



5. INTEGRATED REGIONAL PROJECTS

San Gabriel Canyon Spreading Grounds

135 projects are included in the 2013 Plan Update as of January 2013 and are being evaluated for opportunities to accomplish integrated solutions.

5.1 Introduction

Water resource management projects developed prior to the IRWM Program generally focused on a single purpose, and avoided or minimized impacts on other water resource interests. Examples of this approach include: flood protection, water supply and water treatment projects. Today, agencies, jurisdictions, and stakeholders are increasingly recognizing the value of addressing the interrelationships and interdependencies of water resource management projects and the value of developing integrated projects. Since the 2006 IRWM Plan was published, the GLAC Region has worked to further define and improve the process by which IRWM projects are developed, included, and evaluated. The main characteristic of this process is that it is dynamic – meaning that projects being included and modified as needed, as part of the GLAC IRWM Program.

Given the dynamic nature of the project process, this chapter will focus primarily on how the GLAC Region conducts the process and secondarily, provide the most recent list of projects as of January 2013. Specifically, this chapter will:

- Present the project review process including procedures for: 1) submitting a project to be included in the IRWM Plan, 2) reviewing and selecting projects to implement the IRWM Plan, and 3) communicating the list(s) of selected projects for public review,
- Discuss integration efforts for stakeholder-identified projects and
- Describe the current list of IRWM implementation projects identified by the Region's stakeholders and vetted by the Region's SCs (including DAC projects).

5.2 Project Review and Selection Process

The GLAC IRWM Plan will be implemented through specific studies and actions. In order to identify potential projects that facilitate IRWMP implementation, the Region periodically conducts an open “call for projects.” Stakeholders and others are encouraged to submit projects via the IRWMP website. The discussion below will summarize 1) procedures for submitting a project to be included in the IRWM Plan, 2) procedures for review of projects to implement the IRWM Plan, and 3) procedures for communicating the list of selected projects.

Procedures for Submitting a Project to be included in the IRWM Plan

Although a proponent can submit projects for consideration at any time, the GLAC Region will review submittals quarterly, as described below, to determine whether the submittals are sufficiently developed and demonstrate appropriate need that can be funded through the IRWM Grant program (PRC §75028 (a)) or other funding opportunities.

In addition, the Region conducts periodic calls for projects. These calls for projects provide dates by which projects will need to be submitted or updated in time for the next round of project reviews or selections for either the overall plan or for consideration in funding applications. These notices are posted on the IRWM website, on the announcement board of the project database

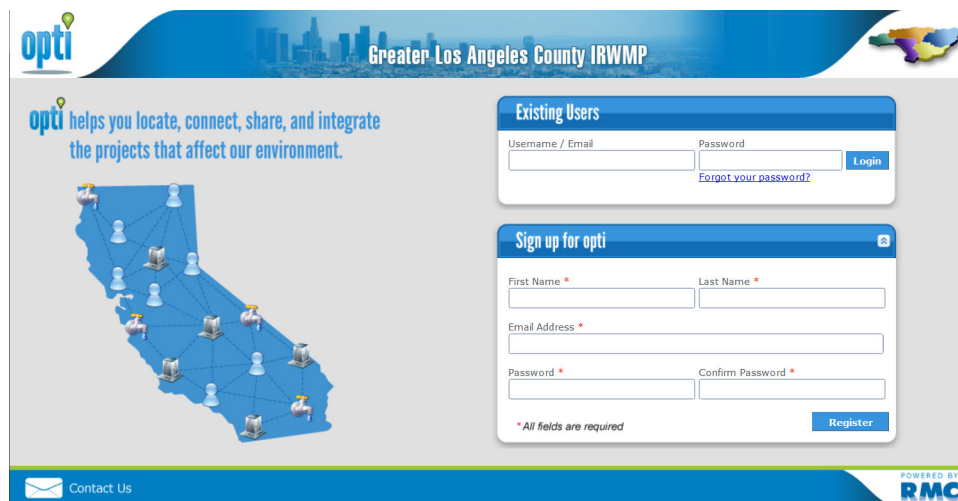
communications system, and via email from each of the Subregional SCs. All regional stakeholders are encouraged to submit projects by logging on as a project user (also known as a “project proponent”) to the Region’s project database. The most up-to-date IRWMP Project list can be found by logging into the project database from the IRWM website at www.lawaterplan.org.

The last call for projects concluded January 31, 2013. Projects were then reviewed, categorized and prioritized according to the process described below.

What types of projects are encouraged?

IRWM Plan projects that aim to accomplish the following GLAC Region objectives are encouraged:

- Optimize local water resources to reduce the Region’s reliance on imported water
- Improve water quality of receiving waters and comply with water quality regulations (including TMDLs) by improving the quality of urban runoff, stormwater, and wastewater
- Protect, restore, and enhance natural processes and habitats
- Increase watershed friendly recreational and open space for all communities within the Region
- Reduce flood risk in flood prone areas by either increasing protection or decreasing needs using integrated flood management approaches
- Adapt to and mitigate against climate change vulnerabilities



How can projects be submitted and/or updated?

Project proponents can submit new projects or make modifications to existing projects using the project database from the GLAC IRWM website at www.lawaterplan.org. There is a web interface project form with specific sections for required and desired information. For applicants without internet access, projects can be submitted in a hard copy format by contacting LACFCD at (626) 458-3525.

In order to enter projects into the database, stakeholders need to sign-up through the webpage to be a user/proponent. It is highly recommended that new users review the User Guide which is accessible after log-in through the “Help” menu.

What information is required?

Projects at all levels of planning completeness are welcome. However, basic information must be supplied in order for a project submittal to be accepted into the project database for consideration by the appropriate SC. Those items listed in the top half of the sidebar are the minimum required. They are shown with a single asterisk on the database project submittal form.

However, the GLAC Region is primarily interested in well-developed projects for inclusion in the IRWM Plan, in order to implement the Plan’s objectives. The information listed in both the top and bottom half (shown with two asterisks on the project submittal form) of the sidebar must be submitted in order that a project’s entry be considered for inclusion in the IRWM Plan. If all required information is submitted, the project will be evaluated by the appropriate Subregional SC for completeness and to determine that the project meets the IRWMP objectives -- among many other factors -- as described below.

The GLAC Region encourages proponents to submit conceptual projects. Conceptual projects will be discussed by SCs and, if they meet specific basic criteria, but don’t include all the detail required to be included in the IRWM Plan (just the information on the top of the sidebar), they will only be viewable to other stakeholders on the project database webpage. They will not

Required information For Project Submittal in the database:

- Project Title
- Implementing Organization
- Project Location
- Primary and other Subregion
- Primary Contact
- Description
- Primary Benefits
- Resource Management Strategies
- Status
- Schedule
- IRWM Plan Adoption
- Statewide Priorities
- State Program Preferences

Additional Information Required for Submittal in the database for Consideration for Inclusion in the IRWM Plan:

- Project Partners & Other Stakeholders
- Project Start Date
- Environmental and other permits
- Total Cost and Local Match
- Annual O & M Costs
- Project Cost Breakdown
- Address Critical Water Supply and Water Quality needs of Disadvantaged Communities
- Consider environmental justice
- Address Critical Water Supply and Water Quality needs of American Tribal Communities
- Address climate change / GHG reduction

be included in the IRWM Plan. By also including promising conceptual projects in the database, the SC is able to help foster additional project development creativity and potential project integration.

How are projects accessed and viewed?

Any interested party can register as a user with the system to log on and view project lists and information, as well as maps of project locations. Any uploaded data and information associated with projects is also accessible. Again, it is possible to sign up for the project database from the GLAC IRWM website at www.lawaterplan.org.

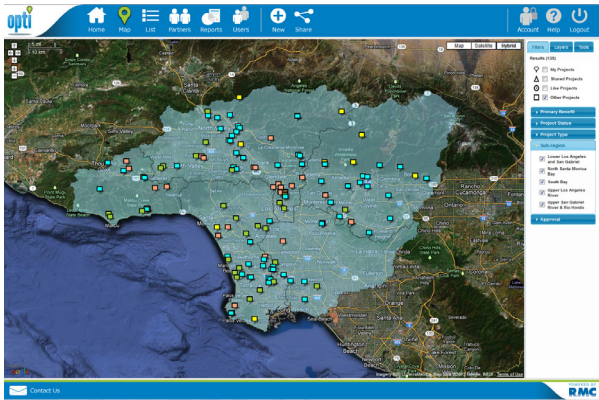


Figure 5-1: Project Database Viewing (Points indicate project locations)

Procedures for Review of Projects to Implement the IRWM Plan

Project development and review is intended to be an on-going process. Each Subregional SC is responsible for reviewing all projects submitted by proponents within their Subregion. Projects are reviewed at least quarterly to determine if they can be included as part of the GLAC IRWM Plan or considered as conceptual for further development by proponents and potential partner stakeholders. Project proponents are encouraged to attend these meetings to present additional information and answer any questions from SC members and Subregional stakeholders.

The decision to include or not include a project for public viewing in the web database as a conceptual project or for inclusion in the Plan is documented in the SC meeting notes and communicated directly

to project proponents. Each SC has the authority to make the designation for their Subregion. The review process is comprised of two stages as shown in the box below.

The list of projects in Section 5.4 of this 2013 Plan Update were submitted by January 31, 2013 and reviewed and categorized at February 2013 SC meetings. Worksheet A, used to make the determination, is included in Appendix B. Worksheet A was developed according to DWR Guidelines for project selection and will be used by the Subregional Steering Committees to evaluate whether projects meet the criteria for Stages I and II, as described in the following box. Therefore, all projects in the listing provided in Section 5.4 needed to meet Stage II criteria by January 31, 2013 to be eligible.

The Stage II criteria are the same as those provided in the *Department of Water Resources' 2012 Integrated Regional Water Management Program Guidelines* available at www.lawaterplan.org and on the DWR website. After January 31, 2013, submitted projects will continue to be reviewed on at least a quarterly basis by each SC.

Selecting Projects

After much deliberation, the LC decided not to prioritize projects for the IRWMP, for the reasons outlined below. First, while a prioritized list may provide a snapshot of projects at any given time, the LC recognized that as soon as a prioritized

Project Review Stages

Stage I: Does the project meet basic minimum criteria that should allow it to be in the project database for general public viewing?

