

2. PROJECT DESCRIPTION

A. PROJECT OVERVIEW

The Pier 70 area (Pier 70) encompasses 69 acres of historic shipyard property along San Francisco's Central Waterfront. Under the Burton Act, Pier 70 is owned by the City and County of San Francisco (City) through the Port Commission of San Francisco (Port or Port Commission).¹ The Port intends to rehabilitate and redevelop Pier 70, and has selected Forest City Development California, Inc. (Forest City) to act as master developer for 28 acres of the site. Forest City will initiate rezoning and develop design standards and controls for a multi-phased, mixed-use development on that site and two adjacent parcels.² (See Figure 2.2: Existing Site Plan, p. 2.11.) As envisioned, the proposed Pier 70 Mixed-Use District Project (Proposed Project) would include phased development of market-rate and affordable residential uses, commercial use, retail/arts/light-industrial (RALI) uses,³ parking, shoreline improvements, infrastructure development and street improvements, and public open space. Together, the Port and Forest City are the project sponsors for the Proposed Project.

The proposed Pier 70 Mixed-Use District Project, for which this project-level Environmental Impact Report (EIR) has been prepared, comprises a project site of an approximately 35-acre area bounded by Illinois Street to the west, 20th Street to the north, San Francisco Bay to the east, and 22nd Street to the south. The project site is south of Mission Bay, east of the Potrero Hill and Dogpatch⁴ neighborhoods, and within the northeastern portion of San Francisco's *Central Waterfront Area Plan*, one of four areas covered by the *Eastern Neighborhoods Rezoning and Area Plan (Eastern Neighborhoods Area Plan)*. The project site is located within Pier 70, except

¹ The Burton Act (Chapter 1333 of the Statutes of 1968) was adopted by the California Legislature in 1968. Under the Burton Act and the companion Burton Act transfer agreement, the State transferred ownership of the tidelands making up San Francisco harbor to the City, with the requirement that the City form a Port Commission with complete authority to use, operate, manage and regulate the granted lands.

² The Port and Forest City entered into an Exclusive Negotiating Agreement in July 2011, as authorized by Port Commission Resolution No. 11-49. The Port Commission subsequently endorsed a Term Sheet outlining features of the Proposed Project, which the San Francisco Board of Supervisors endorsed in June 2013 by Resolution No. 201-13.

³ The project sponsors describe the RALI use as including neighborhood retail, arts, eating and drinking places, production distribution and repair, light manufacturing, and entertainment establishments, which are collectively referred to for the purposes of this EIR as RALI uses.

⁴ The Dogpatch neighborhood is bounded by Mariposa Street to the north, I-280 to the west, Cesar Chavez Street to the south, and Illinois Street to the east.

for a 3.6-acre parcel adjacent to Pier 70's southwest corner, known as the Hoedown Yard, which is owned by Pacific Gas and Electric Company (PG&E).⁵

The project site contains two development areas. The "28-Acre Site" is an approximately 28-acre area located between 20th, Michigan, and 22nd streets, and San Francisco Bay. This site includes Assessor's Block 4052/Lot 001 and Lot 002 and Block 4111/Lot 003 and Lot 004. The "Illinois Parcels" form an approximately 7-acre site that consists of an approximately 3.4-acre Port-owned parcel, called the "20th/Illinois Parcel," along Illinois Street at 20th Street (Assessor's Block 4110/Lot 001) and the approximately 3.6-acre "Hoedown Yard," at Illinois and 22nd streets (Assessor's Block 4120/Lot 002 and Block 4110/Lot 008A), which is owned by PG&E. The Hoedown Yard includes a City-owned 0.2-acre portion of street right-of-way that bisects the site.⁶

The Proposed Project would amend the *San Francisco General Plan (General Plan)* and Planning Code, adding a new Pier 70 Special Use District (SUD). The SUD would establish land use zoning controls for the project site, and incorporate the design standards and guidelines for all new construction at the project site as set forth in the proposed *Pier 70 SUD Design for Development* document (*Design for Development*).⁷ The Zoning Maps would be amended to show changes from the current zoning (M-2 [Heavy Industrial] and P [Public]) to the proposed SUD zoning. Height limits on the 28-Acre Site would be increased from 40 to 90 feet, except for a 100-foot-wide portion adjacent to the shoreline that would remain at 40 feet, as authorized by Proposition F in November 2014. The Planning Code text amendments would also modify the existing height limits on an eastern portion of the Hoedown Yard from 40 to 65 feet. Height limits are further restricted through the design standards established in the proposed *Pier 70 SUD Design for Development*. The Proposed Project would also amend the Port's *Waterfront Land Use Plan* (WLUP).

Under the proposed SUD, the Proposed Project would provide a phased mixed-use land use program in which certain parcels could be developed with either primarily commercial uses or residential uses, with much of the ground floor dedicated to RALI uses. In addition, two parcels

⁵ Under an option agreement with PG&E, the City has an option to purchase the Hoedown Yard. PG&E has consented to including the Hoedown Yard in the project sponsors' rezoning efforts; however, the City would not exercise its option to purchase the Hoedown Yard and development of this parcel would not proceed, unless PG&E locates a suitable relocation site for the current utility operations at the Hoedown Yard. PG&E's consent is reflected in the letter from Kendrick Li, Supervisor Land Acquisition Development, PG&E, to Brad Benson, Port of San Francisco, regarding the Hoedown Yard, June 6, 2014. The environmental analysis assumes that the City will exercise its option with PG&E, and will subsequently purchase the Hoedown Yard.

⁶ The 0.2-acre Michigan Street right-of-way is a recorded easement; however, no physical roadway exists.

⁷ The proposed *Pier 70 Design for Development* document, which is included as part of the Proposed Project, would set forth the underlying vision and principles for development of the project site, and establish implementing standards and design guidelines.

on the project site (Parcels C1 and C2) could be developed for structured parking, residential/commercial use, or solely residential use, depending on future market demand for parking and future travel demand patterns. Development of the 28-Acre Site would include up to a maximum of approximately 3,422,265 gross square feet (gsf) of construction in new buildings and improvements to existing structures (excluding square footage allocated to accessory parking⁸). New buildings would have maximum heights of 50 to 90 feet. Development of the Illinois Parcels would include up to a maximum of approximately 801,400 gsf in new buildings; these new buildings would not exceed a height of 65 feet, which is the existing height limit along Illinois Street on both the Port-owned and the western portion of the Hoedown Yard.

The Union Iron Works Historic District (Historic District) is listed in the National Register of Historic Places (National Register) in recognition of Pier 70's role in the development of steel shipbuilding in the United States and for industrial architecture built at the site between 1884 and the end of World War II. The majority of the project site is within the Historic District. The 28-Acre Site contains 12 of the 44 contributing buildings/structures/features (collectively "contributing features") of the Historic District and one of the ten non-contributing features. With implementation of the Proposed Project, three contributing features (Buildings 2, 12, and 21) would be rehabilitated in compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and adapted for reuse; one landscape feature (the existing remnant of Irish Hill⁹) would be mostly retained; and seven structures and sheds (Buildings 11, 15, 16, 19, 25, 32, and 66), containing 92,945 gsf, would be demolished. The Port has proposed to demolish the 30,940-gsf Building 117, located on the project site, prior to approval of the Proposed Project.¹⁰ The single non-contributing feature on the project site (Slipways 5 through 8, which are currently covered by fill and asphalt) would be partially demolished.

The Proposed Project includes transportation and circulation improvements, new and upgraded utilities and infrastructure, geotechnical and shoreline improvements, and 9 acres of public open space. Three options for sewer/wastewater treatment, three options for grading around Building 12, and an option for pedestrian passageways are evaluated in this EIR. The Proposed Project also includes four variants that consider modifications to the proposed infrastructure and building systems to enhance sustainability.

⁸ All proposed parking is considered accessory, excluding those parking spaces within the C1 and/or C2 parking garages. Parking spaces within the two parking garages are considered principal use.

⁹ Today, approximately 1.4 acres remain from the original 20.6 acres of Irish Hill.

¹⁰ Building 117 is proposed for demolition as part of the 20th Street Historic Core project to allow the adjacent building (Building 116) located on the 20th Street Historic Core site to be rehabilitated to meet fire code. The Port filed an application to demolish Building 117 on January 7, 2016, Case No. 2016-000346ENV. Any approval of the demolition of Building 117 will undergo appropriate environmental review, as required by CEQA. San Francisco Planning Department, Notification of Project Receiving Environmental Review, Illinois and 20th Streets/Pier 70 ("20th Street Historic Core"), Case No. 2016-000346ENV, September 8, 2016.

B. PROJECT SPONSORS' OBJECTIVES

The Port and Forest City seek to achieve the following objectives by undertaking the Proposed Project:

- Create a unique San Francisco neighborhood within an industrial historic district that includes new, activated waterfront open spaces with the amenities and services necessary to support a diverse, thriving community of residents and workers, while addressing potential land use conflicts with ongoing ship repair at Pier 70.
- Implement the open space, housing, affordability, historic rehabilitation, artist community preservation, commercial, waterfront height limit and urban design policies endorsed by the voters in Proposition F for the 28-Acre Site (November 2014).
- Provide dense, mixed-income housing that includes both ownership and rental opportunities, to attract a diversity of household types in order to help San Francisco meet its fair share of regional housing needs.
- Provide a model of 21st century sustainable urban development by implementing the *Pier 70 Risk Management Plan* approved by the San Francisco Bay Regional Water Quality Control Board; encouraging energy and water conservation systems; and reducing vehicle usage, emissions, and vehicle miles traveled to reduce the carbon footprint impacts of new development, consistent with the Port's *Climate Action Plan*.
- Provide access to San Francisco Bay where it has been historically precluded, by opening the eastern shore of the site to the public with a major new waterfront park, extending the Bay Trail, and establishing the Blue Greenway, and create a pedestrian- and bicycle-friendly environment.
- Rehabilitate three contributors to the Union Iron Works Historic District to accommodate new uses consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties, and design and build new infrastructure, public realm areas, parks and buildings consistent with the Infill Development Design Criteria within the Port's *Pier 70 Preferred Master Plan* and support the continued integrity of the Union Iron Works Historic District.
- Create business and employment opportunities for local workers and businesses during the design, construction, and operation phases of the Proposed Project.
- Elevate and reinforce site infrastructure and building parcels to allow the new Pier 70 neighborhood to be resilient to projected levels of sea level rise and any major seismic event, as well as incorporate financing strategies that enable the project and the Port's Bay shoreline to adapt to future, increased levels of sea level rise.
- Along with the Historic Core and Crane Cove Park, serve as a catalyst project for Pier 70 to support the Port's site-wide goals established in the *Pier 70 Preferred Master Plan*, including new infrastructure, streets and utilities, and new revenue to fund other Pier 70 improvements.
- Construct a high-quality, public-private development project that can attract sources of public investment, equity, and debt financing sufficient to fund the Proposed Project's site and infrastructure costs, fund ongoing maintenance and operation costs, and produce a market rate return investment that meets the requirement of Assembly Bill (AB) 418 (2011) and allows the Port to further its Public Trust mandate and mission.

- Through exercise of the City's option with PG&E to purchase the Hoedown Yard, provide funds for the City's HOPE VI rebuild projects in accordance with Board Resolution No. 54-14, such as the Potrero Terrace and Annex project.

C. PROJECT LOCATION AND SITE CHARACTERISTICS

PROJECT SITE VICINITY

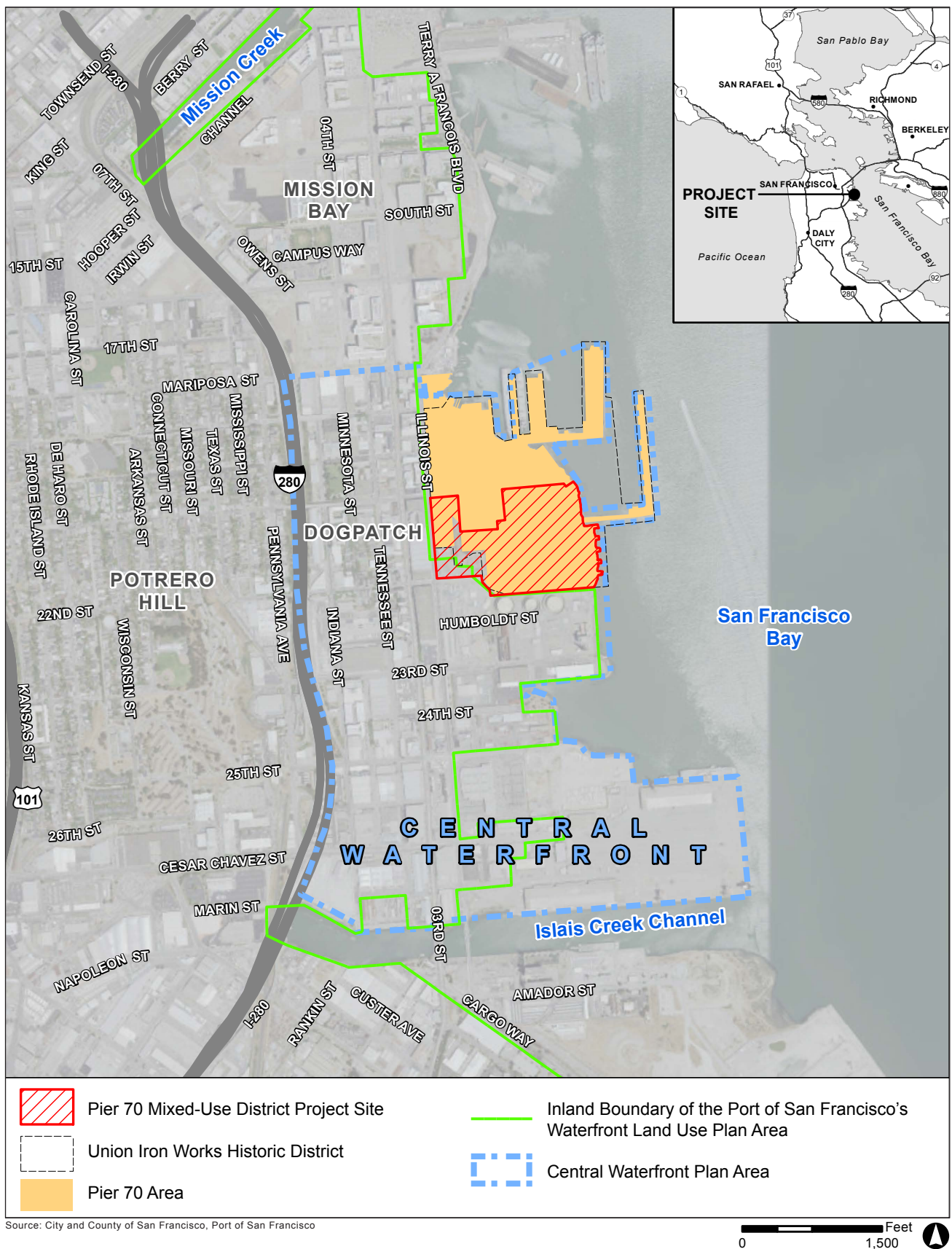
The 35-acre project site is located within the 69-acre Pier 70 area on San Francisco Bay along San Francisco's Central Waterfront, described on p. 2.6. (See Figure 2.1: Project Location.) It is just south of Mission Bay South and east of the Potrero Hill and Dogpatch neighborhoods. The American Industrial Center, a large multi-tenant light-industrial building, is located across Illinois Street, west of the Illinois Parcels. To the north of the project site are the BAE Systems Ship Repair facility, the 20th Street Historic Core (Historic Core) of the Union Iron Works Historic District,¹¹ future Crane Cove Park (construction of which is scheduled to begin in 2016), and the Mission Bay South redevelopment area. To the south of the project site are PG&E's Potrero Substation (a functioning high-voltage transmission substation serving San Francisco), the decommissioned Potrero Power Plant, and the TransBay Cable converter station, which connects the Pittsburg-San Francisco 400-megawatt direct-current, underwater electric transmission cable to PG&E's electricity transmission grid by way of the Potrero Substation.

Nearby transportation infrastructure includes Third Street, a major arterial¹² located about 300 feet west of the project site; the Caltrain right-of-way and 22nd Street station,¹³ located approximately 0.3 mile to the west; and the north-south-running Highways 101 and 280, about 0.5 mile and 0.3 mile west of the project site, respectively. Cesar Chavez Street runs east-west about 0.5 mile to the south of the project site and connects to Highways 101 and 280. Muni's Third Street light rail line has two station stops between 500 to 1,000 feet from the project site, one at Third and 20th streets and the other at Third and 23rd streets. The project site is approximately 0.5 mile from stops for Muni's 22 Fillmore and 48 Quintara/24th Street bus routes. Major bikeways near the project site are Route 5 (Illinois Street), a dedicated north-south bikeway along the waterfront (including The Embarcadero to Bayshore Boulevard); Route 40 (16th and Illinois streets), a dedicated east-west bike lane; Route 7 (Indiana Street), a north-south bike route through the Dogpatch neighborhood; and Route 23 (Mariposa Street), which overlaps with Route 7 along Mariposa Street and turns into a bike lane on Mississippi Street.

¹¹ The Historic Core is an approximately 7-acre portion of the Union Iron Works Historic District and contains 270,000 gsf of largely vacant industrial and office space currently undergoing rehabilitation for adaptive reuse.

¹² *San Francisco General Plan* Transportation Element, Map 6, Vehicular Street Map.

¹³ Caltrain's Fourth and King terminus is about 1.25 miles north of the project site.



PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 2.1: PROJECT LOCATION

There is a dilapidated pier extending from the project site into San Francisco Bay immediately northeast of the slipways, but outside of the project site boundary. The pier is constructed of creosote-treated wood and is not structurally sound. There are no alterations planned for this pier, which would remain in place under the Proposed Project. The dilapidated pier is not part of the Proposed Project analyzed in this EIR.

PROJECT SITE DEVELOPMENT BACKGROUND

Pier 70 is owned by the Port and encompasses approximately 69 acres of historic shipyard property along San Francisco's Central Waterfront. Most of Pier 70 (66 of the total 69 acres) is listed in the National Register as the Union Iron Works Historic District, described on pp. 2.9-2.10. Portions of Pier 70 are still used today for ship repair operations, as well as for other industrial operations.

In 1997, the San Francisco Port Commission identified the preservation of Pier 70's ship repair industry and history as key priorities for its WLUP.¹⁴ In 2010, the Port Commission published the *Pier 70 Preferred Master Plan*¹⁵ (*Preferred Master Plan*), stating its vision to "create a vibrant and authentic historic district that re-establishes the historic activity level, activates new waterfront open spaces, creates a center for innovative industries, and integrates ongoing ship repair operations" at Pier 70.¹⁶ The *Preferred Master Plan* also provides a framework for Pier 70 that serves to allocate land to parks, ship repair, historic rehabilitation, and new development sites; establish infill design guidelines to protect the integrity of the Historic District as new development occurs; and prioritize investment in the most significant historic buildings.

COMPETITIVE SOLICITATION AND EXCLUSIVE NEGOTIATION AGREEMENT

The Port intends to rehabilitate or redevelop a portion of Pier 70 in furtherance of the goals identified in the *Preferred Master Plan*. In August 2010, the Port initiated a public solicitation process through a Request for Developer Qualifications to select a private developer partner for the development of the 28-Acre Site. After considering a staff memorandum that evaluated Request for Qualification responses and public comments made at Port Commission hearings, in April 2011 the Port Commission selected Forest City as the master developer to initiate rezoning, develop design standards and controls, and implement development of a multi-phased, mixed-use development on the project site. The parties entered into an Exclusive Negotiating Agreement in

¹⁴ Port of San Francisco, *Waterfront Land Use Plan*, adopted 1997.

¹⁵ Port of San Francisco, *Pier 70 Preferred Master Plan*, April 2010. Available online at http://www.sfport.com/ftp/uploadedfiles/about_us/divisions/planning_development/southern_waterfront/pier70masterplan_intro-overview.pdf, accessed September 24, 2015.

¹⁶ *Ibid.*, p. 1.

July 2011 as authorized by Port Commission Resolution No. 11–49. In compliance with the Exclusive Negotiating Agreement, Forest City conducted community outreach and developed a land use plan for the Proposed Project, drawing on the framework established by the *Preferred Master Plan*.

The Port Commission and the Board of Supervisors endorsed a nonbinding Term Sheet between the Port and Forest City outlining features of the Proposed Project in May and June 2013, respectively. Under the Term Sheet, the Illinois Parcels would be included in the proposed SUD, and Forest City, although it would not have development rights to those parcels, would in a public-private partnership with the Port, and in collaboration with the Office of Economic and Workforce Development and other City agencies, seek entitlements for mixed-use development on both the 28-Acre Site and the Illinois Parcels. Forest City would act as master developer to construct the parks, streets, and infrastructure to support new development on the 28-Acre Site. Forest City would either construct the planned new buildings on the 28-Acre Site or assist the Port in the disposition of property to third-party builders.

PROPOSITION F

On November 4, 2014, the San Francisco electorate approved Proposition F, a ballot measure that authorized a height increase at the 28-Acre Site from the existing 40 to 90 feet, directed that the project proposed on the 28-Acre Site undergo environmental review, and established policies regarding the provision of certain significant public benefits as part of the proposed project at the 28-Acre Site. Proposition F complied with the requirement established by Proposition B (June 2014) for San Francisco voter approval for any proposed height limit increase along the San Francisco waterfront on Port-owned property that would exceed existing height limits in effect on January 1, 2014. Proposition B does not apply to the Hoedown Yard, because the property is not owned by the Port. Proposition F conditioned the effective date of the proposed height increase on completion of an EIR and approval of a development plan for the 28-Acre Site by the Port Commission and Board of Supervisors. Proposition F did not address heights on the Illinois Parcels.

The height increase approved in Proposition F was contingent on the City’s later approval of a project at the 28-Acre Site that would include the following:

- Provision of 9 acres of waterfront parks, playgrounds, and recreation opportunities on and adjacent to the 28-Acre Site;
- Construction of between approximately 1,000 and 2,000 new housing units;
- Provision of 30 percent of all new housing units at below-market rates;
- Stipulation that the majority of new housing units be offered for rent;

- Restoration of those historic structures on the site that are essential to the integrity of the Union Iron Works Historic District;
- Creation of substantial new and renovated space for arts, cultural, small-scale manufacturing, local retail, and neighborhood-serving uses;
- Preservation of the artist community currently located in Building 11 (the Noonan Building) by providing new state-of-the-art, on-site space that is affordable, functional and aesthetic, and by continuing to accommodate the Noonan Building community within the Union Iron Works Historic District during any transition period associated with the construction of new space;¹⁷
- Creation of between approximately 1,000,000 and 2,000,000 square feet of new commercial and office space; and
- Provision of accessory parking facilities and other transportation infrastructure as part of a transportation demand management program that enhances mobility in the district and neighborhood.

UNION IRON WORKS HISTORIC DISTRICT

Most of Pier 70 (66 of the total 69 acres) is listed in the Historic District. The Historic District's National Register nomination report¹⁸ documents the significance of Union Iron Works (UIW) and Bethlehem Steel at Pier 70 and their role in the nation's maritime history, supporting multiple war efforts, as well as in the evolution of industrial architecture in San Francisco. The Historic District's 44 contributing features and 10 non-contributing features include "buildings, piers, slips, cranes, segments of a railroad network, and landscape elements." Most of the buildings are of an industrial architectural style and historic use, and made of "unreinforced brick masonry, concrete, and steel framing, with corrugated iron or steel cladding."¹⁹ Pier 70's contributors to the Historic District are widely recognized as constituting the most intact industrial complex west of the Mississippi that represents the industrialization of the western United States. The Historic District was listed in the National Register in large part because the area "maintains exceptional integrity in terms of location, design, setting, materials, workmanship, feeling, and association."²⁰ UIW built or repaired ships at Pier 70 from the time of the Spanish American War in 1898, and ship repair operations continue today. The Historic District is not locally designated under Articles 10 or 11 of the San Francisco Planning Code.²¹

¹⁷ Rents are to be based on the Port's current parameter rent schedule for the Noonan Building inflated to the date the new space is available, and thereafter as outlined in project approval documents.

¹⁸ The Historic District nomination provides a complete account of the history of the site and can be accessed on the Port's website at <http://sfport.com/Modules/ShowDocument.aspx?documentID=6608>. Accessed September 24, 2015.

¹⁹ Ibid., p. 5.

²⁰ Ibid., p. 23.

²¹ Article 10 of the Planning Code describes Preservation of Historical Architecture and Aesthetic Landmarks, and Article 11 of the Planning Code describes Preservation of Buildings and Districts of Architectural, Historical, and Aesthetic Importance in the C-3 District.

The Historic District is characterized by the following features:

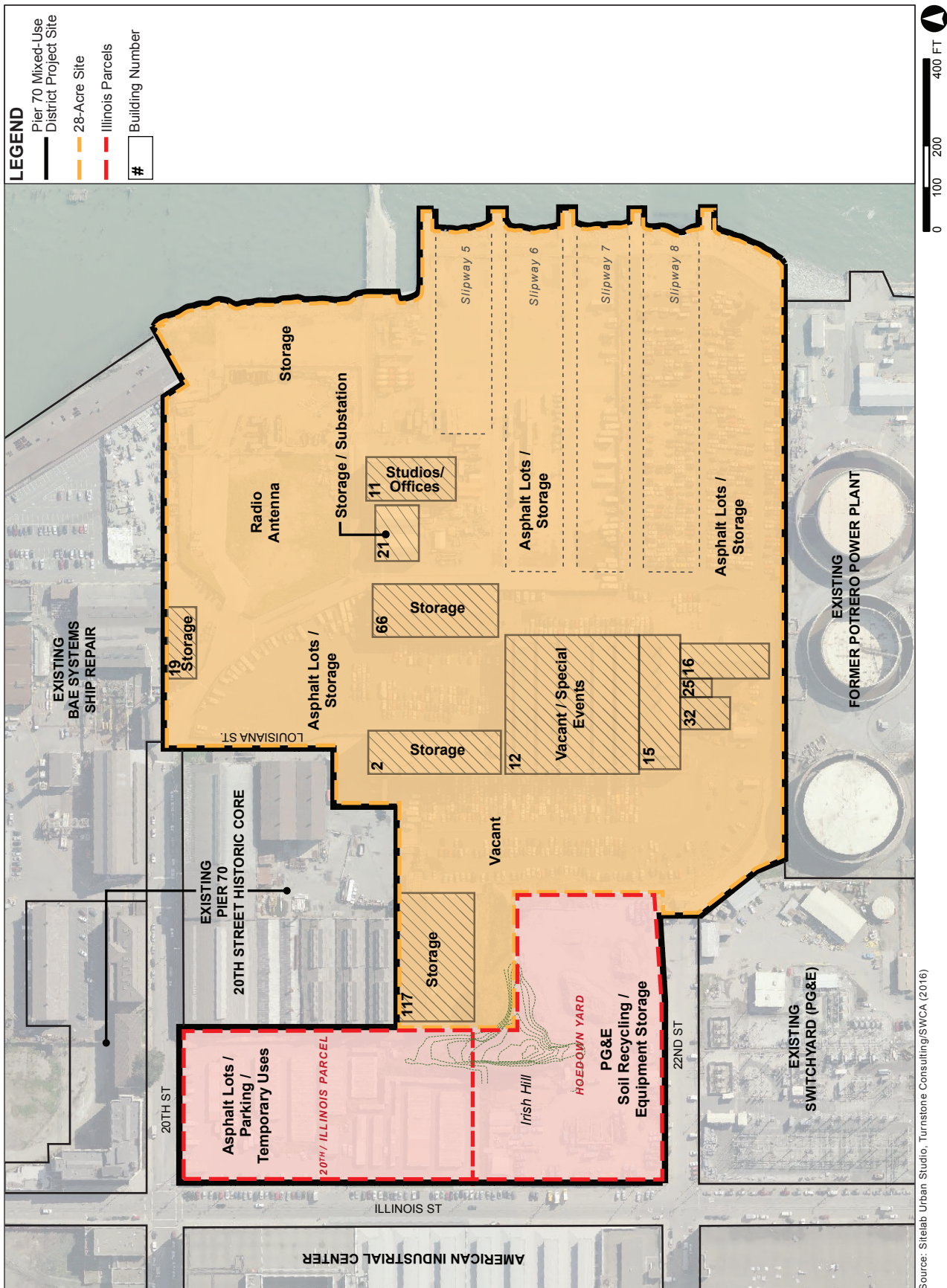
- Waterfront location;
- Numerous contributing features dating from 1884 to 1945;
- Minimal planted vegetation;
- Open areas that are paved or covered with gravel;
- Streets without curbs or gutters (except for 20th Street, which has granite curbs);
- Dense urban industrial character;
- Buildings that vary in scale, from 60,000 to 100,000 square feet and heights from one to six stories (80 feet), as well as a wide range of architectural treatments and materials;
- Unique groupings of buildings, including the unreinforced monumental masonry Buildings 113 and 114, as well as the steel-frame and corrugated-metal World War II Building 12 complex;
- Wharves, piers, slips, cranes and floating drydocks; and
- Ongoing ship repair activity.

