

SAFE, CLEAN WATER PROGRAM

Stakeholder Advisory Committee

Meeting Summary: November 8, 2017

1. Meeting in Brief

This was the kickoff meeting of the Stakeholder Advisory Committee (SAC) process for the Safe, Clean Water Program. The objectives of the meeting were to:

- Provide an overview of the SAC's purpose and roles;
- Provide context for Stormwater Funding Measure development;
- Share the program's purpose and process; and
- Receive stakeholder input on the above.

The meeting was attended by SAC delegates and alternates, members of the public, and the County team (including County staff and consultants). Supervisor Kuehl came to the meeting to thank attendees for their time and participation in this process.

Stakeholders asked for additional information on the stormwater system and the relationship of this program to other County plans and programs. Input was offered on a range of topics, including:

- Economic benefits of the program;
- The identification of specific projects, project types, and criteria in the Measure;
- Public outreach;
- Legal considerations;
- Regional Water Quality Control Board (RWQCB) involvement; and
- Funding sources and needs.

2. Action Items

ACTION ITEM: The County team will distribute an expanded draft Charter to the SAC and will seek comments on the draft at the next meeting.

ACTION ITEM: The County team will provide a map of regional stormwater facilities, indicating which are addressed in the basin plan.

ACTION ITEM: The County team will revisit the potential for RWQCB participation on the SAC.

ACTION ITEM: The County team will consider a request to hold the next meeting on December 12 or December 14, rather than December 13.

ACTION ITEM: The County team will consider shifting the time of future meetings earlier and the possibility of expanding the length of the meetings.

Supervisor Kuehl's Remarks

Supervisor Kuehl thanked attendees for participating in this important effort to help create a comprehensive multi-benefit stormwater program. She recognized and expressed her appreciation for their commitment of time to this process. The County needs to hear and incorporate stakeholders' input early in the process in order to develop a successful plan. It is initiating this effort by collecting participants' thoughts on how to plan water policy programs and projects in the region and will continue to incorporate many important voices into the Stormwater Funding Measure.

Stormwater is a regional issue that does not stop at jurisdictional boundaries. As such, the County is taking the lead on bringing parties together. The plan must reflect a regional approach but also must work within individual cities. Supervisor Kuehl expressed her excitement about the start of this process and her confidence about its success given the people who are on the team and the SAC. She emphasized her appreciation for participants' willingness to sit around the same table and encouraged them to listen to each other, think locally and globally (regionally), and enjoy the process.

3. Public Comments

- Eric Wolf, San Gabriel Council of Governments (COG): Work on defining an appropriate definition of a regional project. The definition used for EWMPs and high-cost projects may not maximize stormwater capture.
- Richard Watson, Richard Watson & Associates, Inc.:
 - Agrees there is a need to develop an appropriate definition of regional projects. The County may want to consider defining regional projects as including both large scale and watershed scale projects.
 - Leveraging must be an important element for this program.
 - Consider source control to save money in the long run.
 - Supports the inclusion of project types as this will provide flexibility and would allow for potential future project phases.
- Alex Paxton, Water Foundation:
 - One of the reasons this program is important is that it could generate one of the few sources of money to pay for maintenance and operation of stormwater facilities. Think about how to identify and educate the public about this funding, which is needed to make projects successful.

4. Next Steps

SAC participants are welcome to send any additional questions to Ms. Friedman-Johnson.

The County team plans to conduct one-on-one conversations with SAC participants.

SAC participants are encouraged to inform others who may be interested in this process.

The website for this effort is: www.safecleanwaterla.org (or <https://dpw.lacounty.gov/lacfd/scwp/>).

Materials to be reviewed before the next meeting will be sent the SAC one week in advance of the next meeting.

The next meeting is scheduled for December 13, 2017 from 1:00 – 3:00pm at La Plaza de Cultura y Artes, 501 N. Main St, Los Angeles.

SAFE, CLEAN WATER PROGRAM

Stakeholder Advisory Committee

CHARTER

1. Background

The Los Angeles County Board of Supervisors (Board) is developing a Stormwater Funding Measure, a program that would be funded by a potential parcel tax, which would pay for multi-benefit stormwater projects and programs to improve water quality, increase water supply, and provide community enhancements.

This effort – led by the Board and described in their Motion on May 30, 2017: Regional Water Resilience Planning, Outreach, and Engagement, and Stormwater Capture Expenditure Plan – directs the DPW Director through the Los Angeles County Flood Control District to develop an Expenditure Plan and associated Stormwater Funding Measure. It is anticipated that in the summer of 2018, the Board will hold a public hearing to consider whether to put the Stormwater Funding Measure on the November 2018 ballot.

The Board has directed the DPW to develop the Expenditure Plan via a collaborative stakeholder process. This Stakeholder Advisory Committee (SAC) has been convened to fulfill that goal.

2. Purpose & Composition

- a. The SAC will meet to discuss development of an Expenditure Plan, which will guide administration and allocation of revenue generated by the Stormwater Funding Measure should the measure be submitted to and approved by the voters.
- b. The Board will consider input from the SAC on specific issues related to project selection criteria, governance, allowance for credit or rebate for existing efforts, workforce development, and other topics important in shaping the Measure.
- c. The SAC will serve in an advisory capacity as a critical forum for stakeholders to weigh in on program design and make recommendations.
- d. The SAC will be composed of 20-30 appointed members, and will include representatives from all Councils of Government within Los Angeles County, several water agencies, and the business, labor, academic, environmental, and environmental justice communities, among others.
- e. The Board retains final decision authority on the final Expenditure Plan and potential ballot Measure.

3. Goals of the SAC

- a. Review technical materials and provide comment, data, and relevant local information for consideration by the Board, the DPW, and the Conservation and Natural Resources Group (CNRG).
- b. Make recommendations for consideration by the Board, the DPW, and CNRG, when such recommendations are sought.
- c. Assist in conveying concepts and other information to the larger community.
- d. Provide comments on draft concepts and proposals.