Is the project a useful conceptual project which addresses IRWM objectives and targets? The information that must be provided is shown with a single asterisk on the project form. If yes, the project will be accepted into the database for public viewing assuming basic information on the project concept is included and certain questions are answered affirmatively. (There will be a special designation for conceptual projects.) Or alternatively,

Stage II: Does the project meet criteria that should allow it to be included in the IRWM Plan?

Are key elements of a project complete enough that the SC can determine that the project will meet DWR requirements and GLAC Region IRWM objectives and targets, and that it is implementable either in the short or long term? The information that must be provided is shown with a double asterisk on the project form.

list is compiled, it can quickly become inaccurate due to, for example, an important multi-benefit project being added the day after the list is prioritized, or a project proponent modifying or pulling a formerly-prioritized project off the list the day after the list is prioritized.

Next, the Region intends to pursue achieving the IRWM objectives, but prioritizing them may improperly indicate that certain objectives are more important than others. Also, project proponents may choose to enter individual projects with the understanding that agreements will be worked out in the future to combine similar benefit projects, but there is no realistic way to account for that in a project prioritization process.

Finally, and perhaps most importantly, the Region wants to maintain flexibility to prioritize projects as needed, based on issues the Region is facing at the time, such as severe drought, flooding conditions, or other unforeseen circumstances. Not prioritizing projects also gives the Region more flexibility to select projects for funding from various grant programs that may not be at/near the top of a prioritized list, but may be well supported by a deserving community. For all these reasons, the Region’s decision was to maintain a list of projects,

but without prioritizing them. The process occurs at the direction of the LC and the most recent project selection is posted on the project database webpage. The general process and criteria to be used to determine the priority level of projects are provided in the box below. These could be superseded by specific grant criteria

Procedures for Communicating the List of Selected Projects

As noted earlier, the Region conducts periodic “calls for projects”. These notices are posted on the IRWM website, on the announcement board of the project database communications system, and via email from each of the SCs. These same communication tools are used to communicate about the status of projects. The database system is particularly user friendly in that it offers web access to registered users for the latest conceptual and IRWM projects. This information is shown on maps by type of project or Subregion, and all users can view project details including photos and detailed reports that have been submitted. Users are also able to “friend” projects and follow them as they grow and change.

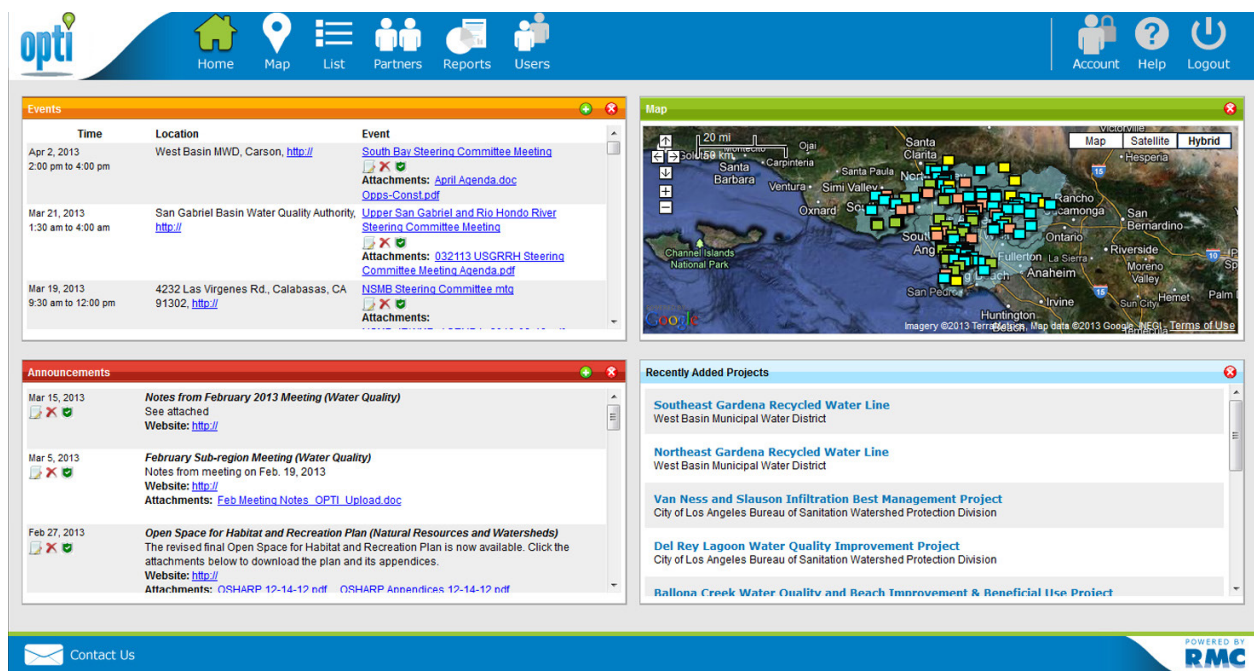


Figure 5-2: Project database user dashboard

5.3 Project Integration

As DWR notes in the Guidelines, IRWM planning decisions can lead to existing or “off the shelf” projects being combined or replaced by new and/or different projects. Part of the advantage of regional planning is addressing similar objectives of local interests with a regional project. Resources of personnel, finance, and equipment to implement multiple smaller efforts may benefit from economies of scale when similar local interests can be met with a regional project. IRWM plans must contain provisions for reviewing project objectives and considering new, expanded, or even different solutions that meet multiple local needs. The decisions made in the IRWM Plan should consider the interconnected needs of the Region and not just the needs of specific entities in the RWMG. Opportunities for project integration are regular topics of discussion at GLAC Subregional SCs’ monthly meetings and during quarterly project review workshops.

The new MS4 Permit, adopted November 2012 and effective December 2012 by the LARWQCB, encourages enhanced watershed management planning and gives special credit to projects that meet multiple benefits beyond water quality alone. This parallel effort, which is also watershed-based, may create opportunities to merge water quality watershed management approaches with the IRWM planning process resulting in additional economies of scale.

Integration Process and Tools

As part of the objectives and targets update process, the GLAC Region compiled and developed several geo-referenced data layers to assist in spatially identifying priorities and potential opportunities to achieve water supply, water quality, habitat, recreation and flood management benefits. These data layers were initially used individually to determine the objectives and planning targets for each water management area. However, these datasets can also be overlaid to visually highlight areas with the greatest potential to provide multiple benefits. The resulting Potential Benefits Geodatabase can also align these areas relative to other layers containing agency service areas and jurisdictions – allowing for project proponents and partners to be identified.

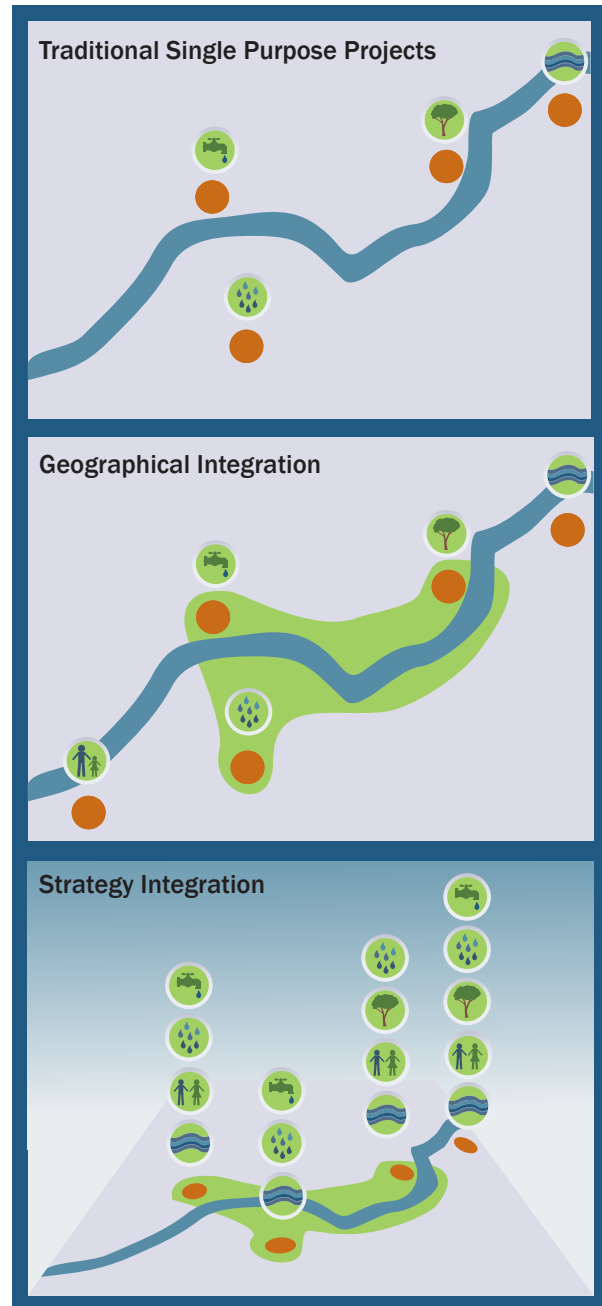


Figure 5-3. Stakeholders can identify opportunities to integrate projects near each other (geographic integration) and redesign projects to accomplish multiple objectives (strategy integration).

Potential Benefits Geodatabase

The GLAC IRWMP Potential Benefits Geodatabase is a dynamic tool that should be updated as new data is made available in order to maintain its relevance in the IRWM planning context. However, in order to provide an analysis of potential integration and partnership opportunities for the 2013 GLAC

IRWM Plan, current data layers were overlaid and analyzed. The key layers used are shown in Map 5-1. It should be noted that these datasets may not be complete or in need of further refinement and therefore will be updated on an as-needed basis – which is part of the dynamic process previously described. Therefore, the Geodatabase should only be used as an initial step in identifying multi-benefit potential and by no means used to invalidate the potential for achieving benefits in other areas.

