
Appendix L1

Water Service Analysis

DEXTER WILSON ENGINEERING, INC.

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CONSULTING ENGINEERS

**YARDS AT THE BAY
ROHR WOHL SPECIFIC PLAN
WATER REPORT
CITY OF CHULA VISTA**

August 14, 2023

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Job No. 537-023

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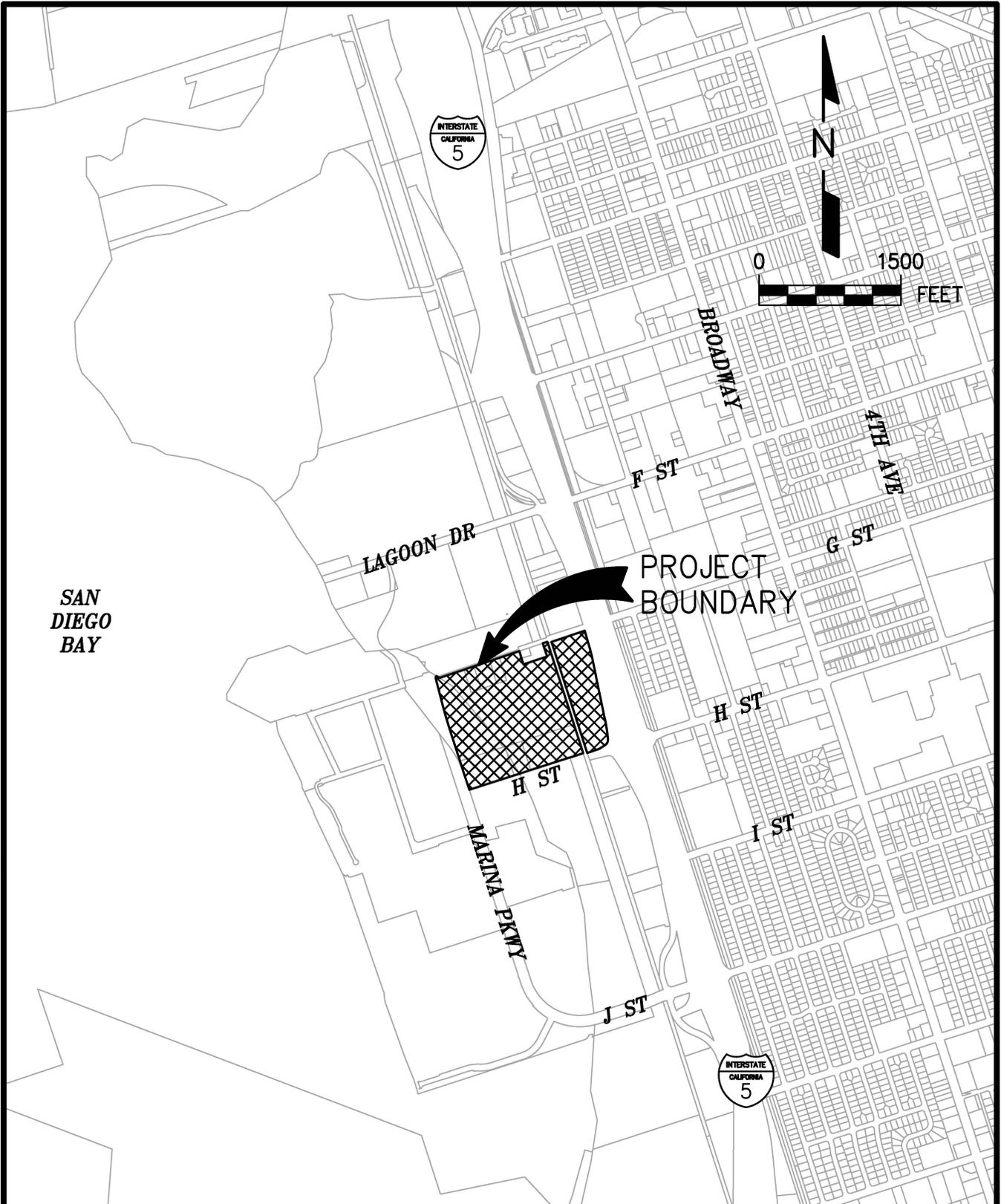
Subject: Yards at the Bay/Rohr Wohl Specific Plan Water Report

Introduction

This letter report provides a water study for the Yards at the Bay project also known as the Rohr Wohl Specific Plan project. The purpose of this report is to supplement and complement the environmental documentation being prepared for this redevelopment site relative to water service.