4. Roles & Responsibilities

- a. **Project Sponsor:** The Board is responsible for the development of the Expenditure Plan and Stormwater Funding Measure that may be proposed for the November ballot. The Board is the final decision maker on the Expenditure Plan and Stormwater Funding Measure.
- b. **Project Manager:** At the Board's direction, the DPW will (1) convene all meetings; (2) provide technical support to the SAC; (3) serve as a "clearinghouse" for information; (4) develop text and format work products in cooperation with project consultants; (5) guide the development of a work plan and schedule for the SAC process; and (6) listen to and consider SAC comments, dialogue, and recommendations in development of the Expenditure Plan and potential ballot Measure.
- c. **Project Consultant:** CNRG will (1) serve as a resource for policy and technical guidance; (2) prepare the work plan and schedule for the overall SAC process; (3) develop text and format work products; (4) serve as a "clearinghouse" for information; (5) manage technical experts, facilitation support, and staff that serve the SAC.
- d. **Stakeholder Advisory Committee Members:** SAC members are expected to be actively involved in the process and to (1) attend and participate in meetings consistently; (2) brief their alternate to ensure they remain up-to-date on project activities; (3) contribute expertise, data and information to clarify statements, avoid making hasty judgments, and advance innovation; (3) assist with action items identified during meetings, as needed; (4) help identify, review, verify, and critique data, assumptions, analysis, and methods used by the DPW, other County staff, and CNRG to develop an Expenditure Plan; (5) serve as the liaison to communicate information to and from their organizations and constituencies, assisting the DPW in communicating educational information to the broader public, as well as the individual constituencies and communities represented by each individual member; and (6) act in a manner that will enhance trust among all fellow members and interested parties, including sharing the interests of the constituency (ies) they represent. Members may be asked to (7) chair or attend

workgroup meetings; and (8) develop content, text or provide other assistance to project sponsor, consultant, or facilitator.

- e. **Stakeholder Advisory Committee Alternate Members:** Given the volume of information to be considered, the aggressive timetable, and various demands on members' schedules, the alternates for delegates are recommended. While not required, alternates are welcome to attend all SAC meetings. When a SAC member is present, that member's alternate will sit in the general public section. This will ensure sufficient space and equity amongst all members sitting at the table and that SAC input is reflective of communication from a single representative per organization. Alternates are expected to (1) stay up to date on all project activities and meeting developments; (2) attend on behalf of your representative when said member is unable to attend, fully prepared to discuss agenda items; and (3) when representing your member, honor expectations outlined in section (c). Due to our fast pace, no items addressed at previous meetings will be revisited to accommodate an alternate.
- f. **Facilitators:** The Center for Collaborative Policy (CCP), California State University (CSUS) will provide a facilitation team that will serve as a third-party and impartially guide the process. Facilitators will not promote a particular outcome for the group, but will advocate for a transparent effective process. Facilitators will ensure the SAC stays within scope and follows the terms of this charter. In support of the Project Sponsor and Consultants, the facilitators will (1) design the process; (2) formulate meeting goals and agendas; (3) manage meetings and ensure respectful dialogue; (4) build mutual understanding and shared responsibility, balance participation, and help members work productively; and (5) serve as a confidant for members who wish to express concerns privately, whether about the substance of discussions or the collaborative process. If a member has a concern about the neutrality or performance of the facilitator, s/he should first speak with the facilitator. If the concern is unresolved, the member should discuss it with CNRG.

The Project Sponsor, Consultant, County staff and facilitators comprise the Project Team.

5. Meeting Materials & Deliverables

a. Meeting Summaries

- i. The facilitation team will prepare draft and final meeting summaries, including discussion highlights, action items, and points of agreement and disagreement. They will ensure a draft summary is distributed approximately one week in advance of the subsequent meeting.
- ii. These summaries will serve as a history of the SAC's efforts. Therefore, it is critical that all SAC members carefully read summaries before each meeting and share any needed edits to ensure we have an accurate account. A meeting summary will become final once SAC edits are incorporated.

b. Meeting Materials

- i. The Project Team will ensure all meeting materials are delivered approximately one week prior to meetings.
- ii. Members will review material in advance and be prepared to engage in substantive discussions during meetings.

6. Operating Protocols

a. General Principles of Collaboration

Using the following general principles of collaboration, SAC members:

- Commit to expending the time, energy, and organizational resources necessary to fulfill SAC roles and responsibilities as outlined above;
- Recognize the validity of and seek to understand different points of view and different interests;
- Respect the personal integrity, values and legitimacy of the interests of each member;
- Allow everyone to participate so that no one individual dominates the discussion;
- Seek to develop inclusive solutions that meet the range of interests around the table; and
- Regard disagreements as problems to be solved, not battles to be won.

b. Standard Meeting Guidelines

- Electronic courtesy. Please turn off cell phones, or any other communication item with an on/off switch to “silent.” We understand you have demanding responsibilities outside of the meeting room. We ask that these responsibilities be left at the door. Your attention is needed for the full meeting.
- Be comfortable. Help yourself to refreshments or take personal breaks.
- Humor is welcome and important. However, humor should never be at someone else's expense.
- Stay focused on the charter and meeting goals and objectives. There are many related topics that people care about. The SAC cannot address all of these. The facilitator will help the group stay focused on the deliverables.
- Use common conversational courtesy. Don't interrupt others. Use appropriate language. Avoid third party discussions.
- Share the air. Let us ensure as many people as possible can participate in discussions.
- All ideas and points have value. You may hear something you do not agree with. You are not required to defend or promote your perspective, but you are asked to share it. All ideas have value in this setting. If you believe another approach is better, offer it as a constructive alternative.
- Avoid editorials. Avoid ascribing motives to or judging the actions of others. Tell us what is important to you, and what you would like to see.

- Honor time. In order to achieve meeting objectives, it is important to follow the time guidelines provided by the facilitator.

7. Decision Making

In some cases, the DPW may seek recommendations from the SAC. This is a consensus seeking process. The SAC will strive to reach consensus though it is not mandatory to making a decision and moving the process forward. When seeking consensus, the SAC will consider the following range of definitions for support:

Unqualified Support: Full agreement with all aspects of proposal.

Strong Support: Support for most aspects of proposal. No fundamental disagreements with any aspect of proposal.

General Support: Support for all or most aspects of a proposal. No fundamental disagreement with key aspects of proposal. Includes having unanswered questions that need additional information or clarification.

Qualified Support: Significant disagreement with one or more aspects of proposal; however, can live with the proposal as packaged. (Overall, suggested proposal is better than leaving things as they are now). In this “not happy, but I’ll live with it” option, parties will be asked to work on generating alternative options or language that address the concerns of all.

