Grant Progress Report

Bay Area Green Infrastructure Master Planning Project

GA# 12-415-550

Progress Report # 6

Reporting Period: 10/01/2014 to 12/30/2014

Submittal Date 2/13/2015

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 – 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		
3.5	Toolkit Technical Memorandum	April 30, 2015			
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		
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	66% (6/9)	02/13/15
G.	REPORTS				
1.	Progress Reports within forty-five (45) days following the end of the calendar quarter (March, June, September, and December)		Quarterly	66% (6/9)	02/13/15
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 Green-Plan-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, Green-Plan-it will be pilot tested in several municipalities/watersheds. The results of Green-Plan-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

- 10/6/14 ABAG, MTC, SFEI, Water Board Meeting San Mateo (attachment 2)
- 10/7/14 SFEI conference call with San Mateo (included in attachment 3, deliverables 4.2, 4.3, & 4.5)
- 11/13/14 SFEI conference call with San Jose - (included in attachment 3, deliverables 4.2, 4.3, & 4.5)
- 12/9/14 and 12/15/14 – Discussion about how to conduct outreach on Green Planning efforts for April 23, 2015 General Assembly (draft agenda is attachment 4)
- 12/16/14 Conference Call with State Board on matching funds reduction (State Board email is attachment 5)
- 12/31/14 Submittal of Deliverables 4.2, 4.3, and 4.5 (attachment 3)

Summary of Items for Review

Invoice #6

Proiect Administration (Cumulative _66_ % complete)
Project administration during this quarter has included the completion of Invoice 6, project management including completing the quarterly report, updating the project website, reviewing project deliverables submitted by SFEI and attending team meetings.

Proiect Design (Cumulative __60% 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 _66_%,6 out of 9 complete) - continues on a quarterly basis no delays or issues to report.

Attachments

1. SFEI Progress Report #6 (Quarter 6 – October 1, 2014 through December 31, 2014)
2. Minutes of Green & Sustainable Streets Meeting in San Mateo (10/6/14)
3. Deliverables 4.2, 4.3, 4.5 (REVISED)

4. Draft Agenda ABAG General Assembly
5. State Board Memo on Match Reduction

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
- Exhibit B4.3 Developing list of Potential LID retrofit sites for field verification

SFEI

- Updating GreenPlan-IT Model
- 8 conceptual designs with cities of San Jose and San Mateo

SAN FRANCISCO ESTUARY INSTITUTE
4911 Central Avenue, Richmond, CA 94804 • p 510-746-7334 • f 510-746-7300 www.sfei.org

Green Infrastructure Master Planning Project Quarterly Progress Report
Q4 2014 (Progress Report #6)

Task 1: Project Assessment and Evaluation Plan
Work Completed during the Period

- No work completed on this task during Quarter 4 2014.

Task 2: Technical Advisory Committee
Work Completed during the Period

- SFEI staff followed up with technical advisors on project progress.

Task 3: LID Toolkit

Work Completed during the Period

- SFEI continued to hold internal meetings to check in on project progress, discuss technical questions, develop project match documentation, and plan project next steps.
- SFEI staff continued documenting the toolkit modules including user and technical documentation and preparing the modules for uploading to the project website.
- SFEI staff began development of the project website. The website will contain modules, technical documentation, and module user documentation. The website will be completed within Q1 2015.
- SFEI staff continued working with our city partners, the city of San Jose and city of San Mateo. SFEI staff held phone conferences with the city of San Mateo on October 7 and with the city of San Jose on November 13.
- SFEI staff continued working with the city of San Jose to rerun the site locator tool with new data layers and new weighting of existing data. SFEI staff will rerun all 3 modules for the city of San Jose in Q1 2015. At this point, we will be at 100% completion with both the city of San Jose and city of San Mateo with regards to our partnering efforts.
- SFEI added a feature to the site locator tool that outputs a KMZ file for easier user viewing.
- SFEI staff completed a progress report covering the technical development of the cost/benefit analysis. The progress report was submitted to the State Board.

Task 4: Green Infrastructure Master Plans
Work Completed during the Period

- SFEI staff completed a progress report covering the results of the pilot demonstration of the toolkit in San Jose and San Mateo. The progress report (SFEI deliverable 3.4) was submitted to the State Board as Deliverables 4.2 and 4.3 of Grant Agreement 12-415-550.
- Dan Cloak of DCEC continued planning for the 8 conceptual designs with cities of San Mateo and San Jose. The DCEC Memo of November 20, 2014 was submitted to the State Board as Deliverable 4.5 of Grant Agreement 12-415-550.

Task 5: Education and Outreach

Work Completed during the Period

- No work performed on this task during the reporting period.

Attachment 2

Meeting Minutes
Green and Sustainable Streets
San Mateo City and County Model(s): a way forward for the region?

10/6/14 10:00 am - Noon
San Mateo City Hall
Conference Room C
330 West 20th Avenue, San Mateo

Attendees:

Larry Patterson	City Manager	City of San Mateo
Ken Chin	Project Manager	City of San Mateo
Matt Fabry	SMCWPPP Program Manager	C/CAG
Sandy Wong	Executive Director	C/CAG
Doug Johnson	Principal Planner	MTC
Duane Bay	Assistant Planning Director	ABAG
Jennifer Krebs	Principal Planner	SF Estuary Partnership
Josh Bradt	Project Manager	SF Estuary Partnership
Sarah Richmond	Planner	BCDC/Adapting to Rising Tides Project
Tom Mumley	Assistant Executive Officer	Regional Water Board
Randy Breault	PW Director	City of Brisbane
Gillian Adams	Planner for San Mateo	ABAG
Peter Schultze-Allen	Senior Scientist	EOA/SMCWPPP/SCVURPPP/ACCWP

Discussion Summary:

Welcomes and Introductions

Jennifer: Introduced the purpose of the meeting – to share the good work going on in the City and County of San Mateo with MTC and ABAG staff; and to begin a dialog on how to integrate funding for Green Streets into Complete Streets Transportation Funding.

San Mateo County: Vehicle License Fee & staff of C/CAG dedicated to Stormwater Pollution Prevention & Management Countywide

Matt: Introduced the key concepts and what CCAG/SMCWPPP has done regarding Green Infrastructure (GI)/Green Streets and coordination with transportation issues in San Mateo County. One key concept: Streets are drainage and transportation systems; the two programs should be integrated.

San Mateo City: Sustainable Streets Planning effort and GreenPlan-IT incorporation

Larry: The City of San Mateo has a model program – they think the term "Sustainable Streets" is useful in that it combines "green streets" and "complete streets" concepts. Larry went over his personal journey to become a believer. He discussed how when he started as PW director 15 years ago, his first task was to deal getting all of the city out of FEMA flood map to help the residents paying high flood

insurance in the flatlands. The City has spent $30 million of a $50 million program so far to accomplish that through pump stations and levees. In order to accomplish Sustainable Streets, cities need to think about a 50 year planning horizon, not just the next 3-5 years.

Ken: Talked about the last few years of Sustainable Streets (SS) planning and implementation with a powerpoint. San Mateo received a Caltrans grant to start the project. When San Mateo heard about the GreenPlan Bay Area Grant, they were interested in the Green Plan-IT GIS analysis to show where good locations for Green Streets are in San Mateo and how these streets could fit into the SS Plan. San Mateo is scheduled to complete their SS Plan in the spring followed by an update their Circulation Element and Land Use Element of their General Plan.

Stormwater Quality: Municipal Regional Permit (present and future)

Tom: Discussed 25 years of Regional Water Board planning leading up to a proposal to require GI planning in the next Municipal Regional Permit cycle. Mentioned the current exclusion for special projects partially came from a request by MTC to help get TOD projects built in PDA's. Also discussed the reasons why street projects have been a difficult subject to regulate up to now. He described the application of Green Plan-IT hydrologic analyses in San Jose where San Francisco Estuary Institute has calculated that a GI program has the possibility of reducing flows to the Guadalupe River by 30%. He also mentioned the concern about legacy pollutants of concerns that may be addressed by GI.

Discussion

Larry: Noted that there are problems with getting funding for local road maintenance and the focus on GI could exacerbate that problem since the priority streets for GI would probably be arterials not small residential streets that need maintenance. He also mentioned that any time you propose bringing in a back hoe to dig a hole it complicates the CEQA process for a project.

Randy: PW directors have become suspicious of anything that might take away their local streets and roads maintenance funds. Several years ago MTC proposed some funding changes which incited the PW directors to form a "Local Streets and Roads Committee" at MTC to fend off any loss of funding for road maintenance.

Doug: Transportation funding is complicated with federal sources like STP and CMAQ sometimes being combined with county VLF and local sales tax revenue. He mentioned that the Local Streets Road Committee might be a good group to reach out to regarding GI since they might be one of the most important groups to win over with the City of San Mateo as the Poster Child.

Duane: ABAG has a small amount of money that could be used to do some outreach to municipalities on GI planning. He said that traditionally ABAG has focused their outreach on municipal planners and therefore now wants to reach out more to municipal engineers on various issues that include GI.

Sarah: Worked on the Adapting to Rising Tides project and is very interested in how GI could interact with resiliency/climate change and sea level rise.

Sandy: CCAG is the only one of the Bay Area county congestion management agencies (CMAs) that is also the countywide stormwater program so it has done some good work on this issue.

Josh: Berkeley has a $30 Million Bond Measure to do GI. Using opportunity to integrate gray infrastructure replacement at same time. Don't want to dig up street twice.

Tom: State Water Revolving Loan Fund is competitive with Bond funding. SF has some calculations showing this and is (or might be?) using the SRF for projects instead of bonds.

Next Steps

Jennifer and Matt will schedule future discussions/presentations at the MTC Streets Working Group; ABAG Regional Planning Committee, Executive Board, and/or General Assembly; Bay Area Planning Directors Association and Public Works Directors Groups. Jennifer and Matt will also investigate training forums for local planning and public works staff.

Attachment 3

Memo

Date: 12-31-14 (revised 2-11-15)

To: Rachid Ait-Lasri

From: Jennifer Krebs

Re: Deliverables 4.2 & 4.3 Grant Agreement No 12-415-550

San Francisco Estuary Partnership and San Francisco Estuary Institute are collaborating with local governments in the San Francisco Bay Area to develop a workable LID siting toolkit for use in municipal green planning efforts. The toolkit is called GreenPlan-IT and the municipal siting efforts, GreenPlan Bay Area. This memo and attachments provides the GreenPlan-IT outputs/results based upon meetings with both San Mateo and San Jose to clarify their planning needs.

Meeting Dates. The minutes of these are attached to this memo.

- San Mateo – 8/12/14
- San Mateo – 9/24/14
- San Mateo – 10/7/14
- San Jose – 9/24/14
- San Jose – 11/13/14

Toolkit Results. San Francisco Estuary Institute's Report entitled "LID GreenPlan-IT Toolkit Demonstration Progress Report" contains the Toolkit results produced to date. The report was submitted to SFEP in November 2014. It is attached to this memo. Figures 1 and 2 of the report show prospective effective LID sites in each city respectively.

Sites selected for Field Verification. On September 24, SFEI, SFEP and Dan Cloak discussed field verification with San Mateo. At that time, San Mateo recommended a desktop based verification. The SFEI Report states:

> We have completed a desktop ground truthing for the identification and rankings for the Feasibility Module output in San Mateo. Part of the project is to look at suitable LID locations and determine if locations and rankings match real, on the ground opportunities. Specifically, we have looked at Grant St., Fremont Street and why one street ranked higher than the other, Delaware Street, and Bay Meadows. The findings showed that Grant Street was ranked higher than Fremont Street since it had a planned bike lane, which was given a higher weight in the opportunities table. Delaware Street and Bay Meadows were unranked in the output because they were excluded as possible

> locations due to site characteristics deemed not feasible for implementing LID. Overall, many of the sites identified and ranked highly by the locator tool were also sites that were previously identified as potential LID opportunities by San Mateo.