Using the Geodatabase

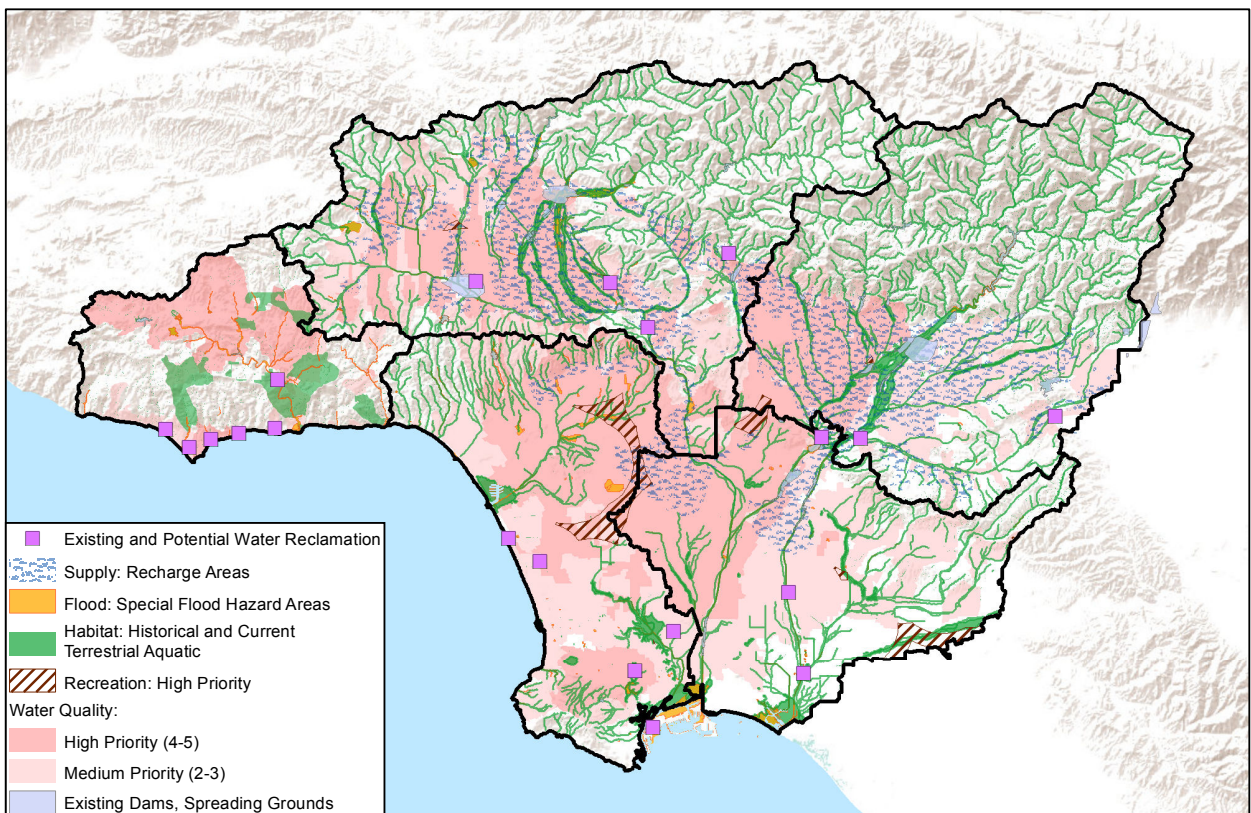
The Geodatabase is a dynamic visual tool. The data layers and maps shown in Table 5-1 and Map 5-1 are only some of a multitude of ways to package and view the datasets to help with the integration process. It is important to note that not all data that could be useful in identifying integration and partnership potential for the Region is easily viewed spatially in this format. Therefore the Geodatabase should only be used as one of several potential integration tools or methods.

The Geodatabase can also be used to identify the potential for further integration between existing projects included in an IRWMP. Currently the

GLAC Region’s web-based project database georeferences all projects included in the IRWM. As part of the 2013 Plan Update, this dataset of projects will eventually be updated and prioritized.

This resulting project dataset could be included as a layer in the Geodatabase or conversely, the existing Geodatabase layers could be uploaded to the database for public viewing and made available to the project database users. In the future, additional layers, such as groundwater quality and general plan areas, can be added to the Geodatabase to enhance the ability of project proponents to identify integration opportunities. Either way, by overlaying the current projects on top of the potential benefit layers, additional benefits could be added to existing projects or linked to other projects and proponents through those benefits.

Planning for the GLAC Region is primarily done on a subregional level, given that each Subregion has a unique set of physical characteristics and stakeholders that create opportunities for project identification and collaboration. Therefore, the Geodatabase layers are more useful when examined and discussed on a subregional scale.



Note that detailed data for the NSMB Subregion is currently absent, but will be improved over time.

Map 5-1: GLAC Region Potential Benefits Geodatabase Layers

Table 5-1: Potential Benefit Geodatabase Layers

Data Layer	Description
Supply: Recharge Areas ¹	Shows areas where soils suitable for recharging are above supply aquifer recharge zones. Thereby indicating that water infiltrating in these areas has the potential to increase groundwater supplies. NOTE: The Central Basin and Main San Gabriel Basins are adjudicated basins, so pumping and recharge are actively managed to maintain both water supplies and water quality.
Supply: Existing and Potential Water Reclamation ²	Shows locations of existing water reclamation plants.
Flood: Special Flood Hazard Areas ³	Shows some of the areas that would benefit from increased drainage to alleviate flooding potential.
Habitat: Historical and Current Terrestrial Aquatic ⁴	Shows the combined current and historical habitat areas that would indicate the potential for aquatic habitat protection, enhancement, or restoration benefits to be derived. (Note: North Santa Monica Bay Subregion did not have similar data so it shows Significant Ecological Areas instead ⁵ .)
Recreation: High Priority ⁶	Shows areas that have the greatest need for open space recreation given the distance from current open space recreation sites.
Water Quality: Medium and High Priority ⁷	Shows watershed areas with medium and high priority and therefore relative potential to improve surface water quality.

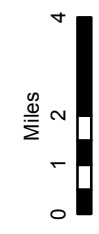
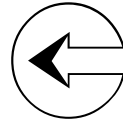
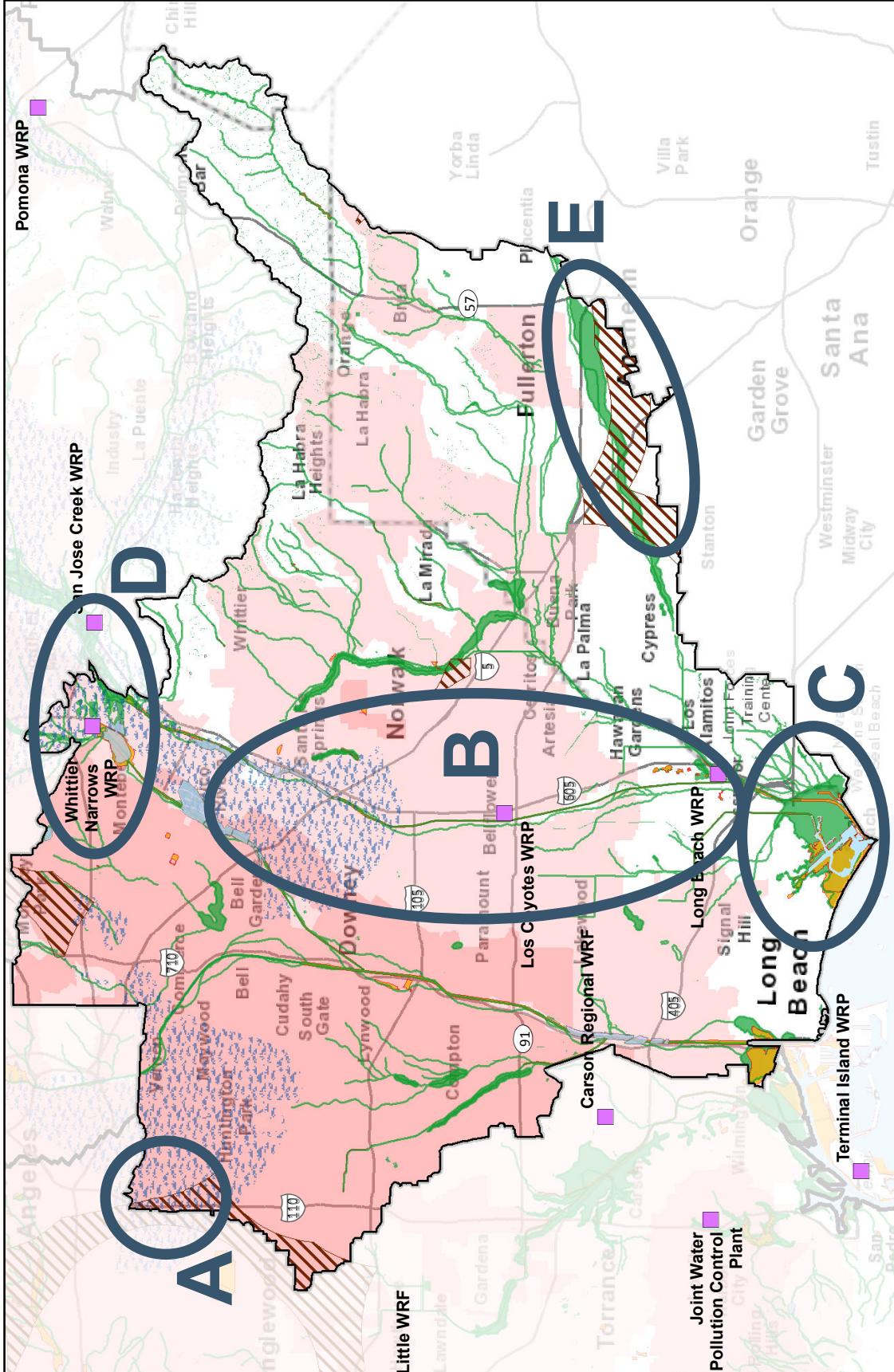
1 Created using Los Angeles County's groundwater basins shapefile overlaid with soils and known forebays shapefiles.
 2 Created by RMC Water and Environment for the Los Angeles Department of Water and Power's Recycled Water Master Planning program to show reclaimed water that could be made available for recycled water use.
 3 Created by Federal Emergency Management Agency to define areas at high risk for flooding (subject to inundation by the 1% annual chance flood event) and where national floodplain management regulations must be enforced.
 4 From Regional restoration goals for wetland resources in the Greater Los Angeles Drainage Area: A landscape-level comparison of recent historic and current conditions using GIS (C. Rairdan, 1998) and additional current terrestrial aquatic habitat is based on the extent of current habitat derived from the National Wetlands Inventory.
 5 Significant Ecological Areas are those areas defined by Los Angeles County as having ecologically important land and water systems that support valuable habitat for plants and animals.
 6 Created for the GLAC IRWM Open Space for Habitat and Recreation Plan (2012), and shows where there is less than one acre of park or recreation area per one thousand residents.
 7 Created for the GLAC IRWM Surface Water Quality Targets TM (2012), which ranked catchments based on TMDLs, 303(d) listings and catchments that drain into Areas of Special Biological Significance (ASBS).

