

**COUNTY OF SAN MATEO  
PLANNING AND BUILDING DEPARTMENT**

**DATE:** March 27, 2019

**TO:** Planning Commission

**FROM:** Planning Staff

**SUBJECT:** Briefing on San Mateo County Green Infrastructure Plan Preparation

County File Number: PLN 2019-00082

**SUMMARY**

Staff will conduct a briefing on the County's approach to preparing its Green Infrastructure (GI) Plan, a requirement of the San Francisco Bay Regional Water Quality Control Board's (Water Board) Municipal Regional Permit. The briefing will provide: (1) an overview of Water Board requirements as they pertain to the regulation of stormwater and runoff generated from streets and private and public development; (2) an overview of the State's Green Infrastructure Plan requirements; and (3) an opportunity to comment on policy approaches that will be included in the GI Plan, and potential policy and regulation changes to require GI on private and public property.

**BACKGROUND**

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Location: Unincorporated San Mateo County

**DISCUSSION**

A. *What is the County Required to Do?*

The San Francisco Bay Regional Water Quality Control Board's (Water Board) 2015 Municipal Regional Permit (MRP) regulates pollutants in stormwater runoff from municipal storm drain systems throughout San Mateo, Santa Clara, Alameda, and Contra Costa Counties. The MRP requires each jurisdiction, including the County of San Mateo, to develop a Green Infrastructure (GI) Plan that demonstrates how jurisdictions will gradually shift from traditional "gray" storm drain infrastructure—which channels polluted runoff directly into receiving waters without treatment—to a more resilient and sustainable storm drain system comprised of "green" infrastructure, which captures, stores, and treats stormwater using specially-designed landscape systems. The GI Plan, including a description

of regulation updates, must be completed by September 30, 2019. Regulation updates, as described in the GI Plan, must be implemented by December 31, 2020.

*B. What is GI?*

Green Infrastructure uses vegetation, soils, and natural processes to *treat and clean* stormwater (remove pollutants), *store* stormwater (direct water to stable storage areas away from roads and other development), and *infiltrate* treated water back into the groundwater table (replenishing the groundwater table). GI measures provide landscape-based multiple benefits, including flooding and erosion prevention, reduction of heat island effect, aesthetic benefits, traffic calming, and improvements to water quality and groundwater recharge. Regarding water quality, GI measures remove specific pollutants from stormwater and are needed to help the County to achieve specified pollutant load reductions to improve water quality by 2020, 2030, and 2040.

At the scale of a city or county, Green Infrastructure refers to the patchwork of these landscape features. There are three categories of GI measures based on their location:

- Along or within a street or public right-of-way, these measures are referred to as Green Street measures.
- On a private parcel, these measures are referred to as Low Impact Development (LID), or LID measures.
- Generally located on publically-owned lands, Regional Projects involve collaboration among multiple municipalities and/or public agencies to construct large GI projects that capture and treat stormwater from off-site areas. Collaboration with other jurisdictions may allow for larger GI projects with greater economies of scale, specifically cost-sharing opportunities and greater flood control and pollutant reduction capacity.

GI and LID measures include the following facilities which can be built in the public right-of-way and/or private property:



Figure 1 - Stormwater Planters



Figure 3 - Rain Gardens



Figure 2- Stormwater Curb Extensions



Figure 4- Tree Wells



Figure 5 - Infiltration Systems



Figure 8 - Rainwater Harvesting



Figure 6 - Pervious Pavement



Figure 9 - Vegetated Swales



Figure 7 - Green Roofs



Figure 10 - Green Gutters

C. *What is a Watershed?*

The County proposes a watershed-level approach to planning construction of GI measures. A watershed is a land area that channels rainfall and snowmelt to creeks, streams, and rivers, and eventually to outflow points: the San Francisco Bay and the Pacific Ocean.

San Mateo County has 87 watersheds, ranging in size from 81 square miles (Pescadero-Butano) to less than 1 square mile. Each watershed will have varying levels of opportunities for GI construction. The County and its consultant team will

be looking at the *costs* (such as constraints to GI including soil conditions, road configuration, and utility locations) and *benefits* (such as pollutant removal, “greening” of high pedestrian-traffic areas) of the construction of GI measures in each watershed. The consultant team will be making recommendations to the County on the best locations for these infrastructure investments.

For example, on the Bayside, the County jurisdictional areas comprise a small amount of each watershed they lie in. Urbanized areas in the County, including Emerald Lake Hills (ELH)/Palomar Park and North Fair Oaks (NFO) are more sizable. While the County can make GI investments in NFO that make economic sense, ELH/Palomar Park and the other unincorporated County residential areas of the Bayside are not likely to be prudent GI investments due to topography, street and road configurations, and concerns about loss of parking and neighborhood disruption.