SFEI's discussion about Field Verification sites took place after the writing of the Report. The report states:

> In San Jose, the Feasibility Module was demonstrated in one primary watershed, the Guadalupe River (Figure 2). For the public parcels, the tool identified 99 acres of highly suitable locations, 813 acres of moderately ranked locations, and 1600 acres of low ranked locations. Higher ranked sites were based primarily on heavily weighted factors of priority development areas and community needs.
>
> We have not completed the ground truthing with the city of San Jose yet and will be meeting with them on November 11 to talk about locations we may want to visit or remotely investigate.

The minutes from the November 11, 2014 Webex state the following on sites for Field Verification:

- City looked at existing LID sites and they didn't show up in the tool output
  - Cheynoweth Avenue at Snell Avenue - why was the north side of the street not identified as suitable locations?
  - Alum Rock Avenue and Hwy 680 - very wide street - why not highly ranked?
  - Ocala avenue - Capital to Daytona
- San Jose will think more about doing some field ground truthing by mid January.
- San Jose will come up with the sites to look at.

GreenPlan San Mateo Meeting Minutes

8-12-14, 9:30 to 11:30 am

San Mateo Conference Room C

Attendees: Dan Cloak (DCE), Lester McKee & Pete Kauhanen (SFEI), Josh Bradt & Jennifer Krebs (SFEP), Ken Chin, Sarah Scheidt, Jocelyn Walker, Gary Heap (San Mateo), Matt Fabry (C/CAG)

Pete K of SFEI presented information on GreenPlan-IT (powerpoint attached)

Q & A -
Sarah - want to overlay PCB and trash areas to assure that the areas identified meet MRP compliance.

Ken – the improvements in GreenPlan-IT are great! It is cool, useful, and usable. I should have invited more folks to attend the meeting. It will help the city move from "pin the tail on the donkey" to a better approach. 2 areas to be included (maybe) are Bay Meadows and Humboldt offramp.

Gary – what is relevant about the Humboldt corridor - bids for work are coming back high – We can nix areas in non-high-priority areas.

Matt - how to incorporate this info in Sustainable Streets Plan?
Ken – The outputs should be in plan - maps etc. City will approve the plan in Feb/Mar. CEQA will take place in June/July. Then the Planning Dept will update City General Plan.

Next Steps:
- SFEI will schedule a follow up conference call to determine how to prioritize data layers, weighting issues, etc.
- This Group (expanded) will meet again in mid/late sept. to review the updated data outputs
- Site verification/site design. Dan Cloak will check out San Mateo drive and grant Ave. He will work on drawings to for the sustainable streets plan, or appendix, or ....
- Josh Bradt is working on alternative compliance methodologies. He presented an outline of thoughts to date and got feedback (outline attached). This will also be expanded by the next meeting.

Extra notes for Josh

Dan to date some developers have taken street run off or other uphill site. REstrictions willl probably go away next MRP. Not too many projects will need offsite; so they might not really push public infrastructure. But might help city allow the development to happen. Josh - add swales to city parking lot.

Impact fees. Matt - in Portland they charge vehicle fees, Ken - San Mateo wants to add traffic fee, might be sustainable streets fee. Burlingame has SW fee.

Matt will try to make progress on regional level, but need help on local funding.

San Mateo GreenPlan Meeting Minutes
9-24-14, 9:30 to 11:30

Attendees:
Jessica Alba, Nelson-Nygaard
Ken Chin, City of San Mateo
Pete Kahanen, SFEI
Jen Hunt, SFEI
Jennifer Krebs, SFEP
Josh Bradt, SFEP
Lester McKee, SFEI
Matt Fabry, C/CAG
Gary Heep, City of San Mateo
Jocelyn Walker, City of San Mateo
Dan Cloak, DCE Environmental
Suzanne Chan, City of San Mateo
Ken Messing?, City of San Mateo

1. SFEI presentation on GreenPlan-IT outputs for San Mateo – Powerpoint presented by Pete Kahanen of SFEI

2. Discussion

- The City requests the final GreenPlan-IT outputs in KML. Also maps in high resolution PDF for the Sustainable Streets Plan.
- The City proposes to review KML outputs prior to (and perhaps instead of) a walking verification of LID sites.
- SFEI will follow up with San Mateo regarding possible alternative ways of ranking data layers. Additional runs of the model may occur.
- The City needs documents for the Sustainable Streets Plan by 10/15 – Maps and data runs will go in the appendices. The main document will need a brief write-up of how data were derived and a map.
- SFEI will add post-GIS processing information on contaminated sites. These will be packaged with the final version of GreenPlan-IT.

3. **Design Issues** – Dan Cloak suggested a brainstorm on possible green infrastructure retrofits. Sites included:

- San Mateo Drive. Nelson Nygaard has conceptuals for San Mateo Drive. Dan suggested walking the street and picking out spots for rain gardens. Then he'll write up a step-by-step procedure for how to do this in other areas.
- PGE substation
- South Claremont near lumberyard.
- 9th & Pine.

- Hayward Ave
- Dale Ave near Treatment Plant.

4. Funding issue –

- The Sustainable Streets Plan will have a funding chapter. Nelson Nygaard will send a copy of the chapter to SFEP to review.
- There was discussion of having some sort of metric goal for sustainability so that fees cover achieving an endpoint.

5.Next Steps –

These are noted above in the text. Also another meeting will be set to discuss planning and funding issues.

2014-10-07 GIMPP Meeting Notes: Pete, Ken Chin, Jen

Present at Phone Conference: Ken Chin (city of San Mateo), Pete Kauhannen (SFEI), Jen Hunt (SFEI)

Discussion Items

Item	Notes
PDF and KML - Get feedback from the city of San Mateo on functionality and usability of PDF and KML output files from the site locator tool	• PDF files look good • KMLs look good • City of San Mateo recommendation: Break out sidewalks from streets so that they can be seen discreetly

Ground Truth Results from the 90% output from the site locator tool for the city of San Mateo	Remote Ground Truth
	• SFEI and City of San Mateo have already done some remote checking to see why locations were/weren't ranked as expected
	• Areas to validate
	  • Why are sites outside of the PDA not ranked e.g. east side of hwy 101
	  • Why was the central neighborhood unranked (east of grant) - humboldt and idaho?
	• Remaining questions
	  • Does the City have water well data layers?
	  • Does the city have a driveways data layer?
	Field ground truth
	• San Mateo has no need for us to do any field ground truthing
	• Potentially go out with Dan Cloak

Final Deliverables	• The city of San Mateo needs a memo for their Sustainable Streets Plan that outlines the process (data used, data weight, data ranks) for developing the site locator tool output for the pilot watersheds in the city. SFEI will develop a draft document, get input from SFEP, and send to the city of San Mateo for review.

Action Items

- [x] Pete Kauhanen to look at breaking out sidewalks from streets

San Jose GreenPlan Meeting Minutes
9-24-14, 1:30 to 3:30

Attendees:
Mira Chokshi, AECOMM
Anne Symonds, AECOMM
Casey Hirasaki, City of San Jose
James Downing, City of San Jose
Jared Hart, City of San Jose
Bryan Apple, City of San Jose
Brian Mendenhall, Santa Clara Valley Water District
James Manitakos, Santa Clara Valley Water District
Liang Lee, Santa Clara Valley Water District
Jing Wu, SFEI
Lester McKee, SFEI
Pete Kahanen, SFEI
Jen Hunt, SFEI
Dan Cloak, DCE
Josh Bradt, SFEP
Jennifer Krebs, SFEP

1. SFEI presentation on GreenPlan-IT outputs for San Jose – Powerpoint presented by Pete Kahanen of SFEI

2. Discussion

- AECOMM is currently working on San Jose Storm Sewer Master Plan due to be complete in 2016. Green-PlanIT outputs likely to go into this document rather than into the Urban Village Plans.
- San Jose may have additional data layers for SFEI – to be discussed by SFEI and San Jose. These include urban villages, future capital plans, some data on contaminants.

3. **SFEI Presentation on Optimization Tool outputs for San Jose** -Powerpoint presented by Jing Wu

4. Discussion

- Should there be data runs for other than 2-year, 24 hour duration designstorm? Possibly multi year total rain fall to calculate contaminant removal. San Jose and SFEI to discuss further.

5. **Design Issues** – Dan Cloak suggested a brainstorm on possible green infrastructure retrofits. Sites included:
    - Thompson creek – severe runoff issues.
    - Guadalupe River next to Montague Expressway – site of pump station.

- Dan and San Jose to discuss further. After a list of sites is compiled, Dan will visit and inspect sites.

6. Funding Issues – Josh Bradt distributed a memo on alternative compliance programs and their framework nationally. Discussion:

- SCVWD has $ for watershed improvements.
- Storm sewer master plan will have chapter on how to fund. Focused on capacity more than WQ. Perhaps set up in lieu fee.
- Rebate programs – SCVWD has several. Perhaps rebate program for parking lots and/or driveways.

7. Next Steps –

- These are noted above in the text. Also another meeting will be set to discuss revised GreenPlan-IT outputs, planning and funding issues.

2014-11-13 Meeting Notes: Phone conference with San Jose

In attendance

- City of San Jose Staff: Jared Hart, Bryan Apple, Casey Hirasaki, Shelley Guo, And James Downing
- SFEI staff: Lester McKee, Pete Kauhanen, Jen Hunt

Discussion Items

	San Jose's Questions	Notes
1	• How was the hydraulic model used to produce the 90% submittal? Where is the connection of the model and the GIS siting tool?	The hydraulic model is not used to produce the suitable LID location map. The site locator tool produces a map with suitable LID locations, by feature type, by calculating the factor weights in the opportunities and constraints table, the restrictions identified in the knockout analysis, and the results of the base analysis. Each of these modules within the site locator tool are optional, iterative, and can be modified by the end user. Suitable locations are not based on the hydrologic or optimization output. However, outputs from the site locator tool are fed directly into the optimization module in order to determine the number of LID features required in a watershed for a specific reduction in hydrology. As an example, Jing showed the results of a desired 30% hydrologic reduction and how many LID features within each subbasin is required to meet this 30% reduction. How can we improve the output? • Show only high ranking areas? • Could reduce or increase the number of bins to help break out the most opportune sites. This can happen on the user side. • unranked locations are the result of no overlapping opportunity data layers
2	• The optimization tool suggests that 'X' amount of LIDs in a subcatchment (which can be very large) are required to achieve a 30% flow reduction. This only provides very rough locations that may not be where the flows are occurring.	• The model and the optimization does not have a spatial component so the output is a number of LID types per sub drainage but does not Recommend where LID should be implemented • San Jose sees the value with the planning tool • Pollutants: San Jose wants to overlay the tool outputs over GIS pollutant data layers

3	• Layers that could be incorporated:
	  • Trash generation
	  • Parcel by Parcel POC maps that will be generated in the coming months
	  • Pavement Condition (if available through CSJ DOT)
		• San Jose will look into adding additional layers and then we will take another pass at updating the opportunities and constraints table
		• Look at LID designs for multi benefit including hydromod, trash capture, pollutant treatment
		• San Jose to check out their data layer availability and follow up if they want to run another iteration.
		• San Jose to consider re-running the tool with the base analysis as an opportunity rather than a knock out

4	• Lots of areas identified. (Can be adjusted by changing the symbology?)	• The weights can be tweeked in order to
5	• How exactly is the rank value calculated?	Final Rank = SumOf FactorWeightedValues FactorWeightedValues = factor value * factor weight Factor value = Sumof layer weighted values within the factor LayerWeightedValues (layer value * layer weight)

	ground truthing needed? if so, where?	• City looked at existing LID sites and they didn't show up in the tool output
		  • Cheynoweth Avenue at Snell Avenue - why was the north side of the street not identified as suitable locations
		  • Alum Rock Avenue and Hwy 680 - very wide street - why not highly ranked?
		  • Ocala avenue - Capital to Daytona
		• San Jose will think more about doing some field ground truthing by mid January. San Jose will come up with the sites to look at.
		• SFEI to send base layer analysis and O&C and knockout data layers

Action Items

- San Jose will think more about doing some field ground truthing. Field work should happen by mid January. San Jose will come up with the sites to look at.
- Pete Kauhanen: SFEI to send base layer analysis and O&C and knockout data layers to San Jose
- Pete Kauhanen Will look at the 3 sites identified above to see why they were not identified by the locator tool

LID GreenPlan-ITToolkit Demonstration Progress Report

GreenPlan-IT SFEI Deliverable 3.4: Status report presenting the demonstration of LID Toolkit in at least three local watersheds with list of watersheds selected and ranking of sites.

