water meters in East Palo Alto is 35 years. The typical useful life is 10-15 years. The City's old water meters lack efficiency and do not accurately record water use.

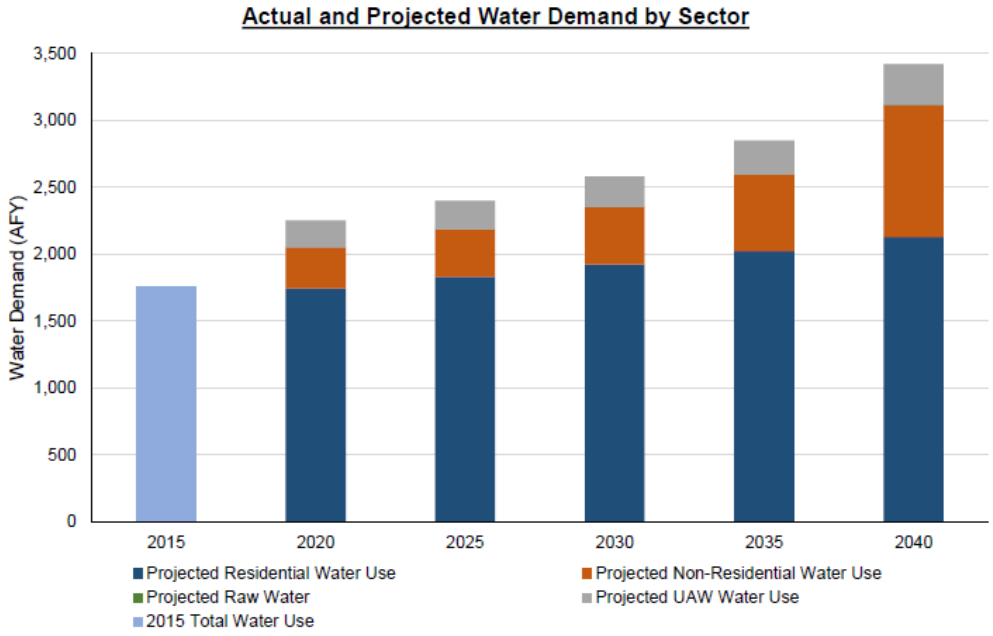
Improving the City's water security through improving the distribution system, establishing groundwater wells, establishing emergency interties, and constructing new storage facilities is essential to the safety and water security in the city.

Since 2015, the City took major steps in addressing the water supply side of the Water Safety Strategy Blueprint. In June 2017, the City was able to significantly increase its individual supply guarantee (ISG) from SFPUC by purchasing the rights to one million gallons per day (or 1 MGD) from the City of Mountain View; and the transfer of 0.5 MGD from the City of Palo Alto in May 2018. Between April 2016 and May 2018, the City increased its water supply from 1.963 MGD to 3.463 MGD, an increase of 76%. Based on the most recent Urban Management Plan (UWMP), The City can meet 2040 projected potable and raw water demand (See Table 4-2).

With the recent increase in the City water supply allocation to meet potential emergency drought water supply shortfalls, and the future water demand envisioned in the City General Plan and the Ravenswood Specific Plan over the next 20 years, essential improvements to the City's water distribution system are needed to provide additional flow, storage, redundancy, and to increase reliability of the city system. to protect the health and safety of East Palo Alto residents.

Projected Potable and Raw Water Demand by Sector (DWR Table 4-2)
City of East Palo Alto, California

Water Use Sector	Projected Potable and Raw Water Demand (AFY) (a)				
	2020	2025	2030	2035	2040
Projected Residential Water Use (b)	1,743	1,829	1,921	2,020	2,127
Projected Non-Residential Water Use (c)	307	355	427	571	985
Total Projected Water Use	**2,050**	**2,184**	**2,348**	**2,592**	**3,112**
Raw Water	2	2	2	2	2
Unaccounted-for Water (8.9%) (d)	199	212	228	252	303
Total Projected Water Demand (e)	**2,251**	**2,397**	**2,578**	**2,846**	**3,417**



The 2015 Water Safety Strategy Blueprint report presented a comprehensive strategy, consistent with two of the City Council Strategic Initiatives:

1. "Provide adequate domestic water to customers in the City of East Palo Alto water system", and
2. "Maintain and upgrade city's water system."

The focus is now shifting to Initiative 2 - To Maintain and Upgrade the City water system, including the improving the water distribution and adding storage capacity within the City.

