Grant Progress Report

Bay Area Green Infrastructure Master Planning Project
GA# 12-415-550

Progress Report # 7

Reporting Period: 1/01/2015 to 3/31/2015

Submittal Date 5/12/2015

Grant Agreement No: 12-415-550
Project Name: Bay Area Green Infrastructure Master Planning Project
Contractor Name: San Francisco Estuary Partnership / ABAG

I certify under penalty of law that this document and any attachment was prepared by me or under my direction in accordance with the terms and conditions of each Grant Agreement Exhibit. Based on my inquiry of the persons or persons who manage the project, or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. All information submitted in this document and all attachments conform to and is in accordance with the state and federal laws and I so here certify with my signature. I am aware that there are significant penalties for submitting false or misleading information.

Project Director: JUDY KELLY — Judy Kelly – Printed Name; Signature

Summary of Work Completed To Date

Work Item	Items for Review	Critical Due Date	Estimated Due Date	Percent Work Complete	Date Submitted
EXHIBIT A – SCOPE OF WORK TO BE PERFORMED BY THE GRANTEE					
A.	PLANS AND GENERAL COMPLIANCE REQUIREMENTS				
1.	GPS information for Project site and monitoring locations	Day 90		100%	10/26/13
2.	Monitoring and Reporting Plan	N/A	N/A	N/A	N/A
2.1	Project Assessment and Evaluation Plan (PAEP)	Day 90		100%	10/26/13
2.2	Monitoring Plan (MP)	N/A	N/A	N/A	N/A
2.3	Quality Assurance Project Plan (QAPP)	N/A	N/A	N/A	N/A
2.4	Proof of Water Quality Data Submission to CEDEN	N/A	N/A	N/A	N/A
3.	Copy of final CEQA/NEPA Documentation	Day 90		100%	10/26/13
4.	Public Agency Approvals, Entitlements, or Permits	N/A	N/A	N/A	N/A
B.	PROJECT-SPECIFIC REQUIREMENTS				
1.	Project Management				
1.2	Notification of Upcoming Meetings, Workshops, and Trainings		15 Days In Advance		
2.	TAC				

2.1	List of TAC Members, Their Affiliated Organizations, and Their Roles and Responsibilities		November 2013	100%	12/2/13
2.2	Three (3) TAC Meeting Agendas, Sign-In Sheets, and Minutes		As Needed	100%	8/15/14
2.3	TAC Status Report	December 31, 2014			12/31/14
3.	Toolkit				
3.4	The Packaged Toolkit		February 2015		2/17/15
3.5	Toolkit Technical Memorandum	April 30, 2015			4/30/15
3.6	List of Communities and Staff Contact Information that Participated in Toolkit Demonstration		May 2015		
4.	Green Infrastructure Master Plans		May 2015		
4.1	Preliminary Meeting Minutes and a List of Selected Watersheds		February 2014	100%	12/31/13
4.2	Toolkit Results and Secondary Meeting Minutes		December 2014		12/31/14
4.3	List of Potential LID Retrofit Sites Selected for Field Verification		December 2014		12/31/14
4.5	List of Selected Sites for LID Conceptual Design		April 2015		11/20/2014
4.6	Green Infrastructure Master Plans		May 2015		
5.	Evaluation of Potential Funding Mechanisms				
5.1	Meeting Agendas, Sign-In Sheets, and Minutes		April 2015		
5.2	In-Lieu Fee Program Memorandum		May 2015		
6.	Education and Outreach				
6.1	Website Link		October 2013	100%	10/26/13
6.3	Webinar Material		July 2015		
6.5	Project Results Presentation Material		July 2015		
EXHIBIT B – INVOICING, BUDGET DETAIL, AND REPORTING PROVISIONS					
A.	INVOICING		Quarterly	55% (5/9)	11/15/14
G.	REPORTS				
1.	Progress Reports within forty-five (45) days following the end of the calendar quarter (March, June, September, and December)		Quarterly	55% (5/9)	2/13/15
2.	Annual Progress Summaries		Annually by 9/30		1/13/15
3.	Natural Resource Projects Inventory (NRPI) Survey Form	Before Final Invoice			
4.	Draft Final Project Report	August 31, 2015			

5.	Final Project Report	October 31, 2015			
6.	Final Project Summary	Before Final Invoice			
7.	Final Project Inspection and Certification	Before Final Invoice			

Progress Report Narrative

GreenPlan Bay Area is a collaborative effort between San Francisco Estuary Partnership (SFEP), San Francisco Estuary Institute (SFEI) and several Bay Area municipalities. SFEI will develop spatial tools which will be used by several Bay Area municipalities to develop plans that identify the optimal combination of Green Infrastructure (GI)/Low Impact Development (LID) features for achieving desirable outcomes at the watershed scale.

The spatial tools, aka GreenPlan-IT, will include four components: a GIS siting tool with user interface to determine site suitability, a watershed model to identify high-yield runoff and pollutant areas ('hot spot'), optimization techniques to search for optimal combinations of LID locations, types and configurations, and a post-processor to compile and display outputs in user-friendly formats.

After development, GreenPlan-IT will be pilot tested in several municipalities/watersheds. The results of GreenPlan-IT will serve as the basis for municipal Green Infrastructure Master Plans and/or a list of priority LID sites for each jurisdiction. Conceptual designs will be developed for 8 LID sites/projects. Jurisdictions will also collaborate with ABAG/SFEP to explore potential funding frameworks (such as alternative compliance programs) for LID retrofits.

Summary of Activities

- Submitted Annual Progress Report on January 13, 2015
- Meetings and correspondence with ABAG staff to Plan the General Assembly (held 4/23/15).
- Meetings with cities about how GreenPlan-IT works and their Green Planning needs for the future efforts. Discussions occurred with the cities of Oakland, Sunnyvale, Richmond, San Jose, and Contra Costa County. SFEP and collaborators have been notified that we will receive funding from US EPA to refine GreenPlan-IT for the next round of the Bay Area's Municipal Regional Permit under the Regional Water Quality Control Board and assist new cities in writing Green Plans.

Summary of Items for Review

Invoice #7

Project Administration (Cumulative 75 % complete)
Project administration during this quarter has included the completion of Invoice 7, project management including completing the quarterly report, updating the project website, reviewing project deliverables submitted by SFEI and attending team meetings.

Project Design (Cumulative 70 % complete)
Project design included the tasks listed on the attached SFEI quarterly progress report as well as attending development meetings with staff from participating municipalities and SFEI; reviewing documents and providing input.

Exhibit A Deliverables
B(G)1 - Progress Reports (Cumulative 77 % 7 out of 9 complete) - continues on a quarterly basis no delays or issues to report.
Annual Progress Summary (submitted in January 2015)
Deliverables Update Memo (Deliverable 3.6; 4.6; 5.1; 5.2)

Attachments

1. SFEI Progress Report #7 (Quarter 7 – January through March 2015)
2. Annual Progress Summary
3. Deliverables Update Memo (Deliverable 3.6; 4.6; 5.1; 5.2)

Summary of Items in Progress

SFEP

- Exhibit A - B(G)1 Progress Reports - continues on a quarterly basis; no delays or issues to report.
- Exhibit B5 Evaluation of potential funding mechanisms - alternative compliance research – see discussion in Deliverables Update Memo

SFEI

- Webinar
- 8 conceptual designs with cities of San Jose and San Mateo

Question for State Board:

SFEP would like to inquire whether this project requires certification re: one or both of the following contract provisions:

P12 - 7. FINAL PROJECT INSPECTION AND CERTIFICATION. Upon completion of the Project, the Grantee shall provide for a final inspection and shall certify that the Project has been completed in accordance with this Agreement, any final plans and specifications submitted to the State Water Board, and any amendments or modifications thereto. If the Project involved the planning, investigation, evaluation, design, or other work requiring interpretation and proper application of engineering, or other professionals, the final inspection and certification shall be conducted by a California Registered Civil Engineer or other appropriate California registered professional. The results of the final inspection and certification shall be provided to the Grant Manager.