The developed LID toolkit was applied to watersheds in the city of San Mateo and San Jose to identify feasible and optimal locations for LID implementation. The GIS Feasibility Module was applied to both San Mateo and San Jose, while the Effectiveness Module and Cost/Benefit Analysis were only applied to parts of Guadalupe River and Los Gatos Creek watersheds and urban drainage systems in San Jose.

Demonstration of Feasibility Module

As described in Status report 3.3 a, the City of San Mateo and City of San Jose were identified as primary partners to demonstrate the Feasibility Module. SFEI staff held multiple WebEx phone conferences with the cities to discuss available local data, opportunities and constraints for implementing LID in each city, priorities for implementation, and how to weight the priorities in order to produce a relatively ranked output.

The project team (SFEP and SFEI) met with the San Jose and San Mateo on September 24 to present the 90% output of the Feasibility Module. Suitable locations and rankings of those locations were reviewed by both cities and maps showing suitable locations were provided to the cities, electronically. Suitable locations were identified in both public and private areas.

San Mateo quickly implemented the project findings into their Sustainable Streets Plan via a brief memo (provided to the State Board in the recent quarterly report) and a map of locations suitable for LID implementation, by watershed. In San Mateo, the Site Locator Tool was demonstrated in discrete watersheds including Borel Creek, Laurel Creek, Leslie Creek, Poplar Creek, San Mateo Creek, as well as multiple unnamed drainages (Figure 1). In San Mateo, approximately 150 acres of publicly owned property were moderately ranked for potential LID implementation across the entire city.

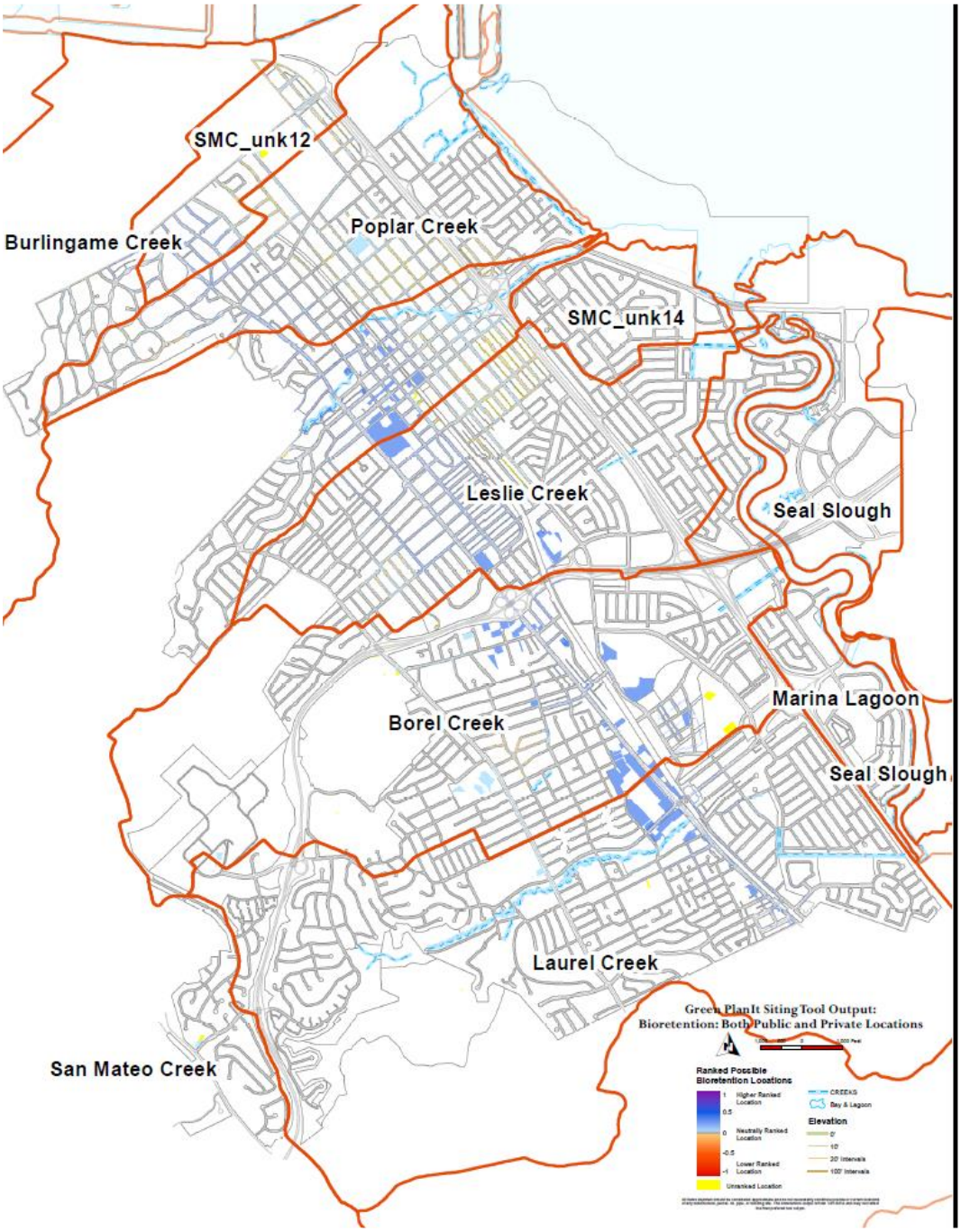

Figure 1. Map output (90% completion) of the Feasibility Module for each watershed in the city of San Mateo. Color gradations within the watersheds designate relative site ranking from yellow (unranked locations) to dark purple (highest ranked locations) for potential LID implementation. Orange lines delineate each watershed boundary.

Higher ranked sites were based primarily on heavily weighted factors of priority development areas and funding opportunities.

We have completed a desktop ground truthing for the identification and rankings for the Feasibility Module output in San Mateo. Part of the project is to look at suitable LID locations and determine if locations and rankings match real, on the ground opportunities. Specifically, we have looked at Grant St., Fremont Street and why one street ranked higher than the other, Delaware Street, and Bay Meadows. The findings showed that Grant Street was ranked higher than Fremont Street since it had a planned bike lane, which was given a higher weight in the opportunities table. Delaware Street and Bay Meadows were unranked in the output because they were excluded as possible locations due to site characteristics deemed not feasible for implementing LID. Overall, many of the sites identified and ranked highly by the locator tool were also sites that were previously identified as potential LID opportunities by San Mateo.

In San Jose, the Feasibility Module was demonstrated in one primary watershed, the Guadalupe River (Figure 2). For the public parcels, the tool identified 99 acres of highly suitable locations, 813 acres of moderately ranked locations, and 1600 acres of low ranked locations. Higher ranked sites were based primarily on heavily weighted factors of priority development areas and community needs.

We have not completed the ground truthing with the city of San Jose yet and will be meeting with them on November 13 to talk about locations we may want to visit or remotely investigate.

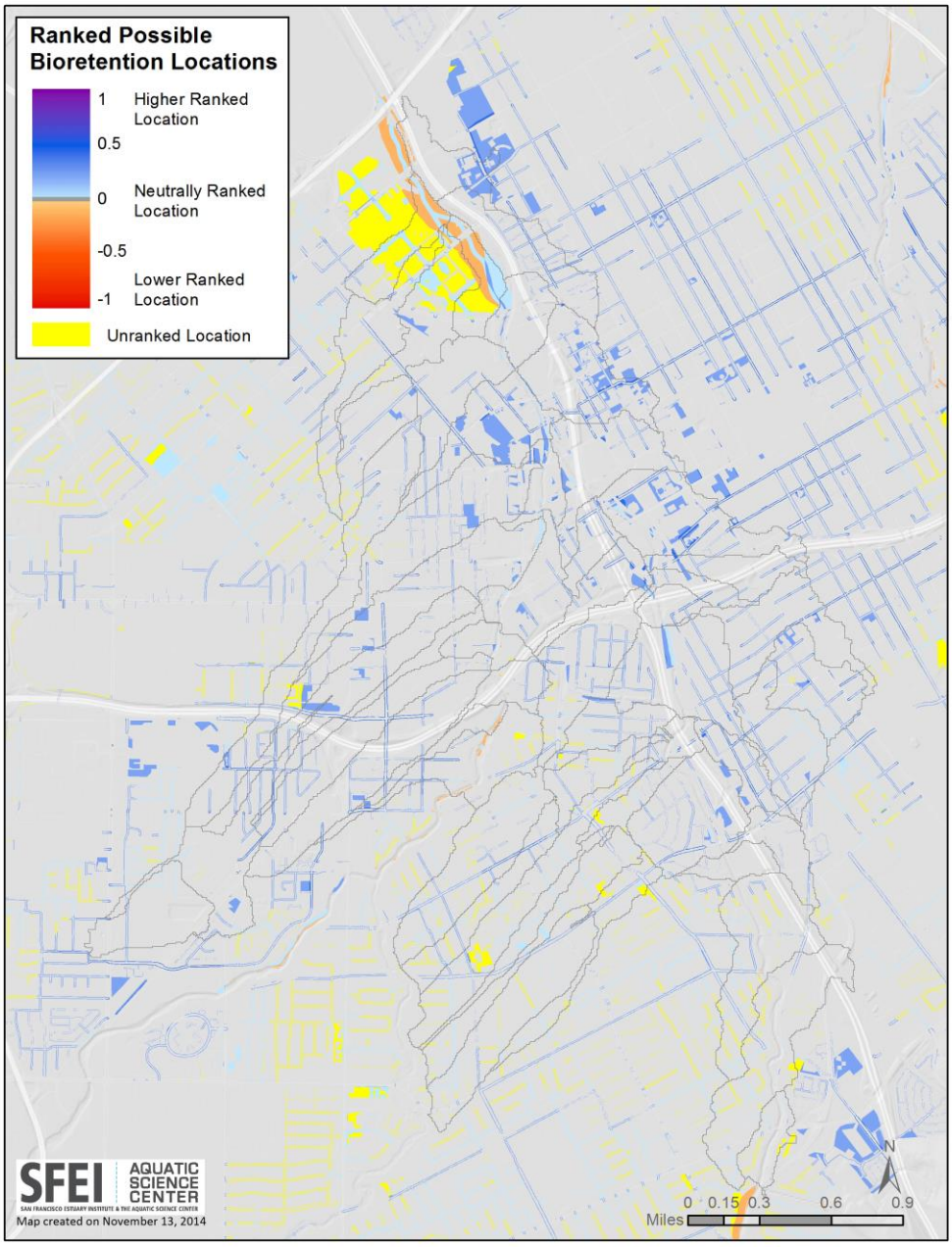

Figure 2. Map output (90% completion) of the Feasibility Module for a portion of the Guadalupe River watershed in the City of San Jose (downtown area). Color gradations within the watersheds designate relative site ranking from yellow (unranked locations) to dark purple (highest ranked locations) for potential LID implementation. The entire map area is within the geographic boundary of the Guadalupe River watershed.