The Rohr Wohl Specific Plan project site is 44.78 acres located in the City of Chula Vista, California. The site is in the northwest portion of the City; the project site is located west of Interstate 5, north of H Street, south of G Street, and east of Marina Parkway. Figure 1 presents a vicinity map showing the location of the project site.

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FIGURE 1
VICINITY MAP
YARDS AT THE BAY

Background

The project site is divided into three separate planning areas. The eastern portion of the project site, closest to Interstate 5, between G Street and H Street, is designated as Planning Area A and is 9.29 acres. The largest planning area is Planning Area B-1, which is 26.13 acres. The third planning area is Planning Area B-2, which is located south of B-1 and is 9.36 acres. Figure 2 shows the site plan and the three planning areas.

The subject property consists of developed land occupied by the former Rohr Aircraft Facility. The site was developed with several industrial buildings historically used for manufacturing, warehousing, research and development, and related office uses totaling approximately 1,048,841 square feet. One of the industrial buildings in Planning Area A, known as Building 29 at 795 H Street, was used for research and development, tooling, and warehousing and distribution of aftermarket products until February 2021. Renovations of that building commenced in 2021, including removal of approximately 50,000 square feet of interior mezzanine office space.

Planning Areas B-1 and B-2 were used for manufacturing operations which ceased in approximately 2020. Demolition of the buildings in Planning Areas B-1 and B-2 (totaling approximately 766,837 square feet) commenced in May 2023 in connection with environmental remediation of the site.

Land Uses

Planning Areas A, B-1, and B-2 of the project site are located within the Chula Vista Bayfront Local Coastal Program and currently lie within the General Industrial (I) Zoning and Industrial (I) General Plan land use designations. Land uses in the vicinity of the project site include vacant properties, Collins Aerospace, and Seven Mile Casino to the north; Marina, Chula Vista Harbor, and future development as part of the Chula Vista Bayfront Master Plan to the south; Bay Boulevard and Interstate 5 to the east; and Chula Vista RV Resort and future development site for the Gaylord Pacific Resort Hotel and Convention Center to the west.