P 17 - 27. PROFESSIONALS: The Grantee agrees that only licensed professionals will be used to perform services under this Agreement where such services are called for. All technical reports required pursuant to this Agreement that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with California Code of Regulations, title 16, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

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Green Infrastructure Master Planning Project Quarterly Progress Report
Q1 2015 (Progress Report #7)

Task 1: Project Assessment and Evaluation Plan

Work Completed during the Period

- No work completed on this task during Quarter 1 2015.

Task 2: Technical Advisory Committee

Work Completed during the Period

- No work completed on this task during Quarter 1 2015.

Task 3: LID Toolkit

Work Completed during the Period

- SFEI continued to hold internal meetings to check in on project progress, discuss technical questions, and plan project next steps.
- SFEI staff completed the toolkit user documents which have been uploaded to the project website.
- SFEI completed development of the project website. The website will contain the toolkit, technical documentation, and toolkit user documentation.
- SFEI staff continued working with the city of San Jose. SFEI staff held phone conferences with the city of San Jose on February 3 and March 19. At the February 3 meeting, city staff decided that they wanted to run the Site Locator Tool with the Regional Base Analysis (RBA) included and a 2nd run with the RBA included and ranked in the Opportunities and Constraints table. The city also wanted to add in the urban villages data layer in lieu of the priority development data layer. SFEI reran the Site Locator Tool with the updated information and held a 2nd conference call on March 19 to review the outputs. The city was pleased with the outputs of the 2nd tool run. Current city 'green streets' were shown as highly ranked locations including:
    - Park and University (particularly the island/median)
    - Emery and Park (there was a location with an inlet)
    - Meridian Ave and Park (another island/median)
    - Tillman street
    - Sunol St and Park (island/median)
    - Chynowith street

    Next steps were for San Jose staff to identify possible locations to do site visits on April 8th.
- Staff began preparation for the April 8 meeting with San Jose to discuss the 100% Toolkit outputs for San Jose.

Task 4: Green Infrastructure Master Plans

Work Completed during the Period

- SFEI developed a draft demonstration report summarizing the Toolkit genesis, the process of working with the cities of San Jose and San Mateo, and the outcomes of running the Toolkit in the partner communities. A final report will be completed in April.
- Dan Cloak of DCEC continued planning for the 8 conceptual designs with cities of San Mateo and San Jose and prepared for the April 8 meeting with San Jose.

Task 5: Education and Outreach

Work Completed during the Period

- An adjustment was made to this invoice for the facilities expense.

Annual Progress Summary

Proposition 84 Stormwater Planning & Monitoring Grant

Bay Area Green Infrastructure Master Planning Project

Association of Bay Area Governments

Agreement Number 12-415-550

DATE OF SUBMISSION: 1/15/15

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1. Background – The Bay Area Green Infrastructure Master Planning Project (Called GreenPlan Bay Area for public purposes) will provide a Low Impact Development (LID) Toolkit (entitled GreenPlan-IT for public purposes) and other planning assistance to help Bay Area municipalities strategically plan and implement LID projects at a watershed scale. The Grant Recipient is San Francisco Estuary Partnership in collaboration with San Francisco Estuary Institute. Dan Cloak Environmental Consulting and municipalities in the Bay Area. GreenPlan-IT has been pilot tested and demonstrated in the cities of San Mateo and San Jose. The primary watersheds in these cities include: the Guadalupe River and Coyote Creek in San Jose as well as ------ in San Mateo. These watersheds are impacted by typical urban pollutants arising from roads, cars, and trucks as well as legacy pollutants such as PCBs and Mercury. At the start of GreenPlan Bay Area neither San Jose nor San Mateo had plans or methodologies to site Low Impact Development (LID) features to address the typical urban pollutants of the watersheds.

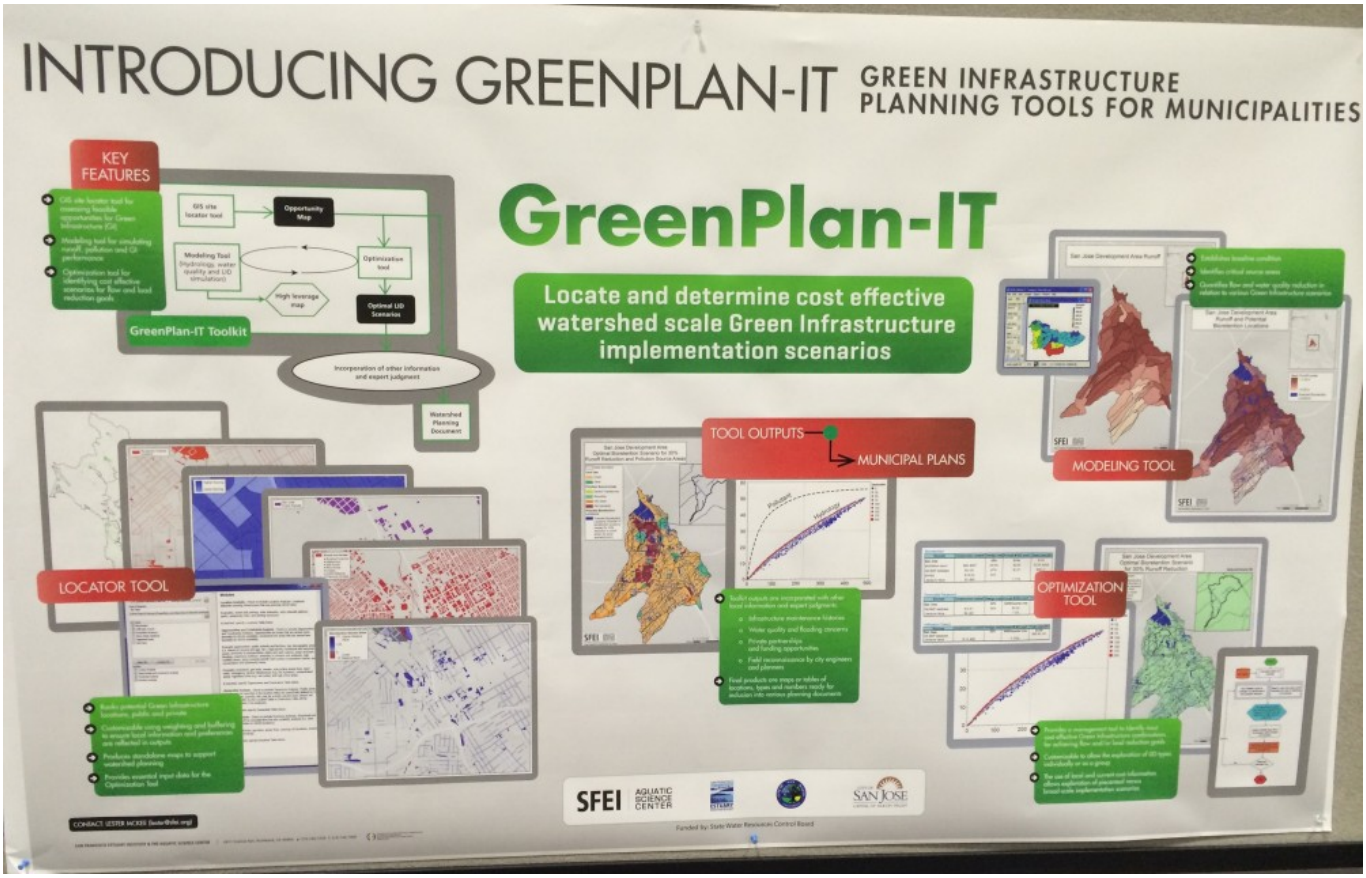
2. Project Description – The primary elements of GreenPlan Bay Area are to: 1) develop and demonstrate a portable GIS-based LID Siting Toolkit in 3 Bay Area pilot watersheds (GreenPlan-IT). GreenPlan-IT will facilitate identification, evaluation and ranking of potential sites based on both their relative feasibility and potential effectiveness in reducing flow and pollutant loads and minimizing impacts on beneficial uses of Bay Area rivers, lakes, and streams. A cost/benefit analysis will be performed on the potential sites and the sites will be ranked according to the analysis. 2) The project team will collaborate with partnering Bay Area municipalities (San Mateo and San Jose) to develop Green Infrastructure Plans and conceptual designs of LID installations. These plans will be integrated into municipal planning efforts so that the plans are the basis for new and re-development in the municipalities. 3) The project will consider a variety of strategies to fund LID retrofits. 4) Education and outreach within the region and state expand the reach and impact of the project through a publically accessible project website.