Analysis

In 2010, Integrated Resources Management LLC prepared a Water System Master Plan (Master Plan) for the City of East Palo Alto. The report concluded that, although the existing water supply provided by the San Francisco Public Utility Company (SFPUC) through the regional Hetch Hetchy system is minimally adequate to meet current demands, it is insufficient to meet the demands of future development in the City. In addition, because the City's only water storage capacity is supplied by the SFPUC via the Hetch Hetchy system, there is no redundancy in the system and as a result, public safety in the event of a disaster such as an earthquake, power outage or major fire, is at risk. The purpose of this Water Strategy Blueprint is to review, with the City Council, critical components of the available strategies to

improve the overall performance of the system.

Over the past six years, the City Council received several reports related to water supply and distribution. As a result, number of projects were identified and listed in the City's Capital Improvement Program. However, the prioritization of those projects, and how they fit in an overall City Water Safety Strategy hasn't been fully discussed. Some of these reports identified substantial deferred maintenance needs affecting the system. Overall, the system is aged and beyond its operational life. Approximately 70% of the pipelines that deliver water to customers are below minimum standards. Improvements have been limited because of the limited resources. the water rate structure does not include a capital reserve or replacement fund component.

Water System Current Conditions

The City of East Palo Alto generally receives all of its potable water from the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy System. The City's water systems services practically the entire City, or about 2.5 square miles, and approximately 4,200 residential, commercial and industrial customers, which accounts for approximately 93 percent of the water customers within the City limits. Other portions of the City are served by two mutual water companies: (1) Palo Alto Park Mutual Water Company (PAPMWC), and (2) O'Connor Tract Cooperative (O'Conner), which provide water to the remaining seven percent of water customers living in the City. PAPMWC operates five groundwater wells, serving 650 residences; and O'Connor operates two wells in Menlo Park, serving approximately 300 residences. Some groundwater from the Gloria Bay well (at the corner of Gloria Way and Bay Road) is used by the City for street cleaning and median irrigation.

The City's water system is operated by American Water Enterprises under a Lease Agreement which is overseen by the City's Engineering and Finance staff under contract with American Water Enterprises. The City of East Palo Alto assumed operation of the water distribution system from San Mateo County in 2001. Currently, American Water Enterprise manages the distribution, operation, and maintenance of the City's water system. The lease agreement is in the process of being transferred to Veolia, pending issuance of the operation and maintenance permit from the State of California Department of Water Resources.

There are three SFPUC turnouts, located to the North of the City, running along O'Brien Drive, near Willow Rd., Casey Ct. in Menlo Park, and University Avenue, as well as two unidirectional emergency interties that serve the two mutual water companies.

The City has no storage capacity. In sum, the City water system relies solely on water from the SFPUC system for storage, fire flow, and emergency use.

The SFPUC provides water to the City through what it is called an Interim Supply Guarantee or ISG, which was until recently limited to 1.963 million gallons a day (MGD), or 2,199 Acre Feet per Year (AFY or the volume of one acre of water surface area to a depth of one foot). The ISG is derived from a larger allocation formula developed through the Bay Area Water Supply and Conservation Agency (BAWSCA) wholesale water supply agreement with the SFPUC.

Water Supply/Water Rights Acquisitions

In April 2016, the City Council approved Resolution No. 4723 that authorized the City Manager

to pursue water transfers of up to 1.5 million gallons per day.

In July 2016, Council approved a moratorium on new water connections. New connections were prohibited due to concerns that the Water Utility did not have sufficient water supply to meet planned growth envisioned in the City's General Plan.

In June 2017, the City was able to significantly increase its individual supply guarantee (ISG) from SFPUC by purchasing the rights to 1 MGD from the City of Mountain View; and the transfer of 0.5 MGD from the City of Palo Alto in May 2018. Between April 2016 and May 2018, the City increased its water supply from 1.963 MGD to 3.463 MGD, an increase of 76%.

Until the recently approved water transfers, the City of East Palo Alto lacked adequate domestic water supply to serve the growth planned in the General Plan. Also, East Palo Alto does not have emergency water supply to provide water in the event that there is a disruption in the San Francisco Public Utilities Commission (SFPUC) water system. If the connection with the SFPUC system is disrupted or intentionally closed, there is no water supply in the majority of the City.

Groundwater Wells

In spring of 2018, the City completed the Gloria Way Well Rehabilitation. The well can provide up to 300 gallons per minute (gpm), but the well will primarily be operated as an emergency/back up well. Staff completed this project with more grant funding than anticipated, greatly limiting the use of capital surcharge monies.