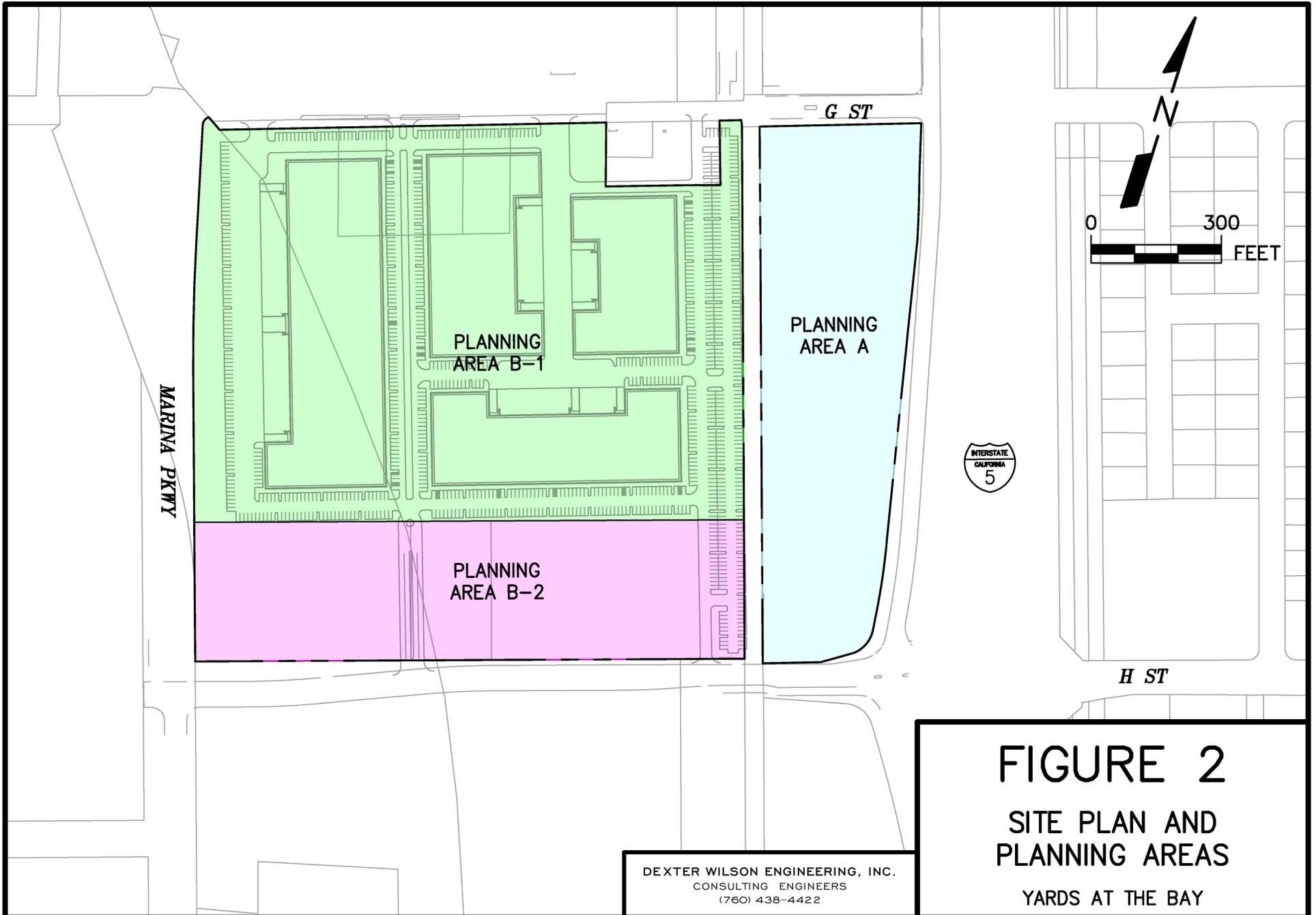


Table 1 below summarizes the proposed land uses for the Yards at the Bay site. These land uses will be presented as changes to the current General Industrial Zoning and Industrial General Plan land use by way of the Rohr Wohl Specific Plan document.

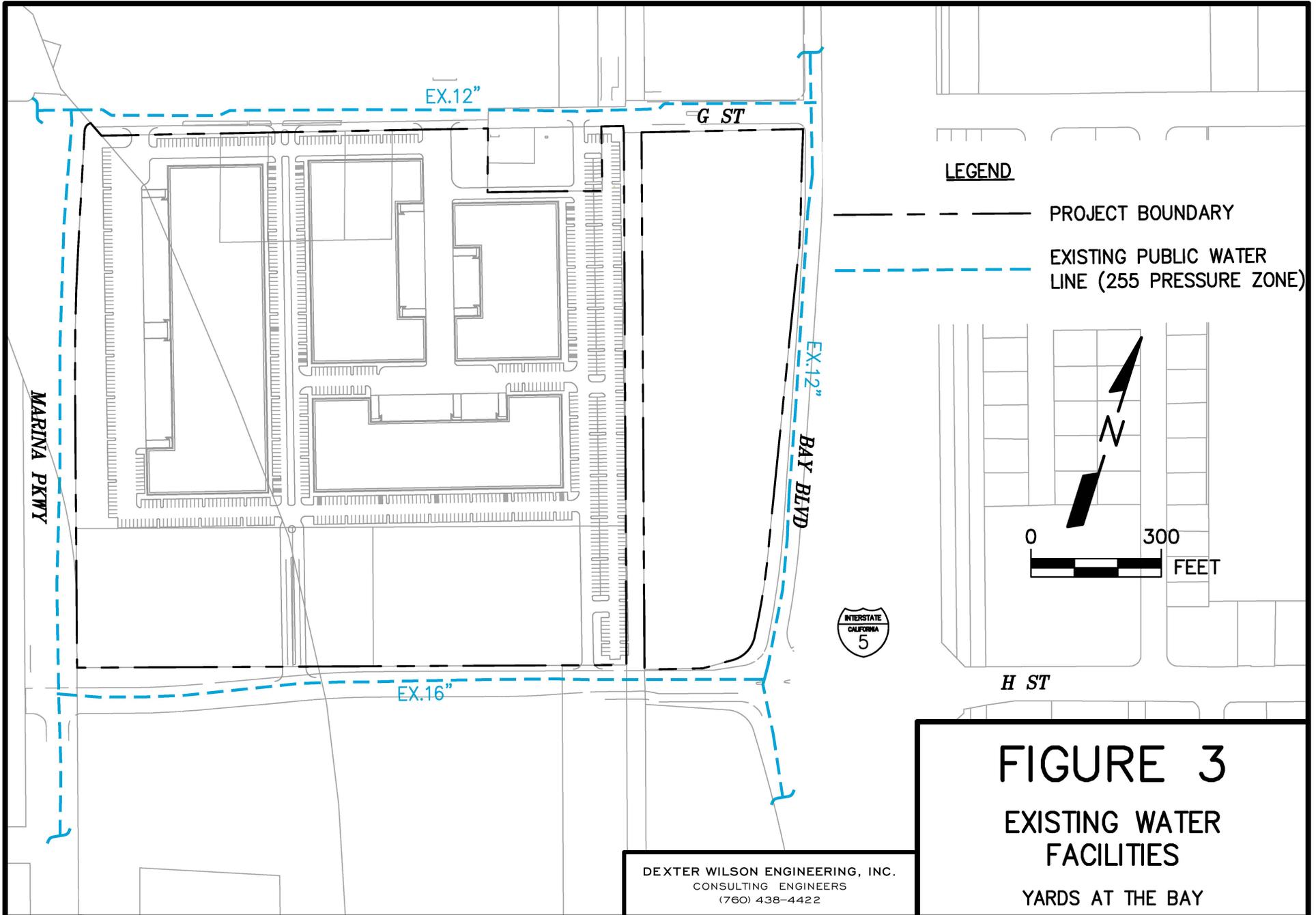
| TABLE 1 PROPOSED LAND USES FOR PLANNING AREAS | | |
|--|---|----------------|
| Planning Area | Specific Plan Land Use | Acreage |
| A | Business Park Flex | 9.29 |
| B-1 | Regional Technology Park/Light Industrial/Commercial Office | 26.13 |
| B-2 | Commercial Retail/Commercial Visitor/Commercial Office | 9.36 |

