

Appendix H

Water Supply Assessment (WSA)

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AGENDA ITEM

Public Utilities Commission

City and County of San Francisco



DEPARTMENT Water Enterprise AGENDA NO. 11
MEETING DATE April 24, 2018

Approve Water Supply Assessment: Regular Calendar
Project Manager: Paula Kehoe

Approve Water Supply Assessment for the Potrero Power Station Project

Summary of Proposed Commission Action:	Confirm and approve the analysis and conclusions set forth in the Water Supply Assessment (WSA) for the proposed Potrero Power Station Project, pursuant to the State of California Water Code (Water Code) Section 10910 <i>et seq.</i> and California Environmental Quality Act (CEQA) Section 21151.9 and CEQA Guidelines Section 15155.
Background:	<p>California's Water Supply Assessment law (Water Code Sections 10910-10915) provides a nexus between the regional land use planning process and the environmental review process. The law also reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. The core of this law is the requirement for a public water system to prepare a water supply assessment (WSA) about whether available water supplies are sufficient to serve the demand generated by projects of a specified size ("water demand projects"), as well as the reasonably foreseeable cumulative demand in the region over the next 20 years under a range of hydrologic conditions. The WSA is required within 90 days of the time the public water system receives a request for such assessment from the lead agency preparing an environmental impact report (EIR) or negative declaration for a water demand project under CEQA.</p> <p>The San Francisco Planning Department, which carries out the City's lead agency responsibilities under CEQA, is preparing an EIR for the proposed Potrero Power Station Project, which is located along San Francisco's Central Waterfront on the site of the former Potrero Power Plant and is generally bound by 22nd Street to the north, the San Francisco Bay to the east, 23rd Street to the south, and Illinois Street to the west ("Proposed Project"). The Planning Department has identified the Proposed Project as a water demand project. The Proposed Project includes the redevelopment of the project site into a mixed-use development, including residential; commercial; hotel;</p>

APPROVAL: _____

COMMISSION
SECRETARY

Donna Hood

	<p>community facility; production, distribution, and repair; retail and other active uses; and parking. The Proposed Project would also include public access areas and open spaces and a grid of public streets and private alleys. Overall, the Proposed Project would involve the construction of up to approximately 5.3 million gross square feet.</p> <p>The content of a WSA is specified by the Water Code and includes identification of any existing water supply entitlements or contracts, and detailed information about groundwater supplies. It assesses the adequacy of water supplies to serve the proposed project and cumulative demand.</p> <p>The WSA must be completed by the public water supplier that would serve the proposed project and be approved by its governing body at a public meeting. Approval of a WSA is not approval of the development project for which the WSA is prepared. A WSA is an informational document required to be prepared for use in the City's environmental review of a proposed project under CEQA.</p> <p>The attached WSA prepared by San Francisco Public Utilities Commission (SFPUC) staff analyzes the sufficiency of long-term water supplies to serve the Proposed Project and cumulative development and concludes that there are adequate short-term and long-term water supplies to provide water service to the Proposed Project in compliance with the Water Code requirements.</p>
Result of Inaction:	A delay in approving this agenda item will result in the inability of the San Francisco Planning Department to complete the environmental review for the proposed Potrero Power Station Project. Under CEQA Guidelines Section 15155, the SFPUC may, within 90 days of the request for the WSA from the Planning Department, request a reasonable extension of time to complete the WSA.
Description of Action:	Approve the WSA for the proposed Potrero Power Station Project, pursuant to the State of California Water Code Section 10910.
Environmental Review:	Approval of the WSA is not considered "approval" of a "project" as those terms are defined by CEQA. The Water Supply Assessment is required by and prepared according to the CEQA Guidelines and is an informational document only, and does not constitute the Commission's approval of the Potrero Power Station project. Accordingly, this action is not subject to CEQA.
Recommendation:	SFPUC staff recommends that the Commission adopt the resolution.
Attachment:	1. Water Supply Assessment for the Potrero Power Station Project

PUBLIC UTILITIES COMMISSION

City and County of San Francisco

RESOLUTION NO. 18-0069

WHEREAS, Under the California Environmental Quality Act (CEQA) and California Water Code (Section 10910(g)(1)), the San Francisco Public Utilities Commission (SFPUC) is required to prepare and approve a Water Supply Assessment (WSA) for the cumulative water demands presented by the proposed Potrero Power Station Project, which is located along San Francisco's Central Waterfront on the site of the former Potrero Power Plant and is generally bound by 22nd Street to the north, the San Francisco Bay to the east, 23rd Street to the south, and Illinois Street to the west; and

WHEREAS, The proposed Potrero Power Station Project would include the redevelopment of the project site into a mixed-use development, including residential; commercial; hotel; community facility; production, distribution, and repair; retail and other active uses; and parking; as well as public access areas, open spaces, and a grid of public streets and private alleys; and involve the construction of up to approximately 5.3 million gross square feet; and

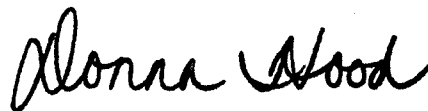
WHEREAS, Approval of the WSA as an informational document is not considered an approval action as defined by CEQA; and

WHEREAS, A WSA must be approved at a public meeting by the governing body of the public water supplier that would serve the proposed project; and

WHEREAS, The SFPUC staff prepared a WSA for the proposed Potrero Power Station Project, dated March 27, 2018, which is attached hereto and concludes that the SFPUC has adequate water supplies to meet the Project's water demands through 2040; now, therefore, be it

RESOLVED, This Commission approves the attached Water Supply Assessment dated March 27, 2018 for the proposed Potrero Power Station Project, which is located along San Francisco's Central Waterfront on the site of the former Potrero Power Plant and is generally bound by 22nd Street to the north, the San Francisco Bay to the east, 23rd Street to the south, and Illinois Street to the west, pursuant to the State of California Water Code Section 10910(g).

I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at its meeting of April 24, 2018.



Secretary, Public Utilities Commission




San Francisco Water Power Sewer


Services of the San Francisco Public Utilities Commission

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March 27, 2018

TO: Commissioner Anson Moran, President
Commissioner Ike Kwon, Vice President
Commissioner Ann Moller Caen
Commissioner Francesca Vietor
Commissioner Vince Courtney

THROUGH: Harlan L. Kelly, Jr., General Manager 

FROM: Steven R. Ritchie, Assistant General Manager, Water 

RE: Water Supply Assessment for the Potrero Power Station Project

1.0 Summary

1.1 Introduction

Under the Water Supply Assessment law (Sections 10910 through 10915 of the California Water Code), urban water suppliers like the San Francisco Public Utilities Commission (SFPUC) must furnish a Water Supply Assessment (WSA) to the city or county that has jurisdiction to approve the environmental documentation for certain qualifying projects (as defined in Water Code Section 10912 (a)) subject to the California Environmental Quality Act (CEQA). The WSA process typically relies on information contained in a water supplier's Urban Water Management Plan (UWMP), and involves answering specific questions related to the estimated water demand of the proposed project. This memo serves as the WSA for the proposed Potrero Power Station Project ("proposed project"), for use in the preparation of an environmental impact report by the City and County of San Francisco Planning Department (case no. 2017-011878ENV, San Francisco Planning Department).

1.1.1 2015 Urban Water Management Plan

The SFPUC's most current UWMP is the UWMP update for 2015, which was adopted in June 2016. The water demand projections in the UWMP incorporated 2012 Land Use Allocation (LUA 2012) housing and employment growth projections from the San Francisco Planning Department.