Fundamental Disagreement with Key Aspects of Proposal: Not willing to support or live with the proposal as it stands. Parties with this opinion must suggest alternatives that move the proposal toward accommodating the interests of all.

Consensus will be achieved when all members can state some level of support, from qualified support to unqualified support. To determine if the SAC is moving toward consensus, the facilitator will periodically ask for an informal “read” or “straw poll” of the group’s perspective. The answer to this question is used for the purpose of developing the dialogue and is not binding.

When there appears to be general agreement regarding a proposal, a more formal question may be asked of the SAC to determine if they have reached consensus and can provide a final recommendation. If consensus has been reached, the decision of the group will be memorialized (e.g., through meeting summaries, reports, memos, etc.) and will take the form of a recommendation from the SAC to the Board and the DPW. The Board and the DPW recognize the value of consensus among SAC members and will give high priority consideration to proposals and recommendations for which there is consensus and/or significant agreement among SAC members. The Board is not bound to adopt a proposal or recommendation where consensus exists.

As previously mentioned, consensus is not required, but is desired. Therefore, if consensus is not achieved within the scheduled time frame for a topic discussion, the Project Team will determine if the topic / proposal warrants more discussion to achieve consensus. Due to the expedited nature of the overall process, prolonged discussions by the SAC on a specific topic may not be feasible. The DPW will retain final decision responsibility on whether the SAC should continue to seek consensus or move on to other topics. If consensus is not feasible on a specific topic, the facilitators will document, in the meeting summary, the full range of perspectives including minority opinions.

8. Meeting Process & Schedule

- a. 8 meetings of the SAC are planned between November 2017 and June 2018. Most meetings will last 2 hours, but some may be expanded for more robust discussion.
- b. If necessary, the Project Team will constitute work groups to review and provide feedback on specific topics between SAC meetings.
 - i. Work Groups will be given specific tasks with identified work products and schedules for completion. Unless otherwise requested by the Project Team, following completion of the tasks, these groups shall disband.
 - ii. When a group is formed, all SAC Members will be given an opportunity to indicate their willingness to participate. All members who express their willingness will be invited to participate. In order to ensure an acceptable range of perspectives on the subcommittees, additional members may be specifically invited to serve on the group by the Project Team.
- c. The proposed meeting dates are on Wednesdays as follows:
 - i. November 8, 2017
 - ii. December 13, 2017
 - iii. January 10, 2018
 - iv. February 14, 2018
 - v. March 14, 2018
 - vi. April 18, 2018
 - vii. May 9, 2018
 - viii. June 13, 2018

To assist with planning and materials, SAC members are asked to confirm attendance for meetings by RSVP date. However, as schedules can change at the last minute, should a member who previously thought themselves unable to attend become available, they are encouraged to attend regardless of RSVP status.

All meetings (unless otherwise stated) will be held from 1:00 pm to 3:00 pm at the Kenneth Hahn Hall of Administration, 500 W Temple St, Los Angeles, CA 90012, unless otherwise notified.

Stormwater Project Types	Stormwater Project Benefits						
	Water Supply	Water Quality	Flood Protection	Habitat	Climate Resilience	Passive Recreation	Education Opportunities
 <p>Green Streets</p>	✓	✓		✓	✓	✓	✓
 <p>Low Flow Diversions & Direct Treatment</p>		✓			✓		
 <p>Low Impact Development</p>	✓	✓		✓	✓	✓	✓
 <p>Large Wetlands</p>	✓	✓		✓	✓	✓	✓
 <p>Park Infiltration Galleries</p>	✓	✓			✓	✓	✓
 <p>Spreading Ground Enhancements</p>	✓			✓	✓	✓	
 <p>Dam & Reservoir Retrofits</p>	✓	✓	✓		✓		

PROJECT CONCEPT

COUNTY OF LOS ANGELES
Department of Public Works

BASSETT HIGH SCHOOL STORMWATER CAPTURE MULTI-BENEFIT PROJECT



The Project will protect the water quality of local rivers and streams, increase the local water supply, and enhance a school community

Located within the disadvantage community of City of La Puente, the project would capture and infiltrate urban runoff and stormwater from 875 acres of mostly residential and small commercial land use.

PROJECT FEATURES

- ♣ Diversion structure, pretreatment system, and underground infiltration chambers will capture flows from nearby storm drains and recharge the groundwater.
- ♣ Design capacity of the project is about 38 acre-feet.
- ♣ Enhancements and redesign of existing sports fields, outdoor classroom and educational garden with informational signage.

ESTIMATED COSTS

Planning	\$860,000
Engineering Design	\$1,100,000
Environmental Compliance	\$80,000
Construction	\$35,000,000
Net Total	\$37,040,000
Annual O&M & Monitoring	TBD

SCHEDULE

Planning	2016-2017
Final Design	Spring 2019
Advertisement and Award	TBD
Construction Start	TBD
Construction Closeout	TBD

If you have any questions, please contact Paul Alva at palva@dpw.lacounty.gov

PROJECT CONCEPT

COUNTY OF LOS ANGELES
Department of Public Works

FRANKLIN D. ROOSEVELT PARK REGIONAL STORMWATER CAPTURE PROJECT



The Project will protect the water quality of local rivers and streams, increase the local water supply, and enhance park amenities.

Located in the unincorporated area of Florence-Firestone, the project would capture and infiltrate urban runoff and stormwater from 200 acres of mostly residential and commercial land use.

PROJECT FEATURES

- ♣ Diversion structure, pretreatment system, and underground infiltration chambers will capture flows from nearby storm drains and recharge the groundwater.
- ♣ Design capacity of the project is about 8 acre-feet and would be able to capture water for 210 households in an average year.
- ♣ Enhanced park amenities, such as a re-designed soccer field with artificial turf, education garden, LID features, new picnic areas, and a new healthy court with kids playmounds and Americans with Disabilities-accessible exercise equipment.

Community meetings were held on November 9 and 16, 2016.

ESTIMATED COST

Planning	\$360,000
Engineering Design	\$1,600,000
Environmental Compliance	\$150,000
Construction	\$11,000,000
Prop 84 Grant Funding	-\$2,000,000
Net Total	\$11,110,000
Annual O&M & Monitoring	\$45,000

SCHEDULE

Planning	2015 to 2016
Final Design	Late 2017
Advertisement and Award	Spring 2018
Construction Start	Fall 2018
Construction Closeout	Fall 2019

If you have any questions, please contact Paul Alva at palva@dpw.lacounty.gov

PROJECT CONCEPT

COUNTY OF LOS ANGELES
Department of Public Works

LADERA PARK STORMWATER CAPTURE PROJECT



The Project will protect the water quality of local rivers and streams, increase the local water supply, and enhance park amenities.