The Pad D well is still in the environmental design phase. The City has an administrative draft EIR based on utilizing Pad D as a full production well that was prepared prior to the water transfer. In the spring of 2020, staff will return to the City Council with an update on Pad D and a discussion about the potential changes to the environmental strategy necessary to utilize it as an emergency/back up well.

Adopted Water Fees

Water Capacity Fee
Council also approved a Water Capacity Fee charged on qualifying projects to: (1) recover the costs of water system infrastructure and water supply to ensure that future development pays its own way and does not place a burden on existing customers; and, (2) equitably recovers costs based on the new or increased capacity needs of new or intensified development.

Water Meter Replacement Fee
The City enacted a Water Meter Surcharge in October 2015 to address the need to replace the many aged water meters in the system. Currently over 1600 water meters have been replaced by AWE, primarily on an as-needed basis when meters are identified in the field as damaged. The remaining 2,500 water meters will be replaced within two years Staff and AWE/Veolia coordinating the water meter replacement program that will replace all old meters within the City within two years. Staff will return to Council with the details on this project.

Water Capital Infrastructure Surcharge
In October 2015, the City enacted a Water Capital Surcharge to address several critical system deficiencies. The water rate capital surcharge was designed to secure debt financing

for these high priority needs plus provide a small amount of additional annual funding for critical projects.

The Water Capital Improvement Surcharge generates an estimated $500,000 per year. This revenue provides a local match and financing to leverage outside funding, including grants, loans, and debt. The Water Capital Improvement Surcharge will be used to implement the highest priority capital projects.

A primary goal of implementing a Water Capital Improvement Surcharge is to fund projects that will expand the water supply, upgrading watermains and adding storage capacity, and allowing the City to have secondary water sources in emergency events when SFPUC water is not safe or available. The Water Capital Improvements Surcharge will be the financing cornerstone of the CAP required by the SWCRB Citation.

Water Distribution System Deficiencies

The City's water distribution system is suffering from substantial deferred maintenance. The pipes are old and break often. It consists of a pressurized network of 1½ to 12-inch diameter pipes. The minimum standard pipeline diameter for water distribution mains in the system should be eight (8) inches. The water system has 135,000 linear feet of six or less than six-inch pipelines and 300 fire hydrants. Overall, the system is aged, highly corroded, beyond its operational life, and with a patchwork of various pipe materials. Thus, approximately 70% of the water system, or 25.6 miles of pipe are below minimum standards.

Breaks in the distribution system are been repaired as they occur, and improvements have been limited. The water distribution system needs upgrading with larger-diameter pipes to meet future system demands, and to provide minimum system pressures and fire flow requirements. The City's 2018 Capital Improvement Program (CIP) as well as the 2010 Water System Master Plan documents the needed improvements to the existing infrastructure. Defined CIP projects include new water storage tanks, emergency water connections, groundwater wells to meet emergency and back-up needs, and the upgrade and extension of City water mains. Currently, these projects are unfunded but are essential to serve existing residents and future development demands.

It is also recognized that nearly half of the City's existing water mains are over 50 years old and have reached or will soon reach the end of their useful life, and costly failures will occur more frequently unless the City establishes a program to proactively fund the replacement and upgrade of these aging lines. The total estimated cost for replacing the water lines and funding the CIP water infrastructure projects is estimated to be $75 million (adjusted to 2020 construction costs.) Thus, while having an adequate water supply is essential, funding necessary water infrastructure improvements on the water distribution system is just as critical and represents by far the more significant cost burden for the City. The water rate capital surcharge is not adequate to fund these projects. The City anticipates pursuing a variety of funding sources in future years to help fund these water main improvement needs,

Without addressing the City water flow deficiencies, the City will not be able to approve additional developments and new projects. The fact that we currently have more than 7 Million square feet of non-residential, and more than one thousand residential units are in the pipelines. Fire flow data at various locations in the City, including the southside of the City (Willow and Woodland Neighborhood); and the Ravenswood Business District are currently

coming at unacceptable levels; therefore; impacting the City's ability to approve some of the development projects that already approved by the City Council. Critical housing projects, such as on City's own 965 Weeks Street, will also be impacted. Constructing new watermains to supply more water flow to these areas is critical to addressing the fire flow requirements as required by the Fire Code. Constructing new watermains will improve system reliability, water quality, reduce waste of water and improve fire flow and pressures.

