



Green Infrastructure Plan

City of East Palo Alto



PERMEABLE PARKING



PERMEABLE CROSSWALK



STORMWATER PLANTER



NEW CURB & GUTTER

REDUCE & SLOW RUNOFF • FILTER POLLUTANTS • IMPROVE DRAINAGE

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List of Acronyms

Acronym	Definition
Ac	Acre
Ac-ft	Acre-feet
ADA	Americans with Disability Act
BASMAA	Bay Area Stormwater Management Agencies Association
C/CAG	City/County Association of Governments
CIP	Capital Improvements Projects
DMA	Drainage Management Area
EPA	East Palo Alto
FY	Fiscal Year
GI	Green infrastructure
LID	Low impact development
HM	Hydromodification management
HRU	Hydrologic Response Units
LSPC	Loading Simulation Program C++
MRP	Municipal Regional Stormwater Permit
MTC	Metropolitan Transportation Commission
N/A	Not Applicable
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and maintenance
PCBs	Polychlorinated biphenyls
RWQCB	Regional Water Quality Control Board
RAA	Reasonable Assurance Analysis
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SRP	Stormwater Resource Plan
SUSTAIN	System for Urban Stormwater Treatment & Analysis
TBD	To Be Determined
TMDL	Total Maximum Daily Load

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1.0 Introduction

a. Purpose of the Green Infrastructure Plan

The purpose of the Green Infrastructure Plan is to guide the identification, implementation, tracking, and reporting of green infrastructure projects within the City of East Palo Alto in accordance with the requirements of Municipal Regional Stormwater Permit (MRP), Order No. R2-2015-0049, adopted by the San Francisco Bay Regional Water Quality Control Board on November 15, 2015. The Plan is required by the MRP, in part, as an alternative to expanding the definition of Regulated Projects prescribed in Provision C.3.b to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace existing impervious surface area. “Green infrastructure” refers to stormwater infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments.

At the scale of a city or county, green infrastructure refers to the patchwork of natural and landscaped areas that provide habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood, street, or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up, storing, and/or improving the quality of water. In the case of the City of East Palo Alto, green infrastructure is considered as low impact development sited on both private property and public right of way. At the project level, this includes treatment of stormwater from new or re-developed private properties, and treatment of stormwater from the public right of way.

MRP Requirements

This Green Infrastructure Plan has been developed to comply with Green Infrastructure Plan requirements in Provision C.3.j of the MRP, which states in part:

The Plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff TMDL waste load allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. For this Permit term, the Plan is being required, in part, as an alternative to expanding the definition of Regulated Projects prescribed in Provision C.3.b to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace existing impervious surface area. It also provides a mechanism to establish and implement alternative or in-lieu compliance options for Regulated Projects and to account for and justify Special Projects in accordance with Provision C.3.e.

Over the long term, the Plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.

The Plan shall also identify means and methods to prioritize particular areas and projects within each Permittee’s jurisdiction, at appropriate geographic and time scales, for implementation of green infrastructure projects. Further, it shall include means and methods to track the area within each Permittee’s jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area. As appropriate, it shall incorporate plans required elsewhere

within this Permit, and specifically plans required for the monitoring of and to ensure appropriate reductions in trash, PCBs, mercury, and other pollutants.

MRP Provision C.3.j requires Permittees to complete and implement GI Plans that facilitate Permittee efforts to transition from traditional gray to green infrastructure-centric approaches which will shift from impervious conveyance of stormwater towards detention and treatment of stormwater prior to discharge into the Waters-of-the-State. The MRP sets forth three broad goals for these plans:

1. Ensure each Permittee has established the necessary procedures and practices to require and implement green infrastructure practices in public and private projects as part of its regular course of business.
2. Serve as a reporting guide and implementation tool to provide reasonable assurance that urban runoff TMDL wasteload allocations will be met, including the projected goal of controlling 3 kg/year of PCBs regionwide via green infrastructure by 2040.
3. Set targets for green infrastructure implementation and identify future actions needed to address the adverse water quality impacts of urbanization and urban runoff on receiving waters.

b. City of East Palo Alto Description and Background

East Palo Alto is a unique city within Silicon Valley and the Bay Area. Embracing its roots as a place that is welcoming to all people, from all walks of life, the City is committed to providing a strong base of affordable housing for the region while advancing the jobs-housing balance vision of the City. East Palo Alto is part of the near continuously developed area stretching along the western shore of San Francisco Bay between the cities of San Francisco and San Jose. The area known as “The Peninsula” is constrained by the Bay and the Santa Cruz Mountains. East Palo Alto is largely positioned within the original alluvial plain of San Francisquito Creek, where headwaters enter the San Francisco Bay, with 51% of the City in the FEMA 100-year floodplain. The City is in the heart of the mid-peninsula and is bounded by Menlo Park in the North and West and Palo Alto in the South and West.

East Palo Alto has an area of approximately 1,319 acres or about 2.7 square miles (including waterways); 42% which includes single-family residential and mobile homes; 8.5% duplexes, multi-plexes and high density housing units; 20.4% parks and open space; 6.3% office, commercial and industrial; and 8.3% public and private schools and municipal facilities; the City’s one hotel utilizes less 0.22% of the city’s land. The City took over the management of the storm drain system in 2005, which had previously been managed by San Mateo County. During this transition, many records of asset locations, easements, and maintenance were lost due to improper record keeping. The City continues to build on creating and establishing a proper asset and record keeping system.

Background

Through the past century, East Palo Alto has continued to evolve from a collection of agricultural lands into a diverse community consisting of predominantly single-family residential, multi-family, a retail center, a campus-style site with a hotel and office towers, one mixed-use development, an industrial area, and other diversified sectors. The City’s character is urban, with most areas of the community having developed or redeveloped intermittently over time with larger developments, such as the “University Circle” complex and the “Ravenswood/ 101 Shopping Center” having been built during the later end of California’s Redevelopment Agency era between 1945 and 2012. There remain approximately a dozen greenhouses in the “Weeks” residential neighborhood, as well as the Ravenswood Business District, reflecting an ongoing transition from an agrarian community.

Outside of the single-family housing neighborhoods, much of the City remains poised for redevelopment with large multifamily housing clusters and areas for redevelopment which may become office, light industrial, or research and development areas.

Multifamily housing throughout the City is largely nearing the end of its expected life-cycle; some current

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owners have publicly disclosed interest in upgrading or are presently seeking upgrades and replacements of older units. The City has strict rent-control and tenant protections, which requires a delicate balance for developers who seek to redevelop older units to ensure minimal or no displacement. In these areas, upgrading the utilities such as water, wastewater and electrical remain a high priority to support the proposed densities, which are in some cases 3-4 times the current density. Water systems for sewer and domestic water supply are currently largely inadequate to support intensified use and require comprehensive upgrades.

Some former industrial areas in the northern portion of the City are land restricted because of significant contamination in many areas. Due to the high real estate value, many formerly contaminated sites are expected to redevelop in the near future, with development companies purchasing these properties to build large office campuses. Areas the General Plan has anticipated would support 1.4 million square feet of potential office and industrial use have had developments proposed at significantly higher densities, possibly three or four times the General Plan projections. These large redevelopments Areas within the prior contaminated zones will be required to implement green infrastructure, reducing the previous contamination that used to discharge directly to our local waterways.

The City still has a few nurseries within one of the single-family home neighborhoods, reminiscent of the agricultural past, which generally sets it apart from its more urbanized neighborhoods. Other newer neighborhoods reflect planned subdivision developments, which continues to be an emerging favored redevelopment type in neighborhoods, with higher density, and townhouse style layouts within single family neighborhoods. There are also many schools within the single-family neighborhoods.

The City has committed to increasing density for some residential and some commercial uses as noted in the City's Vista 2035 General Plan. Commercial, industrial and mixed-use developments are encouraged by the City's zoning code. East Palo Alto City Council has also adopted Complete Streets policies, with a commitment to creating streets that are safe for all methods of transportation. The policies adopted include a commitment to creating and maintaining Complete Streets serving all users. Except for the City's main arterials, University Avenue and segments of Bay Road and Newbridge Road, streets are limited to a maximum of two through lanes. University Avenue is a major arterial serving not just East Palo Alto, but providing the first point of connection between the East Bay and the Peninsula. The City would like to address heavy traffic and emissions through the University corridor through a redesign that would not only integrate green infrastructure into the street but expand the access for pedestrian and bicycle travel while providing amenities such as trees and benches for bus stops. The City's Bicycle and Pedestrian Master Plan envisions expansion of dedicated and shared bicycle facilities. The City's Four Corners/ Ravenswood Specific Plan expands the requirements for stormwater compliance beyond standard municipal code requirements to address the buildout of a modern stormwater system for an area that largely lacks such utilities. Creative solutions may include use of roadway medians, new curb extensions, and possibly reduced lanes of travel to accommodate green infrastructure where existing right of way is inadequate to support such measures.

Residential Neighborhoods

There are six primary neighborhoods in the City of East Palo Alto referred to the community in a variety of ways, but for the purposes of this Plan the limits will be as follows: the Gardens, the Kavanaugh Neighborhood, the Palo Alto Park Neighborhood, University Village, and the Weeks Neighborhood, and the West Side, or Woodland Neighborhood.

The Gardens Neighborhood

The Gardens Neighborhood is bounded on the west by Pulgas Avenue, the east by the Bay Trail, the south by San Francisquito Creek, and in the north by Sage Street. The neighborhood is almost entirely single-family residential, with two churches making up the only other land uses. This area was developed entirely in the 1950's, later than most other residential areas of the City, and therefore not expected to undergo redevelopment with GI opportunity in the future.

The Kavanaugh Neighborhood

The Kavanaugh Neighborhood is bounded by University Avenue, to the East, Bay Road, to the South, and Willow Road, to the West, largely fully built out with sidewalks and storm drain systems which flow to the north of the City into the Menlo Park service area. Largely single-family residential homes with several churches and the City Hall/County building, there is also a fast food facility and a major school campus. Streets in this neighborhood are largely in good condition, with sidewalks. Neighbors to the West of Ralmar have a very dense tree canopy, while those to the East are building up their canopy through volunteer tree planting efforts.

The Palo Alto Park Neighborhood

The Palo Alto Park Neighborhood, named after the local water purveyor, Palo Alto Park Mutual, provides primarily single-family housing, with a school district headquarters, the YMCA, the Senior Center, and an already approved Sobrato Phase II office building and parking tower, along with several small businesses along East Bayshore Road. Bounded on the south and west by Highway 101, Bay Road to the North, and University Avenue to the East, this neighborhood also has numerous churches and Bell Street Park, along with a small Newbridge Park “pocket park” area. The City is currently designing improvements for Addison Avenue, which will include new sidewalks, a storm drain, and stormwater curb extensions. Like many other streets in this neighborhood, which currently lack storm drainage and consistent sidewalks with safe street crossings, Addison Avenue can use green infrastructure integrated with Safe Routes to School improvements to address the infrastructure gaps and abate standing water and safety issues the residents face.

The Bell Street Park and the Newbridge pocket park are two opportunities for the City to consider large-scale regional stormwater detention projects to provide for future stormwater storage capacity when development occurs in areas with limited space for green infrastructure opportunities, utility conflicts, or when sizeable trees would be displaced in order to accommodate stormwater treatment facilities. If, for instance, East Bayshore Road, which is designated in the Vista 2035 General Plan as a mixed-use low-density use, becomes more fully developed, there may be limited space for green infrastructure, and a regional detention facility may be appropriate. In such a case, Bell Street Park or additional nearby pocket-parks have been identified as locations for potential regional green infrastructure treatment as a multi-use facility, while continuing to serve as a community park.

University Village

The neighborhood known as University Village is bordered between Bay Road to the South, University Avenue to the North and West, and the large parcel known as 391 Demeter Street to the East. Comprised of single-family homes almost exclusively, this neighborhood also includes Jack Farrell Park.

One particular feature to University Village is the very high groundwater table and the storm drain system which lacks adequate hydraulics to adequately discharge the storm drain system, which drains onto the 391 Demeter Street property in locations to the North of Fordham Street, the end of Stevens Avenue, and the end of Purdue Avenue. Storm drain lines in this area from University Village have not been regularly maintained due to a lack of City easements to maintain the detention areas. Also, outfalls in this area do not include back-flow prevention for bay water entering into the neighborhood storm drain pipes during high tide. As such, the storm drain system is generally filled with water, both stormwater as well as tidally-influenced San Francisco Bay water. With future development potential, the storm drain system would be upgraded and enable adequate discharge of stormwater to the Bay. Jack Farrell Park, once used as a stormwater detention basin, could also be repurposed for regional treatment as a multi-use facility while retaining the community park amenities.

Stormwater near the Ravenswood City School District school campus for the 49ers Academy and Costaño Elementary school discharges in the City of Menlo Park near the railroad crossing on University Avenue. Properties around the school campus are prone to localized flooding and standing water due to the inadequate storm drain system serving this area. . This area is a wetland with species of concern, which prevents regular maintenance without proper permits to ensure the protection of endangered species and conservation or

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mitigation for any damage to the wetlands.

Further exacerbating these issues, there is also a high incidence of designated wetlands, resulting in oversight requirements from numerous Federal and State entities regulating wetlands including but not limited to the State Water Resources Control Board and the San Francisco Regional Water Quality Control Boards, the California Department of Fish and Wildlife, the San Francisco Bay Conservation & Development Commission, and possibly the California Coastal Commission. Due to the potential contamination of PCBs and Arsenic from the adjacent area, the Department of Toxic Substances Commission is also an interested party. Other entities have also indicated interest and/or extended potential jurisdiction.

The Weeks Neighborhood

The Weeks Neighborhood is bounded between University Avenue on the West, Bay Road to the North, the Bay Trail to the East, and Donohoe and O'Connor Streets to the South. About half of the streets in the Weeks Neighborhood have sidewalks. The storm drain system in this area installed, draining is part of the the Runnymede Drainage system with a terminus at the O'Connor Pump Station, which pumps water into San Francisquito Creek.

Largely comprised of single-family homes, this residential neighborhood still retains some of the historical agricultural and larger lot sizes, with some of the City's historical inventory of houses from that era. There are presently many vacant properties of about an acre, and due to the large lot sizes, this neighborhood is shifting towards higher density housing with many parcels applying for multiple dwelling units per acre, within the maximum density allowed by the community. Recent submittals for proposed projects suggest an intensification of land use beyond that envisioned in the Vista 2035 General Plan update. This neighborhood has a large number of churches, public, private and charter schools, which results in more careful consideration for traffic impacts and improved mobility and accessibility standards, traffic calming measures, and increased numbers of street lighting, which can reduce area of right of way available for new green infrastructure features. Within the Weeks neighborhood, there is also a small neighborhood market.

Located near the Weeks Neighborhood, MLK Park, could provide a location for a regional stormwater treatment facility. A regional project sited at MLK Park could provide stormwater detention more efficiently and with fewer design challenges than green infrastructure on public street right of way, where other priorities and existing infrastructure compete in the same footprint.

Due to the large lot sizes and significant impervious surface areas in Weeks Neighborhood churches, places of worship, public and private school campuses, there lies a great potential in supporting on- and off-site improvements to reduce sheet flow from private property into the public right of way and further implement green infrastructure goals. As new developments occur in this area, there is a This is an area of potential collaboration the City could support as new development projects come for to the City for review. The potential of improving the frontage of these properties with a sustainable street designs that accommodate improved pedestrian and bicycle access, with a broader tree canopy, and green infrastructure to promote healthier mobility and walkability while also improving stormwater quality.

An opportunity also presents itself for updating various streets in the Weeks Neighborhood, including specifically the segments of Beech Street, which runs between Clarke and Pulgas, and Green Street, which runs from Clarke Street to Cooley Avenue. These segments include larger parcels, several of which are vacant, and lack sidewalks, creating an opportunity for green infrastructure elements.

The West Side

The "West Side," also referred to the Woodland Neighborhood, runs along the City of East Palo Alto's west side, which is also along the western side of Highway 101, with Woodland Avenue the public roadway running all along the West Side roughly following the bank of the San Francisquito Creek, and West Bayshore Road which runs along the sound wall of Highway 101. The tree canopy in the West Side includes significant numbers

of private protected trees, as well as riparian trees. San Francisquito Creek is a mostly un-armored creek with a significant amount of native and non-native trees and understory vegetation providing foliage, shade coverage, and habitat to local fauna. Publicly maintained trees in this neighborhood are primarily limited to trees along the West Bayshore Road sound wall and Woodland Avenue.

The West Side neighborhood includes primarily an older stock of multifamily housing referred to as the Woodland Park Community, current ownership controls over 1,800 units of apartments, a condominium complex, and some single-family residential homes. The multifamily housing generally falls under the City's Rent Stabilization Ordinance, with specific renters' protections to limit gentrification and rental turnover intended to stabilize housing for the community.

Recently, the property owner of Woodland Park Community has expressed interest in replacing around 160 of the multifamily units with a new complex that proposes to triple or even quadruple the housing density for that area. As is, the proposed project would be considered a Regulated Project under the Municipal Regional Permit, which governs the City's discharge of stormwater, which implies the Project would be required to implement low-impact development for onsite stormwater management. Rebuilding these units also represents an opportunity to maximize green infrastructure for this area which drains east into the Runnymede Drainage system, and ultimately to the eastern section of the San Francisquito Creek via the O'Connor Pump Station. The Project falls in FEMAs "minimal flood risk" area, which indicates that the Project would not be required to significantly address potential flooding hazards. However, since nearly half of the City of East Palo Alto is considered a very vulnerable community with regards to resiliency to flooding in that roughly half of the community lies within the 100-year FEMA floodplain, implementation of green infrastructure to reduce the peak-stormwater discharges is considered a best management practice and shall be considered with every large project that will require encroachment into the public right of way, sidewalk modification or storm drain upgrades.

As with all infrastructure changes, potential loss of tree canopy, traffic calming measures, utility conflicts and accessibility for alternative transportation options such as pedestrian and bicycling as well as access to public transportation require a full review of all variables and prioritization of these facets of infrastructure improvements to incorporate Green Infrastructure. While the owners of Woodland Park Communities have not disclosed an interest in replacing all units in this portfolio, this entire area represents an opportunity to implement significant improvements to the street drainage and stormwater detention, while providing multiple community amenities.

The roadways in this neighborhood are generally degraded to a point of which the roadways have significant potholes and begun to lose structural integrity. The storm drainage and sidewalk infrastructure for these single-family areas are significantly limited or non-existent. The West Side represents an area of prime potential for green infrastructure implementation as roadways become improved and the City addresses current gaps in surface water discharge. For this area, green infrastructure shall be assessed on a no-missed opportunity basis, and property owners of parcels other than single-family homes may be asked to dedicate adequate street frontage to enable green infrastructure, particularly along Woodland Avenue and East Bayshore Road, and further asked to assess according to "no missed opportunity" standards furthering the green infrastructure expansion at intersections as bulb-outs to provide extended pedestrian and bicycle protections.

University Avenue, the Ravenswood Shores Business District and Bay Road

While not a particular neighborhood, University Avenue from Woodland Avenue to Bay Road, and Bay Road, from University Avenue to the East at Cooley Landing represent future anticipated increased density and development potential.

The City's Vista 2035 General Plan indicates a higher density of use and increased mixed-use along the University Avenue corridor. Further, University Avenue is subject to likely traffic calming measures, road diet, and enhanced alternative transportation modality such as bikeways, expanded sidewalks and vegetation strips.

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The General Plan anticipates Bay Road to the East of University Avenue, as a flourishing downtown center for the City, with increased density including high density residential, mixed use, offices, and research and development opportunities. Presently, a single project is under construction at the corner of Pulgas Avenue and Bay Road, while many applications for permits and pre-applications are in process for this area, including the Ravenswood Shores Business District. Anticipated development in this area represents tremendous change to the current impervious surface coverage in an area which has legacy contamination from prior industries.

Due to planned improvements, these areas represent what may be considered the City's highest potential for Green Infrastructure implementation. Right of way acquisition for public improvements and easement dedications will be requirements in conditions of approval for most projects in these areas, particularly along Bay Road, and new developments to the north and east of Bay Road at the backside of residential lots along Illinois Avenue.

Due to the likelihood that new roadways will be built and existing roadways will be reconstructed, the City has proposed a regional stormwater capture project for Bay Road and the Ravenswood Shores Business District at the current parcel at the end of Bay Road at the site which is currently 2091 Bay Road and along the shoreline to the South and North. This treatment buffer area could also be extended near the current terminus of the private roadway of Tara Road, and Pulgas Avenue. Generally, sites for regional projects require the main storm line to be above the groundwater or highest high tide level. The City intends to seek funds to explore this concept and potentially acquire properties to design and construct public amenities including trails, parkways, and stormwater detention through the 2020-2021 Capital Improvement Program (CIP), which would be partially funded through appropriate cost-share for alternative compliance, available to local property developers in the area in the event green infrastructure standards are infeasible for property frontages. The offsite or Regional Project needs to be completed within three years after the end of construction of the Regulated Project, which can be extended up to five years with Executive Officer approval.

Flooding Risks

Flooding has presented a significant, intermittent hazard in East Palo Alto in the past, including numerous recurring localized areas of standing water and even significant flooding. Many of the areas of significant flooding potential have been addressed with improvement projects implemented since 2001, including the Runnymede Drainage Improvements, the San Francisquito Creek Phase I Project, and enhanced maintenance activities. While these improvements have supported the community in reducing flooding risks, many areas remain in flood prone areas or areas prone to standing water during annual rain events, due to hydraulic issues with the stormwater outfalls.

Roughly half of the accessor parcel numbers in East Palo Alto are identified as falling within the special flood hazard zone by Federal Emergency Management Agency (FEMA) and are considered flood prone or hazard areas in East Palo Alto. These areas are subject to periodic inundation which may result in property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare. Structures that are not adequately floodproofed, anchored, properly elevated or otherwise protected from flood damage may also contribute to the flood loss. These areas require raised finished floor elevations (typically by approximately 18 inches) during new construction.