Located in the unincorporated area of Ladera Heights, the Project will capture and infiltrate urban runoff and stormwater from 110 acres of mostly residential and commercial land areas.

PROJECT FEATURES

- ♣ Water treatment system to use stormwater runoff for irrigation purposes.
- ♣ Pretreatment and underground infiltration systems with a total capture capacity of 5.1 acre-feet (equivalent to 1.6 M gallons)
- ♣ Low Impact Development “green street” features along adjacent streets
- ♣ An demonstration garden featuring bio-swales, drought tolerant plants with identification tags, and interpretive signs.

ESTIMATED COST

Planning	\$300,000
Engineering Design	\$1,000,000
Environmental Compliance	\$400,000
Construction	\$7,900,000
Prop 1 & 84 Grant (50%)	-(4,350,000)
Net Total	\$5,250,000
Annual O&M & Monitoring	\$45,000

SCHEDULE

Planning	2016 & 2017
Final Design	1st Quarter 2018
Advertisement and Award	2nd Quarter 2018
Construction Closeout	2nd Quarter 2019
Effectiveness Monitoring	4th Quarter 2019

If you have any questions, please contact Paul Alva at palva@dpw.lacounty.gov



PUBLIC WORKS

LOS ANGELES COUNTY

WATER RESOURCES



Rory M. Shaw Wetlands Park



The Sun Valley Watershed suffers from flooding, stormwater pollution, and a lack of open space.

The Los Angeles County Department of Public Works, on behalf of the Los Angeles County Flood Control District (LACFCD) protects nearly 10 million residents and \$1.2 trillion in property.

The Sun Valley Watershed is a 2,800-acre urban watershed tributary to the Los Angeles River. This underserved community suffers from chronic flooding and stormwater pollution and lacks recreational space and wildlife habitat.

In 2004, the LACFCD developed the Sun Valley Watershed Management Plan to solve the major flooding problem, while retaining all stormwater runoff from the watershed, increasing water conservation, recreational opportunities, and wildlife habitat, and reducing stormwater pollution.

The Rory M. Shaw Wetlands Park Project is identified as a major component of the Sun Valley Watershed Management Plan.

- ❖ The Rory M. Shaw Wetlands Park proposes to convert a 46-acre, engineered, inert landfill into a multi-purpose wetlands park.
- ❖ A storm drain system will be constructed to collect stormwater runoff from a 929-acre drainage area and convey them into the project site.
- ❖ Detention ponds and wetlands will be constructed to capture and treat stormwater runoff to provide water quality enhancement.
- ❖ The treated flows will then be pumped to the adjacent Sun Valley Park for infiltration through existing infiltration basins, providing recharge into the groundwater.
- ❖ The water conservation benefit is expected to be 590 acre-feet per year.
- ❖ The project will also enhance native vegetation, create opportunities for wildlife habitat, and provide an additional 46 acres of open space recreation to a community that is currently underserved for recreational opportunities.
- ❖ The total cost for design and construction is estimated at \$52 million and will be funded by the LACFCD, the Los Angeles Department of Water and Power, and Proposition O grant funds.

For more information, please contact Ms. Angela R. George at (626) 458-4300 or at ageorge@dpw.lacounty.gov.

PROJECT CONCEPT

LOW-FLOW DIVERSION (LFD) SYSTEMWIDE UPDATE PROJECT

10/23/2017

Updated Low-Flow Diversion



Typical Upgraded Control Cabinet



Low-Flow Diversions

- The LACFCD currently operates 21 LFDs throughout Los Angeles County.
- LFDs divert water from storm drains to the sanitary sewer or other treatment system to eliminate polluted dry-weather runoff into receiving waters.
- Each LFD is unique in design, equipment, and operations although there are design similarities.

LFD Task Force

- The Divisions in the Task Force include FMD, OSD, DES, ITD, and WMD.
- The LFD Task Force was created to improve LFD efficiency by improving coordination and communication among the Divisions involved with LFDs.