The areas described here are meant to provide examples of potential multiple-benefits areas and are not meant to be a comprehensive inventory of opportunities. As Subregions move forward to identify potential projects, it will be necessary to examine localized site characteristics (such as land uses) to confirm that it will be possible to meet the potential benefits discussed below.

Integration Opportunities in Lower Los Angeles and San Gabriel Subregion

Map 5-2 focuses on the Lower San Gabriel and Los Angeles River Subregion and highlights just a few unique areas within the Subregion that have potential for generating multiple benefit projects. The areas described here are meant to provide examples of potential multiple-benefits areas and are not meant to be a comprehensive inventory of opportunities. As Subregions move forward to identify potential projects, it will be necessary to examine localized site characteristics (such as land uses) to confirm that it will be possible to meet the potential benefits discussed below.

- There is a relatively high need for recreational open space in three different areas.
- There are critical recharge areas for the Central Basin in the upper Subregion (where the hydro-geology is the most favorable for recharge) while the majority of pumping is done in the southern portion of the basin. NOTE: The Central Basin and Main San Gabriel Basins are adjudicated basins, so pumping and recharge are actively managed to maintain both water supplies and water quality.
- The western portion of the Subregion has high priority drainage areas for water quality improvements that also overlap some of the recharge areas.
- There are coastal areas that could provide both flood control and habitat benefits.
- There are several sources of recycled water supply that could be further utilized as local supply, though it should be noted that this could be limited by contractual agreements for existing and future recycled water supplies.



Sources: ESRI, Los Angeles County DPW
Date Modified: 10/27/2013

- Existing and Potential
 - Water Reclamation
 - Existing Dams, Spreading Grounds
- Water Quality: Catchment Prioritization
 - High Priority (4-5)
 - Medium Priority (2-3)

- Supply: Recharge Areas
- Flood: Special Flood
- Hazard Areas
- Habitat: Historical and Current
- Terrestrial Aquatic
- Recreation: High Priority

Potential Multiple Benefits
Lower SG & LA Rivers
Integrated Regional Water Management Plan
Map 5-2

The following sections highlight a few areas in the Subregion where integration and partnership opportunities could be found based upon the Geodatabase layers and multiple benefit analysis performed.

A. South Central Los Angeles Area Recreation, Recharge, Stormwater Quality Benefits

There are areas with the potential for groundwater recharge in the northwestern area of the subwatershed (South Central Los Angeles) overlying the Central Basin. Additionally, there are park-poor areas which also overlay high priority stormwater management catch basins. These recharge areas predominately lie within high priority areas for water quality improvements. Given that this area is heavily urbanized, it would be well suited for decentralized stormwater capture and use projects as well as infiltration BMPs that could achieve water quality and groundwater water supply benefits. Because it is park-poor, finding locations that can be converted from industrial use to parkland with infiltration for stormwater (where industrial areas border residential areas) shows promise. Care would need to be taken in the heavily industrialized areas that soils are not contaminated before infiltration is encouraged here.

Partnerships between the WRD, Central Basin MWD and the City of Los Angeles, and cities such as Vernon and Huntington Park as well as unincorporated Los Angeles County could result in integrated projects.

B. Central Basin Recharge and Pumping

The majority of pumping demand is located in the southern, more heavily urbanized, portion of the Subregion; however replenishment is conducted at the northern forebay recharge facilities. Although there are both underutilized recycled water and stormwater supplies available, the ability to infiltrate more supply is limited by the rapidity at which supplies can be pumped to ensure that mounding does not become an issue. Pumping in closer proximity to the recharge could prevent mounding. Partnership projects that would seek to create a recharge and pumping balance could be explored between the southern Central Basin pumpers and WRD.

C. Lower San Gabriel River Watershed and Seal Beach Habitat Improvements and Flood

The mouth of the San Gabriel River provides opportunities for integrated project development that could result in achieving habitat and flood control benefits. Integrated flood management projects would become even more beneficial as a way to adapt to sea level rise as a result of climate change. Partnership opportunities exist between LACFCD, the City of Long Beach and the City of Seal Beach.

D. Intra-Regional Montebello Forebay Recharge and Open Space

The San Gabriel River Valley narrows in the Montebello area which also provides the dividing line between the Upper San Gabriel and Rio Hondo Subregion and the Lower Los Angeles and San Gabriel Rivers Subregion. This area is also the main recharge forebay for the Central Basin where several spreading ground facilities are located. Although somewhat urbanized relative to other densities in the Region, this area also provides a great deal of open space given those facilities. Preserving and further enhancing the spreading capacity is critical to meeting supply goals, as well as water quality goals. Increased stormwater infiltration will lessen the amount of contaminants able to be transported further downstream. If there are projects that could also incorporate both habitat and recreation elements without compromising these primary functions, there is the potential for achieving further integrated and beneficial results.

Recycled water supplies in this area could be further maximized for increased recharge and supply benefits. Partnerships with WRD, LACSD, LACFCD, Central Basin MWD, Central Basin pumpers and overlying cities could also benefit from above ground open space.

E. Anaheim and Fullerton Recreational and Habitat and Open Space

There is a significant band of priority area for recreational open space in this swath of Orange County overlapping a wetlands and habitat area. Water supply or quality projects in this area could be developed to include both recreation and habitat components to achieve those benefits. Partnership opportunities exist for the Mountains and Rivers Conservancy or similar conservancies in Orange County along with the Cities of Anaheim and Fullerton.

Integration Opportunities in North Santa Monica Bay

Based upon Map 5-3, the North Santa Monica Bay Subregion is notable relative to other subregions in a few ways:

- There is less need for additional passive recreation and open space; however there is deficit of active recreation in this Subregion.
- There are urbanized upstream areas with storm-water quality and potential flood impacts on downstream developed areas and sensitive near-shore habitat areas.
- There is less concrete channelization of streambeds than in other subregions and greater potential to more easily return channelized streambeds to natural streambeds and habitat areas.

What is not seen in the map, but is true of the North Santa Monica Bay Subregion, is that relative to other subregions, the North Santa Monica Bay is heavily dependent upon imported water supplies given limited groundwater recharge potential. Therefore local supply development anywhere within the Subregion would be considered to provide great benefits.

The following sections highlight a few areas in the North Santa Monica Bay Region where integration and partnership opportunities could be found based upon the Geodatabase layers and multiple benefit analysis performed.

A. West Lake Village and Agoura Hills Integrated Flood Management and Water Quality

This area is a priority area for water quality issues as well as flood issues. Additionally, capturing storm-water for onsite use has the potential to reduce reliance on imported water supplies. There could also be opportunities to return channelized streams to more natural systems with habitat restoration as an added benefit. Projects could provide multiple benefits when coupled with water quality improvement components and flood management. Removal of non-native species in the upper watershed is also an opportunity for this area. There is the potential for partnerships between LACFCD, Santa Monica Mountains Conservancy, State Parks, and the cities of Westlake Village and Agoura Hills.

B. City of Calabasas Supply, Water Quality and Flood Management

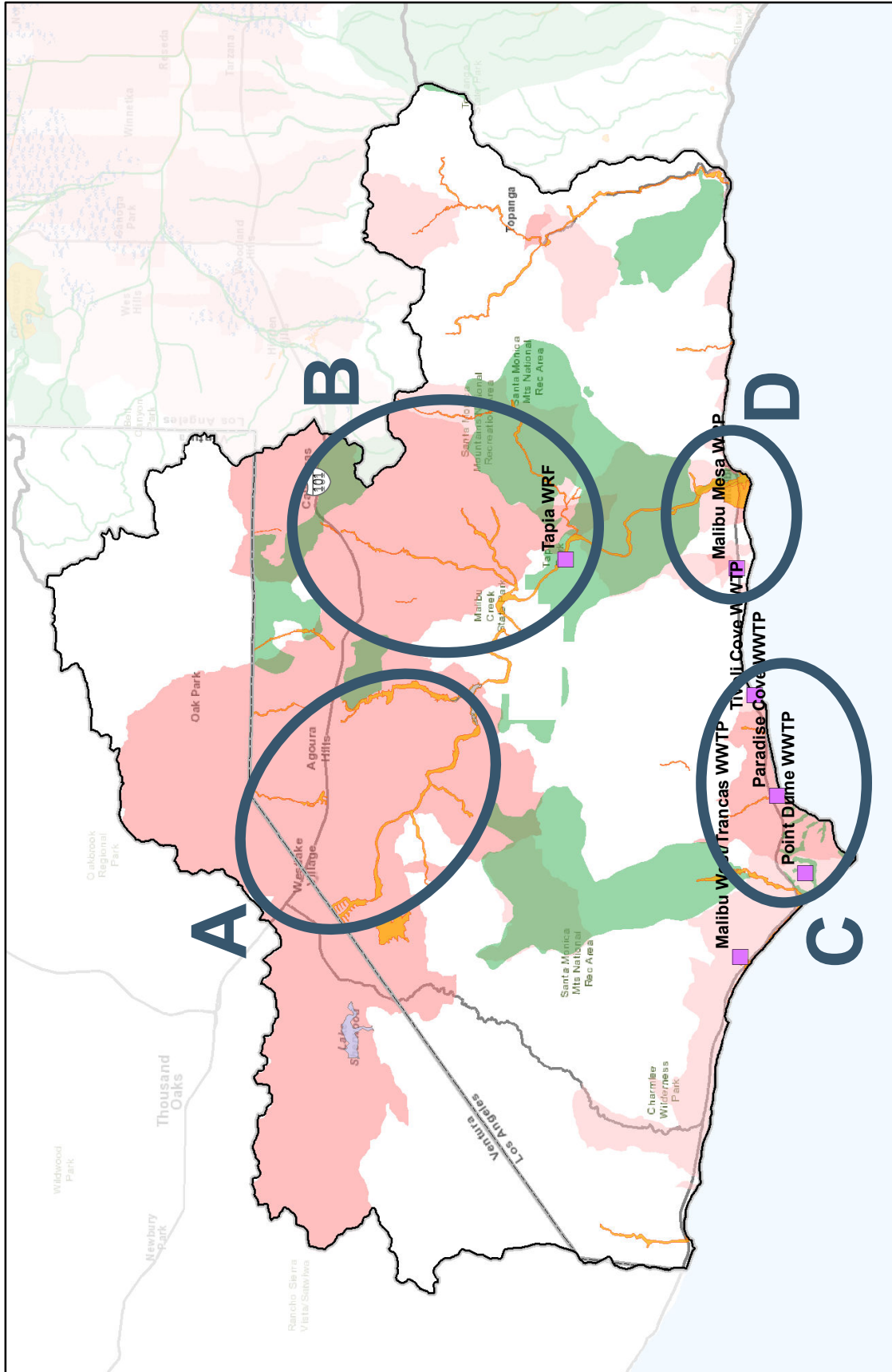
The City of Calabasas is on the border between the Upper Los Angeles River Watershed and the North Santa Monica Bay Subregion, and therefore provides an opportunity for collaboration between these two Subregions. This area is also a priority area for water quality improvements and integrated flood management that could further enhance habitat benefits for the Region by returning channelized streams to more natural systems. The proximity to a reclaimed water source could also incorporate a water supply benefit into projects developed in this area. Partnerships between the City of Calabasas, LACFCD, Las Virgenes MWD and local watershed groups could generate the multiple benefit projects.

