5. UTILITIES

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The information provided in this chapter is consistent with information previously provided in Project-wide utility master plans for each system. This chapter provides a summary version of the various utility master plan documents, and there is no new or additional utility information provided herein. Utilities will meet SFPUC clearance standards documented in Order 128A unless approved otherwise by SFPUC on a case by case basis.
5.1 STORMWATER TREATMENT

All watershed areas will include centralized treatment areas where a single treatment feature treats storm water from the entire watershed including private parcels, city rights-of-way and TICD controlled property. Private vertical development and TIDA controlled property will not be required to implement any storm water treatment measures on their parcels because the storm water treatment is provided in designated off-parcel centralized treatment areas as approved by the SFPUC.

The Best Management Practices will consist of bioretention facilities located on public open spaces. The Job Corps, site which is not part of the project, will not have treatment and will have its storm water conveyed directly to the Bay via a force main.

Storm drainage Outfall C on Treasure Island (TI) will have the treatment area located in an area upstream and adjacent to the outfall. Storm drainage Outfall A will have an interim force main to direct flow to a centralized treatment area on the north end of 4th Street. Outfall B will be provided with a force main to convey flow into the storm drain gravity conveyance system and then be treated in a centralized treatment area on the west end of 6th Street in the Cultural Park area. The rest of TI in this major phase will require a temporary treatment area, since the final treatment locations will not be built within this major phase. The temporary treatment area will be provided north of 4th Street and east of Avenue F. On Yerba Buena Island treatment flows will be diverted from the storm drain systems via gravity into the treatment area. These treatment areas will not be close to the outfall and will require any treatment flow downstream of the treatment areas to be pumped into the treatment areas.

Centralized storm water treatment areas shown are conceptual only and will be further documented in the Project’s Preliminary and Final Storm Water Control Plans to be submitted during development of the project improvement plans.
5.2 STORM DRAIN

The proposed storm drain mains will be located in the street right-of-way except for the following locations:

- Storm drain outfalls through the parks and open spaces.
- A storm drain main will convey flow along the western extension of 4th Street, the western edge to block C2-H and then back to Cityside Avenue.
- A storm drain main will convey flow through a private drive aisle in a private parking lot between buildings B2 and B3.
- Public storm drain main will be located in the Share Public Ways.

Anywhere a public storm drain line is located outside the street right-of-way, an easement will be dedicated for that storm drain line, as identified in the approved Infrastructure Plan or future approved Utility Master Plans.

Existing storm drain mains will be demolished and removed as needed with the phasing of the Project. Storm water runoff within the Project area on Treasure Island currently flows to one of six outfalls to the San Francisco Bay on the west, south and eastern side of the island. These outfalls will be consolidated into four new outfalls located at the site of select existing outfalls. On Yerba Buena Island there are at least eighteen outfalls to the Bay within the project area. Project storm water runoff will be directed to one of two new outfalls; one off of Treasure Island Road right before Treasure Island and the other on the northeastern end of the island off of North Gate Road. Existing outfalls will remain as upstream areas are diverted to the new outfalls.

The existing Job Corps storm drain system crosses their property line at several locations along their western and southern property line were it connects to existing TI systems. The Project will coordinate with the Job Corp and re-connect their system onsite at one location along Avenue C. A new pump station and force main will discharge to the existing outfall.

Blocks B3 and a small portion of B2 will drain to Outfall A. Blocks B1, M1 and portions of B2 and IC-4 will drain to Outfall B. All the C blocks within the project area and the existing Treasure Island Chapel parcel will drain to Outfall C. The remainder of the block on Treasure Island drain to outfalls on the eastern side of the Island. All of these facilities will not rely or impact the existing storm drain system.

On Yerba Buena Island hillside areas 1Y and 2Y will drain toward the Outfall on Treasure Island Road while the rest of the site will drain toward the North Gate Road outfall.