System-Wide Update Project

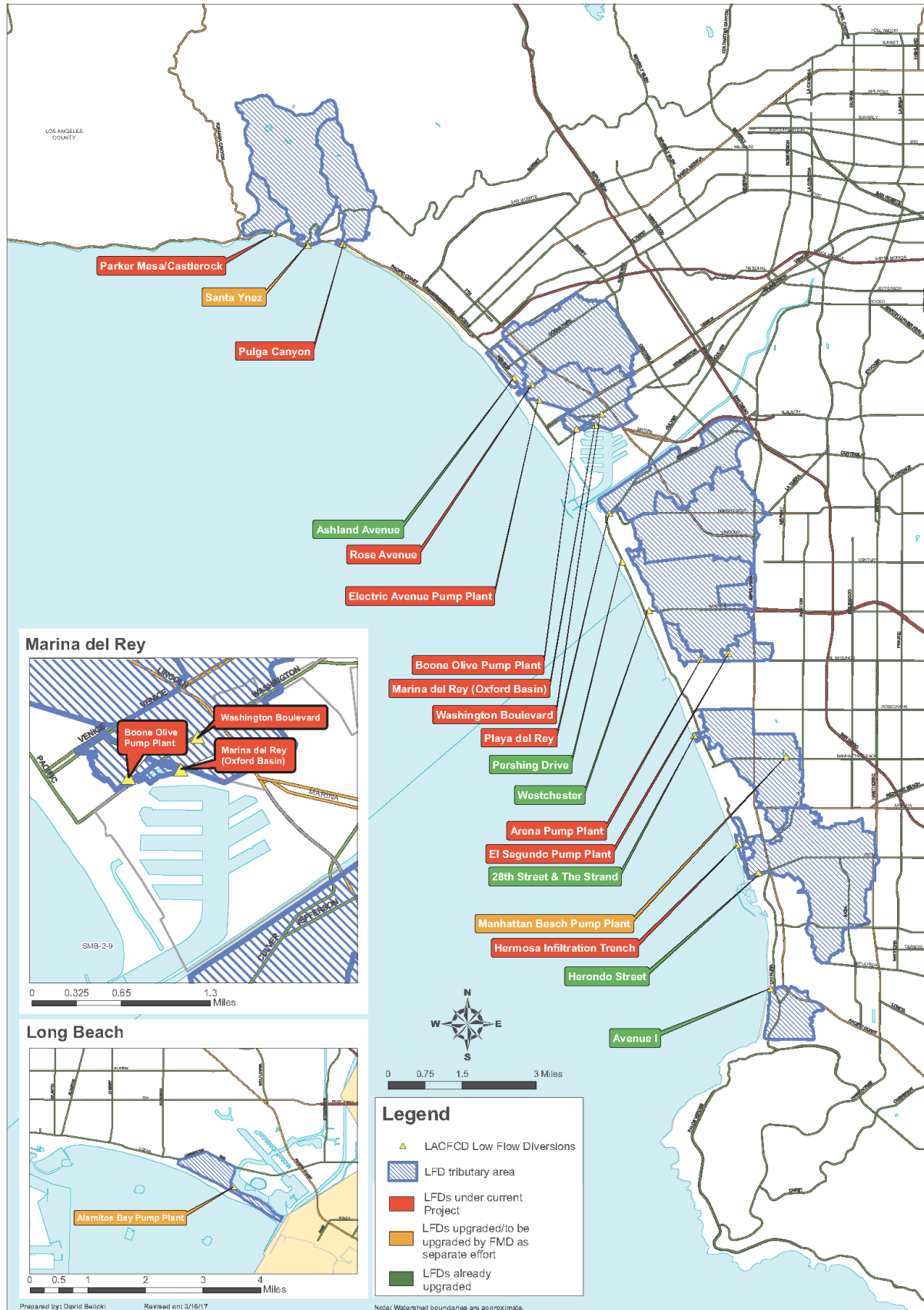
- Project goals are to have a uniform and comprehensive LFD instrumentation with increased monitoring and reporting capabilities at all 21 LFDS.
- The Project will ultimately modernize, standardize, and improve reliability of the LFD system.
- The project will also enable FMD staff to more efficiently operate and maintain the LFD system.
- Status:
 - 3 sites were upgraded through WMD's as-needed contract as a pilot project;
 - 3 LFD sites have been upgraded using AED's Gordian Group JOC;
 - 2 LFD sites to be updated by FMD;
 - 13 sites currently in design development and construction to start in Summer 2018

Project Budget and Schedule

- Estimated project budget \$2.5M for current project (update last 13 LFD sites) and \$1M for first 8 sites.
- Pilot project began in November 2013 and update project to be complete by Summer 2018.

PROJECT CONCEPT

Los Angeles County Flood Control District Low Flow Diversions and Associated Tributary Areas

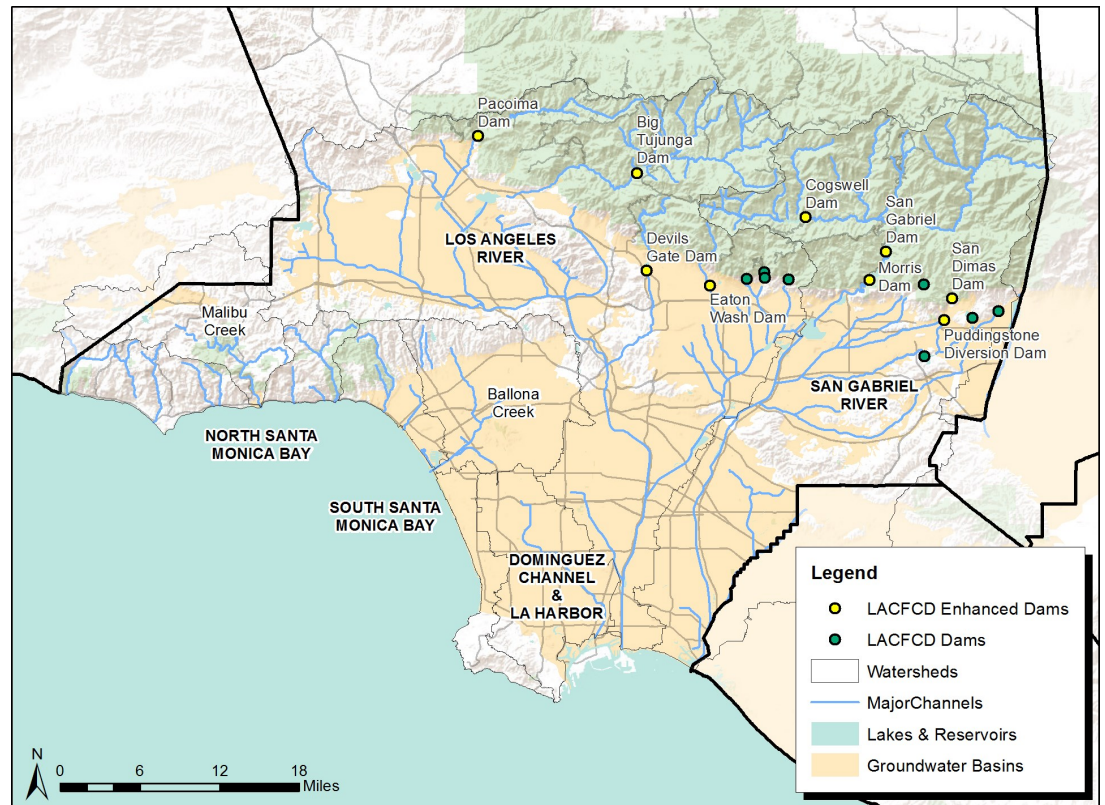


KEY FEATURES

- ▶ 14 existing Los Angeles County Flood Control District (LACFCD) owned dams evaluated
- ▶ 9 Los Angeles County owned dams modified for increased storage
- ▶ Average increase of 150,000 AFY of stormwater capture
- ▶ Project Cost: \$183/acre-foot

Overview

The LA Basin Study is assessing the region's major water conservation and flood risk mitigation infrastructure to prepare for future drivers that may impact water supply, such as changes to climate and population. The study is a long-range planning effort that is evaluating the potential of the existing facilities and additional new stormwater capture concepts to increase the resiliency of local water supplies under an uncertain future. The LACFCD Dams Project Group improves stormwater capture and storage at 9 of the region's 14 water conservation dams. The LACFCD Dams make a major contribution to the local water supply of the Los Angeles Basin by capturing and storing stormwater flows from the mountains above the Basin and releasing it later to downstream spreading grounds. The dams also play a crucial role in Los Angeles County's flood risk management by slowing flows in the downstream drainage system. This project group proposes to install additional operational controls at 9 of the existing Dams to increase capacity to temporarily capture and store stormwater.