Demonstration of Effectiveness Module and Cost/Benefit Analysis

As described in Status report 3.3b and 3.3c, the Guadalupe watershed was chosen as the pilot watershed to develop and demonstrate the Effectiveness Module, while San Jose's Priority Development Area (PDA) within Guadalupe watershed was used to demonstrate the cost/benefit analysis. The demonstration of Effectiveness and Cost/Benefit Analysis modules involve many steps and tasks, which include calibrating the Effectiveness Module to measured data, implementing the optimization algorithm through computer programming, setup of the optimization module with key inputs, and finally, the compilation and interpolation of model outputs. To date, all major tasks were completed and draft outputs were produced. Below are the brief summary of each step.

- **Calibrating Effectiveness Module**

The Effectiveness Module was built upon the publicly available EPA Storm Water Management Model (SWMM) version 5.0 (Rossman, 2010), as described in Status report 3.3b. The modeling area encloses Lower Guadalupe watershed and was divided into 150 sub-basins for model calibration (Figure 3). The model was calibrated to two year flow data from two flow stations - USGS station at Highway 101, near the mouth of Guadalupe River, and Los Gatos Creek at Lincoln Avenue (Figure 3). The model calibration results for daily flow at USGS station at Highway 101is shown in Figure 4. The close match of modeled flow to observed values, represented in figure 4, indicates a good calibration. Statistical analysis showed that this calibration was appropriate for the Effectiveness Module.

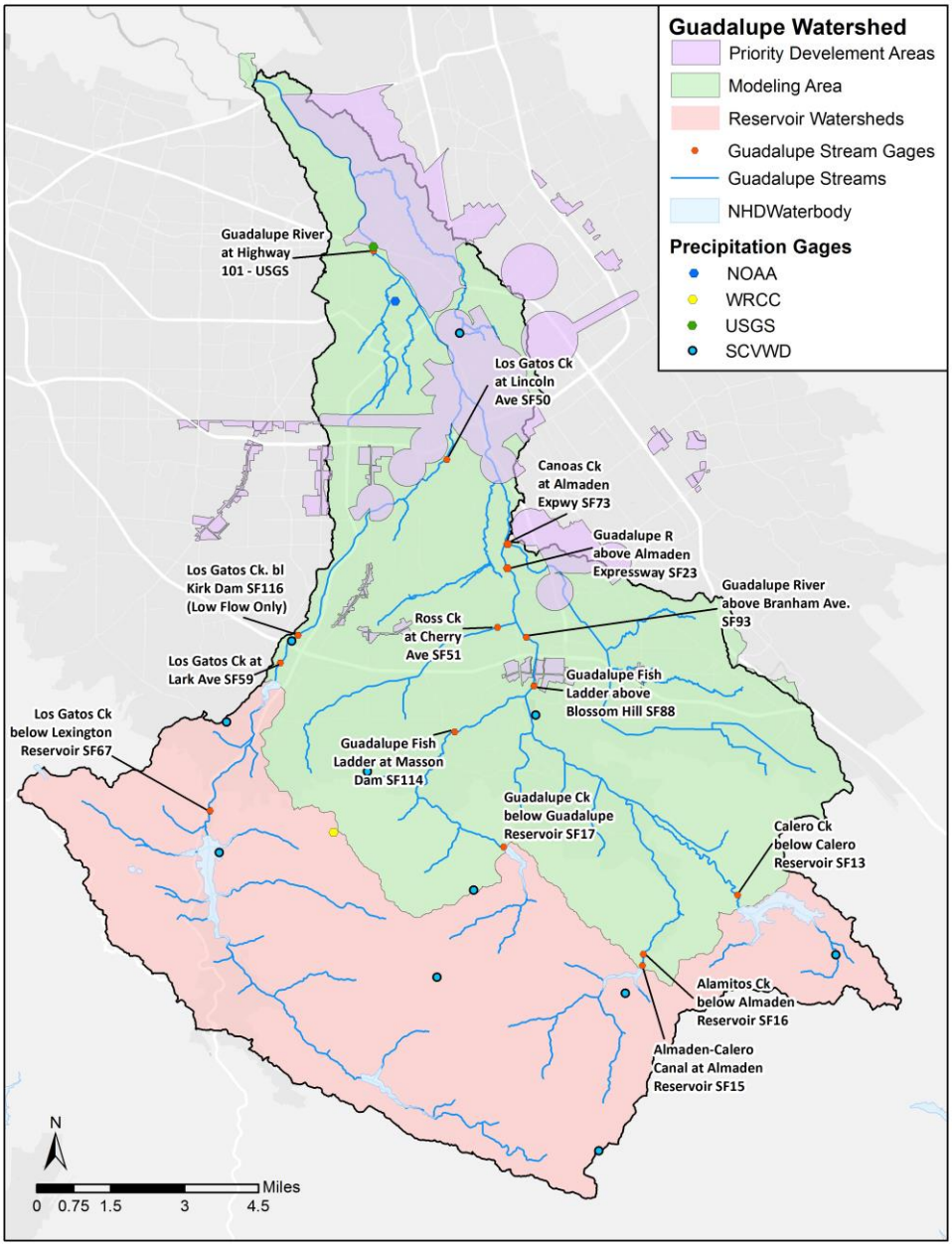

Figure 3. Guadalupe Watershed and Modeling area. **Area in purple denotes the priority development area (PDA) within the city of San Jose. Area in green denotes watershed extent for the effectiveness module (note: the model did not include watershed areas above reservoirs). Colored dots denote precipitation gauges that provided data for the model.**

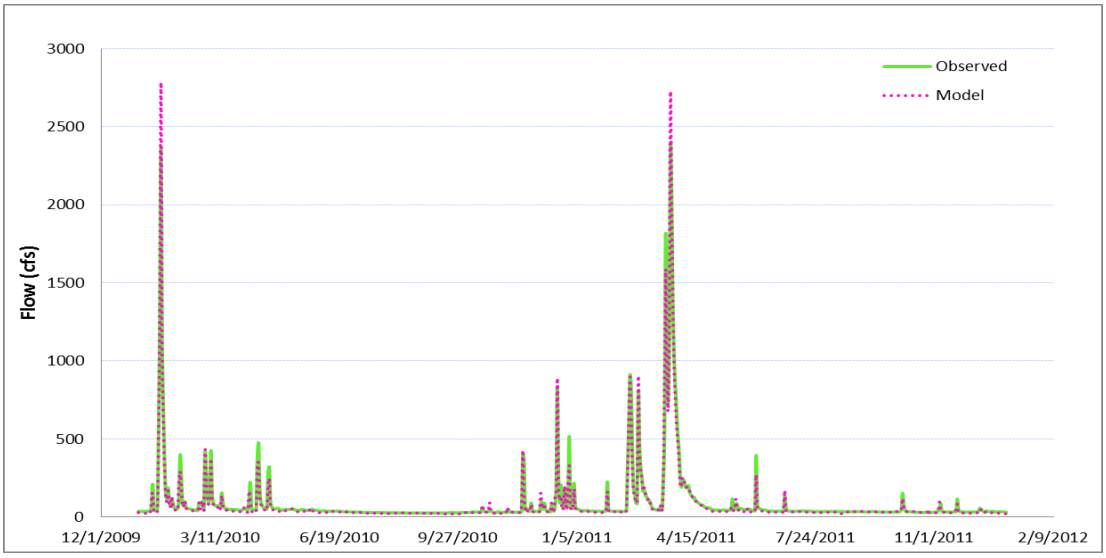

Figure 4. Flow Calibration Results at USGS Station near Highway 101. Green graph denotes results of empirical flow data while red graph denotes modeled flow using SWMM model. The model tends to overestimate peak flow during very high flow events but generally has good calibration.

The calibrated model was then used to establish baseline condition, generate pre- and post-LID hydrographs, quantify flow and water quality reduction for various LID scenarios, and serve as the foundation for optimization algorithm.

- **Implementing Cost/Benefit Analysis**

The Cost/Benefit Analysis module uses the outputs/information produced by the LID Feasibility Module and Effectiveness Module as the foundation, and applies an optimization routine as a search engine to quantify cost/benefit of LID scenarios and develop a cost-benefit curve that spans a range of LID options. The major effort of developing the Cost/Benefit Analysis module was focused on implementing the selected optimization technique through computer programming. The optimization algorithm selected for this project is Non-dominated Sorting Genetic Algorithm (NSGA-II), because it provides trade-off curves between pollutant reduction and total net cost increase (Deb, et al 2002). The programming was done in FORTRAN language and tested to make sure the codes functions properly before it was used for real case study.

- **Setup Cost-Benefit Analysis**

The developed Effectiveness and Cost-Benefit Analysis modules were then setup with key input for San Jose's PDA (purple area, Figures 3 and 5). The PDA is located in downtown and north San Jose with a drainage area of 4300 acres. The area was divided into 53 sub-basins ranging from 20 to 150 acres for model simulation (Figure 5).

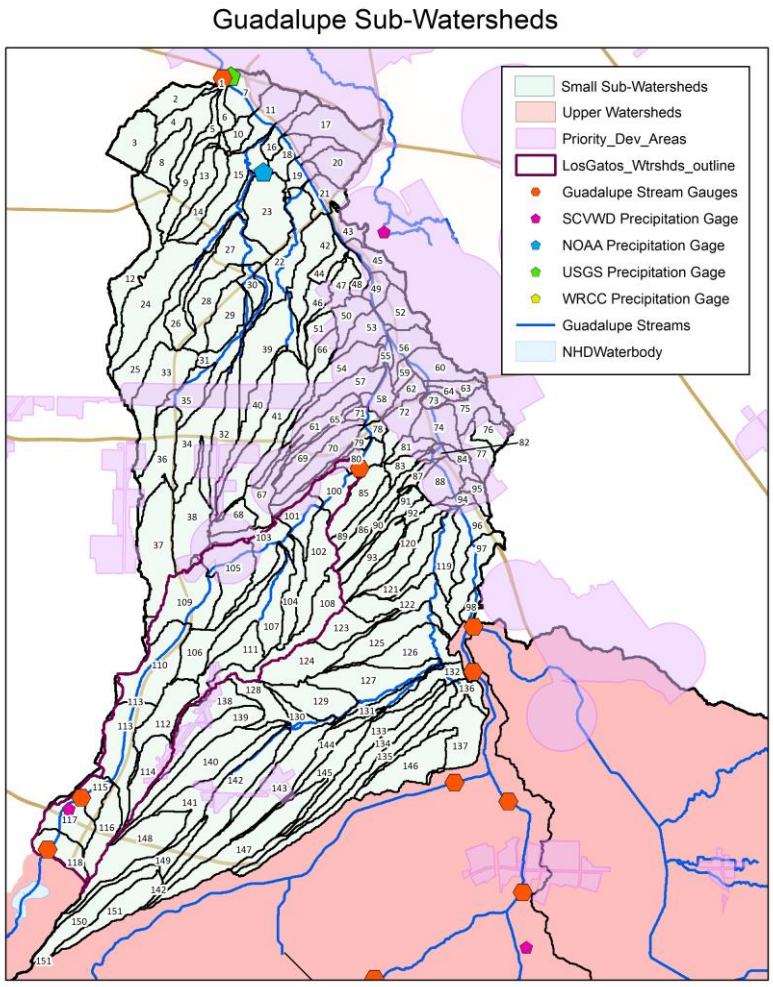

Figure 5. Modeling area and San Jose priority development area within the geographic boundaries in the City of San Jose. Light blue areas denote the 53 sub-watersheds used for the effectiveness module. Purple areas denote San Jose priority development areas. Color dots denote stream and precipitation gauges for data included in the module. Blue lines denote the main stem and tributaries to the Guadalupe River.

Three LID types - Bioretention, Infiltration Trench, and Permeable Pavement were included for optimization, as recommended by the project TAC. Each LID feature was assigned a typical design configuration, with surface area of 1000 sf, 500 sf and 5000 sf for Bioretention, Infiltration Trench, and Permeable Pavement, respectively. During the optimization process, the design of each LID type remained the same, and the decision variables were the number of each LID type within each sub-basin.

