





chapter 6

**INFRASTRUCTURE +
SERVICES**

Infrastructure improvements are required to support the Bay Fair TOD Specific Plan Area (Plan Area). The majority of the Plan Area currently consists of shopping centers and parking lots. Redeveloping the area with residential and commercial uses described in this Specific Plan will require significant improvement to and expansion of the underground infrastructure including municipal water, sewer, storm drainage, and fiber optics/broadband networks. Furthermore, the City's General Plan emphasizes conservation, sustainability, efficiency, and waste reduction. Therefore, this Plan envisions to the greatest extent possible the incorporation of reclaimed water projects, solar power generation, solar heating, efficient recycling, storm water pollution prevention and infiltration, and other environmentally sensitive and carbon footprint minimizing infrastructure. The City's vision also emphasizes availability and access to high speed telecommunications. Whether provided by local/community broadband networks, private carriers and/or through private/public partnerships (i.e., LitSL), all new development will be required to offer high quality, reliable internet and other telecommunications services and amenities (i.e., free and public Wifi, cellular technology) in compliance with the Fiber Optics Master Plan currently in the planning stages.

To provide guidance on these topics for the Bay Fair Plan Area, this chapter provides plan-level policy and strategy for the following topics:

- Water Supply
- Reclaimed Water
- Storm Drainage and Flood Control
- Wastewater Collection and Treatment
- Energy (energy production, district energy, micro-grid, electrical, natural gas)
- Telecommunications (fiber optic, cable TV, telephone, and wireless)
- Solid Waste and Recycling
- Police and Fire Services
- Public Schools

Water Supply

East Bay Municipal Utility District supplies and maintains the municipal drinking water to the Specific Plan Area. The Plan Area is bordered by large (30" – 36") water transmission mains on Hesperian Boulevard and East 14th Street as shown in Figure 7.1. These mains have sufficient capacity to serve the Plan Area. Existing infrastructure within the Plan Area, surrounded by Hesperian Boulevard, East 14th Street, and the railroad tracks is limited, and may require construction of new distribution mains. The distribution infrastructure in other areas may also need replacement due to age and supply capacity for fire response purposes.

Water Supply Policies

1. **TIMING OF UPGRADE.** Water infrastructure construction should occur in advance of roadway, bicycle and pedestrian corridor improvements.
2. **LOCATING DISTRIBUTION MAINS.** Generally, distribution mains and valves should be located within major and minor streets. This Plan discourages street connections in place of bicycle and pedestrian corridors. For this reason, it may be necessary to route distribution mains through these corridors. Minimize, to the greatest extent possible the amount distribution main and valves within bicycle and pedestrian corridors.
3. **VALVE ACCESS.** Provide maintenance vehicle access to all water main control valves located within bicycle and pedestrian corridors.
4. **OUTDOOR RECYCLED WATER PLUMBING.** Encourage the installation of "purple piping" plumbing that accommodates future recycled water service in all outdoor landscaping areas that will require watering.

Reclaimed Water

The San Leandro Water Reclamation Facility (WRF) and the Oro Loma Sanitary District (OLSD) provide treated and reclaimed wastewater to users within and outside of the City of San Leandro. Currently, reclaimed water is being used primarily to irrigate golf courses. Provisioning of reclaimed water to the Plan Area from these two facilities would require approximately five miles of pipeline infrastructure (purple pipe) from the WRF and approximately three miles of pipeline from OLSD to reach the Plan boundary.

An alternative to expanding the treatment capacity at the WRF or OLSD facilities and constructing miles of purple pipe to the

Plan Area is to install a package reclaimed water treatment system and storage tank. A package system can be sized to meet the demands for landscaping and other uses. All waste generated by this local treatment can be discharged back into the wastewater collection system for treatment by OLSD.

Construction of reclaimed water infrastructure from either treatment plant or a centrally located package treatment system within the Plan Area would advance the City's General Plan policy to "deliver high quality reclaimed water for landscaping, industrial use, and other non-potable applications."