The WSA for a qualifying project within the SFPUC's retail service area may use information from the UWMP. Therefore, ***the 2015 UWMP is incorporated via references throughout this WSA shown in bold, italicized text.*** The UWMP may be accessed at www.sfwater.org/uwmp.

Mark Farrell
Mayor

Ike Kwon
President

Vince Courtney
Vice President

Ann Moller Caen
Commissioner

Francesca Vietor
Commissioner

Anson Moran
Commissioner

Harlan L. Kelly, Jr.
General Manager

OUR MISSION: To provide our customers with high-quality, efficient and reliable water, power and sewer services in a manner that values environmental and community interests and sustains the resources entrusted to our care.



1.1.2 Basis for Requiring a WSA for the Proposed Project

The proposed project has not been the subject of a previous WSA, nor has it been part of a larger project for which a WSA was completed. The proposed project qualifies for preparation of a WSA under Water Code Section 10912(a) because it is a mixed-use development that includes more than 500 residential dwelling units and 250,000 square feet of commercial office space. The proposed project is characterized further in Section 1.2.

1.1.3 Conclusion of this WSA

In this WSA, the SFPUC concludes that there are adequate water supplies to serve the proposed project and cumulative retail water demands during normal years, single dry years, and multiple dry years over a 20-year planning horizon from 2020 through 2040. Additional information on supply sufficiency is provided in Section 4.2, Findings.

1.2 *Proposed Project Description*

California Barrel Company LLC, the project sponsor, seeks to redevelop approximately 28.8 acres located along San Francisco's Central Waterfront encompassing the site for the former Potrero Power Plant that closed in 2011. The project site is generally bound by 22nd Street to the north, the San Francisco Bay to the east, 23rd Street to the south, and Illinois Street to the west. The proposed project includes the redevelopment of the project site into a mixed-use development including residential; commercial; hotel; community facility; production, distribution, and repair (PDR); retail and other active uses; and parking. The proposed project would also include public access areas and open spaces and a grid of public streets and private alleys. Overall, the proposed project would involve the construction of up to approximately 5.3 million gross square feet.

In addition to the Target, or Preferred, Development Program, two additional scenarios—a Maximum Residential Development Program and a Maximum Commercial Development Program—were analyzed. However, for the purpose of the WSA, only the Maximum Residential Development Program is assessed for water supply as it would result in a higher water demand estimate and would encompass the Maximum Commercial Development Program Demands. Refer to Attachment B for additional details on the proposed project scenarios.

Total construction is estimated to occur over a 15-year period and several phases, and is anticipated from the beginning of 2020 to the end of 2034. Additional information about the phasing plan is available in Attachment B.

2.0 Water Supply

This section reviews San Francisco's existing and planned water supplies.

2.1 *Regional Water System*

See **Section 3.1 of the UWMP** for descriptions of the Regional Water System (RWS) and **Section 6.1 of the UWMP** for water rights held by City and County of San Francisco and the SFPUC Water System Improvement Program (WSIP).

2.2 *Existing Retail Supplies*

Retail water supplies from the RWS are described in **Section 6.1 of the UWMP**.

Local groundwater supplies, including the Westside Groundwater Basin, Central Groundwater Sub Basin, and Sunol Filter Gallery Subsurface Diversions, are described in **Section 6.2.1 of the UWMP**.

Local recycled water supplies, including the Harding Park Recycled Water Project and Pacifica Recycled Water Project, are described in **Section 6.2.1 of the UWMP**.

2.3 Planned Retail Water Supply Sources

The San Francisco Groundwater Supply Project is described in **Section 6.2.2 of the UWMP**.

The proposed Westside and Eastside Recycled Water Projects, as well as non-potable water supplies associated with onsite water systems implemented in compliance with San Francisco's Non-potable Water Ordinance (Health Code Chapter 12C), are also described in **Section 6.2.2 of the UWMP**.

2.4 Summary of Current and Future Retail Water Supplies

A breakdown of water supply sources for meeting SFPUC retail water demand through 2040 in normal years is provided in **Section 6.2.5 of the UWMP**.

2.5 Dry-Year Water Supplies

A description of dry-year supplies developed under WSIP is provided in **Section 7.2 of the UWMP**. Other water supply reliability projects and efforts that are currently underway or completed are described in **Section 7.4 of the UWMP**. A breakdown of water supply sources for meeting SFPUC retail water demand through 2040 in multiple dry years are provided in **Section 7.5 of the UWMP**. For a single dry year, the retail RWS allocation and, thus, the breakdown of water supply sources would be the same as those in a normal year.

3.0 Water Demand

This section reviews the climatic and demographic factors that may affect San Francisco's water use, projected retail water demands, and the demand associated with the proposed project.

3.1 Climate

San Francisco has a Mediterranean climate. Summers are cool and winters are mild with infrequent rainfall. Temperatures in the San Francisco area average 57 degrees Fahrenheit annually, ranging from the mid-40s in winter to the upper 60s in late summer. Strong onshore flow of wind in summer keeps the air cool, generating fog through September. The warmest temperatures generally occur in September and October. Rainfall in the San Francisco area averages about 22 inches per year and is generally confined to the "wet" season from late October to early May. Except for occasional light drizzles from thick marine stratus clouds, summers are nearly completely dry. A summary of the temperature and rainfall data for the City of San Francisco is included in Table 1.

Table 1: San Francisco Climate Summary

Month	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)	Average Monthly Rainfall (inches)
January	58.0	45.7	4.36
February	60.3	47.3	4.41
March	61.4	48.1	2.98
April	62.3	49.1	1.38
May	63.2	50.9	0.68
June	64.8	52.7	0.18
July	65.6	54.3	0.02
August	66.6	55.3	0.06
September	68.1	55.0	0.19
October	67.8	53.3	1.04
November	61.2	48.1	2.85
December	58.3	45.9	4.33
Annual Average	63.3	50.6	22.45
Source: Western Regional Climate Center (www.wrcc.dri.edu), 1981-2010 data from two San Francisco monitoring stations (Mission Dolores/SF#047772 and Richmond/SF#047767).			

3.2 Projected Growth

Projections of population growth in the retail service area through 2040 are presented in **Section 3.2.2 of the UWMP**. The corresponding LUA 2012 projections for housing and employment in San Francisco, which are incorporated into the projected retail water demands, are provided in **Appendix E of the UWMP**.

3.3 Projected Retail Water Demands

For the 2015 UWMP, the SFPUC developed a new set of models that incorporate socioeconomic factors to project retail demands through 2040. These models incorporate the latest housing and employment projections from LUA 2012. **See Section 4.1 of the UWMP** for tabulated retail water demand projections through 2040 and a description of the model methodology.

3.4 Proposed Project Water Demand

California Barrel Company LLC's engineer consultants provided a memo describing the methods and assumptions used to estimate the water demand of the proposed project, along with the resulting demand (Attachment B). The SFPUC reviewed the memo to ensure that the methodology is appropriate for the types of proposed water uses, the assumptions are valid and thoroughly documented along with verifiable data sources, and a professional standard of care was used. The SFPUC concluded that the demand estimates provided by the consultants are reasonable. Water demand associated with the proposed project over the 20-year planning horizon is shown in the following table.

