



Memorandum

TO: HONORABLE MAYOR AND
CITY COUNCIL

FROM: Kerrie Romanow
Matt Cano

SUBJECT: SEE SUBJECT BELOW

DATE: August 19, 2019

Approved

Date

8/30/19

SUBJECT: CITY OF SAN JOSE GREEN STORMWATER INFRASTRUCTURE PLAN

RECOMMENDATION

Approve the Green Stormwater Infrastructure Plan in advance of its submission to the Regional Water Quality Control Board by the September 30, 2019 deadline.

OUTCOME

This action results in approval of the Green Stormwater Infrastructure Plan, which advances the City's goals of more comprehensively managing stormwater, providing multiple benefits for the environment and community, and complying with a regulatory requirement.

EXECUTIVE SUMMARY

The Green Stormwater Infrastructure (GSI) Plan presents a comprehensive approach to protecting the City's creeks, and the San Francisco Bay from harmful pollutants. GSI generally uses vegetation, soils, and natural processes to filter pollutants such as metals, oils, and bacteria that run off impervious surfaces during rain events. These water quality improvements can be coupled with designs that enhance aesthetics, incorporate public art, recreation, and improve ecological and urban conditions through added green space.

The City operates under a Municipal Regional Stormwater Permit (Stormwater Permit), issued by the Regional Water Quality Control Board, that includes a requirement to develop a plan to incorporate green stormwater infrastructure design elements into public and private lands. The Stormwater Permit requires the City to submit this plan to the Water Board with the City's 2019 Stormwater Annual Report by September 30, 2019. The City also embarked upon developing a

Comprehensive Load Reduction Plan (CLRP) describing how the City can achieve a bacteria reduction target to enhance water quality in local creeks and waterways. The GSI Plan and Comprehensive Load Reduction Plan requirements are similar as they are both intended to be plans that provide reasonable assurance that pollutant loads will be reduced. Because the elements of the two plans overlap, City staff have developed a single GSI Plan incorporating the requirements of the CLRP. This plan describes how GSI is included at the citywide planning level; how designs and specifications support implementation of GSI; the prioritization methodology for project site selection, and a list of six potential regional projects that could be implemented to advance the City closer toward the bacteria reduction target. In addition, the draft GSI Plan presents a citywide GSI implementation strategy that demonstrates the types and quantities of projects needed to achieve the target. Finally, the draft GSI Plan summarizes the City's funding analysis and processes to implement GSI.

BACKGROUND

Water currently enters the City's storm sewer system through approximately 32,000 storm drain inlets. Stormwater flows are conveyed without treatment to local creeks and streams and ultimately to the San Francisco Bay. These flows are comprised of rainfall runoff, excess irrigation water, and other outdoor water that can collect pollutants as they run across rooftops, sidewalks, driveways, streets, and landscaping. Green stormwater infrastructure uses vegetation, soils, and natural processes to reduce and filter the runoff pollutants.

The Stormwater Permit has included Green stormwater infrastructure provisions for several years, imposing requirements for new development and redevelopment projects of a certain size to construct stormwater treatment measures to control pollutant discharges. While these regulated developments have been addressed on a project by project basis, they have primarily been limited to treatment of parcels. The City has complied with these permit obligations, but the Green Stormwater Infrastructure Plan (GSI Plan) presents a comprehensive approach to green stormwater infrastructure in the public right of ways and public properties, which is significant because these encompass large areas of impervious land with associated runoff.

The City's Stormwater Permit now requires this comprehensive plan for incorporating green stormwater infrastructure design elements into public and private lands. The City also embarked upon developing a Comprehensive Load Reduction Plan (CLRP) describing how the City can achieve a bacteria reduction target to enhance water quality in local creeks and waterways. The GSI Plan and Comprehensive Load Reduction Plan requirements are similar as they are both intended to be plans that provide reasonable assurance that pollutant loads will be reduced. Because the elements of the two plans overlap, City staff have developed a single GSI Plan incorporating the requirements of the CLRP. The City competitively secured the professional consultant services of Paradigm Environmental, supported by subconsultants Lotus Water and EOA, to assist with the development of a green stormwater infrastructure plan.