3. Project Status – GreenPlan-IT has been developed and GreenPlan-IT site location outputs have been run for the Cities of San Jose and San Mateo. SFEI is completing a user's guide and documentation for GreenPlan-IT. Following this, SFEP and SFEI will host a webinar to demonstrate GreenPlan-IT to other municipalities in the Bay Area. Cities including Fremont, Sunnyvale, and Richmond have expressed interest in participating in the Webinar and using GreenPlan-IT for planning purposes in their cities. GreenPlan-IT, the user's guide, documentation and Webinar, will be published on a website (which will link off the project website, http://www.sfestuary.org/greenplanning/) so that cities throughout California (and beyond) can use the siting tools. San Mateo has incorporated the GreenPlan-IT outputs, and a memo generated by SFEI explaining the outputs, into its Sustainable Street Plan, which is now undergoing CEQA for implementation in 2015 and beyond. San Jose will incorporate the GreenPlan-IT outputs into its Stormwater Master Plan which will be complete after the term of the grant. SFEP has discussed funding options for LID sites with San Mateo and San Jose. SFEP needs to convene a meeting with municipalities to discuss these options and get feedback. The project is on budget and on time.

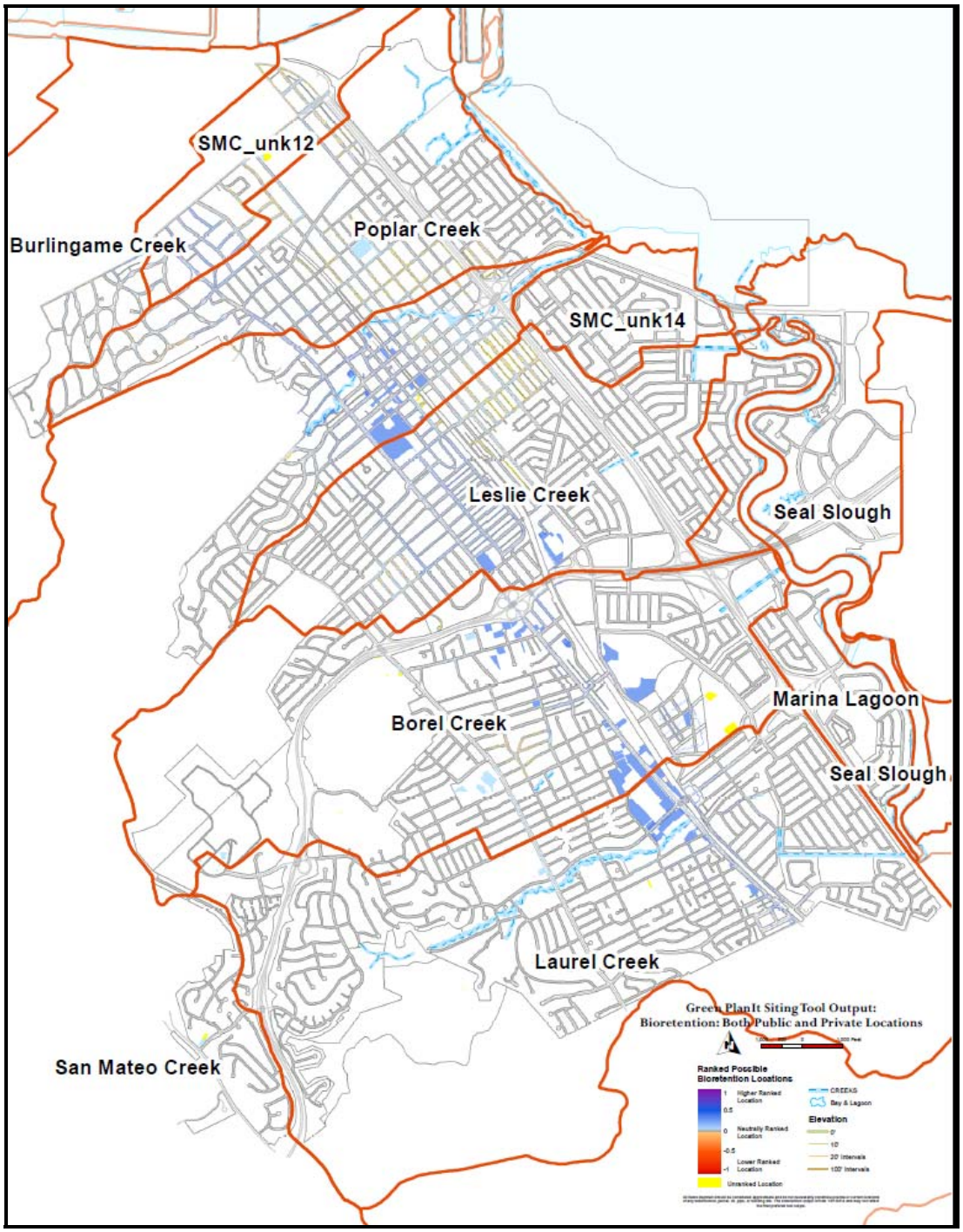
4. PAEP Update Table		
Project Goals	**Targets**	**Comments**
1. Develop and demonstrate a GIS-based LID planning Toolkit in pilot watershed / municipalities to prioritize LID Siting.	1.High priority LID sites identified for 2 municipalities 2.Municipalities verify that sites are good locations 3.Modeled quantification of load benefits to watersheds and/or flow reductions seem realistic to project stakeholders	1. San Jose and San Mateo are selected cities 2. San Mateo along with SFEI has done a "desk audit" of sites; San Jose and SFEI are currently developing a list of sites to field verified this spring. 3. The modeled load reductions (San Jose only) have been presented to San Jose and the Santa Clara Valley Water District.
2. Develop and complete Green Infrastructure Master Plans for participating municipalities	1. Selection of 2 municipalities that have agreed to develop master planning documents 2.Development of Green Infrastructure Master Plans 3. Development of at least 8 LID conceptual designs	1. & 2. San Mateo is developing a Sustainable Streets Plan; San Jose is developing a Stormwater Master Plan. Both plans will include GreenPlan-IT outputs. 3. Dan Cloak is developing conceptual plans for San Mateo and San Jose. This effort will take place this spring.
3. Develop and disseminate outreach and education materials to stakeholders to ensure understanding and use of the LID Toolkit.	1. Webinar demonstrating toolkit features and use attended by 8 or more municipal staff 2. Quarterly website updates to outreach/educational when applicable 3. Toolkit User's Guide 4. Presentations given 3 or more regional and/or state meetings	1. The Webinar will take place in May or June 2015. Municipal Staff will be invited. The materials will be posted on a website for future use. 2. All materials related to the Grant are available on the project website, noted above. 3. The GreenPlan-IT User's Guide will be published. 4. Presentations on the project have already been given. More are forthcoming during the term of the grant and afterwards.