The project site contains 12 of the 44 contributing features in the Historic District and one of the ten non-contributing features in the Historic District. The Hoedown Yard is not within the Historic District, but it has also been used for industrial purposes since the 1880s. Identifiable historical uses at the Hoedown Yard appear to have been limited to the storage of fuel oil in above-ground storage tanks (30,000- to 40,000-barrel capacity) for adjacent industrial activities. PG&E acquired the Hoedown Yard over time from various companies, including UIW and Bethlehem Steel. (See Figure 2.2: Existing Site Plan.)

HISTORIC UPLANDS AND TIDELANDS

A portion of the San Francisco Bay shoreline as mapped in 1869 now falls on land areas of the project site, following an undulating pattern east-to-west, then curving south. The 1869 shoreline started south of what is now 20th Street, traversing the project site in the southern direction.²² Portions of the shoreline were later filled to form the eastern edge of project site and lands to the north.

²² Treadwell and Rollo, "Environmental Site Investigation Report: Pier 70 Master Plan Area, San Francisco, California," prepared for the Port of San Francisco, January 13, 2011, Figure 4, Current Land Use (PDF p. 309).



PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 2.2: EXISTING SITE PLAN

A substantial portion of the project site has always been upland, meaning that it is located upward of the historical shoreline. The uplands were originally part of the privately owned Rancho del Potrero Nuevo, but title to the rancho was never confirmed and the lands were ultimately confirmed as being within the San Francisco pueblo.²³ The City's Van Ness Ordinance ultimately conveyed title of the pueblo lands to those persons in actual possession.²⁴

In the late 1860s, the State authorized tidelands grants in the Pier 70 area to William Alvord and his company (and successor in interest), the Pacific Rolling Mills Company, with a condition requiring that iron production facilities be constructed. In 1900, the Pacific Rolling Mills Company conveyed all of its property in the Pier 70 area to Risdon Iron & Locomotive Works, creating the Risdon Yard.

The uplands, generally east of the north-south-running Georgia Street,²⁵ were part of the Risdon Yard. The Risdon Yard was transferred to several successive private owners until the U.S. government acquired the yard in 1940, then immediately leased it to Bethlehem Steel in connection with the war effort. The State purchased the Risdon Yard, including the uplands, in 1967, and then conveyed the property to the Port under the 1968 Burton Act grant. Bethlehem Steel held the remainder of the Pier 70 uplands until 1982, when the Port acquired the uplands property, along with former tidelands from Bethlehem Steel, as described below.

The largest portion of the Pier 70 site comprises lands mapped and sold by the Board of Tide Land Commissioners (BTLC). The sales were authorized by Chapter 543 of the Statutes of 1868. That statute directed the BTLC to establish a waterfront line in San Francisco south of Second Street; to reserve lands for streets, docks, piers, slips, canals, drains, and other uses as necessary for the public convenience and for the purposes of commerce; and to auction into private ownership the remaining lands landward of the waterfront line. Most of the BTLC lots were owned by Bethlehem Steel or Risdon Iron & Locomotive Works by the turn of the nineteenth century into the twentieth century.

All of the filled lands north of the Bethlehem Steel property appear to have been reserved from sale by the State, including Illinois Street, portions of 20th and Michigan streets, and the Central Basin. The State conveyed these lands to the City as part of the Burton Act grant.

²³ The pueblo lands were granted by Mexico and, after extensive litigation, ultimately patented by the United States to the City, resulting in the 1883 Pueblo Line, which represents the land comprising the San Francisco pueblo. The confirmed pueblo line is determinative of the boundary between uplands granted to the City and the sovereign tide and submerged lands of the State at statehood.

²⁴ Brad Benson, Port of San Francisco, memorandum to Jennifer Luchessi, Executive Director, California State Lands Commission, September 24, 2015.

²⁵ The north-south-running Georgia Street, which bisects the project site beginning at 20th Street through the Historic Core site and continuing south to 22nd Street, is not a physical street. The northern portion of this roadway was closed in 1884, and the southern portion was closed in 1940.

PROJECT SITE LAND USE RESTRICTIONS

PUBLIC TRUST LANDS

Portions of the 28-Acre Site and Illinois Parcels are subject to the common law tidelands public trust for commerce, navigation, and fisheries and the statutory trust under the Burton Act, as amended (the Public Trust). (See Figure 2.3: Existing Public Trust Lands.) The Public Trust imposes certain use restrictions on historical tidal and submerged lands along the waterfront to protect the interests of the people of the State of California for commerce, navigation, and fisheries, as well as other public benefits recognized to further trust purposes, such as recreation and environmental preservation.²⁶

SAN FRANCISCO

Eastern Neighborhoods Area Plan

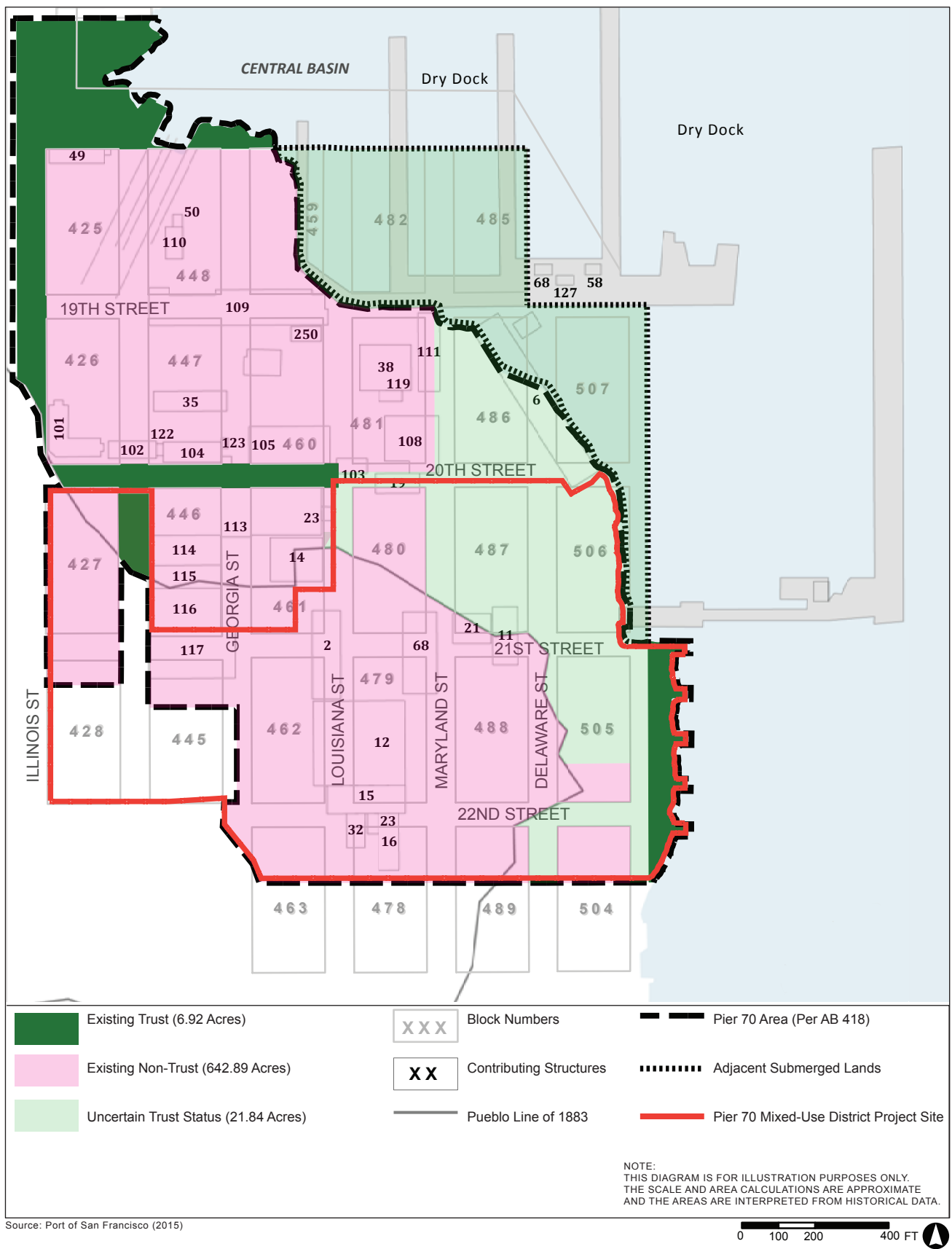
Central Waterfront Area Plan

The Proposed Project comprises the northeastern portion of the *Central Waterfront Area Plan*, as shown on Figure 2.1, p. 2.6. The *Central Waterfront Area Plan* is one of the four plan areas covered by the *Eastern Neighborhoods Rezoning and Area Plan (Eastern Neighborhoods Area Plan)*, which the Board of Supervisors adopted in 2009.²⁷ The Eastern Neighborhoods area contains much of the City's industrial zoned land and has been transitioning to other uses over the past several decades. One of the goals of the Eastern Neighborhoods planning effort was to find a balance between the growth of housing and office uses and the preservation of production, distribution, and repair (PDR) facilities.²⁸ The project site was included in one of the four sub-areas of the *Eastern Neighborhoods Area Plan* (as part of the *Central Waterfront Area Plan*), but, except for height increases affecting the Illinois Parcels, the Pier 70 parcels were not rezoned, deferring to the Port-led community planning process for Pier 70, described previously on p. 2.7.

²⁶ California State Lands Commission, The Public Trust Doctrine. Available online at http://www.slc.ca.gov/About_The_CSLC/Public_Trust/Public_Trust_Policy.pdf. Accessed on October 19, 2016.

²⁷ San Francisco Planning Department website, *Eastern Neighborhoods*, available online at www.sf-planning.org/index.aspx?page=1673, accessed April 6, 2015. The other plan areas within the *Eastern Neighborhoods Area Plan* are Central Waterfront (adjacent and west of the Central Waterfront Area Plan), Mission (west of Potrero), Showplace Square/Potrero (adjacent and north of Potrero), and East SOMA (i.e., East South of Market, which is northwest of Mission Bay).

²⁸ San Francisco Planning Department website, *About the Eastern Neighborhoods*, available online at www.sf-planning.org/index.aspx?page=1677#1, accessed September 24, 2015.



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FIGURE 2.3: EXISTING PUBLIC TRUST LANDS

Zoning and Height and Bulk Districts

The 28-Acre Site is zoned M-2 (Heavy Industrial) and located in a 40-X Height and Bulk District. The Illinois Parcels are zoned M-2 and P (Public) and located in a 40-X and a 65-X Height and Bulk District. Existing and proposed height and bulk limits are shown on Figure 2.4: Existing and Proposed Height and Bulk Districts. Planning Code amendments associated with the *Eastern Neighborhoods Area Plan* increased height limits, from 40 to 65 feet, for the Illinois Parcels and the western portion of the Hoedown Yard. Height limits for the eastern portion of the Hoedown Yard and the entirety of the 28-Acre Site were not changed and remain at 40 feet. As authorized by Proposition F in November 2014, height limits on the 28-Acre Site would be increased to 90 feet, except for a 100-foot-wide band adjacent to the shoreline that would remain at 40 feet.

PORT OF SAN FRANCISCO

Waterfront Land Use Plan

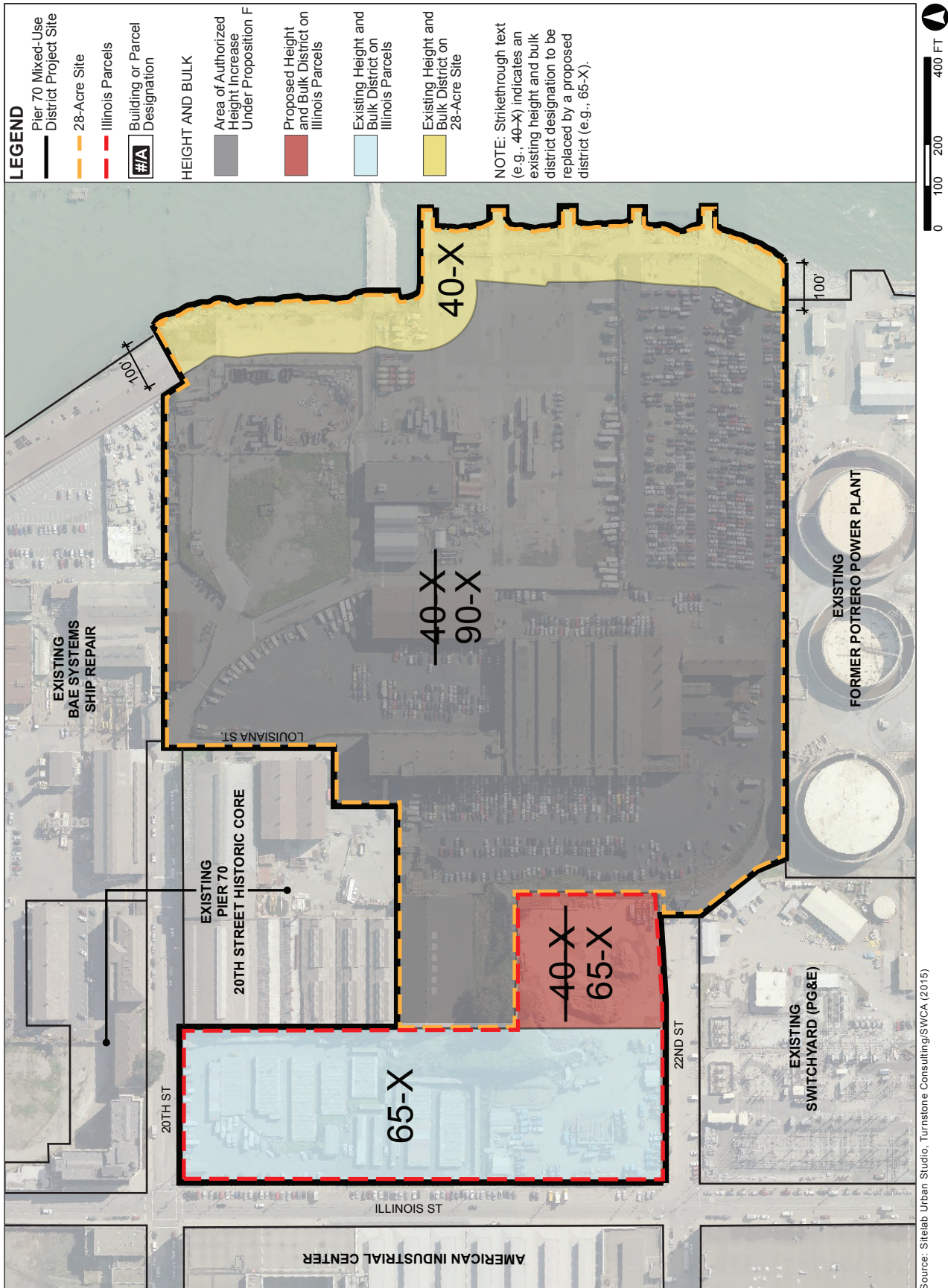
The majority of the Proposed Project is within the Port of San Francisco's WLUP, which is a land use policy document governing property under the jurisdiction of the Port, generally from Fisherman's Wharf to India Basin.²⁹ The Hoedown Yard is not under Port jurisdiction and is therefore not covered in the WLUP. The WLUP Southern Waterfront Subarea extends from Mariposa Street, just north of the project site, south to and including India Basin.³⁰

Port of San Francisco Pier 70 Preferred Master Plan

As noted on p. 2.7, through a community-based planning process, the Port developed the *Preferred Master Plan*, dated April 2010. The *Preferred Master Plan* sets forth the Port's vision for Pier 70, which is to "create a vibrant and authentic historic district that re-establishes the historic activity level, activates new waterfront open spaces, creates a center for innovative industries, and integrates ongoing ship repair operations." The plan also provides a framework for Pier 70 that serves to allocate land between parks, ship repair, historic rehabilitation, and new development sites; establish infill design guidelines to protect the integrity of the Historic District as new development occurs; and prioritize investment in the most significant historic buildings.

²⁹ City and County of San Francisco, Port of San Francisco, *Waterfront Land Use Plan*, Revised Version, 2009. Available online at <http://www.sfport.com/index.aspx?page=294>. In 2014-2015, Port staff completed the comprehensive Waterfront Plan 1997-2014 Review Report and developed a public process for targeted updates to the Waterfront Plan. Draft updates to the *Waterfront Land Use Plan* are anticipated in the spring of 2017.

³⁰ City and County of San Francisco, Port of San Francisco, *Waterfront Land Use Plan*, Map of the Southern Waterfront Subarea, Revised Version, 2009, p. 163A.



PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 2.4: EXISTING AND PROPOSED HEIGHT AND BULK DISTRICTS

PROJECT SITE CHARACTERISTICS

The project site currently contains approximately 351,800 gsf of buildings and facilities, most of which are deteriorating. Current uses on the site, all of which are temporary, include special event venues, artists' studios, self-storage facilities, warehouses, automobile storage lots, a parking lot, a soil recycling yard, and office spaces.

The project site has varying topography, sloping up from San Francisco Bay, with an approximately 30-foot increase in elevation at the western extent of the 28-Acre Site. The 35-foot-tall remnant of Irish Hill is located in the southwestern portion of the project site and straddles both the 28-Acre Site and Illinois Parcels. Impervious surface covers approximately 98 percent of the 28-Acre Site and approximately 43 percent of the Illinois Parcels.

28-ACRE SITE

The existing buildings on the 28-Acre Site are mostly low- to mid-rise structures in deteriorating condition. The site also includes a small portion of the remaining 1.4-acre remnant of Irish Hill. (See Figure 2.2, p. 2.11.) The Port has entered into interim leases and licenses for all of the useable buildings. Current uses of these buildings are as follows:

- Building 2, a warehouse space, is leased by Paul's Stores for storage.
- Building 11, known as the Noonan Building and previously used as administration and design offices for the World War II shipbuilding yard, is currently leased as artists' studios and office space.
- The Building 12 complex and the paved lot to the west of the complex are used for community, arts and cultural, and special events through a Port license to Forest City. The complex, made up of Building 12 (former Plate Shop No. 2), Building 15 (former Layout Yard), Building 16 (former Stress Relieving Building), Building 25 (former washroom and lockers), and Building 32 (former Template Warehouse), was once used for producing ship hull plates.
- Building 19 is part of the BAE Systems lease premises, where it is used to store sandblasting grit. Building 19 is identified in the BAE lease as an area the Port can remove from the lease with a 6-month notice starting in January 2017.
- Building 21, an electrical substation and a former Risdon Iron Locomotive Works and Pacific Rolling Mills Company building, is partially leased to the SOMArts Cultural Center for storage.

The Port has also leased certain portions of the land within the project site, including four former slipways (Slipways 5, 6, 7, and 8) on the 28-Acre Site, which have been filled and paved.

Current uses are as follows:

- West of Building 11 (the Noonan Building), SOMArts and Ernest Rivera lease paved land for storage.

- Affordable Self Storage leases the southeastern corner of the slipways, which includes rows of self-storage lockers.
- Immediately north of Affordable Self Storage, Boas International leases an area for new automobile storage.

With the exception of a portion of the Affordable Self Storage lease area along the southern border of the project site and the studio/office uses in Building 11, all described leases and licenses are operating on a month-to-month basis as of July 31, 2016.

ILLINOIS PARCELS

20th/Illinois Parcel

The 20th/Illinois Parcel, which is owned by the Port and within the greater 69-acre Pier 70 boundary and the Historic District, is a paved area with asphalt lots used for paid parking, construction lay-down, and other temporary uses. The Port has leased this site to Imperial Parking, Inc. for commuter parking, terminable with 30 days' notice. Also, the 20th/Illinois Parcel contains a portion of the 1.4-acre remnant of Irish Hill, which straddles both the southeastern corner of the 20th/Illinois Parcel and the northeastern corner of the Hoedown Yard.

Hoedown Yard

South of the 20th/Illinois Parcel, the PG&E-owned Hoedown Yard is used by PG&E for vehicle parking, equipment storage (in the western portion of the yard), and temporary stockpiling of materials generated from subsurface utility maintenance operations in San Francisco (in the eastern portion of the yard). PG&E also uses a portion of the site as a settling area for drilling mud (a mixture of bentonite and water) that has been used by PG&E crews for off-site utility work.

A remaining section of Irish Hill is located in the northeastern corner of the Hoedown Yard. The Hoedown Yard is outside of the 69-acre Pier 70 boundary, but it is included in the project site and proposed SUD.

LANDSCAPE AND VEGETATION

The project site has varying topography, sloping down toward San Francisco Bay, with a prominent decrease in elevation at the eastern extent of the 28-Acre Site. The project site has almost no vegetation, with the exception of the remnant of Irish Hill in the Hoedown Yard, which contains scattered ground-level shrubs and a stand of eucalyptus trees, and scattered vegetation east of Building 19, near the radio antenna in the northeastern part of the site. There are no significant landscape elements or street trees.

INFRASTRUCTURE

Potable and Recycled Water Systems

The San Francisco Public Utilities Commission (SFPUC) provides potable water to the project site through a 12-inch-diameter domestic water line that runs underneath 20th Street and extends along the northern boundary of the project site. Other domestic water lines in the vicinity of the project site include an 8-inch-diameter water line underneath Illinois Street and an 8-inch line beneath 22nd Street. This system provides potable water to the project site for all site uses, as well as low-pressure water for firefighting purposes. The fire hydrants closest to the project site are located near the intersections of Illinois and 22nd streets (one hydrant), Illinois and 20th streets along the northern property boundary (four hydrants), and 19th and Illinois streets (one hydrant). Currently the City does not provide recycled (reclaimed) water on the eastern side of San Francisco or within the project site.

The Auxiliary Water Supply System (AWSS), also known as the San Francisco Emergency Firefighting Water System, provides a supplemental high-pressure water source for fire-fighting in certain areas of San Francisco. At this time, the AWSS does not extend into the project site, although there is a 14-inch distribution line location beneath Third Street.

Wastewater and Stormwater System

The project site is served by the City's combined sewer system that is operated by the SFPUC. The project site is located within the 20th Street sub-basin of the City's combined sewer system. This sub-basin includes 8-inch and 18-inch sewer conveyance pipes in 20th Street from Illinois Street to Louisiana Street that convey both stormwater and wastewater to 42-inch sewer line beneath 20th Street east of Louisiana Street, and a 54-inch storage and detention pipe along the eastern portion of the site that extends south from the pump station. These sewer lines are owned by the SFPUC and convey flows to the 20th Street pump station³¹ near the northeast corner of the project site. In addition, the Port owns 6- to 12-inch mains across the site that connect to SFPUC-owned infrastructure. The pump station has a dry-weather capacity of approximately 2.65 million gallons per day (mgd).³² Based on existing wastewater flows, the remaining capacity of the pump station is about 1.2 mgd. The existing 20th Street pump station is described in Section 4.K, Utilities and Service Systems.

³¹ A pump station is a facility that includes pumps and equipment for pumping fluids from one place to another.

³² San Francisco Public Utilities Commission (SFPUC), 20th Street Pump Station Volumetric Discharge Test and Contributing Flows, Technical Memorandum, August 30, 2013

Flows from the 20th Street pump station are conveyed to a 27-inch-diameter gravity sewer main under Illinois Street via a 10-inch-diameter force main located beneath 20th Street. From there, the combined stormwater and wastewater flows are conveyed to the Southeast Water Pollution Control Plant (SEWPCP) for treatment prior to discharge to San Francisco Bay in accordance with the National Pollutant Discharge Elimination System (NPDES) permit for the SEWPCP, North Point Wet Weather Facility, and all of the Bayside wet-weather facilities (Bayside NPDES Permit).

The 20th Street sub-basin includes 20th and 22nd streets combined sewer discharge (CSD) structures that are connected by the 54-inch storage and detention pipe. During wet weather, stormwater and wastewater flows that exceed the capacity of the 20th Street pump station plus the storage capacity of the 42- and 54-inch sewer lines are discharged through the CSD structures.

Electricity and Natural Gas

Electrical service to the project site is provided by PG&E and SFPUC Power via three 12-kilovolt (kV) electrical distribution circuits. One circuit is at 22nd Street, originating from the adjacent substation and transferring to a Port-owned underground distribution line near the edge of the property. The second runs overhead from the substation, traversing the remnant of Irish Hill, and continuing along Michigan Street to the corner of 20th Street before going underground to Port-owned distribution equipment in Building 102 near the edge of the 28-Acre Site. This currently serves as the primary circuit for the BAE Systems Ship Repair site. The third runs underground down 20th Street to the Port-owned distribution equipment in Building 102, and currently serves as the secondary circuit to the BAE site. An additional smaller overhead circuit also runs down 20th Street from Illinois Street and provides power to the combined sewer pump station. Two north-south overhead 12-kV electrical distribution lines traverse Illinois Street and connect to the PG&E Potrero Substation located on the eastern side of Illinois Street between 22nd and 23rd streets. There are 12 street lights around the asphalt lots on the southeastern end of the project site.

Natural gas is delivered to the project site through a PG&E-owned east-west natural gas line under 20th and Michigan streets. The Port owns natural gas lines that connect to the PG&E line on 20th Street. From there, several smaller Port-owned natural gas distribution lines circulate natural gas throughout the 28-Acre Site. Additionally, several abandoned Port-owned natural gas lines also exist within the project site. There are no existing natural gas lines connecting to the Illinois Parcels.

D. PROPOSED PROJECT CHARACTERISTICS

DEVELOPMENT CHARACTERISTICS

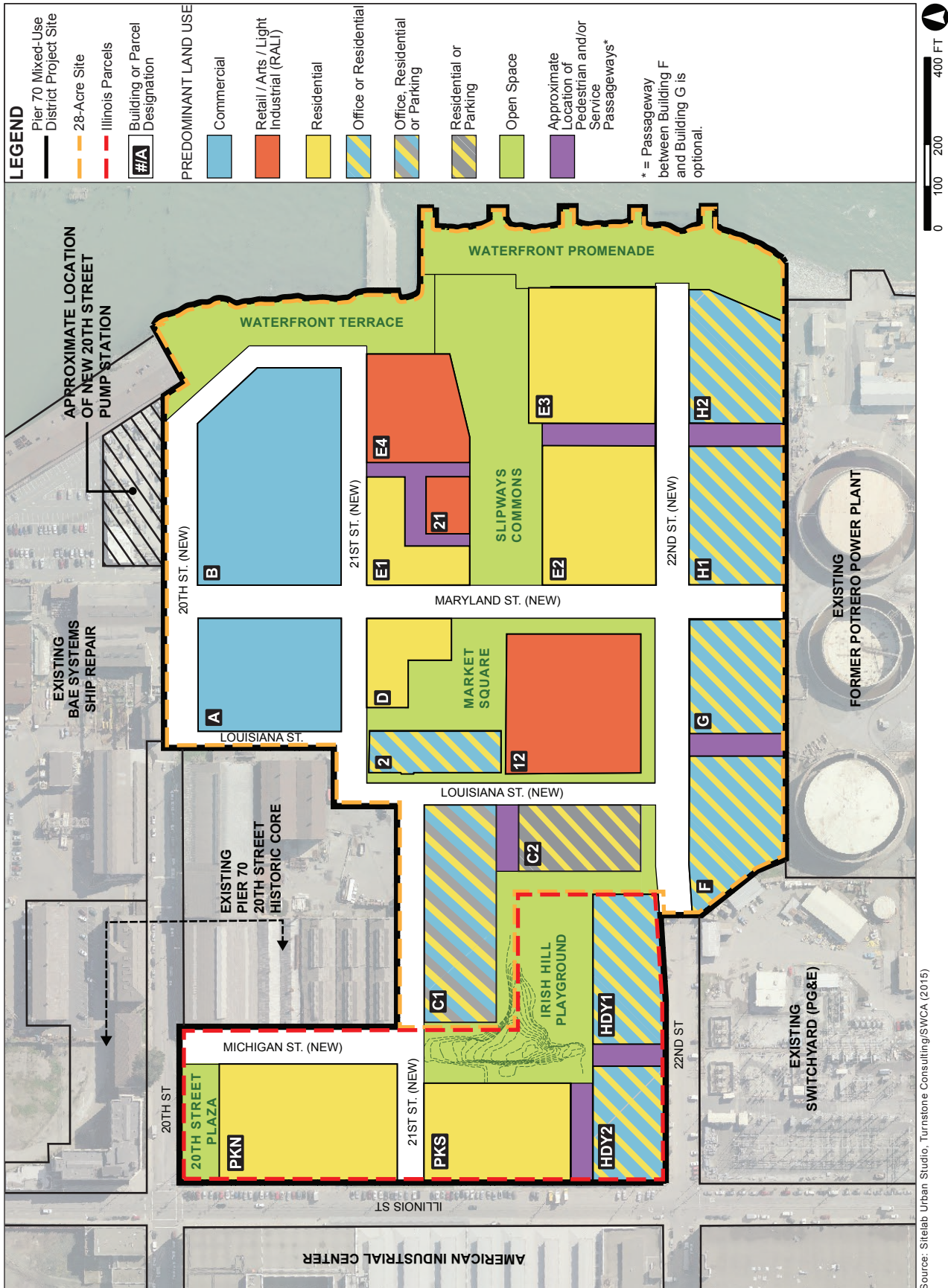
The Proposed Project would rezone the entire 35-acre project site and establish development controls for the site through adoption of a proposed SUD. (See Figure 2.5: Proposed SUD Land Use Program.) As envisioned, the Proposed Project would include market-rate and affordable residential uses, commercial use, RALI uses,³³ parking, shoreline improvements, infrastructure development and street improvements, and public open space. The proposed SUD would provide a mixed-use land use program in which certain parcels on the project site could be zoned as mixed-use, allowing for either commercial or residential uses. In addition, the proposed SUD would provide that two parcels on the project site (Parcels C1 and C2, located at the corner of Louisiana and the new 21st streets and near the western boundary of the 28-Acre Site) would be designated for structured parking, accessible to the public, but could be developed with either residential or commercial uses (Parcel C1) or residential uses (Parcel C2), depending on future market demand for parking and future methods of travel for residents and visitors.