Development of the GSI Plan has been a citywide effort involving multiple City departments. The Environmental Services Department (ESD) initiated a GSI Plan steering committee and working group which included representatives from the departments of Planning, Building and Code Enforcement (PBCE), Public Works (PW), Transportation (DOT), Parks, Recreation and Neighborhood Services (PRNS), Office of Economic Development (OED), and Airport. Representatives from these departments provided guidance, information, and input to collaboratively develop the plan.

The Transportation and Environment Committee approved a staff report on the [*City of San Jose Green Stormwater Infrastructure Plan*](#) on June 3, 2019. Modifications to the staff report have been added and incorporated into this staff report to Council.

ANALYSIS

The GSI Plan describes how the City can shift from directing stormwater flows from impervious surfaces into storm drain infrastructure, where the stormwater runoff is not treated and discharges directly into receiving waters, to a system where stormwater runoff is slowed, infiltrated, used, and/or treated prior to discharge to receiving waters. It is a planning level document intended to help guide the City with implementation of green stormwater infrastructure.

Although GSI's primary role is to reduce erosive flows and quantities of pollutants being discharged to San Jose's creeks and the Bay, it can provide multiple community and environmental benefits. GSI can beautify neighborhoods through added green space and provide unique opportunities to integrate a comprehensive design approach that will enhance aesthetics through landscaping and public art and improve water quality. It can also help reduce the urban heat island effect and improve air quality through the introduction of more vegetation in the City. Increasing vegetation can also provide an ecological benefit by improving the biodiversity of plant types in the urban environment and providing habitat for birds, butterflies, bees, and other local species. In addition, GSI has the potential to augment groundwater and alternative water supplies, such as recycled water.

GSI Coordination with Planning Documents and Designs

The GSI Plan is consistent with major strategies, goals, and policies of the Envision San Jose 2040 General Plan, and aligns with the direction the City is moving with initiatives such as the Climate Smart San Jose Plan and the San José Complete Streets Design Standards & Guidelines. Including appropriate GSI language ensures existing and future City planning documents are consistent on green stormwater infrastructure requirements and goals. ESD coordinated with partner departments to ensure City planning documents include appropriate cross-references and are consistent. The GSI Plan describes the updates to plans that have already been made, and notes plans that will be updated or developed with GSI language in the future.

In addition, the GSI Plan describes the regional effort to meet the Stormwater Permit requirement to develop GSI design guidelines and standards. The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), comprised of thirteen towns and cities, Valley Water, and the County of Santa Clara (all subject to the Stormwater Permit) led this effort. SCVURPPP produced a GSI Handbook that highlights design approaches and standards for retrofitting GSI facilities into various public locations such as roadways, parks, and parking lots. City staff from several departments, including PW, DOT, PRNS, and ESD were engaged in the process and actively participated in regional workshops and interdepartmental meetings to inform the regional effort. The regional process benefitted from the wide variety of experiences of the collaborating agencies and helped promote consistency throughout the region.

GSI Project Prioritization Methodology

The GSI Plan describes the City's prioritization methodology for identifying potential GSI project locations. The starting point for the City's site prioritization process was the output from the countywide GSI prioritization process, led by SCVURPPP, that utilized multi-benefit scoring criterion. The City refined the output from the countywide prioritization process for green streets and regional projects by applying more-localized criteria, including site-level construction constraints and input from multiple City departments including PW and PRNS.

Green Streets

Green street projects are small-scale projects spread throughout the urban area in the public right-of-way and are intended to capture runoff from the street and adjacent parcels. Staff developed a construction feasibility focused process to prioritize green streets. The process yielded a map reference tool in geographic information systems (GIS). Several GIS layers, including groundwater depth, soil type, street widths, street lengths, and utility locations were used for the evaluation and then were combined into a technical suitability map. In addition to technical suitability, staff also considered opportunities to integrate GSI with other projects (e.g. bike lane, traffic safety) as part of the prioritization.