Presently Planning Area A is undergoing renovation and is on a separate track for occupancy of its space. This report will not address the water demand for Planning Area A but will focus on Planning Areas B-1 and B-2.

Existing Water System

Water service to the Yards at the Bay site will be provided by Sweetwater Authority. Figure 3 shows the existing water facilities in the vicinity of the project site. The Sweetwater Authority public water system includes a 12” water line in Bay Boulevard along the east side of the site, a 12” water line in G Street along the north side of the site, and a 16” water line in H Street on the south side of the site.

These existing water lines are within the Sweetwater Authority 255 Pressure Zone system and are connected to the 18 million gallon Bonita Valley Reservoir located east of Interstate 805 and south of Bonita Road.



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FIGURE 3
EXISTING WATER FACILITIES
YARDS AT THE BAY

Available Water System Pressure

The project site elevations are expected to range from 10 to 15 feet above sea level. Based on the maximum hydraulic grade line (HGL) of 255 feet for the water service system, maximum static pressures on the project site will range from 104 psi to 106 psi.

Working pressures at the project site are expected to be lower than the maximum static pressures for two reasons. One is that the available hydraulic grade line under typical water system demand conditions will be lower than 255 feet because of the distance between the project site and the reservoir feeding the system. A second reason is that water services to the project will pass through a water meter and backflow preventer; these two items will incur a pressure loss of 15 psi. Thus, the working pressures at the project site will be around 80-85 psi.

When static pressures exceed 80 psi, the California Plumbing Code requires pressure regulating valves at each building supply. Therefore, all buildings within the Yard at the Bay project will be required to have individual pressure regulating valves at each building supply.

Estimated Water Demands for Yards at the Bay

As noted earlier in this report, the land uses proposed for Yards at the Bay will be more defined than simply General Industrial. However, even with the greater definition, it is still unknown what types of uses will ultimately be constructed within the project. Therefore, the water demand estimate for the project site will be presented in two ways. First, we will estimate the water demand based on the Sweetwater Authority standard land uses. This will serve as the low end of the expected water use. Secondly, we will provide an estimate based on a more intensive use of water to accommodate potential higher uses within the project.