LACFCD Dams

LACFCD Dams serve a dual purpose of stormwater capture and flood risk management by temporarily capturing and storing stormwater. Fourteen existing LACFCD dams were evaluated and 9 were selected for modifications which would include construction of additional operable controls at the outflow structures.



Multiple-Benefits & Partner Opportunities

By increasing the capture and storage of stormwater, this project group offers opportunities for increased flood risk management and may also increase the existing water quality benefit of the dams. This project group also provides opportunities for partnering between flood control, groundwater management, and local government agencies.

Implementation Challenges

Implementation of this project group would involve significant permitting considerations. Detailed investigations of changes to the flood risk management and water conservation functions of the dams will need to be performed. Potential impacts on the seismic and structural stability of the dams will also need to be investigated, as well as potential environmental impacts.

Resiliency to Climate Change

The region is preparing for climate change in numerous ways, one of which is ensure a reliable future water supply. The Los Angeles County Flood Control District is investigating solutions to adapt to climate change and continue to further enhance its stormwater capture efforts. Resiliency to future climate change means safeguarding the existing stormwater conservation system and improving upon it to make the most of stormwater when it is available, as well as storing it for later within groundwater reserves. Local stormwater capture solutions can enhance the resiliency of the region and help manage future climate risks. Increased infiltration and stormwater retention from these projects can both replenish local groundwater reserves to provide a more reliable water supply and help mitigate some potential flooding impacts. Sediment loading to the reservoirs behind the dams under the climate scenarios was not evaluated explicitly, but is expected to increase under wet climate scenarios. Periodic sediment removal from the reservoirs will be necessary to maintain the stormwater storage capacity and climate resiliency of this project group

Findings

Construction of additional operable controls at the outflow structures of the 9 dams could increase their capacity to temporarily capture and store stormwater for release later to downstream spreading grounds where it could infiltrate into groundwater reserves. The average annual stormwater conservation benefit for the middle climate scenario is approximately 150,000 acre-feet of stormwater conservation per year (AFY).

**Stormwater Conserved for
LACFCD Dams**

LACFCD Dam	Median Future Climate Scenario (AFY)
Big Tujunga	11,786
Cogswell	11,762
Devil's Gate	9,747
Eaton Wash	1,277
Morris	71,853
Pacoima	1,259
Puddingstone Diversion	888
San Dimas	2,041
San Gabriel	39,404
TOTAL	150,015

MONTEITH PARK STORMWATER CAPTURE PROJECT



The Project will protect the water quality of local rivers and streams, and enhance park amenities.

Located in the unincorporated area of View Park, the Project will capture and infiltrate urban runoff and stormwater from 188 acres of mostly residential land use.

PROJECT FEATURES

- ♣ Pretreatment and underground infiltration systems with a total capture capacity of 7 acre-feet (equivalent to 2.3 M gallons)
- ♣ Low Impact Development “green street” features along adjacent streets
- ♣ Diversion structure, pretreatment system, and underground infiltration systems will capture flows from a nearby stormdrain.

ESTIMATED COST

Planning	\$400,000
Engineering Design	\$400,000
Environmental Compliance	\$200,000
Construction	\$6,000,000
Net Total	\$7,000,000
Annual O&M & Monitoring	\$45,000

SCHEDULE

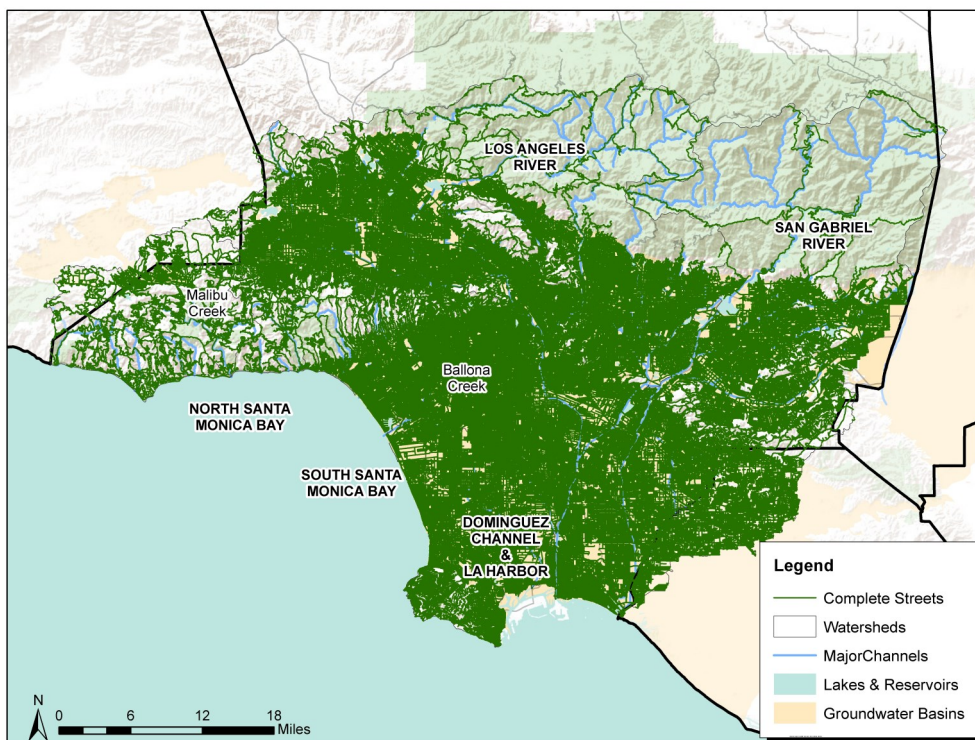
Final Design	1st Quarter 2019
Advertisement and Award	2nd Quarter 2019
Construction Closeout	2nd Quarter 2020
Effectiveness Monitoring	4th Quarter 2020