The primary waterways in East Palo Alto are San Francisquito Creek which receives over 67% of the City's stormwater, and San Francisco Bay, which receives the remainder through indirect outfalls which discharge into sloughs that make their way to the San Francisco Bay. The headwaters of the San Francisquito Creek originate west of Interstate 280 in the hillside area of Stanford above Searsville Dam. San Francisquito Creek hosts the most viable remaining native steelhead population in the South San Francisco Bay, and the Center for Ecosystem Management and Restoration named San Francisquito Creek an anchor watershed for the recovery of wild steelhead trout in the San Francisco Bay. East Palo Alto is at the mouth of San Francisquito

Creek, and is only a small portion of the creek's total watershed.

The headwaters of the San Francisquito watershed are in the Santa Cruz Mountains above Menlo Park, around 667 meters (2,188 ft) above the Bay. The creek mainstem originates at the confluence of Bear Creek and Corte Madera Creek just below Searsville Lake in the Jasper Ridge Biological Preserve on lands purchased by Stanford University in 1892. The lake is formed by Searsville Dam, a 65-foot-tall and 275-foot-wide series of concrete blocks. SFC is a natural waterway in that it is dynamic and changes according to hydro-morphology with a majority of the creek unarmored. The main line of SFC currently runs for an average length of about 12.5 miles, and after exiting the foothills near Junipero Serra Boulevard and Alpine Road, runs in a narrowly cut channel within a broad alluvial fan, with final discharge into the San Francisco Bay south of the Dumbarton Bridge and north of the Palo Alto Flood Basin. With a watershed of about 42 square miles, it represents the dividing line between San Mateo and Santa Clara counties throughout much of its length.

In East Palo Alto, nearest the midpoint of Euclid Street at Woodland Avenue, the centerline of the bed of SFC forms the boundary between the City of Palo Alto (generally to the south) and the Cities of East Palo Alto (generally to the northeast) and Menlo Park (generally to the west), and thus between San Mateo and Santa Clara counties. In the late 1920s levees were constructed to re-route the creek through a new engineered channel from its former mouth, to a sharp north turn for about half a mile, then to the northeast, before exiting to the San Francisco Bay. By 2004, filled areas such as the Baylands Golf Links and the Palo Alto Airport have reduced the tidal marsh significantly, as was common historical practice throughout much of the San Francisco Bay tidal marsh. Current understanding of sea level rise and shoreline resiliency indicates tidal marsh is a significant feature and acts as a supportive buffer reduce sea level rise impacts.

In 1999, after record flooding, the City of East Palo Alto entered into a partnership, the San Francisquito Creek Joint Powers Authority (SFCJPA), with the jurisdictions of Menlo Park, San Mateo County, Palo Alto and Santa Clara Valley Water District, to plan, design and obtain necessary community review and environmental permitting for waterway enhancements to improve SFC capacity, to reduce flooding impacts from storm events and improve future resiliency to sea level rise impacts, while providing recreational amenities. San Francisquito Creek Flood Control Project, Phase I, from highway 101 to the San Francisco Bay, has been completed. Future phases include multiple proposed improvements between highway 101 to El Camino Real, with the collective goal of protecting lives and property from flooding impacts and the local goal of improving community recreational amenities.

San Francisquito Creek is subject to tidal influence from the San Francisco Bay, in the downstream basin, from roughly Newell Road to the eastern terminus at the San Francisco Bay. Phase I of the San Francisquito Creek improvements included expanded capacity to address anticipated sea level rise. Properties along the segment between highway 101 and the San Francisco Bay benefit from such flood improvements, which includes homes to the South of O'Connor Street which are presently secure from the 100-year flood event.

The San Francisco Bay presents additional challenges for flood control, which includes concerns for impending sea level rise, for which the City of East Palo Alto is considered the most vulnerable community along the Peninsula, and possibly the entire San Francisco Bay Area. Concerns about the community's ability to be resilient in the event of a severe flooding episode include lack of access to relocation funds and inability to leave the area in the event of a flooding disaster. To mitigate some of these vulnerabilities, the City, in conjunction with the San Francisquito Creek Joint Powers Authority, has taken on a new project which would extend the levee along San Francisquito Creek from O'Connor Street, North to Tara Street. The so-called Safer Bay Project would be designed to address sea level rise impacts along the Eastern edge of the City through a series of horizontal and vertical levee extensions.

Addressing the incidence of localized standing water and flooding incidents will take significant infrastructure investment to fully remedy. In the meantime, small actions that include stormwater detention in key areas

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may help alleviate these issues. Further, use of site design and source control measures can incrementally reduce the incidence of stormwater standing on roadways, driveways, and walkways by requiring all small projects that replace walkways and driveways to do so with permeable materials that allow stormwater to infiltrate into native soil. This will require revision of the City’s municipal code to require that such replacements are required as a condition of project approval, regardless of whether the new or redevelopment project is a “regulated project.”

Water Quality Impairments

San Francisquito Creek (SFC) is a 303(d) listed impaired waterbody, impaired by trash, sediment, and pollutants which flow to the San Francisco Bay. , further intensifying existing pollution found in water and soil samples, as well as aquatic life. Section 303(d) of the federal Clean Water Act requires that states identify water bodies that do not meet the beneficial uses for receiving waters, which are identified in the Basin Plan for the San Francisco Bay Region. . Total Maximum Daily Loads (TMDLs) examine these water quality impairments, identify sources of pollutants, and specify timelines needed for the waterbody to meet its beneficial uses. For San Francisquito Creek, there is a TMDL for mercury and polychlorinated biphenyls (PCBs), and the creek is on the 303(d) for toxicity, trash, and sediment. Green infrastructure will help in meeting the goals of the TMDLs by reducing pollutants entering receiving waters. The Reasonable Assurance Analysis (RAA) models hydrology and pollutants throughout the County to establish how much GI is necessary to meet the required Countywide reduction in mercury and PCBs reaching the Bay, and add to the 3 kg reduction in PCBs required for the entire Bay Area.

c. Green Infrastructure Plan Development Process

East Palo Alto has engaged in a comprehensive and coordinated process in the development of the City’s Green Infrastructure Plan. The City is a member of the San Mateo Countywide Water Pollution Prevention Program (Countywide Program), a program that is a partnership of the City/County Association of Governments (C/CAG), the County of San Mateo, and each incorporated City in the County, that share a common National Pollutant Discharge Elimination System (NPDES) permit. As a member agency of the Countywide Program’s Green Infrastructure Committee, the City jointly collaborated with the Countywide Program, its consultants, and other member agencies in the development and integration of some of the materials required to fulfill or to support the preparation of GI Plans. This work included preparation of related documents such as the San Mateo Stormwater Resource Plan, Green Infrastructure Reasonable Assurance Analysis, Bay Area Stormwater Management Agencies Association regional sizing for constrained non-regulated street projects, and the San Mateo Sustainable Streets Master Plan. East Palo Alto staff has participated with the SMCWPPP GI Committee since 2016 to review and discuss GI Plan related elements and approaches. In addition to ongoing support and coordination, the GI Committee provided template material for integration in the GI Plan.

East Palo Alto’s GI Plan was also developed in collaboration with multi-disciplinary City staff, City decision makers, and the community in coordination with City consultants. The City held internal multi-disciplinary meetings with City staff and discussed the need for the GI Plan. There were also important discussions regarding no missed opportunities for green infrastructure planning and implementation, which resulted in commitment and implementation of GI construction through plan review and project approvals. The City continued to learn from SMCWPPP Green Infrastructure Committee member agencies as their Green Infrastructure Plans have been finalized and reviewed for consideration of best practices.

This Plan is a dynamic toolkit which will be updated as new information becomes available including the Sustainable Streets Plan from San Mateo County, as well as the upcoming East Palo Alto Urban Forest Management Plan, which is under development. Additional design details provided by the SMCWPPP Green Infrastructure Design Guide provides design details from SFPUC which are very useful when designing green infrastructure elements and other GI elements will also be upcoming as appropriate measures are created by San Mateo County Permittees and the City of East Palo Alto.

The City has worked continuously over the last three years with staff, decision makers, and the public to

identify green infrastructure opportunities to achieve the mandates of the MRP. Staff has taken notes during multi-disciplinary meetings to receive direction as to the general needs of the community, the flooding constraints, sea level rise concerns, best management practices, and will continue to discuss the needs, goals, and vision for East Palo Alto’s GI Plan. The GI Plan will be integrated with the community’s vision of the future urban forest, through the development of a comprehensive Urban Forest Management Plan. This integration will consider the balance of needs as preservation or planting of public trees may complete for the same limited public right of way footprint required for green infrastructure features. In some cases, the community may need to weigh the benefits of large native shade trees and green infrastructure to prioritize which will provide the greater benefits. The goal of integrating these two plans will be to maximize environmental benefits and human health benchmarks.

d. Next Steps

Upon City Council adoption, the City will be working with private landowners to create regional projects and seek funding opportunities for publicly owned facilities. One large project that the City has recently included in the Capital Improvement Program is the expansion of Cooley Landing Park, towards the interior of the City. Address 2091 Bay Road has been preliminarily identified as an ideal buffer zone between future development along Bay Road, and the San Francisco Bay, at the eastern terminus of Bay Road. There is an opportunity to incorporate green infrastructure regional system into a public amenity, expanding the footprint of Cooley Landing Park.

The City is also providing guidance to encourage incorporating green infrastructure into private development projects when new or replacement roadways are being built. This includes grading and drainage guidelines to encourage LID and pervious materials along the frontage of properties and requiring developments increasing impervious areas to incorporate detention basins.

In addition, the City is investigating further opportunities to implement green infrastructure in each roadway improvement project, park upgrade, and public utility easements where land is largely available to consider green infrastructure opportunities for detention or pre-treatment in neighborhoods such as the Gardens Neighborhood, which are largely built-out with little-to-no opportunity for green infrastructure improvements existing due to narrow public right of way. Parks are also indicated as a great opportunity for multiple benefit projects that can be retrofitted to detain and treat stormwater, while providing for nature-inspired public amenities as alternative compliance opportunities.

e. Summary of Green Infrastructure Plan Elements

This GI Plan contains the elements required by the MRP. Table 1-1 below links each section of this Plan to the applicable MRP provision.

Table 1-1: Green Infrastructure Plan Chapters and Applicable MRP Provisions for Green Infrastructure Planning and Implementation

Chapter of Green Infrastructure Plan	Applicable MRP Provision
1. Introduction	C.3.j
2. Green Infrastructure Project Identification and Prioritization	C.3.j.i.(2)(a), C.3.j.i.(2)(b), and C.3.j.i.(2)(j)
3. East Palo Alto Green Infrastructure Implementation	C.3.j.i.(2)(a), C.3.j.i.(2)(b), C.3.j.i.(2)(c), and C.3.j.i.(2)(d)
4. Green Infrastructure Project Tracking and Mapping	C.3.j.i.(2)(d)
5. Green Infrastructure Integration with Other Planning Documents and Legal Mechanisms	C.3.j.i.(2)(h), C.3.j.i.(2)(i), and C.3.j.i.(3)

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6. Green Infrastructure Guidance	C.3.j.i.(2)(e), C.3.j.i.(2)(f), and portion of C.3.j.i.(2)(g)
7. Green Infrastructure Hydraulic Sizing	C.3.j.i.(2)(g)
8. Evaluation of Funding Opportunities	C.3.j.i.(2)(k)
9. Outreach and Education	C.3.j.i.(4)
Appendices A. East Palo Alto-specific Prioritization Factor and Criteria Tables B. East Palo Alto-Specific Existing, Planned and Potential GI Projects	

2.0 Green Infrastructure Project Identification and Prioritization

a. *Prioritization Approach*

This chapter describes the prioritization and mapping approach and process for green infrastructure projects as required in Provision C.3.j.i.(2)(a) and provides a summary description of prioritized green infrastructure projects and opportunities by type per Provision C.3.j.i.(2)(b). This chapter also outlines a workplan to complete prioritized early implementation projects per Provision C.3.j.i.(2)(j).

The San Mateo Countywide Stormwater Resource Plan (SRP) was used to identify, prioritize, and map areas for planned and potential green infrastructure projects throughout the County. A secondary process was developed for and used by East Palo Alto to refine the countywide process to develop City-specific criteria for prioritizing potential public green infrastructure opportunities and other opportunities for private development and private/public partnerships. Both processes developed maps and project lists which can be incorporated into the City's long-term planning and capital improvement processes.

A map and listing of these prioritized opportunities are included in this section. These opportunity areas can be more fully vetted as project proposals and funding availability is identified. Each project over 5,000 square feet will be assessed on a "no missed opportunity" standard to ensure any potential for installation of green infrastructure is fully considered and designed prior to building permit issuance. Projects over one acre in size shall include green infrastructure, which may require easements granted from private property into the public right of way. In the case where green infrastructure is completely infeasible and cannot be implemented along the property frontages for any new or modified streetscapes. Large regional projects shall be prioritized through the City's Capital Improvement Program. There may be future opportunities for project proponents to contribute "fair share" contributions of regional stormwater treatment amenities for projects which cannot fully implement green infrastructure in the public right of way. No mechanism is currently available in the City of East Palo Alto for alternative compliance "in lieu" projects, but the City hopes to develop a program in the future.

The Countywide Program developed a Reasonable Assurance Analysis (RAA) to identify and map a "recipe" of projects and wasteload allocation reduction goals for implementation by 2020, by 2030, and by 2040. Refer to Chapter 3 for further information.

b. *Project Identification and Prioritization*

Countywide Process²

The SRP includes an evaluation of project benefits addressing several key metrics: Water Quality, Water Supply, Flood Management, Environmental, and Community benefits. First, suitable public parcels and public rights of way were identified. Hydrologic Response Units (HRUs), small spatial units containing unique attributes, were used to evaluate watershed processes to prioritize stormwater and dry weather runoff capture projects. The following attributes were assessed: land use, impervious cover, hydrologic soil group, and slope. Based on these key metrics, watershed characteristics, and watershed processes, several green infrastructure stormwater projects were identified and prioritized to address water quality impairments, reduce flooding, and provide more natural groundwater recharge throughout the County.

A screening and prioritization method was developed for the SRP to reasonably assess stormwater capture projects, with an emphasis on projects that offered the greatest opportunity for multiple benefits. Higher prioritization was given to projects that addressed flood-prone streams, those located in PCBs-interest areas, and ones that drain to TMDL waters.

Three types of stormwater management project opportunities were identified throughout the County:

Regional Stormwater Capture Projects – These consist of facilities that capture and treat stormwater from large drainage areas or watersheds. The primary objective of regional projects is often flood

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attenuation, but many also contain a water quality treatment and/or infiltration component. In some cases, the diverted flows are returned after treatment or are used for irrigation.

Green Streets – These consist of stormwater capture infrastructure in public rights of way. Green streets are intended to capture only runoff from the street and adjacent land that drains to the street.

Low Impact Development (LID) Retrofit – This includes green infrastructure, is a form of on-site urban infrastructure design that uses a suite of technologies intended to imitate pre-urbanization (natural) hydrologic conditions. LID and green infrastructure are meant to capture, slow, and decrease (through infiltration, if feasible) runoff to reduce the impacts of the urban landscape.

Separate prioritization scoring processes were developed for each of the three project types. A project's priority score was determined by summing all the points assigned from the evaluated physical characteristics, proximity to areas of interest, potential for co-locating projects, and other various multiple benefits. All public parcels and streets throughout the county were prioritized and the results were analyzed at the countywide scale and city-scale. The scoring was used to rank the projects by cost benefit, watershed, jurisdiction, and project type.

East Palo Alto-Specific Process (Planned for Potential Future Integration)

Due to East Palo Alto's unique existing characteristics, City goals and policies, and other factors, it was important to customize the countywide project identification and prioritization process with a screening that is separate from the SRP screening. This allows the City to modify countywide prioritization procedure to include new prioritization factors to address conditions not included in the countywide process, to focus on circumstances or preferences that are specific to East Palo Alto.

Prioritization factors, scoring, and weighting used in the Countywide process will continue to be assessed and modified, retained, or eliminated as appropriate to reflect East Palo Alto-specific concerns. In addition, new criteria may be included if new information becomes available prior to the project authorization. East Palo Alto-specific screening and prioritization criteria factors were also assessed for three different types of projects – regional (water capture) projects, green streets, and parcel-based.

Table 2-1, on the following page, illustrates the various screening and prioritization criteria factors that were used to identify, prioritize, and map green infrastructure opportunities within East Palo Alto provided in Appendix A.

The project prioritization process was a two-step process. Screening factors were used to screen out conditions that are detrimental to green infrastructure, such as obstructions to pedestrian travel, and narrow or non-linear streets without any meaningful capacity for public vegetated areas. In this case, that included certain land uses, ownership, and proximity to the Bay, which may preclude infiltration. After the prioritization criteria factors were identified, they were scored. Some criteria were then weighted to emphasize specific issues identified as having a higher level of importance for the community of East Palo Alto, such as amenities that prioritize walking and biking which requires expanded roadways or sidewalks for access.

A project's overall priority score is the sum of the individual weighted prioritization scores. Because each project type's prioritization method contains a different mix of screening and prioritization factors, and scoring and weighting varies between project types, the scores cannot be directly compared between different project types. Refer to Appendix A for tables illustrating the screening and prioritization criteria factors.

Following the SRP method of categorizing the level of project priority, the recalculation of green infrastructure project opportunities using East Palo Alto-specific criteria and scoring of selected green infrastructure opportunities were prioritized as High, above the 90th percentile; Medium, above the 60th percentile; and Low, below the 60th percentile with data from the SRP. This ranking is likely to be revised in the upcoming Urban Forest Management Plan to further incorporate and integrate shade trees and understory canopy, if feasible.

Table 2-1: Screening and Prioritization Criteria Factors of the San Mateo SRP and East Palo Alto-specific Prioritization Process

Prioritization Criteria and Screening Factors	Regional Stormwater Capture	Green Streets	Public and Private Parcel-based GI Projects
San Mateo SRP Prioritization Factors Retained or Modified			
Parcel land use (modified for East Palo Alto-specific criteria to include ownership)	X		X
Impervious area (%)	X	X	X
Parcel size (acres)	X		X
Street Type (modified for East Palo Alto-specific criteria to emphasize street types and projects more likely to receive grant funding)		X	X
Hydrologic soil groups	X	X	X
Slope (%) (of minor importance in East Palo Alto, due to low slope issues)	X	X	X
Proximity to flood-prone areas	X	X	X
Contains PCBs risk areas	X	X	X
Currently planned by City or co-planned with other City or anticipated private development projects	X	X	X
Drains to TMDL water (includes majority of City)	X	X	X
Safe Routes to School program		X	
Above groundwater basin	X	X	X
Augments water supply	X	X	X
Water quality source control	X	X	X
Creates or enhances habitat	X		X
East Palo Alto-Specific Prioritization Criteria (Planned for Future Integration)			
Parcels and roadways, or planned roadways in the Ravenswood Shores Business District	X	X	X
Greenways/Complete streets projects (adjacency)	X	X	X
Streets with existing storm drains	X	X	X
Streets identified for future storm drains and other drainage improvements	X	X	X
Project located within ¼ mile of identified RHNA site or other affordable housing site	X	X	X
Project identified in Vista 2035 General Plan, Ravenswood Four-Corners Specific Plan, Urban Forest	X	X	X
Parcel Ownership	X		X
Parcel ownership and land use	X		X
Projects with multi-benefit opportunities including safe routes to school, pedestrian/ADA improvements		X	X

c. Identification of Prioritized Green Infrastructure Project Opportunities

Existing and Planned Projects and Potential Opportunities

Existing, planned, and potential green infrastructure projects were identified by a range of methods. Existing projects were identified using the City’s list of completed projects. Planned projects are C.3 regulated and other green infrastructure projects in the planning and design phase that the City is tracking or are currently under construction. These include projects related to development, redevelopment or remodeling of school facilities, and new low-income housing projects. These projects are expected to be completed during the 2020 to 2030 time period, though recent economic developments may extend some buildouts to the 2030-2040 time period.

The City’s Capital Improvement Projects (CIP) list was reviewed to determine if existing planned and/or funded projects are opportunities for green infrastructure. The review found identified a number of potential projects. Longer term future projects not on the CIP list such as additional regional stormwater treatment projects, bicycle and other complete street improvements, a new City Hall, Police Station, new parks, and other planned community amenities such as safe routes to schools projects, are not fully considered or included in the analysis for identifying potential green infrastructure opportunities, as many of the required sites have not been identified or procured from private parties. They do, however, represent opportunity beyond the scope of this Plan and all projects will be assessed for a “no missed opportunity” standard, as improvements are considered.

Other considerations include identifying streets and intersections that could easily accommodate green infrastructure – these are typically those with intersections that require traffic calming and pedestrian friendly infrastructure such as bulb-outs, wider streets, proximity to existing and planned storm drain improvements, and while not fully detailed and mapped, private residential parcels that offer the potential for shared public/private or private provision of green infrastructure typically when being built-out as subdivisions or multifamily dwellings (generally, not for single family housing projects). In addition, potential green infrastructure projects are expected to happen opportunistically as prospects and funding avail themselves.

During the course of multiple study sessions held to discuss traffic and parking alternatives, the City Council stated they supported the integration of traffic calming and streetscape applications such as with Bicycle Master Plan improvements. The City is looking closely at all street intersections including existing landscaped medians, corner and mid-block crossing extensions, and along landscaping strips where existing trees would not be negatively impacted and shallow underground utilities do not prevent obstructions. Some key areas for consideration include University Avenue, Newbridge Road, and Bay Road support the integration of traffic calming and streetscape improvements.