Also, in order to maximize capture, treatment, and infiltration of urban runoff from impervious surfaces, the focus of the GI Plan will be on the developed urban portions of unincorporated County and will not consider undeveloped open space, agricultural lands, and forested lands. The stormwater conveyance infrastructure in rural coastal areas consist mostly of vegetated ditches, which provide similar function as GI. Urban open space, such as public parks, and underutilized or vacant land in developed communities will still be considered in the GI Plan.

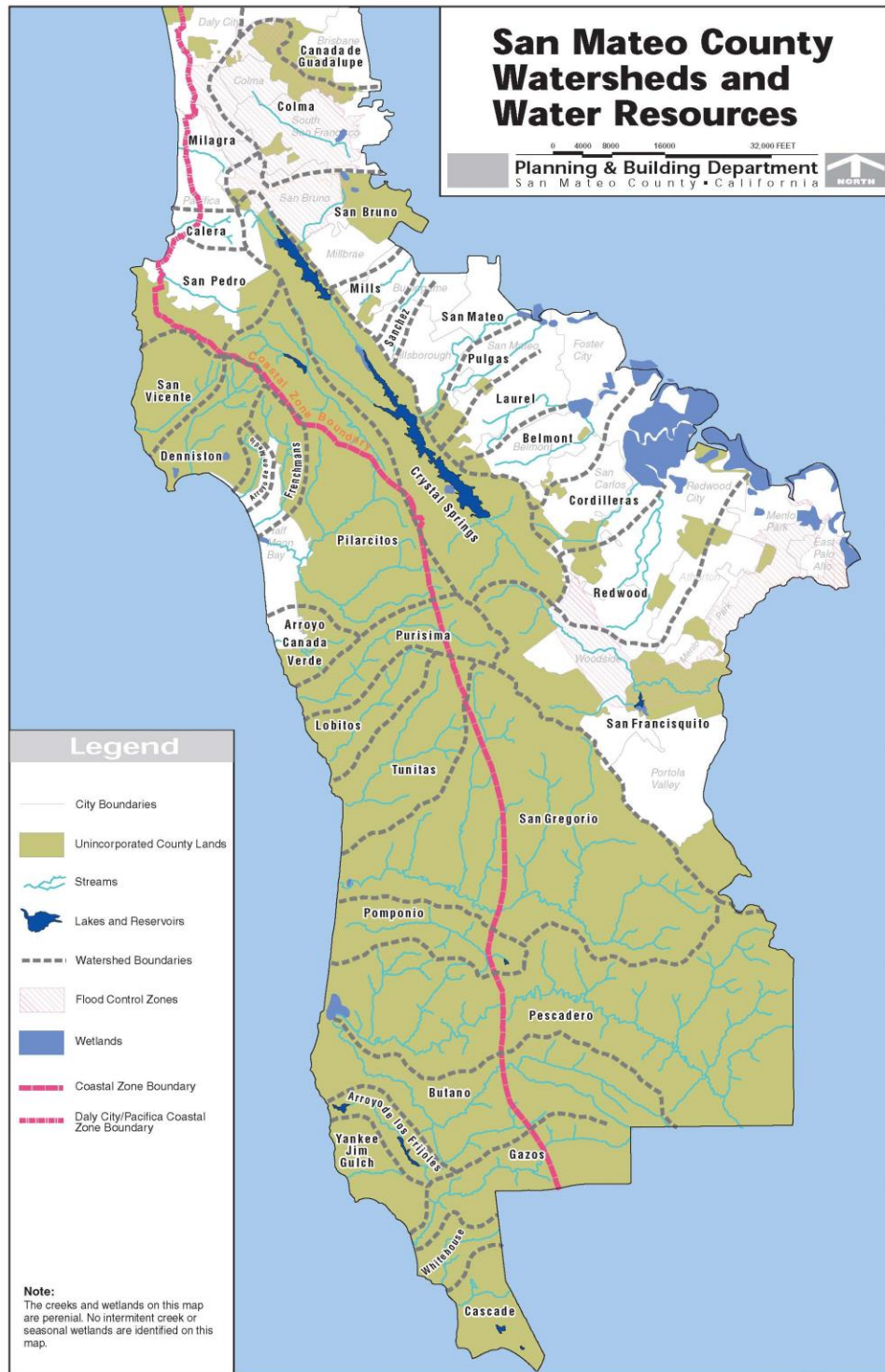


Figure 11- Simplified map of watershed of unincorporated areas of San Mateo County

*D. The County's Collaborative Approach to Meeting the GI Requirements Set by the MRP*

The County has formed a collaborative team led by the Office of Sustainability (OOS) with staff from the Planning and Building, Public Works, and Parks Departments and the Project Development Unit of the County Manager's Office. This team interviewed several firms and recommended that OOS contract with EOA, Inc., in collaboration with Lotus Water and Paradigm Environmental, David J. Powers and Associates, and SCI Consulting Group, to prepare a comprehensive GI Plan that describes how the County intends to do to meet the GI requirements of the MRP.