Table 2: Water Demand Based on Project Phasing

Demand of Proposed Project (mgd)	2020	2025	2030	2035	2040
Potable Demand	—	0.057	0.159	0.251	0.251
Non-potable Demand	—	0.014	0.050	0.074	0.074
Total Demand	—	0.072	0.209	0.325	0.325
mgd = million gallons per day <u>Notes:</u> The estimates above reflect the Maximum Residential Development Program. Water demand estimates for the Target Development Program and Maximum Commercial Development Program are lower and are provided in Attachment B. Total demand conservatively assumes that all demands are met with potable supplies. For the estimated portion of demands that could be met with non-potable supplies, refer to Attachment B. Construction would be phased and occur between 2020 and 2034.					

The San Francisco Planning Department has determined that the proposed project is encompassed within the projections presented in LUA 2012 as indicated in the letter from the Planning Department to the SFPUC (Attachment A). Therefore, the demand of the proposed project is also encompassed within the San Francisco retail water demands that are presented in **Section 4.1 of the UWMP**, which considers retail water demand based on the LUA 2012 projections. The following table shows the demand of the proposed project relative to total retail demand.

Table 3: Proposed Project Demand Relative to Total Retail Demand

	2020	2025	2030	2035	2040
Total Retail Demand (mgd) ¹	77.5	79.0	82.3	85.9	89.9
Total Demand of Proposed Project (mgd)	—	0.072	0.209	0.325	0.325
Portion of Total Retail Demand ²	—	0.09%	0.25%	0.38%	0.36%
<u>Notes:</u> 1. Retail water demands per Table 4-1 of the UWMP . 2. The proposed project is accounted for in the LUA 2012 projections and subsequent retail water demand projections.					

4.0 Conclusion

4.1 Comparison of Projected Supply and Demand

Section 7.5 of the UWMP compares the SFPUC's retail water supplies and demands through 2040 during normal year, single dry-, and multiple dry-year periods. See Table 4, below, which is adapted from the UWMP (Table 7-4). As explained previously in Section 3.4, water demands associated with the proposed project are already captured in the retail demand projections presented in the UWMP. The proposed project is expected to represent 0.09 to 0.38 percent of the total retail water demand.

Table 4: Projected Supply and Demand Comparison (mgd)

		Normal Year	Single Dry Year ¹	Multiple Dry Years		
				Year 1 ¹	Year 2 ²	Year 3 ²
2020	Total Retail Demand ³	77.5	77.5	77.5	77.5	77.5
	Total Retail Supply ⁴	77.5	77.5	77.5	77.5	77.5
	Surplus/(Deficit)	0	0	0	0	0
2025	Total Retail Demand ³	79.0	79.0	79.0	79.0	79.0
	Total Retail Supply ⁴	79.0	79.0	79.0	79.0	79.0
	Surplus/(Deficit)	0	0	0	0	0
2030	Total Retail Demand ³	82.3	82.3	82.3	82.3	82.3
	Total Retail Supply ⁴	82.3	82.3	82.3	82.3	82.3
	Surplus/(Deficit)	0	0	0	0	0
2035	Total Retail Demand ³	85.9	85.9	85.9	85.9	85.9
	Total Retail Supply ⁴	85.9	85.9	85.9	85.9	85.9
	Surplus/(Deficit)	0	0	0	0	0
2040	Total Retail Demand ³	89.9	89.9	89.9	89.9	89.9
	Total Retail Supply ⁴	89.9	89.9	89.9	88.8	88.8
	Surplus/(Deficit)	0	0	0	(1.1)	(1.1)
Notes:						
1. During a single dry year and multiple dry year 1, a system-wide shortage of 10% is in effect. Under the Water Shortage Allocation Plan (WSAP), the retail supply allocation at this stage of shortage is 36.0% of available RWS supply, or 85.9 mgd. However, due to the Phased WSIP Variant, only 81 mgd of RWS supply can be delivered. RWS supply is capped at this amount.						
2. During multiple dry years 2 and 3, a system-wide shortage of 20% is in effect. Under the WSAP, the retail supply allocation at this stage of shortage is 37.5% of available RWS supply, or 79.5 mgd. RWS supply is capped at this amount.						
3. Total retail demands correspond to those in Table 4-1 of the UWMP , and reflect both passive and active conservation, as well as water loss.						
4. Total retail supplies correspond to those in Table 6-7 of the UWMP . Procedures for RWS allocations and the WSAP are described in Section 8.3 of the UWMP . Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, if groundwater and recycled water supplies are not available, up to 81 mgd, or the corresponding capped amount in dry years, of RWS supply could be used.						

The LUA 2012 projections result in a retail demand in 2035 of 85.9 mgd, which represents a 5.0 mgd, or 6 percent, increase over the 2035 demand projected in the 2010 UWMP. The ability to meet the demand of the retail customers is in large part due to development of 10 mgd of local WSIP supplies, including conservation, groundwater, and recycled water. These supplies are anticipated to be fully implemented over the next 10 to 15 years.

If planned future water supply projects (i.e., San Francisco Groundwater Supply Project, Westside Recycled Water Project, Eastside Recycled Water Project, and onsite non-potable supplies) are not implemented, normal-year supplies may not be enough to meet projected retail demands. To balance any water supply deficits during normal years, the SFPUC may import additional water from the RWS beyond the retail allocation of 81 mgd, with mitigation implemented by the SFPUC and potential environmental surcharges if RWS deliveries exceed the 265 mgd interim supply limitation.

If dry-year supply projects (i.e., Calaveras Dam Replacement Project, Lower Crystal Springs Dam Improvements Project, Alameda Creek Recapture, Regional Groundwater Storage and Recovery Project, and water transfers) are not implemented, existing dry year supplies may not be enough to meet projected retail demands. To balance any water supply deficits during dry years, the SFPUC may reduce system deliveries and impose customer rationing.

The SFPUC remains committed to meeting the level of service goals and objectives outlined under WSIP. In addition, the SFPUC continues to explore other future supplies, including:

- Development of additional conservation and recycling.
- Development of additional groundwater supplies.
- Securing of additional water transfer volumes.
- Increasing Tuolumne River supply.

4.2 Findings

Regarding the availability of water supplies to serve the proposed project beginning as soon as 2025, the SFPUC finds, based on the entire record before it, as follows:

- During normal years, single dry years, and multiple dry years, the SFPUC has sufficient water supplies to serve the proposed project.
- With the addition of planned retail supplies, the SFPUC has sufficient water supplies available to serve its retail customers, including the demands of the proposed project, existing customers, and foreseeable future development.

Approval of this WSA by the Commission is not equivalent to approval of the development project for which the WSA is prepared. A WSA is an informational document required to be prepared for use in the City's environmental review of a project under CEQA. It assesses the adequacy of water supplies to serve the proposed project and cumulative demand.

Furthermore, this WSA is not a "will serve" letter and does not verify the adequacy of existing distribution system capacity to serve the proposed project. A "will serve" letter and/or hydraulic analysis must be requested separately from the SFPUC City Distribution Division to verify hydraulic capacity.

If there are any questions or concerns, please contact Steve Ritchie at (415) 934-5736 or SRitchie@sfwater.org.

Attachment A –

Communications from San Francisco Planning Department



SAN FRANCISCO PLANNING DEPARTMENT

MEMO

DATE: June 13, 2013

TO: SF Planning EP Planners & SFPUC Planners

FROM: Scott T. Edmondson, AICP; Aksel Olsen

RE: Project Types Represented in the Land Use Allocation

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This Memorandum explains the Planning Department's Land Use Allocation (LUA) and the types of projects included in the LUA. The 2012 LUA is the most recent update and uses the Association of Bay Area Governments' (ABAG) May 2012 Jobs-Housing Connection Scenario. As this memorandum explains, the Planning Department expects that the LUA will encompass the vast majority of development proposals that project sponsors will present to the Planning Department. This memorandum also identifies possible unusual circumstances under which EP Planners and the SF PUC Planners may want to consult further with the Planning Department's Information and Analysis Group to determine whether a project is encompassed within the LUA.