A customized list of “higher priority” potential green infrastructure opportunities was developed. First, the SRP’s prioritized regional projects, green streets, and parcel’s green infrastructure project opportunities were reviewed and assessed. Secondly, Google Earth and Google Street View were used to perform a more detailed evaluation of streets, intersections, and public and private institutional parcels that could include potential green infrastructure opportunities. This information was brought into the GIS data sets for analysis, which was then reviewed, and in some cases, adjusted to better reflect certain conditions, such as impervious area on a street or parcel and adjacencies of drainage infrastructure. The goal of this assessment was to identify public and private locations that could accommodate green infrastructure projects that could be implemented:

- In the near term
- Potential for public/private partnerships
- As public projects are planned
- When GI funding is identified

While East Palo Alto owned parcels and other publicly and privately-owned parcels were evaluated, East Palo Alto only has control over a modest list of City-owned parcels and planned CIP projects to direct the timing of implementation. However, there are conditions in the City of East Palo Alto which warrant detaining stormwater

to prevent localized flooding due to submerged storm drain outfalls and undersized storm drain systems designed for a more rural community with less impervious surfaces. In such cases, conditions of approval have generally reflected requirements for new or re-developments to install GI systems with a “no missed opportunity” approach combined with source control and site design elements including discharging any sidewalks to adjacent landscaping. Coupled with an intense development interest in the City, and an increasing corporate awareness of natural systems approach to development, the City has already witnessed proposed interest in regional stormwater treatment facilities for anticipated future campus build-outs beyond their regular C.3 requirements. The GI Plan is to serve a framework to explore and implement such visionary approaches to sustainable street development.

Regional Water Capture Projects

The City is seeking opportunities for regional projects with potential to provide stormwater treatment on a larger scale. The RAA discusses how regional projects are more *cost-effective* than other public green infrastructure investment, such as green streets. *East Palo Alto intends to prioritize the use of regional projects to help meet their pollutant load reduction requirements.* Although regional projects are the most cost-effective project type that the City can invest in, they are usually more expensive and require more time to plan, design, and construct.

East Palo Alto has identified a regional water capture project potential at a number of locations, which does not represent a comprehensive list of potential sites:

- Safer Bay Project to provide an enhanced bayside protection for sea-level rise and flooding, if opportunities for GI integration are possible, they will be incorporated into the design.
- North-eastern end of Bay Road, at 2091 Bay Road, expanding Cooley Landing Park to provide a buffer zone from the Bay, and allow treatment along the Bay Road frontage which is prone to utility conflicts and known soil contamination with various constituents.
- Loop Road is considered for extra traffic capacity from the Ravenswood Shores Business District, northerly to University Avenue; if such a roadway is proposed, GI will be integrated into the design.
- Public park retrofits including but not limited to Bell St, Jack Farrell, Joel Davis, and Dr. Martin Luther King, Jr Parks.
- Public storm drain easements.
- University Village outfalls at Fordham, Stevens and Purdue, as well as near the end of Demeter Street and Pulgas Avenue, these outfalls require complete redesign, which presents an opportunity for potential multi-benefit regional treatment facilities which may co-design as parkways providing connection to the newly built Bay Trail extension between Bay Road and the Ravenswood Open Space Preserve (managed by Mid-Peninsula Open Space District).

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Green Streets

The City's urban roadways, with narrow pavement, sometimes rolled or no curbs, and modest tree canopy, require focused planning and design to redesign streets that mimic natural environments, detaining stormwater and removing pollutants. The City will continue pursuing opportunities to green its streets and intersections to help manage and treat stormwater runoff and provide complete and sustainable streets, traffic calming, urban greening, neighborhood enhancement, and other community-wide benefits.

East Palo Alto is a community with significant deferred infrastructure maintenance from pre-incorporation, which may translate to slower improvements than our economically advantaged, more established neighbors. The high percentage of narrow right of way, modest numbers of existing publicly planted large mature trees, and substantial gaps in sidewalks and storm drain infrastructure present real limits for full green street development. The great need along with funding opportunities directed towards disadvantaged communities can also offer opportunities to update long deferred roadway infrastructure and make substantial improvements to the quality of life for the community. This, along with areas with historical soil contamination, high ground water table, poor infiltrating soils and an existing lack of funding for street construction and maintenance, limits opportunities for green streets and intersection improvements. However, there are pockets throughout the City in which streets and intersections can be retrofitted to include some green infrastructure. The City is already working on roadway improvements with funds dedicated through the Affordable Housing and Sustainable Communities (AHSC) Grant for Light Tree Apartments, which will provide funding for a substantial build-out of the City's Bicycle Transportation Plan. Limited funding was included to provide some green infrastructure retrofits to further enhance bicycle improvements and walkability throughout the community. Future grant improvements, which hopefully includes funding for the buildout of 965 Weeks Street, an affordable housing project, will include similar opportunities.

Public and Private Parcel Green Infrastructure/LID Projects

Public parcels, owned by the City of East Palo Alto and by other public agencies such as the fire district and school districts, and private institutional uses such as schools were identified and assessed for potential individual or shared green infrastructure opportunities. Of these, the large numbers of school sites represent an exceptional opportunity for public and special district collaboration. The Ravenswood City School District has large numbers of facilities which have recently been consolidated or shifted to Charter School facilities. The ability to integrate green infrastructure facilities in these locations, such as retrofitting parking lots, landscaped areas around buildings, grassy fields and other landscape areas, and along street frontages provides a means of expanding the planting palate from turf grass with a few trees. With less water intensive vegetation and a higher level of visual interest, improved drop-off zones, expanded bicycle accessibility and walkways that meet ADA compliance, addressing localized standing water issues can enable safe access to schools during the rainy season. Such improvements offer significant quality of life and school accessibility for the community.

East Palo Alto owned sites are limited to parks, the "Reentry Center" at 2277 University, and the "Permit Center" at 1960 Tate Street. Under the successor to the Redevelopment Agency, the City also owns a property at 1901 Bay Road, the "Tanklage Site" which has been considered for potential location of the future East Palo Alto Police Department. The site is presently hosting the RV Safe Parking Pilot Program, a temporary safe-haven for residents living in RVs, awaiting permanent affordable housing opportunities. 1901 Bay Road is considered poised for redevelopment. The 2277 University and 1960 Tate sites are not considered a high priority as they are smaller sites with limited ability to apply green infrastructure features due to limited street frontage and small parking lots.

Most of the City facilities are under lease by the City, with limited ability to make retrofits, including the East Palo Alto City Hall, which is sited at the San Mateo County Building which includes the County's East Palo Alto Public Library, Human Services, Behavioral Health and Recovery Services, Probation Office, and other

departments. City Hall located at 2415 University offers significant opportunity to implement low- impact development features and green infrastructure, but the future of the site is still unknown but holds great potential for a new City Hall if San Mateo County is willing to offer it to the community. The City is developing a Master Plan for City facilities but has yet to detail or purchase sites for the future Police Department or City Municipal Maintenance Corporation Yards.

Non-City owned public and private parcels within Park and Open Space (POS) and Public Facility and School (PFS) Zoning Districts were evaluated as they typically offer larger areas to integrate green infrastructure facilities within the site due to the existence of open space, parking lots, and ball fields.

The following tables and maps show the outcome of the East Palo Alto-specific prioritization process and evaluation of green infrastructure opportunities of higher priority projects (those parcels, street and intersections identified above as opportunities for green infrastructure on City and other public agency and private potential projects) is prioritized for the potential GI opportunity. This list provides the preferred “short list” of prioritized projects to plan for and implement as funding, opportunities, and the need arises. As the opportunities identified in this process are implemented, new green infrastructure opportunities will be added to the list. The green infrastructure and LID that will be implemented on private residential parcels are not included in these tables and maps as the timing and location of the projects cannot be anticipated.

Figure 2-1 and Table 2-2 show the constructed and planned green infrastructure projects in East Palo Alto. A map and list illustrating the resulting East Palo Alto-specific prioritized potential green infrastructure projects is found in Figure 2-2 and Tables 2-3 and 2-4. In addition, other public parcel and street project opportunities identified in the SRP are represented.

Lists and maps of planned and potential projects will be updated, as needed, to reflect changed circumstances, the identification of funding options, new opportunities, or the implementation of a countywide regional approach scenario.

Table 2-2. Completed and Planned Green Infrastructure Projects

Project Type		Project Type
Completed Projects (Public, Public Other Agency, and Private)		
Bay Road	GI	Public
Cummings Park	Media Filtration Device	Private
East Palo Alto Academy	LID	Public
EPACenter Arts Pulgas Avenue at Bay Road, GI	LID and GI along frontage of Pulgas	Public
First Free Wesleyan Tongan Church	Pervious Asphalt parking lot	Private
Garden School	LID	Private
La Estrellita Market	LID	Private
MidPen Senior Housing w/ EPA Can DO	LID	Private
Montage/ Edenbridge DBK Homes	LID	Private
MPFPD Fire Station #2	LID & Hydromodification	Public
Pitcher Drilling	Onsite LID	Private
Ravenswood Family Health Center	Onsite LID and Rainwater Cistern	Private

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Sobrato Project (Phase I)	LID	Private
SUHSD Myrtle Street School Expansion	LID	Public
YMCA	Media Filtration Device	Private
Project Type		Project Type
Completed Projects (Public, Public Other Agency, and Private)		
Cooley Landing	LID along driveway	Public
1160 Weeks St Subdivision	LID and pervious pavement	Private
Planned Projects (Public, Public Other Agency, and Private)		
Addison Avenue SRTS	GI	Public
Light Tree Apartments	LID and GI (if feasible)	Private
The Primary School 1200 Weeks Street	LID and GI along frontage	Private

Table 2-3. East Palo Alto-specific Identified Potential Green Infrastructure Opportunities for Regional and Parcel-based Projects

East Palo Alto-specific Prioritized Potential Projects (Public, Public Other Agency, and	Priority Level	Ownership
Regional Projects and Parcel-based Green Infrastructure Projects		
Baylands Park	1.00	Public
Hetch Hetchy Aqueduct Linear Park	1.00	Public
Martin Luther King Jr. Park Stormwater Capture & Reuse Facility	1.00	Public
Northern Portion East of Illinois Ave north of Demeter/Pulgas/Tara Rd roadway ends (potential extension of Baylands Park)	1.00	Public

Table 2.4. East Palo Alto-specific Identified Potential Green Infrastructure Opportunities for Green Streets Projects

Potential Projects	Priority Level	Ownership
Green Streets Projects for Public and Private Property Development (No Missed Opportunity=NMO, Required=R C.3 Regulation Status will be determined during project design)		
151 & 264 Tara Road R GI	1.00	Private
573 Runnymede University Corner_Clarum Homes 16 Unit Subdivision NMO GI	0.80	Private
812 Green St. E. Palo Alto, CA 94303 Cedar Green NMO GI	0.80	Private
717 Donohoe 10-Unit Subdivision NMO GI	0.80	Private
965 Weeks St NMO GI	1.00	Private
1200 Weeks St_The Primary School_LID& GI NMO GI	1.00	Private
1675 BAY RD Four Corners Project at University and Bay Sand Hill Property Mixed Use Campus with Laboratories and Housing NMO GI	1	Private
1805 E Bayshore Rd Lightree Apartments_Expansion NMO GI	1.00	Private
1950 Bay Road_EPA Center Arts_Under Construction_LID&GI NMO GI	1.00	Private
2020 Bay Road former Romic Brownsfield Cleanup R GI	1	Private
2111 University Avenue University Plaza Phase II NMO GI	0.80	Private
Bicycle and Pedestrian Improvements NMO GI	1.00	Public
Bus Stop Shelter Improvements NMO GI	0.20	Public
Harvest Investments 14+ acres superfund site R GI	1	Private
Hetch Hetchy Aqueduct Linear Park NMO GI	1.00	Public
Implementation of Storm Drain Improvements NMO GI	1.00	Public
Major Street Reconstruction R GI	1.00	Public
New Facilities in Ravenswood SPA R GI	1.00	Public
New Loop Road RGI	1.00	Public
New Sidewalk, Curb, and Gutter Program NMO GI	1.00	Public
New Trails & Sidewalks in Ravenswood SPA R GI	1.00	Public
Northern Portion East of Illinois Ave north of Demeter/Pulgas/Tara Rd roadway ends Development R GI	1.00	Public
Repair of University Village Outfalls NMO GI	1.00	Public
Ravenswood Business District R GI, with new development	1.00	Public
Safe Route to School NMO GI	1.00	Public
Safer Bay Flood Control Improvement Project NMO GI	1.00	Public
San Francisquito Park and Trail NMO GI	1.00	Public
San Francisquito Creek Flood Protection Project - Upstream to Highway 101 NMO GI	0.80	Public
Sycamore LLC Emerson Collective 50-acre campus R GI	1	Private

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Tara Road <i>R GI</i>	1.00	Public
Traffic Calming Program <i>NMO GI</i>	1.00	Public
University Circle <i>NMO GI</i> new Tower,	0.80	Private
Weeks Street <i>NMO GI</i>	1.00	Public

Potential Projects	Priority Level	Ownership
Green Streets Projects (<i>No Missed Opportunity=NMO, Required=R</i>)		
961 Beech Street subdivision <i>NMO GI</i>	0.8	Private
660 Donohoe Subdivision <i>NMO GI</i>	0.8	Private
809 Donohoe subdivision <i>NMO GI</i>	0.8	Private
965 Weeks St MFD <i>NMO GI</i>	1	Public/Private
2212 University Ave Micro Hotel <i>NMO GI</i>	0.8	Private
2398 University and Bay Hotel <i>NMO GI</i>	0.8	Private

d. Workplan to Complete Alternative Compliance and Early Implementation

Prioritized projects identified as part of a Provision C.3.e Alternative Compliance program or part of Provision C.3.j Early Implementation are required to prepare a Workplan to ensure completion of those prioritized projects. Those projects that fall under these Provisions are summarized below. A Workplan has been developed to identify the approach, scheduled timeframes, and other key information for implementing these projects.

As of May 2020, there are no identified Provision C.3.e Alternative Compliance program projects in East Palo Alto. East Palo Alto has identified the following prioritized projects as part of Provision C.3.j.ii Early Implementation.

These are public and private green infrastructure projects that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures.

1. Project: COOLEY LANDING PARK, PHASES 3, 4, AND 5

Location: 2100 Bay Road

Description: Park driveway utilizes “no missed opportunity” standard to incorporate a narrow biotreatment swale along the driveway starting at the park entrance and leading to the first parking lot, where the driveway stormwater sheet flows into numerous curb cuts, into an engineered bioretention area with subdrain.

Status: **COMPLETED**, O&M ongoing. Project has been installed and replanted in 2020 for full vegetation through a volunteer planting to reestablish thriving planting palate and remove areas where landscaping has not resulted in full establishment.

2. Project: ADDISON AVENUE COMPLETE STREETS, SAFE ROUTES TO SCHOOL AND GREEN

INFRASTRUCTURE PROJECT: CIP Safe Routes to School and Robert Wood Johnson Foundation Grant Ecology for Health Grant

Location: Addison Avenue between E. Bayshore Road and Bay Road

Description Authorized by the City Council, this project serves to address standing water issues on Addison Avenue. Addison Avenue is a local residential street which serves to direct students to schools throughout the City in the Palo Alto Park Neighborhood. With a lack of sidewalks and storm drain system, this street has been redesigned to become a modern green street, which treats stormwater prior to discharge into the City’s storm drain system, while enhancing the walkability and bike-ability of the streetscape by providing 6,200 ft². of sidewalks, and addressing former soft shoulder street frontages along residential and business properties with landscaped stormwater detention facilities to filter stormwater prior to entering the storm drain system for discharge.

The project has been funded in part by the AISC Grant for Light Tree Apartments, Safe Routes to School and by a Robert Wood Johnson Foundation Grant Ecology for Health provided to the City’s partnership with San Francisco Estuary Institute (Aquatic Science Center), which will support the development of a planting palate for improved health outcomes.

Status: The project is under design and review with construction documents imminent within a few months and construction likely to take place within the current calendar year (2020).

3. Project: BAY ROAD IMPROVEMENTS PHASE II: CIP ST-05A

Location: Clarke Avenue East to Cooley Landing Park entrance

Description Complete road rebuild, including underground utilities, with storm drain improvements and Green Infrastructure, where feasible.

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Bay Road requires substantial upgrades to the underground storm drainage system due to future development and undersized storm drains. Due to the limited public right of way, existing soil contamination, and the high groundwater table, the capacity for adding additional storm drain improvements and green infrastructure has been maximized in the plans, but yields modest capacity.

Status: Project is fully designed, funded and under construction.

4. Project: EPACENTER ARTS PROJECT

Location: 1950 Bay Road, Northeastern Corner of Bay Road and Pulgas Avenue

Description: Art and cultural center for youth in East Palo Alto

Designed by world-renowned architect Kulapat Yantrasast, and situated in East Palo Alto's new innovation corridor, the 25,000 square foot EPACENTER building features an array of creative, flexible spaces—a digital media lab, a visual arts studio, a high-tech digital black box theatre, and a 350-seat outdoor amphitheater.⁷ Fully integrated into the aesthetic of the landscaping, the site boasts a cistern to capture and detain roof runoff into a holding tank for reuse in landscape irrigation. With low impact development throughout, the site also features bioretention areas along the street fronts of Pulgas Avenue and Bay Road, as part of a “no missed opportunity” for stormwater treatment along the frontage of the property.

Status: Site continues construction and should be finalized by summer 2020. Due to a planned volunteer effort for public tree planting, some vegetation may be finalized within 90 days of the release of occupancy, due to COVID-19 Shelter in Place requirements.

5. Project: SOBRATO PHASE II

Location: 2111 University Avenue

Description: An eight-story office building with a five-story parking garage.

Status: Approved; finalizing plans for building with potential regional treatment system across the street on Caltrans property—GI has been determined as infeasible on Donohoe and University frontages due to utility conflicts.

6. Project: THE PRIMARY SCHOOL

Location: 1200 Weeks Street

Description: The Primary School plans to accommodate more than 600 students and 70 staff members in a 61,000-square-foot building. As planned, the new campus would have a two-story main building, 24 classrooms, a 10,800-square-foot gymnasium and several play yards and recreation areas. The site as approved will include low impact development as well as green infrastructure installations along Weeks Street and Runnymede Street to treat street stormwater runoff, where feasible. As part of the area of impact for the 1990 Bay Road Superfund site, the area may be subject to soil and groundwater contamination of arsenic as well as other associated

Status: Approved; under construction. Rough grading complete.

7. Project: LIGHT TREE APARTMENTS AFFORDABLE HOUSING PROJECT

Location: 1805 E. Bayshore Road

Description: An existing affordable housing site, the updated site will include the construction of 128 new units, 14 of which will be set aside for formerly homeless people, the disabled and/or transitional-age youth. The site will include low impact development on site, as well as green infrastructure installations along E. Bayshore Road.

Status: Approved; finalizing design.

8. Project: 965 WEEKS STREET AFFORDABLE HOUSING PROJECT

Location: 965 Weeks Street

Description: 150 units, most of which will be designated as affordable housing and suitable for larger families that require multiple rooms. The site will contain low impact development standards and will

include green infrastructure along Weeks Street, where feasible.

Status: Preliminary approvals; design and funding acquisition ongoing.

9. Project: BAYLANDS PARK STORMWATER TREATMENT PROJECT

Location: End of Bay road

Description: The City has added for City Council consideration of design and environmental review of a regional stormwater capture facility project at the end of Bay Road, at the northeast and southwest corners of Bay Road. The project is proposed as a new high opportunity project for regional stormwater capture and expansion of Cooley Landing Park between the eastern end of Weeks Street, to the eastern side of 2020 Bay Road property, including the property located at 2091 Bay Road, currently in operation as an auto recycling facility.

The proposed project is for a regional stormwater detention and treatment facility to act as a buffer between new proposed development in the Ravenswood Shores Business District, and the San Francisco Bay, while contributing as a multi-benefit project in expanding community trail access to both the Bay Trail, and the San Francisco Bay shoreline, and enhanced sea level rise protections from waters from the San Francisco Bay. The proposed project would help alleviate downstream flooding issues by providing for detention during high tide events when storm drain outfalls may otherwise be submerged in Bay waters.

The City is presently working on identifying expanding funding and design of the Safer Bay Project which would extend a protective horizontal levee from O'Connor Street to the south, to Tara Road to the north, terminating near the proposed project location. This regional treatment facility would provide needed capacity in the City's stormwater detention system during large storm events which, when coupled with high tide events can prevent the discharge of stormwater from the City's storm drain system, in the absence of a pump station. The System would double as a treatment facility for the removal of pollutant loads expected to be contributed from this area, which includes two Brownfields sites, the former "Romic Environmental" located at 2020 Bay Road, as well as US EPA Superfund site "Rhone-Poulenc" site, located at 1990 Bay Road, with buildings currently signed as "Catalytica."

Status: conceptual.

3 San Mateo Stormwater Resource Plan, page 76.

4 USEPA Region 9, Statement of Basis, Statement of Basis for Proposed Soil and Ground Water Remedy 2007

5 USEPA, Superfund Record of Decision, Rhone-Pulenc/Coecon, CA ROD0992080, c.1992

6 Herbicide Company "Genealogy," Oregon State University, Appleby, Prof. Emeritus, 2018

7 <https://epacenterarts.org/about/place/newbuilding/>

3.0 East Palo Alto Green Infrastructure Implementation Goals⁴

This chapter provides an overview of the purpose of the San Mateo Countywide Program GI Reasonable Assurance Analysis (RAA) and a summary of the RAA results for East Palo Alto to serve as stormwater improvement goals that set the stage for an adaptive management approach.

a. Overview

The MRP requires the development of GI Plans (Provision C.3) and Polychlorinated Biphenyls (PCBs) and Mercury Control Measure Implementation Plans (Provisions C.11 and C.12) that provide the necessary pollutant load reductions to meet Total Maximum Daily Load (TMDL) wasteload allocations, or the maximum load, or amount, of pollutants each discharger of waste is allowed to release into a particular waterway⁵, over specified compliance periods. A key component of these plans is an RAA⁶ that quantitatively demonstrates that proposed control measures will result in sufficient load reductions to meet wasteload allocations for municipal stormwater discharges to the San Francisco Bay.

The City/County Association of Governments (C/CAG) of San Mateo County, via its Countywide Program, led a county-wide effort to develop a RAA to determine load reductions to meet wasteload allocations among San Mateo County permittees, and set goals for the amount of green infrastructure each permittee needs to achieve for their portion of the countywide load reductions the MRP assigns to green infrastructure. The City's GI Plan must therefore reasonably be expected to achieve the stormwater improvement goals outlined in the countywide RAA. It is the goal of this plan that through public and private partnerships, the City will contribute to wasteload reductions beyond targets identified in the RAA.

b. Preliminary Identification of Opportunities for Green Infrastructure Projects

To support the RAA and GI Plans, C/CAG undertook a number of planning efforts to identify opportunities for green infrastructure implementation. The following is a summary of those efforts.