Under the Proposed Project, development of the 28-Acre Site would include up to approximately 3,422,265 gsf of construction in new buildings and improvements to existing structures (excluding square footage allocated to accessory and structured parking). New buildings would range in height from 50 to 90 feet. Development of the Illinois Parcels would include up to approximately 801,400 gsf of construction in new buildings (excluding square footage allocated to accessory parking). New buildings on the Illinois Parcels would not exceed a height of 65 feet.

DEMOLITION AND REHABILITATION

The project site has 12 contributors to the Historic District and one non-contributor, totaling 351,800 gsf. The Proposed Project includes rehabilitation, in compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, of approximately 227,800 gsf in Buildings 2, 12, and 21 for reuse. Buildings 2 and 12 would remain in their current location. Building 21 would be relocated about 75 feet to the southeast, to create public frontage along the waterfront park and maintain a visual connection to Buildings 2 and 12. (See Table 2.1: Existing and Rehabilitated Buildings on the Project Site, and Figure 2.6: Proposed Rehabilitation, Retention and Demolition Plan.) As part of the Proposed Project, seven of the remaining contributing buildings and structures on the site (Buildings 11, 15, 16, 19, 25, 32, and 66), containing 92,945 gsf, would be demolished. A small portion of the contributing feature, the

³³ The project sponsors describe the RALI use as including neighborhood-serving retail, arts activity, eating and drinking places, production distribution and repair, light manufacturing, and entertainment establishments.



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FIGURE 2.5: PROPOSED SUD LAND USE PROGRAM

remnant of Irish Hill, would also be removed. The Port has proposed to demolish the 30,940-gsf Building 117, located on the project site, separately from and prior to approval of the Proposed Project.³⁴ The non-contributing feature on the project site (subterranean portions of Slipways 5 through 8) would be partially removed as part of the Proposed Project.

Table 2.1: Existing and Rehabilitated Buildings on the Project Site

	Existing Gross Square Footage	Existing Gross Square Footage to Be Retained and Rehabilitated
Existing Buildings	351,800 ¹	227,800 ²

Notes:

- 1 Includes Buildings 2, 11, 12, 15, 16, 19, 21, 25, 32, 66, and 117. The Port has proposed to demolish Building 117 separately from and prior to approval of the Proposed Project. The demolition of Building 117 will undergo appropriate environmental review, as required by CEQA.
- 2 The existing 227,800 gsf of retained building space are located in Buildings 2, 12, and 21 on the 28-Acre Site. These three buildings would be retained and rehabilitated as part of the Proposed Project.

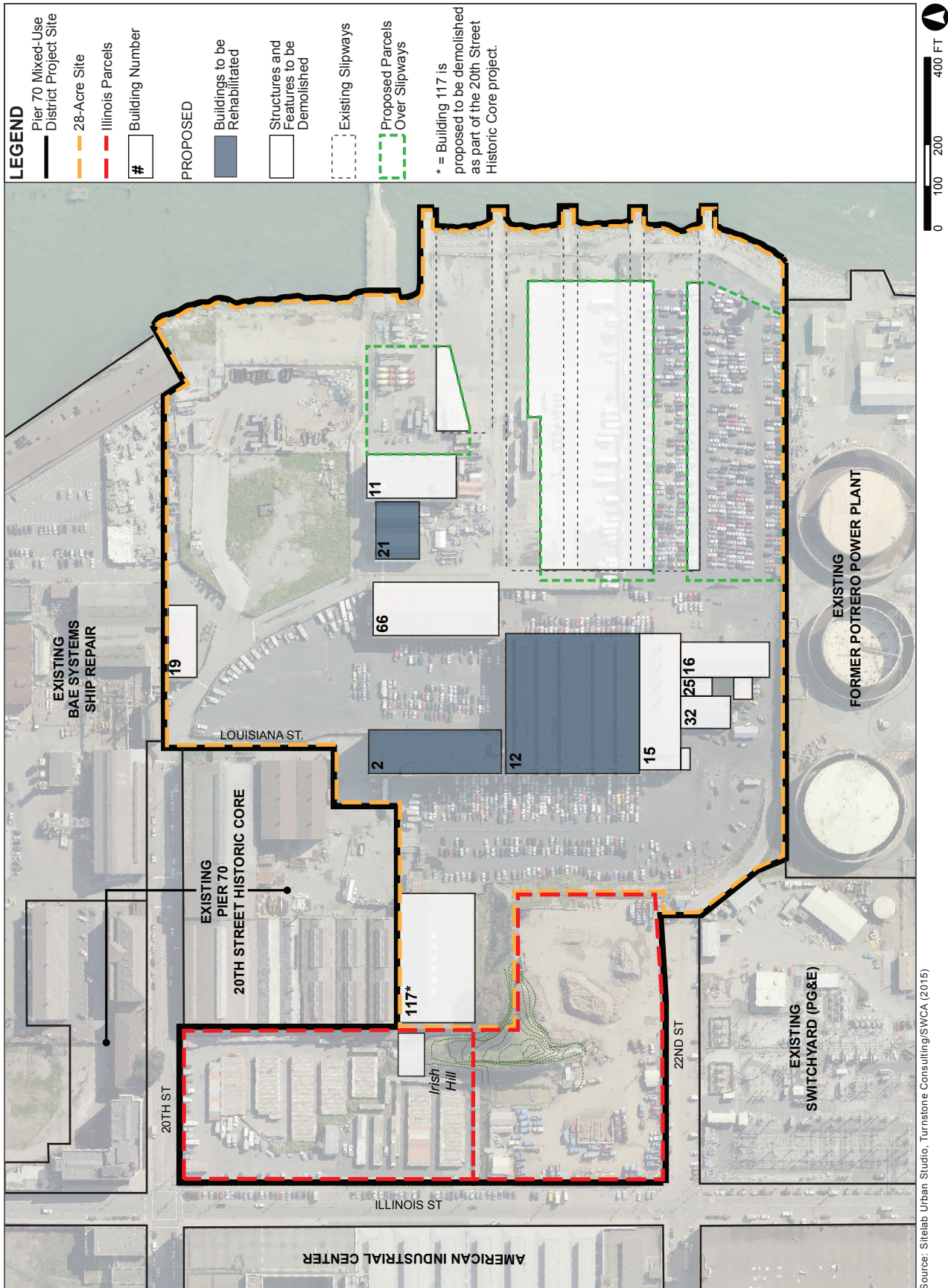
Sources: Forest City; Turnstone/SWCA

RELOCATION OF EXISTING TENANTS

The Port negotiated most of the existing leases on the 28-Acre Site and the 20th/Illinois Parcel after entering into exclusive negotiations with Forest City. All existing leases are short-term leases for interim uses, and all leases, except those for the tenants in Building 11 (the Noonan Building) and a portion of the Affordable Self Storage lease, are operating on a month-to-month basis and will be terminated in anticipation of the Proposed Project. The Port will develop a plan for tenant relocation to the extent required under the California Relocation Assistance Law (Cal. Gov. Code Sections 7260-7277) and applicable regulations. The Port will also try to relocate larger-scale tenants to other available, suitable Port property. As part of its proposed Fiscal Year 2015-2016 capital budget, the Port intends to improve 17 acres of the Pier 94 Backlands³⁵ as

³⁴ Building 117 is proposed for demolition as part of the 20th Street Historic Core project to allow the adjacent building (Building 116) located on the 20th Street Historic Core site to be rehabilitated to meet fire code. The Port filed an application to demolish Building 117 on January 7, 2016, Case No. 2016-000346ENV. Any approval of the demolition of Building 117 will undergo appropriate environmental review, as required by CEQA. San Francisco Planning Department, Notification of Project Receiving Environmental Review, Illinois and 20th Streets/Pier 70 ("20th Street Historic Core"), Case No. 2016-000346ENV, September 8, 2016.

³⁵ Pier 94 Backlands is a 23-acre unimproved Port-owned site located about one mile to the south of the project site. Future improvements associated with Pier 94 Backlands will undergo a separate review and entitlement process and are not included as part of the Proposed Project.



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FIGURE 2.6: PROPOSED REHABILITATION, RETENTION, AND DEMOLITION PLAN

paved, open industrial land. If constructed in time, the Backlands would be one of the potential relocation areas identified by Port staff for existing major tenants of industrial and storage uses currently at Pier 70.

In accordance with the Term Sheet between the Port and Forest City³⁶ and Proposition F (November 2014), the tenants of the Noonan Building would be provided on-site space that is affordable, functional, and aesthetic. Rent on the new space will be based on the Port's current parameter rent schedule for the Noonan Building inflated to the date the new space is available. Tenants of the Noonan Building would be continuously accommodated. If new space is not yet constructed on the project site prior to the demolition of the Noonan Building, the Port or Forest City would offer the tenants (most of whom are on month-to-month leases) replacement space elsewhere within the Pier 70 area.

SPECIAL USE DISTRICT AND LAND USE PROGRAM

The Proposed Project would amend the Planning Code to include the proposed Pier 70 SUD, and would amend the Zoning Maps to reflect the proposed SUD. The proposed SUD would require compliance with the proposed *Pier 70 SUD Design for Development*, which is discussed on p. 2.35. Under the proposed SUD, the Proposed Project would provide a mixed-use land use program in which certain parcels (Parcels F, G, H1, H2, HDY1, and HDY2) and Building 2 could be developed for either primarily commercial uses or residential uses. Parcels C1 and C2 would be designated for structured parking, but could be developed with either residential or commercial (Parcel C1) or residential uses (Parcel C2), depending on future methods of travel for residents and visitors.

Proposed new zoning in the SUD would permit the following uses, listed below by parcel and shown in Table 2.2: Proposed Pier 70 Special Use District – Primary Uses by Parcel and Rehabilitated Building.

On the 28-Acre Site:

- Parcels A and B: Restricted to primarily commercial use, with RALI uses allowed on the ground floor.
- Parcel C1: Permitted for commercial, residential, or structured parking uses with RALI uses allowed on the ground floor.
- Parcel C2: Permitted for either residential or structured parking uses, with RALI uses allowed on the ground floor.
- Parcels D, E1, E2, and E3: Restricted to primarily residential use, with RALI uses allowed on the ground floor.

³⁶ *Term Sheet for Pier 70 Waterfront Site*, between the Port Commission and Forest City, June 11, 2013.

Table 2.2: Proposed Pier 70 Special Use District – Primary Uses by Parcel and Rehabilitated Building

Parcel or Rehabilitated Building	Allowable Use					Maximum Height (Feet)	
	Residential		Commercial		Structured Parking		RALI (Ground Floor)
28-Acre Site ¹							
A			●			●	90
B			●			●	90
C1	●	or	●	or	●	●	90
C2	●	or			●	●	90
D	●					●	90
E1	●					●	90/65
E2	●					●	70
E3	●					●	70
E4			●			●	50
			Upper Floor				
F	●	or	●			●	90
G	●	or	●			●	90
H1	●	or	●			●	90
H2	●	or	●			●	90
Building 2	●	or	●			●	Existing (82)
Building 12			●			●	Existing (60)
			Upper Floor				
Building 21						●	Existing (44)
Illinois Parcels ²							
PKN	●					●	65
PKS	●					●	65
HDY1	●	or	●			●	65
HDY2	●	or	●			●	65

Notes:

¹ In addition to the uses listed, all 28-Acre Site parcels are permitted to include accessory parking. However, this does not apply to existing Buildings 2, 12, and 21, and Parcel E4.

² In addition to the uses listed, all Illinois Parcels are permitted to include accessory parking.

Sources: Forest City; Turnstone/SWCA

- Parcels F, G, H1, and H2, and Building 2: Permitted for either commercial or residential uses, with RALI uses allowed on the ground floor.
- Parcel E4 and Buildings 12 and 21: Permitted for RALI uses with commercial allowed on the upper floor of Parcel E4 and Building 12.
- All 28-Acre Site parcels except existing Buildings 2, 12, and 21 and Parcel E4: Permitted to include accessory parking.

On the Illinois Parcels:

- 20th/Illinois Parcel (Subdivided into Parcel K North [PKN] and Parcel K South [PKS]): Restricted to primarily residential use, with RALI uses on the ground floor.
- Hoedown Yard (Subdivided into Parcel Hoedown Yard 1 [HDY1] and Parcel Hoedown Yard 2 [HDY2]): Permitted for either commercial or residential uses, with RALI uses allowed on the ground floor.
- All Illinois Parcels: Permitted to include accessory parking.

Development under the proposed SUD is intended to provide a balanced mix of uses to support revitalization of the project site and respond to market conditions in the project site vicinity. To cover a full range of potential land uses that could be developed under the proposed SUD, this EIR analyzes a maximum residential-use scenario and a maximum commercial-use scenario for the project site. The two scenarios bracket specific maximum ranges of uses that could be developed under the proposed SUD.

The Maximum Residential Scenario and the Maximum Commercial Scenario for both the 28-Acre Site and the Illinois Parcels are mutually exclusive: the maximum commercial and maximum residential programs could not both be built. If the Proposed Project were to be built with the maximum amount of commercial space, less space would be developed with residential uses; conversely, if the maximum number of residential units were constructed, less space would be developed with commercial uses, as described below. Depending on the uses developed, the Proposed Project's total gsf would range between a maximum of 4,212,230 gsf, under the Maximum Residential Scenario, to 4,179,300 gsf, under the Maximum Commercial Scenario, excluding square footage associated with accessory and structured parking.³⁷ Total construction would not exceed a maximum of 3,422,265 gsf on the 28-Acre Site and 801,400 gsf on the Illinois Parcels.

For both development scenarios, construction is projected to begin in 2018 and would be phased over an approximately 11-year period, concluding in 2029. Proposed development is expected to involve up to five phases.

³⁷ Per the Planning Code, parking and mechanical equipment space do not count toward gross square footage.

Maximum Residential Scenario

28-Acre Site

Development under the Maximum Residential Scenario on the 28-Acre Site would include a maximum of up to 3,410,830 gsf in new and renovated buildings (excluding square footage allocated to parking). (See Table 2.3: Project Summary Table – Maximum Residential Scenario, and Figure 2.7: Proposed Land Use Plan – Maximum Residential Scenario.) Under this scenario, there would be up to 2,150 residential units (up to approximately 710 studio/one-bedroom units and 1,440 two- or more bedroom units), totaling about 1,870,000 gsf, as well as approximately 1,095,650 gsf of commercial space and 445,180 gsf of RALI space (241,655 gsf of retail space, 60,415 gsf of restaurant space, and 143,110 gsf of arts/light-industrial space). The overall development envelope includes rehabilitation of 237,800 gsf in Buildings 2, 12, and 21 in compliance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties. Table 2.3 assumes that the parcels (Parcels F, G, H1, and H2) and Building 2 would be devoted to residential use, and Parcels C1 and C2 would be built as residential use in order to study the maximum gsf of development area on the project site under the Maximum Residential Scenario.

Illinois Parcels

Development under the Maximum Residential Scenario on the Illinois Parcels would include a maximum of up to 801,400 gsf in newly constructed buildings (see Table 2.3). Under this scenario, there would be up to 875 residential units (up to approximately 290 studio/one-bedroom units and 585 two- or more bedroom units³⁸) totaling about 760,000 gsf, as well as approximately 6,600 gsf of commercial area and approximately 34,800 gsf of RALI space (27,840 gsf of retail space and 6,960 gsf of restaurant space) in new buildings.

Maximum Commercial Scenario

28-Acre Site

Development on the 28-Acre Site under the Maximum Commercial Scenario would include a maximum of up to about 3,422,265 gsf in new and renovated buildings. (See Table 2.4: Project Summary Table – Maximum Commercial Scenario, and Figure 2.8: Proposed Land Use Plan – Maximum Commercial Scenario.) Under this scenario, there would be up to 1,100 residential units (up to approximately 365 studio/one-bedroom units and 735 two- or more bedroom units)

³⁸ The exact mix of dwelling unit types to be provided by the Project has not been established at this time; For purpose of analysis in this EIR, it has been assumed that 33 percent of the total number of dwelling units under each scenario would be analyzed as studios or one-bedroom units, while 67 percent would be analyzed as having two or more bedrooms.

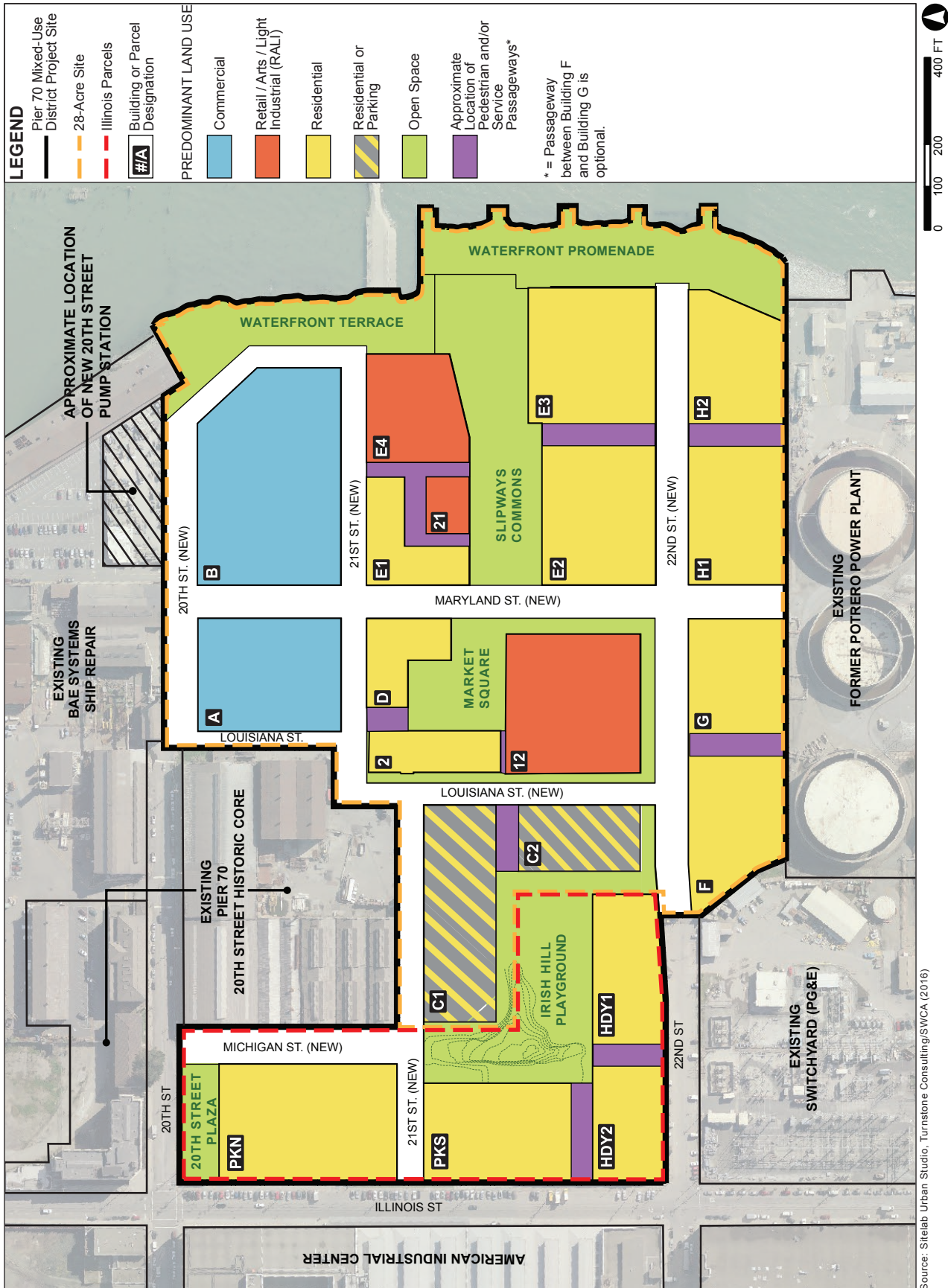
Table 2.3: Project Summary – Maximum Residential Scenario

Use	28-Acre Site (New and Rehabilitated Construction)	Illinois Parcels (New Construction)	Maximum Proposed Project Totals
Residential	1,870,000 gsf	760,000	2,630,000 gsf
No. of units	2,150 units	875 units	3,025 units
<i>Parcels</i>	<i>C1, C2, D, EI, E2, E3, F, G, H1, H2, Building 2</i>	<i>PKN, PKS, HDY1, HDY2</i>	
Commercial	1,095,650 gsf ¹	6,600 gsf	1,102,250 gsf
<i>Parcels</i>	<i>A, B</i>	<i>PKN</i>	
RALI	445,180 gsf	34,800 gsf	479,980 gsf
Retail	241,655 gsf	27,840 gsf	269,495 gsf
Restaurant	60,415 gsf	6,960 gsf	67,375 gsf
Arts/Light-Industrial	143,110 gsf		143,110 gsf
<i>Parcels</i>	<i>A, B, C1, C2, D, EI, E2, E3, E4, F, G, H1, H2; Buildings 2, 12, 21²</i>	<i>PKN, PKS, HDY1, HDY2³</i>	
Total	3,410,830 gsf	801,400 gsf	4,212,230 gsf
Parking^{4, 5}			
Off-Street	2,708 spaces	662 spaces	3,370 spaces
On-Street	253 spaces	32 spaces	285 spaces
Open Space	6.5 acres	2.5 acres	9 acres

Notes:

- 1 The existing 227,800 gsf of retained, rehabilitated building space in Buildings 2, 12, and 21 on the 28-Acre Site would be renovated and converted into commercial, RALI, or residential, depending on location. The Proposed Project's total gsf reflects this retained and renovated space.
- 2 On the 28-Acre Site parcels, RALI would be located on the ground floor of the new or rehabilitated buildings. Building 21 would contain only RALI uses.
- 3 On Illinois Parcels PKN, PKS, HDY1, and HDY2, RALI would be located on the ground floor of the new buildings.
- 4 Parking totals reflect a maximum of one parking space per 1,000 gsf of commercial development and 0.75 parking spaces per residential unit.
- 5 All Illinois Parcels and 28-Acre Site parcels are permitted to include parking as an accessory use. Parcels C1 and C2 may have structured parking.

Sources: Forest City; Turnstone/SWCA



PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 2.7: PROPOSED LAND USE PLAN - MAXIMUM RESIDENTIAL SCENARIO

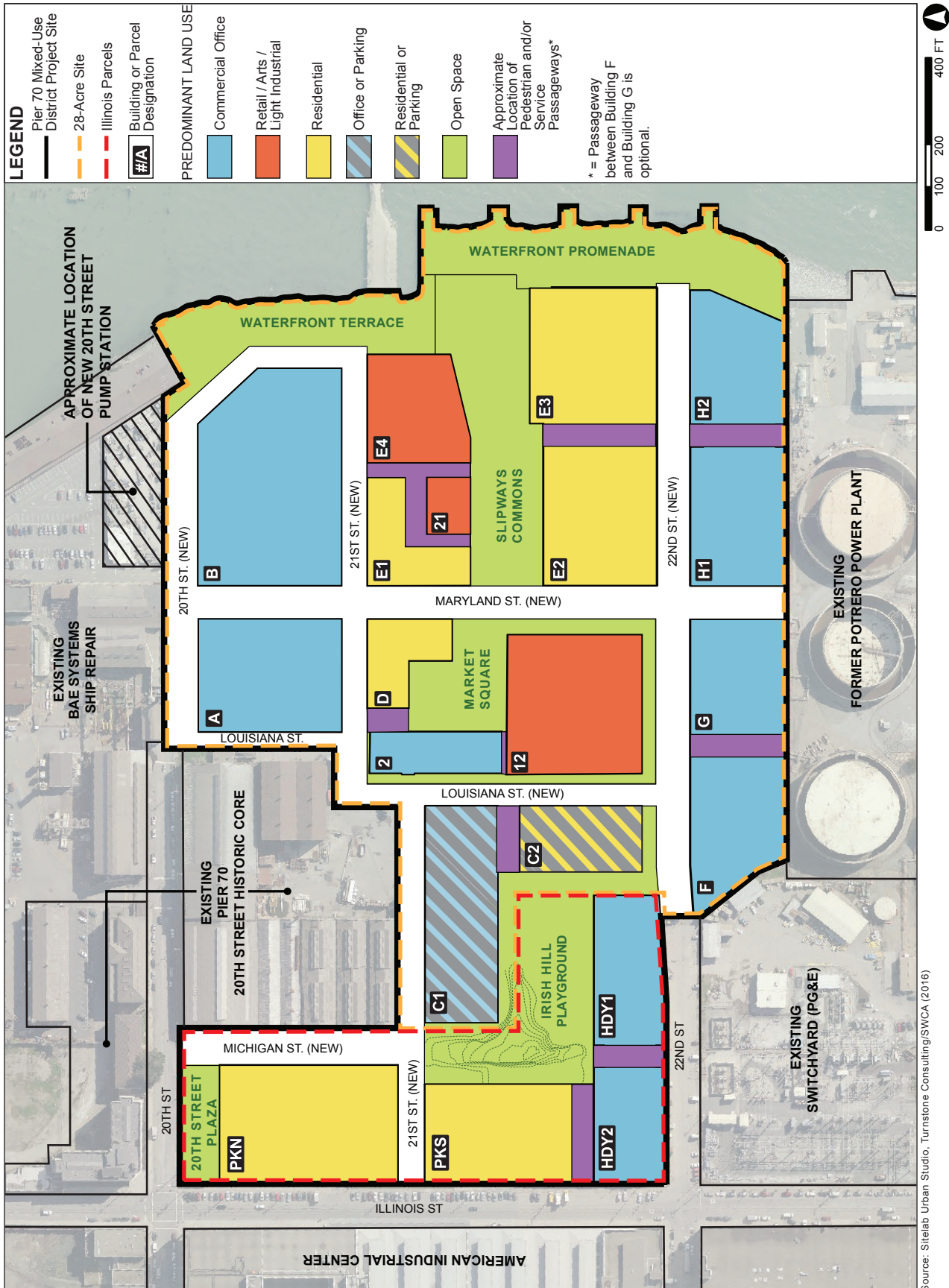
Table 2.4: Project Summary – Maximum Commercial Scenario

Use	28-Acre Site (New and Rehabilitated Construction)	Illinois Parcels (New Construction)	Maximum Proposed Project Totals
Residential	957,000 gsf	473,000 gsf	1,430,000 gsf
No. of units	1,100 units	545 units	1,645 units
<i>Parcels</i>	<i>C2, D, E1, E2, E3</i>	<i>PKN and PKS</i>	
Commercial	2,024,050 gsf ¹	238,300 gsf	2,262,350 gsf
<i>Parcels</i>	<i>A, B, C1, F, G, H1, H2, Building 2</i>	<i>PKN, HDY1, HDY2</i>	
RALI	441,215 gsf	45,735 gsf	486,950 gsf
Retail	238,485 gsf	36,590 gsf	275,075 gsf
Restaurant	59,620 gsf	9,145 gsf	68,765 gsf
Arts/Light-Industrial	143,110 gsf		143,110 gsf
<i>Parcels</i>	<i>A, B, C1, C2, D, E1, E2, E3, E4, F, G, H1, H2 and Buildings 2, 12, 21²</i>	<i>PKN, PKS, HDY1, HDY2³</i>	
Total	3,422,265 gsf	757,035 gsf	4,179,300 gsf
Parking ^{4, 5}			
Off-Street	2,849 spaces	647 spaces	3,496 spaces
On-Street	253 spaces	32 spaces	285 spaces
Open Space	6.5 acres	2.5 acres	9 acres

Notes:

- 1 The existing 227,800 gsf of retained, rehabilitated building space in Buildings 2, 12, and 21 on the 28-Acre Site would be renovated and converted into commercial, RALI, or residential, depending on location. The Proposed Project's total gsf reflects this retained and renovated space.
- 2 On the 28-Acre Site parcels, RALI would be located on the ground floor of the new or rehabilitated buildings. Building 21 would contain only RALI uses.
- 3 On Illinois Parcels PKN, PKS, HDY1, HDY2, RALI would be located on the ground floor of the new buildings.
- 4 Parking totals reflect a maximum of one parking space per 1,000 gsf of commercial development and 0.75 parking spaces per residential unit.
- 5 All Illinois Parcels and 28-Acre Site parcels are permitted to include parking as an accessory use. Parcels C1 and C2 may have structured parking.