Table 2 presents the water demand based on standard Sweetwater Authority water demand factors. These come from the Water Agencies Standards Committee of which Sweetwater Authority is a member.

| TABLE 2 YARDS AT THE BAY WATER DEMAND ESTIMATE | | | |
|---|----------------------|--|--------------------------------------|
| Land Use | Area, sq. ft. | Water Demand Factor, gpd/net ac | Average Water Demand, gpd |
| Planning Area B-1 | | | |
| Building 1 | | | |
| Footprint | 79,820 | | |
| Office | 10,400 | 5,000 | 1,194 |
| Industrial | 69,420 | 4,000 | 6,375 |
| Building 1 | | | |
| Footprint | 102,730 | | |
| Office | 16,640 | 5,000 | 1,910 |
| Industrial | 86,090 | 4,000 | 7,905 |
| Building 1 | | | |
| Footprint | 108,400 | | |
| Office | 10,400 | 5,000 | 1,194 |
| Industrial | 98,000 | 4,000 | 8,999 |
| Building 1 | | | |
| Footprint | 172,800 | | |
| Office | 16,224 | 5,000 | 1,862 |
| Industrial | 156,576 | 4,000 | 14,378 |
| Planning Area B-2 | | | |
| Retail 1 | 19,448 | 5,000 | 2,232 |
| Retail 2 | 7,049 | 5,000 | 809 |
| Retail 3 | 7,387 | 5,000 | 848 |
| Retail 4 | 18,326 | 5,000 | 2,104 |
| Office | 7,387 | 5,000 | 848 |
| Hotel | | | |
| Footprint | 20,900 | 7,000 | 3,359 |
| Level 2-4 | 62,700 | 7,000 | 10,076 |
| TOTAL | | | 64,093 |

As noted earlier in this report, the goal of the Yards at the Bay project is to attract business with higher job densities than may be typical of industrial developments. For this reason, we are proposing a modification to the Sweetwater Authority standard water use factors so that the water system planning for Yards at the Bay will accommodate higher intensity uses.

Table 3 below calculates a higher water use. Two water demand factors are being revised. First is the Industrial Water Demand Factor. The standard factor is 4,000 gpd/net acre. This factor is being increased by 50 percent to 6,000 gpd/net acre to account for higher intensity uses within the proposed buildings in Planning Area B-1.

The second area of increased water demand is expected to be in the retail buildings which are part of Planning Area B-2. Typical retail uses are considered to be small specialty shops mixed with coffee shops and maybe a single take-out food establishment. The proposed increased water use factor will take into consideration the potential for a full restaurant and additional coffee shops or craft drink establishments. The increase in the water use factor is 30 percent, from 5,000 gpd/net acre to 6,500 gpd/net acre.

| TABLE 3 YARDS AT THE BAY MODIFIED WATER DEMAND ESTIMATE | | | |
|--|----------------------|--|--------------------------------------|
| Land Use | Area, sq. ft. | Water Demand Factor, gpd/net ac | Average Water Demand, gpd |
| Planning Area B-1 | | | |
| Building 1 | | | |
| Footprint | 79,820 | | |
| Office | 10,400 | 5,000 | 1,194 |
| Industrial | 69,420 | 6,000 | 9,562 |
| Building 1 | | | |
| Footprint | 102,730 | | |
| Office | 16,640 | 5,000 | 1,910 |
| Industrial | 86,090 | 6,000 | 11,858 |
| Building 1 | | | |
| Footprint | 108,400 | | |
| Office | 10,400 | 5,000 | 1,194 |
| Industrial | 98,000 | 6,000 | 13,499 |

**TABLE 3
 YARDS AT THE BAY
 MODIFIED WATER DEMAND ESTIMATE**

| Land Use | Area, sq. ft. | Water Demand Factor, gpd/net ac | Average Water Demand, gpd |
|--------------------------|---------------|---------------------------------|---------------------------|
| Building 1 | | | |
| Footprint | 172,800 | | |
| Office | 16,224 | 5,000 | 1,862 |
| Industrial | 156,576 | 6,000 | 21,567 |
| Planning Area B-2 | | | |
| Retail 1 | 19,448 | 6,500 | 2,902 |
| Retail 2 | 7,049 | 6,500 | 1,052 |
| Retail 3 | 7,387 | 6,500 | 1,102 |
| Retail 4 | 18,326 | 6,500 | 2,735 |
| Office | 7,387 | 5,000 | 848 |
| Hotel | | | |
| Footprint | 20,900 | 7,000 | 3,359 |
| Level 2-4 | 62,700 | 7,000 | 10,076 |
| TOTAL | | | 84,718 |