ABAG's Projections of San Francisco's Economic Growth and the LUA

The LUA takes ABAG's 30-year projections of citywide household and job growth and allocates them to smaller geographic units, in this case, the traffic analysis zones of the SF Transportation Authority's Countywide Transportation Model. Thus, the LUA does not project growth but simply allocates ABAG's growth projections to subarea locations within the city. The current 2012 LUA uses ABAG's Jobs-Housing Connection Scenario projections for San Francisco and covers the period from 2010 to 2040; these projections were released in May 2012 and are represented in five-year increments.

ABAG derives its demographic and economic growth projections from assumptions about long-term demographic and economic growth.¹ ABAG maintains its own set of regional models and develops each forecast with its in-house experts and private economic consultants.² The forecasting is informed by the best information and assumptions available through federal and State agencies, such as the State Department of Finance, and private sources. However, ABAG develops its forecast based on local knowledge from over 50 years of forecasting and develops the forecast to reflect local conditions in contrast to more general forecasting assumptions of State or federal sources. ABAG's estimate of total citywide growth for the 30-year period is expected to best represent actual growth at the end of the 30-year period. However, projected growth for any portion of the projection period, such as growth in a one-year or a five-year period, would be expected to vary from actual growth in such periods. Within the 30-year growth projection period, higher than average growth periods could be followed by lower than average growth periods such that growth over the period would ultimately equal the projected 30-year

total. All projection methodologies make assumptions based on the best available information at the time. To minimize the effects of imprecision intrinsic to any projections methodology when used in for planning decisions, ABAG follows professional best practices and updates its projections every two years. Accordingly, the Planning Department updates its LUA every two years. The planning practice of frequently updating projections and plans allows the incorporation of new information over time to provide for the most up-to-date projections.

The SFPUC updates its Urban Water Management Plan (UWMP) every five years. The UWMP typically relies on LUA projections or similar information. But, because the LUA is updated every two years, the SFPUC may want to review the LUA issued within SFPUC's 5-year UWMP cycle; and if it varies in a significant way from the SFPUC's projections used in its UWMP, discuss with Planning whether it should make any changes in its own water supply needs assessment during an UWMP cycle.

Types of Projects Included in the LUA

The LUA translates ABAG's projected household and job growth into total expected development in San Francisco over a 30-year period. The LUA translates ABAG's household growth into residential housing units and ABAG's job growth into commercial space.³ Thus, the LUA projections of housing units and commercial space include all project types expected from San Francisco growth, such as housing, office, retail, production-distribution-repair (PDR), visitor, and cultural-institutional-educational (CIE). The LUA does not exclude any project type or potential growth. As such, the LUA and the ABAG economic projections upon which it is based contain the best estimates available of reasonably foreseeable growth and development in San Francisco over a 30-year period.

Unusual Circumstances

The LUA can be considered to include all reasonably expected growth and development and it is frequently updated to correct for expected variations. Nevertheless, there are possible unusual circumstances under which the EP Planners or SFPUC Planners may want to request further Planning Department consultation with the Information and Analysis Group to determine if a particular project falls within the LUA. ABAG's projections and the Department's LUA take into account urban economic trends and based on that information capture all reasonably foreseeable growth in San Francisco. Limited capital and aggregate demand of any urban economy constrains growth. However, occasionally the reality or perception may arise that a project lies outside the normal growth constraints of the San Francisco economy for some reason, and therefore lies outside ABAG's projection's and the Department's current spatial allocation in its LUA.

One can envision the rare case of a project arising outside the City's economy (demand and capital) from an organization not located in San Francisco using nonprofit foundation funds or private donations to construct a large institutional project in San Francisco, such as a major hospital, a university, or an office complex. These projects would represent spending and demand beyond that normally active in the San Francisco economy, and therefore represent net additions to projected growth beyond that captured by ABAG's projections and reflected in the Department's LUA. Indicative characteristics of such projects

would include those with non-local sponsors, of large size, and for an institutional land use. Alternatively, very large project proposals from local project sponsors active in the SF economy involving a large site, land assembly, a planned unit development (PUDs), master plans, or area plan and rezoning proposals may warrant individual assessment for a range of reasons even though they are likely captured in ABAG's projections and the LUA. Such projects would be similar to recent projects such as Hunters Point/Candlestick, Park Merced, Treasure Island, Pier 70 Master Plan, Eastern Neighborhoods, or the Transit Center District Plan.

The bi-annual update of ABAG's projections and the LUA would be able to capture development associated with such projects. However, should such a project be proposed between updates, the EP Planners and SFPUC could treat its appearance as sufficient cause to request the Planning Department's assistance in determining whether to consider the project outside the latest LUA projections.

¹ Please see ABAG's summary of its research and forecasting on its website: <http://www.abag.ca.gov/planning/research/index.html>

² ABAG describes its current Jobs-Housing Scenario policy-based forecast here: http://onebayarea.org/pdf/IHCS/May_2012_Jobs_Housing_Connection_Strategy_Appendices_Low_Res.pdf.

³ The LUA citywide totals only differ slightly, up to within one percent of ABAG totals (+/-). The difference is produced by LUA's complex method of translating ABAG projections into development (residential units and commercial space) and allocating total citywide growth to subarea locations. The minor difference between the LUA and ABAG citywide totals is real in absolute terms, but not in the sense that they are different projections. The one percent difference does not constitute a difference of projections. ABAG and MTC consider variation of one percent in citywide totals, plus or minus, as sufficiently representing ABAG's projections for consistency with the MTC regional projections and modeling purposes (congestion management, etc.). Even if a few versions of the LUA must be done to make minor subarea spatial allocation corrections, as long as the LUA's citywide totals are within one percent of ABAG's projections, and ABAG's projections have not changed, the LUA citywide totals have not effectively changed either. Any of those LUA versions' citywide totals fully represent the same unchanged ABAG projection totals.

Attachment B –

Potrero Power Station Project Demand Memo



SAN FRANCISCO PLANNING DEPARTMENT

MEMO

DATE: March 21, 2018
TO: Fan Lau, SFPUC
FROM: Chris Thomas, Environmental Planning
CC: Rachel Schuett, Environmental Planning
RE: Potrero Power Plant Project Water Supply Assessment Request
(Planning Department Case No. 2017-011878ENV)

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Information:
415.558.6377

The purpose of this memorandum is to request that the San Francisco Public Utilities Commission (SFPUC) prepare a Water Supply Assessment (WSA) for the proposed Potrero Power Plant project, in compliance with CEQA Guidelines Section 15155 and Sections 10910 through 10915 of the California Water Code. As indicated in the attached memorandum, the project sponsor proposes to redevelop the project site (formerly the PG&E Potrero Power Plant) into an approximately 5.3 million gsf mixed-use development that would include residential, hotel, office and research development, community facilities and public open space land uses.

The project sponsor has provided project information intended to meet the requirements outlined in the SFPUC guidance memo dated September 6, 2016. The project would be phased. A summary of the project description, proposed average daily water demands for 2020, 2025, 2030 and 2035, and supporting tables prepared by the project sponsor's consultant (based on the SFPUC Non-Potable Water Calculator Version 7), are attached.

Should you have questions or need additional information from the Planning Department or the project sponsor, please contact me at 415-575-9036 or christopher.thomas@sfgov.org.