Regional Projects

Regional GSI projects are large-scale stormwater capture and treatment measures that are intended to collect and treat runoff from large drainage areas inclusive of several neighborhoods which provides certain economies of scale. The projects are referred to as regional because they treat stormwater from a larger area than a local parcel or street-based project. They also have greater potential to provide multiple-benefits, as demonstrated by projects implemented throughout the country over the last decade. The examples of aboveground projects (stormwater is collected/treated at the surface) and underground projects (stormwater is collected/treated below the surface) listed below manage stormwater runoff while maintaining or enhancing recreational uses. Several of these projects are presented in the Environmental Protection Agency's *Green Infrastructure in Parks: A Guide to Collaboration, Funding, and Community Engagement*.¹

¹ (https://www.epa.gov/sites/production/files/2017-05/documents/gi_parksplaybook_2017-05-01_508.pdf).

- Aboveground regional projects: Cromwell Park in Shoreline, Washington, Hunter Point South Waterfront Park in Queens, New York, Historic Fourth Ward Park in Atlanta, Georgia, and Elmwood Park in Omaha, Nebraska. These projects include features such as sports fields and play areas in detention basins, as well as wetlands, bioretention areas, and stormwater retention ponds surrounded by trails, landscaping, elevated platforms for performances, site-seeing, public gathering, public art, and cultural and recreational uses.
- Underground regional projects: Sun Valley Park in Los Angeles County, California, and Alta Vista Park in the City of Redondo Beach, California. Both examples included large infiltration systems underground that allowed for the aboveground uses such as soccer and baseball fields to be restored.

Please see Attachment A: *Aboveground and Underground Regional Projects* for a sampling of aboveground and underground project photographs.

Potential regional project locations were identified through a process collaboratively executed by multiple departments including PRNS, PW, and ESD. The evaluation process included technical feasibility criteria such as size of drainage area, site size, depth to groundwater, and soil types. Many of the potential locations are in parks because a sufficient amount of land is needed to collect stormwater runoff from large drainage areas and parks are the largest available public space. In considering potential park locations, staff prioritized locations where GSI may be integrated into recreational uses such that they are either maintained or enhanced through the design and construction process. As demonstrated by the examples provided above and others across the country, park areas can be ideal sites where GSI can provide multiple benefits such as enhancement to habitat, recreation, and water reuse. Potential locations were further reviewed by PRNS against criteria such as whether existing recreational facilities or park conditions might be improved or impacted by the project, how reservable fields might be impacted, and where there would not be an impact to existing, mature trees, and impact on future design renovations. Conceptual designs were developed for six potential locations: River Oaks Pump Station, Vinci Park, Kelley Park Disc Golf Course, Kelley Park Stables, Roy M. Butcher Park, and the Tully Ballfields. See Attachment B: *River Oaks Pump Station Conceptual Design* as an example. All project locations are considered potential and the conceptual designs are preliminary.

Measure T, passed by voters in November 2018, provides funding of \$25,000,000 to assist with the implementation of regional GSI projects. Public Works staff further analyzed the list of potential regional GSI locations and applied additional criteria related to constructability, site availability, site condition, and usage, to develop a scoring matrix for these sites. The following two sites received the highest ranking and are feasible for design, permitting and construction in the next three years:

- River Oaks Pump Station
- Kelley Park Stables

Pending feedback from the Parks and Recreation Commission, staff will propose one or two projects as priorities to the Mayor and City Council for use of the \$25 million. Following selection of one or two priority projects, staff will engage in a scoping analysis of the projects.

This analysis will include community involvement and look to answer questions about how a project can provide a dual benefit of green infrastructure and serve as a community open space asset. Following the scoping analysis, staff will return to the Mayor and City Council for project scope approval before completing the final design work. This extra step of City Council approval will ensure that the public has an opportunity to weigh in on the staff analysis of the benefits and/or impacts of the project. If a project which is under the control of the PRNS (such as the Kelley Park Stables) is selected, staff will also return to the Parks and Recreation Commission for feedback on the final scope prior to making a final recommendation to the City Council. The outreach will be a joint effort of PRNS, PW and ESD. Specific methods of outreach will be tailored to the community around each location.