Attachments: 1) Poster of GreenPlan-IT 2) Map of San Mateo showing Watersheds and Prospective LID Sites 3) Guadalupe Watershed in San Jose Project Location Map; 4) Map of San Jose showing Prospective LID Sites

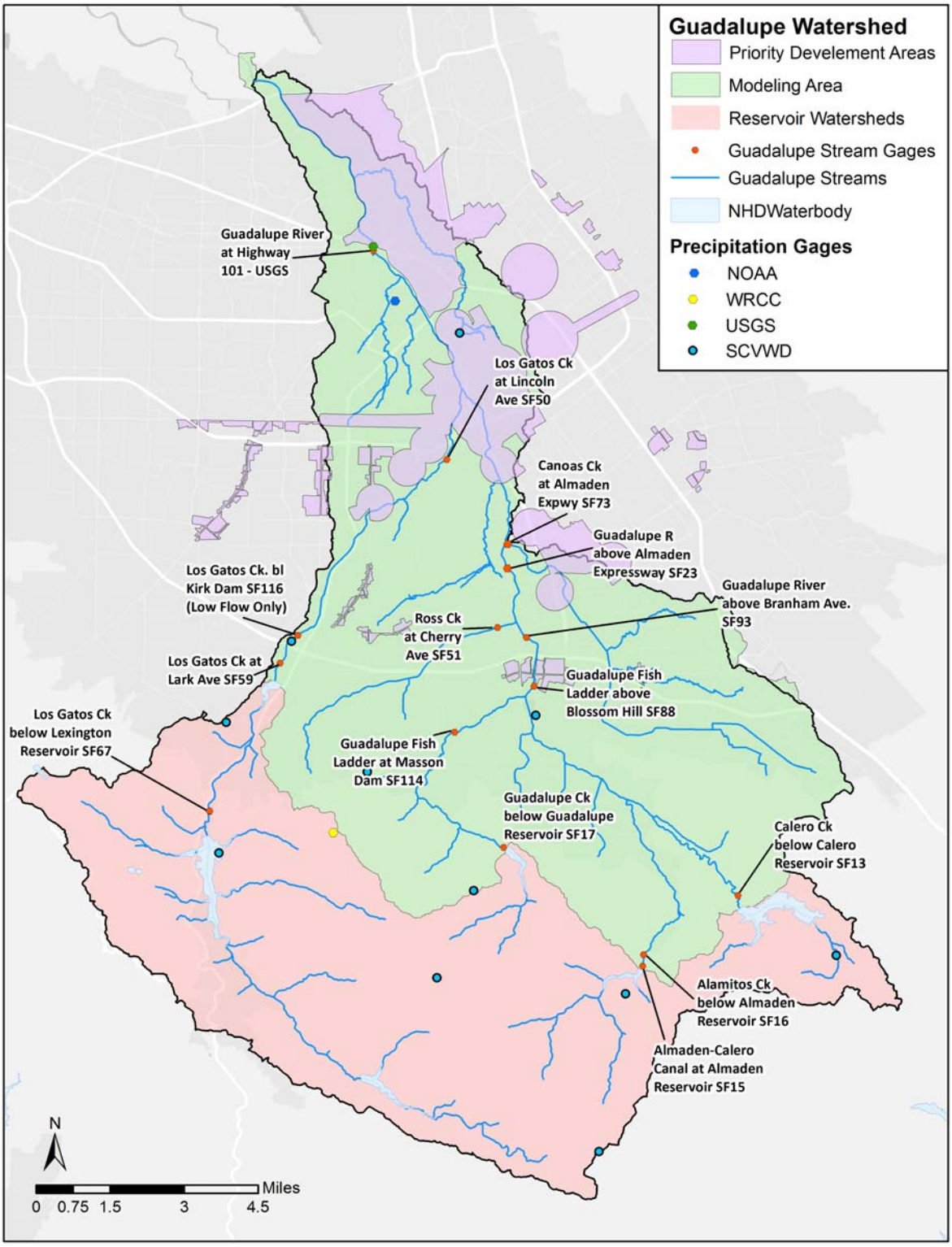
Poster of GreenPlan-IT



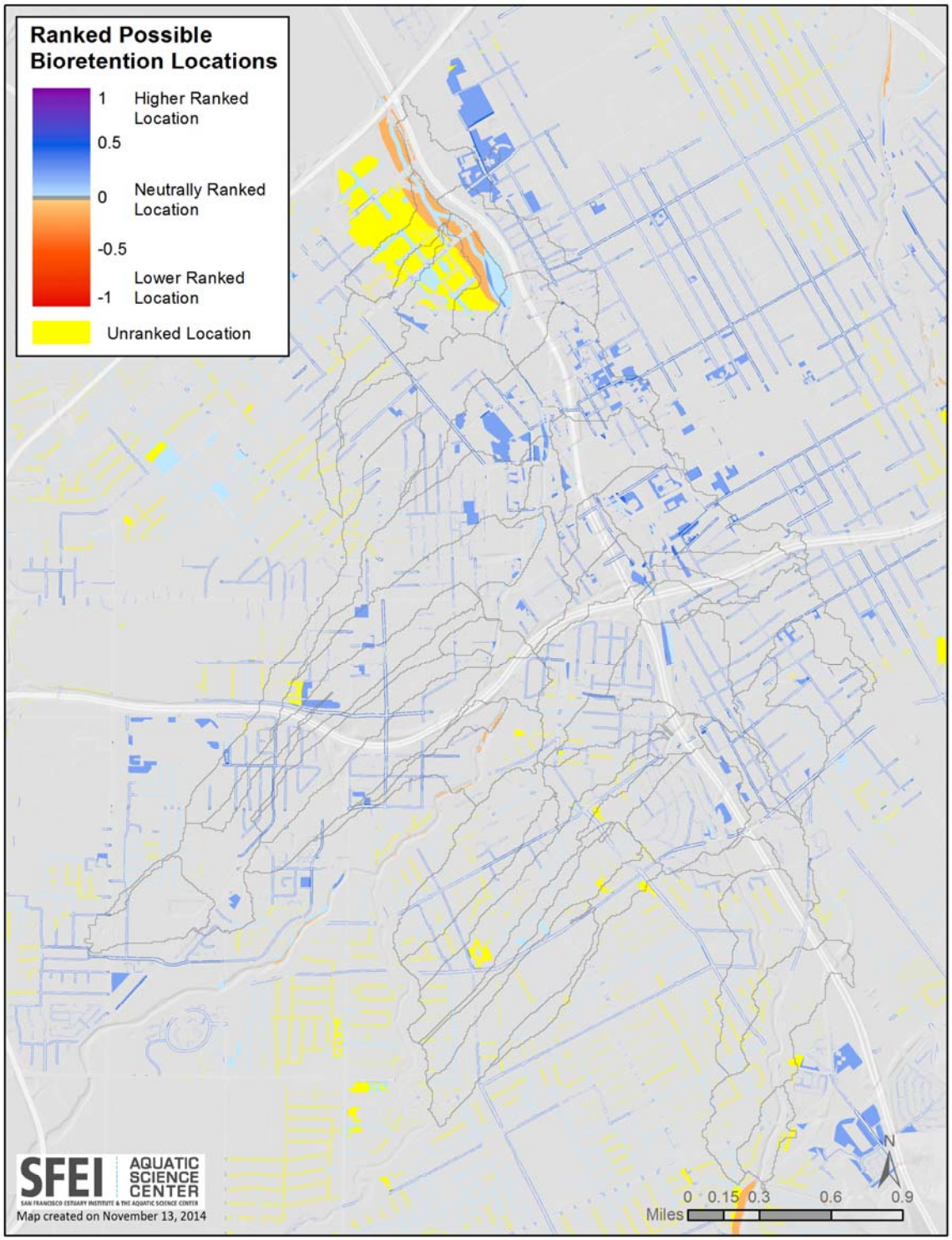
Map of San Mateo showing Watersheds and Prospective LID Locations (90% completion level)



Map of San Jose's Guadalupe Watershed



Map of San Jose with Prospective LID Locations (90% output)



Deliverables Update Memo

TO: RACHID AIT-LASRI

FROM: JENNIFER KREBS

RE: GRANT AGREEMENT NO 12-415-550 STATUS OF DELIVERABLES

MAY 15, 2015

DELIVERABLE 3.6 LIST OF COMMUNITIES AND STAFF CONTACT INFORMATION THAT PARTICIPATED IN TOOLKIT DEMONSTRATION

The following communities have provided data to SFEI for GreenPlan-IT. As of this writing, SFEI has completed its work with San Mateo and San Jose. It is currently "crunching" the data for Sunnyvale.