March 21, 2018
Job No.: 2747-000

M E M O R A N D U M

TO: Erin Epperson – Associate Capital

FROM: Angelo Obertello, P.E., LEED AP, Principal

SUBJECT: Potrero Power Station – Project Water Demand

The following provides a summary of the estimated potable and non-potable water demands associated with the Potrero Power Station project.

Project Description

The Potrero Power Station project (“Proposed Project”) area is approximately 28.8 acres located along San Francisco’s Central Waterfront. The project site is generally bound by 22nd Street to the north, the San Francisco Bay to the east, 23rd Street to the south and Illinois Street to the west.

The Proposed Project includes the redevelopment of the project site into a mixed-use development including residential, commercial, hotel, community facility, PDR, retail and other active uses, and parking. The Proposed Project would also include public access areas and open spaces and a grid of public streets and private alleys.

Overall, the Proposed Project would involve the construction of up to approximately 5.3 million gross square feet. The proposed target development program and maximum residential or commercial scenarios are outlined as follows:

Table 1: Proposed Development Program Scenarios

Proposed Building Use	Preferred Development Program	Maximum Residential Development Program	Maximum Commercial Development Program
Residential	2,682 units / 2,682,427 sf	3,014 units / 3,014,376 sf	2,441 units / 2,441,667 sf
Commercial (Hotel)	241,574 sf	0 sf	241,574 sf
Commercial (Office)	597,723 sf	421,952 sf	814,240 sf
Commercial (Research And Development)	645,738 sf	645,738 sf	645,738 sf
Commercial (Retail)	107,439 sf	107,439 sf	107,439 sf
Commercial (PRD)	45,040 sf	45,040 sf	45,040 sf
Community Facilities	100,938 sf	100,938 sf	100,938 sf
Assembly / Entertainment	25,000 sf	25,000 sf	25,000 sf
Parking	921,981 sf	931,614 sf	902,856 sf
Public Open Space	6.3 acres	6.3 acres	6.3 acres

Potrero Power Station – Project Water Demand

Page 2 of 3

March 21, 2018

Job No.: 2747-000

Potable water is currently available from existing potable water pipelines adjacent to the project site located in 22nd Street, 23rd Street and Illinois Street.

The project site is located within the City's designated recycled water use area and is subject to the Recycled Water Use Ordinance. Accordingly, the Proposed Project would install a recycled water distribution pipeline system throughout the project site.

The Proposed Project is also subject to the Non-Potable Water Ordinance. The proposed project would include the diversion and reuse of graywater and rainwater for toilet and urinal flushing, cooling towers and irrigation uses. The non-potable water generated within the project site would be distributed to the proposed buildings through the proposed recycled water pipeline system.

Existing Potable and Non-Potable Water Demand

The historical water use at the project site was associated with the PG&E Power Plant, which was closed in 2011. Since the PG&E Power Plant was closed in 2011, the site has on-going environmental remediation activities and some of the structures have been since demolished. The existing water use has been further reduced as there are only a small amount of remaining employees and uses within the project site. There is no available source or use of recycled water at the project site.

In order to estimate the historical potable water demand, a unit demand factor of 0.15 gallons per day per square foot has been applied to the existing building square footages. Prior to 2008 and adoption of California Green Building Standards, 0.10 gallons per day per square foot was a generally accepted water demand for office / commercial space. This demand factor has been increased to 0.15 gpd / sf to account for older, less efficient fixtures within the existing buildings. The existing water demand estimated is based on the square footage of the existing structures within project even though the majority of these existing structures housed power generation equipment that did not have a potable water demand. Table 2 outlines the estimated historical potable water demands at the project site.

Table 2: Existing Potable Water Demand

Building Uses	Unit	Demand Factor	Potable Water Demand	
			Average Daily Demand (gal per day)	Average Daily Demand (gpm)
Commercial (Industrial) ¹	107,000 sf	0.15 gpd / sf	16,050 gpd	11 gpm

Notes¹:

The existing square footages of the existing building within the project site are based upon the September 15, 2017 project application materials.

Proposed Potable and Non-Potable Water Demand

The potable and non-potable water demand calculations associated with each development program scenario for the Proposed Project are estimated using the SFPUC's Non-Potable Water Program district scale water calculator ("calculator").

The estimated indoor water demands were input to the calculator to reflect HVAC / Cooling Demands. The HVAC / Cooling water demands were estimated based on the projected cooling loads for each development program scenario. The cooling load of each land use within the development was estimated by Atelier Ten using energy models based on current 2016 Title 24 California Building Energy Efficiency Standards. The cooling load was converted to cooling tower water demands by adding the heat load from the chillers and auxiliary mechanical systems. Then the quantity of water was calculated based on the required amount to evaporate this heat load plus additional water to accommodate blowdown and drift. The cooling tower water demand input to the calculator represents a maximum estimate. The actual cooling tower water demands could be lower if heat recovery systems are installed to meet the heat loads in the buildings. The output from the calculator for each development program scenario is enclosed as Attachment 1.

Below are summary tables for the proposed Potable and Non-Potable Water Demands associated with the proposed project. The demands are provided by 5-year increments based on the proposed project Phasing Plan. The Phasing Plan is enclosed as Attachment 2. The highest water demand development program scenario is the maximum residential program.

Table 3: Cumulative Potable Water Demand

	Average Daily Water Demand (gpd)			
	2020	2025	2030	2035
Target Program	0	30,700	132,200	224,400
Maximum Residential Program	0	57,300	158,800	251,000
Maximum Commercial Program	0	30,700	117,400	205,000

Table 4: Cumulative Recycled Water Demand

	Average Daily Water Demand (gpd)			
	2020	2025	2030	2035
Target Program	0	16,700	55,000	78,900
Maximum Residential Program	0	14,400	49,900	73,800
Maximum Commercial Program	0	16,700	49,800	79,300

NON-POTABLE WATER CALCULATOR

Project Summary Sheet

Project Contact: Angelo Obertello
925-866-0322
aobertello@cbandg.com

Estimated Site/Building Permit Issuance Date: 1/1/2020



Total Gross Square Footage: 5,367,860

1. Demands and Supplies Summary

Demands Met by Non-Potable Supply for Project (gpy):	28,792,700	Meets Grant Criteria for Annual Offset in Year 2036
Demands Met by Non-Potable Supply for Project *:	26%	
Project Total Annual Water Demand (gpy) *:	110,681,535	
If Grant Offset Criteria Met, Occurs in Year:	2036	
Potable Make-Up Water Allocation (gpy):	1,910,686	Potable supplies are allocated to this project to meet remaining demands. Projects are allocated an additional 10% in potable supplies as a buffer.
Avg. Daily Wet Weather Potable Allocation (gpd):	5,006	Projects are allocated these potable supplies during wet weather months (October - March)
Avg. Daily Dry Weather Potable Allocation (gpd):	5,469	Projects are allocated these potable supplies during dry weather months (April - September)

*Note: Estimates based on Tab 6 - Building Potential Summary total water demand values. Manually entered non-potable demands that exceed auto-calculated non-potable demands from Tab 6 may result in Total Annual Water demands greater than the value used in this analysis

2. Building Information Summary

	Main Project Site 1	Site 2	Site 3
Project / Building Name:	Potrero Power Plant - Target Program		
Project Address:	420 23rd Street		
Assessor's Block & Lot No. / APN:	4232-006		
Year Online:	2036		
Building Type:	Mixres	Mixres	Mixres
Total Building Size (gross square footage or GSF):	5,367,860	0	0
Total Lot Size (ft²):	1,262,277	0	0
Number of Residential Units:	2,682	0	0
Impervious Surface Above Grade (ft²):	533,200	0	0
Impervious Surface Below Grade (ft²):	332,246	0	0
Landscaped Area (ft²):	207,810	0	0
Site Location (Zone):	Eastern SF	Eastern SF	Eastern SF