Corrective Action Plan (CAP)

Capital system improvement needs are reinforced by the Corrective Action Plan (CAP) issued by State Water Resources Control Board (SWRCB) following the release of untreated water in March of 2015 by the SFPUC. Staff is currently developing implementation plans for Pad D Groundwater Well, establishing emergency interties, and identifying and planning for water storage tank(s), a comprehensive and pro-active pipeline replacement project. Additionally, Council recently approved a risk-study of the water distribution system in order to support prioritization of critical improvements. Going forward, several projects are necessary for continued improvement of water system reliability.

Water Interties

The City currently has three interties with other adjacent water systems: two, one-way interties with Palo Alto Park Mutual Water Company and O'Connor Tract Co-operative Water Company, and one intertie with the City of Menlo Park. The City previously had an intertie with the City of Palo Alto and is currently working on a draft agreement to reconstruct the intertie before the end of this year (2020).

Water System Improvements

To meet current and future water demands, number of capital improvement projects are needed to address current, ongoing development needs, and to attract additional development that could pay fees for the additional water improvements mentioned above. Some of these projects will focus mainly on addressing fire flow in two areas of the city:

A. The southside (Willow and Woodland Neighborhood); and
B. The Ravenswood Business District as defined by the 4 Corners Specific Plan.

Tier I, Short-Mid Term Projects:
Staff identified a number of short to midterm projects that can improve water flow to the City distribution system and address fire flow deficiencies in most of the city. Staff with the assistance of its Consultant, Fryer & Laureta, Inc., ran hydraulic models to determine the impact of each of the following improvements on the City water distribution system. These displays will be presented to the Council with the hydraulic model results. Some of the short to midterm projects include the following:

1. O'Brien Turnout Upgrade at the SFPUC Regional Water System

The water supply turnouts at the SFPUC Regional Water System are located at Willow Road, O'Brien Drive and University Avenue. Water comes from the SFPUC Hetch Hetchy System at pressures ranging from 105 to 140 psi Pressure-regulating valves at each turnout reduce the pressure to an acceptable operational pressure. The operation pressure is 70 psi at Willow Road turnout, 75 psi at O'Brien Drive turnout, and 75 psi at University Avenue turnout.

The City is currently working with the SFPUC to upgrade the size of the turnout at the O'Brien Drive from one existing 6" to two 8" Water Meters. This allowing for more water flow to the City. Construction on this project will commence in early February 2020 and will be completed in less than two months thereafter.

2. New Water Main on Woodland Avenue (across University Avenue)

This project will construct a missing gap in the water distribution system on the southside of the City. This project is essential to the water safety in that portion of the City.

3. New 12" Water Transmission Main to Meet Current and Future flow Demands

Fire flow data at various locations in the City, including the southside (Willow and Woodland Neighborhood); and the Ravenswood Business District are currently coming at unacceptable levels; therefore; impacting the City's ability to approve some of the development projects that already approved by the City Council. Critical housing projects, such as on City's own 965 Weeks Street, will also be impacted. Constructing new watermains to supply more water flow to these areas is critical to addressing the fire flow requirements as required by the Fire Code. Constructing new watermains will improve system reliability, water quality, reduce waste of water and improve fire flow and pressures.

4. Construct Water Intertie with Palo Alto

The City of East Palo Alto had an emergency inter-tie with the City of Palo Alto in the former University Circle redevelopment project area. During the construction of the Four Seasons Hotel, that inter-tie was disconnected. As a result, this emergency supply water source is no longer available. Reestablishing the inter-tie is important, especially for fire prevention, given that the west side of the City experiences chronic low fire flow pressure.

In order to re-establish this emergency water supply connection, the City would first have to enter into a water supply agreement regarding this connection with the City of Palo Alto, and second, build the connection itself. The City completed the design and shared it with Palo Alto for final comment and approval. The cost of establishing the inter-tie is preliminarily estimated at $200,000.

The Inter-tie will be metered and programmed to open automatically if the pressure in the City water system drops below the required standard (i.e. currently 20 psi). An agreement on when and how the intertie can be used is being prepared by Palo Alto and East Palo Staff. The final draft of the agreement will be presented to the City Council for approval when ready.

TABLE 1-WATER SYSTEM IMPROVEMENTS, Tier I Projects

Tier I Projects	Estimated Cost ($)	Completion Date	Funding Status/Source
1. O'Brien Turnout Upgrade	**200,000**	**April 2020**	**Funded/ Water Rate Surcharge**
2. New Watermain, Closing Gap	**250,000**	**November**	**Funded/Water**

Across University		**2020**	**Rate Surcharge**
3. New 12-inch Transmission Main	**5,000,000**	**September 2021* *Subject to availability of funds**	**Unfunded, Pursue IIG from the State**
4. Construct water Intertie with Palo Alto	**$220,000**	**November 2020**	**Funded/Water Rate Surcharge**

Tier II, Long Term, Projects:

5. Construct new turnout at the SFPUC Hetch Hetchy Water System, upstream of University Avenue

This project will provide the City with another turnout on the SFPUC-Hetch Hetchy Regional Water System. The new turnout is located upstream of University Avenue to supply additional water to the RBD. This project is not funded and will be paid for from water capacity fee and other impact fees.