Source: Forest City; Turnstone/SWCA



PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 2.8: PROPOSED LAND USE PLAN - MAXIMUM COMMERCIAL SCENARIO

totaling about 957,000 gsf, as well as approximately 2,024,050 gsf of commercial area, and 441,215 gsf of RALI space (238,485 gsf of retail space, 59,620 gsf of restaurant space, and 143,110 gsf of arts/light-industrial space). The overall development envelope includes the rehabilitation of 227,800 gsf in Buildings 2, 12, and 21 in compliance with the Secretary of the Interior's Standards for Treatment of Historic Properties. As noted above, the mixed-use land use program contemplates two parcels, Parcels C1 and C2, that may be developed for parking, residential, or commercial use depending on future market demand for parking and future travel patterns. The project summary shown in Table 2.4 assumes that certain parcels (Parcels C1, F, G, H1, H2, and Building 2) would be developed as commercial use and that Parcel C2 would be developed as residential use in order to study the maximum gsf of development area on the project site under this Maximum Commercial Scenario.

Illinois Parcels

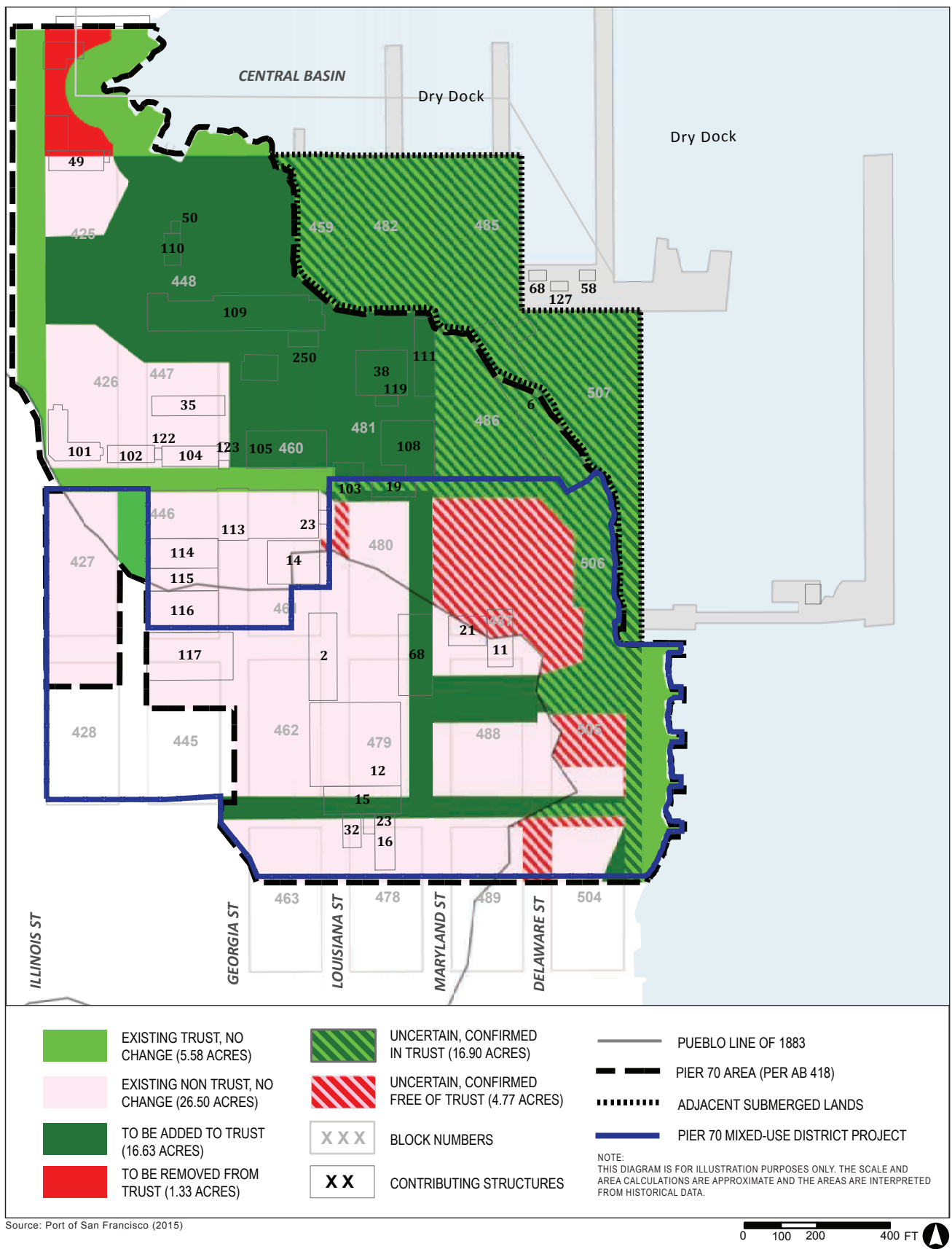
Development on the Illinois Parcels under the Maximum Commercial Scenario would include a maximum of about 757,035 gsf in new buildings (see Table 2.4). Under this scenario, there would be up to 545 residential units (up to approximately 180 studio/one-bedroom units and 365 two-or-more bedroom units³⁹) totaling about 473,000 gsf, as well as approximately 238,300 gsf of commercial area and approximately 45,735 gsf of RALI (36,590 gsf of retail space and 9,145 gsf of restaurant space) in new buildings.

PUBLIC TRUST EXCHANGE

As described on p. 2.13, portions of the 28-Acre Site and Illinois Parcels are subject to the common law public trust for commerce, navigation, and fisheries and the statutory trust under the Burton Act, as amended (the Public Trust). (See Figure 2.3, p. 2.14.) In order to clarify the Public Trust status of portions of Pier 70, the Port has obtained State legislation (AB 418) that authorizes the State Lands Commission to approve a Public Trust exchange that would free some portions of the project site from the Public Trust while committing others to the Public Trust.⁴⁰ (See Figure 2.9: Proposed Public Trust Exchange Configuration.) To implement the Proposed Project in accordance with the proposed SUD, the Port and State Lands Commission would have to implement a public trust exchange that would lift the Public Trust from designated portions of Pier 70 in accordance with the terms of a negotiated trust exchange agreement meeting the requirements of AB 418. The Hoedown Yard is not subject to the Public Trust and will not be affected by the trust exchange.

³⁹ Ibid.

⁴⁰ Assembly Bill 418 (stats. 2011, ch. 447).



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FIGURE 2.9: PROPOSED PUBLIC TRUST EXCHANGE CONFIGURATION

AFFORDABLE HOUSING PROGRAM

Under the Proposed Project, 30 percent of all completed residential units on the 28-Acre Site would be required to be offered at below market rate prices, and a majority of residential units constructed would be rentals, in compliance with Proposition F. The Proposed Project's affordable housing requirement would be established through transaction documents between the City, the Port, and Forest City for the Proposed Project. Residential units on the Illinois Parcels would be subject to the affordable housing requirements in Section 415 of the Planning Code. Under Board of Supervisors Resolution No. 54-14, if the City exercises its option to purchase the Hoedown Yard from PG&E, proceeds from the sale of the Hoedown Yard would be directed to the City's HOPE SF housing program, which includes the Potrero Terrace and Annex HOPE SF project.

PROPOSED PIER 70 SUD DESIGN FOR DEVELOPMENT BUILDING DESIGN STANDARDS AND GUIDELINES

The Proposed Project would amend the *General Plan* and Planning Code, adding a new Pier 70 SUD, which would establish land use zoning controls for the project site, and incorporate the design standards and guidelines in the proposed *Design for Development*. The *Design for Development* includes proposed building design standards and guidelines (Building Design Standards) which are intended to address compatibility of new development within the project site with the Historic District, guide rehabilitation of existing historic buildings as critical anchors, and encourage architecture of its own time in new construction.

Future vertical development at the project site, whether constructed by Forest City, Forest City affiliates, or third-party developers selected by the Port through broker-managed offerings, would be bound by the *Design for Development*, including the Building Design Standards. The Port and Planning Department would use the proposed Building Design Standards to evaluate these future development proposals within the project site for conformity with the *Pier 70 SUD Design for Development*. The Port will review historic rehabilitation proposals through its building permit process, for compatibility with the Secretary's Standards in the context of the Historic District.

Components of the proposed Building Design Standards are described below. Conceptual renderings showing visualizations of representative design viewpoints are shown in Figure 2.10: Representative Waterfront Promenade and Building 12 Market Square Views, Figure 2.11: Representative Slipways Commons Views, and Figure 2.12: Representative 20th Street and 22nd Street Views.



Representative Waterfront Promenade View Looking North



Representative Building 12 Market Square View Looking Southwest

Source: Sitelab Urban Studio (2016)

PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 2.10: REPRESENTATIVE WATERFRONT PROMENADE AND BUILDING 12 MARKET SQUARE VIEWS



Slipways Commons: Representative View Looking East



Slipways Commons: Representative View Looking West

Source: Sitalab Urban Studio (2016)

PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 2.11: REPRESENTATIVE SLIPWAYS COMMONS VIEWS



Representative View of 20th Street Looking East



Representative View of 22nd Street Looking East

Source: Sitelab Urban Studio (2016)

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**FIGURE 2.12: REPRESENTATIVE 20TH STREET
AND 22ND STREET VIEWS**

BUILDABLE ZONES AND MAXIMUM BUILDING ENVELOPES

New construction within the Illinois Parcels (Parcels HDY1, HDY2, PKN and PKS) would have a maximum height of 65 feet. On the 28-Acre Site, buildings up to 90 feet in height could generally be constructed along its southern, western, and northern perimeters (Parcels A, B, C1, C2, D, and portions of Parcels E1, F, G, H1, and H2). (See Figure 2.13: Proposed Height Limits Plan.)

The Building Design Standards define new construction zones within the project site, separated from retained historic structures by buffer zones formed by the proposed network of streets and open spaces. Within the new construction zones, the Building Design Standards would establish building envelopes for new construction within each parcel intended to maintain varied heights in new construction and create juxtapositions of scale to relate to the historic character of the site. As part of the Proposed Project, existing Buildings 2 and 12, in the central portion of the site, would be retained at their existing heights of approximately 82 feet and 60 feet, respectively. At the center and eastern portions of the site (portion of Parcel E1, and Parcels E2, E3, and E4), new buildings would be limited to heights between 50 to 70 feet. Existing Building 21, which is 44 feet tall, would be moved about 75 feet southeast from its current location to a new site on the northern edge of the proposed Slipways Commons open space. In its new location, Building 21 would front the Slipways Commons open space and maintain a visual connection to Buildings 2 and 12. It would be framed by new 90-, 65-, and 50-foot-tall buildings to the west, north, and east, respectively.

REHABILITATION OF CONTRIBUTING STRUCTURES

The Building Design Standards call for rehabilitation of Buildings 2, 12, and 21 in accordance with the Secretary of the Interior's Standards for Rehabilitation. Except for grading activities necessary for the construction of 21st Street, the Building Design Standards specify that no substantial intervention shall be permitted on the remnant of Irish Hill that would be retained under the Proposed Project.

PROJECT-WIDE MASSING AND ARCHITECTURE

Project-wide standards and guidelines apply to all new construction, and are intended to encourage building variety and a pedestrian scale that meets the needs of a mixed-use neighborhood. The Building Design Standards include standards and guidelines that promote a strong building streetwall in all new construction to support a cohesive urban fabric, relate to the pattern of historic buildings, define views through the site and to the water, and create an active urban street for pedestrians. Standards and guidelines also call for the following:

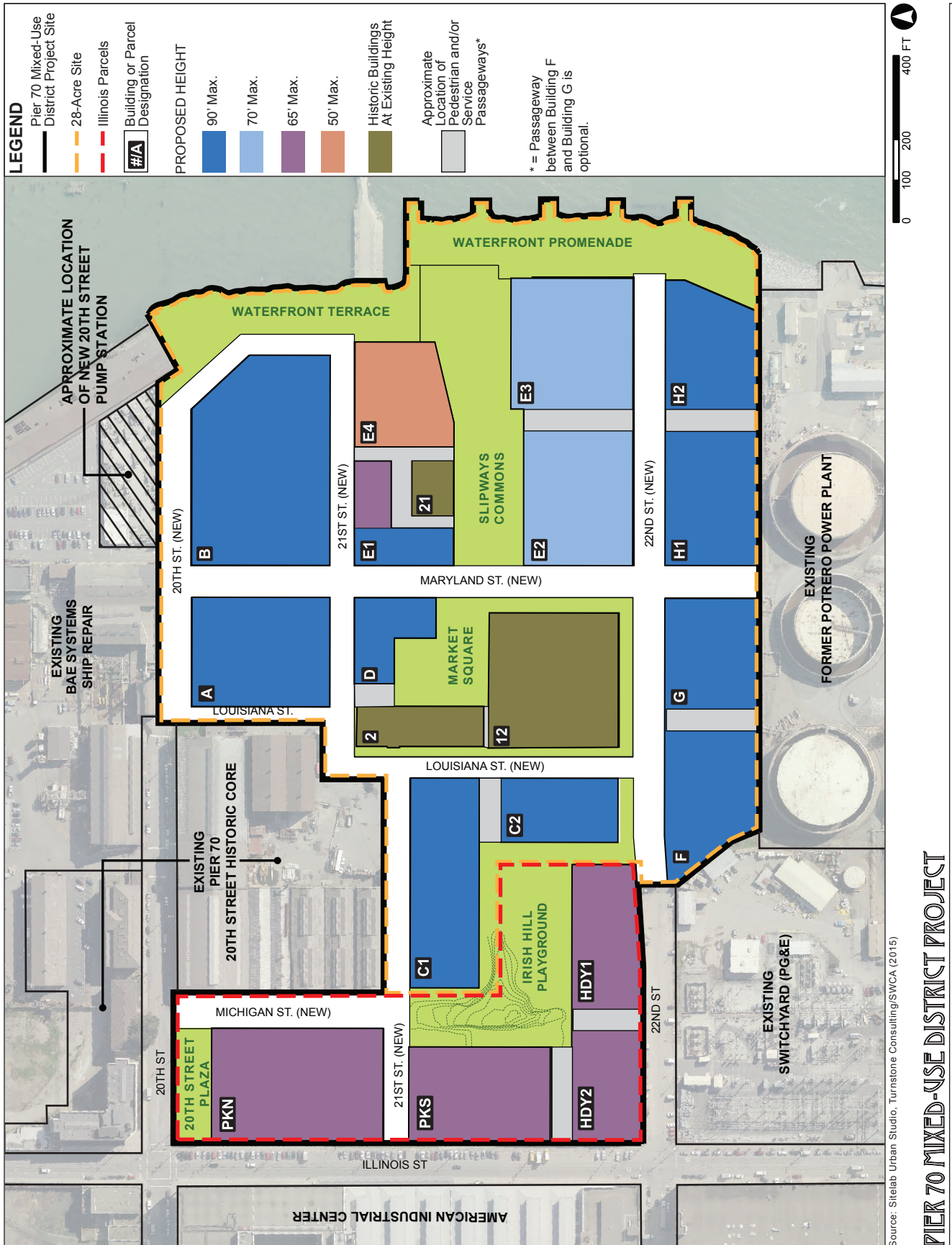


FIGURE 2.13: PROPOSED HEIGHT LIMITS PLAN

PIER 70 MIXED-USE DISTRICT PROJECT

Source: Sitelab Urban Studio, Turnstone Consulting/SWCA (2015)

- Defining a differentiated building base zone;
- Reinforcing a transparent and active ground floor to engage pedestrians;
- Promoting high-quality storefront and building entry design;
- Prohibiting long expanses of blank wall;
- Prohibiting the replication of historic buildings in new construction;
- Promoting architectural variety requiring that all new buildings be visually distinct from each other, with variations in building massing, materials, and fenestration;
- Promoting depth and texture in façades with a variety of materials and treatments;
- Providing for non-occupiable horizontal projections such as marquees, awnings, and canopies, cornices, and louvers; and
- Providing for occupiable projections such as bay windows and balconies.

Other standards and guidelines address roof treatments, residential open space, garage and service entry design, and sustainability strategies for maximizing efficiency through thoughtful building design.

LOCATION-SPECIFIC MASSING AND ARCHITECTURE

Location-specific requirements call for increased attention to the design of the building envelope at particular key locations to respond to specific design issues at those locations.

Adjacency to Contributors of Historic District

To enhance compatibility of new construction with adjacent contributors to the Historic District, new buildings would reference adjacent contributing features through a range of strategies established to relate to the inherent qualities of the Historic District and to respect its character-defining features and unique views.

Setback and Massing Standards of Parcel A for Views of Historic Building 113

To maintain a visual gateway into the Historic District, and to maintain relationship with the adjacent 60-foot height of Building 113, the massing at the northwestern corner of Parcel A would be set back above 60 feet (the remainder of new construction on Parcel A would be 90 feet in height).

Height Referencing Dimensional Quality

To enhance compatibility of new construction with adjacent contributors to the Historic District, select façades of new construction across the street from or adjacent to contributing features would distinctly reference the height of the adjacent building, within a 5-foot height range in

order to align with the finished floors of new buildings. Dimensional quality means that certain key façades of new buildings would respond to the height of adjacent historic buildings by projecting or recessing from the vertical plane through the use of distinct fenestration lines, massing, setback, volumetric shifts, or changes in the façade material or color.

Related Treatment to Adjacent Contributors of Historic District

To enhance the compatibility of new construction with adjacent contributors to the Historic District, select façades of new construction would incorporate elements that relate to the adjacent historic building, in keeping with contemporary design and construction methods. Façades would include one or more of the following elements: (1) height, (2) bay rhythm/vertical modulation, (3) glazing proportions and/or pattern, (4) horizontal banding, (5) material grain, and (6) alignments with key edges or openings.

Limited and Prohibited Façade Materials

To enhance compatibility of new construction with adjacent contributors to the Historic District, the following materials would be limited on façades of new construction immediately adjacent to contributors to the Historic District: (1) bamboo wood, (2) smooth, flat glass curtain walls, (3) coarse-sand finished stucco, (4) highly reflective glass, and (5) wood resin panels. The following materials would be prohibited on façades of new construction immediately adjacent to the contributing features: (1) vinyl planks and siding, and (2) artificial stone or fiberglass. In addition, building façades finished entirely with solid stucco would not be permitted. Stucco could only be used in combination with other permitted building materials.

Bird-Safe Controls

All new construction façades are subject to the City's Bird Safe Standards for "feature-related hazards." The City's Bird Safe standards for "location-related hazards" shall apply to façades fronting on Irish Hill Playground and façades within 300 feet of and facing San Francisco Bay.

Mid-Block Passages

The Proposed Project includes mid-block passages that would allow for a connector between Parcels F and G, Parcels H1 and H2, and Parcels HDY1 and HDY2, as identified on Figure 2.14: Mid-Block Passageway Locations. The Building Design Standards include standards and guidelines for these connectors to provide for adequate clearance from the ground, maintain visual separateness from the building façade, and maintain a minimum openness to the sky. Since design details for these pedestrian building connectors between these parcels are not decided, the Proposed Project would include a pedestrian passageway option under the Maximum

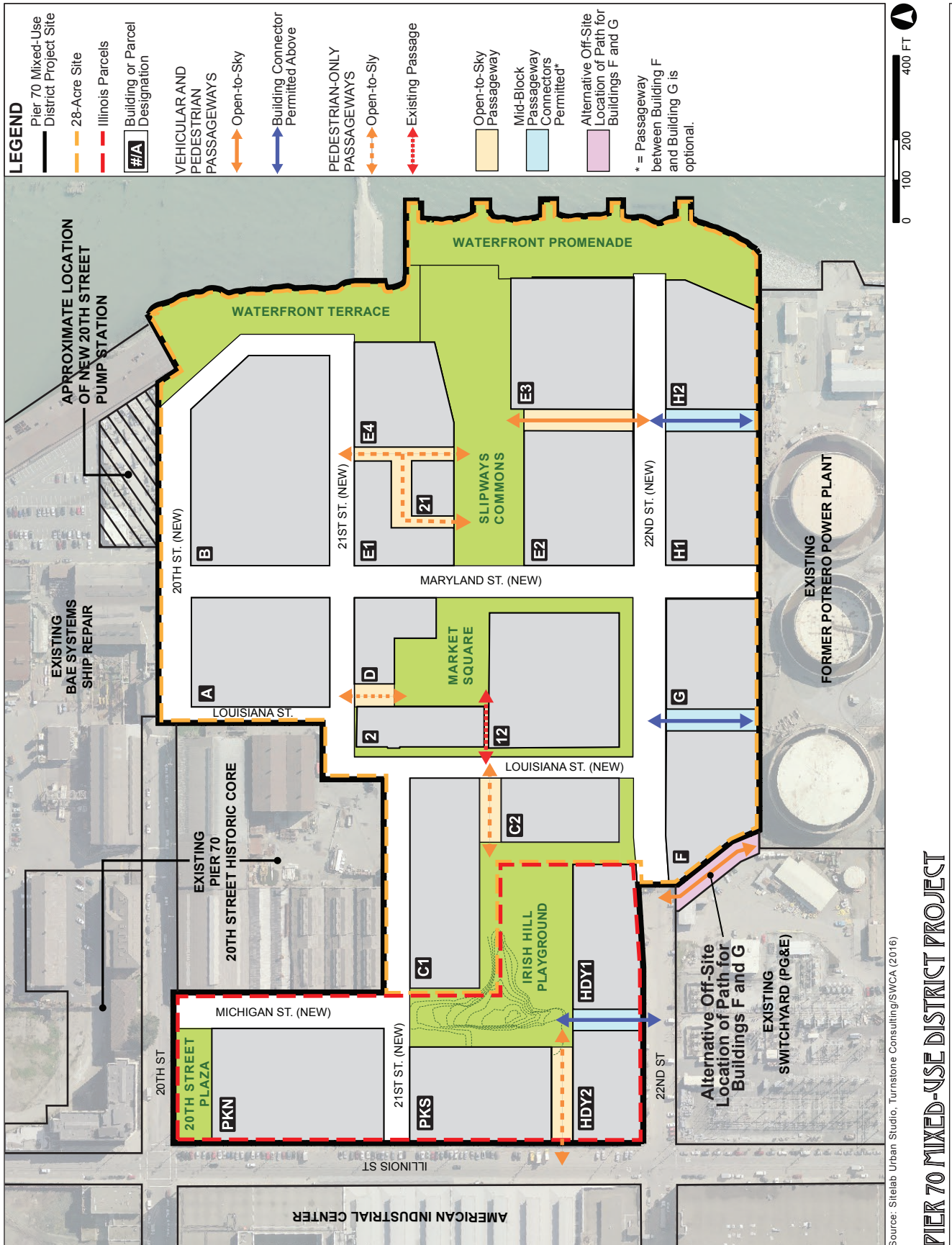


FIGURE 2.14: MID-BLOCK PASSAGEWAY LOCATIONS

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Commercial Scenario. A Pedestrian Passageway Option is not applicable under the Maximum Residential Scenario since mid-block pedestrian passageways are not planned under that scenario. Both the Maximum Commercial Scenario and the Pedestrian Passageway Option would include a 40-foot-wide mid-block pedestrian passage that differentiates building massing in the southern parcels (Parcels F and G, Parcels H1 and H2, and Parcels HDY1 and HDY2). However, the Pedestrian Passageway Option would require that an above-ground building connection over the passageways retain at least 60 percent exposure to the sky, whereas the Maximum Commercial Scenario would require a minimum setback of at least 10 feet with an additional setback of another 10 feet on the upper floor.

Long Façades in Key Locations

The Building Design Standards identify long façades in key locations which would be subject to further architectural requirements beyond the Project-wide Standards. The Building Design Standards identify and illustrate examples of design strategies for long façades in key locations to promote flexibility, variety, creativity, and thoughtfulness in building design. These strategies fall under the categories of large-scale massing, modulation, and fine-grained materiality, described below, and should be used in combination.

Massing

Massing strategies are large urban-scale setback, projections, and interventions that activate public space, respond to historic context, and offer improved views and sun exposure to provide massing variation along the length of the façade. These strategies include ground-floor and base setbacks, upper-level setback, passageways or entryways that subdivide the façade, courtyards and terraces that subdivide the façade, and substantial subtractions or projections to the building envelope.

Modulation

Modulation strategies are occupiable small-scale shifts of the building envelope in order to achieve variation and depth along the length of a façade, such as inset vertical or horizontal bays or shifts in massing, subdividing the façade into two offset façade systems, volumetric façade articulation, and roofline modulation.

Materiality

Materiality strategies identify materials and treatments to be applied to façades. These include preferred façade materials, material treatment, pattern of assembly, façade depth, and shading elements.

Waterfront Façades

The Building Design Standards identify and apply architectural requirements for key waterfront façades. The waterfront façade standards serve to reinforce the following waterfront-specific goals: reinforce the public nature of the waterfront park through the adjacent ground-floor treatments and uses; provide views of the water from the buildings; maximize sunlight on adjacent open spaces; and promote pedestrian scale on the ground floor along the waterfront.

PROPOSED OPEN SPACE PLAN

The Proposed Project would include 9 acres of publicly owned open space. (See Figure 2.15: Proposed Open Space Plan.) The Building Design Standards for the proposed open space plan respond to several key objectives:

“to connect the Dogpatch neighborhood to the waterfront, to create a variety of vibrant public spaces for social interaction and respite, to enhance the resiliency of the site against sea-level rise, to retain a defining feature of the Historic District open areas, and to project an identity for the site that draws from the character of the adjacent neighborhood and the history of the Pier 70 industrial waterfront.”⁴¹

The proposed open space would supplement recreational amenities in the vicinity of the project site, such as the future Crane Cove Park in the northwestern part of Pier 70, and would include extension of the Blue Greenway⁴² and Bay Trail through the southern half of the Pier 70 area.

As described below, open spaces programmed as part of the Proposed Project are the Waterfront Promenade, the Waterfront Terrace, Slipways Commons, the Building 12 Market Plaza and Market Square, the Irish Hill Playground, 20th Street Plaza, and Buildings C1 and C2 structured parking rooftops, if parking structures are built on these parcels. These open spaces are anticipated to accommodate everyday passive uses as well as public outdoor events, including art exhibitions, theater performances, cultural events, outdoor fairs, festivals and markets, outdoor film screenings, evening/night markets, food events, street fairs, and lecture services. Fewer than 100 events per year are anticipated and would likely include approximately 25 mid-size events attracting between 500 to 750 people, and four larger-size events attracting up to 5,000 people.