Citywide Implementation Strategy

The GSI Plan defines the bacteria reduction target based on an analysis required by the consent decree, and the citywide strategy section describes how GSI project types can be combined to meet the target. The GSI project types included in the strategy are prioritized regional projects and green streets, early implementation GSI projects (i.e. green street grant projects), unidentified public-parcel Low Impact Development (LID) retrofits, and estimated future development projects required to install GSI per the Stormwater Permit. Together, these elements comprise a formula for achieving capture of the bacteria storm target. The roughly 2,000 GSI installations currently on public and private property combined with projections for future development, capture and treat only approximately 100 of the 833 acre-feet required to meet the bacteria reduction target. Additionally, implementation of the six identified potential regional projects and technically suitable potential green street locations respectively move the City closer to its bacteria reduction target with the regional projects providing the most reduction based on the number of projects per acre treated. The strategy includes a “to-be-determined” category that would need to be defined and implemented to meet the bacteria reduction target by 2050, as specified in the consent decree. The “to-be-determined” category, which comprises roughly 70% of the overall strategy, could include additional regional projects, more green streets deemed less technically suitable, retrofits of City-owned property to include GSI, and potential additional new and redevelopment with GSI required by the Stormwater Permit. This is a long-range strategy that is not intended to be inclusive of every project needed to meet the target and will be subject to adaptive management as new information is obtained.

EVALUATION AND FOLLOW-UP

Staff will present an update on GSI implementation in the next 12 to 18 months.

PUBLIC OUTREACH

ESD coordinated with the PW, DOT, and PRNS to conduct a public meeting on November 15, 2018 to educate the public about green stormwater infrastructure, potential project locations, and the draft GSI Plan. Generally, participants asked questions seeking a better understanding of GSI

and how it would be integrated into parks. Staff explained the preliminary status of the concept designs and that additional outreach on designs will be conducted. Additionally, staff met with several environmentally-focused groups including the Conservation Council, Greenbelt Alliance, and Save the Bay.

The draft GSI Plan was posted to the City's website on April 24, 2019 and the public was invited to provide comments on the draft plan by May 15, 2019. During the 21-day public comment period staff received feedback from a combination of 22 interested parties addressing a range of topics, including: preservation of park uses; project designs; public health and safety; open space preservation; operations and maintenance; green street implementation; flooding and climate change; and internal and external stakeholder coordination.

Four of the 22 comment letters are from non-governmental organizations including Save the Bay, League of Women Voters, SPUR, Greenbelt Alliance, and Committee for Green Foothills (Greenbelt Alliance and Committee for Green Foothills submitted a joint letter). Letters from these groups express support for accelerated citywide implementation of green stormwater infrastructure and an interest in expansive implementation of green streets that focuses on achieving multiple benefits. The letters also describe the groups' interest in preserving Coyote Valley and their perspective on how it fits into the context of a broader green infrastructure plan. One group asked the City to consider the impacts of climate change and to include a discussion of them in the GSI Plan. Subsequently, San Francisco Baykeeper provided written comments on the GSI Plan primarily requesting more detailed information on projects under the "to-be-determined" category.

The City also received two letters from park advocates and 16 emails from community members regarding the Kelley Park Disc Golf Course which is identified in the GSI Plan as a potential location for a regional GSI project. Although some commenters support the concept of treating water prior to it reaching local creeks and the Bay, they broadly express concerns about using parks as regional GSI project sites. They also note specific concerns regarding the conceptual designs presented in the GSI Plan. While no designs have been developed beyond the concept level, commenters question whether any design would be compatible with current park uses and allow adequate flexibility for future uses.

Staff presented the GSI Plan to the Transportation and Environment Committee on June 3, 2019, and subsequently to the Parks and Recreation Commission on June 5, 2019. The Transportation and Environment Committee approved the staff report.

Additionally, public outreach will be conducted during the implementation phase. As the City determines which projects are feasible, staff will conduct public outreach during planning and design phases, as appropriate.