Reclaimed Water Policies

- 1. GENERAL PLAN POLICY CSF-6.6, RECLAIMED WATER SYSTEM.** Continue the expansion of the reclaimed water system, and the delivery of high quality reclaimed water for landscaping, industrial use, and other non-potable applications as they become financially feasible. Employ advanced technology so that reclaimed water can eventually be made available to all households.
- 2. GREEN STREET INFRASTRUCTURE.** The availability of reclaimed water is beneficial to water conservation and for supporting street rain gardens during dry period. Vegetation, including grasses, flowers, trees and bushes, can be maintained with reclaimed water in place of municipal drinking water.
- 3. RESIDENTIAL AND COMMERCIAL IRRIGATION.** With the availability of reclaimed water and as permitted by health codes, irrigation of landscaping should be required from reclaimed water source and metered with dedicated water meters, if metered usage is required by the City or the water district.
- 4. INDOOR AND OUTDOOR RECYCLED WATER.** Encourage innovative indoor and water recycling techniques such as rainwater capturing systems, use of cisterns, dual plumbing, and installation of greywater recapture systems.

Storm Drainage and Flood Control

All of the drainage within and surrounding the Plan Area flows to the Estudillo Canal Flood Control Channel (Canal) which bisects the project area, as shown in Figure 7.2. Within this Plan Area, stormwater will be collected with drainage inlets and conduits that discharge into the Canal. The Canal is owned and operated by the Alameda County Flood Control & Water Conservation District while the area drain system will be owned and maintained by the City.

Portions of the Plan Area are presented as being within a Special Flood Hazard Area (SFHA) "AH (El. 33)" by the effective Flood Insurance Rate Map. Zone AH is designated as "areas with a 1% annual chance of shallow flooding, with an average depth ranging from 1 to 3 feet. The "base flood elevation" is determined as elevation 33 feet (NAVD 88).

The Alameda County Flood Control and Water Conservation District is developing alternatives for improvements to the canal in order to gain capacity for the 1% annual chance flood, thus eventually removing the Plan Area from the SFHA. Significant improvements to the Canal and channel crossings, through the Bay Fair TOD, may include the following, but not limited to: channel improvements, floodwalls, culverts, and elevating road crossings. The channel crossings that may or may not require improvements include: Union Pacific Railroad, existing maintenance bridge, Hesperian Blvd, BART, pedestrian walkway bridge, Bayfair Dr, Coelho Dr, and E. 14th St. Further analysis is required to determine the

level of improvements. Although work will begin on the canal, downstream near the San Francisco Bay, funding and schedule for the reach through the Plan Area is currently under development.

The City is party to the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order R2-2015-0049 (MS4). This permit requires the incorporation of Low Impact Development (LID) and Stormwater Treatment technologies in new development and redevelopment projects, in order to mimic the natural hydrology of the lands prior to disturbance. The objective of LID and post-construction BMPs for stormwater is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. The Plan must incorporate these permit requirements during construction and maintain BMP facilities in perpetuity.

Storm Drainage and Flood Control Policies

1. **FLOODPLAIN.** Pursue regulatory approaches that avoid the future expansion of the floodplain and avoid flooding risks for new development.
2. **LOW IMPACT DEVELOPMENT MEANS AND METHODS.** Promote the use of Low Impact Development (LID) techniques to mitigate the impact of stormwater runoff, both for individual sites and as a coordinated district-wide effort. This includes the use of rain gardens, cisterns, rain barrels, infiltration, retention, on-street swales, vegetated areas, permeable pavement, vegetated roofs, on-site wastewater reuse systems, and other LID best practices. This Specific Plan encourages adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; protection and/or restoration of riparian areas and wetlands as project amenities. reducing impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; and the use of micro-detention as project amenities.
3. **FLOOD CONTROL PROJECTS.** In coordination with efforts by the Alameda County Flood Control District, pursue capital improvements to reduce or remove Special Flood Hazard Areas from within the Specific Plan Area. This includes, but may not be limited to, improvements to the Estudillo Channel, expansion or naturalization of the Estudillo watercourse, creation of floodwalls, and elevation of road crossings.
4. **10-YEAR LEVEL OF PROTECTION.** 10-year peak flows should be contained within the drainage system constructed for the Plan Area.
5. **IMPROVEMENT TIMING.** Major stormwater infrastructure upgrades should occur in advance of roadway, bicycle and pedestrian corridor improvements.
6. **GREEN STREET INFRASTRUCTURE.** Utilize roadside stormwater capture, infiltration, and treatment technologies that meet the intent of the MS4 permit and that are compatible with the character of the Specific Plan Area. Some technologies may include rain gardens and permeable paving roadside parking.