3. Summary of Nonpotable Demands and Supplies for the Project

Non-Potable Water Supply Estimates

On-site Alternate Water Source Supplies	Annual Supply (gpy)	Annual Supply (gpy)	Annual Supply (gpy)	Total (gpy)
Rainwater:	4,469,973	0	0	4,469,973
Stormwater:	3,586,006	0	0	3,586,006
Graywater:	47,561,467	0	0	47,561,467
Blackwater:	0	0	0	0
Foundation Drainage	0	0	0	0
Cooling & Other Supplies	1,452,868	0	0	1,452,868
TOTAL:	57,070,314	0	0	57,070,314

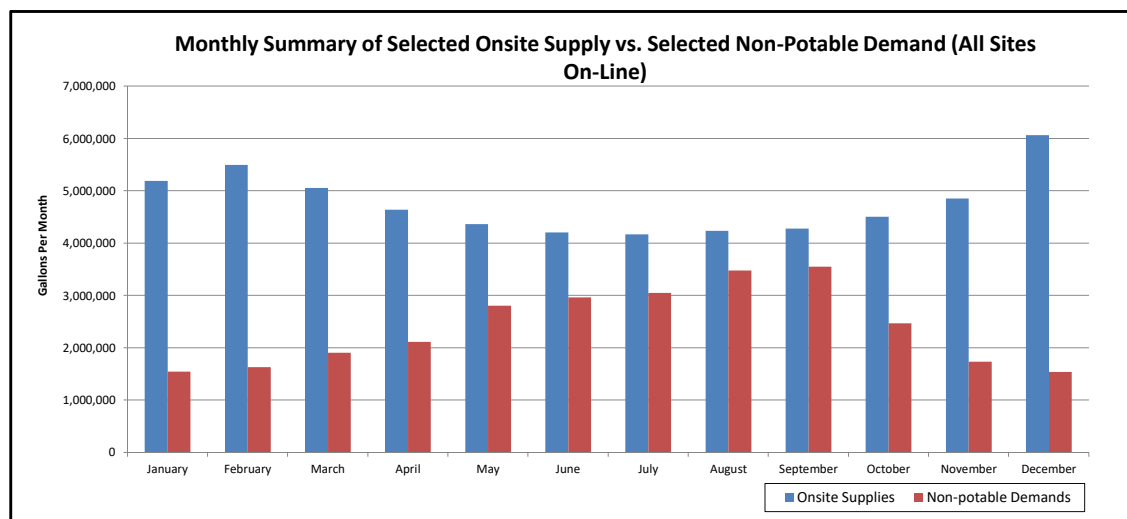
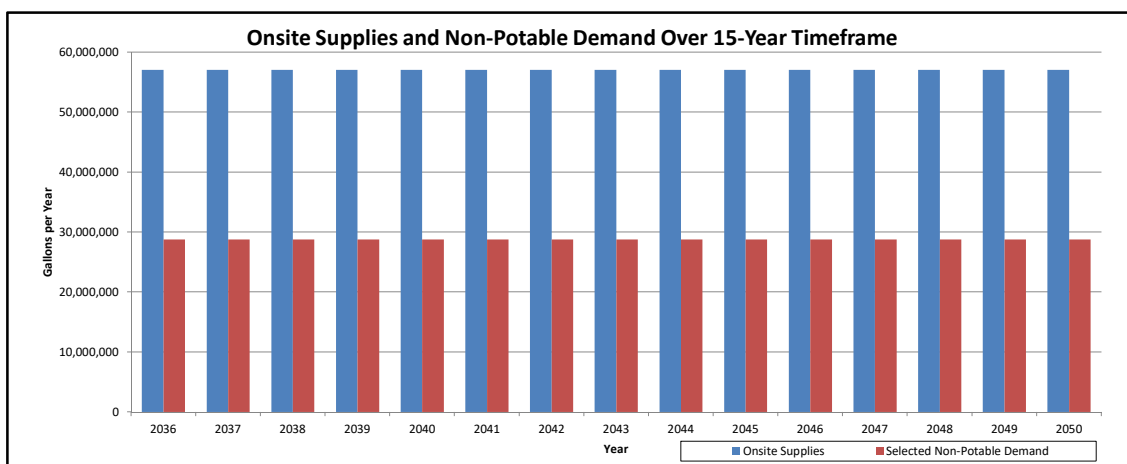
Non-Potable Applications Estimates

Project Specific Non-Potable Application Demands	Annual Demand (gpy)	Annual Demand (gpy)	Annual Demand (gpy)	Total (gpy)
Toilets/Urinals:	17,292,322	0	0	17,292,322
Irrigation:	1,814,537	0	0	1,814,537
Toilets/Urinals + Irrigation:	19,106,859	0	0	19,106,859
Cooling Tower:	9,685,785	0	0	9,685,785
Commercial Laundry & Other	0	0	0	0
TOTAL:	28,792,644	0	0	28,792,644

4. Project Phasing

15-Year Timeframe	SITE 1: Potrero Power Plant - Target Program -- 420 23rd Street		SITE 2: --		SITE 3: --		Re-Used Non-Potable Supplies (gpy)
	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	
2036	57,070,314	28,792,644	0	0	0	0	28,792,644
2037	57,070,314	28,792,644	0	0	0	0	28,792,644
2038	57,070,314	28,792,644	0	0	0	0	28,792,644
2039	57,070,314	28,792,644	0	0	0	0	28,792,644
2040	57,070,314	28,792,644	0	0	0	0	28,792,644
2041	57,070,314	28,792,644	0	0	0	0	28,792,644
2042	57,070,314	28,792,644	0	0	0	0	28,792,644
2043	57,070,314	28,792,644	0	0	0	0	28,792,644
2044	57,070,314	28,792,644	0	0	0	0	28,792,644
2045	57,070,314	28,792,644	0	0	0	0	28,792,644
2046	57,070,314	28,792,644	0	0	0	0	28,792,644
2047	57,070,314	28,792,644	0	0	0	0	28,792,644
2048	57,070,314	28,792,644	0	0	0	0	28,792,644
2049	57,070,314	28,792,644	0	0	0	0	28,792,644
2050	57,070,314	28,792,644	0	0	0	0	28,792,644

This offset analysis assumes the full year of supplies is available to offset non-potable demands. Some scenarios may require storage to store excess supplies from one month in order to use those supplies in another month with unmet demands.