A unit cost approach was recommended by the TAC and used to calculate the total cost associated with each LID scenario specified in the optimization process. Based on local cost information provided by the city of San Jose and other sources, the cost for bioretention was estimated as $104/sf surface area, Infiltration Trench $90/sf surface area, and Permeable Pavement $34/ sf surface area. These are total costs that includes construction, design and engineering, and Maintenance and Operation with 20 year lifecycle. The total cost of each LID scenario were calculated as:
Total cost = Sum (number of each LID type*unit cost* surface area of each LID type)

The optimization was run on a 2-year storm (1.86 inch) with 24 hour duration, as proposed by the City of San Jose. The optimization was to identify most cost-effective LID combinations for achieving certain flow reduction goal.

- **Cost/Benefit Curve: Optimization output**

Once the Cost/Benefit Analysis setup was done, the optimization process was run for 200 iterations, with 100 solutions for each iteration. The outputs of optimization was a benefit curve (Figure 6) that spans a range of LID options for different levels of flow reduction. The final optimal solutions (red line, Figure 6) were where the optimization coverages and each point represents a combination of number of LID types within each of 53 sub-basins.

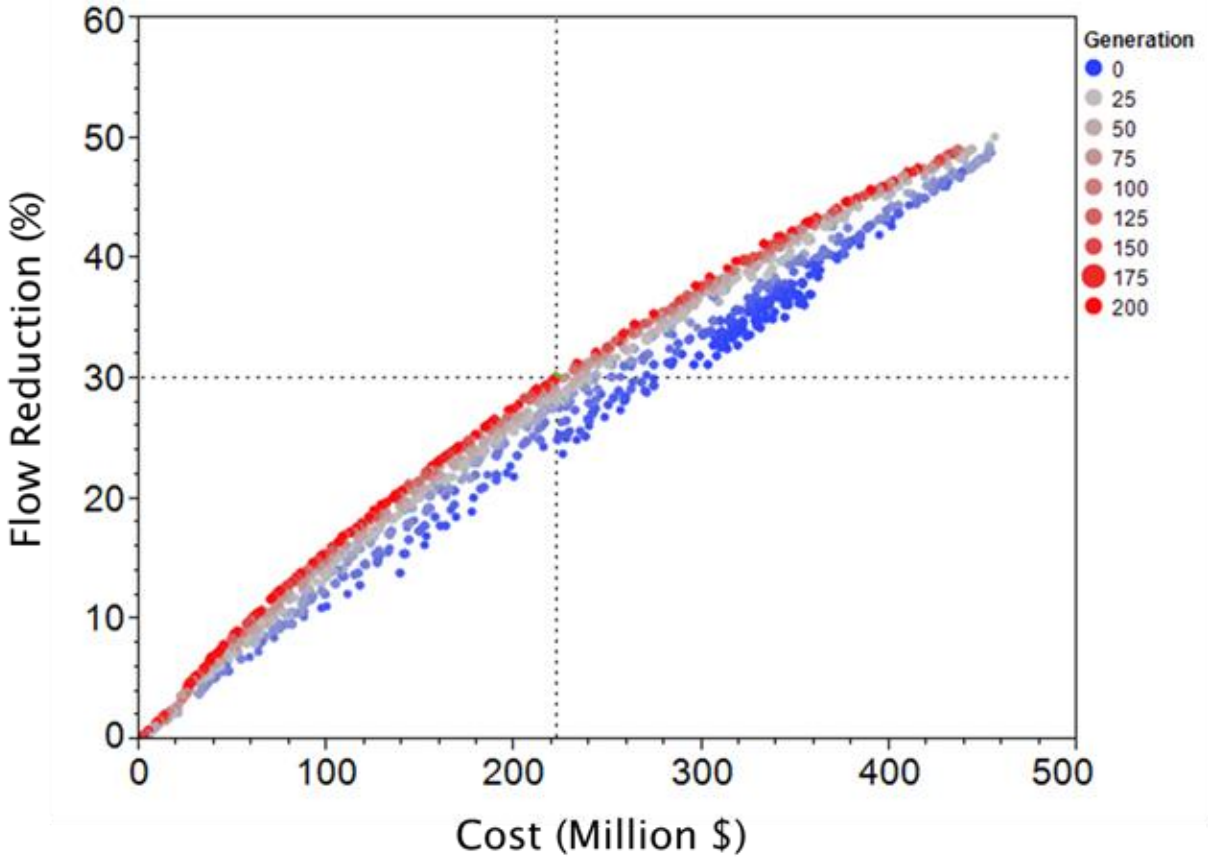

Figure 6 Cost/Benefit Analysis Curve for San Jose PDA for optimal implementation of LID. The top red curve shows the optimal solution from the cost/benefit analysis. As an example, the crosshairs of the dotted line, in the graph, show that a 30% reduction in flow to the Guadalupe River would cost an estimated $220 million. These are estimated costs based on input unit costs for LID implementation.

- **Optimal Sites for 30% Runoff Reduction**

Once the-optimal solution was identified, the optimal number of sites for each reduction goal of interest can be specified. Table 1 lists the optimal combination of LID types identified through the optimization process for achieving 30% runoff reduction. A total 2856 LIDs will be needed to treat the 4300 acre PDA with a price tag of $220 million, based on the model assumptions of LID design and unit cost. In general, the number of each LID type needed for achieving certain reduction goals is determined by the collective factors of LID design, cost and potential feasible locations. The cost of $220 million should not be considered a real prediction of actual costs but is accurate relative to other alternative LID combination scenarios for the purposes of this type. The actual

cost of implementation would be much less and would need to take into account many kinds of factors that are not needed in the optimization procedure; for example:

- Reduced cost associated with developing and using standard designs
- Reduced costs for implementing many LIDs at once within a series of larger "single projects"
- Reduced need and costs for upgrade of existing grey infrastructure
- Add revenues for attracting businesses and increasing property values
- Reduced costs for heating/cooling
- Added benefits for carbon sequestration, pedestrian friendly spaces etc.

The number of LIDs identified for 30% runoff reduction was then overlaid with Feasibility Module output to help pinpoint optimal LID locations and prioritize LID implementation within the PDA. Figures 7-9 show the distribution of optimal LIDs across the PDA for Bioretention, Infiltration Trench, and Permeable Pavement, respectively. The number labeled on the maps are the optimal LIDs needed for each sub-basin, corresponding to the number in Table 1. These sites were then ranked based on the weighting assigned by GIS feasibility module. The municipalities can incorporate these maps and ranking into their planning documents to guide their long-term LID/GI implementation effort.

Table 1 The Number of LID identified, in each sub-watershed and for each LID feature type, in order to attain a goal of 30% runoff reduction draining to the Guadalupe River. Table also shows the percent of impervious watershed treated, in total, from LID implementation in each sub-watershed

Subcatchment	Bioretention	%Imprv Treated	Infiltration Trench	%Imprv Treated	Permeable Pavement	%Imprv Treated	Total LIDs	Total %Imperv Treated
S43	34	38	36	20	0	0	70	58
S44	0	0	1	1	0	0	1	1
S45	0	0	57	20	0	0	57	20
S46	52	33	5	2	10	32	67	67
S47	46	35	1	0	7	26	54	61
S48	0	0	2	1	0	0	2	1
S49	11	13	0	0	5	30	16	43
S50	40	31	59	23	5	19	104	72
S51	4	4	1	0	0	0	5	4
S52	127	73	27	8	0	0	154	81
S53	93	61	96	32	0	0	189	93
S54	111	47	110	23	5	11	226	81
S55	22	41	2	2	0	0	24	43
S56	54	34	132	42	0	0	186	76
S57	157	67	86	18	0	0	243	85
S58	27	24	37	16	0	0	64	40
S59	21	42	35	35	0	0	56	77
S60	118	59	69	17	0	0	187	76
S61	5	3	76	23	3	9	84	35
S62	1	1	52	34	0	0	53	35
S63	17	22	54	35	0	0	71	58
S64	12	31	27	34	0	0	39	65
S65	16	26	0	0	0	0	16	26
S66	129	53	6	1	8	16	143	71
S67	0	0	5	2	10	30	15	32
S68	17	14	1	0	0	0	18	14
S69	47	29	45	14	0	0	92	44
S70	76	36	90	22	0	0	166	58
S71	7	14	0	0	0	0	7	14
S72	1	1	1	0	12	36	14	37
S73	0	0	13	17	0	0	13	17
S74	20	10	0	0	8	20	28	30
S75	54	33	53	16	1	3	108	52
S76	30	25	0	0	0	0	30	25
S77	34	25	4	1	0	0	38	26
S78	14	25	0	0	0	0	14	25
S79	0	0	0	0	0	0	0	0
S80	4	3	2	1	0	0	6	3
S81	24	29	0	0	0	0	24	29
S82	1	3	0	0	0	0	1	3
S83	0	0	0	0	0	0	0	0
S84	0	0	18	13	0	0	18	13
S85	2	1	0	0	6	14	8	15
S86	0	0	0	0	10	26	10	26
S87	0	0	22	24	0	0	22	24
S88	3	2	0	0	2	5	5	7
S89	0	0	62	31	0	0	62	31
S90	7	12	0	0	0	0	7	12
S91	11	9	0	0	0	0	11	9
S92	0	0	0	0	0	0	0	0
S93	0	0	16	4	2	5	18	9
S94	0	0	0	0	0	0	0	0
S95	10	15	0	0	0	0	10	15

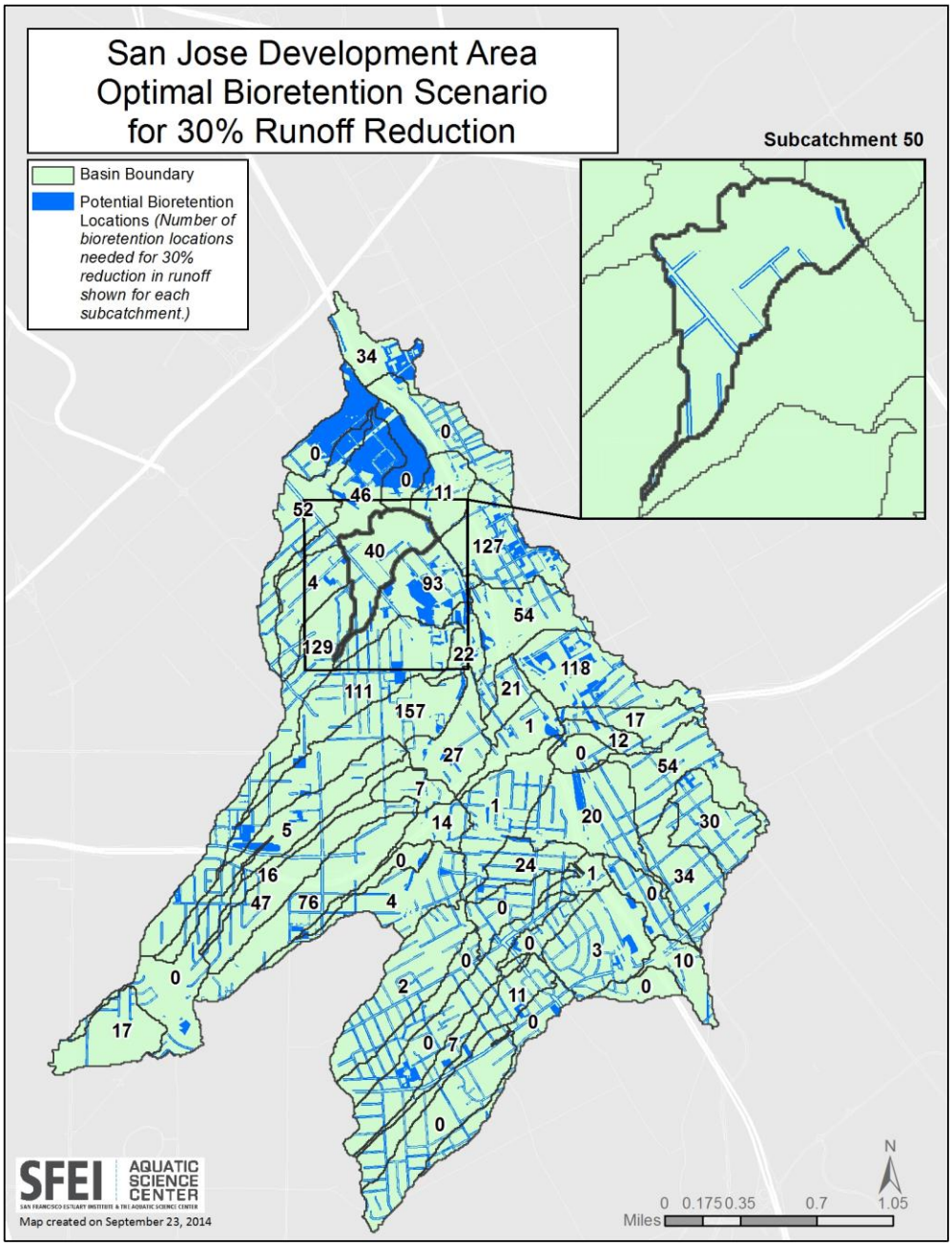

Figure 7. Overlay of Feasibility Module ranked output of feasible LID Bioretention locations with numbers of LID features needed per sub-watershed to reach the goal of 30% runoff reduction draining to the Guadalupe River. This map can be used by municipalities to assess the number of LID required to meet goals as well as suitable locations for placement of these features.