Wastewater Collection and Treatment

Wastewater within the Specific Plan Area is maintained by the Oro Loma Sanitary District. An existing sewer trunk bisects the Plan Area as shown in Figure 7.3. Wastewater generated north of Thornally Drive between Hesperian Boulevard and East 14th Street can flow through a new gravity system in a southerly direction and discharge to the existing trunk. Wastewater generated west of Hesperian Boulevard can be collected in existing sewer trunks within Hesperian Boulevard, north and south of the railroad tracks.

The Oro Loma Sanitary District has indicated that the existing trunk systems have sufficient capacity for growth related flow anticipated from the Plan Area; however, large new development projects or projects requiring

discretionary review in the Plan Area must identify any impacts to the wastewater collection systems and the treatment system, which may require a sewer capacity study. There are limited public sewer mains within the Plan Area to serve redevelopment so this Specific Plan assumes new sewer mains will be constructed as part of new development.

The wastewater treatment plant is jointly owned by Oro Loma Sanitary District and the Castro Valley Sanitary District. With a treatment capacity of 20 million gallons per day (mgd) and current demand of approximately 12 mgd, it is anticipated that the plant will have sufficient available capacity for all additional Plan Area flows without the need to upgrade the facility.

Wastewater Collection and Treatment Policies

- 1. TIMING OF UPGRADE.** Sewer infrastructure upgrades should occur in advance of roadway, bicycle and pedestrian corridor improvements.
- 2. LOCATING OF SEWER MAINS AND MANHOLES.** Generally, sewer mains and manholes should be located within major and minor streets. This Plan discourages street connections in place of bicycle and pedestrian corridors. For this reason, it may be necessary to route sewer main through these corridors. Minimize, to the greatest extent possible the amount sewer main and number of manholes within bicycle and pedestrian corridors.
- 3. MANHOLE ACCESS.** Provide maintenance vehicle access to all manhole located within bicycle and pedestrian corridors.
- 4. WASTEWATER SYSTEM IMPACTS.** New development projects over 1 acre in size must identify impacts to the wastewater collection system and the treatment system, including a sewer capacity study if requested by the City. Projects may be required to construct new sewer mains as part of the development process.

Energy

A keynote goal of the City is to expand renewable energy resources, promote energy efficiency and energy conservation. This Plan introduces a unique opportunity to fulfill the goal significantly by redeveloping the area with renewable energy technologies such as roof top and parking canopy solar power generation and solar heating. PG&E supplies electrical and gas services to the Plan Area and surrounding region.

Energy Policies

1. **RENEWABLE ENERGY.** Support the development and application of renewable energy technologies such as active, passive, and photovoltaic solar energy; fuel cells; and other sustainable sources.
2. **ENERGY MICRO-GRID.** Strongly encourage new and existing buildings to integrate and contribute to City efforts to develop an energy micro-grid which produces and distributes energy in a non-centralized system reliant on renewable sources such as solar.
3. **DISTRICT ENERGY.** Allow and encourage shared heating and cooling between multiple buildings and other “district” energy and shared energy systems in the Bay Fair area.
4. **ENERGY-EFFICIENT INFRASTRUCTURE.** When installing new public infrastructure such as streetlights, traffic signals, water conveyance pumps, use energy-efficient models and systems whenever possible, incorporating new technologies as they become available.
5. **ENERGY INNOVATION.** Support new and innovative energy technology, with the objective of reducing dependence on fossil fuels, reducing greenhouse gas emissions, and using energy more efficiently.
6. **GREEN BUILDING.** Ensure the enforcement of California Green Building Code requirements and the continued use of green building checklists during the permitting of major residential and non-residential construction.
7. **WIND TURBINES.** Develop and promote City’s guidelines for use of wind turbines where aesthetic and environmental concerns can be sufficiently addressed.
8. **ELECTRICAL SERVICE.** Encourage partnerships with PG&E for the procurement of electrical service from renewable, sustainable and green sources.
9. **COMMUNITY CHOICE AGGREGATION (CCA).** Continue to participate in Alameda County’s Community Choice Aggregation (CCA) program, which allows homes, businesses, and municipal facilities to buy and/or develop power on their own behalf.
10. **ELECTRIC VEHICLE CHARGING STATIONS.** Support the development of a network of electric vehicle charging stations throughout the Plan Area.