⁴¹ *Draft Pier 70 SUD Design for Development*, April 1, 2016, Section 3.1, “Open Space Vision and Objectives,” p. 39.

⁴² The Blue Greenway is a City of San Francisco project to improve the City’s southerly portion of the 500-mile, 9-county, region-wide Bay Trail, as well as to extend the newly established Bay Trail and associated waterfront open space system. This 13-mile trail corridor will connect China Basin in the north to Candlestick Point State Recreation Area in the south. Trail information is available online at <http://www.sf-port.org/index.aspx?page=1433>, accessed September 24, 2015.

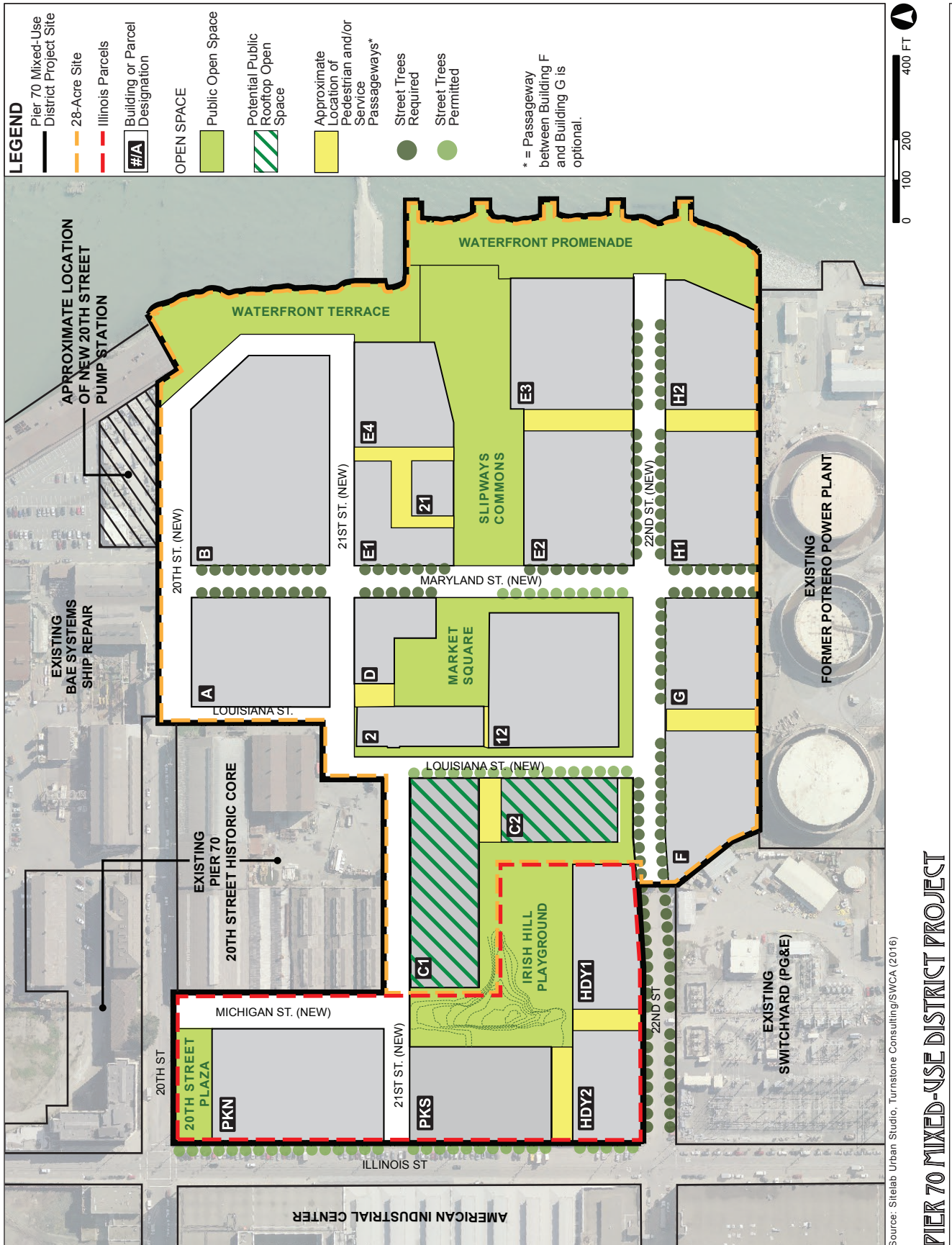


FIGURE 2.15: PROPOSED OPEN SPACE PLAN

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Source: Sitelab Urban Studio, Turnstone Consulting/SWCA (2016)

The Proposed Project would also include private open space areas such as balconies, rooftops, and courtyards that would be accessible only to building occupants.

WATERFRONT PROMENADE

The Waterfront Promenade would encompass a minimum 100-foot-wide portion of an approximately 5-acre waterfront park area (which also includes the Waterfront Terrace and Slipways Commons open space areas, described below) located along the central and southern shoreline of the project site. The Waterfront Promenade would include a north-south-running pedestrian and bicycle promenade as part of the 20-foot-wide Blue Greenway and Bay Trail system that extends from Mission Creek to the southern San Francisco County line at Candlestick Point. Anticipated features include outdoor dining terraces east of Parcel E3 and H2, and furnished picnic and seating terraces east of Parcels E3 and H2, which would provide park users with opportunities for waterfront viewing and passive recreation. A 6-foot-wide informal shoreline pathway would run parallel to the riprap along the water's edge and would connect the various features at the San Francisco Bay edge. The Pier 70 slipway structures along the water's edge would also be made accessible to the public and would offer opportunities for fishing and views of the San Francisco Bay and Pier 70 historic buildings.

The Proposed Project includes installation of four viewing pavilions along the water's edge. These viewing pavilions are large-scale public art and artifact pieces, which would be designed to emphasize the view of the horizon as well as accommodate a variety of public program uses such as cultural events and gatherings. The Waterfront Promenade includes two of the four viewing pavilions; the remaining two would be installed in the Waterfront Terrace and Slipways Commons, discussed below.

WATERFRONT TERRACE

The Waterfront Terrace would be constructed along the northern half of the project site's shoreline, to the north of the Waterfront Promenade, and orient views towards the active shipbuilding activities north of the project site. The Waterfront Terrace includes three primary spaces: a viewing pavilion to the north, a social lawn along the central portion, and picnicking and seating areas along the southern portion. The Waterfront Terrace would also include the northern portion of the 20-foot-wide Blue Greenway and Bay Trail system within the project site.

SLIPWAYS COMMONS

Slipways Commons open space would connect existing Buildings 2, 12, and 21 to the waterfront. This area would be designed as the most flexible, multi-purpose open space, intended to accommodate community gatherings, festivals, performances, art installations, and nighttime and cultural events, as well as passive recreation. Anticipated features include a multi-function

commons, an event plaza, and a viewing pavilion. No roadway would be permitted between Parcels E1, E2, E3 and E4 and Building 21 and the park, in order to maximize recreational use of the park and encourage pedestrian travel.

BUILDING 12 PLAZA AND MARKET SQUARE

The Building 12 Plaza and Market Square would be a series of small plazas and outdoor market spaces. Market Square would be located directly north of Building 12 and east of Building 2 with four pedestrian access points. The approximately 1.5-acre plaza and square would provide the opportunity for informal and formal events, supporting flexible space for open-air markets, market stalls, and small performances and gatherings. Along the eastern and southern edges of Building 12, small plazas (approximately 26 to 28 feet wide) would provide opportunities for artwork displays, seating, and ground-floor uses within adjacent buildings to extend into these outdoor areas. The southern plaza would also have a café terrace. The Proposed Project would potentially retain a metal-frame remnant of Building 15 above the new 22nd Street, directly south of Building 12.

IRISH HILL PLAYGROUND

The Irish Hill Playground installation would be a 2-acre area south and east of the existing remnant of Irish Hill. The Irish Hill Playground would include children's play areas (play slope and play pad), other recreation opportunities, a picnic grove, a lounging terrace, and planted slopes and pathways. The non-native stand of eucalyptus trees located on the remnant of Irish Hill would remain.

20TH STREET PLAZA

The 0.5-acre 20th Street Plaza open space area would be located at the southeast corner of the intersection of 20th and Illinois Street streets, directly north of Parcel PKN. This gateway space would allow for direct views from 20th and Illinois streets to Building 113, on the Historic Core site. Potential features within the 20th Street Plaza include terraced seating areas and stormwater management facilities.

ROOFTOP OPEN SPACE AREAS

As described above, Parcels C1 and C2 would be designated for parking structures, but could be developed with either residential or commercial uses, depending on future market demand for parking and travel patterns. If parking structures are constructed on those parcels, the rooftops would be used to provide additional public open space and amenities such as active sports courts and play fields, community gardens, seating, and observational terrace areas. This acreage would be in addition to the 9 acres of public open space proposed at the project site.

PROPOSED TRAFFIC AND CIRCULATION PLAN

OVERVIEW

The Proposed Project would encourage alternative modes of transportation (transit, walking, and biking) by building a dense, pedestrian friendly, mixed-use, and transit-oriented development; using Transportation Demand Management (TDM) strategies;⁴³ prioritizing safety, especially for bicyclists and pedestrians; implementing a shuttle bus service to connect Pier 70 to regional transit hubs; and establishing a bicycle share system. The TDM strategies would be presented in a section of the *Pier 70 SUD Transportation Plan*. Entitlement and transaction documents would require the Proposed Project to establish a Transportation Management Agency (TMA) to coordinate and implement TDM measures, including the shuttle service.

STREET IMPROVEMENTS AND CIRCULATION

As shown on Figure 2.16: Proposed Roadway Network, the proposed primary streets on the project site would be 20th and 22nd streets, built out from west to east. The proposed Maryland Street would be a secondary north-south-running street designed as a shared street.⁴⁴ New minor streets proposed as part of the Proposed Project include a new 21st Street, running west to east from Illinois Street to the waterfront, and Louisiana Street, running north from 22nd Street. New traffic signals would be installed at the intersection of Illinois and 21st streets. Louisiana Street from 21st Street to 20th Street would include a jog to accommodate existing historic structures within the Historic Core. Except for the western side of Louisiana Street adjacent to the Historic Core, all proposed streets would include sidewalks, and street furniture where appropriate. Maryland, 20th, and 22nd streets would include bicycle infrastructure or signage. With the exception of Louisiana Street between 20th and 21st streets, all proposed streets would be two-way, with a single lane of travel in each direction. Louisiana Street would be one-way in the southbound direction, with a single lane of travel. The Proposed Project does not include bus or truck routes, although buses could be accommodated in the future. The proposed new streets would provide access for emergency vehicles and off-street freight loading. Michigan, Louisiana, and 21st streets would be designed as primary on-street loading corridors.

⁴³ Transportation Demand Management is the application of strategies and policies to reduce travel demand (specifically that of [single-occupancy private vehicles](#)), or to redistribute this demand in space or in time.

⁴⁴ Shared streets are generally curbside streets that maintain driveway-like access for vehicles operating at low speeds to provide necessary services and are designed to prioritize pedestrian travel by implicitly slowing traffic speeds using design features, and other cues to slow or divert traffic.

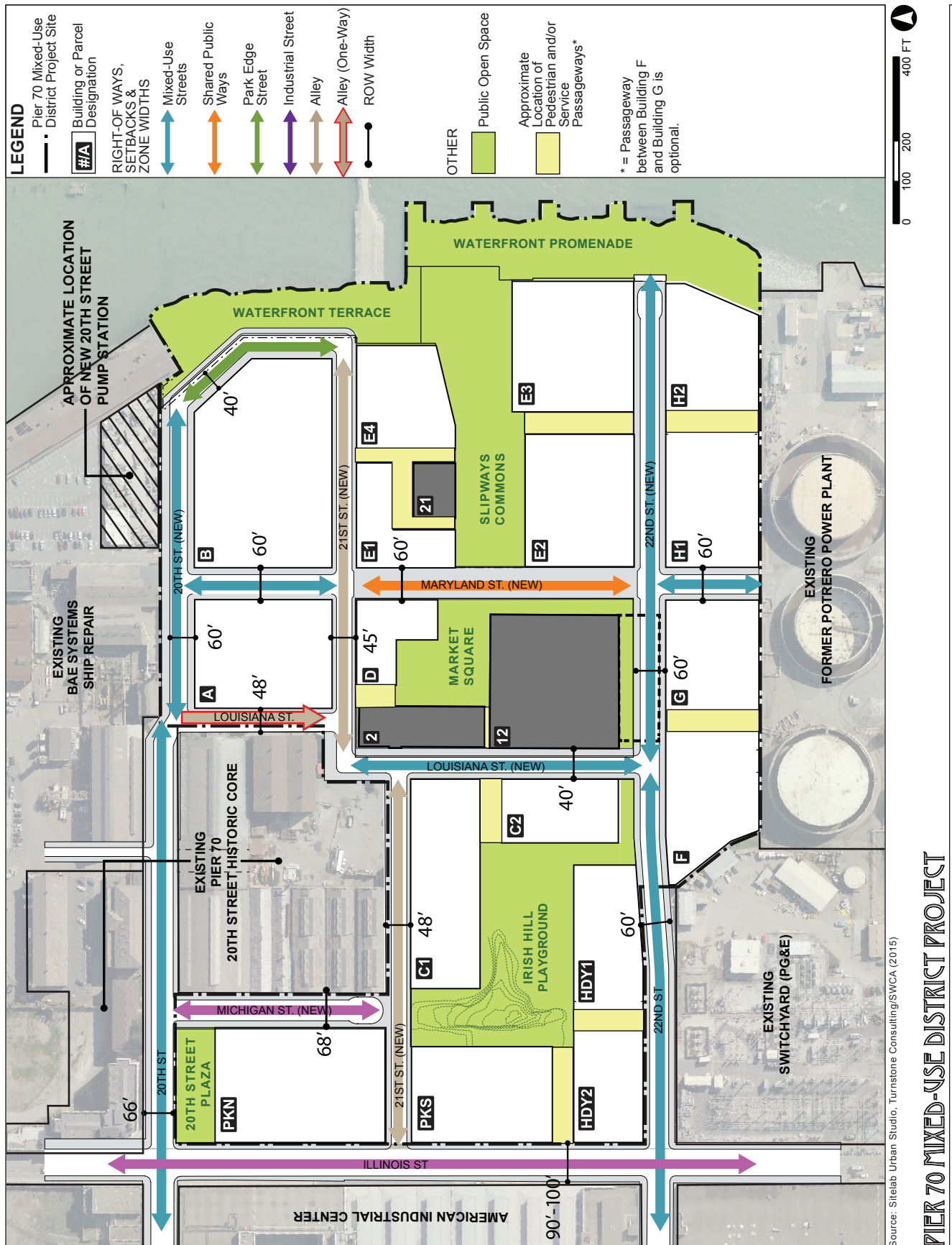


FIGURE 2.16: PROPOSED ROADWAY NETWORK

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As part of the Proposed Project, Michigan Street from the southern side of 20th Street towards 21st Street would be narrowed from 80 to 68 feet with 12 feet of the right-of-way converted from a public street to private use, i.e., “vacated,” and developed as part of the Illinois Parcels. Vehicle travel would not be connected through to 21st Street due to a grade change, but pedestrian pathways would connect.

TRANSPORTATION PLAN

The Proposed Project would include a *Pier 70 SUD Transportation Plan* intended to manage transportation demands and to encourage sustainable transportation choices, consistent with the City of San Francisco’s Transit First, Better Streets, Climate Action, and Transportation Sustainability Plans and Policies. The *Pier 70 SUD Transportation Plan* would include a TDM Program that would establish a TMA to manage implementation of TDM measures at the site. The TMA for the Proposed Project would be funded by project-generated sources and would be responsible for working with future subtenants of the project site (e.g., employers, residents, etc.) to ensure that they are actively participating in the TDM program. The TMA would be managed by a Transportation Coordinator who would oversee implementation of the TDM Program.

Key strategies to be included in the TDM Program would be a shuttle service, bike sharing stations and other means of encouraging bicycle use, unbundled parking, car-sharing services, and other approaches to discourage use of single-occupant private vehicles. The shuttle service would connect residents and workers to regional transit hubs, such as the 16th/Mission BART station, the 22nd Street Caltrain station, and the Caltrain station at Fourth and King streets. (See Figure 2.17: Proposed Shuttle System.) Routes, vehicle size, and frequency would be augmented over the course of build-out of the Proposed Project to respond to demand. The shuttle service would be operated by the TMA, with no fee, most likely through a third-party service provider. It would enroll in the SFMTA Commuter Shuttle Program and be subject to that Program’s policies, including establishing specific designated locations for pick-up and drop off, and only using shuttle vehicles which comply with the 2012 California vehicle emissions standards. The Proposed Project would establish a bicycle sharing system to work collaboratively with SFMTA and Bay Area Bike Share (BABS) representatives or a similar bicycle sharing service. Through the TMA, the Proposed Project would implement a number of amenities and education strategies regarding transportation choices, including real-time occupancy data for shared parking facilities, on-street carshare spaces, unbundled parking for residents, preferential treatment for high-occupancy vehicles, a website, production of brochures and newsletter, as well as a dedicated Transportation Coordinator staff member. See “Transportation Demand Management Plan” in Section 4.E, Transportation and Circulation, pp. 4.E.46-4.E.47, for a more thorough discussion of TDM Plan strategies.

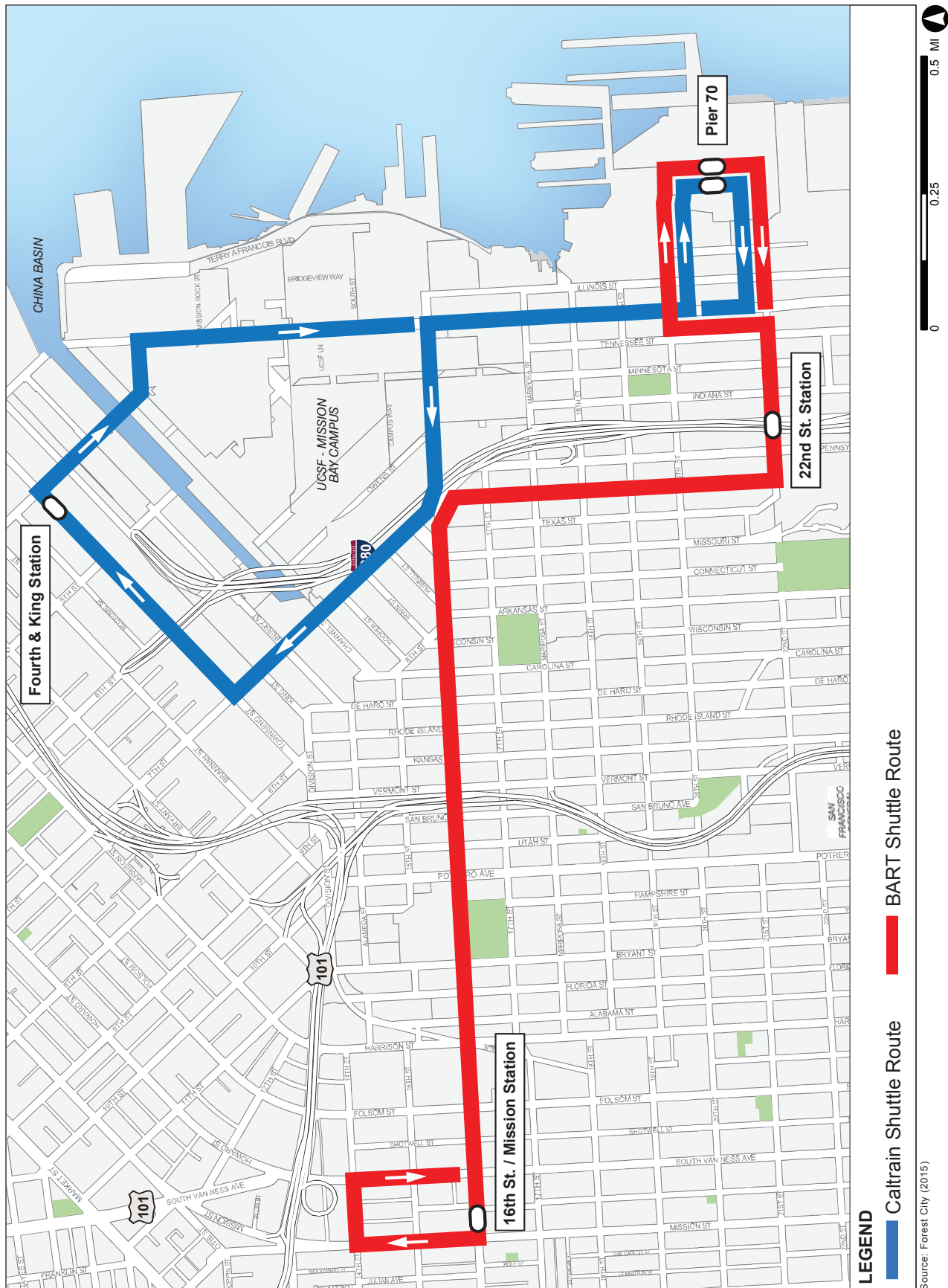


FIGURE 2.17: PROPOSED SHUTTLE SYSTEM

BICYCLE AND PEDESTRIAN IMPROVEMENTS

The Proposed Project includes bike lanes, bike-safety-oriented street design, and bike-parking facilities to promote bicycling in and around the project site. (See Figure 2.18: Proposed Bicycle Network.) Under the provisions of the SUD, bike amenities would be constructed on the project site that would meet or exceed the existing Planning Code requirements at the time of permit submittal.⁴⁵ Under the Maximum Residential Scenario, 1,142 Class 1 and 514 Class 2 bicycle parking spaces would be required.⁴⁶ Sufficient Class 2 bicycle parking should also be provided at key entrance areas of the major open spaces. Under the Maximum Commercial Scenario, 995 Class 1 and 475 Class 2 bicycle parking spaces would be required. Improvements proposed for the Proposed Project include construction of Class II facilities (bicycle lanes) and Class III facilities (shared-lane markings and signage) on 20th, 22nd, and Maryland streets. A Class I separated bicycle and pedestrian facility would be provided along the Bay Trail and Blue Greenway the length of the project site along the shoreline, connecting at Georgia Street to the northbound path to Crane Cove Park and the southern waterfront park boundary to the future southern connection through the former Potrero Power Plant site.

Pedestrian travel would be encouraged throughout the project site by establishing a network of connected pedestrian pathways running both west-to-east and north-to-south to connect open spaces. Street and open space design would also incorporate pedestrian-safe sidewalk and street design and signage. All streets on the project site would include 9- to 18-foot-wide sidewalks. The project site is designed to make the area east of Maryland Street a predominantly pedestrian zone, and there would be no vehicular streets along the length of waterfront parks, with the exception of the north-south running portion of 20th Street. Maryland Street could potentially have a shared street condition, to reinforce the pedestrian connection from the western portion of the site, across the street, and to San Francisco Bay. Both 20th and 22nd streets would feature pedestrian amenities to encourage walking from the Dogpatch neighborhood, as well as transit use along the Third and 22nd streets corridors.

PARKING

The Proposed Project would provide parking spaces within a site-wide maximum and a maximum ratio per use. Under the Maximum Residential Scenario a maximum of 3,370 off-street parking spaces would be allowed, and under the Maximum Commercial Scenario a maximum of 3,496

⁴⁵ Current Planning Code bicycle requirements at the time of publication of the Draft EIR are set forth in San Francisco Planning Code Section 155.2, available online at: <http://planning.sanfranciscocode.org/1.5/155.2/>. Accessed June 30, 2016.

⁴⁶ Class 1 bicycle parking provides lockers, monitored bike parking, or other restricted-access facilities. Class 2 bicycle parking is unprotected bike racks.

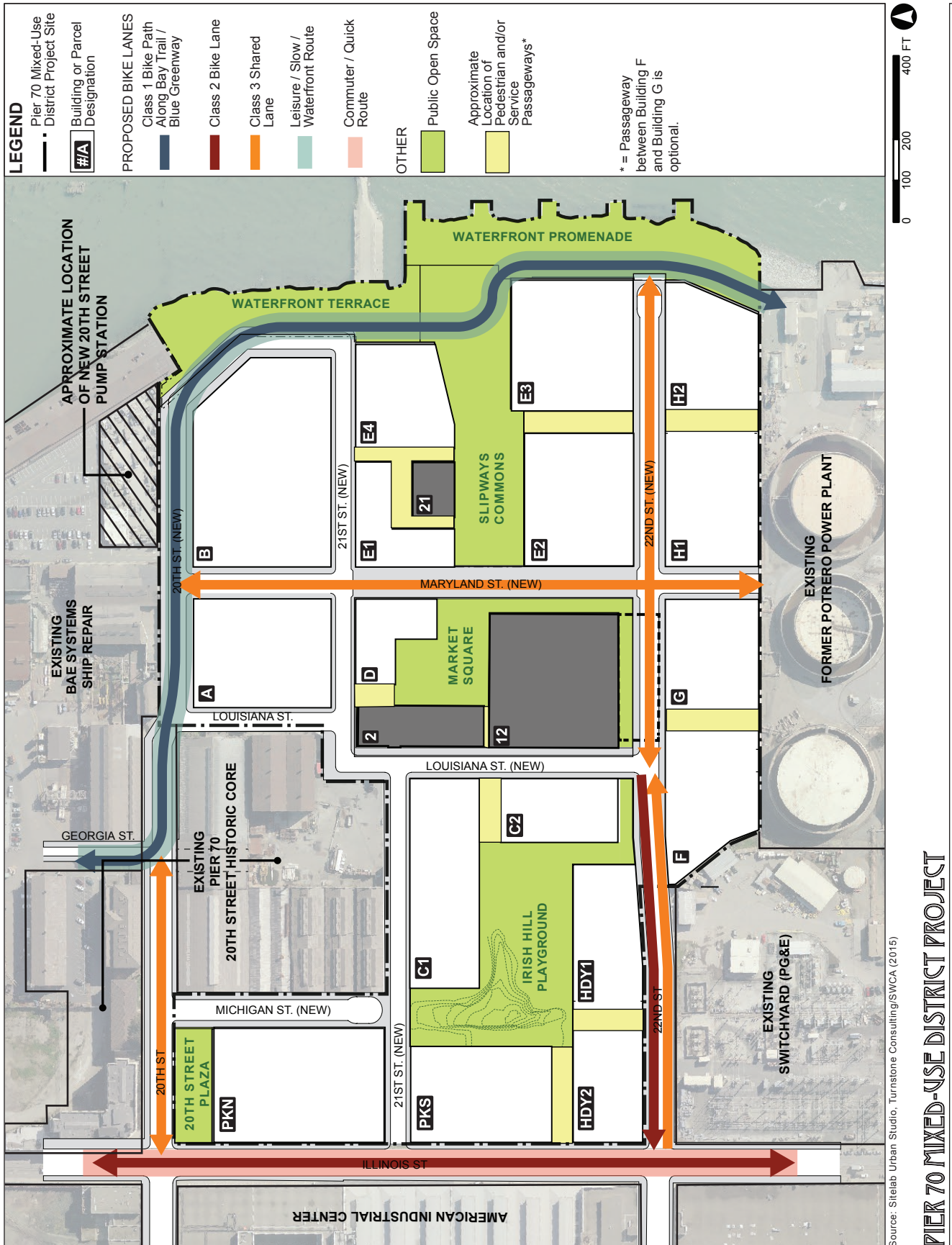


FIGURE 2.18: PROPOSED BICYCLE NETWORK

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off-street parking spaces would be allowed. The Proposed Project would provide about 285 on-street parking spaces along most the streets internal to the project site under either scenario. One parking space per 1,000 square feet of gross floor area would be provided for office/commercial and RALI uses, and 0.75 parking spaces per residential unit would be allowed. If not developed as residential or commercial uses, planned structured parking on Parcels C1 and C2 would provide shared parking for multiple uses. The Illinois Parcels and most parcels on the 28-Acre Site, excluding Buildings 2, 12, and 21, would also have accessory parking. All residential parking would be unbundled, which means parking would be an optional, additional cost to the price of renting or purchasing a dwelling unit.