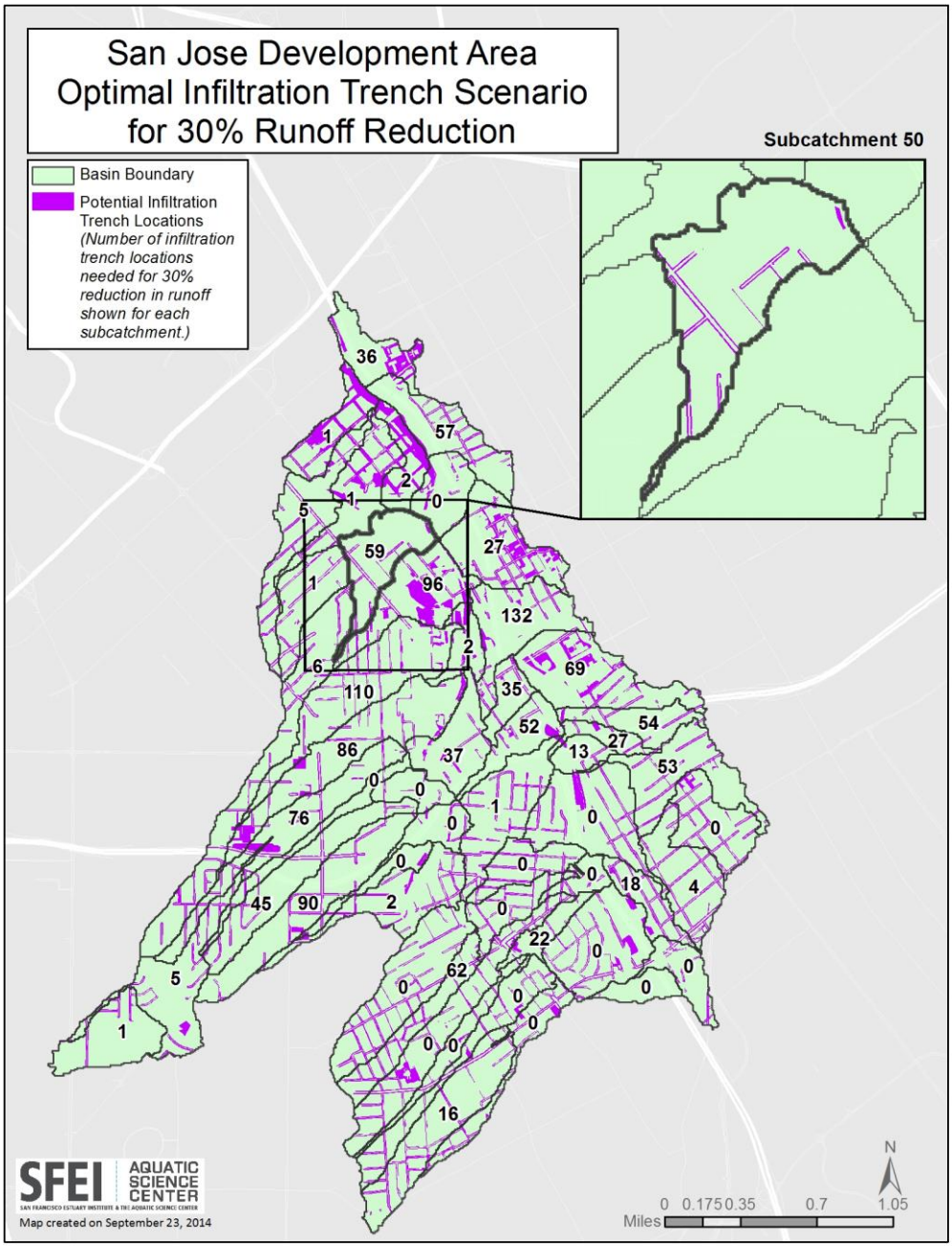

Figure 8. Overlay of Feasibility Module ranked output of feasible LID Infiltration Trench locations with numbers of LID features needed per sub-watershed to reach the goal of 30% runoff reduction draining to the Guadalupe River. This map can be used by municipalities to assess the number of LID required to meet goals as well as suitable locations for placement of these features.

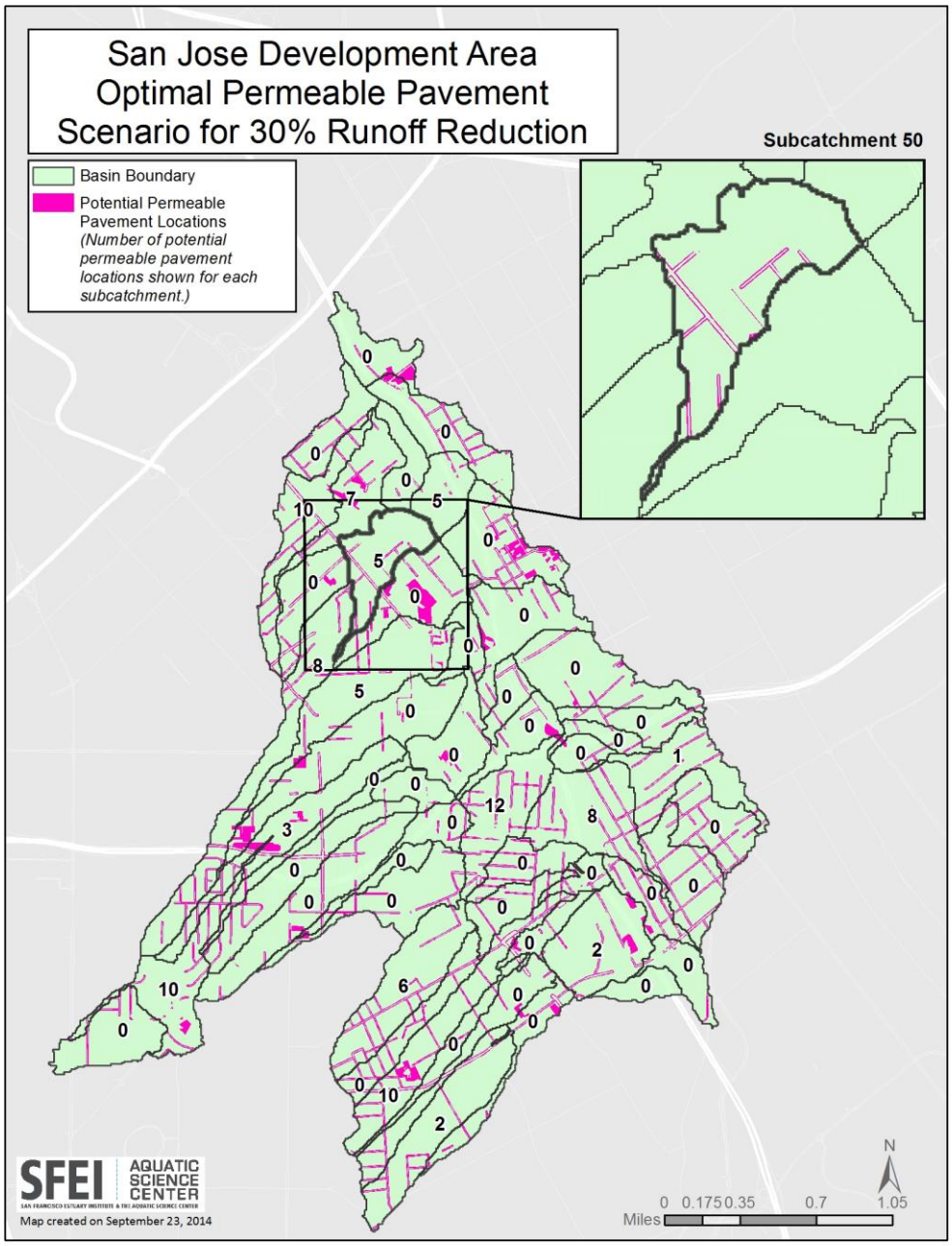

Figure 9. Overlay of Feasibility Module ranked output of feasible LID Permeable Pavement locations with numbers of LID features needed per sub-watershed to reach the goal of 30% runoff reduction draining to the Guadalupe River. This map can be used by municipalities to assess the number of LID required to meet goals as well as suitable locations for placement of these features.

References

Deb, K., Pratap, A., Agarwal, S., and Meyarivan, T., A fast and elitist multi objective genetic algorithm: NSGA-II, IEEE Transactions on Evolutionary Computation, 6(2) (2002) 182-197.

Rossman, L (2010). Storm Water Management Model User's Manual Version 5.0, EPA/600/R-05/040, July 2010.

TECHNICAL MEMORANDUM

To: Jennifer Krebs, San Francisco Estuary Project
Lester McKee, San Francisco Estuary Institute
Jennifer Hunt, San Francisco Estuary Institute

From: Dan Cloak

Subject: **Bay Area Green Infrastructure Master Planning Project**
Preliminary List of Sites

Date: 20 November 2014

The Green Infrastructure Master Planning Project includes preparation of conceptual project designs—with key project information for soliciting project support and funding—for up to eight sites.

The following preliminary list is a compilation of sites suggested by staff from the two participating municipalities, the City of San Mateo and the City of San Jose.

The preliminary list comprises 10 sites, the first eight of which are identified as current priorities for the preparation of conceptual project designs. As our investigation continues, sites may be removed from the list based on preliminary review of feasibility. Other sites may be added, and the list may be reprioritized.

Coming tasks include:

1. Determine which of the site locations are within areas mapped by SFEI's GreenPlan-IT.
2. Conduct a preliminary review of the potential benefits and feasibility of LID implementation at the sites.
3. Prepare additional documentation on the process and rationale for selecting these sites.
4. Identify additional sites if needed or if doing so would add benefit to the project, and reprioritize the list.
5. Make a final selection of up to eight sites for preparation of conceptual designs.