C. Point Dume and South East Coastal Watershed Protection of ASBS

This coastal area is adjacent to an offshore significant habitat area and designated ASBS and MPAs, and has special need for water quality best management practices (BMPs) to protect the ASBS. This area also provides good opportunities for habitat restoration and partnerships between the City of Malibu, LACFCD, LACPW, LACB&H, Caltrans and State Parks. The area up coast of Point Dume Headlands is also a Marine Protected Area and the same partnership opportunities apply.

D. Malibu Creek Habitat and Water Quality and Supply

This coastal area near and including Malibu Lagoon has great potential for habitat restoration, water quality protection and flood protection. Encouraging above ground collection of rain water in nearby residential and retail communities can also help reduce dependence on imported water while removing some potential for flooding and storm-water quality impacts. Partnerships between the City of Malibu, the Santa Monica Bay Restoration Commission, State Parks, Caltrans, LACB&H and LACFCD could result in integrated projects for the Subregion. The proposed centralized wastewater treatment facility in the Malibu Civic Center area will provide recycling opportunities to reduce dependence on imported water supplies.



Potential Multiple Benefits
 North Santa Monica Bay
 Integrated Regional Water Management Plan
 Map 5-3

Existing and Potential

- Water Reclamation
- Existing Dams, Spreading Grounds
- Water Quality: Catchment Prioritization
- High Priority (4-5)
- Medium Priority (2-3)

Supply: Recharge Areas

- Flood: Special Flood Hazard Areas
- Recreation: High Priority
- Habitat: Significant Ecological Areas

Legend:

- Water Reclamation (Purple square)
- Existing Dams, Spreading Grounds (Light blue square)
- Water Quality: Catchment Prioritization (Light red square)
- High Priority (4-5) (Red square)
- Medium Priority (2-3) (Light red square)
- Supply: Recharge Areas (Blue wavy lines)
- Flood: Special Flood Hazard Areas (Orange square)
- Recreation: High Priority (Hatched square)
- Habitat: Significant Ecological Areas (Green square)

Scale: Miles 0 0.5 1 2

Sources: ESRI, Los Angeles County DPW
Date Modified: 10/27/2013

Integration Opportunities in the South Bay

The South Bay Subregion’s integration potential is notable relative to other subregions in a few ways:

- There are minimal areas suitable for ground-water recharge for water supply.
- It has the largest area in need for open space and recreation.
- It has great potential for coastal habitat preservation, enhancement and restoration.
- There are significant areas with a high priority water quality improvement potential.

What is not obvious from Map 5-4 is that relative to other subregions, the South Bay is heavily dependent upon imported water supplies given limited groundwater recharge potential. Therefore local supply development anywhere within the Subregion would be considered to provide great benefits.

The following paragraphs describe the circled areas in Map 5-4 where integration and partnership opportunities could be found based upon the Geodatabase layers and multiple benefit analysis performed. There are multiple areas beyond those few highlighted here for further exploration by the South Bay Subregion stakeholders and project proponents.

A. Hollywood Basin Water Supply and Water Quality

Although limited, there are areas with the potential for groundwater recharge in the northern area of the Subregion (Beverly Hills and Hollywood areas) that could recharge the Hollywood Groundwater Basin. These recharge areas also predominately lie within high priority areas for water quality improvements. Given that this area is heavily urbanized, it would be well suited for decentralized stormwater capture and use projects as well as infiltration BMPs that could achieve water quality and groundwater supply benefits. Potential partnerships between LACDPW, and the cities of Beverly Hills, West Hollywood and Los Angeles as well as several nongovernmental organizations could result in multi-benefit projects.

B. Mid City Los Angeles Water Quality, Flood Management Habitat and Recreation

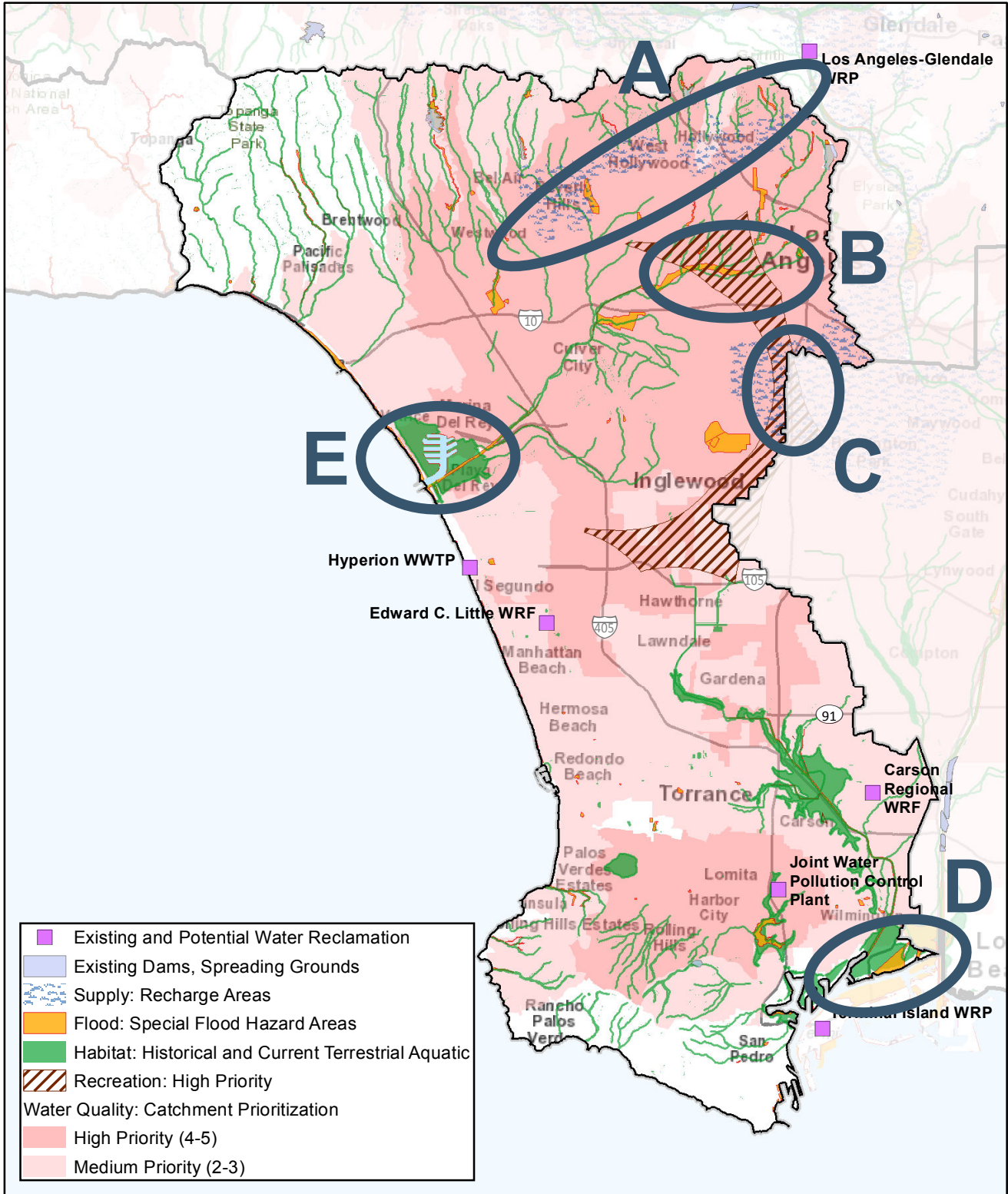
Historically, this area was the upstream area of Ballona Creek but has since then become heavily urbanized. These unique characteristics provide an area with opportunities for both flood management and water quality improvements. The area’s current urban density may limit the ability to provide habitat benefits, however recreation opportunities could still be feasible in the area on a neighborhood scale. Projects could provide multiple benefits when coupled with water quality improvement components and flood management.