CITY OF SAN MATEO. KEY CONTACTS: KEN CHIN & JOCELYN WALKER

Kenneth Chin, Project Manager, City of San Mateo Public Works Department
330 W. 20th Avenue, San Mateo, CA 94403, (650) 522-7313, *kchin@cityofsanmateo.org*

Jocelyn Walker, City of San Mateo Assistant Engineer
330 W. 20th Avenue, San Mateo, CA 94403, (650) 522-7331, *jwalker@cityofsanmateo.org*

CITY OF SAN JOSE. KEY CONTACTS: SUZANNE THOMAS AND JEFF TUCKER

Suzanne Thomas, 200 E. Santa Clara St., 10th Floor Tower San José, CA 95113-1905, (408) 535-8550 Suzanne.thomas@sanjoseca.gov

Jeff Sinclair, 200 E. Santa Clara St., 10th Floor Tower San José, CA 95113-1905, (408) 535-8550, Jeff.Sinclair@sanjoseca.gov

CITY OF SUNNYVALE. KEY CONTACTS: ELAINE MARSHALL AND MARY JEYAPRAKASH

Elaine Marshall, Environmental Services Department, 1444 Borregas Avenue, PO Box 3707, Sunnyvale, CA 94088-3707, 408-730-7720, emarshall@sunnyvale.ca.gov

Mary Jeyaprakash, Environmental Services Department, 1444 Borregas Avenue, PO Box 3707, Sunnyvale, CA 94088-3707, 408-730-7737, mjeyaprakash@sunnyvale.ca.gov

Deliverable 4.6 Green Infrastructure Master Plans

In the fall of 2013 at the project inception, SFEP and SFEI met with cities interested in GreenPlan Bay Area at a Kick Off Meeting. Following the meeting a survey was conducted to elicit interest in becoming a partner city for the development of GreenPlan-IT as well as using the GreenPlan-IT outputs in a city planning effort. The cities of San Mateo and San Jose were selected as partner cities on the basis of the survey.

The City of San Mateo reported:

- The city has a high level of interest in master planning for LID
- The city has medium to high accuracy data for many of the data sets identified for incorporation into the toolkit
- The city has additional data that could add value to the toolkit including Street widths - medium accuracy, Street trees - high accuracy, Average Daily Traffic Volumes - medium accuracy
- The city has identified water quality impairment for San Mateo Creek and the lagoon

The City of San Jose reported:

- The city has a high level of interest in master planning for LID
- The city has completed modeling efforts for the Guadalupe River and Coyote Creek
- The city has identified Guadalupe River and Coyote Creek watersheds as potential areas for LID implementation
- The city has additional data that could add value to the toolkit including
    - Rare Species: Accuracy Unknown
    - Disadvantaged Communities: Accuracy High
    - Municipal Utilities (Water, Recycled Water and Sanitary Sewer): Accuracy High
    - Contaminant Hotspots (Hg and PCBs): Accuracy Unknown but the source is SFEI, 2005
    - 303d Listed Waterbodies: Accuracy High
    - Hydromodification Management Zones: Accuracy High
    - Public R-O-W: Accuracy High
    - Structures: Accuracy High
    - Trees, Accuracy Unknown
    - General Plan Growth Areas: Accuracy Unknown
- The city has completed some cost/benefit analyses on gray versus green infrastructure

Since 2013, SFEP and SFEI have held many meetings, webinars, and phone calls to 1) get city inputs to be used in GreenPlan-IT; review draft GreenPlan-IT outputs; get additional information from the Cities as to what would/will be needed to incorporate the GreenPlan-IT outputs (i.e. locations for green infrastructure in areas identified by the municipalities) into city planning efforts.

As of this writing, San Mateo and San Jose are at different phases of their planning process:

- San Mateo has taken the GreenPlan-IT outputs (Site Locator Tool only) and incorporated the outputs into their Sustainable Streets Plan.
- San Jose has received the GreenPlan-IT outputs (Site Locator Tool, Modeling Tool, and Optimization Tool) and will incorporate these outputs into plans that will be complete in the future. These plans include a number of Urban Villages Plans and a Stormwater Sewer System Master Plan.

Finally, as of May 2015, SFEI and SFEP have begun work with the City of Sunnyvale. By the summer of 2015, SFEI will have GreenPlan-IT Site Locator Tool outputs for the City of Sunnyvale to incorporate into their Peery Park Specific Plan.

As the GreenPlan Bay Area team was recently notified that we would receive funding from US EPA (grant award under the San Francisco Bay Water Quality Improvement Fund program pending), efforts with Sunnyvale will be completed in 2016. The GreenPlan Bay Area project will also further its efforts with San Jose.

A more detailed description of the planning efforts in San Mateo and San Jose are presented below.

Partner City – San Mateo

In the Fall of 2013, the City of San Mateo had recently received a 300,000 dollar grant from CALTRANS (which included 184,000 dollars in matching funds) to develop a Sustainable Streets Plan[1]. This plan was to combine two other city planning efforts, a Complete Streets[2] Plan

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[1] The Entire San Mateo Sustainable Streets Plan can be downloaded from http://sustainablestreetssanmateo.com/wp-content/uploads/2015/02/SanMateoSustainableStreetsFullFINAL.pdf

[2] **Complete Streets** are safe, comfortable, and convenient for travel for everyone, regardless of age or ability and includes motorists, pedestrians, bicyclists, and public transportation riders. (Defined by the San Mateo County Sustainable Green Streets and Parking Lots Design Guidebook)

and a Green Streets[3] Plan, into one comprehensive plan. As the final document states in its purpose:

> The Sustainable Streets Plan lays out a vision for a sustainable, safe, and healthy transportation system that supports a sense of community and active living—walking, bicycling, and transit are integral to daily life. The Plan envisions integrating Complete Streets and Green Streets into street designs that are comfortable and convenient for the breadth of travel choices and that improve water quality and reduce other environmental impacts while fitting with desired community character. (p. 2-2)
>
> This plan outlines a vision for using public rights-of-way to serve all users, present and future, and lays out guidelines and policies that will help implement Sustainable Streets over time, and sets a clear implementation plan, identifying funding sources that might be able to support Sustainable Streets projects. A chapter outlining the Vision, Policies, and Objectives forms the core of the plan. These elements will guide the actions of all relevant City agencies and will lay the groundwork for the City's General Plan Circulation Element. (p. 1-3)

Because San Mateo needed GreenPlan-IT outputs quickly, the SFEP, SFEI, San Mateo team decided to run only GreenPlan-IT's Site Locator tool, which was then under construction. SFEI used the following regional GIS layers for San Mateo, as well as a number locally provided GIS layers noted in Table 2-2 of the SFEI **GreenPlan-IT Toolkit Demonstration Report** (beginning on page 18).