PROPOSED INFRASTRUCTURE AND UTILITIES

POTABLE WATER

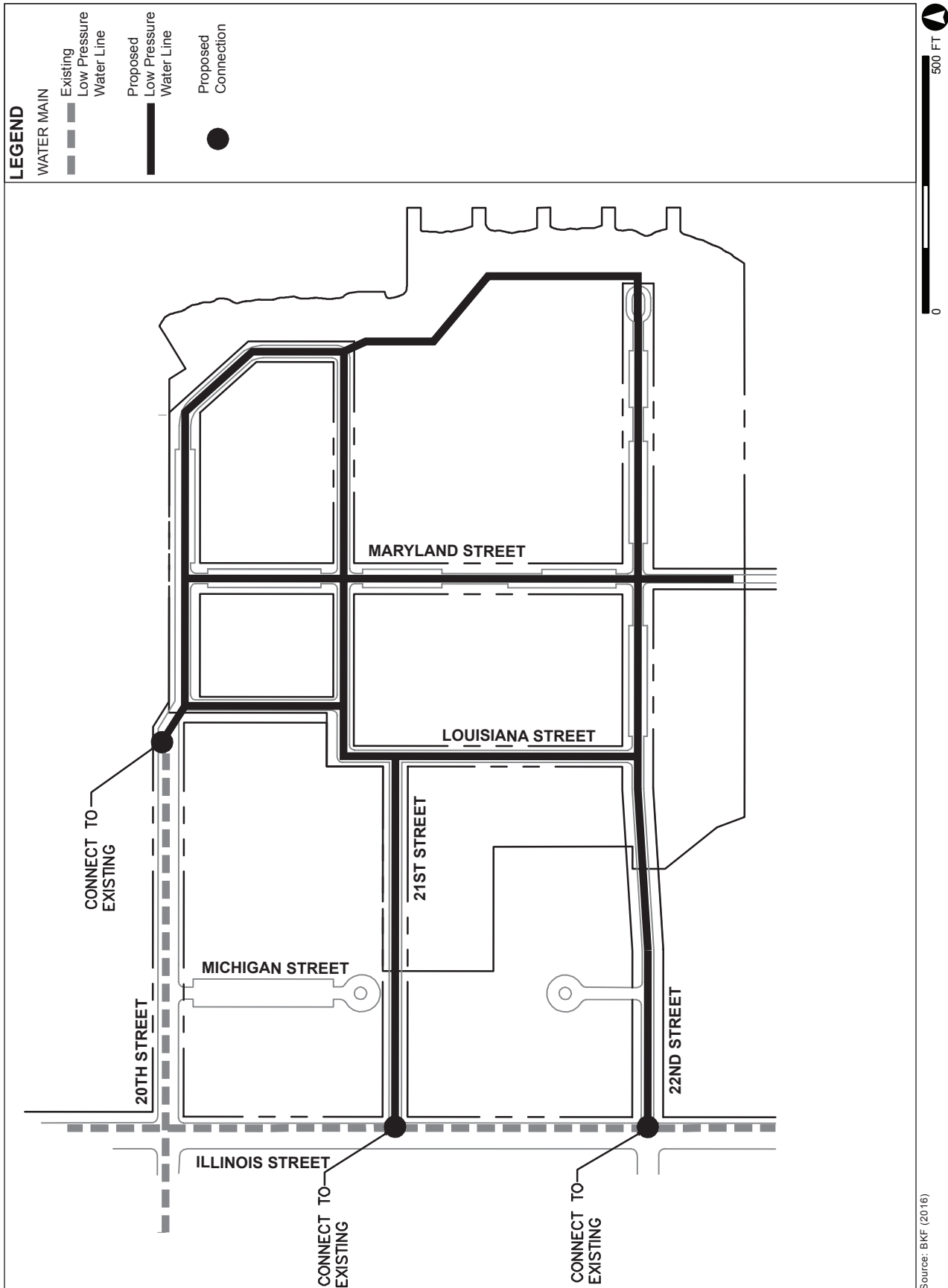
Potable water distribution piping would be constructed in trenches under the planned streets to provide water for site uses and firefighting needs. This piping would connect to the existing water mains of the City's low-pressure water distribution system underneath 20th, Illinois, and 22nd streets. (See Figure 2.19: Proposed Low Pressure Water Distribution System.) Connections to existing water mains would be made at the intersections of Illinois/22nd streets, Illinois/21st streets, and at the intersection of 20th and Louisiana streets.⁴⁷ If necessary, the water main underneath the western portion of 20th Street would be replaced. To reduce potable water demand, high-efficiency fixtures and appliances would be installed in new buildings, and fixtures in existing buildings would be retrofitted, as required by City regulations.

RECYCLED (RECLAIMED) WATER

The project site is located within the City's designated recycled water use area and is subject to Article 22 of the San Francisco Public Works Code, referred to as the Recycled Water Use Ordinance. The goal of the ordinance is to maximize the use of recycled water. Therefore, buildings and facilities that are subject to this ordinance must use recycled water for all uses authorized by the State once a source of recycled water is available and projects must include recycled water distribution systems within buildings as well as throughout the project sites. Commonly approved uses include irrigation, cooling, and toilet and urinal flushing.

The SFPUC's Eastside Recycled Water Project may ultimately provide an estimated 2 mgd of tertiary recycled water on the eastern side of San Francisco. However, the Eastside Recycled Water Project is in the planning stages, with construction expected to be completed by the end of

⁴⁷ BKF, Pier 70, Proposed Utilities, Low Pressure Water System diagram, February 26, 2015.



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FIGURE 2.19: PROPOSED LOW PRESSURE WATER DISTRIBUTION SYSTEM

2029.⁴⁸ Although a source of recycled water is not yet available from the City, the project sponsors would install distribution pipelines to ultimately connect with the City's recycled water distribution system once it is constructed. Accordingly, the Proposed Project includes the installation of distribution pipelines beneath existing and proposed streets within the project area, as shown on Figure 2.20: Proposed Recycled Water Distribution System. These lines would temporarily connect to the in-City, low-pressure water system at the intersection of 22nd and Illinois streets and the intersection of 20th and Louisiana streets. Backflow prevention devices would be installed at each connection to prevent backflow from the recycled water system to the potable low-pressure water system. Once the City's recycled water system is constructed, the Proposed Project's recycled water pipelines would connect to the City's recycled water system.

ON-SITE NON-POTABLE WATER

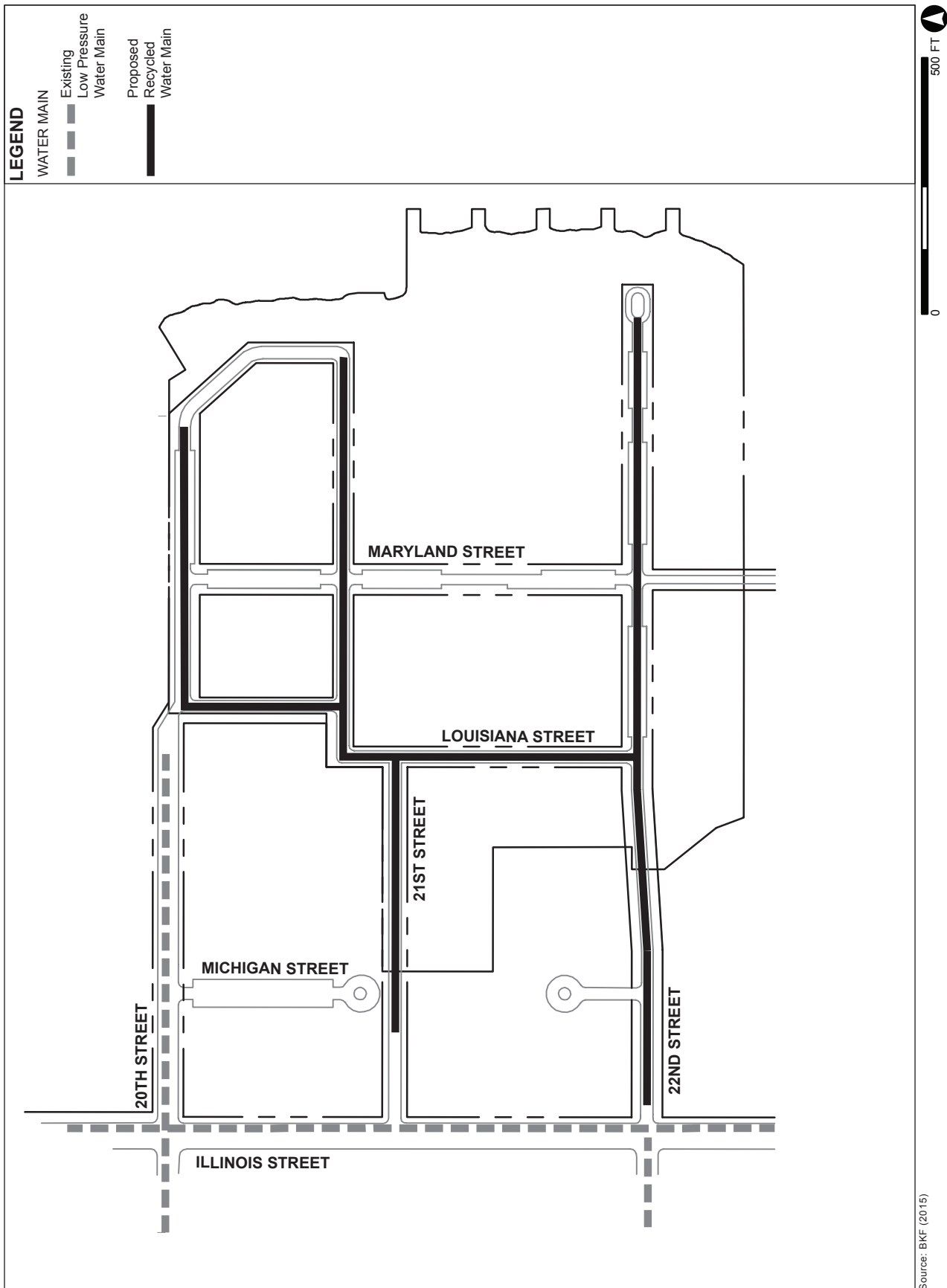
San Francisco's Non-potable Water Ordinance requires new buildings larger than 250,000 square feet to use on-site "alternate water sources" of graywater (e.g., wastewater from bathtubs, showers, bathroom sinks, and clothes washing machines, but not from kitchen sinks, dishwashers or toilets), rainwater (e.g., precipitation collected from roofs and other above-ground collection surfaces, excluding stormwater runoff), and foundation drainage water (e.g., nuisance groundwater that is pumped out to maintain a building's or facility's structural integrity) to meet that building's toilet and urinal flushing and irrigation demands.⁴⁹ The Proposed Project would include the diversion and reuse of graywater and rainwater for toilet and urinal flushing and irrigation.

AUXILIARY WATER SUPPLY SYSTEM

To meet supplemental firefighting water requirements for the AWSS, the Proposed Project would be required to include on-site AWSS high-pressure distribution piping. This network of high-pressure pipelines would connect to the existing AWSS distribution pipeline in Third Street. The pipelines would be installed beneath existing and proposed streets and would supply fire hydrants within the project site for the purposes of firefighting. The AWSS may also include a permanent manifold installed upland of the shoreline that can be connected to a temporary, portable submersible pump for redundancy.

⁴⁸ SFPUC, *San Francisco Eastside Recycled Water Project*. Available online at http://sfwater.org/bids/projectDetail.aspx?prj_id=311. Accessed December 29, 2015.

⁴⁹ City and County of San Francisco Ordinance 109-15, "Health, Public Works Codes - Mandatory Use of Alternate Water Supplies in New Construction" (June 15, 2015), amending San Francisco Health Code section 12C.2.



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FIGURE 2.20: PROPOSED RECYCLED WATER DISTRIBUTION SYSTEM

PROPOSED WASTEWATER (SANITARY SEWER) AND STORMWATER FACILITIES

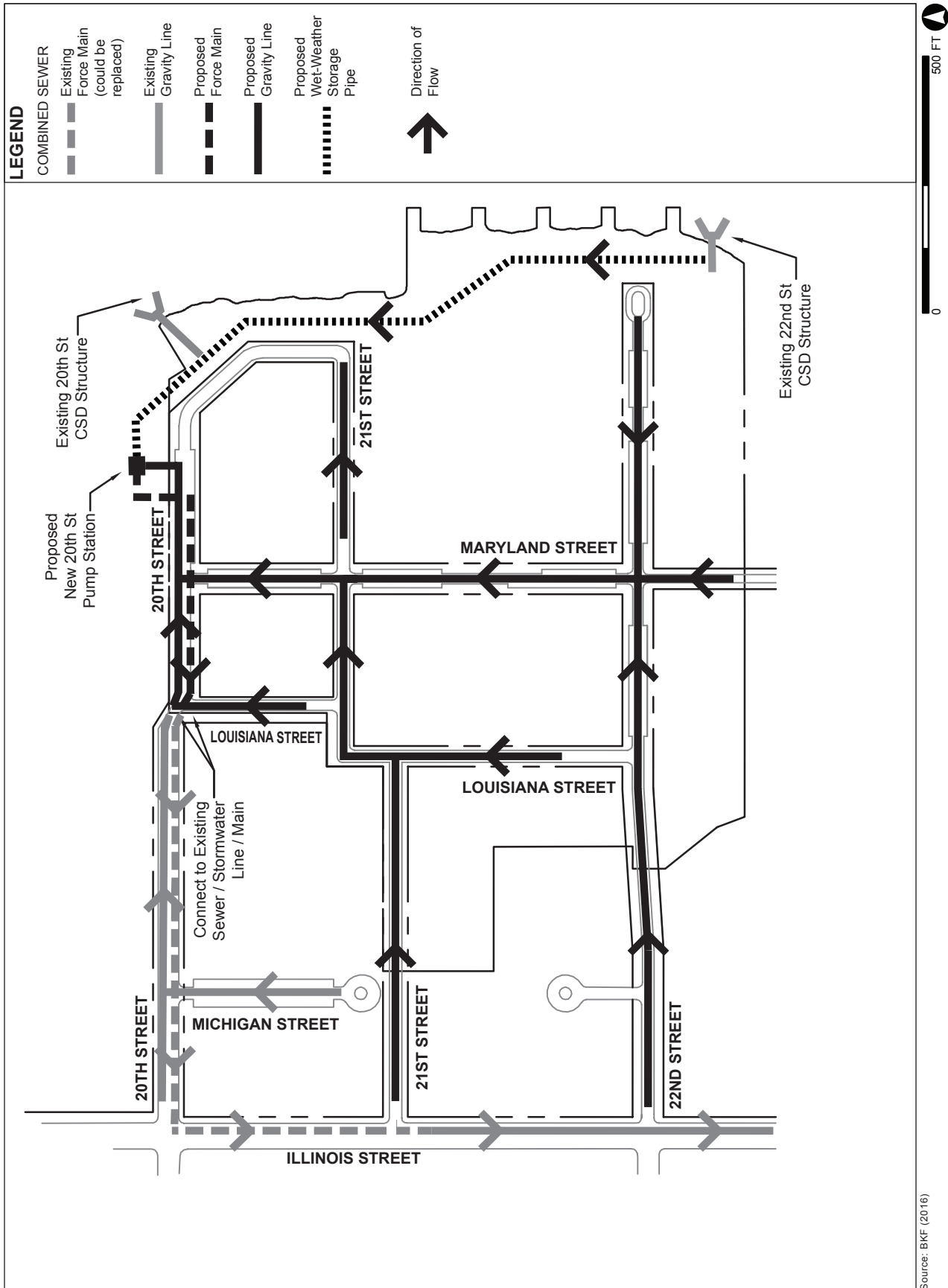
As described under “Infrastructure” on pp. 2.19-2.20, wastewater and stormwater flows from the project site are currently conveyed to the SEWPCP for treatment via the City’s combined sewer system. The Port also owns and maintains many gravity sewer lines that connect the existing buildings on the site to the SFPUC sewer lines.

The project sponsors are considering three options for managing wastewater and stormwater flows from the project site: Option 1, Combined Sewer System; Option 2, Separate Wastewater and Stormwater Systems; and Option 3, Hybrid System. These options are described below. Stormwater and wastewater system improvements common to each option are described first, followed by improvements that are specific to each option.

Common Improvements

Under all of the wastewater and stormwater management options, the Proposed Project would replace SFPUC’s 20th Street Pump Station to accommodate the existing stormwater and wastewater flows within the 20th Street sub-basin along with anticipated wastewater flows from the project site and future development in the 20th Street sub-basin. The new 20th Street Pump Station would be located on Port lands, likely at a location immediately north of the project site boundary, between Buildings 6 and 108 on or near the BAE Systems Ship Repair site, as shown on Figure 2.21: Option 1 – Combined Sewer System. The new 20th Street Pump Station would include the following features, which would be refined during the detailed design phase of the Proposed Project in coordination with the SFPUC:

- The pump station structure and ancillary equipment such as the electrical control panel, and electrical transformer would likely be constructed within an approximately 50-by-60-foot area that would be fenced and allow for vehicular maintenance access. The control panel could be exposed or enclosed within an approximately 15-by-30-foot structure about 10 feet in height.
- A 30-by-30-foot wet well would be constructed to a depth of approximately 20 feet below grade. All of the pumps, valves, and associated mechanical equipment would be enclosed below ground in the wet well and valve vault structures.
- The pump station would be elevated to accommodate a minimum of 66 inches (5.5 feet) of sea level rise above the present day 2000 mean high water line, and would be designed to meet City design guidelines and limit combined sewer discharges into San Francisco Bay, in conformance with the City’s permit requirements through a combination of overflow weirs, sump pumps, and upstream hydraulic systems.



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FIGURE 2.21: OPTION 1 - COMBINED SEWER SYSTEM

It is possible that, in conjunction with installation of the new pump station, a new force main would be constructed to replace all or part of the existing 10-inch force main. The new force main would be installed beneath 20th Street and a portion of Illinois Street to convey flows from the new pump station to the existing 27-inch-diameter gravity sewer main of the City's combined sewer system beneath Illinois Street, as shown on Figure 2.21. In addition, the existing 900-foot-long, 54-inch storage and detention pipe would be replaced and relocated to an area beneath the proposed Waterfront Terrace and Waterfront Promenade, also as shown on Figure 2.21. Similar to existing conditions, the storage and detention pipe would be connected to the existing 20th and 22nd streets CSD outfalls and the storage capacity provided by this pipe, the 42-inch sewer line beneath 20th Street, and the wet well of the 20th Street Pump Station would be used to control the frequency of CSDs from the 20th Street sub-basin. The BAE line connecting to the pump station would be relocated or extended as part of the Proposed Project. All of the Port gravity sewer lines within the project site would also be removed.

The dry-weather capacity of the new pump station and force main would be sufficient to convey the total of all peak dry-weather flows to the 27-inch sewer line of the combined sewer system in Illinois Street. The wet weather capacity of the pump station and storage facilities would be sufficient to ensure that wet-weather combined sewer discharges from the 20th Street sub-basin do not exceed a long-term average of 10 combined sewer discharges per year in accordance with the Bayside NPDES Permit, or contribute to an increase in CSDs from other drainage basins of the combined sewer system that would exceed the long-term average specified in the Bayside NPDES permit. The SFPUC would participate in the design of the new 20th Street Pump Station to ensure these performance criteria are achieved.

Wastewater and Stormwater Flow Options

Three stormwater and wastewater options, described below, are under consideration for implementation under the Proposed Project. For each option, the project sponsors would install the pipelines in trenches beneath the Proposed Project's roadway and open space network. Only one of these options would be implemented, and none of the proposed variants to the Proposed Project, described below in Section E, Project Variants, pp. 2.74-2.79, would change the conceptual description of any of the options under consideration. Under each option, the wastewater flows for each of the three options would be conveyed to the SEWPCP for treatment in accordance with the existing Bayside NPDES Permit. The options differ in the way that stormwater would be managed at the project site.

Option 1: Combined Sewer System

Under Option 1, the project sponsors would construct the new combined sewer lines beneath existing and proposed streets to convey both wastewater and stormwater flows to the new 20th

Street Pump Station. The combined flows would be conveyed from the pump station to SFPUC's gravity sewer beneath Illinois Street via the existing 10-inch force main or a new force main installed concurrently with the 20th Street Pump Station, if replacement of the existing force main is required. (See Figure 2.21, p. 2.60.) The storage capacity provided by the 42- and 54-inch storage and detention pipelines along with the wet well of the 20th Street Pump Station would be used to help control the frequency of CSDs from the 20th Street sub-basin.

Option 2: Separate Sewer and Stormwater System Option (Separated Approach)

Under Option 2, Separate Wastewater System and Stormwater System, wastewater and stormwater would be conveyed in separate wastewater and stormwater systems. (See Figure 2.22: Option 2 – Separate Wastewater System, and Figure 2.23: Option 2 – Separate Stormwater System.) For the wastewater system, the project sponsors would construct new wastewater lines beneath existing and proposed streets to convey wastewater flows to the new 20th Street Pump Station. Wastewater flows would continue to be conveyed to the City's combined sewer system via the existing 10-inch force main or a new force main installed concurrently with the 20th Street Pump Station, if required.

For the stormwater system, the project sponsors would install new storm drain lines beneath existing and proposed streets to convey stormwater flows via gravity to a new outfall located near the foot of the realigned 21st Street. The new outfall would discharge stormwater to the Central Basin of Lower San Francisco Bay. The separate stormwater system would be considered a Small Municipal Separate Storm Sewer System and would be managed in accordance with the SWRCB Small MS4 General Stormwater Permit, described in Section 4.O, Hydrology and Water Quality.

Option 3: Combined Sewers with Separate Sewer in Eastern Portion of Project Site (Hybrid Approach)

Under Option 3, Hybrid System, a combined sewer system would continue to serve most of the project site, except for the area to the east of the proposed Maryland Street. (See Figure 2.24: Option 3 – Hybrid System.) The project sponsors would construct new separate stormwater and wastewater systems to serve the portion of the project site to the east of Maryland Street, including proposed open space areas.

In the area west of the proposed Maryland Street, the project sponsors would construct new combined sewer lines beneath the existing and proposed streets to convey both stormwater and wastewater flows to the new 20th Street Pump Station. The combined flows from this portion of the site would continue to be conveyed to the City's combined sewer system via the existing 10-inch force main or a new force main installed concurrently with the 20th Street Pump Station, if