The County continues to participate in and consult with the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP). The program is a partnership of the City/County Association of Governments (C/CAG), each incorporated city and town in the county, and the County of San Mateo, which share a common Municipal Regional Permit. San Mateo Countywide Water Pollution Prevention Program works with all the municipalities of the MRP to comply with MRP requirements, which include activities related to construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. In addition to efforts to ensure compliance of individual municipalities, SMCWPPP can work with multiple municipalities to coordinate collaborative efforts on Regional GI Projects.

*E. What Role Will the Planning Commission Play in the GI Plan?*

The key role for the Planning Commission is to consider the regulation updates that staff believes are necessary to achieve the GI requirements. The MRP, among other things, requires the GI Plan to include:

1. A summary of the planning documents the County has updated or otherwise modified to appropriately incorporate green infrastructure requirements, such as: General Plans, Specific Plans, Complete Streets Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control or Flood Management Plans, and other plans that may affect the future alignment, configuration, or design of impervious surfaces within the County's jurisdiction, including, but not limited to, streets, alleys, parking lots, sidewalks, plazas, roofs, and drainage infrastructure.

The County is expected to complete these modifications as a part of completing the Green Infrastructure Plan, and by not later than the end of the permit term (December 31, 2020).

2. To the extent not addressed above, a work plan identifying how the County will ensure that green infrastructure and low impact development measures

are appropriately included in future plans (e.g., new or amended versions of the kinds of plans listed above).

F. *County Strategy to Meet GI Goals:*

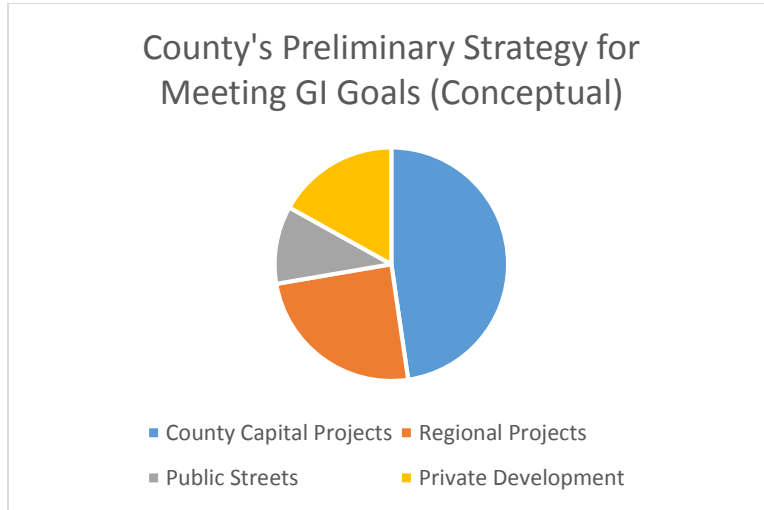


Figure 12

As illustrated in Figure 13, the GI regulation updates applying to private development are only one part of the County's approach to shift toward green stormwater infrastructure. County efforts are described in more detail below:

1. Update County regulations to require private development to incorporate GI measures in new development and redevelopment. EOA, Inc. is helping Planning staff to draft a new Stormwater and Drainage Ordinance, as well as proposed modifications to the County's General Plan, policies, ordinances, and other legal mechanisms as necessary to incorporate new enforceable GI policies for public and decision maker review.
2. Incorporate GI in upcoming County Capital Improvement Projects.
3. Incorporate GI in upcoming Public Street Projects, such as the Middlefield Road Street Improvement Project;
4. Work with the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) and other County municipalities to plan for larger-scale Regional GI Projects. A Regional Project is planned for Orange Park in South San Francisco, and conceptual proposals are being formulated for sites in Redwood City (Red Morton Park), San Bruno (I-280/I-380 interchange), and Atherton (Everest High School) among others.



