



December 20, 2016

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: Revised Water Supply Assessment for the Seawall Lot 337 and Pier 48 Mixed-Use 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 Seawall Lot 337 and Pier 48 Mixed-Use Project (also known as the Mission Rock Project), herein referred to as the "proposed project", for use in the preparation of an environmental impact report (EIR) by the City and County of San Francisco Planning Department (case no. 2013.0208E, San Francisco Planning Department).

This WSA is a revision to and supersedes the WSA that was previously prepared for the same proposed project (dated January 25, 2016; approved February 9, 2016). The WSA was revised to account for (1) higher residential occupancy estimates consistent with the EIR for the proposed project and (2) proposed uses at Pier 48, including a brewery/distillery production facility, which had not been included in the previous water demand estimates. Furthermore, the WSA was revised to reflect the latest retail water demand and supply projections contained in the current UWMP, which was adopted after the previous WSA was prepared. The revised water demand estimates for the proposed project are approximately twice as high as previously estimated, but the WSA's conclusions about the sufficiency of water supplies are unchanged.

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.

Edwin M. Lee
 Mayor

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 Commissioner

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 Commissioner

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 Commissioner

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 General Manager



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 floor 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

The project sponsor (Seawall Lot 337 Associates, LLC.) proposes a mixed-use, multi-phase development of Seawall Lot 337, rehabilitation and reuse of Pier 48 south of China Basin, and construction of approximately 5.4 acres of net new open spaces, for a total of 8.0 acres of open space on the site. The 27-acre project site consists of several areas: the 13.6-acre Seawall Lot 337; the 0.3 acre strip of land on the south side of Seawall Lot 337, referred to as Block P20; the 6.0-acre Pier 48, the existing 2.6-acre China Basin Park; and 4.6 acres of streets and access areas within or adjacent to the boundaries of Seawall Lot 337 and Pier 48. The project site is in the Mission Bay neighborhood of the City and adjacent to the Mission Bay South Redevelopment Area.

Seawall Lot 337 is a roughly rectangular parcel, bounded by Terry A. Francois Boulevard to the north, Terry A. Francois Boulevard and Piers 48 and 50 to the east, Block P20 and Mission Rock Street to the south, and Third Street to the west. Pier 48 is bounded by the San Francisco Bay to the north, east, and south and Terry A. Francois Boulevard to the west. China Basin Park is bounded by China Basin to the north, the San Francisco Bay to the east, Terry A. Francois Boulevard to the south, and Third Street to the west. The 2.6-acre China Basin Park is the only existing open space area on the project site. Most of the project site is paved, with Seawall Lot 337 used mainly as a surface parking lot and the Pier 48 structure used for indoor parking and storage and warehouse uses.

Overall, the proposed project would involve construction of up to approximately 2.7 to 2.8 million gross square feet (gsf) of residential, commercial, active/retail, and parking uses on 11 proposed development blocks on Seawall Lot 337, plus rehabilitation of approximately 288,500 gsf of Pier 48 for reuse. At proposed project completion, the Pier 48 sheds would include approximately 209,000 gsf of useable space, consisting of a 182,000-gsf brewery/distillery production facility, 12,000-gsf restaurant, 1,400 gsf of active/retail, and 14,000 gsf of exhibition space/museum.¹ The Port of San Francisco (Port) owns the entire project site. In addition, approximately 1.1 million gsf of parking would be provided in two public parking garages, one above grade and one underground. The potential range of development for each of these land use components is provided in the Project Demand Memo in Attachment B. Two different land use assumptions at Seawall Lot 337 are being analyzed to capture the full range of possible land uses that could be developed on the project site. For the residential component specifically, 1,000 to 1,600 units would be developed. For the commercial component specifically, 972,000 to 1.4 million gsf would be developed.

Two different land use assumptions at Seawall Lot 337 were analyzed by the project sponsor to capture the full range of possible land uses that could be developed on the project site. The two land use assumptions for Seawall Lot 337 have been identified as

¹ These proposed uses on Pier 48 were not accounted for in the previous WSA for the proposed project.

High Commercial and High Residential. However, for the purpose of the WSA, only the High Residential Assumption is assessed for water supply as it would result in a higher water demand estimate and would encompass the High Commercial demands.

Construction would occur between 2017 and 2023. Approximately 66 percent of the proposed building space would be constructed by approximately 2020. The balance of the proposed project would be constructed by approximately 2022.

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

The San Francisco Planning Department 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 Planning Department 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

	2020	2025	2030	2035	2040
Total Demand of Proposed Project (mgd)	0.323	0.490	0.490	0.490	0.490
mgd = million gallons per day Notes: The estimates above reflect the High Residential Assumption. Water demand estimates for the High Commercial Assumption are slightly 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 the Non-potable Water Calculator described in Attachment B. Construction would occur between 2017 and 2023. Approximately 66 percent of the proposed building space would be constructed by approximately 2020, with the balance of the proposed project constructed by approximately 2022.					