Preliminary List of Project Sites

ID	Site Location and Description	Comments
1	**Ocala Ave.,** East Capitol Expressway to Daytona, San Jose—Bioretention in bulb-outs within ROW	Complements pedestrian and bike improvements on adjacent section (East Capitol expressway to Wonderama)
2	**River Oaks Pump Station**, River Oaks at Guadalupe River, San Jose—diversion of pump discharge	Bioretention treatment of low flows in or adjacent to existing flood control basin
3	**New Autumn Street**, San Jose—Investigate diversion of runoff to landscaped space along Guadalupe River Trail.	Complements bioretention facilities constructed on new section of street
4	**Hedding St.,** Winchester Ave. to 1st St., San Jose—Green Streets treatment	3.2-mile section scheduled for bike and pedestrian improvements. Possible diversion or runoff to airport approach area.
5	**St. James Alleyways**, St. James to E. Julian between 8th and 9th Streets, and 9th and 10th Sts., San Jose—Permeable pavement and infiltration trenches	Similar to project on at Martha and Margaret Streets (2nd and 3rd) funded under Prop. 84 Round 1
6	**Market and First Sts.,** San Jose—Potential bioretention facility in landscaped area of oblique intersection	Commercial Area
7	**San Mateo Dr.,** Peninsula Ave. to Tilton Ave. (mixed land uses, largely commercial), San Mateo	Planned road diet, investigate curb extensions, etc. per Sustainable Streets Plan
8	**El Camino Real,** San Mateo.	Identify potential green infrastructure applications per Sustainable Streets Plan
9	So. Grant Street, 5th Ave. to 10th Ave., San Mateo (residential area)	Planned bike boulevard, investigate potential curb extensions, permeable paving in parking lane per Sustainable Streets Plan
10	Blossom Hill at Monterey Highway, San Jose—use of landscaped area within major arterial intersection	Integrate with traffic calming project; need to check on property ownership for landscaped areas

Attachment 4

Draft Agenda

ABAG General Assembly

April 23, 2015

Asian Cultural Center, Oakland

2:30 to 3:00 Registration

3:00 Welcome by Oakland Mayor Libby Schaaf & ABAG President Julie Pierce

3:10 Keynote: David Sedlak, Malozemoff Professor in Mineral Engineering, Co-director of Berkeley Water Center, Director of Institute for Environmental Science and Engineering (IESE), ReNUWit, Climate Readiness Institute, Title of talk TBD, General Topic – What local governments need to know to prepare their water infrastructures for 2050

3:40 Panel Discussion, Title TBD, General Topic – What water protective/conserving initiatives local governments & water districts are doing to prepare for 2050. Moderator: Karen Mitchoff, Supervisor District IV, Contra Costa County
Panelists:

- Steve Ritchie, Assistant General Manager Water Enterprise, SFPUC
- Larry Patterson, City Manager, City of San Mateo
- Sandi Potter, Environmental Review & Comprehensive Planning Manager, Sonoma County, Former Mayor El Cerrito
- Jay Jasperse, Chief Engineer, Sonoma County Water Agency

4:50 Workshops/Caucuses for Participants – Breakout sessions to be organized so that cities of similar populations can discuss the above topic. Ken Chin to set up powerpoint display and talk about GreenPlan efforts/Sustainable Streets Plan in San Mateo.

6:00 ABAG Business Meeting

6:30 Dinner and Growing Smarter Together Awards

Krebs, Jennifer@Waterboards

From: Ait-Lasri, Rachid@Waterboards
Sent: Tuesday, December 16, 2014 3:10 PM
To: Krebs, Jennifer@Waterboards
Cc: Kelly, Judy@Waterboards; Jen Hunt; Trigueros, Paula@Waterboards; Stebbins, Michele@Waterboards
Subject: RE: Request for Match Reduction for Agreement No. 12-415-550

Hi Jennifer,

I am approving a reduction in match for this project from the original amount of $217,000 to the new amount of $87,912.10. This amount represents approximately 12.8% of the total project costs and is therefore above the minimum of 10% required by law.

Rachid

Rachid Ait-Lasri, PE
Water Resource Control Engineer
Division of Financial Assistance
State Water Resources Control Board
1001 "I" Street, 16th Floor, Sacramento, CA 95814
(916) 341-5825 | Rachid.Ait-Lasri@waterboards.ca.gov

From: Krebs, Jennifer@Waterboards
Sent: Tuesday, December 16, 2014 2:59 PM
To: Ait-Lasri, Rachid@Waterboards
Cc: Kelly, Judy@Waterboards; Jen Hunt; Trigueros, Paula@Waterboards; Stebbins, Michele@Waterboards
Subject: Request for Match Reduction for Agreement No. 12-415-550

Hello Rachid,

Many thanks in your help working with us on the match issue for the GreenPlan Bay Area Project.

As we discussed on the phone and in a previous email, San Francisco Estuary Partnership (SFEP) and our partner, San Francisco Estuary Institute (SFEI), request a match reduction: Costs that we thought would be eligible to count as project match are not eligible. In the meantime, we have received from local governments the data required to develop GreenPlan-IT, the Green Infrastructure Planning Toolkit.

The approved match includes:

Invoice 1 (8/1/13 to 9/20/13)- $1,144.00
Invoice 2 (10/1/13 to 12/31/13)- $3,237.60
Invoice 3 (1/1/14 to 3/31/14) - $332.00
Invoice 4 (4/1/14 to 6/30/14) -$5,767.50
Memo of 11/17 Table 1 - $35,673.00

Memo of 11/17 Table 2 – $41,758
Total - $87,912.10 (or 13% of Total Project Cost {Award Amount $597,901 + $87,912.10 Matching funds = $685,813.10})

For the duration of the project SFEP will provide documentation of local governments involvement even if it cannot be invoiced as match.

Please confirm that this match reduction is approved at your earliest convenience.

Regards,

Jennifer

Jennifer Krebs, Principal Environmental Planner, San Francisco Estuary Partnership (SFEP) / Association of Bay Area Governments (ABAG)

☎ 510.622-2315 | ✉ jkrebs@waterboards.ca.gov

Memo

From: Jennifer Krebs, SFEP

To: Rachid Ait-Lasri, State Board

Re: GreenPlan Bay Area (Agreement Number 12-415-550) Match Sources, Amounts, and Background

Date: 10/17/2014

Since the start of the Green Infrastructure Master Planning Grant, SFEI and partners have worked on a number of projects with direct bearing on the Planning Grant. These projects, and their critical work, are helping to inform the Planning Grant as listed below. Based upon guidance from the State Board during Summer 2014, San Francisco Estuary Partnership provides the following three tables to document matching funds for GreenPlan Bay Area. If the explanations below need further clarification, please let me know so we can provide additional information. I can be reached to discuss this at 510-622-2315.

Table 1: Guadalupe River PCB Monitoring Development Conducted in 2011/2012 – in-kind services were provided by SFEI staff to monitor PCBs in the Guadalupe River during Water Year 2011/2012. The data were collected at the request of Bay Area Stormwater Managers (Bay Area cities and counties). These data were used to develop source area data layers for the GreenPlan-IT Optimization Module.

Table 2: PCB and Hg Regional Watershed Model Development (RWMD) – in-kind services were provided by SFEI staff to develop algebraic methods for calculating PCB and Hg factors throughout the Bay Area and identify potential PCB and Mercury sources in Bay Area watersheds. The model was developed at the request of Bay Area Stormwater Managers (Bay Area cities and counties) under guidance by the Small Tributaries Loading Strategy (STLS) (a working group comprised of local stormwater districts under which the RWSM [Regional Watershed Spreadsheet Model] is developed and reviewed). The reports noted in the task descriptions describe and document the model development. The reports provide the documentation and assumptions that went into the RWMD development, source area GIS data layer development, loading factors etc. The data have then been used as inputs for GreenPlan-IT.

Table 3: Guadalupe River Highway 101 Monitoring – in-kind services from the US Geological Survey to assist the San Francisco Bay Regional Water Quality Control Board and the Santa Clara Valley Water District in continuing the ongoing hydrologic and sediment monitoring at the Guadalupe River Highway 101 location. Hydrology and sediment data, from the Guadalupe River monitoring, were used to calibrate the Stormwater Management Model (SWMM) (which is the modeling platform used in GreenPlan-IT) and also to aid in the development of a water budget for the Guadalupe River. The hydrology and sediment model will be used to measure the predicted effectiveness of LID in reducing stormwater runoff volume and hydrograph and sediment loading from this watershed. Please note that a memo is provided (attachment 1) to explain how USGS calculates costs.

TABLES 1 & 2 APPROVED AS MATCH

TABLE 1: Guadalupe River PCB Monitoring 2011-2012	Match Documentation- In-kind Services: GREEN PLAN BAY AREA				GRANT 12-415-550		ABAG 102223	
ITEM	ACTIVITY	DATE	NAME OF ATTENDEE	AFFILIATION	HOURS	HOURLY RATE	EXPENSES	TOTAL
Guadalupe River PCB Monitoring 2011-2012	Uploaded GIS and modeling data to SFEI FTP site	8/1/2011-6/1/2012	Grosso, Cristina	SFEI	1	$ 102.77		$ 103
Guadalupe River PCB Monitoring 2011-2012	Provided QA/QC review of Guadalupe River PCB and Mercury contaminant data.	8/1/2011-6/1/2012	Yee, Donald	SFEI	13	$ 130.13		$ 1,692
Guadalupe River PCB Monitoring 2011-2012	Collected storm water samples for analysis of PCB and Mercury during storm events at the Guadalupe River 101 monitoring station	8/1/2011-6/1/2012	McKee, Lester	SFEI	138.75	$ 127.74		$ 17,724
Guadalupe River PCB Monitoring 2011-2012	Collected storm water samples for analysis of PCB and Mercury during storm events at the Guadalupe River 101 monitoring station	8/1/2011-6/1/2012	Hunt, Jennifer	SFEI	81	$ 85.10		$ 6,893
Guadalupe River PCB Monitoring 2011-2012	Provided GIS support and applying stormwater concentrations to maps for the Guadalupe River project	8/1/2011-6/1/2012	Klatt, Marcus	SFEI	2.5	$ 59.88		$ 150
Guadalupe River PCB Monitoring 2011-2012	Provided GIS support and applying stormwater concentrations to maps for the Guadalupe River project	8/1/2011-6/1/2012	Wong, Adam	SFEI	1	$ 50.82		$ 51
Guadalupe River PCB Monitoring 2011-2012	Collected storm water samples for analysis of PCB and Mercury during storm events at the Guadalupe River 101 monitoring station	8/1/2011-6/1/2012	Gluchowski, David	SFEI	83.5	$ 47.97		$ 4,006
Guadalupe River PCB Monitoring 2011-2012	Provided GIS support and applying stormwater concentrations to maps for the Guadalupe River project	8/1/2011-6/1/2012	Striplen, Charles	SFEI	1	$ 76.72		$ 77
Guadalupe River PCB Monitoring 2011-2012	Collected storm water samples for analysis of PCB and Mercury during storm events at the Guadalupe River 101 monitoring station	8/1/2011-6/1/2012	Franz, Amy	SFEI	35.75	$ 69.06		$ 2,469
Guadalupe River PCB Monitoring 2011-2012	Project invoicing to BASMAA (funds for this project were provided by the Bay Area Stormwater Management Agency)	8/1/2011-6/1/2012	Leung, Lawrence	SFEI	10	$ 83.45		$ 835
Guadalupe River PCB Monitoring 2011-2012	Provided GIS support and applying stormwater concentrations to maps for the Guadalupe River project	8/1/2011-6/1/2012	Bezalel, Shira	SFEI	1	$ 85.10		$ 85
Guadalupe River PCB Monitoring 2011-2012	Collected storm water samples for analysis of PCB and Mercury during storm events at the Guadalupe River 101 monitoring station	8/1/2011-6/1/2012	Gilbreath, Alicia	SFEI	4	$ 69.88		$ 280
Guadalupe River PCB Monitoring 2011-2012	Collected storm water samples for analysis of PCB and Mercury during storm events at the Guadalupe River 101 monitoring station	8/1/2011-6/1/2012	Kim, Patrick	SFEI	54.75	$ 20.75		$ 1,136
Guadalupe River PCB Monitoring 2011-2012	Collected storm water samples for analysis of PCB and Mercury during storm events at the Guadalupe River 101 monitoring station	8/1/2011-6/1/2012	Casady, Jenna	SFEI	2	$ 20.75		$ 42
Guadalupe River PCB Monitoring 2011-2012	Collected storm water samples for analysis of PCB and Mercury during storm events at the Guadalupe River 101 monitoring station	8/1/2011-6/1/2012	Silver, Stephanie	SFEI	6.5	$ 20.74		$ 135
							Total	$ 35,675