Pump stations will be needed to convey treatment flow into post-construction centralized treatment BMPs. Pump stations will be in manholes before Outfalls A and B for force mains that will direct treatment flows from their drainage areas. At all other locations, including Yerba Buena Island, a pump station with relatively short force main runs will be required to intercept the treatment flow from a manhole just upstream of the outfall and convey it to a nearby treatment area.
PROPOSED STORM DRAIN IN PUBLIC UTILITY EASEMENT

LEGEND
- Orange: Existing Storm Drain
- Green: Proposed Storm Drain
- Blue: Proposed Force Main
- Blue Circle: Proposed Pump Station
- Blue Asterisk: Connection Point
- Pink: Major Phase 1 Boundary

FIGURE 5.2 MAJOR PHASE 1 STORM DRAIN

TREASURE ISLAND & YERBA BUENA ISLAND MAJOR PHASE 1 APPLICATION

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5.3 SANITARY SEWER

The proposed sanitary sewer (SS) system will serve the sewer demands for the development. The existing SS mains and laterals within Major Phase 1 will be demolished. Sewer easements will be provided for sanitary sewer mains that extend through open space and private roads, as identified in the approved Infrastructure Plan or future approved Utility Master Plans.

The proposed SS system will allow for connect of select existing sewer facilities at the following locations:

- Connect to existing Job Corps lateral in proposed Avenue C between proposed 6th and 5th Streets,
- Connect to existing lateral from Island Center parcel in proposed California Avenue,
- Connect to existing lateral from Building B1 in proposed California Avenue,
- Connect to existing lateral from Job Corps in proposed Avenue E,
- Connect to existing lateral from Building B2 in proposed Avenue E,
- Connect to existing lateral from Job Corps in proposed Avenue F,
- Connect to existing lateral from Building B3 in Clipper Cove Avenue,
- Connect proposed force main to existing force main at the intersection of proposed 2nd Street and Avenue G and
- Connect to existing Coast Guard main in North Gate Road on Yerba Buena Island.

Proposed lift stations will be located at the following locations:

- Intersection of proposed Avenue C and proposed 6th Street,
- Intersection of proposed Avenue C and proposed 5th Street,
- Intersection of proposed Avenue C and proposed 4th Street,
- Intersection of proposed California Avenue and proposed Avenue F, and
- In proposed Avenue E and approximately 90 feet inland from Clipper Cove Avenue.

Proposed pump stations will be located at the following locations:

- Intersection of proposed Avenue C and proposed California Avenue,
- In proposed North Gate Road approximately 120 feet from the Coast Guard lands,
- In proposed North Gate Road near the SOQHD parcel, and
- In proposed Macalla Road near the proposed 4Y parcel.

A temporary sewer force main will be provided to connect the proposed pump station at the intersection of Avenue C and California Avenue to the existing waste water treatment facility.
5.4 LOW PRESSURE WATER

The proposed low pressure water (LPW) system will serve the potable water demands and the fire flow demands for the development. LPW includes water tanks on YBI for service and fire protection on TI & YBI, and pumping facilities to serve YBI. The existing LPW mains within Major Phase 1 will be demolished.

LPW facilities will be located within public right-of-way to allow for access and maintenance of facilities unless otherwise approved by the Director with the consent of the SFPUC on a case-by-case basis. In every location where a SFPUC low pressure water main is located outside the public right-of-way, an easement will be dedicated for that low pressure water main. The SFPUC will only consent to such water main easement if the SFPUC determines that the proposed alignment and easement area appropriate based on the SFPUC policy.

The following locations will require an easement:
• Connections to existing Coast Guard facilities,
• Water connection between new water tanks to Macalla Road,
• Water connection from north end of Palm Drive to Cityside Avenue, and
• Water connection in Avenue E between California Avenue and Clipper Cove.

The proposed LPW system will allow for the connection of the existing LPW system at the following locations:
• Connect to the existing main along proposed Cityside Avenue,
• Connect to three existing laterals from Job Corps along proposed Avenue C,
• Connect to one existing main along proposed Avenue D,
• Connect to the existing lateral from Building B2 along proposed Avenue D,
• Connect to the existing main along proposed Avenue E,
• Connect to four existing mains along proposed Avenue F,
• Connect to five existing mains along proposed Avenue G,
• Connect to the existing main at the proposed viaduct,
• Connect to three existing mains from the U.S. Coast Guard,
• Connect to one existing main at the ramp, and
• Connect to one existing main along North Gate Road.

Connection of existing water system to the new LPW system will include meters and backflow devices.
5.5 RECYCLED WATER

The proposed recycled water (RW) system will be used on Treasure Island primarily for irrigation and toilet flushing. Recycled water will not be provided to Yerba Buena Island due to its distance from the recycled water treatment plant, the minimal use application, and the pumping that would be required to meet the elevation change. The Infrastructure Plan included facility to use the recycled water system as a supplemental fire protection system for TI, however, a wet standpipe system connected to the previously proposed fire boat manifolds is currently being negotiated with SFFD to provide a supplemental fire protection system.