C. South Central Intra-Subregional Groundwater Recharge, Recreation and Water Quality

The northern-most boundary between the South Bay and Lower Los Angeles and San Gabriel River Subregions is South Central Los Angeles. This area has a high recharge potential and water quality improvement priority as well as a great need for open space recreation for the heavily urbanized neighborhoods. Therefore, this area has great potential for generating integrated projects that could provide benefits to both Subregions. Projects could include stormwater landscaping BMPs on a site (yard) and neighborhood (park) scale to capture and infiltrate stormwater flows in open areas. Close proximity to regional water reclamation plants can also provide additional supplies to further enhance current use of recycled water for groundwater recharge. Project partners could be West Basin MWD, WRD and the City of Los Angeles.

D. Dominguez Channel Flood Management, Water Supply and Coast Habitat

Another area for potential intra-subregional project with Lower Los Angeles and San Gabriel Subregion is at the mouth of the Dominguez Channel. The area also houses the City of Los Angeles Terminal Island Water Reclamation Plant that could supply recycled water supplies for potable offset for agencies in both Subregions though their joint involvement in the Central Basin. Although heavily industrial, there is potential for habitat benefits if such a project were conceived that could also improve the flood management needed in the area. Partnerships between the cities of Los Angeles, Carson, Long Beach, WRD and West Basin MWD could result in integrated projects.



Potential Multiple-Benefits
 South Bay
 Integrated Regional Water Management Plan
 Map 5-4



Sources: ESRI, Los Angeles County DPW
 Date Modified: 10/27/2013

E. Marina del Rey Water Quality and Coastal Habitat

The Ballona Creek empties into the Santa Monica Bay at Marina del Rey. This coastal area is home to the Ballona Wetlands that are in the process of being restored through past and future new projects that will further increase its habitat and water quality value and benefits. The presence of Ballona Channel (a stream and flood control channel) also provides opportunities for the management of flood waters and coastal inundation as a result of climate change. There are also opportunities for added freshwater wetland treatment upstream of the salt marsh areas that could incorporate passive activity trails.

Potential project partners are the State Fish and Game, the Coastal Conservancy, and the Santa Monica Bay Restoration Commission, along with the LACFCD, non-profit groups (such as the Friends of Ballona Wetlands and Ballona Creek Renaissance) and cities of Los Angeles and Culver City.

The Oxford Flood Control Basin manages stormwater flows into Marina del Rey. While it is principally a flood control basin, it has potential for stormwater quality management and habitat restoration as well with potential partners including LACFCD and County Beaches and Harbors.

Venice Canals and Ballona Lagoon areas also provide opportunities for low impact development to minimize flooding and enhance water quality and open space habitat for the City of Los Angeles and local neighbors and environmental groups.

Integration Opportunities in Upper Los Angeles River

Map 5-5 focuses on the Upper Los Angeles River Subregion and highlights just a few unique areas within the Subregion that have potential for generating multiple-benefit projects. The Subregion's integration potential is notable relative to other subregions in a few ways:

- There are large areas suitable for groundwater recharge and significant sources of local stormwater and recycled water supplies.
- There is a large northern upland open space watershed that drains into areas with a high potential to derive aquatic habitat benefits.

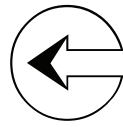
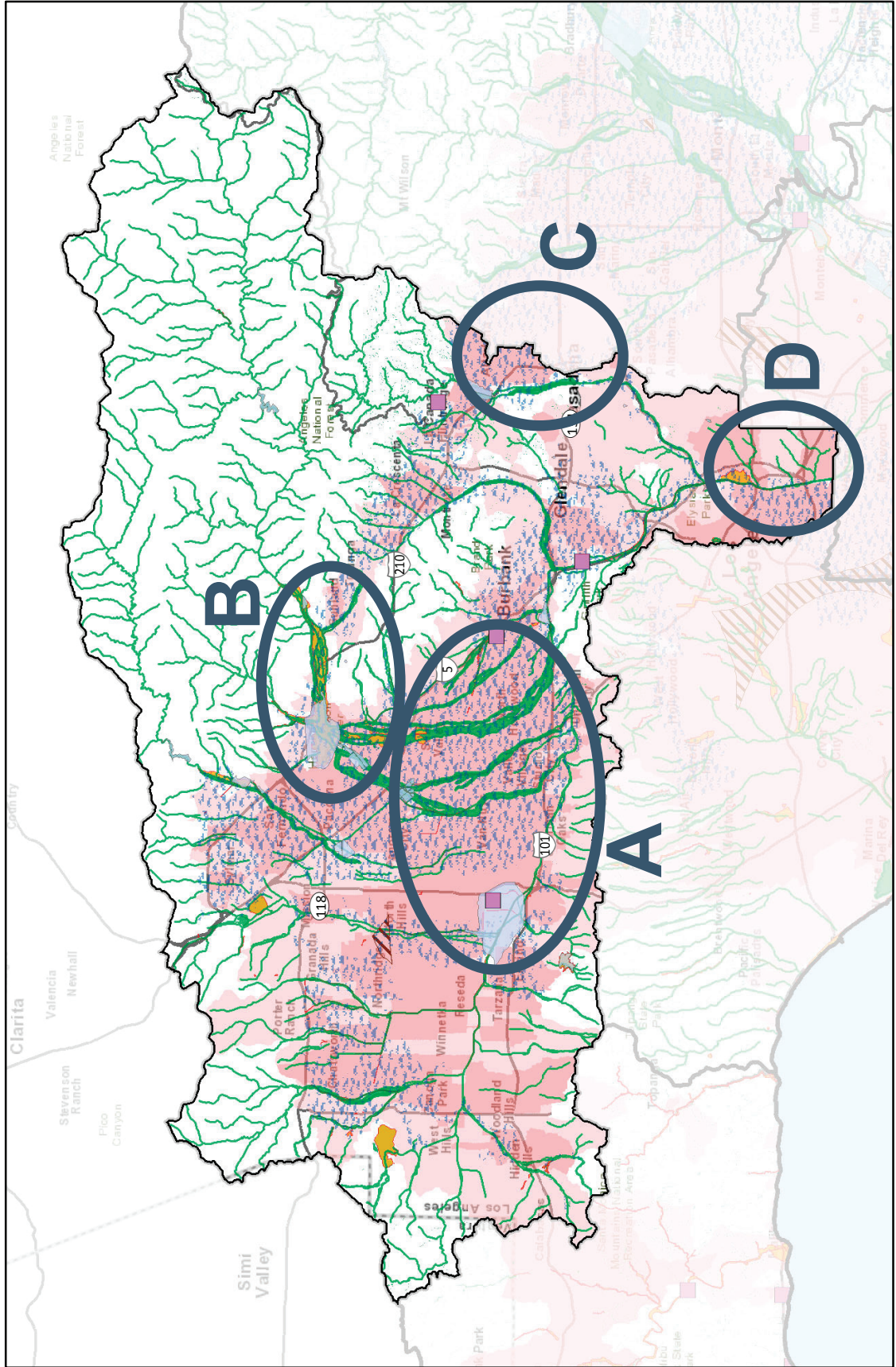
- There is a heavily urbanized valley area but with strong examples of successful integrated flood management facilities and great opportunities for furthering multiple-benefit projects.
- The Los Angeles River Watershed provides unique opportunities for integrated flood management projects that would improve habitat and water quality while maintaining flood control.

The following sections highlight a few areas in the Upper Los Angeles Subregion where integration and partnership opportunities could be found based upon the Geodatabase layers and multiple benefit analysis performed. There are multiple areas beyond those few highlighted here that can be explored by the Upper Los Angeles River stakeholders and project proponents.

A. San Fernando Valley Local Supply and Water Quality

The Upper Los Angeles River Subregion is dominated by the San Fernando Valley and underlying groundwater basin. This combination of available stormwater and recharge potential provide the area with great potential for stormwater conservation through recharge. Stormwater flows through the heavily urbanized valley areas provide both the sources and transport for contaminants that impact water quality as shown by the high priority drainage areas in Map 5-5. Therefore, capture and recharge of stormwater supplies in this area can also provide significant water quality benefits. The majority of all wastewater flows generated in this Subregion pass through the city of Los Angeles' Tillman Water Reclamation Plant. These recycled flows can be made available with stormwater flows to also recharge the basin.

Map 5-5 shows the intersection or recharge areas with high priority water quality drainage areas predominately within the City of Los Angeles, Burbank, Glendale and Pasadena. Partnerships with these cities, LACFCD and other nongovernmental organizations could further expand upon projects completed to maximize the efficacy of existing spreading grounds as well as low impact development and neighborhood stormwater capture and infiltration projects.



- Existing and Potential Water Reclamation
- Existing Dams, Spreading Grounds
- Water Quality: Catchment Prioritization
 - High Priority (4-5)
 - Medium Priority (2-3)

- Supply: Recharge Areas
- Flood: Special Flood Hazard Areas
- Habitat: Historical and Current Terrestrial/Aquatic
- Recreation: High Priority

Potential Multiple-Benefits
 Upper Los Angeles River
 Integrated Regional Water
 Management Plan
 Map 5-5

Sources: ESRI, Los Angeles County DPW
 Date Modified: 10/27/2013

B. Tujunga Area Supply, Quality, Flood and Habitat Benefit

Although nearly the entire San Fernando Valley has recharge and water quality improvement potential, there are some areas that also provide the potential for habitat benefits given historical and current habitat map layers developed in the OSHARTM as well as increased flood management. As Map 5-5 shows, the Tujunga Creek/Hansen Dam area has multiple existing spreading grounds that serve to recharge the San Fernando Basin. As existing open spaces, these areas already provide multiple benefits but still could continue to increase their value through multiple benefit projects that enhance, protect or restore habitat that are also water quality BMPs. Partners in this region are the City and LACFCD as well as neighborhood organizations and other NGOs.

C. Intra-Regional Raymond Basin Water Supply and Quality

The Raymond Basin and the City of Pasadena are divided between the Upper Los Angeles River and Upper San Gabriel and Rio Hondo Subregions. This provides intra-regional opportunities between the Upper LA and Upper SG & RH Subregions for replenishment of the Raymond Basin to benefit both regions through both stormwater capture and accessing recycled water supplies from the Los Angeles-Glendale Water Reclamation Plant. This area also has been identified as a high priority drainage for achieving water quality benefits and therefore multiple-benefits project opportunities. Partnerships between the City of Pasadena, other Raymond Basin pumpers, LACSD and LACFCD could result in very beneficial integrated projects.