COORDINATION

This memorandum was coordinated with the Departments of Planning, Building and Code Enforcement, Transportation, Parks, Recreation and Neighborhood Services, Office of Economic Development, the Airport, the City Attorney's Office, and the City Manager's Budget Office.

COMMISSION RECOMMENDATIONS/INPUT

Staff presented an informational report, [*Regional Green Stormwater Infrastructure Plan and Measure T Clean Water Prioritization*](#), at the Parks and Recreation Commission meeting held on June 5, 2019. During the public comment period several members of the public, including Kelley Park Disc Golf Course users and the San Jose Park Advocates, provided input. Kelley Park Disc Golf Course users expressed concerns about maintaining the current recreational uses at this site, namely disc golfing, and asked that they be included in the project planning process if the City determines that a regional project will be built at this location. Other public commenters expressed concerns about using parklands for the purpose of stormwater management. After a period of questions for staff and discussion, the Commission stated opposition to using any parklands for stormwater regional projects.

COST SUMMARY/IMPLICATIONS

The GSI Plan outlines processes for ongoing incorporation of GSI in City infrastructure as well as specific implementation steps as they relate to potential regional projects to meet the deadlines identified in the City's regulatory requirements. Preliminary implementation costs for all six potential regional projects are estimated by the City's consultant to be approximately \$126 million, including capital and operation and maintenance costs for 30 years exceeding the consent decree requirement to appropriate \$100 million over a ten-year period. The cost to fully implement the entire GSI Plan and operate and maintain GSI projects as required by the permit are expected to greatly exceed \$100 million.

The GSI Plan includes an analysis that resulted in a strategy to achieve the bacteria storm target and includes some limited capital cost information to develop a comparative cost estimate. The resulting \$1.5 billion conceptual dollar amount identified in the GSI Plan (Appx. B, §5.3) is provided for a comparison of model scenarios, and as stated in the GSI Plan, is not an estimate for projections of the capital improvement costs. Staff anticipates the actual capital costs to be significantly larger. For perspective, the Los Angeles County region is pursuing projects totaling approximately \$20 billion over 20 years to help meet a similar requirement. The actual cost of implementation is difficult to accurately predict because the GSI Plan doesn't simply lay out a list of new projects, it provides for a fundamental shift in how the City approaches the management and development of all City properties from parks to streets to parking lots as it relates to stormwater and its treatment and quality. The ultimate solution to meeting the requirements set forth by 2050 will require a significant investment in both funding (similar to

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Los Angeles County's funding measure but scaled to our size) and business practices. The solution will require that the City utilize parks and streets networks and find new properties through purchase or partnership while simultaneously ensuring that the public's use of these facilities is not hindered and in most cases, enhanced.

Staff presented potential funding options to Council on December 19, 2017 in the [Storm Sewer Funding Alternatives](#) report that deemed the most feasible funding options to be general obligation bond funding, a parcel tax, and, to a lesser extent, grants. The Disaster Preparedness, Public Safety and Infrastructure Bond passed by San Jose voters in November 2018 allocates approximately \$25 million to clean water projects that are likely to include green stormwater infrastructure. In addition, staff is preparing to apply for two Proposition 1 grants for identified projects. As noted in the [Storm Sewer Funding Alternatives](#) report, staff will continue to develop a more thorough funding analysis of the two most feasible funding mechanisms: General Obligation Bonds (to fund capital projects) and Parcel Tax (for O&M), or other mechanisms.

CEQA

Statutorily Exempt, File No. PP19-023, CEQA Guidelines Section 15308 Actions by Regulatory Agencies for Protection of the Environment.

/s/
KERRIE ROMANOW
Director, Environmental Services

/s/
MATT CANO
Director, Public Works

For questions, please contact Sharon Newton, Deputy Director of Environmental Services, at (408) 793-5351.

Attachment A – Aboveground and Underground Regional Projects.
Attachment B – River Oaks Pump Station Conceptual Design
Attachment C – Frequently Asked Questions
Attachment D – Draft Green Stormwater Infrastructure Plan