Water Availability

The estimated water demand for the Yards at the Bay project is 84,718 gpd average. As noted previously in this report, the project site was actively being used until 2020. Using the standard water demand factor for industrial land use, 4,000 gpd/net acre, and the square footage of the buildings which existing on Areas B-1 and B-2 (766,837 sq. ft.), the existing water demand for Planning Areas B-1 and B-2 is:

$$766,837 \text{ sq. ft.} \div 43,560 \text{ sq. ft./acre} \times 4,000 \text{ gpd/net acre} = 70,417 \text{ gpd average}$$

Thus, the increase in water demand for the Yards at the Bay project is:

$$84,718 \text{ gpd average} - 70,417 \text{ gpd average} = 14,301 \text{ gpd average}$$

$$14,301 \text{ gpd average equals } 16.0 \text{ ac-ft/year water use}$$

From the Sweetwater Authority's *Water Distribution System 2015 Master Plan*, dated October 2016, the annual water production for the year ending in June 2015 was 19,234 ac-ft. Thus, the additional water demand estimated for the Yards at the Bay project is 0.08 percent of the total water production for the Sweetwater Authority (based on 2015 data). This additional water supply is expected to be accounted for in the typical increase in normal growth in the Sweetwater Authority service area, as well as in the updated projections which Sweetwater Authority makes as part of its 5-year update of its Urban Water Management Plan.

Water Storage

Water storage volume is calculated as one maximum day demand plus fire storage. Fire storage for the Yards at the Bay site is already accounted for in the storage volume in the Sweetwater Authority's system because the existing land use of the project site is Industrial. The 2015 Master Plan identifies the fire storage in the gravity zone system to be based on 5,000 gpm fire flow for four hours. In fact, the Yards at the Bay project will have a lower fire hazard rating than the previous Rohr buildings because of new construction and the installation of fire sprinkler systems in all the new buildings. Therefore, fire water storage for Yards at the Bay is not an issue.

For the increase in water demand of 14,301 gpd, the water storage volume is 21,452 gallons or 0.02 MG. This volume is calculated using a maximum day peaking factor of 1.5 times the average day demand per the 2015 Master Plan Table 4-4 for the gravity fed system.

The 2015 Master Plan notes that the available storage in the gravity zone is 4.9 MG greater than the required storage volume for the water use estimated for 2040. Therefore, there is sufficient water storage for the incremental water demand for the Yards at the Bay project.

Water Transmission

With an existing 12" water line in G Street along the north side of the Yards at the Bay project site, and an existing 16" water line in H Street at the south side of the site, there is sufficient water flow and pressure to develop the project site. This is further supported by hydrant flow tests prepared by Sweetwater Authority. Two tests were conducted, one on the 12" water line in G Street and one on the 16" water line in H Street. These two tests are provided in Appendix A for reference.

The hydrant flow test in G Street shows that a flow of 4,947 gpm can be supplied in the 12" water line with greater than 60 psi residual pressure. The H Street hydrant flow test shows an analysis for 5,000 gpm flow with similar pressure results. This substantiates that a fire hydrant flow requirement of 5,000 gpm is achievable on the Yards at the Bay project site with appropriate fire system looping.

However, the City of Chula Vista Fire Department allows only a 25 percent reduction in the required fire flow for fire sprinklered buildings. Since some of the proposed buildings in Planning Area B-1 may be over 100,000 square feet, consideration may need to be given to the type of construction for these buildings so that the required fire flow does not exceed the ability of the existing water system.

With the ability to modify the type of construction of the larger buildings or configure an onsite fire protection system that will make use of both existing water lines in G Street and H Street, there is no need for offsite water pipeline improvements to provide water service to the Yards at the Bay project site.

Michael Knapton
August 14, 2023
Yards at the Bay Water Report

Conclusion

Thank you for the opportunity to provide professional engineering services on behalf of the Yards at the Bay project. From a water service perspective, there are no offsite water improvements needed to redevelop the proposed project site with the land uses being proposed as part of the Rohr Wohl Specific Plan. Please do not hesitate to contact us if you have any questions about our evaluations and conclusions.

Dexter Wilson Engineering, Inc.

William Todd for

Andrew Oven, P.E.