D. Intra-Regional Central Basin Recharge and Los Angeles River

The Los Angeles River Watershed is divided between the Upper and Lower Subregions however there is an obvious connection between the regions from a water supply and quality perspective. The southernmost area of the Subregion is downtown Los Angeles. As Map 5-5 shows, the area is suitable for groundwater recharge but it also has a high level of impervious surface meaning low infiltration potential. Given that this area is upstream of the Lower Los Angeles River Subregion, water quality improvements made here would benefit

both Subregions. The ability to do large scale BMPs may be limited, however smaller scale decentralized LID projects in this area may be able to provide both water quality and supply benefits. Opportunities for integrated flood management projects along the Los Angeles River would seek to preserve current flood but also improve water quality and open space either for recreation and/or habitat. Partnerships could involve both the cities of Los Angeles and those in the Upper LA & SG Subregion along with the WRD and NGOs.

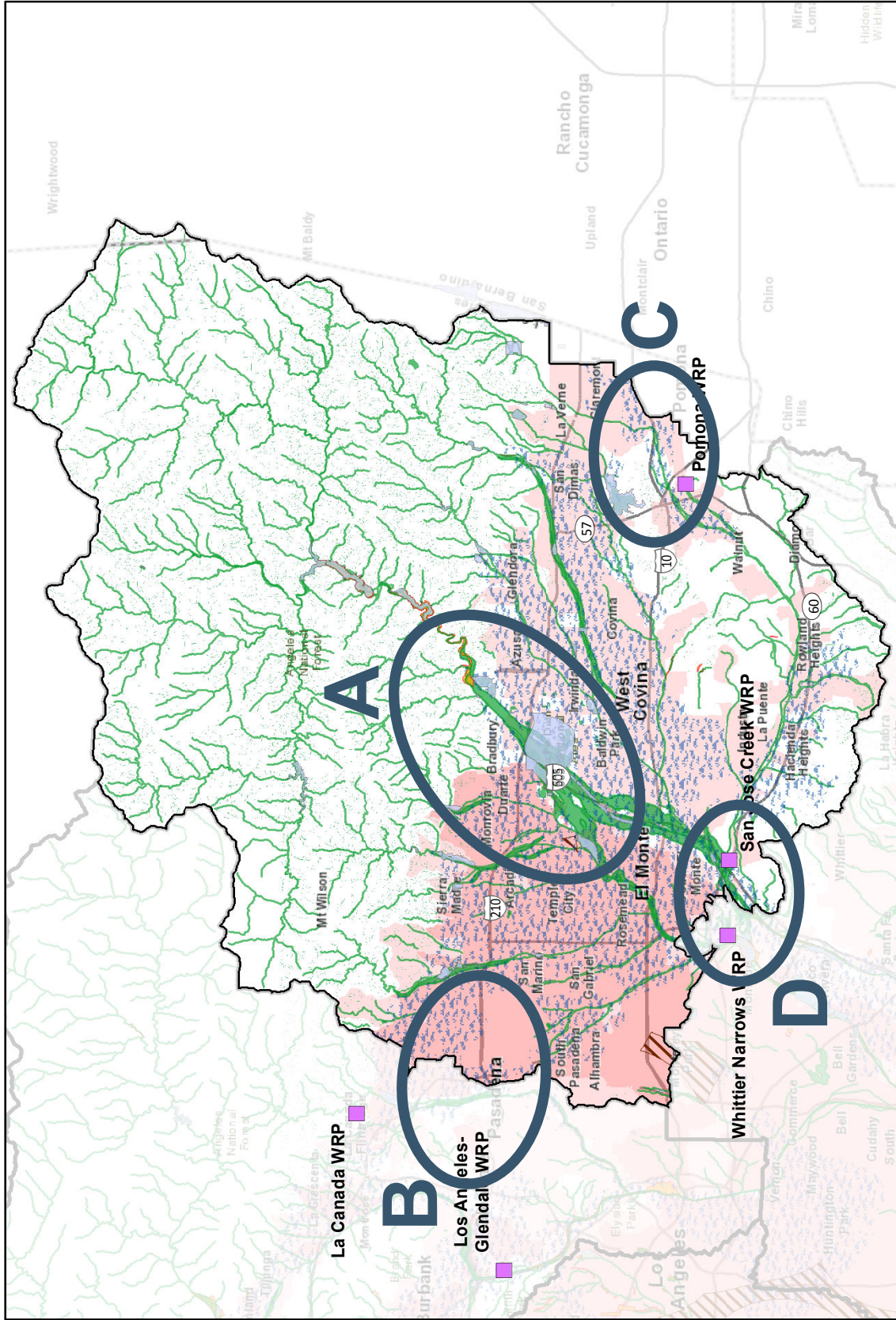
Upper San Gabriel and Rio Hondo Integration and Partnership Opportunities

Map 5-6 focuses on the Upper San Gabriel and Rio Hondo Subregion and highlights just a few unique areas within the Subregion that have potential for generating multiple-benefit projects. The Subregion's integration potential is notable relative to other subregions in a few ways.

- There are significant areas that are suitable for groundwater recharge.
- About half of the watershed is upland open space and half is urbanized.
- Improving groundwater quality and basin replenishment are important supply sources.
- There is access to unused stormwater supply and recycled water supply (though this may be dependent on the time of year or agreements for future supplies).

A. Main San Gabriel Basin Water Quality and Basin Recharge

The headwaters of the San Gabriel River flow from the upland rural watershed into the lower more urbanized watershed that also serves as the main source of the Main San Gabriel Groundwater Basin. As Map 5-6 shows, projects in the area have a great potential to provide water quality, supply, habitat and integrated flood management benefits through integrated project development. Proximity to existing recharge and recycled water facilities also provide a foundation for further use of local supplies. Given the urbanized nature of this area, decentralized stormwater capture programs and BMPs could also be implemented. In addition, projects in this area could also include a habitat component to provide valuable habitat benefits.



Potential Multiple-Benefits
 Upper San Gabriel & Rio Hondo
 Integrated Regional Water
 Management Plan
 Map 5-6

	Existing and Potential		Supply: Recharge Areas
	Water Reclamation		Flood: Special Flood Hazard Areas
	Existing Dams, Spreading Grounds		Habitat: Historical and Current Terrestrial/Aquatic
	Water Quality: High Priority (4-5)		Recreation: High Priority
	Medium Priority (2-3)		

Miles

0 1 2 4

Sources: ESRI, Los Angeles County DPW
 Date Modified: 10/27/2013

B. Inter-Regional Raymond Basin Water Supply and Quality

The Raymond Basin and the City of Pasadena are divided between the Upper LA and Upper SG & RH Subregions. This provides intra-regional opportunities between the Upper LA and Upper SG & RH Subregions for replenishment of the Raymond Basin to benefit both regions through both stormwater capture and accessing recycled water supplies from the Los Angeles-Glendale Water Reclamation Plant. This area, which includes the Rio Hondo watershed, also has been identified as a high priority drainage area for achieving water quality benefits and therefore multiple-benefits project opportunities. Partnerships between the City of Pasadena, other Raymond Basin pumpers, the City of Los Angeles, the City of Glendale and the LACFCD could result in very beneficial integrated projects.

could also incorporate both habitat and recreation elements without compromising these primary functions, there is the potential for achieving further integrated and beneficial results.

Recycled water supplies in this area could be further maximized for increased recharge and supply benefits. Partnerships with WRD, LACSD, LACFCD, Central Basin MWD, Central Basin pumpers and overlying cities could also benefit from above ground open space.

C. Six Basins/Puente Basin Area Supply and Quality Improvement

The Six Basins and Puente Basin groundwater basin area can provide opportunities to offer regional water supply partnerships that could serve to maximize groundwater use through treatment and supply interties between neighboring agencies. Districts such as Walnut Valley Water District and Rowland Water District could work with neighboring agencies (such as the cities of La Verne, Pomona and Golden State Water Company) to increase water quality to levels that could be useful in offsetting their dependence on imported supplies.

D. Intra-Regional Montebello Forebay Recharge and Open Space

The San Gabriel River Valley narrows in the Montebello area which also provides the dividing line between the Upper SG & RH Subregion and the Lower SG & LA Subregion. This area is also the main recharge Forebay for the Central Basin where several spreading ground facilities are located. Although somewhat urbanized relative to other densities in the Region, this area also provides a great deal of open space given those facilities. Preserving and further enhancing the spreading capacity is critical to meeting supply goals, as well as water quality goals. Increased stormwater infiltration will lessen the amount of contaminants transported further downstream. If there are projects that

5.4 Region’s Projects (as of April 2013)

To improve water supplies, enhance water supply reliability, improve surface water quality, expand recreational access, conserve habitat, and improve integrated flood management in the Region, agencies, jurisdictions, and organizations have proposed a range of water resource management projects for the 2013 Plan Update. The projects listed here are the most recent approved list as of April 2013 when the last cycle of project review and selection occurred prior to the publication of this document. Included in this list are DAC projects that were either entered into the project database by stakeholders, or were developed through the efforts of the DAC Subcommittee as described in Chapter 1. As previously stated, the most current listing of IRWM projects and the most recent selection of projects can be found by logging on to the project database through the Region’s IRWM Plan website at www.lawaterplan.org.

Summary of Projects

Table 5-2 provides a summary of the number of projects according to subregion and primary water management benefit. These projects have been vetted by the SC and LC as described previously. Collectively, these projects have the potential to generate substantial amounts of new water, significantly improve surface water quality, restore important habitat areas, and enhance flood protection. The complete list of projects is provided in Table 5-3.