GIS Data Layer Name	GIS Data Layer Description
CPAD_2014a2_Holdings	California Protected Areas database released in the first half of 2014
FEMA_NFHL	National Flood Hazard Layers for all BA counties
Employment_Investment_areas_SCS	From ABAG's data webpage. Priority Development Areas (Current) - This feature set contains changes made to Priority Development Areas since the adoption of Plan Bay Area. DO NOT USE this feature set for mapping or analysis related to Plan Bay Area.
Priority Development Areas_Current	
K_12_Schools	Schools in the Bay Area (point data)
NLCD2011_PercentImpervious	Percent Impervious data from the 2011 National Land Cover
OSM_Buildings	Open Street Map layer for the Bay Area _Late2014
OSM_Libraries	Open Street Map layer for the Bay Area _Late2014

[3] **Green Streets** have enhanced stormwater runoff improvements that capture, slows, filters, and potentially infiltrates stormwater runoff. (Defined by the San Mateo County Sustainable Green Streets and Parking Lots Design Guidebook)

OSM_Parking	Open Street Map layer for the Bay Area _Late2014
OSM_Parks	Open Street Map layer for the Bay Area _Late2014
OSM_Schools	Open Street Map layer for the Bay Area _Late2014
OSM_Streets	Open Street Map layer for the Bay Area _Late2014
R2_CARI_PublicV	California Aquatic Resource Inventory for Region 2
Regional_Bike_Facilities_Bay	Regional bike facilities for the Bay Area
RWQC_RB_2	Region 2 Water Board Boundary

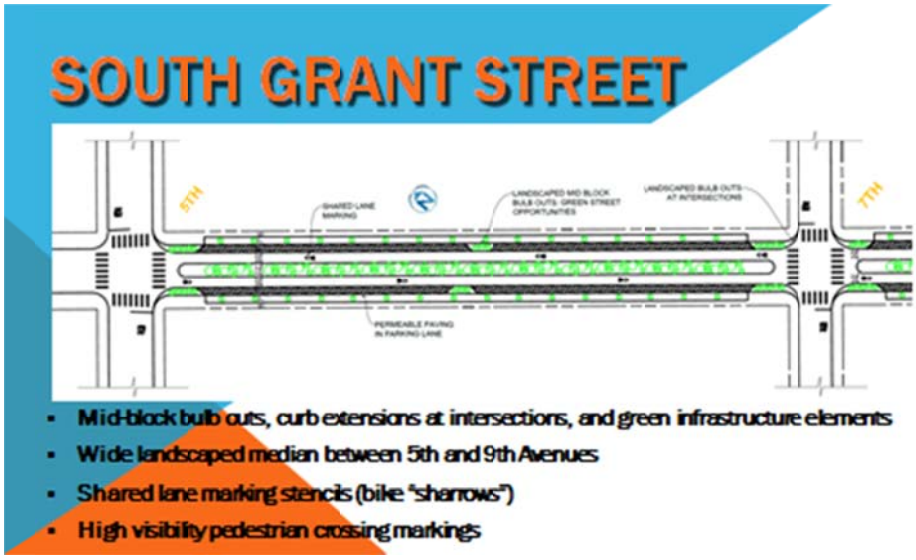
The Sustainable Streets Plan has 3 Main Components:

- Sustainable Streets Plan
- Appendices
- Street Design Guidelines

The GreenPlan-IT Site Locator Tool outputs are in Appendix H.2.

The Plan has policies that will help ensure that Green Infrastructure is in incorporated in future city development. Specifically, Policy 3.D.1 states that stormwater runoff (should be managed) using green infrastructure from 10% of roadway segments citywide and from 20% of roadway segments within the Downtown and Priority Development Area within the City by the year 2050.

Drawings in the Plan show how Green Infrastructure can be incorporated in future roadway improvements as is shown below:



The Plan recommends that the city replace the current Transportation Improvement Fee with a Sustainable Streets Fee that would focus on projects that support the goals of the Plan by improving conditions for all modes.

San Mateo's final adoption of the Sustainable Streets Plan was in February 2015. By September 2015, the City anticipates writing a Green Infrastructure Plan to provide additional specifications and drawings to assist in the implementation of Green Infrastructure throughout the City. Further, by January 2016, the City will have completed its Environmental Review Process and updated its General Plan, incorporating the Sustainable Streets Plan.

Partner City San Jose

The City of San Jose expressed interest in GreenPlan Bay Area because it wanted to make sure that it had done a good job siting its extant green infrastructure projects and a good basis for future projects. City staff, in 2013, was engaged in the launch of Green Streets and Green Alleyways Projects as well as Urban Villages Planning Efforts and Stormwater Sewer System Improvements.

San Jose's General Plan, Envision San José 2040, promotes the development of Urban Villages:

> to achieve fiscal sustainability and improve its job-to-housing balance. Therefore, development within Urban Villages is planned to occur in phases, which are referred to as Horizons in the General Plan. Development proposals for commercial, office and other non-residential uses that are consistent with the General Plan are permitted regardless of what Horizon the development site is located within. In order to carefully manage San José's expected housing growth; residential development is only permitted to occur in the current Horizon and will be available for residential and mixed use development up to the entire planned capacity following the preparation of an Urban Village plan. (https://www.sanjoseca.gov/index.aspx?nid=3784)

The city is currently developing a Stormwater Sewer Master Plan. The Stormwater Master plan is a large-scale effort to analyze deficiencies in the stormwater drainage network (both storm drain and natural drainage) and provide long-term solutions to the identified deficiencies. The Plan's goals are to improve water quality, provide flood protection, enhance and protect habitat, and increase stormwater infiltration. The Plan will identify

capital improvement projects to upgrade the capacity from a 3-year storm to a 10-year storm. City staff expressed interest in using Green Infrastructure to help City achieve water quality and capacity goals.

San Jose expressed interest in receiving outputs from the entire spectrum of GreenPlan-IT tools: the site locator tool, the modeling tool, and the optimization tool. In addition to the regional GIS layers that SFEI developed, San Jose contributed GIS layers (see Figure 3-2 of the SFEI report), and NOAA and the Santa Clara Valley Water District provided SFEI with flow data and rain gauge data from the Guadalupe River.

After the entire GreenPlan-IT was employed in San Jose, SFEI reported that if San Jose constructed 3,300 bioretention facilities capturing 4,300 acres of flow (costing an estimated 200 to 300 million dollars) it could achieve a 30% flow reduction in the Guadalupe Watershed (Figure 3-14, page 50). Specific locations for the green infrastructure installations are shown in Figures 3-16 through 3-18 of the report.

San Jose staff are still engaged in the various planning processes for both the Urban Villages and Stormwater Master Sewer efforts. SFEP and SFEI will continue to work with City staff as needed under the future EPA grant effort.

Deliverable 5.1 Meeting Agendas Sign-In Sheets, and Minutes for Evaluation of Potential Funding Mechanisms

Funding Mechanisms for Green Infrastructure
Meeting 1
Thursday, August 7, 2014

In attendance: Kenneth Moy (ABAG Legal Counsel); Jennifer Krebs (SFEP Senior Environmental Planner); Josh Bradt (SFEP Environmental Planner)

- Discussed potential SW mgmt. funding mechanisms
    - Establish Special Districts on Watershed level to assess drainage/runoff benefits
        - Requires authorizing legislation
            - State level?
            - Local level?
- Reviewed Alternative Compliance guidelines in MRP 1.0

Funding Mechanisms for Green Infrastructure
Meeting 2
Thursday, April 9, 2015

In attendance: Kenneth Moy (ABAG Legal Counsel); Jennifer Krebs (SFEP Senior Environmental Planner); Josh Bradt (SFEP Environmental Planner)

- Revisited idea of Watershed Assessment Districts
    - Nexus with PROP 218 Stormwater exemption effort (*JB to get more info to Ken*)
        - Existing case where Mitigation exemption is being challenged (*KM to research*)
    - PAYS structure may be good example where $$ for energy/water conservation improvements are repaid thru user surcharge (*KM to provide info*).
- Alt Comp/In-Lieu regulations in MRP can be trumped thru Legislature directive
- For Watershed Assessment District or Alt Com plan the challenges are:
    - Aligning jurisdictional boundaries/maps
    - Identifying receiving projects
    - Special District fees would need to be collected until critical mass
        - Developers to pre-commit to join district?
    - District needs to develop cost/benefit analyses to determine fee structure (if incorrect, municipality may not recoup internal costs)
        - Could take years/decades to get needed projects & costs
    - Alternatively, city could build/expend first then recoup thru special district, but these outlays are usually bond funded which may be risky to sell after the fact
    - Sub-regional bonds not typical
- New distributive/dispersive paradigm: equates distributed water re/use (parcels/neighborhoods with cisterns) to distributed energy generation (parcels with solar panels)
- Peggy Rismanchi (Clark Howatt's replacement) at ABAG may be helpful
- Justin (new FAN person) looking to make program more of a policy driver.