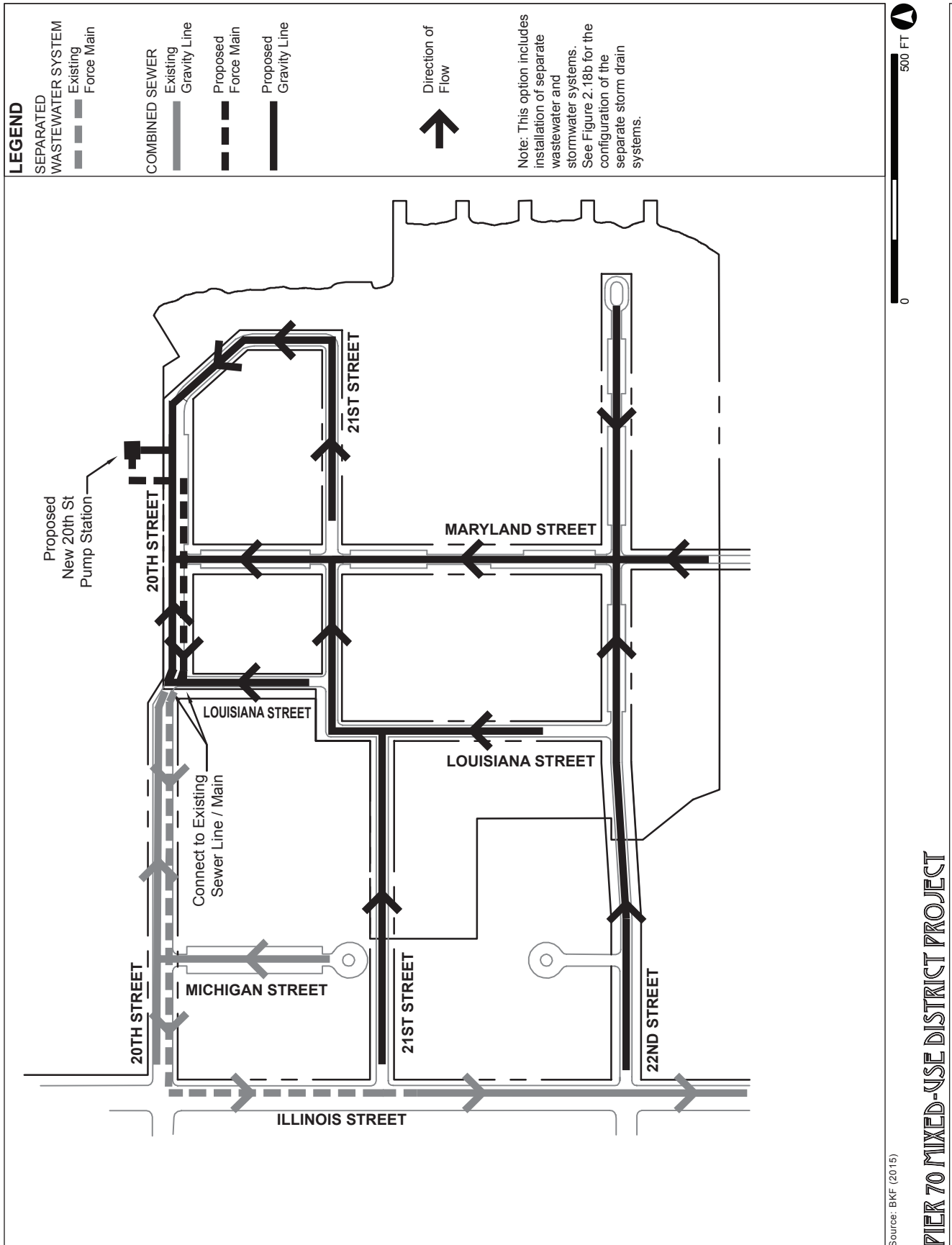


FIGURE 2.22: OPTION 2 - SEPARATE WASTEWATER SYSTEM

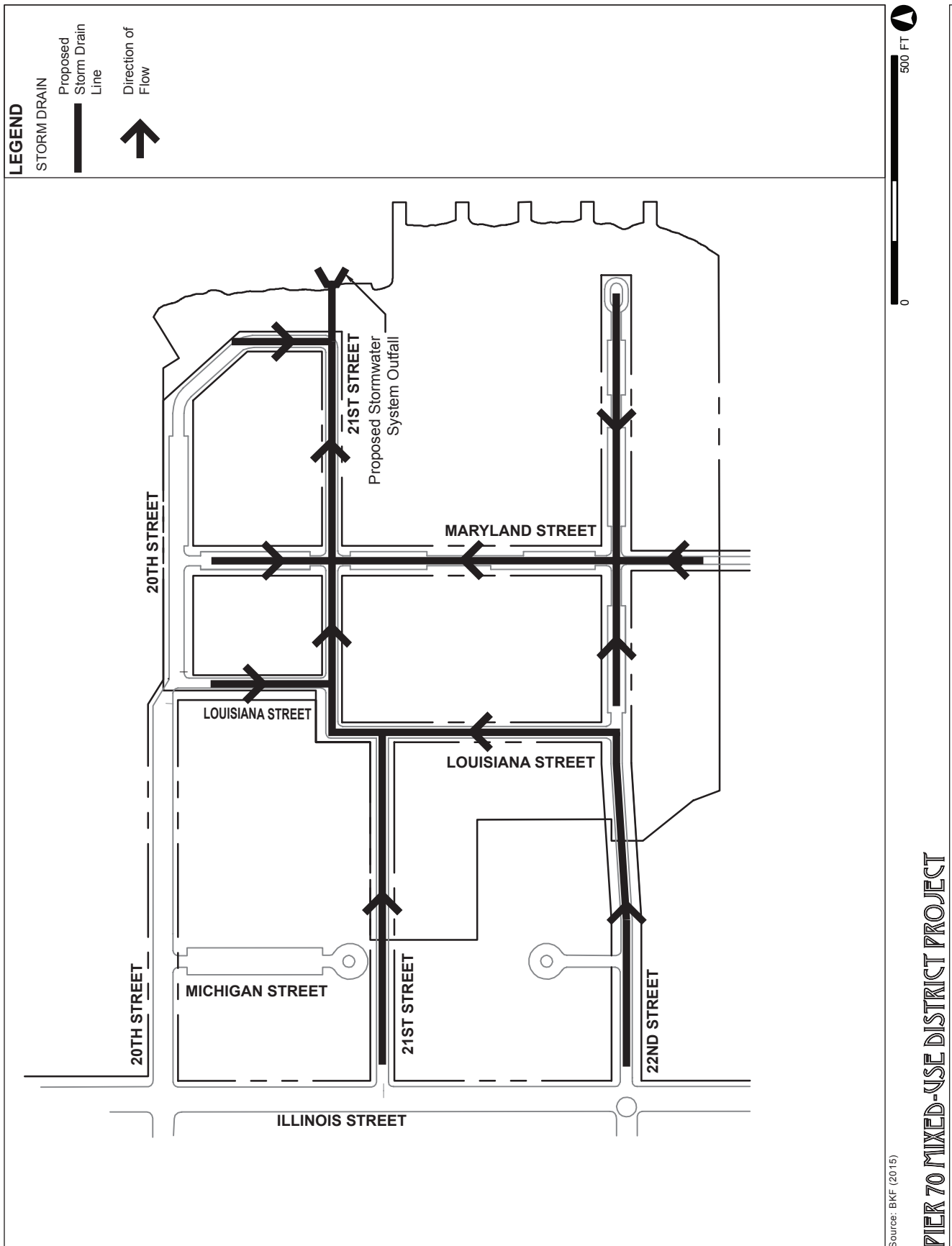
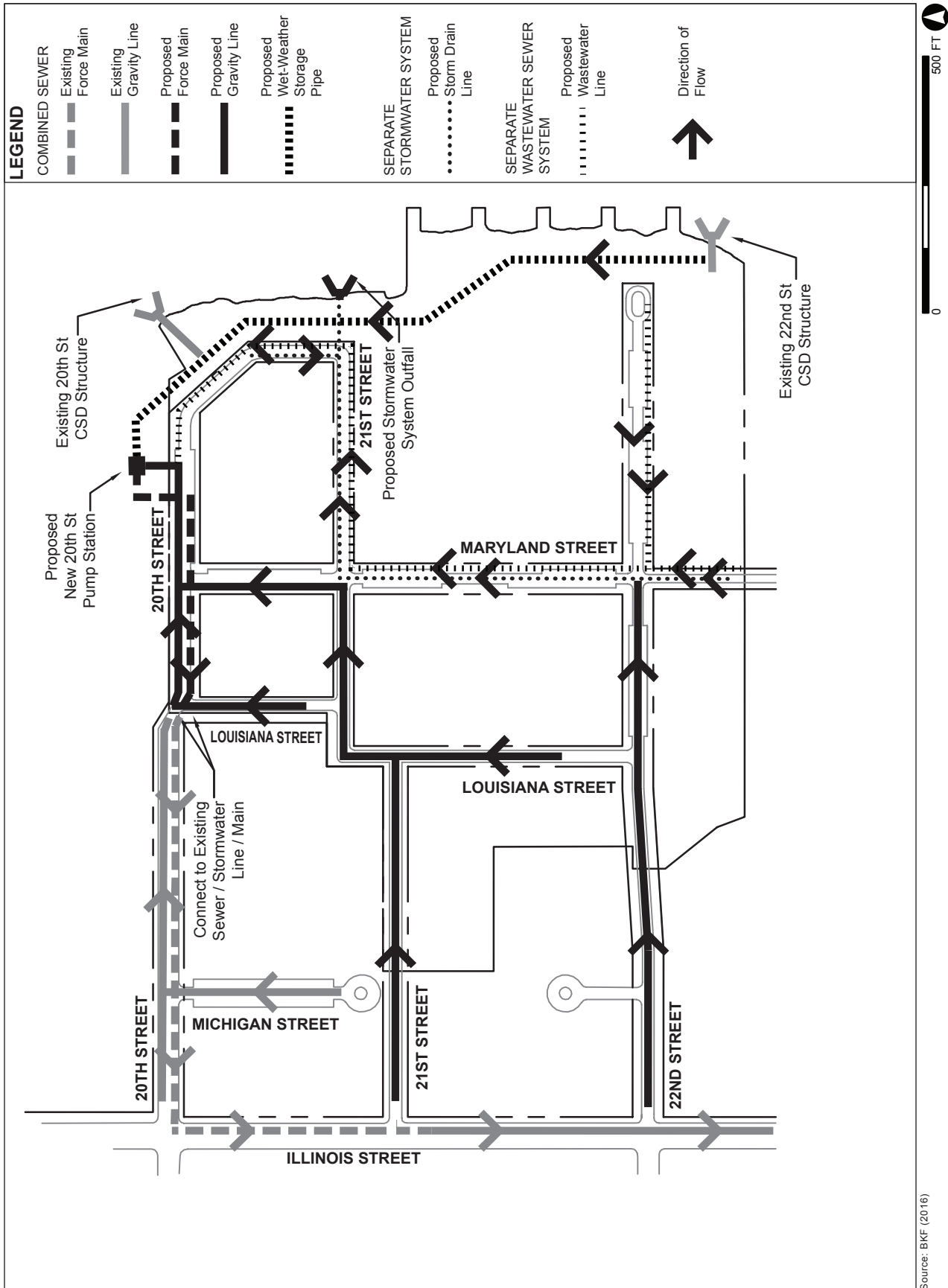


FIGURE 2.23: OPTION 2 - SEPARATE STORMWATER SYSTEM



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FIGURE 2.24: OPTION 3 - HYBRID SYSTEM

replacement of the existing force main is required. The storage capacity provided by the 42- and 54-inch storage and detention pipelines along with the 20th Street Pump Station's wet well would be used to help control the frequency of CSDs from the 20th Street sub-basin.

In the area east of the proposed Maryland Street, the project sponsors would construct new storm drain lines beneath the existing and proposed streets to convey stormwater flows via gravity to a new outfall located near the foot of the realigned 21st Street. The new outfall would discharge stormwater to the Central Basin of Lower San Francisco Bay. This separate stormwater system would be considered a Small Municipal Separate Storm Sewer System and would be managed in accordance with the Small MS4 General Stormwater Permit, described in Section 4.O, Hydrology and Water Quality. The project sponsors would also construct new wastewater lines beneath the same streets. Wastewater flows would be conveyed to the new 20th Street Pump Station. Under this option, all wastewater flows from the project site would continue to be conveyed to the City's combined sewer system via the 10-inch force main or a new force main installed concurrently with the 20th Street Pump Station, if replacement of the existing force main is required. The wastewater flows would be conveyed to the SEWPCP for treatment in accordance with the existing Bayside NPDES Permit.

Electricity and Natural Gas

The Proposed Project would replace overhead electrical distribution with a joint trench utilities distribution system which would follow the proposed realigned roadways. Connecting to the existing 12-kV electricity lines along Illinois, 20th, and 22nd streets, the new electric piping would be within placed within the joint trench system to serve each parcel on the project site.

The Proposed Project would also extend the existing natural gas distribution system from 20th Street to connect to the 28-Acre Site. A new natural gas distribution system would be constructed to extend to the Illinois Parcels. New gas lines would be placed in the joint utilities trench distribution system following the realigned roadways.

The Proposed Project would comply with San Francisco Green Building Requirements for energy efficiency in new buildings. Energy-efficient appliances and energy-efficient lighting would be installed in the three rehabilitated historic buildings.

Back-up emergency diesel generators are required by the San Francisco Building Code for new buildings with occupied floor levels greater than 75 feet in height. There are 10 parcels (all in the 28-Acre Site) that would allow building heights of up to 90 feet: Parcels A, B, C1, C2, D, E1, F, G, H1, and H2. Each of the buildings on Parcels A, C1, C2, D, E1, F, G, H1, and H2 would have a back-up diesel generator, if built with occupied floor levels greater than 75 feet; such generators would operate in emergency situations, each having an average size of 400 horsepower. Due to

the larger size of Parcel B, the building proposed for that parcel would have two 400-horsepower, back-up diesel generators to operate in emergency situations. In total, 11 generators are anticipated on the project site.

As part of the necessary mechanical equipment, the Proposed Project includes installation of mechanical cooling towers located on the roof of each proposed building.

Renewable Energy

The Proposed Project is required to meet the State's Title 24 and the San Francisco Green Building Requirements for renewable energy and the Better Roof Requirements for Renewable Energy Standards.^{50,51} The Proposed Project would allow for roof-mounted or building-integrated solar photovoltaic (PV) systems and/or roof-mounted solar thermal hot water systems for all proposed buildings, excluding existing Buildings 2, 12, and 21. At least 15 percent of the roof area would include roof-mounted or building-integrated PV systems and/or roof-mounted solar thermal hot water systems that would be installed in residential and commercial buildings. Solar PV systems transform sunlight into electricity and solar thermal water systems use the sun's energy to heat water for consumer use. These systems would partially offset the energy demands of the associated buildings. No ground-mounted facilities are proposed under the Proposed Project. The solar PV arrays located on various rooftops could be interconnected via a community microgrid that serves as a site-wide distribution network capable of balancing captive supply and demand resources to maintain stable service within the Project. Microgrids combine various distributed energy resources – such as whole-building energy efficiency improvements, solar photovoltaics, other clean generation such as fuel cells, battery storage, and localized smart energy management technologies – to form a whole system that is greater than its parts. The microgrid can be backed up by the local public utility grid and would not necessarily supply all of the demand from the Proposed Project.

PROPOSED GRADING AND STABILIZATION PLAN

SITE GRADING

The Proposed Project would involve excavation of soils for grading and construction of the 15- to 27-foot-deep basements planned on Parcels A, B, C1, C2, D, E1, E2, E3, E4, F, G, H1, H2, PKN, PKS, HDY1 and HDY2. No basement levels are planned for existing Buildings 2, 12, or 21. The Proposed Project would raise the grade of the 28-Acre Site and the southern, low-lying portions

⁵⁰ San Francisco Building Code, Chapter 13C.

⁵¹ San Francisco Green Building, Environment Codes – Better Roof Requirements for Renewable Energy Standards, Ordinance No. 71-16, April 19, 2016.

of the Illinois Parcels by adding up to 5 feet of fill in order to help protect against flooding and projected future sea level rise, as described below, and as required for environmental remediation.

A portion of the northern spur of the remnant of Irish Hill would be removed for construction of the new 21st Street. The remnant of Irish Hill stands approximately 35 feet tall. Retaining walls would be necessary along the sides of the new 21st Street to protect the adjacent Building 116 in the Historic Core as well as the remnant of Irish Hill and along the reconfigured 22nd Street, to account for the proposed elevation difference between the streets and adjacent ground surfaces.⁵²

While the grading plan assumes some on-site reuse of the excavation soil, which would be stockpiled and reused as fill throughout the project site, a substantial amount of soil export would be required. The Proposed Project would result in a net export total of about 340,000 cubic yards of soil and an import of about 20,000 cubic yards of clean fill, which would be phased over the duration of the planned construction activities.

BUILDING 12 GRADING OPTIONS

In order to provide flexibility for site grading work anticipated as part of the rehabilitation of Building 12, the Proposed Project includes three grading options for Building 12, described below. The determination of a final grading option will ultimately be decided prior to building permit issuance.

Grading Option 1: Raise the Exterior Grade Only

Under Grading Option 1, the structural frame of Building 12 would remain at the current grade. The grade differential of up to about 4 feet between the finished floor elevation of Building 12 and the surrounding street elevation would be bridged by stepped or sloped treatment of the area adjacent to the building, allowing the exterior wall to remain fully exposed. No changes to the interior floor elevation would occur under this option. All exterior, character-defining features of Building 12 would remain visible.

Grading Option 2: Raise the Interior Slab on Grade of Building 12 Structural Frame and Raise the Exterior Grade

Grading Option 2 would raise the interior slab up to a maximum of 3 feet, and raise the adjacent exterior an additional 4 feet, while leaving the Building 12 structure in place. A new slab on grade would be placed over compacted fill and a thickened edge of slab would be placed around the building perimeter. This alternative would cover some currently exposed steel column-to-foundation connections, shorten the height of pedestrian and vehicular openings, and lower the

⁵² The areas on the 28-Acre Site and Illinois Parcels directly adjacent to the 20th Street Historic Core would conform to existing grades; fill would not be placed in these adjacent areas.

sill heights of ground-floor windows, as viewed from the interior. Except for the first 4 feet, the exterior walls of Building 12 would remain fully visible and unchanged from current conditions. To accommodate any remaining elevation change necessary to meet street elevations, the grade differential would be bridged by stepped or sloped treatments.

Grading Option 3: Raise Building 12 Structural Frame

Grading Option 3 would raise and place Building 12 on a new slab foundation at the new grade elevation. The surrounding grade would gradually slope away from the building as needed for drainage purposes. This option would entail disconnecting the structural steel columns from the foundations by unbolting the existing anchor bolts, then incrementally jacking up the building columns to the desired elevation. Due to sitewide grading, the building foundation would be exposed on the northern and eastern sides.

GEOTECHNICAL STABILIZATION

To address the potential hazard of liquefaction and lateral spreading that may occur during a major earthquake, the Proposed Project would include construction of improvements to control the amount of lateral displacement that could occur. These improvements could include either reinforcing the existing slope with structural walls or implementing ground improvements. The structural walls would consist of below-grade secant pile walls along the northeastern and southeastern portions of the project site (north and south of the Slipway structures), to contain and stabilize the soil. Secant pile walls are formed as a series of intersecting reinforced concrete piles, and could generally be constructed by installing a set of primary piles or concrete-filled drill holes, followed by an interlocking, secondary set of piles, with a concrete cap on top, which would be supported by micropile or tie-back anchors set at an angle. Ground improvements may consist of chemical treatments, such as deep soil mixing to add a cement slurry, or vibratory methods, such as vibro-compaction, vibro-replacement, and/or compaction, to strengthen the existing soil.

PROPOSED SHORELINE PROTECTION IMPROVEMENTS AND SEA LEVEL RISE ADAPTATION

The project sponsors' primary criteria for sea level rise adaptation include the following:⁵³

- Reserve the 100-foot shoreline band for public access that is safe and feasible;
- Elevate all buildings and immovable facilities (e.g., roadways) such that adaptation would not be necessary for current worst-case end-of-century sea level rise estimates

⁵³ Moffat and Nichol, "Pier 70 Development, Preliminary Shoreline Improvements Report, San Francisco, California," Draft, August 2015, p. 16.

provided in the National Research Council's June 2012 *Sea-Level Rise for Coasts of California, Oregon and Washington*,⁵⁴ and

- Elevate the Bay Trail such that adaptation would not be necessary over the next 20 to 30 years (by mid-century).

Based on the above criteria, the Proposed Project would include the following improvement concepts:

- Finished floors of buildings within the project site would be elevated to a minimum elevation of 15.4 feet NAVD88 (+104 feet project datum [+4 feet SF Datum])^{55,56,57} to accommodate 66 inches of sea level rise and the 100-year storm surge.
- The Bay Trail in the vicinity of the shoreline would be located at an elevation to accommodate 24 inches (2 feet) of sea level rise before adaptation may be necessary.
- The approximately 40-foot-wide zone between the Bay Trail and the water's edge would be designed to provide safe public access to the water in the near term. This zone would also function as the space where future adaptations could be creatively implemented based on the concepts of "Living with the Bay" and "Managed Retreat." Future adaptations in this area would allow for public access to retreat within the zone between the Bay Trail and shoreline. Adaptations could also include relocating and raising pathways and spur trails, or reconfiguring the shoreline protection to provide flatter slopes, wetlands and wave breaks.

These protection improvement concepts would allow for future adaptations along the shoreline to address higher levels of sea level rise with either the same or a different structural configuration. The Proposed Project would include a public financing mechanism to pay for the cost of future improvements related to sea level rise adaptation, should such improvements be necessary, with the City and the Port responsible for implementing these strategies.

⁵⁴ The National Academies Press, *Sea-Level Rise for the Coasts of California, Oregon, and Washington*, dated 2012. Available online at <http://www.nap.edu/read/13389/chapter/1>. Accessed June 29, 2016.

⁵⁵ The Project Datum elevations are equal to San Francisco Datum elevations plus 100 feet.

⁵⁶ North American Vertical Datum of 1988 (NAVD88) is a fixed reference point (vertical elevation) adopted as the official, civilian, vertical datum for elevations determined by federal surveying. Historically, the average (mean) sea level or some variation of sea level has served as a reference point for elevations. One problem with using sea level is that it changes. In addition, the earth is not spherical, but has an ellipsoid shape, and has local variations due to uplift and sinking of portions of the earth's crust. Therefore, sea level in relation to the earth's crust varies. A vertical datum system not based on sea level avoids these problems. NAVD88 is based on a point in Quebec, Canada. Sources: U.S. Geologic Survey, http://water.usgs.gov/ADR_Defs_2005.pdf, pp. 8-9, accessed June 22, 2015.

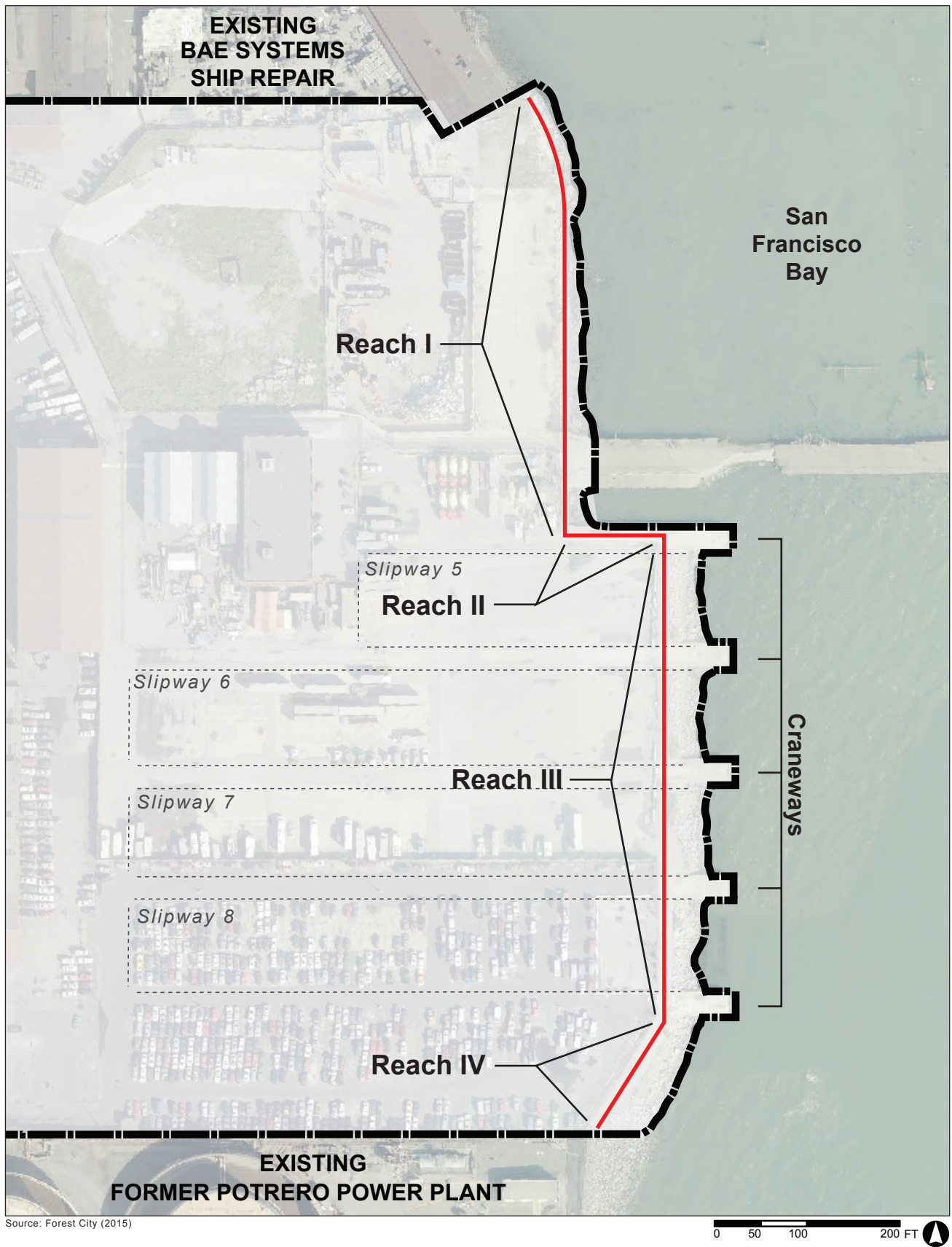
⁵⁷ San Francisco City Datum establishes the City's zero point for surveying purposes at approximately 11.4 feet above the 1988 North American Vertical Datum. The project sponsors have also established a project datum for project-specific purposes that is equal to San Francisco City Datum plus 100 feet. This is 88.6 feet higher than NAVD88.

SHORELINE PROTECTION IMPROVEMENTS

The 28-Acre Site has about 1,380 feet of shoreline along its eastern edge. The objectives of the proposed shoreline protection improvements include maintaining a stable shoreline in the project area by preventing shoreline erosion and protecting the proposed development from coastal flooding. The proposed shoreline protection system is designed to minimize the need for placing fill in San Francisco Bay; maximize open space and public access to the shoreline edge; improve existing slope protection, where feasible; develop aesthetically pleasing and cost-efficient shoreline protection; and provide for future sea level rise adaptation. For design purposes, the existing shoreline is divided into four separate “reaches”⁵⁸ (see Figure 2.25: Shoreline Improvements Map):

- The Reach I shoreline consists of 480 feet along the northern portion of the project site. The top of the bank elevation is 12 to 13.5 feet NAVD88 (+100.6 to +102.1 feet Project Datum [+0.6 to +2.1 feet SF Datum]). This shoreline contains scattered rock and concrete debris (riprap) placed historically for shoreline protection and washed ashore by wind and waves. Portions of the shoreline have a concrete apron. Remnant piles from a former pier structure are scattered through the reach.
- Reach II is a 100-foot stretch of east-west shoreline that faces north and consists of a vertical bulkhead. The top of the bulkhead elevation is 12 to 11.8 feet NAVD88 (+100.6 to +100.4 feet Project Datum [+0.6 to +0.4 feet SF Datum]). Reach II forms the northern limit of the slipways. The vertical bulkhead is made up of steel sheet piles with an overhanging concrete cap.
- Along the southern portion of the project site, Reach III consists of the Slipways 5, 6, 7, and 8, which are bounded by craneways that are perpendicular to the shore. Reach III is 530 feet long. The top of bank elevation is 11.1 to 13 feet NAVD88 (+99.7 to +101.6 feet Project Datum [-0.3 to +1.6 feet SF Datum]). The craneways are constructed of concrete bulkhead walls with an overhanging concrete cap. Located between the craneways, the slipways have a concrete ramp that extends into San Francisco Bay. There is a sheet pile wall at the mudline where the craneways end. Along the existing top of bank, riprap has been placed on the slipways prevent scour. The inland portions of slipways have been filled and covered with asphalt.
- Reach IV encompasses 270 feet along the southern portion of the project shoreline. The top of bank elevation is 12 to 11.3 feet NAVD88 (+100.6 to +99.9 feet Project Datum [+0.6 to -0.1 feet SF Datum]). The Reach IV shoreline faces southeast and consists of riprap. The southern portion of Reach IV is covered by an armor stone revetment installed by PG&E as a remedial measure. This revetment consists of a layer of permeable reactive material on the previous shoreline surface, an overlying bedding layer of gravel, and an armor stone layer on the stabilized shoreline surface. There is an engineered retaining wall at the southern end of the project site, which protects the shoreline of the former Potrero Power Plant property.

⁵⁸ A reach is a continuous stretch of or extent of land.



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FIGURE 2.25: SHORELINE IMPROVEMENTS MAP

Options for shoreline protection improvements were developed for each reach. The proposed shoreline protection improvements and sea level rise adaptation planning criteria are described below.

Reach I

Along Reach I, the existing rip-rap revetment above would be repaired by removing the rip-rap and placing new geotextile fabric and rip-rap materials. The repaired shoreline would have an approximately 3:1 slope. Construction of these repairs would require in-bay construction activities below the high tide level of 7.4 feet NAVD88 (96 feet project datum [-4 feet SF Datum]).

Above 11.4 feet NAVD88 (+100 feet elevation), the slope would include an engineered riprap revetment option or a flatter slope option.⁵⁹ The revetment option would consist of a rock slope protection system made up of armor stones, to protect the shoreline from erosion that would be underlain by geotextile fabric. A crushed-rock leveling course (i.e., top) would also be emplaced. The flatter slope option would consist of erosion-resistant materials (e.g., vegetation).⁶⁰ At this elevation there would also be an approximately 6-foot-wide informal pathway to provide pedestrian access to the shoreline until such time as it becomes infeasible.

Reach II

Along Reach II, the existing bulkhead would be studied and either repaired or replaced. The repair or replacement would be constructed on the water side of the existing bulkhead wall, located in San Francisco Bay shoreline. Since repair and replacement would require excavation and fill, below the high tide level of 7.4 feet NAVD88 (96 feet project datum [-4 feet SF Datum]), two options are being considered: a sheet pile wall or a soldier pile wall.

- **Sheet Pile Wall Option:** Under the sheet pile wall option, interlocking steel sheet piles would be installed. These can be driven below the water surface without the need of temporary cofferdams or dewatering. Individual sheets would be Z-shaped or U-shaped with a ball and socket type of interlock. Once the sheet piles are installed, a concrete (or steel) cap would be constructed to distribute the loads and to provide a finished look to the wall.
- **Soldier Pile Wall Option:** The soldier pile wall option consists of individual piles spaced a short distance apart, with gaps between the piles filled with lagging. The piles would be cast-in-drilled-hole piles, which are built by drilling a hole and inserting a reinforcing cage, then filling the hole with concrete. Installing a soldier pile wall may require temporary cofferdams or dewatering.

⁵⁹ A revetment is a retaining wall or facing of masonry or other material, supporting or protecting a rampart or wall.

⁶⁰ Armor stones are the outer layer of any rock slope protection. The rocks can be of any size.

Reach III

Proposed shoreline protection improvements for Reach III include repairing the existing slope protection with armor stone and a crushed-rock leveling course. Construction of these repairs would require in-water construction activities below the high tide level of 7.4 feet NAVD88 (96 feet project datum).

For the 11.4 to 15.4 feet NAVD88 (+100 to +104 feet Project Datum [+0 to +4 feet SF Datum]) elevation areas, several options are possible, including a riprap revetment, hardscape steps, or a cantilevered/pile-supported deck.⁶¹ The riprap revetment option would include armor stone and a crushed-rock leveling course. The hardscape steps option would consist of wide concrete steps that could also be used for sitting and walking. The cantilevered/pile-supported deck would extend over the sloping shoreline for a short distance between craneway structures, and would allow visitors to be closer to the water and could offer a space for public art. At this elevation there would also be an approximately 6-foot-wide informal pathway to provide pedestrian access to the shoreline until such time as it becomes infeasible.

Reach IV

The proposed shoreline protection improvements along Reach IV would include improvements and repairs to the existing revetment to create a smooth sloped revetment. Construction of these improvements would require in-water construction activities below the high tide level of 7.4 feet NAVD88 (96 feet project datum). Above 11.4 NAVD88 (+100 feet Project Datum [+0 feet SF Datum]). Above 11.4 feet NAVD88 (+100 feet Project Datum [+0 feet SF Datum]) elevation, the slope would include an engineered riprap revetment option or flatter slopes option with erosion-resistant materials (e.g., vegetation).⁶² At this elevation, there would also be an approximately 6-foot-wide informal pathway to provide pedestrian access to the shoreline until such time as it becomes infeasible.

E. PROJECT VARIANTS

In addition to the specific characteristics of the Proposed Project described in this chapter, there are four proposed variants to the Proposed Project, each of which modifies one limited feature or aspect of the Proposed Project. One, a Reduced Off-Haul Variant, is a construction-related variant; the other three – a District Energy System Variant, a Wastewater Treatment and Reuse System (WTRS) Variant, and an Automated Waste Collection System (AWCS) Variant – are variants on infrastructure features of the Proposed Project, and all of the proposed variants focus on sustainability. The four variants are described below.

⁶¹ These elevations are above the reach of present-day tides.

⁶² This elevation is above the reach of present-day tides.

These variants to the Proposed Project are fully analyzed in Chapter 6, Project Variants, at a sufficient level of detail so that one or more of them would be available for selection by the decision-makers and the project sponsors as part of the project approval actions.