6. Install 12-inch transmission watermain on Purdue Street, from Fordham Street to Demeter Street.

The additional water supply is needed to address the anticipated increase in water flow demands in the Ravenswood Business District and facilitate the implementation of the Ravenswood/4-Corner Specific Plan. This project is not funded and will be paid for from water capacity fee and other impact fees.

7. New Water Storage Tank (2 Million Gallons)

The City currently does not have any water storage capacity other than the distribution system's pipes. To meet water system demands, the Gloria Study and the Water Master Plan identify the need of approximately 4.2 million gallons of storage for system equalization, fire flow, and emergency storage. The system will need booster station facilities to pressurize the water distribution system.

The City Water Master Plan recommends two storage tanks of two million gallons each, at an estimated cost of $10 million. Two sites have been preliminarily identified as potential sites for water storage tanks, one at the Northeast corner of University and Bay Road, and another at the intersection of Newell and West Bayshore Road, which may fit a smaller 1 MG tank. Furthermore, a 1.8 MG water storage tank to provide system equalization, fire flow, and emergency storage is needed to provide for the growth from the development envisioned in the Ravenswood/Four Corners Specific Plan.

Alternatively, the emergency storage can be distributed throughout the City in multiple locations, depending on the size of the site available. Multiple smaller sites would provide redundancy to the system and would better equalize flows and pressure than fewer larger tanks. However, fewer larger tanks would be potentially more cost effective.

8. Watermain Replacement Program

As listed in the City's 2018 Capital Improvement Program (CIP) as well as the 2010 Water System Master Plan upgrade and extension of City water mains is needed at various locations Citywide.

As previously mentioned, nearly half of the City's existing water mains are over 50 years old and have reached or will soon reach the end of their useful life, and costly failures will occur more frequently unless the City establishes a program to proactively fund the replacement and upgrade of these aging lines.

The total estimated cost for replacing the water lines and funding the CIP water infrastructure projects is estimated to be $75 million (adjusted to 2020 construction costs.) Thus, while having an adequate water supply is essential, funding necessary water infrastructure improvements on the water distribution system is just as critical and represents by far the more significant cost burden for the City. The water rate capital surcharge is not adequate to fund these projects. The City anticipates pursuing a variety of funding sources in future years to help fund these long-term water main improvements over 20+ years.

TABLE 1-WATER SYSTEM IMPROVEMENTS, Tier II, Long Term, Projects

Tier II Projects (Unfunded)	Estimated Cost ($)	Completion Date	Funding Status/Source
5. Construct new turnout at the SFPUC Hetch Hetchy Water System, upstream of University Avenue	**180,000**	**TBD**	**Unfunded**
6. Install12-inch transmission watermain on Purdue Street, from Fordham Street to Demeter Street.	**1,500,000**	**TBD**	**Unfunded**
7. New Water Storage Tank (2 MG)*	**$6,000,000**	**TBD**	**Unfunded**
8. Watermain Replacement Program	**$75,000,000**	**?**	**Unfunded**
* Does not include land acquisition			

Water Strategy Implementation Needs

Implementing the Water Strategy will take substantial staff and financial resources to undertake the necessary analysis and projects that will provide City Council the detailed information required to strategically and systematically improve the water system.

Therefore, making the implementation of the Water Strategy a priority for the City Council is essential to focus and marshal the legal, human, and financial resources necessary to successfully accomplish this task. A comprehensive strategy will include the development of regional partnerships with number of water related entities, among them:

- The San Francisco Public Utilities Commission (SFPUC)
- The Bay Area Water Supply, Conservation & Development Association (BAWSCA)
- The Santa Clara Valley Water District (SCVWD)
- The cities of Palo Alto and Menlo Park.
- The local mutual water companies, Palo Alto Park and O'Connor Tract.
- Menlo Park Fire District
- Private Developers
- State Department of Water Resources

A substantial involvement at the executive level, including the City Attorney and City Manager offices, Finance Manager as well as members of the City Council, and City staff for a sustained period is needed to implement the Water Strategy.