Green Infrastructure for New Development and Redevelopment

The MRP includes Provision C.3 for the integration of green infrastructure within new development and redevelopment. LID and green infrastructure are implemented throughout the City as new development and redevelopment occurs. The reduced volumes of urban runoff and associated pollutant loads can be considered as part of the load reductions attributed to implementation of green infrastructure. C/CAG worked with San Mateo County permittees to compile information on green infrastructure and LID practices that have been implemented within new development and redevelopment since 2003, the baseline year for calculation of wasteload allocations.

In support of the RAA to model pollutant load reductions, an estimate of the land area and location of new and redevelopment within San Mateo County required to achieve new development and redevelopment (C.3

⁴ Portions of this chapter use template materials from the *Reasonable Assurance Analysis and Green Infrastructure Implementation Goals* by Paradigm, 2019. Refer to Appendix B to review this document in its entirety.

⁵ Glossary, Federal Remediation Technology Roundtable. <https://definedterm.com/a/document/10661>.

⁶ The San Mateo RAA is comprised of two documents:

1. *Phase I Baseline Modeling Report* – Provides documentation of the development, calibration, and validation of the baseline hydrology and water quality model, and the determination of PCBs and mercury load reductions to be addressed through green infrastructure implementation.
2. *Phase II Green Infrastructure Modeling Report* – Provides documentation of the application of models to determine the most cost-effective green infrastructure implementation for each municipality, setting stormwater improvement goals for the GI Plan.

regulated) green infrastructure stormwater management improvements by 2040 was developed. The overall estimate was then translated into estimates for 2015 to 2020, 2020 to 2030, and 2030 to 2040.

These estimates were made by first estimating the land area that can be expected to develop between 2015 and 2040. A range of information was used to make these estimates including the available land area and the demographic files for new households and jobs that were developed and used for the San Mateo Countywide Transportation Plan. The Countywide Program's consultants used a four-step process to estimate future new and redevelopment. The first step identified available land and the land's capacity for new mixed use, residential, and non-residential development, based on assessor's data, member agency policies, and other factors. The second step converted countywide population and employment growth projections into demand for single-family and multi-family homes, and square feet of various non-residential uses. Step three allocated the projected demand to the available land supply. Step four adjusted available land area and expected intensity of development to get a "fit" between supply and demand where the initial allocation process did not indicate enough land for projected development. This information was documented for each jurisdiction, including East Palo Alto, and jurisdictions were given the opportunity to comment on the initial estimates and a revised set of estimates.

These assessments found that East Palo Alto is projected to experience growth in the land uses that typically generate green infrastructure per the requirements of the MRP, such as single-family subdivisions, multi-family, mixed use, or commercial development the identified timeframes, which has, in the last year, shown to be in alignment or surpassing that projected countywide and in most other jurisdictions. This is due to East Palo Alto's situation of having predilection for encouraging low income housing, and pent up development demand for many areas of development. However, with the recent COVID-19 pandemic the future does remain uncertain with regards to development potential yielding full redevelopment that is anticipated.

Some land uses, such as schools, are not accounted for in the countywide land development projections as they do not align with either residential or a quantifiable employment use. Many school sites are present in East Palo Alto, and these uses present other opportunities to provide green infrastructure that can count towards East Palo Alto's load reduction requirements.

Countywide Stormwater Resource Plan (SRP)

The SRP (further discussed in Section 2) is a comprehensive plan that identifies and prioritizes thousands of green infrastructure project opportunities throughout San Mateo County and within each municipal jurisdiction. Prioritized project opportunities include:

- Large regional projects within publicly owned parcels (e.g., parks) that infiltrate or treat stormwater runoff generated from surrounding areas (e.g., diversion from neighborhood storm drain system; diversions from creeks draining large urban areas);
- Retrofit of publicly owned parcels with green infrastructure that provide demonstration of onsite green infrastructure and LID designs; and,
- Retrofit of public street rights of way with green infrastructure, referred to as green streets.

The SRP includes a multi-benefit scoring and prioritization process that ranks green infrastructure project opportunities based on multiple factors beyond pollutant load reduction (e.g., proximity to flood prone channels, potential groundwater basin recharge).

The above efforts and resulting technical products provide preliminary identification of opportunities for green infrastructure projects. These green infrastructure project opportunities, along with the estimate of new and redevelopment green infrastructure discussed above, serve as the foundation for the RAA and East Palo Alto's GI Plan as strategies are developed for implementation plans to meet the PCBs and mercury load reduction goals per the TMDL.

Description of the San Mateo Countywide RAA Model

Through the RAA, C/CAG performed a comprehensive, countywide modeling effort to provide:

- Simulation of baseline loads of PCBs and mercury for each of the County’s watersheds and municipal jurisdictions discharging to San Francisco Bay;
- Estimation of necessary load reduction goals to meet requirements of the MRP and TMDL wasteload allocations; and,
- Determination of the amount of green infrastructure needed to address load reduction goals based on project opportunities.

The RAA also provides analysis of alternative implementation scenarios through cost-benefit optimization that can inform cost-effective green infrastructure implementation within each municipal jurisdiction, including East Palo Alto. These results set goals for GI Plans developed by each Permittee.

The primary goal of the RAA is to quantitatively demonstrate that GI Plans and Control Measure Implementation Plans will result in load reductions of PCBs and mercury sufficient to attain TMDL wasteload allocations and the component stormwater improvement goals to be achieved with green infrastructure.

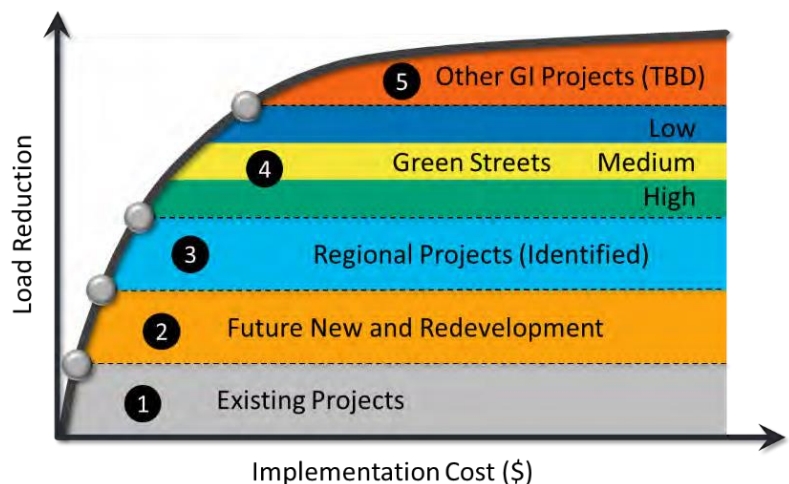
Based on the baseline hydrology and water quality model, the RAA determined that a 17.6% reduction in PCBs loads is needed, countywide, to meet the green infrastructure implementation goals established by the MRP. Zero reduction in mercury loads was determined to be needed from MRP areas because baseline loads were predicted to be below the TMDL wasteload allocations for San Mateo County.

The analytical framework selected to support the San Mateo Countywide RAA is based on a linked system of models. These models provide a characterization of existing conditions and determination of necessary pollutant load reductions to meet requirements of TMDLs and the MRP as well as provide analysis of the amount of green infrastructure needed to provide the portion of the load reduction assigned to green infrastructure by the MRP. Implemented together, the models have the capacity to support efforts to identify cost-effective green infrastructure implementation scenarios that align with municipal goals.

c. Model Considerations to Inform GI Plans

An important consideration for the RAA was the ability to track costs and benefits of different categories of green infrastructure projects within the model. This tracking supports the selection of the most cost-effective implementation strategy to attain pollutant reduction goals, see Figure 3-1. The RAA builds upon the previous planning efforts and represents the following generalized green infrastructure project categories in the model:

1. **Existing Projects:** Stormwater treatment and green infrastructure projects that have been implemented since FY- 2004/05. This primarily consists of all of the regulated projects that were mandated to treat runoff via Provision C.3 of the MRP, but also includes any public green street or other demonstration projects that were not subject to Provision C.3 requirements.



*Figure 3-1. Example Implementation Recipe
Showing General Sequencing of Green
Infrastructure Projects.*

2. **Future New and Redevelopment:**

All the regulated projects that will be subject to Provision C.3 requirements to treat runoff via green infrastructure and LID and is based on projections of future new and redevelopment, see earlier discussion for more detail.

3. **Regional Projects (identified): The City is continuing to assess for regional projects.** One opportunity is discussed in the Sobrato Phase II project previously referenced, with a possible regional detention facility on Caltrans property to jointly treat Caltrans right of way and adjacent roadway equivalent to the Sobrato Phase II frontage.

Other potential regional projects are likely needed for the Ravenswood Specific Plan Area to treat public roadways and potentially provide public amenities such as expanded parkways and trails. These are currently conceptual and are being vetted by the City and developers.

4. **Green Streets:** The Stormwater Resource Plan (SRP) identified and prioritized opportunities throughout San Mateo County for retrofitting existing streets with green infrastructure in public rights-of-way. Green streets were ranked as high, medium, and low priority (within each subwatershed) based on a multiple-benefit prioritization process developed for the SRP. These opportunities were carried forward into the RAA analysis. As shown in Figure 3-1, green street implementation is less cost effective at treating stormwater than development and regional projects.

C/CAG worked with agencies to identify five projects within public parks, Caltrans property, and other entities willing to partner with permittees, including the Addison Avenue Fields project that is being pursued by the City of East Palo Alto, to provide regional capture and infiltration/treatment of stormwater, and included conceptual designs to support further planning and designs. Note – the model can be updated to include future identified projects to support adaptive management.

5. **Other GI Projects (to be determined):** Other types of green infrastructure projects on publicly owned parcels, representing a combination of either additional parcel-based GI or other Regional Projects which have not been identified to date. This may also include additional green infrastructure projects developed in relation to private development that is not required by C.3 requirements to implement green infrastructure, but that may be required to implement green infrastructure through local regulation.

The RAA considers the potential combinations of green infrastructure project opportunities that exist within each municipal jurisdiction and selects a suite or “recipe” of projects that can most cost-effectively address pollutant load reductions. The amount and combination of those green infrastructure projects can be determined through analysis of estimated load reductions and implementation costs. Cost-benefit optimization of green infrastructure project opportunities was included to build upon the preliminary C/CAG SRP planning efforts above, and to inform and set meaningful goals for GI Plans. The model provides an estimate of the resulting pollutant load reduction and implementation costs.

d. East Palo Alto Green Infrastructure Implementation Goals

The RAA considered multiple alternative scenarios that can inform implementation and the adaptive management process. Four modeling scenarios were configured for this analysis and are summarized in Table 3-1:

Load Reduction Objective	Percent of Total GI Cost to Achieve Reduction Objective		Total Savings (Jurisdictional vs. Countywide)
	Jurisdictional	Countywide	
Cohesive Sediment 17.6% Reduction	Scenario 1	Scenario 2	→ Savings
Total PCBs 17.6% Reduction	Scenario 3	Scenario 4	→ Savings
Total Savings (Sediment vs. PCBs)	↓ Savings	↓ Savings	↘ Overall Savings

Table 3-1. Model scenarios objectives and cost-benefit evaluation.

The following factors are considered for each model scenario:

Load Reduction Objective - With a cohesive sediment load reduction objective, Scenarios 1 and 2 represent the most conservative approaches. These assume that given the uncertainties about PCBs source areas, targeting an overall 17.6% load reduction of cohesive sediment in general (silts and clays) achieves the PCBs load reduction objective for GI. Scenarios 3 and 4 assume that PCBs sources are spatially distributed based on analysis of land use types. The cost-benefit optimization process targets those areas as having the highest likelihood of PCBs sources. Scenarios 3 and 4 highlight the potential cost savings (relative to Scenarios 1 and 2) that could be realized if PCBs sources are identified and targeted for green infrastructure implementation.

Jurisdictional verses Countywide - There are many possible ways to achieve a 17.6% load reduction for all of San Mateo County. The “Jurisdictional” approach, Scenario 1, outlines an approach where each jurisdiction is responsible to individually achieve at least a 17.6% load reduction based on the population-based wasteload reduction for each jurisdiction. Conversely, the “Countywide” approach, Scenario 2, achieves the 17.6% load reduction countywide by allowing the model to allocate the countywide wasteload reduction via green infrastructure across jurisdictional boundaries.

Based on the San Mateo Countywide RAA, for East Palo Alto to achieve the 17.6% load reduction under the Jurisdictional approach (Scenario 1), approximately 4.5 – 6.5 acre-feet of treatment capacity would be required by 2040 depending upon which treatment measures are used. Under the Countywide approach (Scenario 2), approximately 2.5 acre-feet of treatment capacity would be required by 2040.

The Scenario 2 approach requires each municipality to agree to reduce overall PCBs within the county with the goal of creating a more cost-effective and efficient scenario by focusing on implementing green infrastructure in municipalities with higher yields of PCBs and soil conditions that are more amenable for infiltration. In general, the countywide approach can provide significant cost savings over the jurisdictional approach, based on the RAA modeling. Some agencies will have more green infrastructure opportunities, higher presence of PCBs, or better infiltrating soils and be able to do more, and some agencies will have fewer or more costly green infrastructure opportunities. A countywide approach also provides the opportunity to fund regional project opportunities, the costs of which could be shared by multiple jurisdictions. It may also provide a vehicle for credit trading between agencies. Refer to the *Green Infrastructure Funding Nexus Evaluation*⁷ for more information about the concept of credit trading.

Following are different conceptual scenarios developed for East Palo Alto illustrate a range of possibilities in terms of jurisdictional (Scenario 1) or countywide (Scenario 2) approaches and projects for East Palo Alto

achieve their pollutant reduction goal. The results of the RAA scenarios can inform the City's adaptive management process for green infrastructure implementation and help garner support for collaborative efforts for green infrastructure implementation or further research of PCBs source areas that could be more cost-effective implementation strategies over time.

Scenario 1: East Palo Alto, Jurisdictional⁸

Two sub-scenarios were developed as alternative implementation "recipes" of green infrastructure projects that could achieve the 17.6% reduction of modeled PCBs for the City. The first sub-scenario, 1.a, assumes the Addison Avenue Green Infrastructure Project is implemented, 1.b, illustrates a mix of green infrastructure implementation in the public right of way. It is likely both scenarios will transpire to some extent by 2030.

⁷ SCI Consulting Group and Larry Walker Associates, January 2019.

⁸ Refer to Appendix C for more detailed implementation measures and strategies tables and charts that the Countywide RAA model identified for East Palo Alto.

Scenario 1a: East Palo Alto, Jurisdictional

Table 3-2 includes the combination of green infrastructure projects that the Countywide RAA model identifies as the most cost-effective implementation scenario for the City. The model indicates that the capacity provided by existing projects and future C.3 regulated new development and redevelopment projects, combined with the green infrastructure stormwater capture projects will exceed the minimum pollutant reduction goal for the City of East Palo Alto.

In addition, the modeling does not account for green infrastructure projects at public schools located within East Palo Alto or the City’s anticipated policy of requiring projects of a certain size to implement green infrastructure to C.3 standards, as attainable. The inclusion of these additional green infrastructure projects into East Palo Alto’s green infrastructure constructed projects accounting will further increase the amount of green infrastructure within East Palo Alto and further exceed their pollutant load reduction goals. The City will continue to identify, calculate, and track these different projects as part of their adaptive management process to determine what projects are needed to achieve their reduction goals.

Implementation Metrics		Implementation Milestones: East Palo Alto					
		Incremental		Cumulative		Final 2040	
		2020-2030	2030-2040	2020	2030	Jurisdictional	Countywide
Index	% Load Reduction	4.7%	9.9%	9.2%	13.9%	23.7%	23.7%
	Volume Managed (acre-ft/yr)	20.5	43.3	42.0	62.5	105.8	105.8
	Treated Impervious (acres)	0.7	75.2	34.9	110.7	110.7	110.7
Capacities (acre-ft)	Existing Projects	1.5	1.5	1.5	1.5	1.5	1.5
	Future New & Redevelopment	0.1	3.0	2.0	2.0	5.0	5.0
	Regional Projects (Identified)	--	--	--	--	--	--
	Green Streets (High)	1.4	0.2	--	1.4	1.6	1.6
	Green Streets (Medium)	--	2.0	--	--	2.0	2.0
	Green Streets (Low)	--	--	--	--	--	--
	Other GI Projects (TBD)	--	--	--	--	--	--
	Total	1.5	5.1	3.4	4.9	10.0	10.0

Table 3-2. Scenario 2, Countywide, green infrastructure implementation milestones for East Palo Alto. (Note: numbers have been rounded and may not add to the total).

If regional projects are not implemented, the Countywide RAA model indicates that, in addition to existing projects and future C.3 Regulated Projects associated with new development and redevelopment projects, the most cost-effective implementation strategy plan for the City is suggested to implement predominately green street projects with some other green infrastructure projects that have yet to be identified to meet the City’s treatment goals.

Scenario 2: Countywide Approach

Table 3-4 illustrates a combination of green infrastructure projects if San Mateo County permittees worked together to achieve the targeted reduction under a Countywide approach (Scenario 2). This scenario accounts for the implementation of the five regional projects currently included with the RAA across San Mateo County.

The model suggests that the City of East Palo Alto would be able to achieve its Countywide allocation of the pollutant reduction target through a combination of existing green infrastructure projects, future C.3 new and redevelopment projects, high and medium priority green streets, and regional projects identified throughout the County in other jurisdictions. The City will need to come up with 3.6 acre-ft of treatment from green streets

Table 3-4. Implementation Milestones: East Palo Alto

Implementation Metrics		Implementation Milestones: East Palo Alto					
		Incremental		Cumulative		Final 2040	
		2020-2030	2030-2040	2020	2030	Jurisdictional	Countywide
Index	% Load Reduction	4.7%	9.9%	9.2%	13.9%	23.7%	23.7%
	Volume Managed (acre-ft/yr)	20.5	43.3	42.0	62.5	105.8	105.8
	Treated Impervious (acres)	0.7	75.2	34.9	35.6	110.7	110.7
Capacities (acre-ft)	Existing Projects	0.0	0.0	1.5	1.5	1.5	1.5
	Future New & Redevelopment	0.1	3.0	2.0	2.0	5.0	5.0
	Regional Projects (Identified)	tbd	tbd	tbd	tbd	tbd	tbd
	Green Streets (High)	1.4	0.2	--	1.4	1.6	1.6
	Green Streets (Medium)	--	2.0	--	--	2.0	2.0
	Green Streets (Low)	--	--	--	--	--	--
	Other GI Projects (TBD)	--	--	--	--	--	--
	Total	1.5	5.1	3.4	4.9	10.0	10.0

Table 3-3. Scenario 2, Countywide, green infrastructure implementation milestones for East Palo Alto.

Implementation Milestones for Impervious Area Treated

These tables represent East Palo Alto’s range of available implementation strategies and goals for projected impervious areas treated, percent pollutant load reduction, and the volume of stormwater runoff managed as modeled for the countywide RAA for both the jurisdictional and countywide scenarios. The City will continue to identify, calculate, and track projects as part of its adaptive management process to determine what projects to implement in order to achieve the reduction goals.

e. Adaptive Management and Managed Metrics

It is likely that the actual implementation of green infrastructure projects will not follow the City prioritization and RAA output exactly; however, the Implementation Milestones tables, or “recipes” provide “management metrics” to guide the adaptive management process. Dimensions, capacity, and location of green infrastructure projects will vary based on on-the-ground feasibility and site-specific constraints.

The management metrics used for managing and tracking the implementation of green infrastructure includes the performance metrics for “% Load Reduction PCBs (Annual),” “Annual Volume Managed (acre-ft),” and “Impervious Area Treated (acres).” “Impervious Area Treated (acres)” is a metric suggested by the MRP for implementation tracking. The “% Load Reduction PCBs (Annual)” and “Annual Volume Managed (acre-ft)” are additional metrics based on annualized results represented in the RAA modeling system that are directly comparable to TMDL wasteload allocations. The “% Load Reduction PCBs (Annual)” provides a relative comparison of the load reduction to be achieved within each subwatershed. The “Annual Volume Managed (acre-ft)” shows the acre-feet of water captured and infiltrated and/or treated within each subwatershed. As a result of adaptive management, the implementation plan strategy may change over time and alternative green infrastructure projects can be substituted without having to re-run the RAA model, as long as the “Management Metrics for GI,” representing the goals for the GI Plan, remain on track. While the various implementation strategies illustrate different ways that East Palo Alto can implement green infrastructure, all scenarios meet the pollutant reduction goals of the MRP.

As part of the adaptive management process, East Palo Alto will continue to look for opportunities to fund and implement green infrastructure projects to meet the final load reduction goals for 2040. The process will include the tracking of management metrics and continued re-evaluation of green infrastructure project opportunities considered for the RAA, including those identified and discussed in Chapter 2. For instance, the RAA assumed projected amounts of green infrastructure and LID associated with new and redevelopment projects, which are expansive in East Palo Alto and which are subject to change based on factors that are outside the control of the City, such as levels of development and changing requirements of the MRP as it is updated. If less development occurs over time, more green streets or regional projects on public land may be needed to provide equivalent volume management. Alternatively, the City may receive full credit for the provision of the Addison Avenue regional water capture project or the permittees in the county may be successful in negotiating a countywide approach for meeting the pollutant load reduction targets. For the RAA and GI Plan, a preliminary schedule was developed to chart a potential course for green infrastructure implementation and considered the various project opportunities.

Given the relatively small scale of most green infrastructure projects, outside of the regional projects (e.g., LID on an individual parcel or green infrastructure in a single street block converted to green street), numerous individual green infrastructure projects will be needed to address the pollutant reduction goals. All the green infrastructure projects will require site investigations to assess feasibility and costs. As a result, the RAA provides a preliminary investigation of the amount of green infrastructure needed to achieve the countywide pollutant load reduction target. The RAA sets the GI Plan goals in terms of the amount of green infrastructure implementation over time to address pollutant load reductions. As GI Plans are implemented and more comprehensive municipal engineering analyses (e.g., masterplans, capital improvement plans) are performed, the adaptive management process will be key to ensuring that goals are met. In summary, the RAA informs green infrastructure implementation goals, but the pathway to meeting those goals is subject to adaptive management and can potentially change based on new information or engineering analyses performed over time.