REDUCED OFF-HAUL VARIANT

The Reduced Off-Haul Variant would minimize the overall volume of excavated soils and the number of off-haul truck trips required for the transport and disposal of excavated soils. The strategy for achieving a reduction in the volume of excavated soils and the resultant off-haul truck trips is three-fold: (1) modify the preliminary grading plan developed for the Proposed Project to raise the base elevation for a portion of the 28-Acre Site; (2) eliminate the proposed 15-foot-deep below-grade basement levels at selected locations on the 28-Acre Site and extend the footprint of one proposed 15-foot-deep below-grade basement level; and (3) eliminate a portion of one of the two level below-grade basement levels. The combination of the proposed increase to the base elevation on a portion of the 28-Acre Site and the modifications to the below-grade basement level parking program would result in an approximately 56 percent reduction in the volume of excavated soils that would need to be transported off site (from approximately 340,000 cubic yards under the Proposed Project to approximately 150,000 cubic yards under this variant). As with the Proposed Project, under the Reduced Off-Haul Variant clean fill would need to be imported to the project site to help protect against flooding and projected future sea level rise. Under the Reduced Off-Haul Variant there would be a slight increase in the volume of clean fill that would need to be imported (from approximately 20,000 cubic yards under the Proposed Project to approximately 21,150 cubic yards). Overall, the Reduced Off-Haul Variant would result in an approximately 52 percent reduction in the combined earth movement.

DISTRICT ENERGY SYSTEM VARIANT

The Proposed Project assumes all heating and cooling would be done at the individual building level and independent from adjacent buildings. PG&E would provide natural gas, and electricity would be provided by the SFPUC and renewable power generated on the project site (e.g., roof-mounted or building-integrated solar photovoltaic systems and/or roof-mounted solar thermal hot water systems for all proposed buildings, if implemented).

Under the District Energy System Variant, a single central energy plant would be located in one of the basement levels of a newly constructed building on Parcel C1. The central energy plant would have a footprint of approximately 8,000 to 14,000 square feet, depending on the equipment used. Exhaust ducts would be required on the roof or façade of the building on Parcel C1. Fifteen- to twenty-foot-tall cooling towers would be located on the roof or would be adjacent to the building. The proposed central energy plant would provide heating and cooling for a linked

group of residential and commercial buildings. Hot water would be used for space heating and water heating, and chilled water would be used for space cooling.

Under this variant, building space heating and space cooling systems within the project site would be linked together via an underground shared energy distribution and exchange loop. The central energy plant would circulate the loop water to individual buildings via the shared energy distribution and exchange loop system that would be located under the proposed street and sidewalk network alongside other utilities. Each building would have heat pumps and a point-of-connection to the shared energy distribution and exchange loop system. Buildings that require heat would remove heat from the loop. Buildings that require cooling would reject that heat by pumping heated water into the loop, therefore removing it from each building's system. The peak water flow capacity of the closed loop system would be approximately 9,000 gallons per minute. The desired temperature range of the water in the loop system would be 50°F to 90°F. To maintain the water in the shared energy distribution and exchange loop system within the desired temperature range, the central energy plant would use natural-gas fired boilers to increase heat and cooling towers to reject heat. The central energy plant would also contain heat exchangers, pumps, boilers, and other ancillary equipment, and would obviate the need for a mechanical cooling tower located on the roof of each building.

WASTEWATER TREATMENT AND REUSE SYSTEM VARIANT

City Ordinance No. 109-15 (the Non-potable Water Ordinance) requires the use of on-site “alternate water sources” of treated blackwater, greywater, and rainwater water for toilet and urinal flushing and for irrigation demand for projects that require a subdivisions approval. Blackwater means wastewater contaminated by feces, urine, other bodily wastes, or other biological wastes, and includes wastewater from toilets, urinals, dishwashers, kitchen sinks, and utility sinks. Graywater is wastewater that has not been contaminated by any toilet discharge and has not been affected by infectious, contaminated, or unhealthy bodily wastes, including from processing, manufacturing, or operating wastes. Examples of graywater are wastewater from bathtubs, showers, bathroom sinks, and clothes washing machines, but not from toilets, kitchen sinks and dishwashers. Foundation drainage water is nuisance groundwater that is extracted to maintain the structural integrity of a building or facility and that would otherwise be discharged to the City's combined sewer system.⁶³

Under the WTRS Variant, blackwater, graywater, and rainwater would be collected from all newly constructed buildings, treated, and reused for toilet and urinal flushing, irrigation, and

⁶³ City and County of San Francisco Ordinance 109-15, “Health, Public Works Codes - Mandatory Use of Alternate Water Supplies in New Construction” (June 15, 2016), amending San Francisco Health Code section 12C.2.

cooling tower makeup. The variant is different from the Proposed Project, because it assumes blackwater is treated and recycled and that all newly constructed buildings would form a district system.

The WTRS Variant consists of a single modular tertiary wastewater treatment system, along with associated collection and distribution piping. This modular system is in essence a miniature version of a typical advanced wastewater treatment plant, including primary treatment (settling and skimming to remove solids), secondary treatment (biological breakdown of organic materials), and advanced treatment (various methods of eliminating pathogens and certain other pollutants).

Under the variant there would be one WTRS module located on the BAE Systems Ship Repair site north of Parcels A and B. The WTRS module would have a footprint of approximately 10,000 to 20,000 square feet and would be fully enclosed within Building 108 (after seismic and structural upgrades to the existing building are completed) or in a newly constructed building on the adjacent asphalt parking lot. Installation of the WTRS module would occur in Phase 1. The piping system that would collect blackwater, graywater, and rainwater from the project site and send out treated wastewater for reuse would have backflow protection and meet other requirements toward the goal of preventing the contamination of potable water piping. This system would also have a cross-connection to the City's combined sewer system to discharge wastewater flows in excess of non-potable demand and in case of emergency.

The WTRS module would be sized to treat approximately 150,000 gallons per day (gpd) depending on the associated non-potable demands for the phase and location. The non-potable (or reuse) demand means the volume of treated wastewater needed for toilet and urinal flushing, irrigation, and cooling towers. Estimated water reuse demand for the Maximum Residential Scenario would be 126,150 gpd.⁶⁴ For the Maximum Commercial Scenario, this demand would be 150,500 gpd. Actual water reuse quantities would be determined in part by San Francisco Health Code Section 12.C.4, regarding Water Budget Documentation and related requirements. Wastewater flow in excess of the non-potable demand would be discharged into the City's combined sewer.

The WTRS module would include at least the following components or functions: feed tank (wastewater input); trash trap; bioreactor; disinfection and storage tank; and heat recovery. Chemicals required for the treatment process would include sodium hydroxide, citric acid (if membranes are used), and an oxidizing disinfection agent, such as sodium hypochlorite. Truck delivery of chemicals for each module would be once every two to six weeks per module.

⁶⁴ BKF, Memorandum to Forest City, re: "Pier 70 – Water Demand Memorandum," April 28, 2016, p. 4 and Tables 3 and 4 on pp. 7-8.

Excess liquid waste from the WTRS module would be discharged into the municipal sewer or hauled away by truck. If allowed by law and by the City, trash trap waste would be double-bagged and disposed of at a landfill.

Odor control units would be installed. The exhaust gases likely would be vented at the top of the building where the module would be located.

The following agencies would oversee the implementation the WTRS Variant at the project site: the SFPUC, the San Francisco Department of Building Inspection, the Port of San Francisco, and the San Francisco Department of Public Health. Collected wastewater would be treated to meet the water quality criteria as set forth by the California Code of Regulations, Title 22, Division 4, Chapter 3.

AUTOMATED WASTE COLLECTION SYSTEM VARIANT

Under the Proposed Project, typical collection trucks would drive around the project site to pick up solid waste (separated by residents and businesses into recyclables, compostables, and trash/waste) from each individual building for transport to Pier 96 (recyclables) in San Francisco, the Jepson-Prairie facility (compostables) in Solano County, and the Hay Road Landfill (trash/waste) in Solano County. An automated waste collection system is under consideration, because it has the potential to operate more efficiently and would reduce the number of trash collection truck trips and the associated noise and air pollutant emissions.

Under the AWCS Variant, an automated waste collection system would be installed to transport solid waste from individual new buildings and in public areas, replacing interior and outdoor trash receptacles. Occupants would be expected to properly disaggregate solid waste into the categories of recyclables, compostables, and trash, and deposit these waste streams into designated receptacles. The waste streams would be temporarily stored at the loading point of each building and then the pneumatic or vacuum system would transport the solid waste with an air suction stream (typically up to 60 miles per hour) through subsurface pipes to a central waste collection facility. Sensors in the temporary solid waste storage locations would initiate the vacuum sequence when the collected solid waste reaches the capacity of the temporary storage space. Alternatively, the vacuum sequence could be initiated according to a pre-determined schedule. Each collected waste stream would be compacted at the central waste collection facility before being hauled to an off-site processing facility.

The central waste collection facility would be located in a stand-alone building near the proposed 20th Street Pump Station on the BAE Systems Ship Repair site directly north of Parcels A and B on the project site. The footprint of the central waste collection facility would be approximately 5,000 square feet and would be housed within a two-story structure (approximately 35 feet in

height), for a total of 10,000 square feet. The central waste collection facility would house the suction equipment fans, air compressors, air filters, waste separators, compactors, containers for temporary storage, and other miscellaneous equipment. Full containers would be collected at a staging area within the AWCS facility and loaded onto trucks for off-site hauling. There would be an average of one truck per day.

Air filters (possibly including wet scrubbers) would be designed and operated to remove airborne particulates. To address odors from decomposing organic matter, the collection system pipes would be under negative pressure (i.e., vacuum towards the central waste collection facility). The AWCS facility would have activated carbon filters to reduce odors in the air flow and exhaust. Noise from fans, other equipment, and trucks would be reduced by using acoustical treatments on walls and ceilings, silencers, and other methods on the exhaust pipe, to reduce noise to 85 decibels or less, measured at the device. The project sponsors would install noise shielding to achieve the compliance standards of the San Francisco Noise Ordinance.

F. PROJECT CONSTRUCTION PHASING AND DURATION

For both development scenarios, the Maximum Residential Scenario and the Maximum Commercial Scenario, Proposed Project construction is conceptual; however it is expected to begin in 2018 and would be phased over an approximately 11-year period, concluding in 2029. Proposed development is expected to involve up to five phases, designated as Phases 1, 2, 3, 4, and 5. Phasing estimates for the Maximum Residential Scenario are shown in Table 2.5: Project Construction and Rehabilitation Phasing for the Maximum Residential Scenario, and Figure 2.26: Proposed Phasing Plan – Maximum Residential Scenario. Phasing estimates for the Maximum Commercial Scenario are shown in Table 2.6: Project Construction and Rehabilitation Phasing for the Maximum Commercial Scenario, and Figure 2.27: Proposed Phasing Plan – Maximum Commercial Scenario. These phases are subject to change, but would occur within the maximum development ranges presented in the two scenarios.

Infrastructure improvements (utilities, streets, and open space) and grading and excavation activities would be constructed by Forest City, as master developer, and would occur in tandem, as respective and adjacent parcels are developed. Vertical development on the various parcels could be constructed by Forest City and its affiliates, or by third party developers.

Table 2.5: Project Construction and Rehabilitation Phasing for the Maximum Residential Scenario

Phase	Project Site	Parcel or Building	Proposed Construction and Rehabilitation			Open Space	Roadways and Other Improvements
			Residential (gsf / No. of Residential Units)	Commercial (gsf)	RAI (gsf)		
Phase 1 (2018-2019)	<i>28-Acre Site</i>						
	<i>Illinois Parcels</i>	PKN	261,700 / 300 units	6,600	6,600	20 th Street Plaza	Michigan Street (new) 20 th Street Pump Station (new)
Phase 2 (2018-2020)	<i>28-Acre Site</i>	Building 2*, Parcel C1, Parcel C2, Parcel D, Parcel E2	578,250 / 662 units	221,100	52,035	Building 12 Market Plaza Market Square Slipways Commons (western portion)	20 th Street (new/central portion) 21 st Street (new/eastern portion) 22 nd Street (existing and new) Louisiana Street (new/southern portion) Maryland Street (new/northern portion)
		Building 12*		60,000	105,500		
	<i>Illinois Parcels</i>						
Phase 3 (2021-2023)	<i>28-Acre Site</i>	Parcel A, Parcel F, Parcel G	436,100 / 505 units	288,200	57,270	Irish Hill Playground	Maryland Street (new/southern portion [continued from Phase 2]), and Louisiana Street (new/northern portion) [continued from Phase 2]
	<i>Illinois Parcels</i>	PKS	213,100 / 240 units		11,000		

Table 2.5 Continued

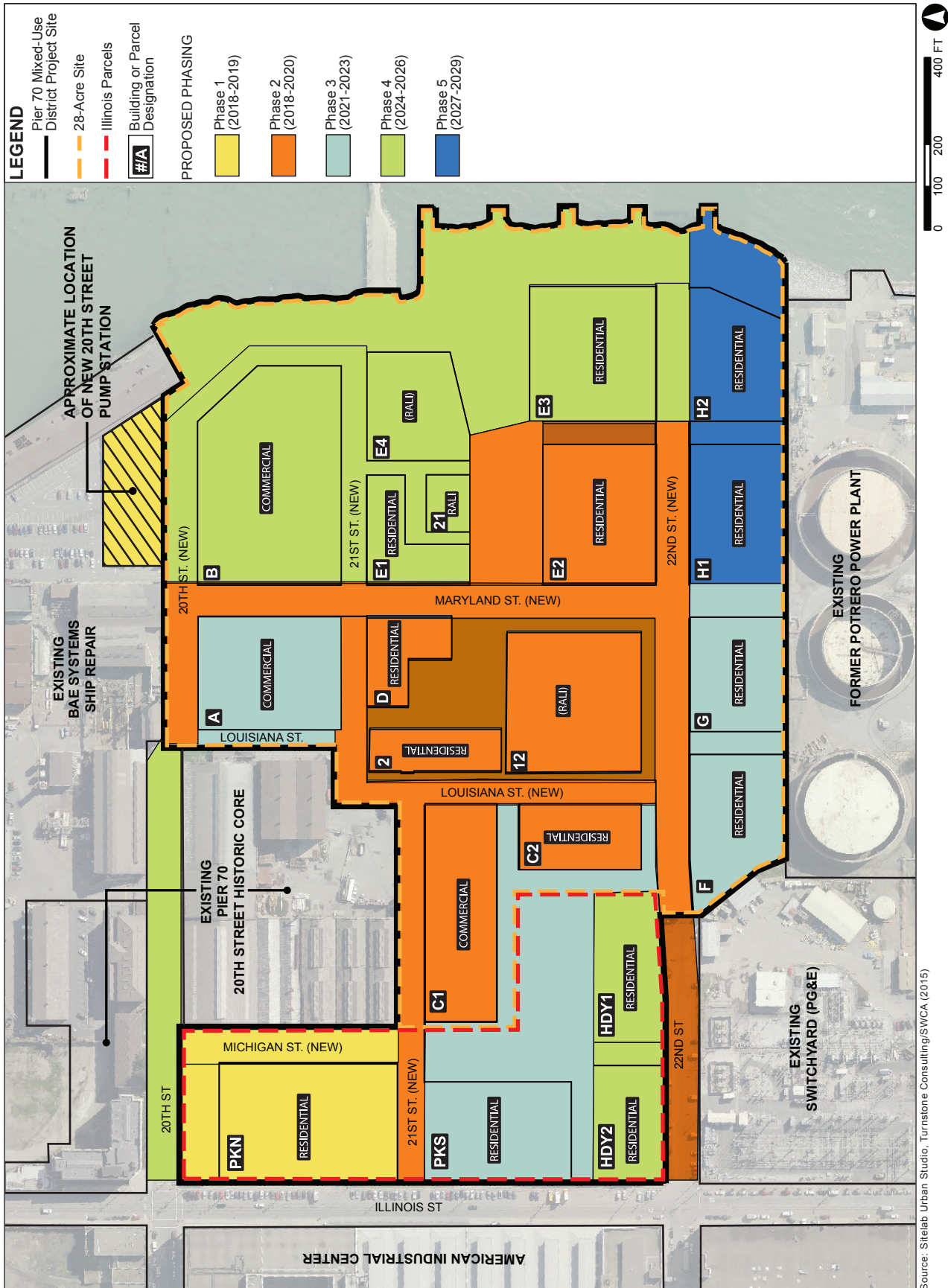
Phase	Project Site	Parcel or Building	Proposed Construction and Rehabilitation			Open Space	Roadways and Other Improvements
			Residential (gsf / No. of Residential Units)	Commercial (gsf)	RALI (gsf)		
Phase 4 (2024-2026)	28-Acre Site	Parcel B, Parcel E1, Parcel E3, Parcel E4	378,600 / 436 units	526,350	189,675	Slipways Commons (eastern portion [continued from Phase 3])	20 th Street (western and eastern portions [continued from Phase 2])
		Building 21 *			10,200	Waterfront Terrace Waterfront Promenade (northern portion)	21 st Street (eastern portion [continued from Phase 2]) 22 nd Street (eastern portion [continued from Phase 2])
	Illinois Parcels	Parcel HDY1, Parcel HDY2	285,200 / 335 units		17,200		
Phase 5 (2027-2029)	28-Acre Site	Parcel H1, Parcel H2	477,050 / 547 units		40,700	Waterfront Promenade (southern portion [continued from Phase 4])	
	Illinois Parcels						
TOTAL			2,630,000 / 3,025 units	1,102,250	479,980		

Notes:

Phases shown are subject to change, but would occur within the maximum development ranges presented in the two scenarios.

* = denotes an existing building that would be rehabilitated under the Proposed Project.

Source: Forest City; Turnstone/SWCA



PIER 70 MIXED-USE DISTRICT PROJECT

FIGURE 2.26: PROPOSED PHASING PLAN - MAXIMUM RESIDENTIAL SCENARIO

Table 2.6: Project Construction and Rehabilitation Phasing for the Maximum Commercial Scenario

Phase	Project Site	Parcel or Building	Proposed Construction and Rehabilitation			Open Space	Roadways and Other Improvements
			Residential (gsf / No. of Residential Units)	Commercial (gsf)	RALI (gsf)		
Phase 1 (2018-2019)	28-Acre Site						
	Illinois Parcels	PKN	260,500 / 300 units	6,600	6,600	20 th Street Plaza	Michigan Street (new) 20 th Street Pump Station (new)
Phase 2 (2018-2020)	28-Acre Site	Parcel A, Parcel D, Parcel E2, Building 2*	389,400 / 445 units	348,200	97,400	Building 12 Market Plaza Market Square Slipways Commons (western portion)	20 th Street (new/central portion) 22 nd Street (existing and new) Maryland Street (new/northern portions)
		Building 12*			52,720		
	Illinois Parcels	PKS	215,500 / 245 units		11,000		
Phase 3 (2021-2023)	28-Acre Site	Parcel C2, Parcel E1, Parcel F, Parcel G	325,350 / 375 units	442,200	57,620	Irish Hill Playground	21 st Street (new/eastern portion) Louisiana Street (new) Maryland Street (new/southern portion [continued from Phase 2])
	Illinois Parcels	Parcel HDY1, Parcel HDY2		231,700	28,135		

Table 2.6 Continued

Phase	Project Site	Parcel or Building	Proposed Construction and Rehabilitation			Open Space	Roadways and Other Improvements
			Residential (gsf / No. of Residential Units)	Commercial (gsf)	RAI (gsf)		
Phase 4 (2024-2026)	28-Acre Site	Parcel B, Parcel C1, Parcel E3,	242,250 / 280 units	747,450	85,505	Slipways Commons (eastern portion [continued from Phase 2]) Waterfront Terrace Waterfront Promenade (northern portion)	20 th Street (western and eastern portions [continued from Phase 2]) 21 st Street (western portion [continued from Phase 3]) 22 nd Street (eastern portion [continued from Phase 2])
		Building 21*, Parcel E4			110,400		
	Illinois Parcels						
Phase 5 (2027-2029)	28-Acre Site	Parcel H1, Parcel H2		486,200	37,570	Waterfront Promenade (southern portion [continued from Phase 4])	
	Illinois Parcels						
Total			1,433,000 / 1,645 units	2,262,350	486,950		

Notes:

Phases shown are subject to change, but would occur within the maximum development ranges presented in the two scenarios.

* = denotes an existing building that would be rehabilitated under the Proposed Project.

Source: Forest City; Turnstone/SWCA

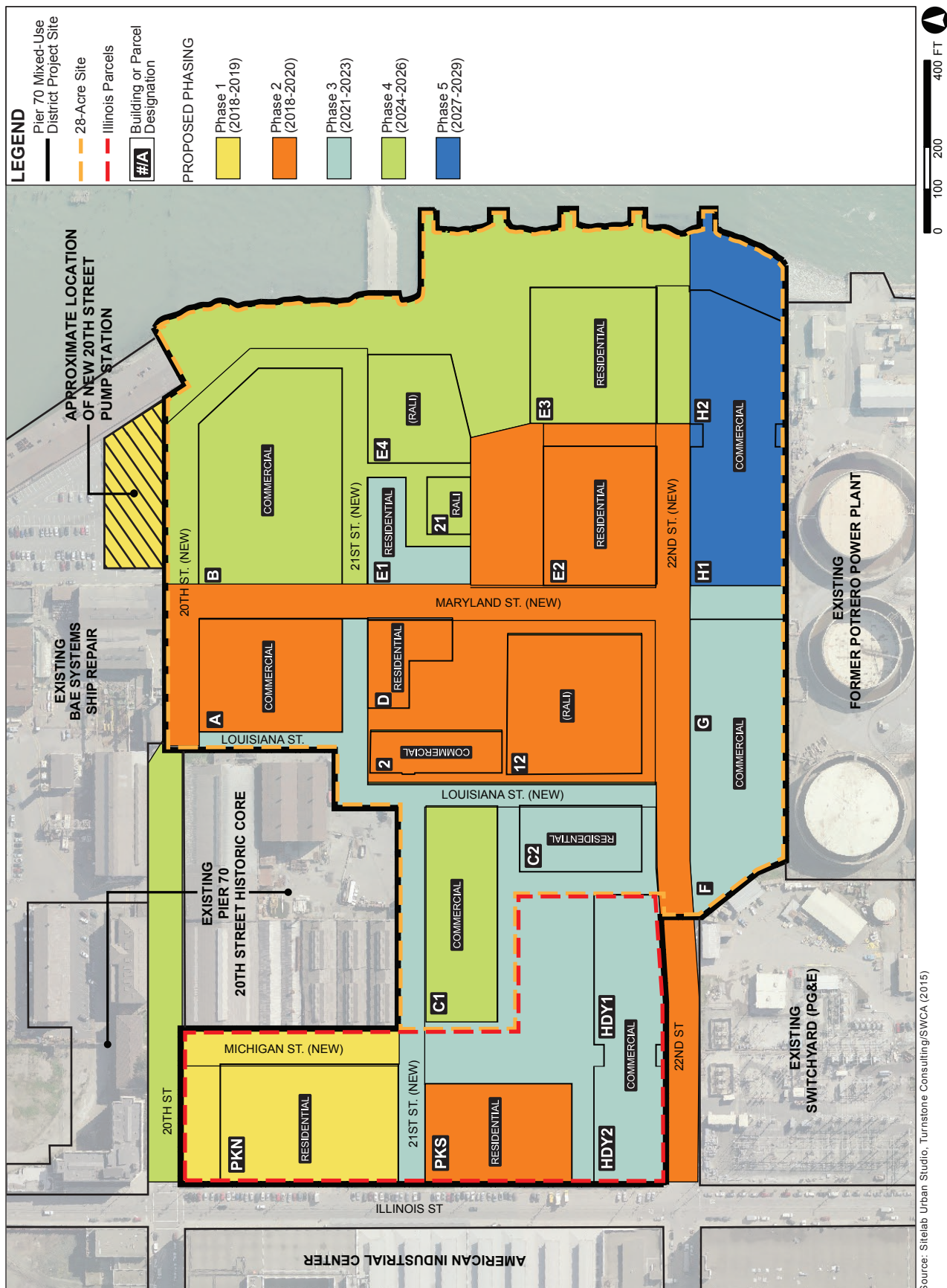


FIGURE 2.27: PROPOSED PHASING PLAN - MAXIMUM COMMERCIAL SCENARIO

G. PROJECT APPROVALS

The Proposed Project is subject to review and approvals by local, regional, State, and Federal agencies, with jurisdiction after completion of environmental review, including the following:

San Francisco Board of Supervisors

- Approval of *General Plan* amendments.
- Approval of Planning Code Amendments and associated Zoning Map Amendments.
- Approval of a Development Agreement.
- Approval of the Interagency Cooperation Agreement.
- Approval of a Public Trust Exchange Agreement.
- Approval of a Disposition and Development Agreement, including forms of ground leases and purchase and sale agreements.
- Approval of Final Subdivision Maps.
- Approval of street vacations, approval of dedications and easements for public improvements, and acceptance (or delegation to Public Works Director to accept) of public improvements, as necessary.
- Approval of the formation of one or more community facilities districts and adoption of a Rate and Method of Apportionment for the districts and authorizing other implementing actions and documents.
- Approval of one or more appendices to the Infrastructure Financing Plan for City and County of San Francisco Infrastructure Financing District No. 2 (Port of San Francisco) and formation of one or more sub-project areas for the 28-Acre Site and some or all of the Illinois Parcels and authorizing other implementing actions and documents.

San Francisco Planning Commission

- Certification of the Final EIR.
- Adoption of findings that the Public Trust Exchange is consistent with the *General Plan*.
- Approval of Proposition M Office Allocation per Planning Code Section 321, to the extent applicable.
- Approval of Pier 70 SUD Design for Development.
- Initiation and recommendation to Board of Supervisors to approve amendments to the *General Plan*.
- Initiation and recommendation to the Board of Supervisors to approve Planning Code amendments adopting a Special Use District and associated Zoning Map amendments.
- Recommendation to Board of Supervisors to approve a Development Agreement.
- Approval of the Interagency Cooperation Agreement.

San Francisco Port Commission

- Adoption of findings regarding Public Trust consistency.
- Approval of Disposition and Development Agreement, including forms of Ground Leases and Purchase and Sale Agreements, authorizing other actions and documents necessary to implement the project, and recommending that the Port Commission and the Board of Supervisors take other actions and documents necessary to implement the project.
- Consent to a Development Agreement and recommendation to the Board of Supervisors to approve.
- Approval of the Interagency Cooperation Agreement.
- Approval of a Development Plan for the 28-Acre Site in accordance with Section 11 of Proposition F.
- Approval of *Pier 70 SUD Design for Development*.
- Approval of amendments to *Waterfront Land Use Plan*.
- Public Trust consistency findings and approval of Public Trust Exchange Agreement with the State Lands Commission.
- Approval of project construction-related permits for property within Port jurisdiction.
- Approval of Construction Site Stormwater Runoff Control Permit.

San Francisco Public Utilities Commission

- Consent to Development Agreement.
- Consent to Interagency Cooperation Agreement.

San Francisco Public Works

- Review of subdivision maps and presentation to the Board for approval.
- Approval of Interagency Cooperation Agreement.
- Issuance of Public Works street vacation order.

San Francisco Municipal Transportation Agency

- Approval of transit improvements, public improvements and infrastructure, including certain roadway improvements, bicycle infrastructure and loading zones, to the extent included in the project, if any.
- Consent to Development Agreement.
- Consent to Interagency Cooperation Agreement.

San Francisco Fire Department

- Consent to Interagency Cooperation Agreement.

San Francisco Art Commission

- Approval of design of public structures and private structures located within public property, to the extent any such structures are located outside of Port jurisdiction.

San Francisco Department of Public Health

- Oversee compliance with San Francisco Health Code Article 22A (Maher Ordinance).

Bay Conservation and Development Commission

- Approval of permits for improvements and activities within the San Francisco Bay Conservation and Development Commission's jurisdictions.

State Lands Commission

- Approval of Public Trust Exchange Agreement.

Regional Water Quality Control Board – San Francisco Bay Region

- Approval of Section 401 water quality certification.
- Site-Specific Remediation Completion Approval(s) under Risk Management Plan.

Bay Area Air Quality Management District

- Approval of any necessary air quality permits (e.g., Authority to Construct and Permit to Operate) for individual air pollution sources, such as boilers and emergency diesel generators.

California Public Utilities Commission

- Approval of PG&E's sale of Hoedown Yard parcel, if PG&E's operations on the site have not already been relocated.

California Department of Fish and Wildlife

- Possible Section 404/Section 10 Permit.

U.S. Army Corps of Engineers

- Possible Section 404/Section 10 Permit.

U.S. Fish and Wildlife

- Possible Section 404/Section 10 Permit.

National Marine Fisheries Service

- Possible Essential Fish Habitat Consultation.
- Possible Endangered Species Act Consultation.