G. *Current GI Requirements for New and Redevelopment Projects on Private Property*

Currently, the MRP (as well as permits issued by the State Water Board prior to the MRP), issued in 2015, requires the following types of new and redevelopment projects to construct LID measures on private property:

1. Commercial, Institutional, Industrial, Multiple-Family Residential, Mixed Use, and Subdivisions projects that create or replace 10,000 sq. ft. or more of impervious surface.
2. Special land uses, specifically auto service facilities, retail gasoline outlets, restaurants, uncovered parking areas (stand-alone or part of a larger project), if the project creates or replaces 5,000 sq. ft. or more of impervious surface.

The projects above are referred to as “Regulated Projects” that must design and construct LID treatment measures at the project site. The measures must be sized in order to accommodate run-off from new or replaced impervious surfaces (roof run-off, impervious parking lots) associated with the project. Once construction is completed, measures must be maintained regularly by the property owner and inspected by the County at least once every 5 years. At this time, within unincorporated areas of San Mateo County, there are approximately fifty (50) private sites with constructed LID measures. The MRP requires that the County increase the amount of stormwater treated with GI, and one place to do that is on private property.

The adoption of new GI requirements for private development would add to the above-described current LID stormwater treatment requirements for new and redevelopment projects. The County needs to determine to what degree additional GI will be required on private property beyond what is required by the MRP.

H. *How Should Development Incorporate LID and GI Measures?*

In the past, the County’s practice has been to manage stormwater through “gray” storm drain infrastructure, largely for the prevention of nuisance associated with runoff (e.g., flooding, erosion resulting from velocity of flow) to receiving properties such as neighboring private property and the public right-of-way. The County’s new recommended approach focuses on multiple-benefit landscape-based GI measures.

1. New Stormwater and Drainage Ordinance

Planning staff would create a new Stormwater and Drainage Ordinance that describes which projects would require GI measures, as well as projects

that may only require standard drainage facilities. Standard drainage facilities are critical in the management of the County's municipal drainage facilities and direct stormwater away from roads and development. These facilities can also store stormwater and infiltrate stormwater into the ground, but do not have the express purpose of treating or cleaning stormwater.

While all projects creating or replacing impervious surface would be subject to standard drainage requirements, only those projects identified by the ordinance would be required to construct GI measures. The County currently requires all private projects which create or replace impervious surface to comply with the Drainage Policy prepared by the Department of Public Works. A new ordinance with updated drainage requirements would ease property owner implementation by providing standard technical details through a Drainage Manual and by allowing the property owner or contractor to prepare the drainage plan for smaller projects.

Staff recommended policy approaches for the ordinance are described in the following section. The ordinance would also include policies and guidance to minimize potential conflicts between GI measures, utilities, public parking, Americans with Disabilities Act (ADA) access, and emergency access.

## 2. Regulation Updates to Address GI Requirements

As noted above, the MRP requires the County's GI Plan to include a summary of the planning documents the County has updated or otherwise modified to appropriately incorporate green infrastructure requirements. Planning staff plans to update its regulatory documents, such as the County's General Plan, Zoning Regulations and the Local Coastal Program, as necessary to incorporate new enforceable GI policies for public and decision maker review.

Regarding updates to the General Plan, one approach is to incorporate new policies within the existing General Plan elements, specifically the Urban Land Use, Vegetative, Water, Fish and Wildlife Resources, and Water Supply elements. New policies would aim to set broader stormwater policy to reduce dangers from flooding, protect community safety and property, and provide well-maintained green infrastructure to the community while reducing the negative environmental impacts of storm runoff on creeks, the Bay, and the Ocean. New policies would also provide support for an implementing regulation in the form of a new Stormwater and Drainage Ordinance as well as changes to other ordinances. Another approach being evaluated is consolidating the policy changes in a new General Plan element focused on watersheds and stormwater.

I. *Potential New Policy Approaches*

1. Which Types of Projects Would be Required to Construct LID and GI Measures?

Planning staff anticipates that the new Stormwater and Drainage Ordinance would require the following project types, in Urban areas, only to construct GI and/or LID measures (in addition to LID measures already required by the State for Regulated Projects), if they meet a certain size threshold (as discussed under Section 2, below):

a. *Commercial, Commercial/Mixed Use, and Commercial Recreation Projects*

Landscape-based GI measures would provide aesthetic and shading benefits in areas that have wider streets and would benefit from traffic and pedestrian improvements. Low Impact Development measures could be used to treat stormwater from parking lots and roofs.