The following provides a priority list of actions for the City to undertake for implementing the GI Plan:

1. Continue to identify and move forward with regional project opportunities.
2. Continue to evaluate and participate in on-going jurisdictional discussions about a countywide approach.
3. Implement “short list” priority green infrastructure projects identified in Chapter 2 and continue to look for other opportunities to implement green infrastructure in public and private projects without “missed opportunities.”
4. Continue to monitor and pursue funding opportunities for green streets, other public, and joint public and private green infrastructure implementation through various grants available to communities with disadvantaged community status.
5. Track green infrastructure projects management metrics and implement adaptive management strategies to ensure the City’s pollutant reduction goals are met.
6. Continue discussions and potential implementation of new City policies and standards to increase the amount of green infrastructure developed through private new and redevelopment and building upon City stormwater greening mechanisms such as maintaining its urban forest and tree canopy.
7. Assess and make modifications to the GI Plan and other City documents and procedures to reflect lessons learned and integrate SMCWPPP GI design guidelines.
8. Continue working on the Urban Forest Management Plan development to integrate human health and ecology into the framework for stormwater management and green infrastructure, amending this GI Plan as appropriate.

4.0 Green Infrastructure Project Tracking and Mapping

a. *Countywide Program Tracking and Mapping Tool*

Municipal Regional Stormwater Permit (Order No. R2-2015-0049) Provision C.3.j requires stormwater Permittees to “include means and methods to track the area within each Permittee’s jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area” into their GI Plans and develop a “process for tracking and mapping completed projects, public and private, and making the information publicly available.” C/CAG has taken the lead to develop a Countywide tracking and mapping resource to address the requirements of Provision C.3.j by leveraging and building upon analyses carried out during the development of the Countywide Stormwater Resource Plan (SRP) and GI Reasonable Analysis Assurance (RAA). C/CAG was recently awarded a Caltrans grant for the development of a San Mateo Countywide Sustainable Streets Master Plan that included \$250,000 in funding for development of a Web-based Sustainable Street and Green Infrastructure Project Implementation Mapping and Tracking Tool (Tracking Tool).

The Tracking Tool will allow C/CAG member agencies to easily enter, track, and update potential, planned, and implemented projects and compare green infrastructure planning efforts to relevant goals through an intuitive and user-friendly “dashboard.” C/CAG member agencies including the City of East Palo Alto will be asked to input planned and implemented green infrastructure project locations and associated treatment areas to the Tracking Tool database. Project locations will be shown on a dynamic map with key base layers including watershed boundaries, waterbodies, city boundaries, and storm drain networks. Users will be able to click on any project or search the green infrastructure project database by keyword to view additional available information such as facility type, sizing, and status. The Tracking Tool will use extensive Countywide stormwater, green infrastructure, and climate change modeling resources to establish water quality and climate change benefits. Water quality performance metrics are expected to address requirements outlined in MRP Provision C.3.j and include an estimate of total area and impervious area treated with green infrastructure as well as stormwater volumes managed during the annual average year. Climate change performance metrics to be included in the Tracking Tool are anticipated to include carbon sequestration, public health benefits, heat island reduction, and water supply augmentation to support climate change adaptation and mitigation efforts.

C/CAG member agency staff responsible for green infrastructure planning and implementation will be able to create various iterations of the Tracking Tool targeted toward the end user to support discussions with public officials, potential funding partners, and public outreach efforts. The Tracking Tool is anticipated to be completed by June 30, 2020.

b. *City Project Tracking Process*

Tracking Tools and Procedures

East Palo Alto uses a variety of tools to track the planning and implementation of pervious area, stormwater detention, green infrastructure, and C.3 regulated projects. These tools include:

- **Project plan review** – New and remodel/redevelopment projects are required to address a range of City required regulations as well as submit for a variety of permits, etc. for review and approval by a range of City multidisciplinary staff. This includes if provision of roadside impervious area is triggered, if on-site detention needed is required, if C.3 is triggered, etc.
- **Project approvals** – Once project submittals contain all of the necessary information and requirements and are found to be in compliance with regulations, conditions of approval and other requirements may be placed on the project along with the project approvals.

- **Construction observations, inspections and enforcement actions** – East Palo Alto performs construction activity, post construction, and operation and maintenance observations and inspections to ensure green infrastructure, low impact development, and other project elements are installed and maintenance as required and requires corrective actions when a project is found defective.
- **Coordination with private and public schools** – East Palo Alto is in the process of developing a good relationship with the private schools in the City and discuss anticipated upcoming planned projects and related C.3 requirements, etc. One private school project is in the construction stage, with GI integration. The City will continue to monitor and coordinate with the schools to track the projects.
- **Regional Project Coordination** – The City will continue to work with various partner entities in the planning, design, and construction of regional projects.
- **Prioritized Green Infrastructure Project Opportunities Maps and Lists** – East Palo Alto will continue to monitor and search for green infrastructure opportunities within the City, including the ability to partner with other public and private projects to provide or expand green infrastructure as a condition of approval for most projects with the exception of single family homes.
- **Internal accounting** – City staff tracks individual permits and agreements (limited number) and maintains an internal accounting of site design measures, stormwater detention, green infrastructure provision including Regulated Projects, and provides such information within their stormwater Annual Report. The City will use the Countywide tracking system once it is operational.
- **Operations and maintenance** – The City has developed checklists and schedules for the operations and maintenance of green infrastructure projects, as well as determined which City departments and staff are responsible for inspection of regulated and private green infrastructure projects and the operations and maintenance of City owned projects.

The City anticipates having all private projects accept responsibility for the operation and maintenance of the GI treatment facilities installed on their frontage in public right of way in conjunction with the onsite stormwater treatment (LID) systems, with support by providing maintenance checklists and schedules. In the event of exceptions to the private party assuming responsibility for GI systems, City staff or their authorized contractor will be responsible for operations and maintenance inspections. The City will develop internal O&M Schedules for these facilities.

The City will continue its internal green infrastructure project tracking process and add the operation and maintenance tracking of new projects once completed.

The City will upload completed green infrastructure project information into the Countywide Program's Tracking Tool to monitor the provision of regional projects and green infrastructure projects and their resulting acre-feet volume water managed and impervious area treated to assess if the City and the county is on track to meet its 2030 and 2040 load reduction goals.

As discussed in Chapter 3, Adaptive Management, East Palo Alto will integrate adaptive management strategies into their routine practices to track planned and potential green infrastructure opportunity projects through all phases of implementation and their timeline. The City still needs to fully assess concepts and determine potential need for additional new City or other public and private green infrastructure provision projects including the amount, potential locations, and funding needs, etc.. The City will make modifications to the plan to take advantage of lessons learned and following if a countywide approach scenario to providing green infrastructure is implemented over individual jurisdiction provision of green infrastructure.

c. Public Access to Information

The public will have access to this GI Plan via the City’s Stormwater web page (<https://www.ci.East Palo Alto.ca.us/141/Environmental-Programs-Committee>). Resources developed by the Countywide Program on behalf of the City and other C/CAG member agencies that have informed the development of this GI Plan are often posted to the Countywide Program’s website. The San Mateo Countywide Stormwater Resource Plan that was approved by the C/CAG Board of Directors on February 9, 2017 and identified potential green infrastructure locations can be found on the Countywide Program’s “Flows to Bay” website (flowstobay.org). The Countywide RAA will be available on the same website for public access and review once final documents have been produced.

The Tracking Tool is expected to serve as a user-friendly, intuitive, and dynamic mechanism for the public to interact with the green infrastructure planning process. The public will have the opportunity to use a web-mapping interface to locate potential, planned, and implemented green infrastructure projects.

5.0 Green Infrastructure Integration with Other Planning Documents and Legal Mechanisms

a. Approach

As required under C.3.j.i.2.h of the MRP's requisites for Green Infrastructure Plans, the City of East Palo Alto evaluated their existing planning, engineering, and other plans, policies, ordinances, resolutions, and similar documents to determine which should be further reviewed and updated or modified to incorporate green infrastructure requirements, reference the City's Green Infrastructure Plan, and other changes to support the implementation of green infrastructure in East Palo Alto. A range of documents were assessed including those related to land use, urban forestry, transportation, infrastructure, health and safety, flooding and drainage, development regulations, and standard details and specifications.

b. Modifications to Existing Documents

The following table, Table 5-1, lists City documents that were collected and evaluated, identifies the documents that were determined to need modification in regard to the implementation of green infrastructure, and the expected timing for revision and adoption of the planning document modifications. Documents determined to be technical in nature or not relevant to green infrastructure policy and implementation have been designated as Not Appropriate (N/A) for modification.

Selected City documents have been reviewed and updated or modified to incorporate or expand upon references to and add definitions, policies, opportunities, requirements, descriptions, and other discussions related to the East Palo Alto's Green Infrastructure Plan, as well as water quality, green infrastructure, low impact development, community character, and other related benefits and issues connected to the mandates of the GI Plan.

Documents noted in Table 5-1 to be modified and adopted prior to or concurrently with the Green Infrastructure Plan have been reviewed by staff from various City departments, commissions, and elected officials, and their comments considered and integrated. Updated documents can be found on the City's website.

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Table 5-1. Identification, Evaluation, and Modification of City Planning Documents

Document	Incorporates GI Requirements	Expected Update Schedule
Bay Access Master Plan (2007)	No	Consideration for GI incorporated in MTC Dumbarton Rail and Sea Level Rise Plan for the Dumbarton Corridor area, including the northern portion of the City, including the Bay Trail.
Bicycle Technical Guidelines (2012)	No	Incorporating Bicycle Technical Guidelines into SMC Sustainable Streets Plan for adoption, 2021.
Bicycle Transportation Plan (2011)	No	Updated document due to be finalized in 2020; attempt to include GI prior to finalization.
Climate Action Plan, (2011)	No	CAP expires December 2020; future update shall incorporate the GI Plan and Urban Forest Management Plan.
Developing an ADA Transition Plan (2016)	No	N/A; design standards are in alignment with the Sustainable Streets Plan and will consider incorporation at the time of adoption.
Encroachment Permit Application	No	Potentially significant encroachments which modify the existing frontage extensively, could be required to implement GI during project application and pre-planning stage, with subsequent plan review and permitting.
General Plan, Draft Update, Vista 2035	Yes	While green infrastructure concepts and requirements are discussed for multifamily dwellings and subdivisions, updates will be required for other campuses and mixed-use developments. Amendments to the General Plan are expected in 2021.
Grading and Drainage Checklist, 2018	No	Amendment and adoption in Spring 2021.
Hazard Mitigation Plan (2015)	No	Through SMC workgroup, consider GI in revisions, 2022.
Housing Element, 2020	No	Potentially incorporating this update expected Fall 2020.
Municipal Code	Yes	Generally covered; Amendment and adoption 2021 for specific language and guidance references.
Planning Permit Application	No	Incorporate GI for frontages prior to June 30, 2021.
Ravenswood/ 4 Corners Transit Oriented Development Specific Plan (2012)	Yes	Generally covered; unlikely to update specific plan in the near future. If City Council directs update, will incorporate.
Storm drain Master Plan	No	Requires comprehensive revisions; according to City CIP. Could incorporate GI into plan for future stormdrain projects.

c. Policies, Regulations, and Other Implementation Mechanisms

As an outcome of the review of existing policy documents, development standards, etc.; and the identification of green infrastructure opportunities throughout the City, it was determined that several new regulations should be prepared for adoption, which are addressed below. In addition, it was determined that the City could pursue an additional method for achieving its stormwater treatment goals which is not currently credited through the MRP such as heritage trees and interceptor trees.

New single-family development regulations

Given the limited footprint of public rights of way and public land in East Palo Alto, as well as limited local funding available for design, construction, and maintenance for green infrastructure, the City intends to require private property developments to install additional green infrastructure beyond MRP Provision C.3 requirements.

Development regulations have been prepared to require certain development projects that are not regulated by the current MRP to provide green infrastructure improvements which are aimed to mimic nature and meet the treatment levels that will result in decreased stormwater discharge to the public right of way.

These requirements will be placed into the City of East Palo Alto's municipal code, in coming months and track the change in impervious surfaces through our database:

- Replacement of driveways and sidewalks shall be made of pervious materials where feasible.
- Inclusion of shade trees when new landscaping is proposed in conjunction with a new or redevelopment project that exceeds 50% of the property value.

Preservation and Enhancement of East Palo Alto's Urban Forest

Trees perform a variety of functions including reducing runoff volumes and improving water quality. East Palo Alto's extensive urban forest aids in reducing stormwater runoff and flooding by capturing rainfall in leaves and bark and allowing for evapotranspiration. In addition, the soil around trees often allow for more infiltration of stormwater and can treat pollutants while tree roots take up infiltrated water and pollutants.

Certain existing trees that are preserved or new trees that are planted as part of a C.3 regulated project, called "interceptor trees", can earn stormwater treatment credits. Interceptor trees are a true landscaped-based green infrastructure measure and do not "mimic" the natural hydrologic cycle that green stormwater measures strive to replicate. For each qualifying tree that is planted or preserved, and meets the minimum requirements of Section 4.1.1 of the C.3 Regulated Projects Guide, a project earns stormwater treatment credits which reduces the surface area of the project that

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must receive stormwater treatment. In other words, the stormwater treatment credit can be subtracted from the amount of impervious surface area requiring treatment.

East Palo Alto is a community that is well known for its heavily forested streets and residential lots and rural character. The City is interested in becoming a Tree City USA community and cherishes and celebrates its community trees. The City and its residents feel strongly about enhancing, protecting, and maintaining the health of its trees. In some locations, the City's urban forest can be expanded through the planting of trees on public and private property and within public rights of way. To better protect, preserve, and expand its urban forest of heritage and other trees and the community character of East Palo Alto, the City is reviewing its City-wide tree protection ordinance that restricts activities near or to tree roots, trunks, and limbs and has penalties for removal of trees.

Amended heritage tree protection ordinance

The City's heritage tree protection ordinance and related application forms are currently (2020) being updated to further enhance and maintain the health of East Palo Alto's urban forest; maintain and increase the City's benefits associated with trees such as climate adaptation, air and water treatment, and enhanced community character; and the City's wishes to expand its tree protection ordinance.

Interceptor tree definition and stormwater credit refinement

East Palo Alto believes that the Countywide Program's existing guidance for interceptor trees in the C.3 Regulated Projects Guide needs to be re-evaluated and refined to redefine interceptor trees to allow greater flexibility in determining which trees are considered interceptor trees. As one of the primary goals of green infrastructure is to mimic natural processes and mitigate the loss of tree canopies and natural vegetation, maintenance and expansion of the urban forest should be credited towards a Permittee's reduction of TMDLs, as trees reduce the impact of development projects on the natural environment, retaining the capacity of evapotranspiration and infiltration. Issues and metrics for consideration can include:

- The C.3 Technical Guidance Manual (version 5) requires an interceptor tree to be planted within 25 feet of a ground-level impervious surface.
 - Expand qualifying impervious surface areas to include above ground level (e.g., roofs) elements in addition to ground level elements if it can be shown that mature tree height will cover the raised impervious surface. Regardless of the impervious surface's elevation, tree canopies can prevent or limit the volume of runoff requiring treatment.
 - Allow for a greater horizontal distance between a designated preserved tree or new tree and project designated impervious surface to be used. This would account for mature tree roots, larger tree sizes and canopies, and conditions where impervious and pervious areas may drain to other impervious areas such driveways or a parking draining to a street.
 - Recognize that interceptor trees are a true landscaped-based green infrastructure measure and do not "mimic" the natural hydrologic cycle that green stormwater measures strive to replicate.
 - Be accepted as a stormwater management and treatment measure as they encourage soil infiltration and take up water and pollutants, treating and improving water quality and reducing erosion and flooding.
 - Expand credit for existing mature trees being retained.
 - Expand the allowable canopy area to acquire stormwater tree credits for existing trees to be the mature canopy size of each tree.
 - Expand credit for preservation or planting of trees within the same watershed as forested cover aids in capturing and reducing runoff and providing treatment at an overall community and regional scale and reduces the burden on public infrastructure and public area impacts.
-

- Expand credit to include evapotranspiration, pollutant removal and volume reduction, and not only canopy interception related to impervious area reduction.

There are examples of other municipalities across the country that have implemented a variety of stormwater credits, fee incentives, and other techniques for existing or newly planted trees to be considered as a stormwater management tool. Some of these expand upon the benefits of trees as stormwater measures. In some cases, the trees are recognized as a treatment measure.

East Palo Alto will continue to research, evaluate, and explore these considerations and advocate the use of interceptor trees with the Countywide Program for discussions with the Water Board to provide and receive interceptor tree credit for existing trees as related to stormwater treatment, stormwater management and flooding attenuation. At the same time, East Palo Alto will move forward with revising their tree ordinance in relation to preservation and enhancement of the urban forest.

Other potential policies, regulations, and other implementation mechanisms

In addition, East Palo Alto is exploring other techniques and strategies to increase green infrastructure implementation and aid in the reduction of TMDL loads. This includes:

1. Continuing to explore the benefits, pros and cons, and advocate for a countywide approach to achieving the countywide TMDL reductions rather than the current approach of each individual member agency/Permittee providing and maintaining green infrastructure within their own jurisdictions to achieve their proportion of the countywide TDML reduction.
2. If regional projects move forward in partnership with other agencies or entities, various new documents will need to be developed, such as Memorandums of Understanding (MOUs) to address planning, implementation, funding, and operations and maintenance.
3. East Palo Alto will continue to look for opportunities to partner with other public and private institutional facilities to add or expand green infrastructure facilities as well as treat shared public and private runoff.

If these and/or other new issues and strategies are determined to be implemented, existing planning documents and legal mechanisms may be updated or completely new documents and mechanisms may need to be prepared.

d. Work Plan for Inclusion of Green Infrastructure in Future Updates or New Documents

The City's planning, engineering, and other documents have been identified to be updated and/or approved after adoption of the Green Infrastructure Plan, including the General Plan and Heritage Tree Protection Ordinance. These documents are being updated as part of the City's normal cycle of plan updates or are currently in the midst of being updated and finalized, as is the case of the General Plan.

Per section C.3.j.i.2.i of the MRP's requirements for Green Infrastructure Plans, a Workplan for updating and modifying these existing documents and preparing new documents must be developed. East Palo Alto's Workplan to include references to the City's Green Infrastructure Plan and other policy, requirements, and guidance to identify and implement green infrastructure is included below. As mandated by the MRP, the Workplan is to identify how the City will ensure that green infrastructure and low impact development measures are appropriately considered, coordinated, and included in future plans.

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identify how the City will ensure that green infrastructure and low impact development measures are appropriately considered, coordinated, and included in future plans.

City staff, officials, stakeholders, and the selected consultants responsible for developing new or updating existing documents will coordinate and actively monitor, consider and incorporate goals, policies, guidance, requirements, and other discussions related to green infrastructure, low impact development, stormwater management, and improving water quality as mandated by the MRP and required by the Green Infrastructure Plan as appropriate to the document. New policies, regulations, and other planning documents and legal mechanisms will be developed to implement green infrastructure, including the potential strategies noted above. East Palo Alto will work with partner agencies in the drafting and adoption of documents related to joint projects or a countywide approach. In addition, secondary community benefits such as enhancing City character and improving roadway safety, building upon earlier green infrastructure policy and plans, evaluating prior projects and programs, consistency between plans and documents, and so forth will be considered for inclusion. Interdepartmental City staff have and will continue to work together to identify, discuss, and implement green infrastructure requirements on projects and planning documents.

Green infrastructure opportunities, prioritization, and strategies will be considered and integrated into these plans when they're updated or developed, where feasible and in accordance with the City's adopted Green Infrastructure Plan and future amendments, including locations identified as opportunities for green street and other green infrastructure measures and facilities.

6.0 Green Infrastructure Guidance

a. Green Infrastructure Design Guide

SMCWPPP, with input and feedback from its member agencies, including East Palo Alto, developed a Countywide Green Infrastructure Design Guide (Design Guide), which provides comprehensive guidance on the planning, design, construction, and operations and maintenance of green infrastructure for buildings, parking lots, sites, and streets. The Design Guide addresses the requirements of the MRP, fulfilling Section C.3.j.i.(2)(e) requiring design and construction guidelines for streets and projects and C.3.j.i.(2)(f) for developing typical design details and specifications for different street and project types. The Design Guide also addresses the part of C.3.j.i.(2)(g) related to a regional approach for alternative hydraulic sizing for non-regulated constrained street projects.

The Design Guide includes a range of information related to green infrastructure, such as provision of policies and definitions; identification of different types of treatment and site design measures; summation of various benefits including a range of community benefits provided beyond stormwater management; presentation of before and after images of integrating green infrastructure into projects; introduction of complete streets concepts and design; discussion regarding BASMAA's regional approach for alternative sizing for non-regulated constrained green street projects; design and implementation considerations; operations and maintenance; and provision of typical construction details and specifications. The Design Guide explains how these concepts, considerations, and guidance can be used to effectively integrate green infrastructure into communities in new and redevelopment projects whether they are C.3 regulated or not.

General guidelines for overall streetscape and project design, construction, and maintenance have been developed so that projects have a unified, complete design and implement the range of functions associated with the projects. The MRP emphasizes the need for guidance related to green streets functions. The Design Guide includes implementation guidance specifically for stormwater management and treatment within streets. The guidance supports safe and effective multimodal travel with a focus on the comfort of people walking and cycling; shared use as public space and an attractive and functional public realm; use of appropriate measures for different street and land use contexts and types; and the achievement of urban forestry goals and benefits. The Design Guide defines practices to give considerations to no missed opportunities and the efficient and effective coordination, review, and implementation of green infrastructure in public and private projects.

The appendices of the Design Guide include typical design details and specifications for the design and construction of green infrastructure applicable to a variety of applications whether street or site-based projects.