Funding Mechanisms for Green Infrastructure
Meeting 3 (Part of April 28, 2015 TAC meeting)

In Attendance: SFEP: *Jenifer Krebs, Josh Bradt*; SFEI: *Lester McKee, Pete Kauhanen*; City of San Mateo: *Ken Chin*; City of San Jose: *Suzanne Thomas, Jeff Sinclair*; City of Oakland*: Becky Tuden, Kristin Hathaway*; City of Richmond: *Joanne Le*; City of Sunnyvale: *Elaine Marshall*; City of Fremont: *Shannon Young*; EOA: *Jill Bicknell, Peter Schultz-Allen*; CCAG: *Matt Fabry*; ABAG: *Mark Shorett*; USEPA: *Luisa Valiela*; Water Board: *Keith Lichten*; Dan Cloak Environmental: *Dan Cloak*

Alternative Compliance – Group discussion on: What is needed to move this forward?

- Elaine Marshall – The math is the challenge. What does it cost to comply on-site versus what it would cost to pay into a central fee accrual system?
- Matt Fabry – alternative compliance policy – came up with a $/gal cost for stormwater. Like Dan Cloak is saying – unless you have large sizing – it's more feasible to manage on site – only a small % of sites would not be able to do it on site – more need an ongoing fee system to do stuff in the public right-of-way. Need to adopt a county wide impact fee – imposed by the county agency - Portland changes an impact fee based on the linear frontage length and increased vehicle trips generated – some kind of nominal fee for businesses – need to pool it at the countywide level – then you would have enough money to do real things. Could or would be in addition to doing things on-site.
- Elaine Marshall – what would be the political process? Voter approval?
- Kristin Hathaway – Green Bond funding – source of funding? A meeting about financing?
- Becky Tuden– GI needs to be shoehorned into the PDAs – alternative compliance for PDA…
- Matt Fabry – Water Board might have an expectation to have a tracking system to link the fee back to the equivalent mitigation?

Summary: Alternative compliance is worth exploring, but nexus studies are needed to develop costs/fees and program needs to be well defined – there will be few regional projects – so individual projects will be the trend, and may be hard to track/manage/report– Offsite in the public right-of-way fits the definition of a regional project – but it should be a regional green infrastructure plan for many smaller GI projects—perhaps City's should do all the work first and create a fee to recoup costs after the fact.

Deliverable 5.2 In-Lieu Fee/Alternative Compliance Program Memorandum (DRAFT)

Benefits of Green Infrastructure

Municipal governments across the country and in the SF Bay Area are beginning to recognize and realize the variety of benefits derived from Green Infrastructure (GI) practices. When widely dispersed throughout a watershed, GI practices can improve water quality while reducing runoff volumes and rates entering the storm sewer system, local waterways, and ultimately the Bay. GI also promotes infiltration and groundwater replenishment where appropriate. To date the greatest municipal practitioners of GI are those with combined sanitary and stormwater sewer systems, because they are legally mandated to reduce wet-weather overflows that overwhelm treatment plants and discharge untreated effluent directly to receiving waters.

Increasing GI Implementation

The Regional Water Quality Control Board favors GI/LID practices, mandating these approaches for new and redevelopment projects of a certain size threshold ("Regulated Project"). Typical road reconstruction projects are exempt unless widening is involved. MS4 jurisdictions in the Bay Area are slow to adopt GI within the public right-of-way as standard operating procedure with funding being a chief concern. To hasten widespread GI implementation, the Water Board's draft MRP 2.0 continues to allow permittees to provide Alternative Compliance to Regulated Project proponents and mandates the development of actionable municipal GI plans over the next 3 years. While both efforts can occur independently, it is likely that municipal planning efforts will be beneficial in developing long-range Alternative Compliance (AC) programs that steer funding and GI projects towards priority locations.

Benefits of Alternative Compliance

AC programs can be beneficial to both the developer community (flexibility for off-site treatment when it is infeasible on-site) and local governments (greater options for retrofit of priority public right-of-way locations). Ultimately the local neighborhood and watershed are beneficiaries since these projects are mandated to provide a net environmental benefit. Although the AC option has been available since 2009, no serious municipal AC programs have been launched. To further encourage the AC option, the Water Board has relaxed some of its original stipulations, now allowing off-site AC projects to be completed within 3 years of the end of the Regulated Project construction without

Alternative Compliance Frameworks

This section describes the municipal internal frameworks[4] needed to establish a viable AC program. There are a variety of AC program choices available to a City, which must determine if its program will assist in brokering between private entities or direct off-site mitigation efforts to further promote GI in the public right-of-way. A greater level of internal planning is needed if the city wants to lead developers to pre-determined public sites or establish a Payment In-Lieu program.

Regulated Project Compliance Hierarchy/Options (taken from West Virginia program)

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4 The primary sources used to develop framework are: the MRP 1.0, MRP 2.0, the West Virginia XXX program, and An Alternative Compliance Framework for Stormwater Management in the Central Coast Region (a 2013 Master's Thesis by Violetta Pristel, California State University Monterey Bay).

1) On-site Compliance – Developer designs & installs required sw controls on-site.

Muni Role	Developer Role
• reviews and approves developer compliance • conduct tracking and reporting	• demonstrate full compliance on-site

2) Developer-driven Off-site Mitigation (private/private) – use off-site project to fulfill entire runoff/pollutant reduction volume or remaining volume after partial on-site management.

Muni Role	Developer Role
• verify on-site infeasibility • review on-site & off-site plans • inspect installation • verify on/off-site LT maintenance practices • conduct tracking and reporting	• must document infeasibility • ID locations for off-site • prepare plans, • secure property rights • construction • maintenance

3) Muni-facilitated (Regional) Off-Site Mitigation (private/public) – developer builds off-site project on public land (right of way or environmentally sensitive area) at site(s) suggested/determined by muni.

Muni Role	Developer Role
• verify on-site infeasibility • IDs priority areas & potential projects • works with developer to select site (meeting community-watershed goals) • review on-site & off-site plans • may assist with securing property rights, approvals, permits • inspect installation • verify on/off-site LT maintenance practices • conduct tracking and reporting	• must document infeasibility • ID locations for off-site • prepare plans • secure property rights • construction • maintenance

4) Payment In-Lieu (private/public) – developer pays fee to cover cost of muni implementing project off-site in the public right-of-way or on municipal property.

Muni Role	Developer Role
• IDs priority areas and potential projects, • sets payment in lieu rate • assess and collect fee from developer • plan off-site project • construct off-site project	• documents on-site infeasibility • pays in-lieu fee

• maintain off-site project • administer In-Lieu program • conduct tracking and reporting	

RISK/BENEFIT tradeoffs

The section below is excerpted from the Pristel Thesis:

4.0 Framework for developing alternative compliance programs in the Central Coast Region

In-lieu fees would allow a municipality to fund 1:1 or aggregate mitigation off-site projects justified under technical infeasibility and/or a watershed planning approach. Additionally, establishing a fee-in-lieu rate allows developers to estimate their off-site retention costs in advance and make informed choices regarding whether to seek AC options or full on-site compliance requirements. The next section proposes a methodological framework to assist municipalities establish fee-in-lieu programs tailored to their specific watershed requirements and community needs.