KEY FEATURES

- ▶ 60,400 acres (61%) of mitigated impervious area
- ▶ 31,500 AFY stormwater captured
- ▶ 614 miles of recreational trails
- ▶ Over 720 acres of new habitat
- ▶ Project Cost: \$15,800/acre-feet

Overview

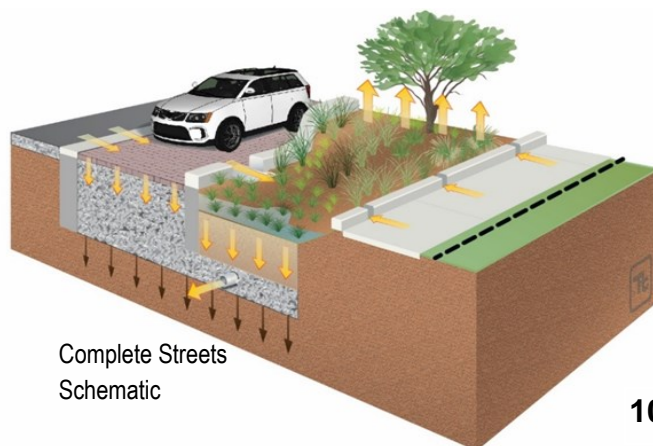
The LA Basin Study is assessing the region's major water conservation and flood risk mitigation infrastructure to prepare for future drivers that may impact water supply, such as changes to climate and population. The study is a long-range planning effort that is evaluating the potential of the existing facilities and additional new stormwater capture concepts to increase the resiliency of local water supplies under an uncertain future. The Complete Streets Project Group utilizes the complete streets initiative to implement stormwater treatment and management. Complete Streets could provide a plan to ensure the safety, accessibility, and convenience of all transportation users, including pedestrians, bicyclists, transit riders, and motorists. This alternative implements stormwater capture and infiltration practices on transportation related land uses, resulting in approximately 60,400 acres of mitigation.



Complete Streets Projects

There is approximately 100,000 acres of transportation related impervious area within the Los Angeles Basin. Complete Streets could provide opportunities for stormwater treatment and management by providing on-site retention, filtration, and infiltration. These projects are typically implemented as bioretention/biofiltration Best Management Practices (BMPs) installed parallel to roadways to supplement parkway landscaping. These BMP systems receive runoff from the gutter via curb cuts. Permeable pavement could also be implemented as part of Complete Streets. Complete Streets projects could include:

- ▶ Green streets and stream tributaries stormwater capture
- ▶ Parkways and road medians stormwater capture
- ▶ Under street infiltration



Complete Streets
Schematic



Summary of Complete Streets Projects

Watershed	Watershed Area (acres)	Total Impervious Street Area (acres)	Implementation Area (acres)	Implementation Ratio of Impervious Area
Ballona Creek	135,090	17,942	10,945	61%
Dominguez Channel	70,428	10,258	6,309	62%
Los Angeles River	533,840	46,295	28,371	61%
Malibu Creek	129,825	986	609	62%
San Gabriel River	434,475	23,064	14,192	62%
TOTAL	1,303,657	98,546	60,427	61%

Multiple-Benefits & Partner Opportunities

In addition to stormwater management, Complete Streets also provide pedestrian safety and traffic calming, habitat, street tree canopy and heat island effect mitigation, increased property values, and a boost in economic activity and visibility of storefront businesses. There are opportunities for the various cities, organizations, and other agencies within the study area to collaborate on a green infrastructure-related streets program. Other street programs could be considered to include other cities, universities, and non-governmental organizations.

Implementation Challenges

Municipalities within the region have adopted ordinances to incorporate green infrastructure requirements for streets projects. These types of programs and ordinances represent the initial stages of developing a comprehensive program. The Complete Streets concept does not have any onerous permitting requirements that could prevent their implementation.

Resiliency to Climate Change

The region is preparing for climate change in numerous ways, one of which is ensure a reliable future water supply. The Los Angeles County Flood Control District is investigating solutions to adapt to climate change and ways to further enhance its stormwater capture efforts. Resiliency to future climate change means safeguarding the existing stormwater conservation system and improving upon it to make the most of stormwater when it is available, as well as storing it for later within deep groundwater reserves. Complete Streets solutions could enhance the resiliency of the region and help manage projected climate risks. Increased infiltration and stormwater retention from these projects could replenish local groundwater reserves to provide a more reliable water supply.

Findings

Implementation of Complete Streets projects could result in approximately 31,500 acre-feet of stormwater conservation per year (AFY) for the middle climate scenario, and 60,427 acres of mitigated impervious surface, representing 61 percent of the overall impervious street area.

Stormwater Conserved for Complete Streets

Watershed	Middle Projected Climate Scenario (AFY)
Ballona Creek	4,996
Dominguez Channel	2,556
Los Angeles River	15,855
Malibu Creek	283
San Gabriel River	7,787
TOTAL	31,477



CITY OF ARCADIA, CITY OF SIERRA MADRE, AND THE COUNTY OF LOS ANGELES
ARCADIA WASH ECOSYSTEM RESTORATION AND GROUNDWATER RECHARGE FACILITY
PROJECT CONCEPT



PLAN VIEW





CITY OF ARCADIA, CITY OF SIERRA MADRE, AND THE COUNTY OF LOS ANGELES

ARCADIA WASH ECOSYSTEM RESTORATION AND GROUNDWATER RECHARGE FACILITY



PROJECT CHARACTERISTICS

Aquatic Ecosystem Restoration Area (Acres)	4	<p>PROJECT DESCRIPTION</p> <p>The proposed project would restore a degraded habitat along a 2,000-foot long section of the Arcadia Wash by constructing adjacent wetland ponds, groundwater recharge basins, and a meandering stream to Baldwin Lake. The project would consist of a channel diversion structure to convey stormwater flows from the Arcadia Wash to the wetlands, groundwater recharge basins, and to the stream. The wetland ponds will create an area for native riparian habitat while providing a natural treatment system for the recharge basins to infiltrate into the Raymond Groundwater Basin. Stormwater will also be conveyed to Baldwin Lake via a natural stream to provide additional habitat areas and water for the lake.</p> <p>PROJECT BENEFITS</p> <ul style="list-style-type: none">• Aquatic Ecosystem Restoration with a natural treatment wetlands and meandering stream adjacent to the Arcadia Wash• Increase habitat value with native/riparian vegetation for migratory birds and other sensitive species located within the area• Groundwater recharge into the Raymond Groundwater Basin and stormwater capture potential• Water Capture to provide a sustainable water supply for Baldwin Lake• Water Quality Improvement in Arcadia Wash, which discharges to the LA River
Length of Ecosystem Restoration Area (linear feet)	2,000	
Preliminary Diversion Rate from Arcadia Wash (cfs)	30	
Preliminary in-stream flow to Baldwin Lake (cfs)	5	
Estimated Storage Capacity for Recharge Ponds (acre-feet)	32	
Estimated Annual Groundwater Recharge (acre-feet/year)	480	