East Palo Alto will use the Design Guide and future amended versions to provide support and guidance in implementing green infrastructure within the City. As more green infrastructure projects are implemented in East Palo Alto, portions of the Design Guide may be superseded by East Palo Alto-specific updates or modifications based upon lessons learned and other factors experienced in or determined by the City. The Design Guide can be found at SMCWPPP's website, at <https://www.flowstobay.org/gidesignguide>.

As noted in the following subsections, the City has included some additional East Palo Alto-specific guidance to address local context and existing policies to customize the guidance for East Palo Alto. Sections of the Design Guide that have been modified or supplemented are maintained in a companion document for convenient understanding, use, and tracking by staff and project proponents. East Palo Alto-specific typical green infrastructure details can be found at <https://www.ci.East Palo Alto.ca.us/237/Construction-and-Engineering>.

b. East Palo Alto-specific Typical Green Infrastructure Details

To aid in the development and implementation of green infrastructure measure types and character that is appropriate to and complementary with the existing appearance of the City, East Palo Alto in conjunction with private developers, has prepared or customized additional typical details to those already present in the set of typical details modified by the SMWCPPP and SFPUC details. Typical details developed as of June 2020 are as follows:

1. GI 1 Landscaped stormwater planter bulb-out. See Figure 6-1.

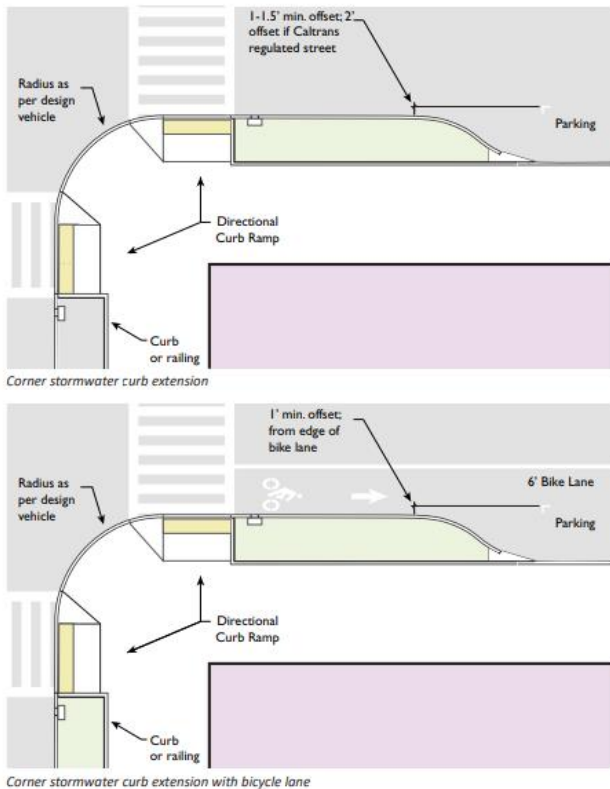
c. Sustainable Streets Master Plan

The C.3 Regulated Projects Guide, previously named the C.3 Technical Guide, now referred to as the Sustainable Streets Master Plan was recently updated. It provides guidance related to more technical aspects of green infrastructure for regulated and other projects. The Sustainable Streets Guide will also be available over the summer of 2020, which will also be a resource for appropriate design options.

Figure 6-1. Landscaped stormwater planter curb extension.

The City considers stormwater curb extensions as particularly advantageous in retrofit situations, because they can be added to existing streets with minimal disturbance and can reduce costs for re-engineering existing storm drains. Other green infrastructure features are available for consideration, but the City reserves the right to provide uniform design details for specific areas of the community as well as full consideration of future maintenance impacts. More consideration is offered to the developer if they agree to maintenance obligations in perpetuity.

Existing curb extensions can often be redesigned to manage stormwater and become stormwater curb extensions which provide multiple benefits. Even where on-street parking is highly used there may be opportunities for smaller curb extensions. Low vegetation is needed to maintain sight lines between vehicles and people walking or bicycling. Intersections with designated right turn lanes along the curb are not appropriate for curb extensions. Intersections with frequent right turns made by buses or large trucks may be infeasible for curb extensions. Locating curb extensions that include green infrastructure near drainage inlets will help ensure that street run-off flows to the green infrastructure, because the grade of the street and gutter should already flow to the inlet. At mid-block crossings, stormwater curb extensions should be given high-priority because of improved visibility between people walking and driving. Design details can be found with the City Engineer, and further information can be obtained at flowstobay.org.



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7.0 Green Infrastructure Hydraulic Sizing

MRP Provision C.3 requires Phase I stormwater Permittees like the City of East Palo Alto to use the municipal planning process to address pollutant discharges in stormwater runoff by requiring the implementation of control measures that infiltrate, biotreat, or capture and use stormwater during new development and redevelopment. The MRP outlines numeric and hydromodification management criteria for Regulated Projects¹² and allows for the use of an alternative sizing methodology for constrained non-regulated green streets projects with green infrastructure typically implemented in rights of way.

a. Regulated Projects

Numeric Sizing Criteria

MRP Provision C.3.d outlines volume and flow-based numeric sizing criteria for stormwater treatment measures implemented on Regulated Projects. Options are presented in Provision C.3.d. of the MRP. An extensive catalog of technical guidance documentation and resources supporting the sizing of C.3 projects is available on the Countywide Program's Flows to Bay website¹³ including worksheets for both volume and flow-based sizing of green infrastructure in a manner consistent with the requirements outlined in MRP section C.3.d.

Hydromodification Management Sizing Criteria

Regulated Projects that create and/or replace one acre or more of impervious surface are also considered Hydromodification Management Projects and are required to meet the Hydromodification Management (HM) Standard of Provision C.3.g.ii unless projects meet one or more of the criteria for exclusion presented in C.3.g.i. These exclusion criteria include conditions where post project impervious is less than or equal to pre-project impervious, the project is located in a catchment that drains to a hardened or engineered channel, or the project is located in a subwatershed that is highly developed with 70% or more imperviousness. The Hydromodification Applicability Map of San Mateo County developed on behalf of Permittees during the previous permit term, presented in Attachment C of the MRP and as Figure 7-1 here, indicates that the City of East Palo Alto drains to areas exempt from the HM requirements outlined in C.3.g. Due to the fact that a majority of the City is in the flood plain of San Francisquito Creek, HM requirements outlined in the MRP Provision C.3.g. would benefit the community by detaining rainfall and preventing sheetflow into streets already burdened with overwhelmed storm drain systems. The City is thereby planning to require post-project runoff volumes and duration do not exceed pre-project conditions for all projects.

¹² Regulated Projects are typically associated with new development or redevelopment on parcels or portions of parcels to meet the definition outlined in the MRP (e.g.; creating or replacing greater than or equal to 5,000 square feet of impervious area). A comprehensive definition of Regulated Projects can be found in Provision C.3.b of the MRP.

¹³ C.3 Regulated Projects Guide documentation can be found on the Countywide Program's Flows to Bay website at <https://www.flowstobay.org/newdevelopment#c3TechGuidance>

b. Non-Regulated Constrained Green Streets Projects

The MRP recognizes that green street green infrastructure implemented in the public right of way may be constrained by available space, the presence of utilities, preservation of heritage trees, or other factors and allows non-regulated green streets project with clearly defined and documented constraints to use an alternative sizing methodology. The Bay Area Stormwater Management Agencies Association (BASMAA) has developed a regional green streets alternative sizing guidance¹⁴ (green streets sizing guidance) based on an extensive hydrologic and hydraulic modeling analyses. The green streets sizing guidance presents sizing curves outlining the minimum bioretention surface area required to treat 80% of average annual runoff to meet the second volumetric hydraulic design criteria presented in MRP Provision C.3.d.i.(1). The guidance also outlines approaches to green infrastructure design for projects where C.3.d sizing requirements cannot be reasonably achieved and presents an equation to calculate the minimum bioretention sizing factor, the ratio of the surface area or footprint of the bioretention facility and the impervious area treated by green infrastructure, to meet requirements outlined in C.3.d based on the mean annual precipitation (MAP) of the project site. The sizing factor equation presented is:

$$\text{Sizing Factor} = 0.00060 \times \text{MAP} + 0.0086$$

A review of annual rainfall records for the closest available long-term rainfall gauge, NOAA gauge number 046646 in Palo Alto, indicates that East Palo Alto receives a MAP of 15.41¹⁵ inches per year translating into an alternate green infrastructure sizing factor of 0.019. Non-regulated constrained green streets projects implemented within the City of East Palo Alto could therefore be sized at 1.8 of a green streets drainage area and achieve the alternative sizing requirements consistent with MRP Provision C.3.d.i.(1). The formula also depends on the depth of the system – this formula is for a 6” deep rectangular bioretention basin. Basins with side slopes or different depths of storage would be sized differently. Additional information regarding the alternative sizing methodology can be found in the *Guidance for Sizing Green Infrastructure Facilities in Street Projects* (which includes the companion analysis document Green Infrastructure Facility Sizing for Non-Regulated Streets Projects) presented in Appendix 7 of the Green Infrastructure Design Guide.

The above referenced sizing is a minimum sizing, and should be seen as the exception, as the goal is to expand on these minimum sizing for enhanced capacity.

¹⁴ BASMAA, 2018. “Guidance for Sizing Green Infrastructure Facilities in Street Projects.”

¹⁵ Climate summaries for northern California available online at

C. Hydraulic Sizing Resources

An overview of relevant guidance documents and resources for Regulated Projects and green streets projects for 1) areas exempt from hydromodification management requirements and 2) areas subject to those requirements and is presented in Table 7-1.

Project Type	Guidance Source Location	
	Provision C.3.i or HM Guidance, if Applicable	Hydraulic Sizing Guidance
Regulated Project that is not a Hydromodification Management Project	Use SMCWPPP <i>C.3 Regulated Projects Guide</i> , Appendix L – Site Design Requirements for Small Projects	SMCWPPP <i>C.3 Regulated Projects Guide</i> , Section 5.1, <i>Hydraulic Sizing Criteria</i>
Regulated Project that is a Hydromodification Management Project	Not applicable.	Not applicable.
Non-Regulated Green Infrastructure Project (public or private project) not subject to Provision C.3.i	Use: SMCWPPP <i>C.3 Regulated Projects Guide</i> , Appendix L – Site Design Requirements for Small Projects	<i>BASMAA Guidance for Sizing Green Infrastructure Facilities in Streets Projects with companion analysis: Green Infrastructure Facility Sizing for Non-Regulated Streets Projects</i> (can also be found in: <i>Green Infrastructure Design Guide</i> , Section 4.12 <i>Sizing of Green Infrastructure Facilities</i> and <i>Appendix 7 Guidance for Sizing Green Infrastructure in Streets</i>) as site conditions permit.
Non-Regulated Green Infrastructure Project (public or private project) subject to Provision C.3.i	SMCWPPP <i>C.3 Regulated Projects Guide</i> , Appendix L – Site Design Requirements for Small Projects	

Table 7-1. Location of hydraulic sizing and other applicable guidance for different project types.

8.0 Evaluation of Funding Opportunities

a. Overview of Current and Potential Funding Opportunities

SMCWPPP commissioned the Green Infrastructure Funding Nexus Evaluation¹⁶ to aid member agencies in an efficient, comprehensive, and cohesive countywide identification, evaluation, and selection of potential funding sources for the implementation of public green infrastructure that would be most useful to each member agency. MRP provision C.3.j.i(2)(k) requires a GI Plan to include “an evaluation of prioritized project funding opportunities, including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.”

The *Green Infrastructure Funding Nexus Evaluation* report investigated common existing funding mechanisms (fees, taxes, developer fees, etc.) as well as recently pioneered funding strategies such as alternative compliance funds and enhanced infrastructure finance districts. Many municipalities are finding that obtaining funding for green infrastructure can be challenging and that no single source of revenue is adequate to fund its stormwater and green infrastructure needs. Hence, most agencies will need to develop a strategy to obtain funding from several sources – a portfolio approach – to successfully achieve the needed funding. The current and ongoing process the City is undertaking of reviewing the funding sources that are, or could be, available will culminate in a toolbox of the green infrastructure funding opportunities that are most beneficial and feasible for East Palo Alto.

East Palo Alto has reviewed the *Green Infrastructure Funding Nexus Evaluation* report and evaluated its findings for potential green infrastructure funding sources and strategies to supplement the funding sources currently being used or intended to be used by East Palo Alto. This evaluation has identified a variety of sources and strategies that can be used or explored more thoroughly following the approval of the GI Plan as East Palo Alto moves forward with planning, design, construction, and operations and maintenance of green infrastructure.

Current funding is insufficient for the capital and maintenance needs of existing stormwater infrastructure. Obtaining additional funds to implement and maintain new green infrastructure facilities within the existing system will be difficult. East Palo Alto will need additional funding to implement all phases of green infrastructure, including staff, planning, design, construction, and operations and maintenance. It is expected that multiple sources of funding will need to be obtained to achieve the City’s goals in providing and maintaining green infrastructure. As possible, East Palo Alto intends to partner with other agencies and private property owners to lessen the City’s direct financial burden.

In addition, East Palo Alto will review other projects to determine if green infrastructure implementation and funding can be integrated into other transportation, utility, and other improvement projects that already have funding or have access to other funding streams. These and other potential green infrastructure funding sources will be monitored by the City and the Potential Funding Opportunities table will be assessed and updated periodically.

¹⁶ SCI Consulting Group and LWA, *Green Infrastructure Funding Nexus Evaluation*, January 2019. Excerpts from this report are used in this GI Plan section. This report can be found as Appendix 6 in the Green Infrastructure Design Guide, another document included by reference as part of this Green Infrastructure Plan.

San Mateo Flood and Sea Level Rise Resiliency Agency

While not included in the following matrix, another source for potential funding may be from San Mateo County and the City/County Association of Governments (C/CAG). The County and C/CAG has developed a new San Mateo Flood and Sea Level Rise Resiliency Agency, to plan, build and maintain projects of regional significance which could complement, or possibly supplement, local green infrastructure needs as well as address sea level rise and flooding challenges. Funding could be provided through a countywide property tax or similar mechanism. If this agency is created it is anticipated that it would fund the maintenance associated with the Addison Avenue Field Water Capture project, discussed below.

Past and Current Infrastructure Funding Efforts

In the past, East Palo Alto has requested special parcel taxes to housing and job training programs and lacks taxing capacity for significant increases to infrastructure tax. In order to fund the storm system improvement needs for the East Palo Alto, the City Council shall consider different funding opportunities including consideration of a benefit assessment for those impacted parcels which specifically benefit from the improvements. East Palo Alto is currently considering public private partnerships that will enable the development of regional stormwater detention facilities, most specifically along the Bay Trail and Ravenswood Specific Plan area. It is expected that other regional projects will benefit from Prop 68 funding and allocations specified for disadvantaged communities. A range of green infrastructure measures and facilities are included as part of East Palo Alto's Capital Improvement Program in order to meet the Provision C.3 requirements for the project. The planning, design, and construction of these facilities will be integrated with the overall project's funding, which is from the City's general fund. Other green infrastructure improvements such as bulbouts, medians and bioretention rain gardens will be incorporated as conditions of approval for project proponents along frontages where such projects are required to modify the public right of way through off-site improvements.

b. Potential Funding Opportunities Evaluation

The range of green infrastructure techniques and applications allows for the consideration of a variety of funding approaches. Based on the funding types, sources, description, and pros and cons identified in the *Green Infrastructure Funding Nexus Evaluation*, the City of East Palo Alto has evaluated funding opportunities for implementing identified and future stormwater and green infrastructure projects. The matrix below provides a summary of the evaluation of green infrastructure potential funding opportunities, options, and strategies as well as concise information about the nexus to green infrastructure, what is funded, funding requirements, and potential for use by East Palo Alto.

Funding opportunities were evaluated on a variety of factors including:

- Existing funding and organizational structures within East Palo Alto
- Whether ballot approval, approval by voters, is needed to implement the funding option
- Past voting outcomes for balloted measures in East Palo Alto
- Likelihood for grant and loan approval
- Ability to support shared projects/partnerships/alternative compliance projects
- What activities the funds can be used towards – staff, planning, capital, operations and maintenance (O&M)

Based on the evaluation of funding opportunities, East Palo Alto has identified the funding source opportunities and approaches that will be considered for use or to be explored in greater detail for potential use. These, and other funding source opportunities determined to not be appropriate for East Palo Alto, are listed in the table below. In addition, their nexus to green infrastructure, green infrastructure funding capabilities, funding requirements, and potential and rational as a green infrastructure funding opportunity for East Palo Alto are summarized.

The "GI Nexus" column explains how the type of funding is connected to green infrastructure and can be

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leveraged to fund green infrastructure projects. Proving nexus to interrelated infrastructure funding sources is necessary to link development impacts and compliance needs. This column conceptualizes the importance of green infrastructure regarding the funding categories.

“GI Funding Capabilities” identifies where the funds can be applied to such as: planning, staff (time), capital costs, and operations and maintenance. Some funding sources may be able to cover some, but not all, of these categories and it is likely that more than one avenue for funding will be necessary to fully fund a project .

The “Requirements” column indicates the significant compliance requirements or actionable steps that are necessary to obtain the funding source. These requirements touch on information on regulatory compliance, voting approval rate, applications, necessary reporting, existing or planned conditions, and approach.

Finally, the Potential GI Funding Opportunity column indicates the viability of the opportunities as a possible funding source as evaluated and determined by East Palo Alto: Yes, No, or Explore, and a concise rationale to support the finding. Where a funding opportunity is marked “Yes”, that indicates where the City has either experienced success in obtaining green infrastructure funding or is interested in pursuing as a funding opportunity for green infrastructure projects. The “Explore” label is given to funding opportunities that may provide possible avenues for funding green infrastructure projects, but viability is reliant on additional factors or further investigation is needed. Funding opportunities marked “No” are considered highly unlikely for East Palo Alto to pursue as a funding source for green infrastructure projects.

Table 8-1: Toolbox of Potential Funding Opportunities

Funding Category/ Opportunities	GI Nexus	GI Funding Capabilities	Requirements	Potential GI Funding Opportunity
Traditional Methods –Balloted Approaches				
Parcel Tax	Can fund all or any parts of a GI program as stipulated in the ballot questions and authorizing ordinance	Staff, Planning, Capital, O&M	Typically require a 2/3 voter approval	No. 2/3 vote to approve will be difficult and unlikely to pass – even for pre-identified stormwater needs – and harder for GI implementation.
Special Tax	Business license tax; vehicle license fees; sales tax; utility users’ tax; transient occupancy tax	Staff, Planning, Capital, O&M	Typically require a 2/3 voter approval	No. 2/3 vote to approve will be difficult and unlikely to pass – even for pre-identified stormwater needs – and harder for GI implementation.
Property Related Fee	Establishes storm drainage as a separate utility service and can fund all or any parts of a GI program	Staff, Planning, Capital, O&M	Prop 218 compliance; rigorous rate study; must define services and service area; property owner approval for non-water, sewer and garbage	No. 50% property owner approval will be difficult to achieve.
General Obligations Bond	Can fund capital GI projects through debt taken on by municipality	Planning, Capital	Voter approval at 2/3 level; will need financial advising consultant	No. City will not borrow funds for these types of improvements. Also, 2/3 vote to approve will be difficult and unlikely to pass.

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Funding Category/ Opportunities	GI Nexus	GI Funding Capabilities	Requirements	Potential GI Funding Opportunity
Traditional Methods – Non-balloted Approaches				
Senate Bill 231	Allows for adoption of property related fees without having to go to ballot	Staff, Planning, Capital, O&M	Cost of service analysis; rate study; Prop 218 protest hearing	Maybe. As the City does not manage and/or maintain sewer systems, nexus in assessing a non-balloted fee would require strategy to stand up to any challenge.
Regulatory Fee (plan, check, and inspection)	Fees and charges for performing administrative activities related to GI	Staff	Cannot exceed the actual cost of performing activities such as permit issuance, inspection, onsite mitigation, etc.	Yes. Fees are limited to recouping costs for services rendered, therefore cannot be used to implement capital improvements, but are assessed to fully recover related costs for NPDES compliance. May be considered as an avenue to meet Alternative Compliance.
Realignment of Services	Leverage funding from other City departments for stormwater activities or reassign the stormwater activity to another department	Staff, Planning, Capital, O&M	Prop 218 compliance for realignment to water, sewer, or garbage must demonstrate applicability	Maybe. Though a nexus may be made associated with refuse collection for trash capture and street sweeping, extending that to GI would be difficult. Refuse rates are already high and with the limited number of customers this option would likely not yield a significant amount of funds. NPDES fees have not been increased since the City took ownership of the storm drain system in 2005; but establishing a Nexus would be essential. Some test cases are underway.
Business License Fee	Applies to commercial operations with clear impacts on stormwater such as restaurants, vehicle repairs.	Staff, Planning, Capital, O&M	Must be a commercial or other operation with clear impacts on stormwater.	Maybe. Small number of applicable businesses which could be relevant, but not currently adequate to cover these costs.

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Funding Category/ Opportunities	GI Nexus	GI Funding Capabilities	Requirements	Potential GI Funding Opportunity
Developer Impact Fee	Could incorporate fees for mitigating stormwater impacts to help fund GI. Would not relieve developer of NPDES requirements	Planning, Capital	Must comply with AB 1600 and include a rigorous nexus study	Yes/ Explore. Establishment of a Storm Drain Utility District has real potential for the city is possible, but may unduly impact property owners who do not contribute to the TMDLs; Nexus may be hard to justify.
Integration with Transportation or Utility Project	Make the connections between streets and drainage systems that are green and complete, where allowed by conditions of the funding source.	Planning, Capital	Examples may include permeable pavements; roadside rain gardens; cisterns	Yes/Explore. With the exception of storm drains, the City does not maintain utilities and conditioning utility projects to incorporate would be challenged by EPASD or West Bay Sanitary. The City may be able to implement some GI improvements with larger transportation projects, but most street projects the City implements are smaller scale street maintenance projects (overlay and slurry seals) and City budget allocation for these improvements is minimal.
Special Financing Districts				
Benefit Assessment	Can fund the construction and maintenance of GI projects	Planning, Capital, O&M	Prop 218 compliance; rigorous engineer’s report; must deduct general benefit from special benefit; property owner approval is required through a ballot proceeding (weighted voting); works best with new development due to voting requirement	Yes/ Explore. May be possible to incorporate some GI into overall benefit calculation for a special assessment. Ravenswood Business District area which has the highest legacy contamination in the City and thereby the highest potential for meeting TMDLs for target pollutants has the greatest potential for this benefit assessment.
Community Facilities District	Can fund the construction and maintenance of GI projects	Planning, Capital, O&M	Requires vote by majority of landowners or 2/3 majority of registered voters	Maybe/explore. Potential with the significant development interest in the City.