Methodological framework for fee-in-lieu programs

The methodological framework for fee-in-lieu programs consists of a series of program framing questions and a methodology to illustrate the process of establishing a program. A case study (refer to Appendix C) demonstrates the application of the methodology.

Framing questions for a fee-in-lieu program

The following series of questions aim to assist municipalities build their own program framework tailored to their watershed, community needs, administrative capacity, and benefit-risk tradeoffs:

- Demand for alternative compliance
  - Are developers or on-site property owners predicted to have a high, medium or low demand for off-site compliance?
  - Is demand expected to be consistent or sporadic?
- Project scale
  - Is off-site retention volume predicted to be large, medium or small?
  - Will off-site projects be 1:1 or aggregate mitigation (mitigation of off-site retention volume from more than one regulated project)?
- Program scale
  - Will alternative compliance be implemented under a site-specific technical infeasibility condition, or under a watershed planning approach such as a Watershed Plan, Regional Plan, and/or Urban Sustainability Area?

- Land availability and constraints
    - Will off-site projects to be located on public and/or private property?
    - Will the municipality or private property owners be responsible for long term operation and maintenance?
    - What are the constraints to land availability (e.g., low soil infiltration, steep slopes, sensitive habitat, willing land owners, and community support)?
- Jurisdiction
    - Will off-site projects be located solely within a municipality's jurisdictional boundary or will projects outside the jurisdiction also be considered?
    - Will the municipality form partnerships or agreements with other municipalities, counties, or agencies?
- Mitigation type
    - What types of SCMs will be allowed at off-site projects?
    - What are the operation, maintenance, and monitoring requirements of the SCMs?
    - Will the trading currency be runoff reduction volume or another unit of measure?
    - Will 'out of kind' SCMs be considered?
    - How will MEP at the off-site location be established?

What quantitative analysis will be used to evaluate off-site compliance?

- Prioritization criteria
    - What criteria will be used to prioritize off-site locations, to maximize benefits and minimize risks?
    - How will the criteria be weighted?
- Fee calculation
    - Will in-lieu fees be estimated using a flat rate or will fee payment be determined on a project-by-project basis?
    - Will a fee rate be based on a pre-established portfolio of off-site mitigation projects or a 'typical' SCM installation?
    - What SCM life-cycle costs and life span will be used to estimate fees?
- Fee schedule
    - Will the fee schedule be a one-time payment (representing the cost of construction and operation and maintenance in perpetuity) or an annual fee paid by the on-site property owner (amortized over the project's lifespan)?

Methodology

A common fee-in-lieu scenario is the flat rate fee approach, with the fee based on a 'typical' SCM installation or a pre-established portfolio of off-site projects. Two major tasks for municipalities establishing either type of program are the estimation of the fee rate and identification of potential off-site locations. A flow diagram (Fig. 2) outlines a methodology to accomplish the tasks which begin with predictions of typical off-site retention volume

requirements (runoff retention volume is the trading currency), identification of allowable SCMs, and estimation of SCM space requirements. Application of the methodology is demonstrated in a case study of a municipality in the Central Coast Region (refer to Appendix C).

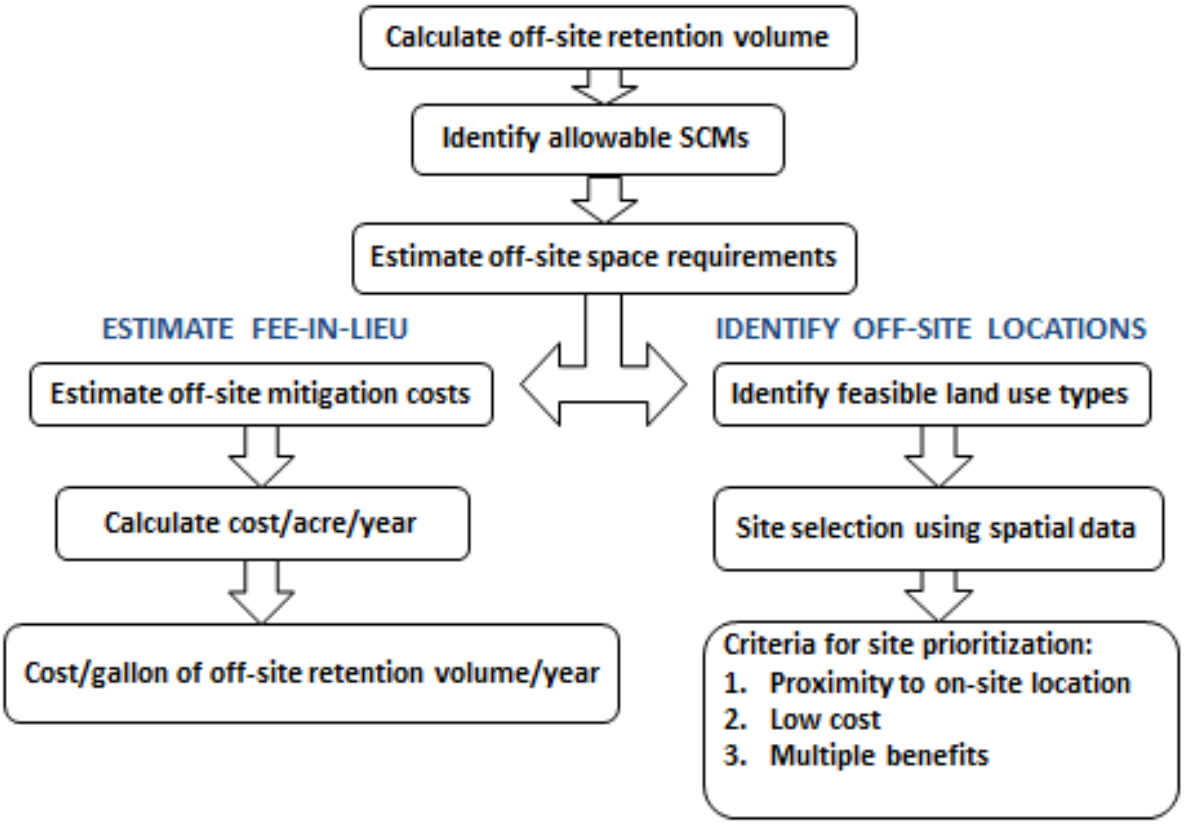

Figure 2: Methodology for fee-in-lieu estimation and off-site location identification. Ideally, off-site locations would be identified prior to the need for AC. Potential projects at the off-site locations would then be used to estimate mitigation costs and calculate in-lieu fees.

Municipalities may choose to identify an inventory of potential off-site project and base their fee rate on average cost of these projects or may choose to base their fee rate on the cost of a typical SCM and implementation scenario. Framing questions on land availability and constraints, jurisdiction, project and program scale, and associated spatial data will assist municipalities in identifying potential off-site projects or a typical SCM implementation scenario. The objective of the site prioritization criteria is to maximize benefits and minimize risks of off-site projects and weighting criteria will assist municipalities select projects tailored to their watershed and community needs. When a regulated project requires off-site compliance, the in-lieu fee is calculated by multiplying

the flat fee rate (cost/gallon/time) by the off-site retention volume.

The fee amount required to mitigate an off-site retention volume should ideally reflect the life cycle costs of a typical off-site project or the average life cycle costs of an inventory of potential projects. Cost categories for fee-in-lieu programs will depend on program characteristics and may include:

- Design and engineering costs (e.g., grading plans, installation plan)
- Construction costs (e.g., materials, equipment usage, labor)
- Operation and maintenance costs (e.g., periodic (at least 20 years) maintenance tasks such as pruning, weeding, sediment removal, may include replacement costs).
- Land costs (e.g., easement purchases, opportunity costs (the foregone opportunity to use the land for another purpose)).
- Overhead costs (e.g., program administration, site identification, project management, site inspections, building and administrative overhead, equipment acquisition and maintenance, interest on loans, accounting fees, insurances, and taxes) (WVDEP 2012).