NON-POTABLE WATER CALCULATOR

Project Summary Sheet

Project Contact: Angelo Obertello
925-866-0322
aobertello@cbandg.com

Estimated Site/Building Permit Issuance Date: 1/1/2020



Total Gross Square Footage: 5,292,097

1. Demands and Supplies Summary

Demands Met by Non-Potable Supply for Project (gpy):	26,940,000	Meets Grant Criteria for Annual Offset in Year 2036
Demands Met by Non-Potable Supply for Project *:	23%	
Project Total Annual Water Demand (gpy) *:	118,538,329	
If Grant Offset Criteria Met, Occurs in Year:	2036	
Potable Make-Up Water Allocation (gpy):	1,866,025	Potable supplies are allocated to this project to meet remaining demands. Projects are allocated an additional 10% in potable supplies as a buffer.
Avg. Daily Wet Weather Potable Allocation (gpd):	4,883	Projects are allocated these potable supplies during wet weather months (October - March)
Avg. Daily Dry Weather Potable Allocation (gpd):	5,347	Projects are allocated these potable supplies during dry weather months (April - September)

*Note: Estimates based on Tab 6 - Building Potential Summary total water demand values. Manually entered non-potable demands that exceed auto-calculated non-potable demands from Tab 6 may result in Total Annual Water demands greater than the value used in this analysis

2. Building Information Summary

	Main Project Site 1	Site 2	Site 3
Project / Building Name:	Potrero Power Plant - Max Res Program		
Project Address:	420 23rd Street		
Assessor's Block & Lot No. / APN:	4232-006		
Year Online:	2036		
Building Type:	Mixres	Mixres	Mixres
Total Building Size (gross square footage or GSF):	5,292,097	0	0
Total Lot Size (ft²):	1,262,277	0	0
Number of Residential Units:	3,014	0	0
Impervious Surface Above Grade (ft²):	533,200	0	0
Impervious Surface Below Grade (ft²):	332,246	0	0
Landscaped Area (ft²):	207,810	0	0
Site Location (Zone):	Eastern SF	Eastern SF	Eastern SF

3. Summary of Nonpotable Demands and Supplies for the Project

Non-Potable Water Supply Estimates

On-site Alternate Water Source Supplies	Annual Supply (gpy)	Annual Supply (gpy)	Annual Supply (gpy)	Total (gpy)
Rainwater:	4,349,681	0	0	4,349,681
Stormwater:	3,524,944	0	0	3,524,944
Graywater:	53,190,626	0	0	53,190,626
Blackwater:	0	0	0	0
Foundation Drainage	0	0	0	0
Cooling & Other Supplies	1,241,952	0	0	1,241,952
TOTAL:	62,307,203	0	0	62,307,203

Non-Potable Applications Estimates

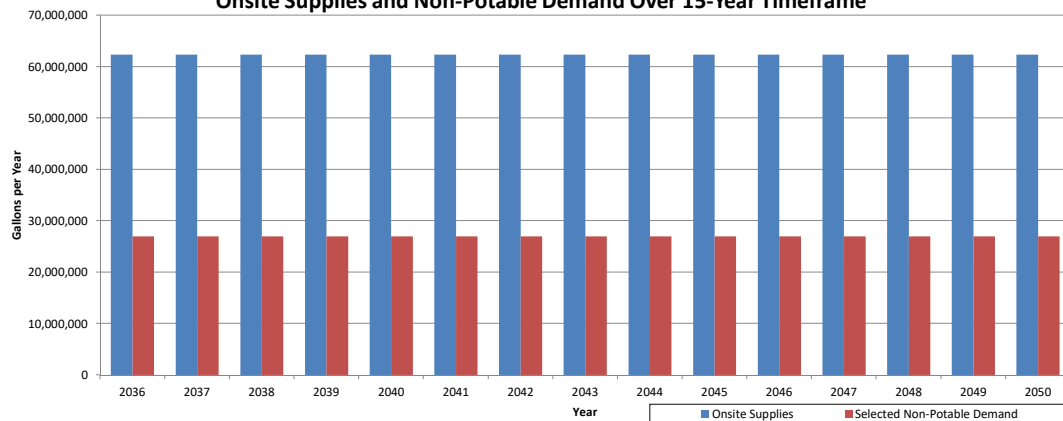
Project Specific Non-Potable Application Demands	Annual Demand (gpy)	Annual Demand (gpy)	Annual Demand (gpy)	Total (gpy)
Toilets/Urinals:	16,845,715	0	0	16,845,715
Irrigation:	1,814,537	0	0	1,814,537
Toilets/Urinals + Irrigation:	18,660,252	0	0	18,660,252
Cooling Tower:	8,279,677	0	0	8,279,677
Commercial Laundry & Other	0	0	0	0
TOTAL:	26,939,929	0	0	26,939,929

4. Project Phasing

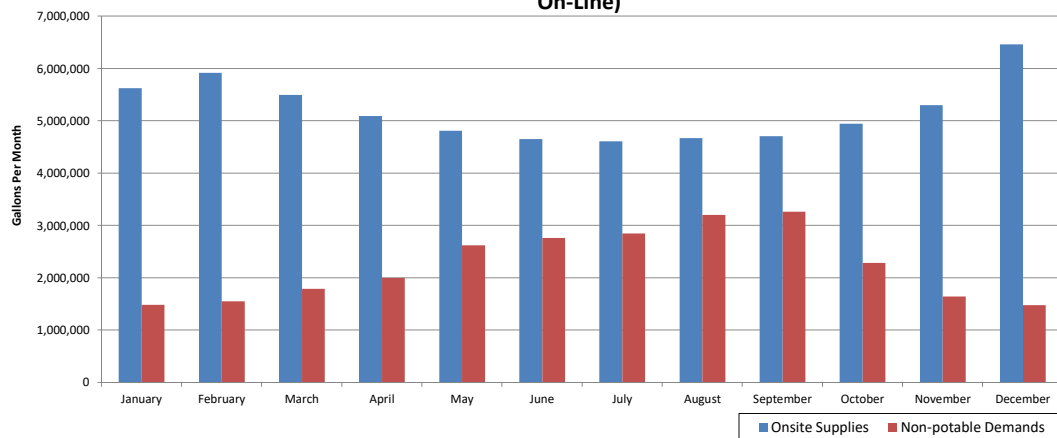
15-Year Timeframe	SITE 1: Potrero Power Plant - Max Res Program -- 420 23rd Street		SITE 2: --		SITE 3: --		Re-Used Non-Potable Supplies (gpy)
	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	
2036	62,307,203	26,939,929	0	0	0	0	26,939,929
2037	62,307,203	26,939,929	0	0	0	0	26,939,929
2038	62,307,203	26,939,929	0	0	0	0	26,939,929
2039	62,307,203	26,939,929	0	0	0	0	26,939,929
2040	62,307,203	26,939,929	0	0	0	0	26,939,929
2041	62,307,203	26,939,929	0	0	0	0	26,939,929
2042	62,307,203	26,939,929	0	0	0	0	26,939,929
2043	62,307,203	26,939,929	0	0	0	0	26,939,929
2044	62,307,203	26,939,929	0	0	0	0	26,939,929
2045	62,307,203	26,939,929	0	0	0	0	26,939,929
2046	62,307,203	26,939,929	0	0	0	0	26,939,929
2047	62,307,203	26,939,929	0	0	0	0	26,939,929
2048	62,307,203	26,939,929	0	0	0	0	26,939,929
2049	62,307,203	26,939,929	0	0	0	0	26,939,929
2050	62,307,203	26,939,929	0	0	0	0	26,939,929

This offset analysis assumes the full year of supplies is available to offset non-potable demands. Some scenarios may require storage to store excess supplies from one month in order to use those supplies in another month with unmet demands.