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Funding Category/ Opportunities	GI Nexus	GI Funding Capabilities	Requirements	Potential GI Funding Opportunity
Business Improvement District	Business and property owners tax themselves to build and maintain GI improvements	Planning, Capital, O&M	Formed by a municipality through a notice and protest hearing process	Yes. Highest potential for Ravenswood Business District area which has the highest legacy contamination in the City and thereby the highest potential for addressing known pollutants.
Enhanced Infrastructure Financing District	Captures property tax increment for building and maintaining infrastructure like GI	Planning, Capital	With no debt: Establish a public finance authority; adopt financing plan; resolutions from participating agencies. With debt: All of the above; get approval from at least 55% of voters in district.	Maybe/explore. City general fund revenues are predominantly property tax based. City would prefer not to dedicate portions of its tax increment for this purpose due to high priorities this limited General Fund is already funding and the high deferred maintenance burden already required.
Alternative Compliance				
Alternative Compliance	Allows developers who cannot meet GI requirements on-site to build (or pay for) off-site construction of GI elements	Staff, Planning, Capital, O&M	Municipality would need to have alternative projects ready-- could be done case by case	Yes/Explore. If projects are defined, may be able to participate.
In-lieu Fee	Allows developers who cannot meet GI requirements on-site to build or pay for off-site construction of GI elements	Staff, Planning, Capital, O&M	Municipality would need to estimate the costs of mitigation – could be done case-by-case	Yes/ Explore. If a regional or large-scale opportunity is developed by the City or private entity, the City can explore the opportunity for creation of an in-lieu program.
Credit Trading Program	Creates GI Credit program for developers and others to trade GI responsibilities to others who have better capability to meet GI goals	Planning, Capital, O&M	A municipality (or regional entity) must create credit trading program including: Definition of GI credits, relative value of credits, timing of responsibilities, eligibility	Maybe/ Explore. Potential if others have projects or if City can credit public right of way for treatment on private property.

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Funding Category/ Opportunities	GI Nexus	GI Funding Capabilities	Requirements	Potential GI Funding Opportunity
Partnerships				
Multi-Agency Partnership	Encourages partnerships with non-stormwater agencies to explore GI co-benefits in their work.	Staff, Planning, Capital	Examples may include spreading basins for groundwater agencies; GI project sites on school grounds; GI on housing authority sites. Can generate credits for Credit Trading Program.	Maybe/Explore. May participate in regional projects, credit transfers, and projects with other agencies who have not met their housing goals, etc.
Transportation	Encourages partnerships with transportation agencies to explore GI co-benefits in their work and take advantage of Complete or Green Streets programs	Staff, Planning, Capital, O&M?	Examples may include: Permeable pavements; rain gardens	Yes. May participate in regional projects and projects with other agencies. Currently working with C/CAG for potential projects.
Caltrans Mitigation Collaboration	Caltrans looks for opportunities for off-site mitigation of stormwater impacts of their highways	Planning, Capital	Local municipalities may enter in a cooperative agreement with Caltrans to build GI as a way for them to mitigate stormwater impacts of their	Yes. Currently working with Caltrans on the Full Trash Capture Reimbursement Agreement; options available for GI as well.
Public-Private Partnership (P3)	Private enterprises can provide overall solutions to GI programs through better access to resources and capital	Planning, Capital, O&M	P3 is primarily a delivery system for projects where debt provides near-term funding and project acceleration	Yes/Explore. Interested in potential options as developers are required to implement along encroached frontages.

9.0 Outreach and Education

East Palo Alto has provided outreach and education to staff, decision makers, and the community regarding green infrastructure in general and specifically for the development of the City's Green Infrastructure Workplan and Green Infrastructure Plan.

a. Coordination with SMCWPPP and Inter-Agency Efforts

East Palo Alto's GI Plan was developed in collaboration with internal City staff, City Council, coordination with consultants, and the Countywide Programs' guidance, as discussed in Chapter 1.c., "Green Infrastructure Plan Development Process".

The Countywide Program has developed numerous educational and reference materials for use by member agencies. This includes the flowstobay.org website, a five-year public education and outreach program, educational flyers about street streets and green infrastructure, and development of PowerPoint Presentations for use in educating elected officials and other stakeholders.

b. East Palo Alto Efforts

The City has also been collaborating with private institutional facilities and other stakeholders such as Caltrans to address flooding and other related stormwater management and treatment issues and the desire to develop a water capture facility project in the City. This process has offered numerous public meetings and the opportunity to educate area residents, decision makers, and others to understand underlying issues and the options to address them, including the use of green infrastructure, to discuss the project and allow stakeholders to provide input and feedback. The City has a project website about the Addison Avenue Green Street project to inform residents about the project. This information can be found at <http://cityofepa.org/index.aspx?NID=685>.

East Palo Alto has worked extensively to educate staff, decision makers, and the community about green infrastructure and the preparation of its GI Plan. Staff has held internal ongoing multi-disciplinary meetings to discuss the need, goals, and vision for both East Palo Alto's GI Work Plan and GI Plan. In addition, the City hosts an Urban Forest Management technical advisory committee meeting for developers and technical experts to influence adjustments to the GI Plan and ensure feasibility of proposed projects prior to finalizing concepts.

The City has also created guidance such as grading and draining criteria and street frontage design to require the use and placement of bioretention areas along property frontages and bulbouts at corners of intersections. The City is considering changing the municipal code for new and re-development projects of over 5,000 square feet of impervious area to incorporate site design measures to reduce the peak flows during annual storm events and prevent sheet flow to adjacent properties while ensuring pre-project discharge equals or reduces post-project stormwater discharge.

The City's website contains a webpage with a link to the Countywide Program, www.flowstobay.org, to educate City residents and others in understanding issues related to stormwater runoff and water quality, to define and explain the benefits of green infrastructure, and provide other information.

The Green Infrastructure Workplan was presented to City Council and adopted in June 2020. The GI Plan was presented to the City Council and adopted by Resolution. Additional public review will include revision of various plans and municipal codes to ensure full integration with the City's municipal codes and plans. The GI Plan will go before the City's Planning Commission and Public Works Commission prior to the Permit Term expiration, foreseeably by December 2020.

Appendices

Appendix A. East Palo Alto-specific screening and prioritization criteria factors with assigned scores and weighting factors table

Regional Capture Screening and Prioritization

Criteria	Source	Points						Weight Factor	Max
		0	1	2	3	4	5		
Criteria Factors									
Slope (%)	San Mateo SRP	N/A Rare						--	5
Parcel Ownership and Land Use	San Mateo SRP (modified)	Other Uses - No	Public, Private Institutional, Schools, Park/Open Space - Yes					--	
Prioritization Factors									
Parcel Ownership and Land Use	San Mateo SRP (modified)		Private Institution	--	Public (other)	--	Public	1	5
Impervious Area (%)	San Mateo SRP	$X < 40$	$40 \leq X < 50$	$50 \leq X < 60$	$60 \leq X < 70$	$70 \leq X < 80$	$80 \leq X < 100$	1	5
Parcel Size (acres)	San Mateo SRP	$0.25 \leq X < 0.5$	$0.5 \leq X < 1$	$1 \leq X < 2$	$2 \leq X < 3$	$3 \leq X < 4$	$4 \leq X$	1	5
Hydrologic Soil Group	San Mateo SRP	--	D	Unknown	C	B	A	1	5
Slope (%)	San Mateo SRP	$5 < X \leq 10$	$4 < X \leq 5$	$3 < X \leq 4$	$2 < X \leq 3$	$1 < X \leq 2$	$0 < X \leq 1$	1	5
Proximity to Flood-prone Channels	San Mateo SRP	Not in sub-basin	$3 < X$	--	$1 < X \leq 3$	--	$X \leq 1$	2	10
Areas with localized flooding - Standing water - storm system overflow or clog	East Palo Alto-specific	No					Yes	2	10
Contains PCBs Risk Areas	San Mateo SRP	None	--	--	Moderate	--	High	2	10
Greenways / Complete Streets Projects	East Palo Alto-specific	No					Yes	1	5
Streets identified for future or with new storm drains, other drainage improvements	East Palo Alto-specific	No					Yes	2	10
Currently planned by City or co-located with other City project	San Mateo SRP (modified)	No			Strong Potential		Yes	2	10
Project identified in approved master plan,	East Palo Alto-specific	No					Yes	1	5
Within the drainage area of Addison Avenue Field	East Palo Alto-specific	Yes = -10						1	5
Drains to TMDL water	San Mateo SRP	No					Yes	1	5
Above groundwater basin	San Mateo SRP	No		Yes				1	5
Augments water supply	San Mateo SRP	No	Yes					1	5
Water quality source control	San Mateo SRP	No	Yes					1	5
Reestablishes natural hydrology	San Mateo SRP	No	Yes					1	5
Creates or enhances habitat	San Mateo SRP	No	Yes					1	5
Project is within 1/4 mile of identified RHNA site or other affordable housing	East Palo Alto-specific	No	Yes					1	5
Community enhancement (i.e. Parks)	San Mateo SRP (modified)	No					Yes	2	10

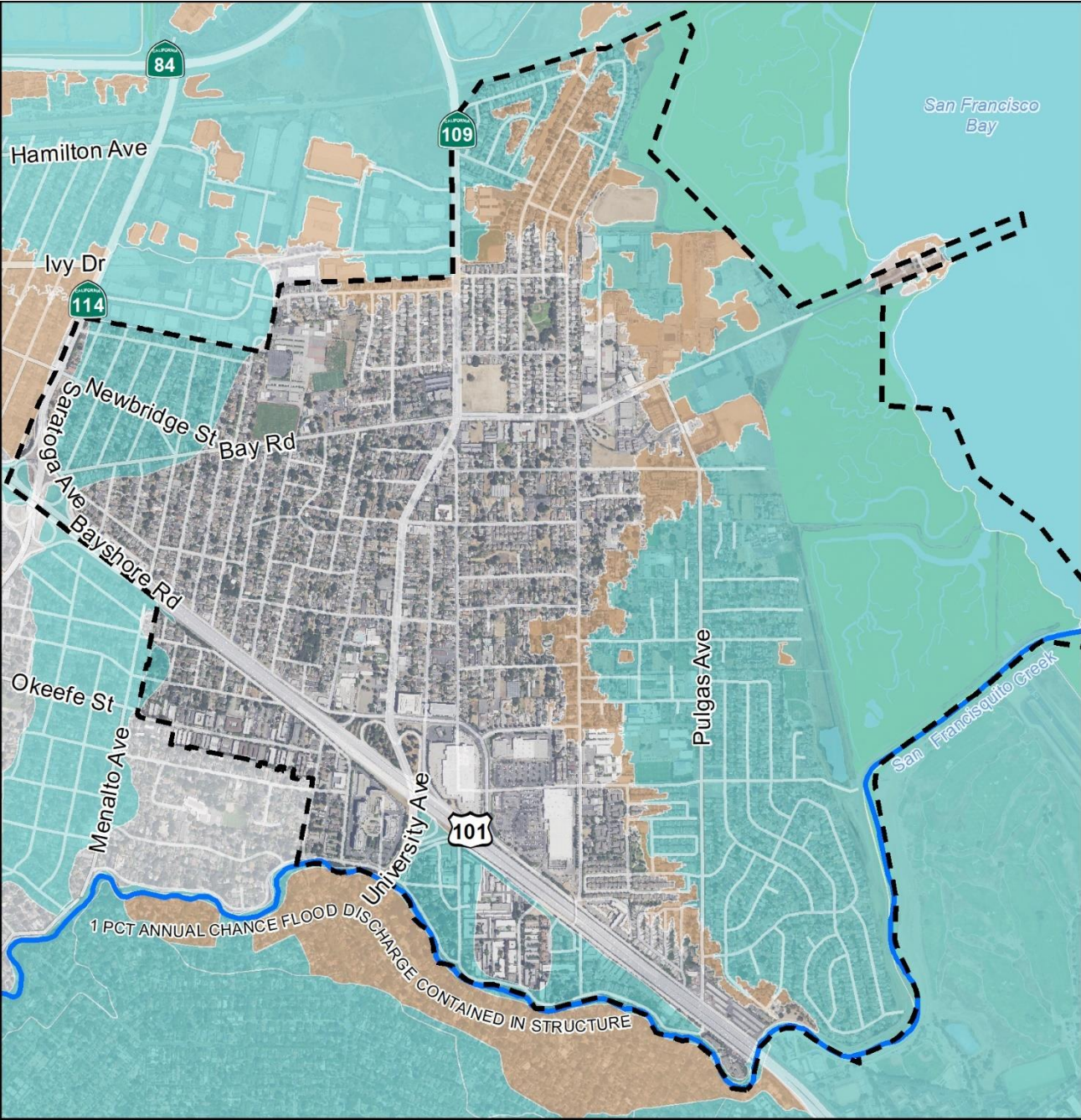
Parcel Based Green Infrastructure Screening and Prioritization

Criteria	Source	Points						Weight Factor	Max	
		0	1	2	3	4	5			
Screening Criteria Factors										
Slope (%)	San Mateo SRP	n/a						--		
Parcel Ownership and Land Use	San Mateo SRP (modified)	Other Uses - No	Public, Private Institutional, Schools, Park/Open Space - Yes					--		
Prioritization Factors										
Parcel Ownership and Land Use	San Mateo SRP (modified)		Private Institutional	--	Public (other agency)	--	Public (City)	1		5
Impervious Area (%)	San Mateo SRP	X < 40	40 ≤ X < 50	50 ≤ X < 60	60 ≤ X < 70	70 ≤ X < 80	80 ≤ X < 100	1		5
Hydrologic Soil Group	San Mateo SRP	unknown	n/a	D	C	B	A	1		5
Slope (%)	San Mateo SRP	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
Proximity to Flood-prone waterways (miles)	San Mateo SRP			--	2	1.5	1	2	10	
Areas with localized flooding - Runnymede Drainage ditch overflow - private property floods - driveways and intersection floods - storm system overflow or clog - lack storm drains/ standing water	East Palo Alto-specific	No					Yes	2	10	
Contains PCBs Risk Areas	San Mateo SRP	None	Low	--	Moderate	--	High	2	10	
Greenways / Complete Streets Projects	East Palo Alto-specific	No					Yes	1	5	
Streets identified for future or with existing storm drains, swales, other drainage improvements	East Palo Alto-specific	No					Yes	2	10	
Currently planned by City or co-located with other City project	San Mateo SRP (modified)	No			Strong Potential		Yes	2	10	
Project identified in approved master plan, community plan, policy, etc.	East Palo Alto-specific	No					Yes	1	5	
Within the drainage area of Addison Avenue or planned regional GI project	East Palo Alto-specific	Yes = -10						1	5	
Drains to TMDL water	San Mateo SRP	N/A					Yes	1	5	
Above groundwater basin	San Mateo SRP	No		Yes				1	5	
Augments water supply	San Mateo SRP	No	Yes					1	5	
Water quality source control	San Mateo SRP	No	Yes					1	5	
Reestablishes natural hydrology	San Mateo SRP	No	Yes					1	5	
Creates or enhances habitat	San Mateo SRP	No	Yes					1	5	
Project is within 1/4 mile of identified RHNA site or other affordable housing site	East Palo Alto-specific	No	Yes					1	5	
Community enhancement (ie parks)	San Mateo SRP (modified)	No					Yes	2	10	

Green Streets Screening and Prioritization

Criteria	Source	Points						Weight Factor	Max	
		0	1	2	3	4	5			
Screening Criteria Factors										
Slope (%)	San Mateo SRP (modified)	No	n/a							--
Ability to add within existing right of way	East Palo Alto-specific	Identified GI opportunities have already screened for this						--		
Prioritization Factors										
Imperviousness (%)	San Mateo SRP	$X < 40$	$40 \leq X < 50$	$50 \leq X < 60$	$60 \leq X < 70$	$70 \leq X < 80$	$80 \leq X < 100$	1		5
Hydrologic Soil Group	San Mateo SRP	--	D	Unknown	C	B	A	1		5
Slope (%)	San Mateo SRP (modified)	--	$4 < X \leq 5$	$3 < X \leq 4$	$2 < X \leq 3$	$1 < X \leq 2$	$0 < X \leq 1$	1		5
Proximity to Flood-prone Channels (miles)	San Mateo SRP	Not in sub-basin	$3 < X$	--	$1 < X \leq 3$	--	$X \leq 1$	2		10
Areas with localized flooding - drywell saturation or clog - channel or ditch overflow - private property floods - driveways and intersection floods - storm system overflow or clog	East Palo Alto-specific	No					Yes	2	10	
Contains PCBs Risk Areas	San Mateo SRP	None	--	--	Moderate	--	High	2	10	
Street Type	San Mateo SRP (modified)	--	--	--	Collector Local	Minor Arterial	Boulevard School Collector Transit Collector School Access	1	5	
Greenways / Complete Streets Projects	East Palo Alto-specific	No					Yes	2	10	
Streets identified for future or with existing storm drains, swales, other drainage improvements	East Palo Alto-specific	No					Yes	2	10	
Currently planned by City or co-located with other City project	San Mateo SRP (modified)	No			Strong Potential		Yes	2	10	
"Safe Routes to School" program	San Mateo SRP	No					Yes	2	10	
Project identified in approved master plan, community plan, policy, etc.	East Palo Alto-specific	No					Yes	1	5	
Within the drainage area of Addison Avenue or planned GI project	East Palo Alto-specific	Yes = -10						1	10	
Drains to TMDL water	San Mateo SRP	No					Yes	1	5	
Above groundwater basin	San Mateo SRP	No		Yes				1	1	
Augments water supply	San Mateo SRP	No	Yes					1	1	
Water quality source control	San Mateo SRP	No	Yes					1	1	
Reestablishes natural hydrology	San Mateo SRP	No	Yes					1	1	
Creates or enhances habitat	San Mateo SRP	No	Yes					1	1	
Project is within 1/4 mile of identified RHNA site or other affordable housing site	East Palo Alto-specific	No	Yes					1	1	
Community enhancement	San Mateo SRP (modified)	No					Yes	2	10	

**Appendix C. East Palo Alto-Specific Existing Conditions
FEMA FLOOD HAZARD ZONE**



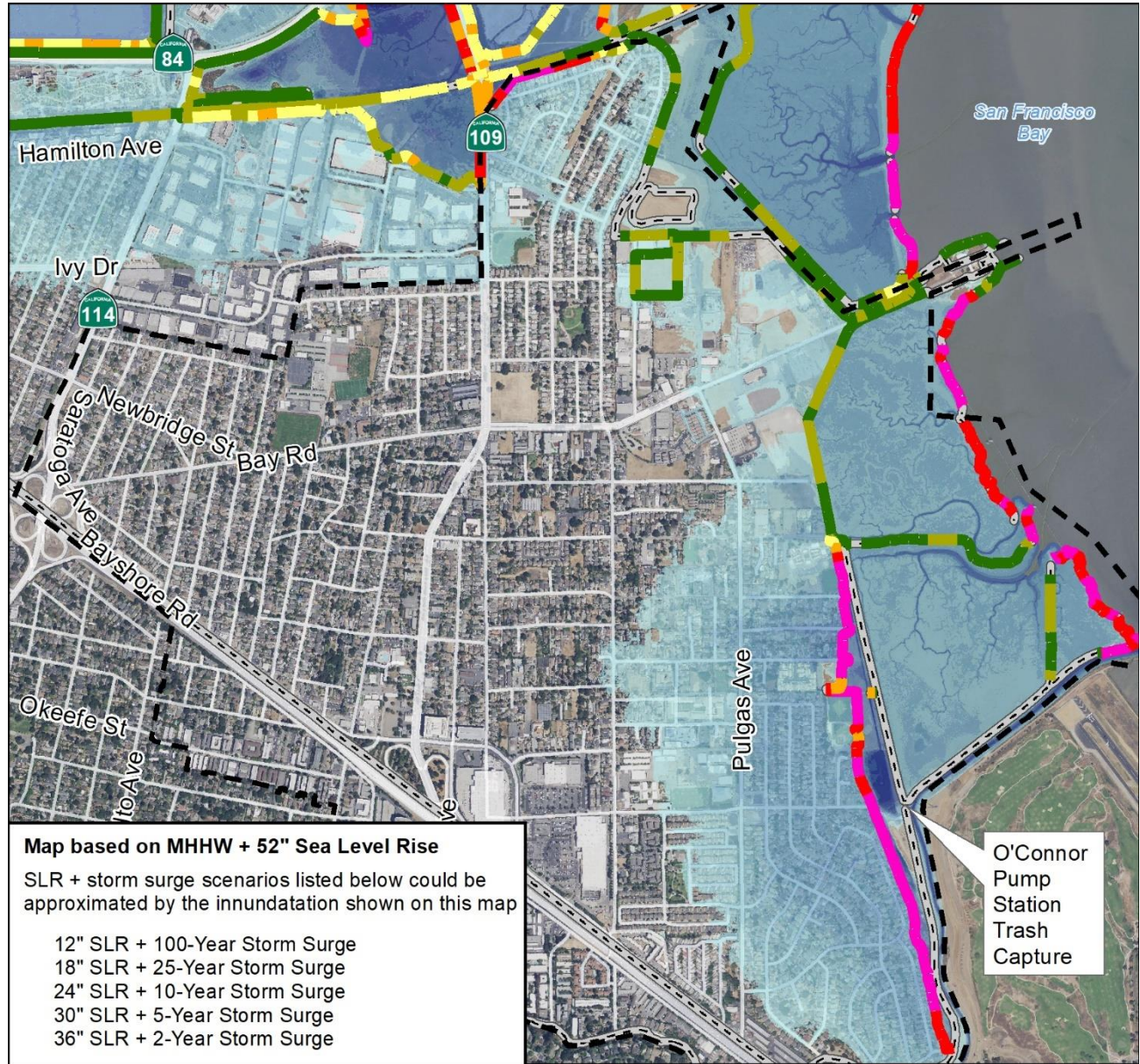
City of East Palo Alto FEMA Flood Hazard Zone