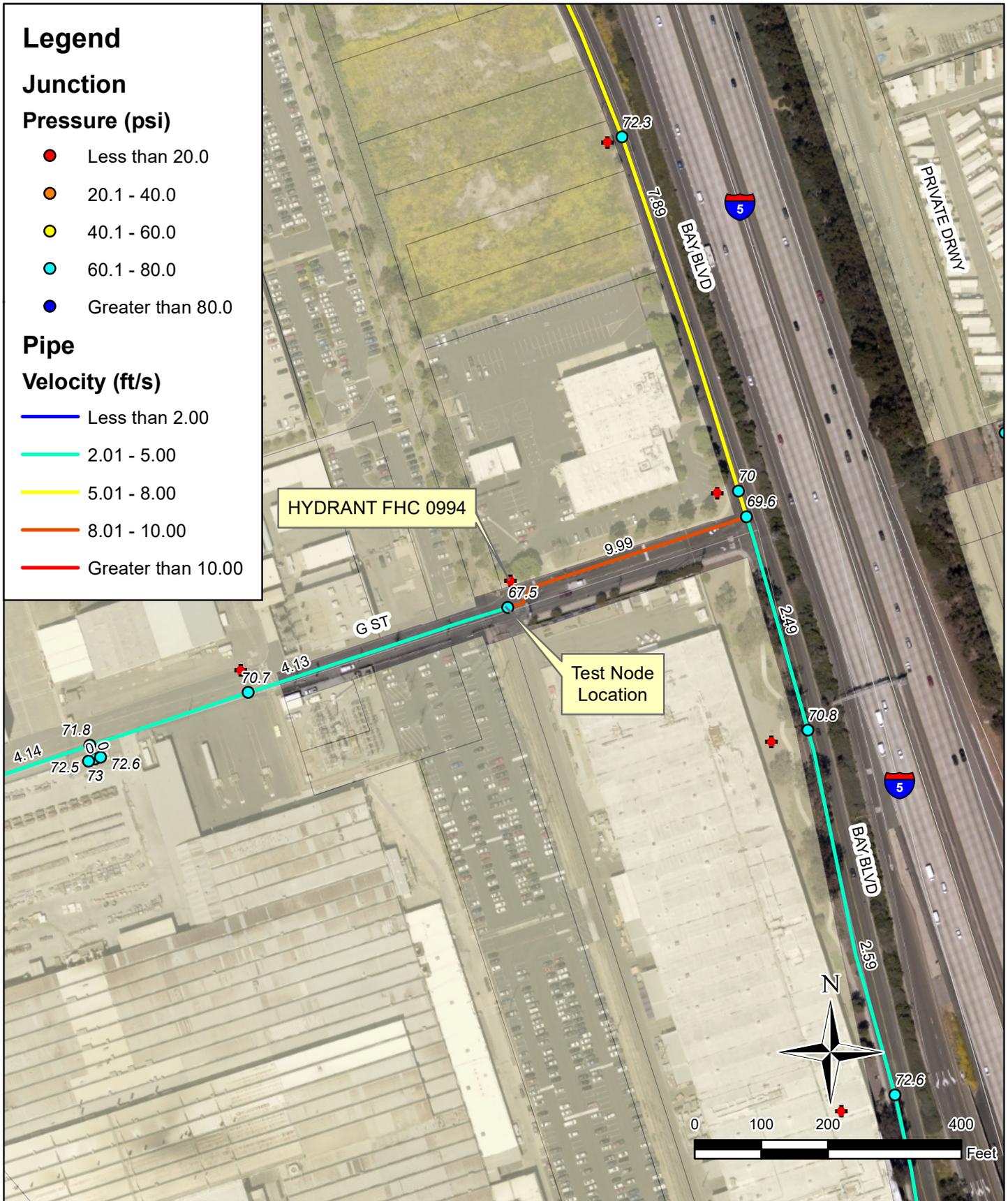
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cc: Mark Kestel, Project Design Consultants, a Bowman Company