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)	0.323	0.490	0.490	0.490	0.490
Portion of Total Retail Demand ²	0.42%	0.62%	0.60%	0.57%	0.55%
Notes: 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 0.4 to 0.6 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 2017, 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@sfgwater.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 –

Seawall Lot 337 and Pier 48 Mixed-Use Project Demand Memo



SAN FRANCISCO PLANNING DEPARTMENT

MEMO

DATE: December 20, 2016
TO: Fan Lau, SFPUC
FROM: Tania Sheyner, Environmental Planning
CC: Chris Kern, SFPUC; Christopher Thomas, Environmental Planning
RE: Seawall Lot 337/Pier 48 Mixed-Use Project Revised Water Demand and Water Supply Assessment Request

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A Water Supply Assessment (WSA) was prepared for the proposed Seawall Lot 337 and Pier 48 Mixed-Use Project (proposed project) by the San Francisco Public Utilities Commission (SFPUC) and adopted February 9, 2016. The WSA prepared for the proposed project assumed a persons per household rate of 2.01 (consistent with the 2015 Retail Demand Model Update - Household and Persons per Household Projections in 2035). Subsequent to the preparation of the WSA, it was determined that a more accurate persons per household assumption for the proposed project is 2.35 (consistent with the current citywide persons per household rate). In addition, the WSA prepared for the project did not account for the water demand of the proposed uses on Pier 48 (including a proposed brewery/distillery). The purpose of this memorandum is to provide the revised demand estimates resulting from an increased estimate in number of residential occupants and from the proposed uses on Pier 48. For the reasons discussed herein, the San Francisco Planning Department requests that the SFPUC prepare a revised WSA for the proposed project. This memorandum serves as that request.

The project description, and estimated project water demand are detailed below. Estimated water demand of the proposed project, excluding the proposed brewery/distillery, is based upon the calculations developed in the SFPUC Single Site Non-Potable Water Calculator. Two revised versions of the Calculator were prepared, one for the High Commercial land use assumption and one for the High Residential land use assumption. Demand estimates for the proposed brewery/distillery were calculated separately from the Calculator since such large atypical water uses cannot be readily accommodated in the Calculator. Copies of the revised Non-Potable Water Calculators and separate brewery/distillery demand estimates completed for the proposed project are available for review upon request as part of Planning Case File 2013.0208E. More information about these assumptions is provided below.

Project Description

The project sponsor (Seawall Lot 337 Associates, LLC.) proposes a mixed-use, multi-phase development of Seawall Lot 337, rehabilitation and reuse of Pier 48 south of China Basin, and construction of approximately 5.4 acres of net new open spaces, for a total of 8.0 acres of open space on the site. The 27-acre project site consists of several areas: the 13.6-acre Seawall Lot 337; the 0.3 acre strip of land on the south side of Seawall Lot 337, referred to as Block P20; the 6.0-acre Pier 48, the existing 2.6-acre China Basin Park; and 4.6 acres of streets and access areas within or adjacent to the boundaries of Seawall Lot 337 and Pier 48. The project site is in the Mission Bay neighborhood of the City and adjacent to the Mission Bay South Redevelopment Area.

Seawall Lot 337 is a roughly rectangular parcel, bounded by Terry A. Francois Boulevard to the north, Terry A. Francois Boulevard and Piers 48 and 50 to the east, Block P20 and Mission Rock Street to the south, and Third Street to the west. Pier 48 is bounded by the San Francisco Bay to the north, east, and south and Terry A. Francois Boulevard to the west. China Basin Park is bounded by China Basin to the north, the San Francisco Bay to the east, Terry A. Francois Boulevard to the south, and Third Street to the west. The 2.6-acre China Basin Park is the only existing open space area on the project site. Most of the project site is paved, with Seawall Lot 337 used mainly as a surface parking lot and the Pier 48 structure used for indoor parking and storage and warehouse uses.

Overall, the proposed project would involve construction of up to approximately 2.7 to 2.8 million gross square feet (gsf) of residential, commercial, active/retail, and parking uses on 11 proposed development blocks on Seawall Lot 337, plus rehabilitation of approximately 288,500 gsf of Pier 48 for reuse. At proposed project completion, the Pier 48 sheds would include approximately 209,000 gsf of useable space, consisting of the 182,000-gsf brewery/distillery production facility, 12,000-gsf restaurant, 1,400 gsf of active/retail, and 14,000 gsf of exhibition space/museum. The Port of San Francisco (Port) owns the entire project site. In addition, approximately 1.1 million gsf of parking would be provided in two public parking garages, one above grade and one underground. The potential range of development for each of these land use components is summarized in Table 1. Two different land use assumptions at Seawall Lot 337 are being analyzed to capture the full range of possible land uses that could be developed on the project site. The two land use assumptions for Seawall Lot 337 have been identified as High Commercial and High Residential.