The layout of the proposed RW system is generally within the proposed street right-of-way. Treasure Island has several different street sections, and RW mains will typically be located under street parking and occasionally under bulb-outs. There is a RW main on private land that extends from the intersection of proposed California Avenue and proposed Palm Drive to proposed Cityside Avenue; a water easement will be provided for this RW main.

The City currently does not have an existing RW system to supply the Project with recycled water. The proposed RW Treatment Facility is subject to future negotiation and agreement between the SFPUC and TIDA.

Since the recycled water supply will not be available during the first phases of project development, the RW system will be served from interim connections to the new LPW system. A backflow device will be installed at each connection point to prevent backflow from the RW system to the LPW system.

The proposed RW system will include temporary connections to the new LPW system at the following locations:

- Connect at the intersection of proposed Cityside Avenue and proposed 5th Street,
- Connect at the intersection of proposed California Avenue and proposed Palm Drive, and
- Connect at the intersection of proposed Clipper Cove and proposed Avenue G.
A joint utility trench system is planned for the project and will include the following dry utilities: electric, gas, telephone, cable TV and other ancillary communication facilities require by SFPUC.

Joint utilities on site shall be placed in a common trench located in the franchised area, under the sidewalk for mechanical protection and will be installed to maintain utility standard clearances from wet utilities and other improvements. Vaults, boxes, manholes and enclosures housing equipment will be installed in the franchised area as well; their locations will be coordinated with wet utilities, other civil and architectural improvements and street lights. Joint utilities will be installed in Shared Public Ways.

Figure 5.6 illustrates the general location of proposed joint trench facilities, an overhead line relocation and new switch gear at the eastern shore and identifies other joint utility source locations. General system elements for each dry utility are described briefly below.

Treasure Island is served by existing submarine cable from Oakland. These lines connect to existing switchgear in existing Building 3. This switchgear then feeds distribution on Treasure Island and a submarine cable to feed distribution facilities on Yerba Buena Island. As part of this Major Phase, new 15kV switchgear will be provided on the east side of the island to feed the new 12kV, 600 and 200 amp distribution system in the new development. This new switchgear will be fed from the existing submarine cable from Oakland. This new switchgear will remain until the next Major Phase can be reviewed.

Electric facilities provided by either PG&E or SFPUC will include conduits, boxes, vaults, cables and devices including, but not limited to, switches transformers, capacitor banks and metering. The electric distribution system will consist of 600 and 200 amp 12 kV underground primary distribution circuits throughout the project. Transformers placed in strategic locations will supply residential, commercial and support facilities with secondary voltage below 600V.

Where feasible, equipment will be placed subsurface. In some areas, subsurface transformers may not be allowed due to water table and soil characteristics. This will be determined by the electric utility on a case by case basis. Transformers supplying electricity to residential and commercial customers may be located either in the franchise area or on private property assuming that adequate operating clearance and access is provided. In areas where subsurface transformers are not feasible pad mounted equipment may be necessary.

Existing natural gas service comes to Treasure Island through an existing 10-inch submarine gas pipeline from Oakland. This line terminates at a large PG&E meter and service lines radiate out from this meter to serve existing uses on TI and YBI. New gas distribution will be provided to serve the proposed development. Gas facilities provided by PG&E will consist of steel or plastic gas pipe, fittings, appurtenances and metering equipment.

Telephone and cable TV facilities provided by AT&T and Comcast will consist of conduits, boxes, vaults and amplifiers to facilitate the installation and operation of copper and fiber optic cables as proposed by the communication providers.

Joint Trench will be provided in all streets and will be adjacent to proposed pump station locations. It is assumed that each pump station will connect to power available in joint trench and will have its own service point with a meter. Communication facilities will also be available adjacent to pump stations to allow for connection to the internet.

Street lighting systems will consist of steel conduits, boxes, wiring and lighting units. A lighting unit will consist of a foundation, pole, mast arm, luminaire(s) and photocell. The street lighting system will utilize LED type lighting and provide photometric and lighting characteristics that are defined in the Treasure Island & Yerba Buena Island Streetscape Master Plan.
JOINT TRENCH

LEGEND
- Existing Submarine Cable
- Proposed Joint Trench
- Temporary Overhead Electrical
- Switch Gear
- Connect to new Joint Trench
- Major Phase 1 Boundary

EXISTING SUBMARINE CABLE FROM EAST BAY

FIGURE 5.6 MAJOR PHASE 1 JOINT TRENCH