Attachments

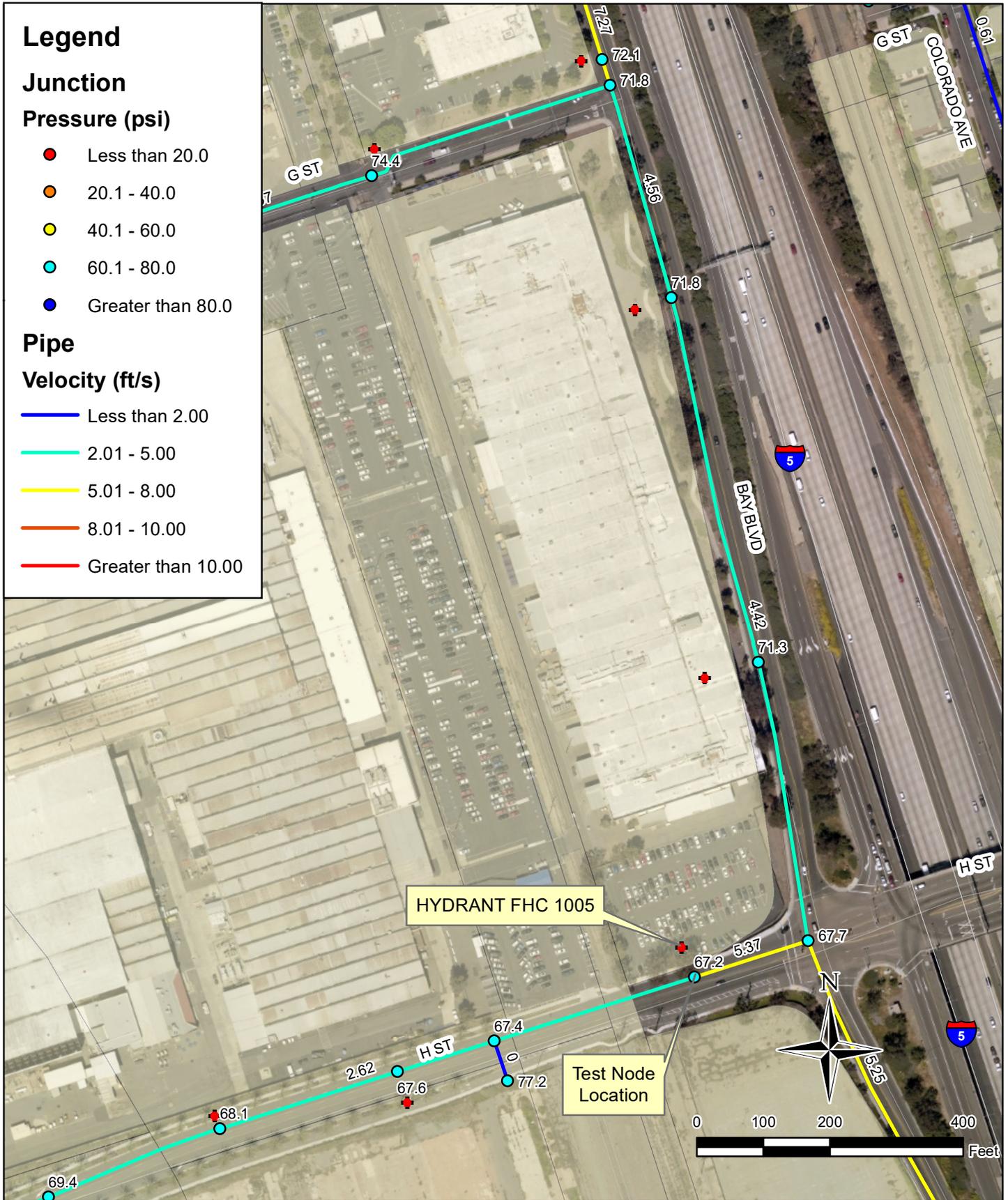
APPENDIX A

SWEETWATER AUTHORITY HYDRANT FLOW TESTS



G Street & Bay Boulevard - Hydraulic Analysis

4,947 GPM demand was applied to a node at the existing 12-inch AC water main located on the north side of G Street, approximately 380 LF west of Bay Boulevard, Chula Vista. The model was set for maximum day water system demands with a four-hour fire flow starting at 9:00 a.m., with all test results shown at 1:00 p.m.



H Street & Bay Boulevard - Hydraulic Analysis

5,000 GPM demand was applied to a node at the existing 16-inch steel water main located on the north side of H Street, approximately 180 LF west of Bay Boulevard, Chula Vista. The model was set for maximum day water system demands with a four-hour fire flow starting at 9:00 a.m., with all test results shown at 1:00 p.m.