TABLE 2: PCB and Mercury Regional Watershed Model Development	Match Documentation- In-kind Services: GREEN PLAN BAY AREA				GRANT 12-415-550		ABAG 102223	
ITEM	ACTIVITY	DATE	NAME OF ATTENDEE	AFFILIATION	HOURS	HOURLY RATE	EXPENSES	TOTAL
PCB and Mercury Regional Watershed Model Development	Analyzed literature for identification of sources of PCBs and Mercury; Reviewed GIS source area data layers and reported findings in a final report	1/1/2012-12/31/2012	McKee, Lester	SFEI	53	$ 137.33		$ 7,279
PCB and Mercury Regional Watershed Model Development	Developed and applied algebraic methodology for calculating source area PCB and Mercury concentrations from empirical stormwater concentrations	1/1/2012-12/31/2012	Lent, Michelle	SFEI	306	$ 61.79		$ 18,909
PCB and Mercury Regional Watershed Model Development	Developed source area data layers for PCB and Mercury based on conceptual models for sources of these pollutants in Bay Area watersheds	1/1/2012-12/31/2012	Kass, Jamie	SFEI	81.75	$ 72.99		$ 5,967
PCB and Mercury Regional Watershed Model Development	Delineated Region 2 watersheds for GIS data layers	1/1/2012-12/31/2012	Pearce, Sarah	SFEI	9.5	$ 97.14		$ 923
PCB and Mercury Regional Watershed Model Development	Worked on final report to STLS	1/1/2012-12/31/2012	Hunt, Jennifer	SFEI	79.5	$ 94.24		$ 7,492
PCB and Mercury Regional Watershed Model Development	Worked on final report to STLS	1/1/2012-12/31/2012	Gilbreath, Alicia	SFEI	16.5	$ 71.95		$ 1,187
							Total	$ 41,758

TABLE 3:Guadalupe River Hwy 101 Monitoring	Match Documentation- In-kind Services: GREEN PLAN BAY AREA				GRANT 12-415-550		ABAG 102223	
ITEM	ACTIVITY	DATE	NAME OF ATTENDEE	AFFILIATION	HOURS	HOURLY RATE	EXPENSES	TOTAL
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2012-12/31/2012	various staff	USGS				$8,473
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2012-12/31/2012	various staff	USGS				$31,861
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2012-12/31/2012	various staff	USGS				$6,838
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2013-12/31/2013	various staff	USGS				$8,473
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2013-12/31/2013	various staff	USGS				$31,861
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2013-12/31/2013	various staff	USGS				$6,838
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2014-12/31/2014	various staff	USGS				$8,550
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2014-12/31/2014	various staff	USGS				$32,150
Guadalupe River Hwy 101 Monitoring	Continuous turbidity data gauge station operation and maintenance; data management	1/1/2014-12/31/2014	various staff	USGS				$6,900
							Total	$141,943

Grand Total								$ 219,376

Attachment 1

Email from Anthony Guerrero at USGS to Jen Hunt of SFEI 10-14:

"Hi Jen -

Yes the discharge record at Guadalupe is a base service and has matching funds so O&M is $20,600 - of which $13,700 comes from SCVWD (Santa Clara Valley Water District, a local water district) and $6,900 is USGS matching funds. There is the additional sediment program which is $32,150 as well as the turbidity surrogate which is an additional $8,550 - No matching funds there.

As far as previous years 2013 - 2014 had the same O&M costs, generally costs only go up when our costs do and 2013 & 2014 had no cost of living increase so there was no change to those programs. 2015 has seen a 0.9% cost increase to reflect the preceding 1% cost of living increase to federal employees. With that said total O&M at Guadalupe was $20,400 for 2013 & 2014."

United States Department of the Interior

U.S. GEOLOGICAL SURVEY

UNITED STATES GOVERNMENT
MEMORANDUM

DATE: April 9, 2014

REPLY TO ATTN OF: Director, USGS, CAWSC, Sacramento, California

SUBJECT: PROGRAMS AND PLANS – Statewide Monitoring Program Prices for 2015 Fiscal Year

TO: All California Supervisors

The following information represents prices for use in negotiating programs for the 2015 fiscal year.

A GUIDE FOR DATA OPERATION COSTS
FY 2015

SURFACE-WATER OPERATIONS

The following gaging station costs and the related system for deriving costs should be considered as a guide, subject to adjustment if circumstances warrant. Individuals who develop different standards should take responsibility for adequate internal documentation of changes. A formal budget spread sheet must be filled out and the Deputy Director or Monitoring Program Chief consulted before actual implementation of alternative prices for data collection.

A. An "equivalent streamflow station" is defined as follows:

1. Has a fairly stable control; one or two ratings used per year.
2. Work effort required is such that three "equivalent stations" could be measured in a day at any time of the year by the average hydrographer.
3. Travel to the station is moderate, less than about 50 miles or 45 minutes time.
4. Maintenance requirements are not more than two working days per year.
5. Vandalism is minimal; one minor incident that causes lost record once every three years.
6. Total working day effort required to go from "gage to page" varies throughout the Center depending on the number of visits and the methods of operation. Fourteen working days are considered the average workforce needed per station per year.

B. The standard streamflow O&M increase in FY15 is 0.9% within the cooperative, OFA, and FERC programs.

All costs were increased by 0.9%, then rounded up or down to the nearest $50 increment if $1,000 or above, the nearest $10 increment if below $1,000. The multiplier factor used for FY93 will be kept so that future increases will be kept at that ratio for all elements of the program. Therefore, an element that increases at a different rate this year (due to rounding), will stay in balance over time as the rounding will go both ways in succeeding years.

An evaluation of the above established a base cost for an "equivalent streamflow station" at $22,800 for the 2015 fiscal year. This cost should be applied to all stations without FMF in the coop, OFA, and FERC programs. For gages in the coop program where FMF is applied, the total cost is $20,600.

C. In addition to the base cost of $22,800 ($20,600 FMF total), the following should be added for other services:

		Unmatched (No FMF)	Matched (With FMF)
1.	Flood-warning station--compute monthly record and be on-call 24 hours a day during flood season for equipment repairs, etc.	$4,300	$3,900
2.	Furnish monthly streamflow records. We endeavor to provide provisional data via the WWW, but if cooperators specify specific due dates for reviewed monthly records, additional costs are incurred.	$2,000	$1,850
3.	Major rivers or special measurements that require more equipment, such as boats, or more manpower than normal.	*	*
4.	Helicopter operation-cost/benefit of helicopter use should be evaluated and estimated case by case.	*	*
5.	FERC stations--for any measurements made beyond the eight normally made during the year, or for special measurements requested.	*	*
6.	Stations that have multiple diversions will be computed on an individual basis using 60% (or $13,700) of an "equivalent station" cost for each diversion.	*	*
7.	Stations with difficult access and long distance to or between stations--estimate on a case by case basis.	*	*

* Items 3-7 should be estimated using a standard budget sheet. This will consider labor, expenses, and overhead.

D. For selected other kinds of station or work, use the following multipliers to determine equivalent costs:

	Multiplier of an Equivalent Station	Unmatched (No FMF)	Matched (With FMF)
Streamflow O&M	1.00	$22,800	$20,600
Seasonal Streamflow O&M	.60	13,650	12,350
Partial Range Streamflow (above or below a specific discharge threshold)	.60	13,650	12,350
Lake/reservoir O&M	.35	8,000	7,250
Crest-stage gage	.20	4,550	4,150
Temperature, continuous	.301	6,850	6,200
Temperature, continuous (in conjunction with full O&M)	.184	4,200	3,800
Specific Conductance and temperature, continuous	.806	18,350	16,550
Specific Conductance and temperature, continuous (in conjunction with full O&M)	.437	10,000	9,050
Precipitation	.35	8,000	7,250
Daily Suspended sediment	1.67	38,100	34,350
Daily total load sediment	2.04	46,550	42,000
Daily seasonal suspended sediment	1.41	32,150	29,000
Daily seasonal total load sediment	1.73	39,450	35,600
Periodic suspended sediment	.76	17,350	15,650
Periodic total load sediment	.92	21,000	18,950
Periodic seasonal suspended sediment	.64	14,600	13,200
Periodic seasonal total load sediment	.79	18,000	16,250

E. Cooperator Furnished Records (primarily FERC) - review and publish:

	Multiplier of an Equivalent Station	Unmatched (No FMF)	Matched (With FMF) *(Coop only)*
Streamflow record, comp & review	.825	18,800	16,950
Streamflow record:			
Full review	.221	5,050	4,600
Full review with fixed geometry weir	.167	3,850	3,500
Partial range record:			
Full review	.167	3,850	3,500
Full review with fixed geometry weir	.088	1,950	1,800
Canal record	.188	4,250	3,850
Non-recording streamflow record (staff)	.088	1,950	1,800
Reservoir:			
Telemetered, daily observations	.054	1,250	1,150
Recorded, full review	.120	2,750	2,500
Non-recording record	.086	2,000	1,850
Powerhouse record	.018	410	N/A
AVM quality assurance check/review	.054	1,250	1,150

Stations or work other than those listed will need to be estimated individually. An additional reduction of 5% rounded to the nearest $10.00 increment if below $1,000 and to the nearest $50 increment if $1,000 or above, will be allowed for electronic transfer of furnished record. See the enclosure for definitions of furnished records.

GROUND-WATER OPERATIONS

Standard annual cost for routine operations at ground-water sites will no longer be used. Each ground-water program will be individually budgeted on an actual cost basis.

WATER-QUALITY OPERATIONS

In 2007, the cost for continuous water-quality monitoring was increased beyond the annual station cost increase for that year to account for the additional work required for quality assurance associated with the guidelines for continous water-quality monitors. This quality assurance work requires cross-sectional measurements of each monitored parameter at each site twice annually.

Temperature as a stand-alone parameter or as an add-on to a full operation gage is listed in this memo, but beginning with the 2007 water year, specific conductance is no longer priced as a single parameter. It is assumed that specific conductance monitoring will not occur without concurrent temperature monitoring, so the cost for these two parameters are combined into a single cost.

Costs for other continuous water-quality monitoring (adding a third parameter such as dissolved oxygen or pH) and turbidity monitoring will be priced individually by site and may vary depending on local conditions, but will include a minimum of $2,450 for the cross-sectional measurements that are required for quality assurance.

Eric G. Reichard
Director, USGS California Water Science Center

Enclosure

DEFINITIONS OF FURNISHED RECORDS

Full Range Record -- Full review

Full range of flow is documented and requires detailed review of computed record including two visits with discharge measurements per year.

Full Range Record -- Full review with a fixed geometry weir

Full range of flow is documented and requires a cursory review of computed record. Two site visits per year do not require discharge measurements unless there is reason to believe the weir is not operating properly (i.e., filling in of approach or weir broken, etc.).

Partial Range Record -- Full review

Flow range limited to low and medium flows. Weir or natural control, subject to shifting, requiring detailed review of computed record.

Partial Range Record with fixed geometry weir

Flow range is required such as a fish release. Two visits but not measurements required unless there is reason to believe it is not operating properly.

Partial Range Record -- Not reviewable

Staff gage sites that require verification of rating for staff. Observations may or may not be published as determined on a case by case basis.

Reservoir, telemetered, daily observations

Hand recorded at remote site. Two visits to check relation between staffs and telemetry. Record then accepted as daily observations.

Reservoir, recorded, full review

One-site record, two visits per year to verify recording procedure.