Table 1. Development Potential

	Range of Development^a
Seawall Lot 337	
Residential ^b	1.1–1.6 million gsf (1,000–1,600 units)
Commercial/Office	972,200–1.4 million gsf
Active/Retail	241,000–244,800 gsf
Total Development	2.7–2.8 million gsf
Parking Garages ^c	
Parking Structure (Parcel D)	837,200 gsf (2,300 spaces)
Parking, Underground Garage (Mission Rock Square)	227,200 gsf (700 spaces)
Total Maximum Development at Seawall Lot 337	3.8–3.9 million gsf^d
Open Space/Public Plazas	8.0 acres
Rehabilitation of Pier 48	288,500 gsf
Source: Seawall Lot 337 Associates, LLC, 2015	
Notes:	
^a . Square footages are rounded to the nearest one hundred, with the exception of square footages greater than 1 million, which are rounded to the nearest one hundred thousand.	
^b . The exact number of dwelling units to be provided by the proposed project has not been established at this time. However, for purposes of this analysis, it is assumed that each dwelling unit would have	

approximately 1,000 gsf, with 2 or more bedrooms.

- c. In addition to the 2,300 spaces in the parking garage on Block D2 and the 700 spaces in the Mission Rock Square below-grade garage, Seawall Lot 337 would include up to 100 spaces located below grade, at grade, or above grade within the proposed buildings (no more than 10 spaces per block). In total, the project sponsor would provide a maximum of 3,100 parking spaces.
- d. Regardless of the mix of residential, commercial, and retail space selected, total maximum development would not exceed 3.9 million gsf

Project Water Demand

Water demand was calculated using the Single Site SFPUC Non-Potable Water Calculator (see attached data sheets) and water demand information for the proposed brewery/distillery production facility at Pier 48 provided by the project sponsor. Please note that the inputs used are based on the total square footage of the project (as well as total employment and square footage of impervious/landscaped areas); these numbers do not take into consideration existing occupied building space, employment, and impervious surfaces. In addition, please note that the water demand in Table 2 was calculated using reduced flow rates for some of the fixtures, including showerheads, lavatory faucets, urinals, and kitchen faucets. While commercial uses consist of office, research and development (R&D)/biotech, labs, institutional, medical, and other similar non-retail uses, for the purposes of calculating water demand, these areas are assumed to be office. Furthermore, while active/retail uses may include shops, restaurants, entertainment venue uses, light industrial/production, community rooms, rooftop lounges, transit hubs, or other uses that promote pedestrian activity, these areas are also assumed to be office for purpose of calculating water demand. Although restaurant and grocery stores have the highest water demand per square foot, applying the general office use to the total proposed square footage would provide a conservative estimate of water demand. Furthermore, the project's total water demands are expected to be reduced as the project's onsite looped recycled water system is developed, which is not considered in the water demand calculations in Table 2. Leadership in Energy and Environmental Design (LEED) certification will be achieved for all commercial office/retail buildings residential development onsite, as outlined in the San Francisco Green Building Ordinance and other City codes. Under the High Commercial Assumption, approximately 22 percent of the water demand would be met by non-potable supply and under the High Residential Assumption, approximately 25 percent of the water demand would be met by non-potable supply.

The revised total annual water demand of the High Commercial Assumption would be 164,007,587 gallons per year (or 449,336 gallons per day, or 0.449 mgd).¹ This represents an increase of 82,509,328 gallons per year (an increase of approximately 101 percent) compared to

¹ This total water demand includes the water demand of the proposed brewery/distillery. It is anticipated that the brewery would produce 500,000 barrels per year. Using a generation rate of 5 gallons of water per 1 gallon of beer, the total annual water demand of the proposed brewery/distillery production facility would be approximately 77,500,000 gallons per year, or 0.212 million gallons per day. The generation rate is based on a brewery industry estimate sourced by Fan Lau, San Francisco Public Utilities Commission. Phone call with Jessica Viramontes, ICF International. Received December 8, 2016.

the total annual water demand of the High Commercial Assumption analyzed in the WSA prepared for the project. The revised total annual water demand of the High Residential Assumption would be 178,832,969 gallons per year (or 489,953 gallons per day, or 0.490 million gallons per day).² This represents an increase of 84,937,841 gallons per year (an increase of approximately 90 percent) compared to the total annual water demand of the High Residential Assumption analyzed in the WSA prepared for the project. These changes to the project assumptions result in a relatively substantial increase in estimated water demand.

Construction of the proposed project would occur between 2017 and 2023. Approximately 66 percent of the proposed building space would be constructed by approximately 2020. The balance of the project would be constructed by approximately 2022. Table 2 summarizes water demand based on project phasing.

Table 2. Water Demand Based on Project Phasing

	2015	2020	2025	2030	2035
Total Demand of High Commercial Assumption (mgd)	--	0.296	0.449	0.449	0.449
Total Demand of High Residential Assumption (mgd)	--	0.323	0.490	0.490	0.490
Note: mgd = million gallons per day					

² See previous footnote.