b. *Industrial Projects*

Green Infrastructure measures can be used to remove legacy and other pollutants from stormwater. These areas have wider streets and would benefit from the aesthetic benefits of landscape improvements as well as traffic and pedestrian improvements. Low Impact Development measures could be used to treat stormwater from parking lots and roofs.

c. *Special Lands Use Projects (Auto Service Facilities, Retail Gasoline Outlets, Restaurants, Uncovered Parking Areas)*

These land uses typically generate stormwater pollutants from their operations. Low Impact Development measures could be used to treat stormwater from parking lots and roofs.

d. *Residential Major Subdivision Projects*

These projects, which would result in five (5) or more parcels, and may require new roads to serve new development. New roads present opportunities to implement GI measures. Low Impact Development could be used to treat stormwater from driveways, walkways, and roofs.

In order to avoid increasing the cost of building affordable housing, staff proposes to exempt Residential Minor Subdivisions and projects which are exclusively Multiple-Family Residential (subdivisions resulting in four (4) or

less parcels from GI and LID requirements. Currently, the construction of one single-family residence is exempt from MRP requirements for Low Impact Development. Under the County's ordinance, these projects would continue to be exempt from requirements.

2. What Size of Private Development Projects would be required to Construct LID and GI Measures?

Planning staff is considering various size thresholds for requiring GI and LID for the specified project types. At this time, staff intends to require the following types of projects to incorporate LID and GI measures:

- Projects that are considered Regulated Projects by the MRP, which create 10,000 sq. ft. or more of impervious surface or 5,000 sq. ft. or more of impervious surface for special land uses. These projects are required to construct LID measures. New regulations would require construction of GI measures within the public right-of-way.
- Projects that are large but under the MRP Regulated Project threshold (10,000 sq. ft. impervious surface threshold and 5,000 sq. ft. for special land uses). Currently, staff is in the process of evaluating historic development patterns and developing appropriate thresholds for triggering LID and GI measures in the above listed project types. This approach would result in an expansion of the number of projects in the unincorporated areas of the County that incorporate LID/GI measures.

3. Where Would GI Measures be Required Instead of LID Measures?

In higher pedestrian traffic areas, such as commercial and commercial recreation areas, the construction of GI measures in the public right-of-way (PROW) would be prioritized over on-site LID measures, due to the multiple benefits of GI measures. These landscape-based measures would provide aesthetic and shading benefits to public pedestrian areas as well as traffic calming functions through islands and bulb-outs at street corners.

While PROW GI measures can be implemented in many locations, the County's consultant team has identified specific areas of focus to maximize the benefit of the County's and private resources. Specific areas of focus identified for GI investments include: North Fair Oaks, West Menlo Park, the Harbor/Industrial region, and the Coastal region. Planning staff would require GI measures in the urban, commercial areas of these communities, where construction of GI measures would be required over a major percentage of the property street frontage.

## **DISCUSSION QUESTIONS**

1. Does the creation of a New Stormwater and Drainage Ordinance seem reasonable and appropriate approach to meeting the County's GI goals?
2. Does the proposed policy approach for incorporating GI into private development seem reasonable and appropriate?

## **PUBLIC OUTREACH**

In addition to scheduled Planning Commission hearings as listed in the anticipated schedule below, the County is planning an April 2019 workshop with civil engineers that work in San Mateo County to collect their feedback on draft requirements of the new Stormwater and Drainage Ordinance, as well as the draft Drainage Manual.

## **ENVIRONMENTAL REVIEW**

Review consistent with the California Environmental Quality Act (CEQA) will be completed after draft regulations are prepared.

## **PARTNER AGENCIES**

1. San Mateo Countywide Water Pollution Prevention Program (SMCWPPP).
2. Representatives of the Department of Public Works, the Parks Department, and the Office of Sustainability serve on the County's GI Internal Working Group.

## **ANTICIPATED SCHEDULE FOR DECISION MAKER REVIEW**

March 27, 2019	Briefing of GI Plan Process at the Planning Commission meeting
April 2019	Workshop with engineering community to review the Draft Stormwater and Drainage Ordinance and the Drainage Manual
May 8, 2019	Summary of regulation updates at the Planning Commission meeting
June 26, 2019	Draft-final regulation updates at the Planning Commission meeting
July 23, 2019	Board of Supervisors meeting document
August 14, 2019	Planning Commission meeting to consider regulation updates and CEQA document

September 10, 2019 Board of Supervisors Meeting to adopt regulation updates and CEQA

September 30, 2019 The County is expected to complete its regulation update as a part of completing the Green Infrastructure Plan which is due on this date and, at the latest, by the end of the MRP permit term (December 31, 2020).

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