- 1% Annual Chance Flood Hazard (100-Year)
- 0.2% Annual Chance Flood Hazard (500-Year)
- Creek

Data Source: FEMA National Flood Zones. Map Service 2019
Imagery: NAIP 2018



Appendix B. East Palo Alto-Specific Existing Conditions SEA LEVEL RISE MAP

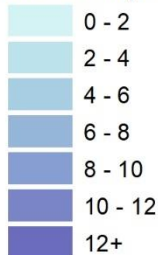


City of East Palo Alto Sea Level Rise Map

Shoreline Overtopping Potential (feet)



Sea Level Rise Inundation (feet)

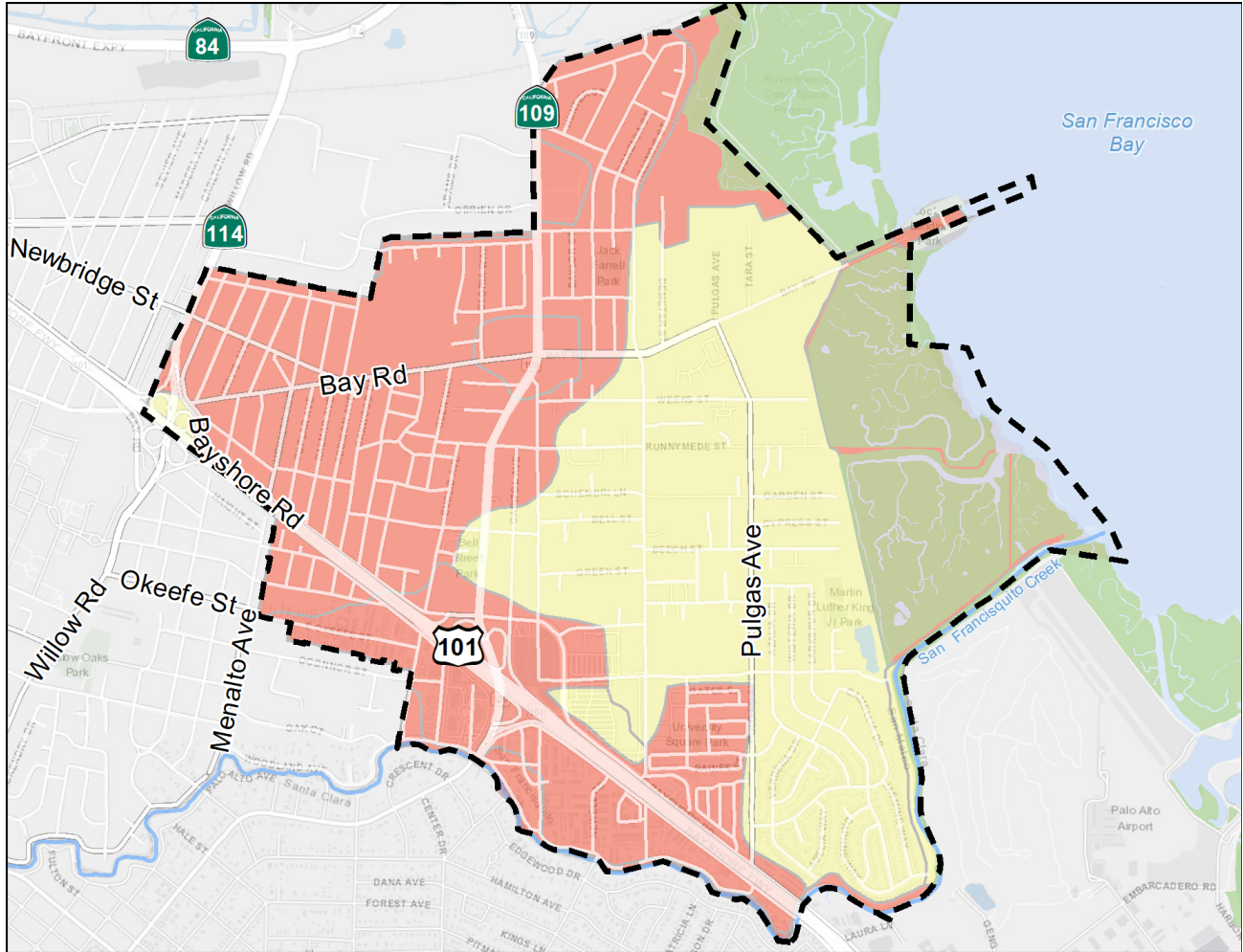


Data Source:
 Adapting to Rising Tides (ART)
 Bay Area Sea Level Rise
 and Shoreline Analysis Maps
 AECOM, BCDC, MTC
<https://explorer.adaptingtoringtides.org/>

City Boundary



**Appendix B. East Palo Alto-Specific Existing Conditions
SOILS MAP**



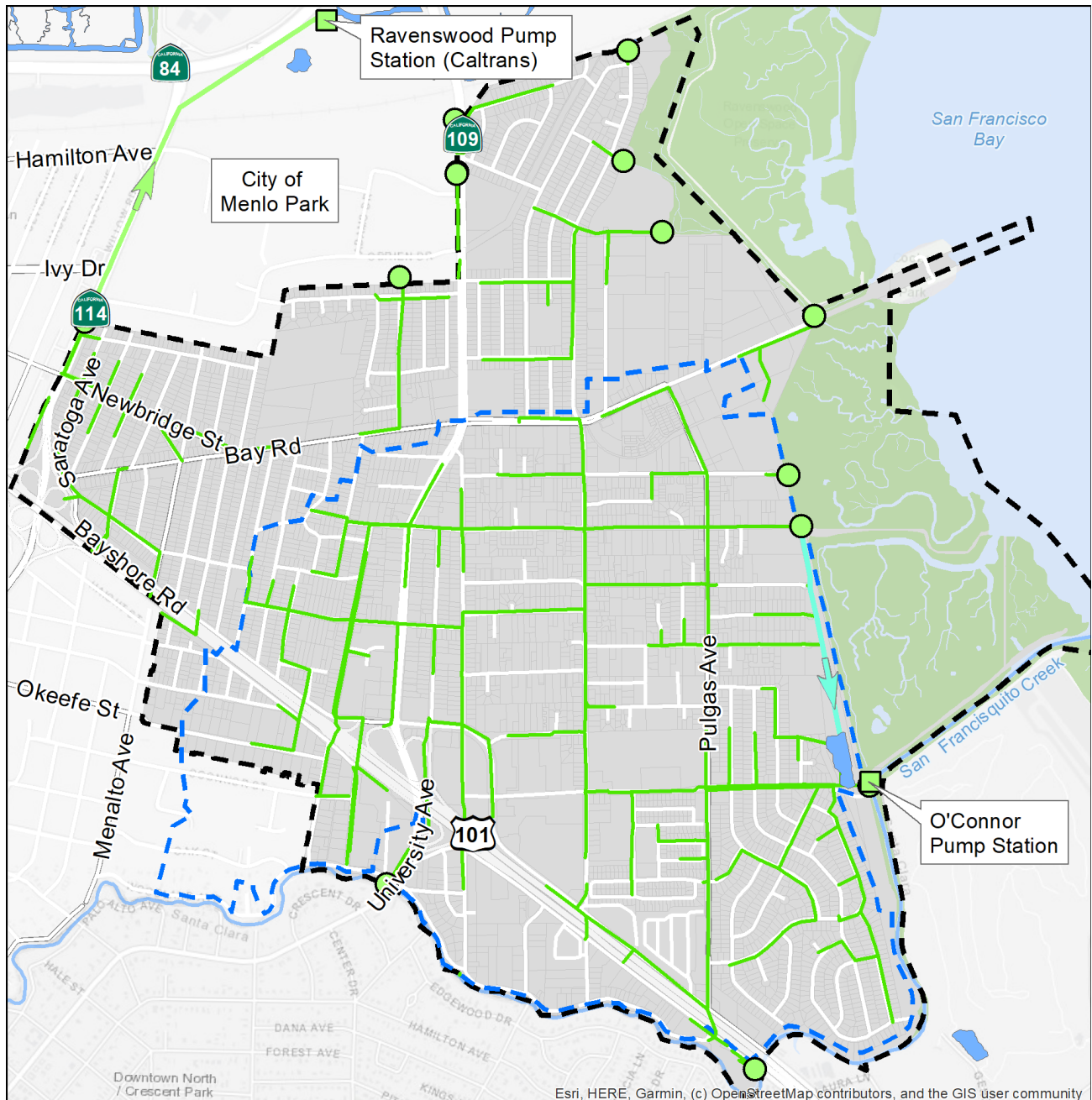
City of East Palo Alto Hydrologic Soil Group - Dominant Condition

- Group A.** Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- Group B.** Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
- Group C.** Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- Group D.** Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Data Source: US Natural Resources Conservation Service, US Department of Agriculture Soil Survey Geographic (SSURGO) Database; ESRI







Appendix B. East Palo Alto-Specific Existing Conditions
STORMDRAIN MAP

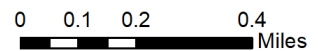


City of East Palo Alto Storm Drain Network

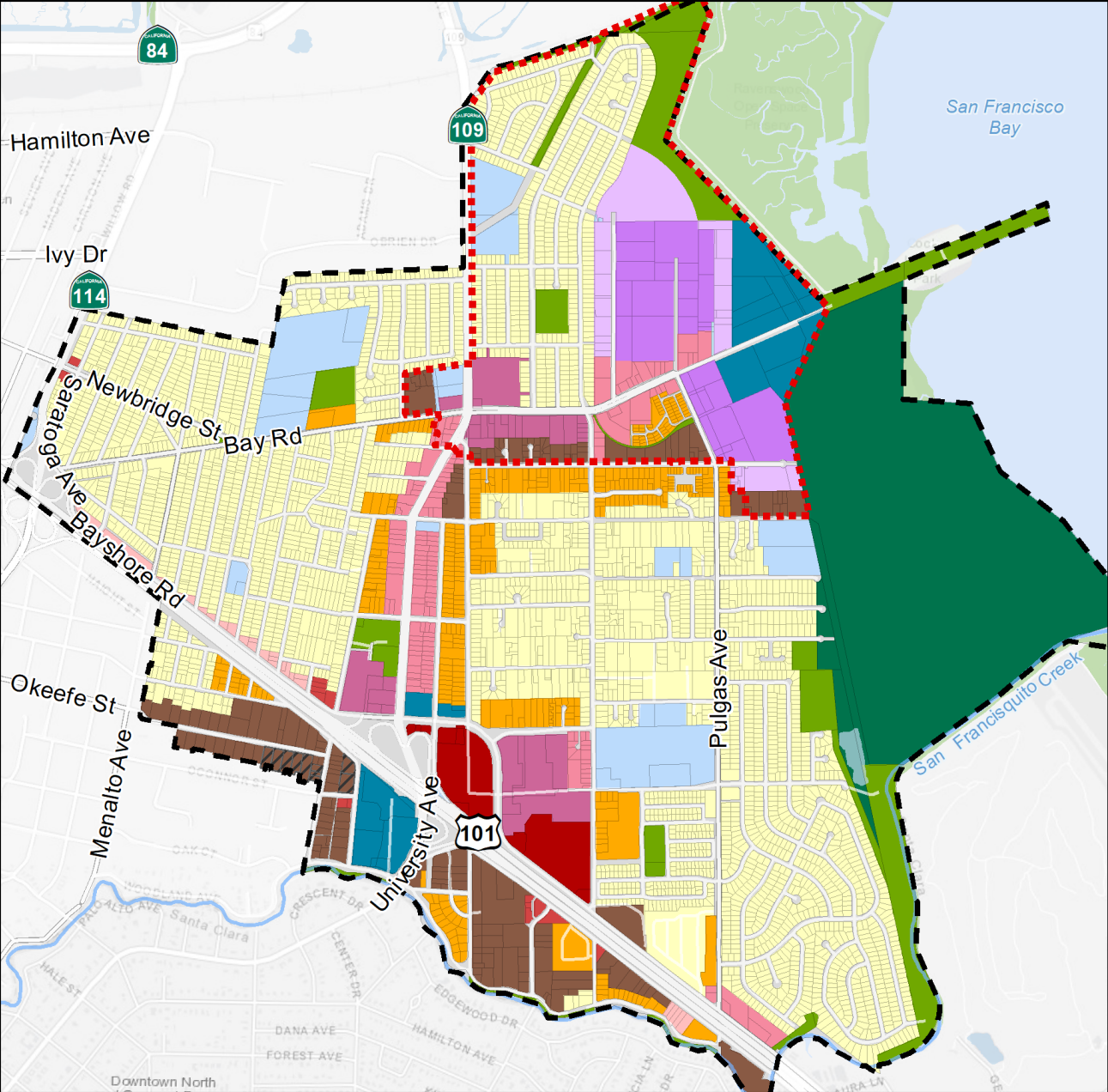
Storm Drain Network

-  Outfall
-  Storm Drain Line
-  Channel
-  O'Connor Pump Station Catchment

-  Wetland
-  City Boundary



**Appendix B. East Palo Alto-Specific Existing Conditions
GENERAL PLAN MAP**

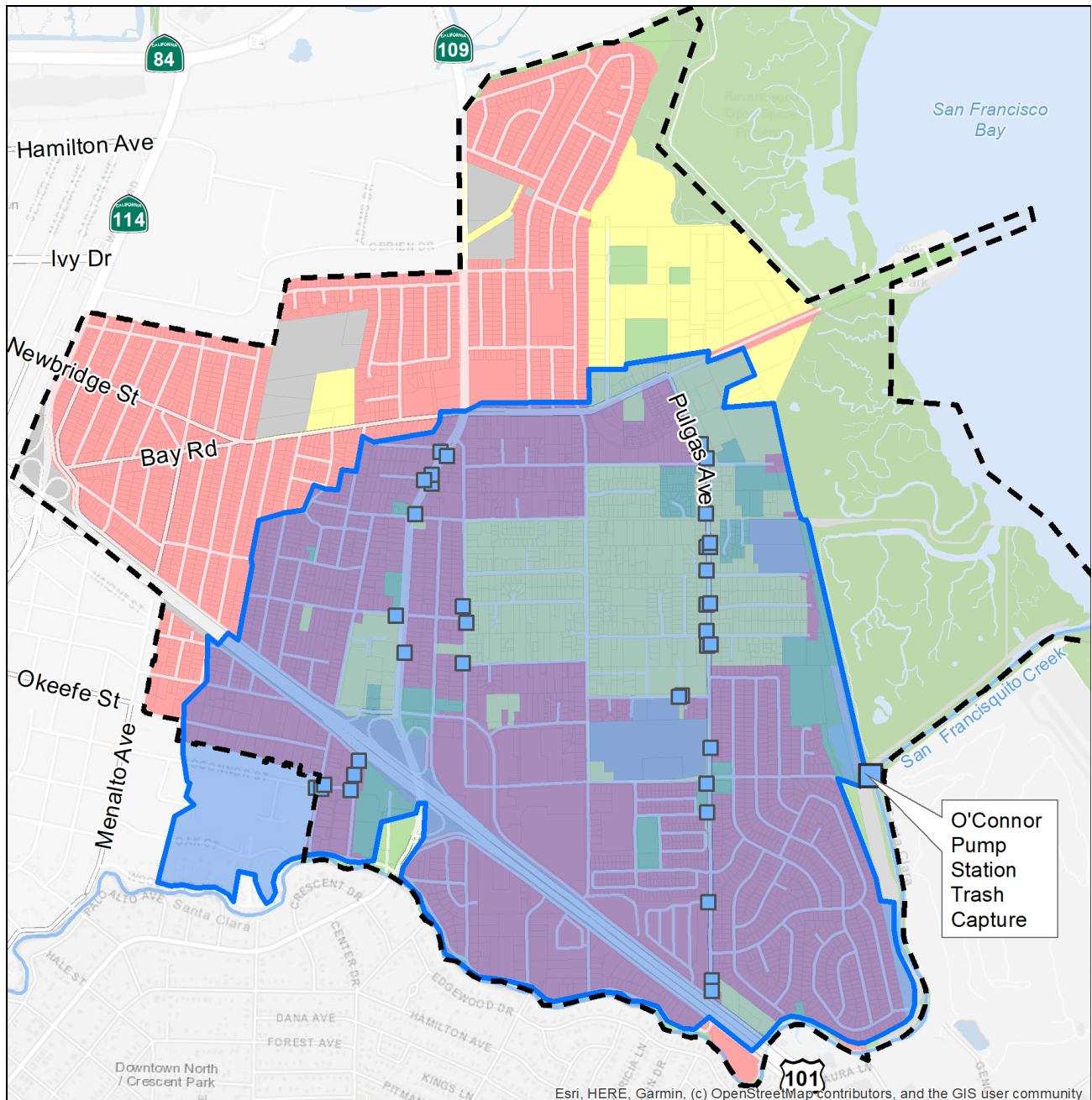


City of East Palo Alto General Plan Land Use Designations

- | | | |
|----------------------------|-------------------------------|--------------------------|
| Low Density Residential | Neighborhood Commercial | Ravenswood Specific Plan |
| Medium Density Residential | General Commercial | |
| High Density Residential | Office | |
| Urban Residential | General Industrial | |
| Mixed-Use Low | Industrial Buffer | |
| Mixed Use Corridor | Resource Management | |
| Mixed Use High | Parks/Recreation/Conservation | |
| | Public/Institutional | |



**Appendix B. East Palo Alto-Specific Existing Conditions
TRASH MAP**



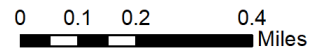
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

City of East Palo Alto Trash Map

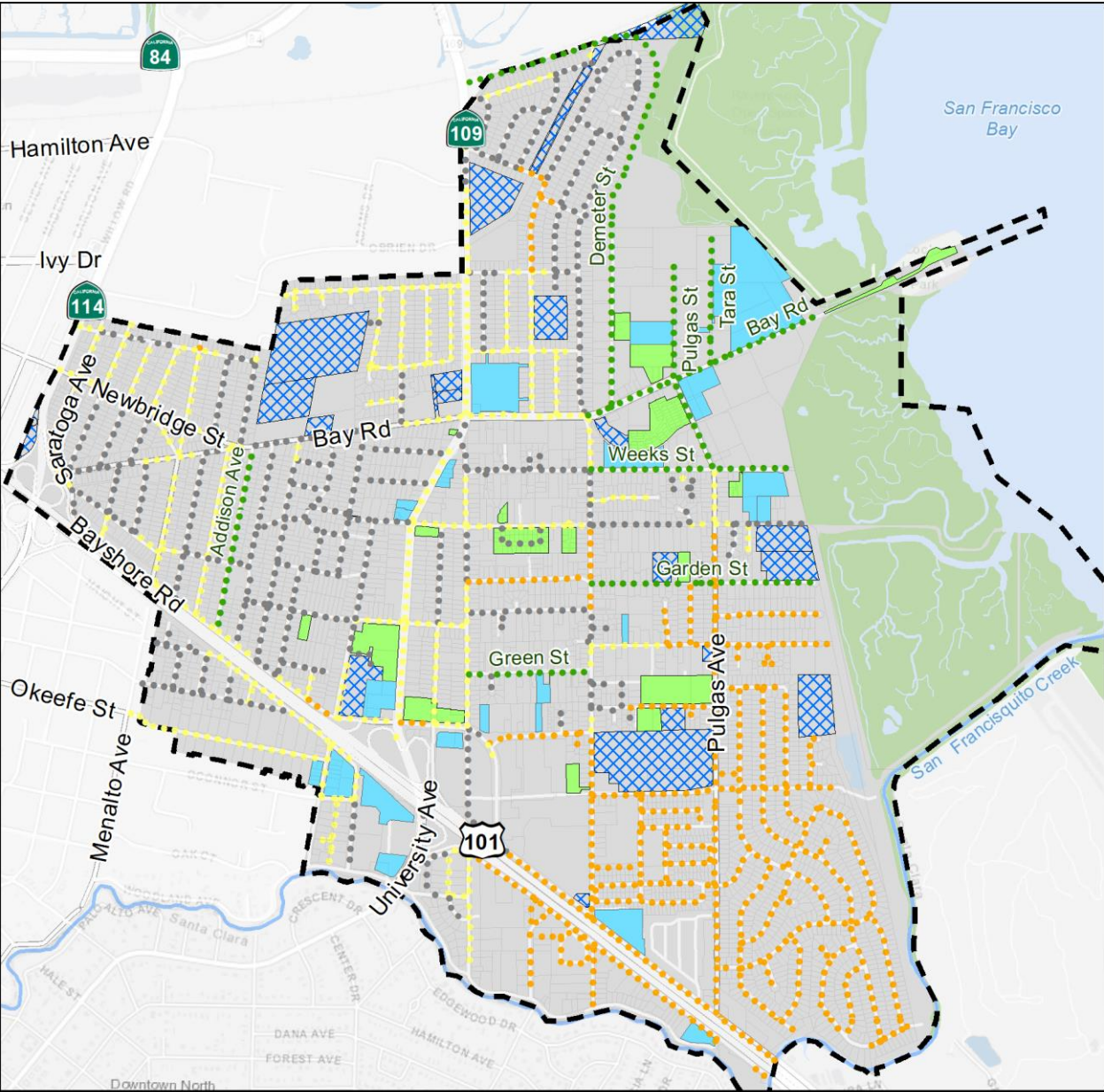
Trash Generation Category

- Low
- Moderate
- High
- Very High
- Non-Jurisdictional

- Creek/Shoreline Hotspot
- Full-Capture Location
- Full Trash Capture
- City Boundary



Appendix C. East Palo Alto-Specific Existing, Planned and Potential GI Projects
GREEN INFRASTRUCTURE PLAN MAP



City of East Palo Alto Existing and Potential Green Infrastructure

**Stormwater Resource Plan
Green Street Opportunity**

- High
- Moderate
- Low

- Planned (not approved) Green Street
- Existing GSI
- Under Construction/
Planned (not approved) GSI
- Stormwater Resource Plan
GSI Projects Prioritized
- City Boundary