Onsite Supplies and Non-Potable Demand Over 15-Year Timeframe



Monthly Summary of Selected Onsite Supply vs. Selected Non-Potable Demand (All Sites On-Line)



NON-POTABLE WATER CALCULATOR

Project Summary Sheet



Project Contact: Angelo Obertello
925-866-0322
aobertello@cbandg.com

Estimated Site/Building Permit Issuance Date: 1/1/2020

Total Gross Square Footage: 5,324,492

1. Demands and Supplies Summary

Demands Met by Non-Potable Supply for Project (gpy):	28,939,200	Meets Grant Criteria for Annual Offset in Year 2036
Demands Met by Non-Potable Supply for Project *:	28%	
Project Total Annual Water Demand (gpy) *:	103,742,471	
If Grant Offset Criteria Met, Occurs in Year:	2036	
Potable Make-Up Water Allocation (gpy):	1,863,132	Potable supplies are allocated to this project to meet remaining demands. Projects are allocated an additional 10% in potable supplies as a buffer.
Avg. Daily Wet Weather Potable Allocation (gpd):	4,875	Projects are allocated these potable supplies during wet weather months (October - March)
Avg. Daily Dry Weather Potable Allocation (gpd):	5,339	Projects are allocated these potable supplies during dry weather months (April - September)

*Note: Estimates based on Tab 6 - Building Potential Summary total water demand values. Manually entered non-potable demands that exceed auto-calculated non-potable demands from Tab 6 may result in Total Annual Water demands greater than the value used in this analysis

2. Building Information Summary

	Main Project Site 1	Site 2	Site 3
Project / Building Name:	Potrero Power Plant - Max Commercial Program		
Project Address:	420 23rd Street		
Assessor's Block & Lot No. / APN:	4232-006		
Year Online:	2036		
Building Type:	Mixres	Mixres	Mixres
Total Building Size (gross square footage or GSF):	5,324,492	0	0
Total Lot Size (ft ²):	1,262,277	0	0
Number of Residential Units:	2,441	0	0
Impervious Surface Above Grade (ft ²):	533,200	0	0
Impervious Surface Below Grade (ft ²):	332,246	0	0
Landscaped Area (ft ²):	207,810	0	0
Site Location (Zone):	Eastern SF	Eastern SF	Eastern SF

3. Summary of Nonpotable Demands and Supplies for the Project

Non-Potable Water Supply Estimates				
On-site Alternate Water Source Supplies	Annual Supply (gpy)	Annual Supply (gpy)	Annual Supply (gpy)	Total (gpy)
Rainwater:	4,479,103	0	0	4,479,103
Stormwater:	3,590,701	0	0	3,590,701
Graywater:	43,404,144	0	0	43,404,144
Blackwater:	0	0	0	0
Foundation Drainage	0	0	0	0
Cooling & Other Supplies	1,546,170	0	0	1,546,170
TOTAL:	53,020,119	0	0	53,020,119

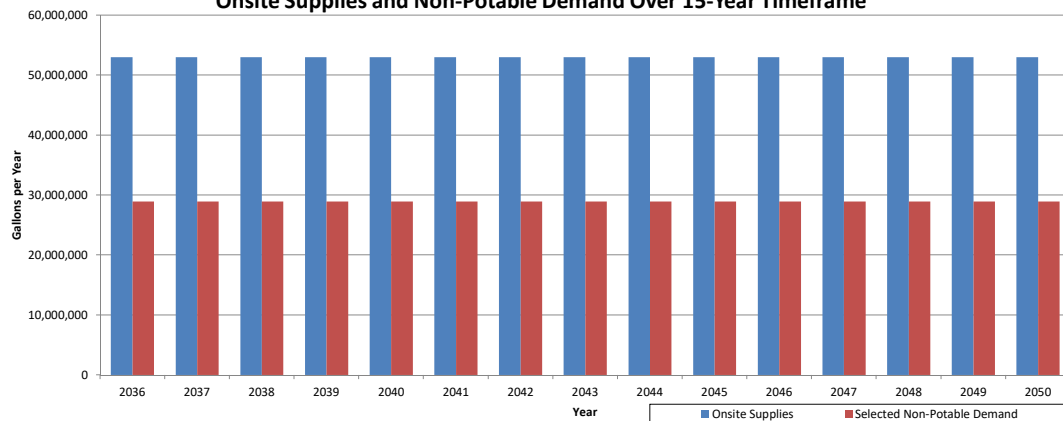
Non-Potable Applications Estimates				
Project Specific Non-Potable Application Demands	Annual Demand (gpy)	Annual Demand (gpy)	Annual Demand (gpy)	Total (gpy)
Toilets/Urinals:	16,816,788	0	0	16,816,788
Irrigation:	1,814,537	0	0	1,814,537
Toilets/Urinals + Irrigation:	18,631,325	0	0	18,631,325
Cooling Tower:	10,307,803	0	0	10,307,803
Commercial Laundry & Other	0	0	0	0
TOTAL:	28,939,128	0	0	28,939,128

4. Project Phasing

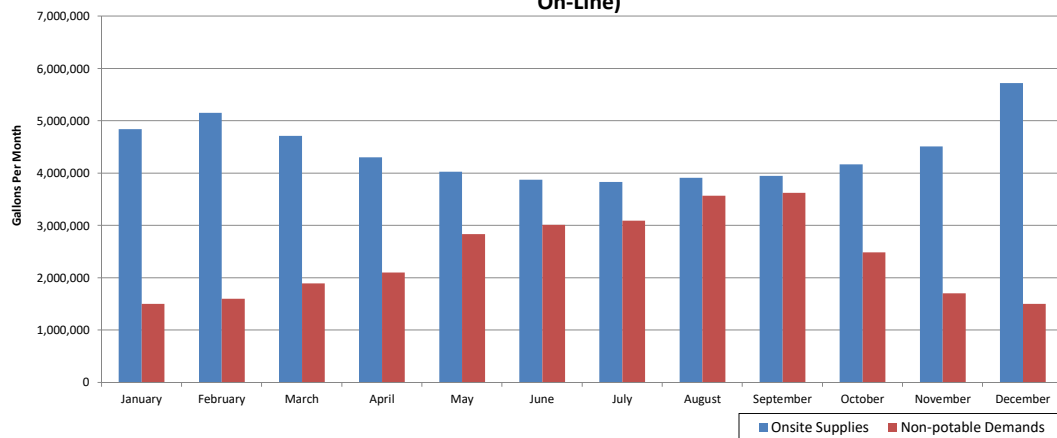
15-Year Timeframe	SITE 1: Potrero Power Plant - Max Commercial Program -- 420 23rd Street		SITE 2: --		SITE 3: --		Re-Used Non-Potable Supplies (gpy)
	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	
2036	53,020,119	28,939,128	0	0	0	0	28,939,128
2037	53,020,119	28,939,128	0	0	0	0	28,939,128
2038	53,020,119	28,939,128	0	0	0	0	28,939,128
2039	53,020,119	28,939,128	0	0	0	0	28,939,128
2040	53,020,119	28,939,128	0	0	0	0	28,939,128
2041	53,020,119	28,939,128	0	0	0	0	28,939,128
2042	53,020,119	28,939,128	0	0	0	0	28,939,128
2043	53,020,119	28,939,128	0	0	0	0	28,939,128
2044	53,020,119	28,939,128	0	0	0	0	28,939,128
2045	53,020,119	28,939,128	0	0	0	0	28,939,128
2046	53,020,119	28,939,128	0	0	0	0	28,939,128
2047	53,020,119	28,939,128	0	0	0	0	28,939,128
2048	53,020,119	28,939,128	0	0	0	0	28,939,128
2049	53,020,119	28,939,128	0	0	0	0	28,939,128
2050	53,020,119	28,939,128	0	0	0	0	28,939,128

This offset analysis assumes the full year of supplies is available to offset non-potable demands. Some scenarios may require storage to store excess supplies from one month in order to use those supplies in another month with unmet demands.

Onsite Supplies and Non-Potable Demand Over 15-Year Timeframe



Monthly Summary of Selected Onsite Supply vs. Selected Non-Potable Demand (All Sites On-Line)



PHASING PLAN