Telecommunications

The City of San Leandro participates in a public/private partnership with LIT San Leandro to offer high speed internet and telecommunication to its local businesses. The Plan Area is situated along this fiber optic loop that runs through Hesperian Boulevard. The service is currently focused toward business connectivity; however, this Specific Plan incorporates medium to large multifamily residential complexes that can be structured as a community service district to offer the service to individual households.

The City is currently developing a long-range Fiber Optics Master Plan to guide the expansion, development, and policies needed to build and sustain broadband, wireless and other “smart city” services. Through a

combination of public/private partnerships (i.e., Lit San Leandro), municipal networks (i.e., “SL WiFiber,” which is the City’s free, public Wi-Fi service), and services from private carriers (i.e., AT&T and Comcast), the City intends to sustain its leadership in broadband and innovation. The Plan Area is situated along the Lit San Leandro fiber optic loop that runs through East 14th Street and Hesperian Boulevard. The broadband internet focus is currently toward business connectivity; however, the Fiber Optics Master Plan will explore relevant models to ensure the delivery of reliable, affordable, high speed broadband services to new residential development areas such as the Plan Area.

Telecommunications Policies

1. **FIBER OPTIC.** Develop a plan to expand current fiber optic networks throughout the Plan Area to attract new high-tech businesses and provide new hotel development with a significant amenity to business travelers.
2. **LIT SAN LEANDRO.** Leverage the City’s partnership with LIT San Leandro to offer gigabit internet service to the businesses within the Plan Area. Identify the feasibility to provision the service to the residential community.
3. **TELECOMMUNICATIONS.** Require all new development projects to incorporate broadband infrastructure in their planning and construction. All development projects shall install telecommunications infrastructure in accordance with the City’s Fiber Optics Master Plan currently in the planning stages, from the local carriers or LIT San Leandro.
4. **CELLULAR TOWERS.** Wireless facilities, including “macro” cellular towers, shall conform to the City’s Wireless Telecommunication Ordinance that establishes guidelines for wireless facilities. The ordinance seeks to direct towers to non-residential areas, limit their total extent and reduce their visual impacts, and encourage the co-location of equipment on existing towers wherever possible. (Note: the trend is moving towards “small” cell installations, such as current 4G and 5G cellular networks designed for installation on public right-of-way, which the Fiber Optics Master Plan will address.)
5. **INTERNET OF THINGS (IoT).** Encourage network infrastructure on hardware and software levels that accept cyber-physical systems from smart-connected objects and infrastructure systems (energy, waste, water, mobility, etc) to create data-driven “Smart City” operations. Align with the City’s developing Smart City and Telecommunications Plan, and leverage existing networks such as the 6LoWPAN network (simple, low throughput wireless network) deployed on city streetlight poles.

Police and Fire Services

The City of San Leandro is served by the San Leandro Police Department and the Alameda County Fire Department (ACFD). The Plan Area will also be served by these departments. The Police Department's headquarters are located approximately 2.15 miles northwest of the Plan Area along East 14th Street. Additional policing of the Plan Area is undertaken by the Bay Area Rapid Transit (BART) Police Department's Bay Fair BART Substation. ACFD Station 24 is closest to the Plan Area, located about four blocks southeast of the Plan Area Boundary along East 14th Street.

The implementation chapter of this Plan includes ongoing actions for coordination of public safety and policing efforts in the area. The urban design chapter includes multiple strategies to encourage Crime Prevention through Environmental Design (CPTED), including more "eyes on the street," beautification and maintenance, and better differentiation of public and private space.

Public Schools

The City of San Leandro is served by two school districts: the San Leandro Unified School District (SLUSD) and the San Lorenzo Unified School District (SLZUSD). The SLUSD serves about three-quarters of the City's students, while the SLZUSD serves the remaining one-quarter. Most of the SLZUSD is beyond San Leandro's boundaries, since it also includes the unincorporated communities of San Lorenzo, Ashland, Cherryland and parts of the city of Hayward. Schools operated by SLZUSD that serve the Bay Fair Plan Area include Hesperian Elementary School, Corvallis Elementary School, Grant Elementary School, Edendale Middle School, Washington Manor Middle School, and San Lorenzo High School.

There are currently no schools located within the Plan Area, although schools would be an allowable use for the Plan Area if developed in the future, as described in the Specific Plan's Land Use Chapter and the City's municipal zoning code. The Environmental Impact Report (EIR) for the Bay Fair TOD Specific Plan includes an evaluation of potential impacts and demand for schools as a result of this plan.

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