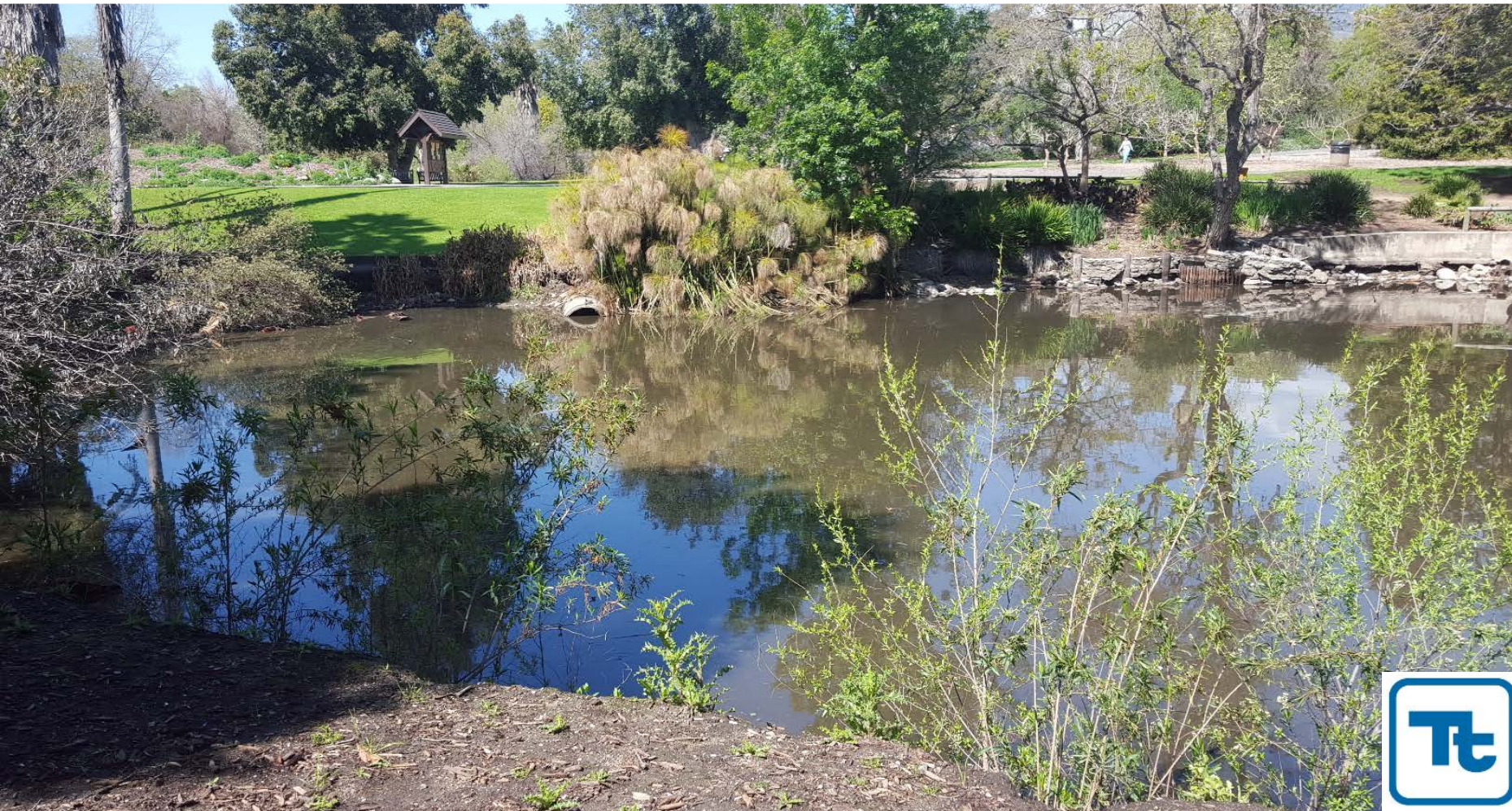
Arcadia Wash (Corps-Built Channel)



Northwest walking path adjacent to Arcadia Wash



Baldwin Lake





PROJECT CONCEPT

CITY OF ARCADIA, CITY OF SIERRA MADRE, AND THE COUNTY OF LOS ANGELES
RIO HONDO ECOSYSTEM RESTORATION PROJECT





CITY OF ARCADIA, CITY OF SIERRA MADRE, AND THE COUNTY OF LOS ANGELES
RIO HONDO ECOSYSTEM RESTORATION PROJECT



PROJECT CHARACTERISTICS

Aquatic Ecosystem Restoration Area (Acres)	24
Length of Ecosystem Restoration Area (linear feet)	2,000
Preliminary Diversion Rate from Sawpit Wash (cfs)	100
Preliminary in-stream flow to Peck Road Water Conservation Basins and Rio Hondo Channel	100
Estimated Storage Capacity Wetlands (acre-feet)	160
Estimated Annual Groundwater Recharge (acre-feet/year)	TBD

PROJECT DESCRIPTION
The proposed project would restore a degraded habitat along a 2,000-foot long section of the Sawpit Wash by constructing approximately a 20-acre wetlands habitat area prior to discharge into Peck Road Water Conservation Basins and to the Rio Hondo Channel. The project would consist of a channel diversion structure and pipeline to convey stormwater flows from the Sawpit Wash to the wetlands habitat area. The wetlands will create an area for native riparian habitat while providing a natural treatment system for the recharge basins downstream.

PROJECT BENEFITS

- Aquatic Ecosystem Restoration with a natural treatment wetlands
- Increase habitat value with native/riparian vegetation for migratory birds and other sensitive species located within the area
- Water Quality Improvement in the Rio Hondo Channel, which discharges to the LA River

Peck Road Water Conservation Basin



Sawpit Wash



Rio Hondo Channel