Subregion	Total Projects Submitted ⁽¹⁾	Number of Projects by Benefit Category ^{(1), (2)}			
		Water Supply	Water Quality	Habitat & Open Space	Flood
Lower San Gabriel and Los Angeles River	8	6	1	1	0
North Santa Monica Bay	18	6	6	5	1
South Bay Watershed	42	21	15	4	2
Upper Los Angeles River	49	23	8	14	4
Upper San Gabriel River and Rio Hondo	18	13	0	0	5

1. Based on projects submitted by April 2013.
2. Primary benefits were identified by project proponent.

Table 5-3: GLAC IRWMP Approved Projects (as of April 2013)

Subregion	Project Title	Primary Benefit	Implementing Organization
Lower SG & LA	Broadway Neighborhood Stormwater Greenway Project	Water Supply	City of Los Angeles Bureau of Sanitation
Lower SG & LA	Dominguez Gap Spreading Grounds West Basin Percolation Enhancement	Water Supply	Los Angeles County Flood Control District
Lower SG & LA	Graywater Standard Implementation	Water Supply	City of Long Beach
Lower SG & LA	Groundwater Reliability Improvement Project (GRIP)	Water Supply	Water Replenishment District of Southern California
Lower SG & LA	Jordan Downs Daylighting Study	Habitat/Open Space	Multi-jurisdictional Agencies-LA City Housing and Public Works
Lower SG & LA	San Jose Creek Water Reclamation Plant East Process Optimization Project	Water Quality	County Sanitation Districts of Los Angeles County
Lower SG & LA	South Los Angeles County Groundwater Pipeline Project	Water Supply	Water Replenishment District of Southern California
Lower SG & LA	WRD Eco Gardener Program	Water Supply	Water Replenishment District of Southern California
North SM Bay	Agoura Road Gap Recycled Water System Expansion	Water Supply	Las Virgenes Municipal Water District
North SM Bay	Citywide Storm Drain Catch Basin Curb Screens	Water Quality	City of Calabasas
North SM Bay	Cold Creek Diamond Acquisition	Habitat/Open Space	Mountains Restoration Trust
North SM Bay	Decker Canyon Recycled Water System Expansion	Water Supply	Las Virgenes Municipal Water District
North SM Bay	Las Virgenes Creek Bank Stabilization, Stream Restoration, Fish Migration Enhancement and Trail Connection	Flood	City of Calabasas
North SM Bay	LVMWD Woodland Hills Golf Course Recycled Water Pipeline Extension	Water Supply	Las Virgenes Municipal Water District
North SM Bay	Malibu Civic Center Area Recycled Water Delivery Project	Water Supply	City of Malibu
North SM Bay	Malibu Civic Center Linear Park Phase 3	Habitat/Open Space	City of Malibu
North SM Bay	Malibu Equestrian Center Runoff BMPs	Water Quality	City of Malibu
North SM Bay	NSMB Water Conservation/Efficiency	Water Quality	City of Malibu
North SM Bay	Malibu Road/Malibu Colony Stormwater Management	Water Quality	City of Malibu
North SM Bay	Westward Beach Road Bioinfiltration	Water Quality	City of Malibu
North SM Bay	Medea Creek Restoration at Chumash Park	Habitat/Open Space	City of Agoura Hills
North SM Bay	Oak Park Medea Creek Restoration	Habitat/Open Space	Mountains Restoration Trust
North SM Bay	Raw Wastewater Diversion to the City of Los Angeles	Water Quality	Las Virgenes Municipal Water District
North SM Bay	Recycled Water Storage and Distribution System Expansion	Water Supply	Las Virgenes Municipal Water District
North SM Bay	Thousand Oaks Boulevard Recycled Water System Extension	Water Supply	Las Virgenes Municipal Water District
North SM Bay	Topanga Connection Acquisition	Habitat/Open Space	Mountains Restoration Trust
North SM Bay	Westward Beach Road Bioinfiltration Project	Water Quality	City of Malibu
South Bay	25mgd Seawater Desalination Plant in West Basin	Water Supply	West Basin Municipal Water District
South Bay	Agua Amarga Lunada Canyon Habitat Restoration	Habitat/Open Space	Palos Verdes Peninsula Land Conservancy & City of Rancho Palos Verdes

Table 5-3: GLAC IRWMP Approved Projects (as of April 2013)

Subregion	Project Title	Primary Benefit	Implementing Organization
South Bay	Alondra Regional Park	Water Quality	Successor Agency, City of Compton
South Bay	Andrews Park Subsurface Storage, Use and Infiltration Project	Water Quality	City of Redondo Beach
South Bay	Ballona Creek Water Quality and Beach Improvement & Beneficial Use Project	Water Quality	City of Los Angeles Bureau of Sanitation Watershed Protection Division
South Bay	C Marvin Brewer Desalter Brackish Groundwater Facility Expansion	Water Supply	West Basin Municipal Water District
South Bay	Carson Regional Water Recycling Project	Water Supply	West Basin Municipal Water District
South Bay	City of Carson Rain Barrel Give Away Phase II	Water Quality	City of Carson, Development Services Department, Engineering Services Division
South Bay	Conservation Budget Based Tiered Rate Structure	Water Supply	West Basin Municipal Water District
South Bay	Conversion of 237th Street Sump Tributary to Machado Lakes for Nutrient and Toxics TMDL BMPs	Water Quality	City of Torrance
South Bay	Conversion of Walnut Ave Sumps Tributary to Machado Lake for BMPs	Water Quality	City of Torrance
South Bay	Del Rey Lagoon Water Quality Improvement Project	Habitat/Open Space	City of Los Angeles Bureau of Sanitation Watershed Protection Division
South Bay	Demonstration Gardens at Los Angeles County Fire Department Stations	Water Supply	West Basin Municipal Water District
South Bay	Dominguez Channel Trash Reduction Via ARS Installation in the City of Carson, CA	Water Quality	City of Carson, Development Services Department, Engineering Services Division
South Bay	Freeway Runoff Infiltration Demonstration Project	Water Supply	City of Santa Monica
South Bay	Goldsworthy Desalter Expansion	Water Supply	City of Torrance
South Bay	Herondo Parking Lot and Beach Infiltration	Water Quality	City of Redondo Beach
South Bay	Improvements to Entradero Storm Drain Channel for Storm Water Infiltration and Habitat Restoration	Water Quality	City of Torrance, SMBBB TMDL Jurisdictional Groups 5 & 6
South Bay	Landscape Irrigation Efficiency Program (LIEP)	Water Supply	West Basin Municipal Water District
South Bay	Manhattan Strand 28th Street Subsurface Infiltration Trench	Water Quality	City of Manhattan Beach
South Bay	Milton Street Park and Green Street project - Ballona Creek	Habitat/Open Space	Mountains Recreation and Conservation Authority
South Bay	Northeast Gardena Recycled Water Line	Water Supply	West Basin Municipal Water District
South Bay	Ocean Friendly Garden (OFG) Program	Water Supply	West Basin Municipal Water District
South Bay	Oxford Retention Basin Multi-Use Enhancement Project	Flood	Los Angeles County Flood Control District
South Bay	Ozone Park Runoff Treatment and ReUse Project	Water Supply	City of Santa Monica
South Bay	Palos Verdes Peninsula Satellite Facilities Study	Water Supply	West Basin Municipal Water District
South Bay	Palos Verdes Recycled Water Lateral	Water Supply	West Basin Municipal Water District
South Bay	Residential Indoor Plumbing Retrofit Kits	Water Supply	West Basin Municipal Water District
South Bay	Residential SMART Timer Retrofit	Water Supply	West Basin Municipal Water District

Table 5-3: GLAC IRWMP Approved Projects (as of April 2013)

Subregion	Project Title	Primary Benefit	Implementing Organization
South Bay	San Ramon Canyon Stormwater Flood Reduction Project	Flood	City of Rancho Palos Verdes
South Bay	South Coast Botanic Gardens	Water Quality	Los Angeles County Department of Public Works
South Bay	South Park Subsurface Infiltration Gallery	Water Quality	City of Hermosa Beach
South Bay	Southeast Gardena Recycled Water Line	Water Supply	West Basin Municipal Water District
South Bay	Transfer Station Rehabilitation	Water Quality	City of Inglewood
South Bay	Turf's Up Water Use Efficiency Program	Water Supply	West Basin Municipal Water District
South Bay	Van Ness and Slauson Infiltration Best Management Project	Water Quality	City of Los Angeles Bureau of Sanitation Watershed Protection Division
South Bay	Vermont Avenue Storm Water Capture and Green Street Beautification Project	Water Quality	City of Los Angeles, Bureau of Sanitation/ Watershed Protection Division
South Bay	Vermont Median Stormwater Park	Habitat/Open Space	Council for Watershed Health
South Bay	Victoria Street CSUDH Water Reuse Concept Proposal	Water Supply	City of Carson
South Bay	Water Star Schools Pilot Program	Water Supply	West Basin Municipal Water District
South Bay	Well 7	Water Supply	City of Inglewood
South Bay	Westwood Neighborhood Greenway Project	Water Quality	City of Los Angeles Bureau of Sanitation Watershed Protection Division
Upper LA	Arroyo Seco Confluence Gateway	Habitat/Open Space	Arroyo Seco Foundation
Upper LA	Arroyo Seco North Branch Creek Daylighting	Habitat/Open Space	Arroyo Seco Foundation
Upper LA	Big Tujunga Dam Spillway Dam	Water Supply	Los Angeles County Flood Control District
Upper LA	Big Tujunga Reservoir Sediment Removal	Flood	Los Angeles County Flood Control District
Upper LA	Boulevard Pit Stormwater Capture Project	Water Supply	LADWP
Upper LA	Branford Spreading Basin Cleanout and Pump	Water Supply	Los Angeles County Flood Control District
Upper LA	Bull Creek Water Conservation	Water Supply	Los Angeles County Flood Control District
Upper LA	Bull Creek Los Angeles Reservoir Water Quality Improvement Project	Water Quality	LADWP
Upper LA	Caballero Creek & Los Angeles River Confluence Park	Water Quality	Mountains Recreation and Conservation Authority
Upper LA	Chase Street Stormwater Greenway	Water Quality	City of Los Angeles Bureau of Sanitation, Watershed Protection Division
Upper LA	Devil's Gate Dam and Reservoir Water Conservation	Water Supply	Los Angeles County Flood Control District
Upper LA	Devil's Gate Reservoir Sediment Removal and Management Project	Flood	Los Angeles County Flood Control District
Upper LA	Elysian Park Water Recycling Project	Water Supply	LADWP
Upper LA	Elysian Reservoir Water Quality Improvement Project	Habitat/Open Space	LADWP
Upper LA	Foothill Municipal Water District Recycled Water Project	Water Supply	Foothill Municipal Water District
Upper LA	Groundwater System Improvement Study	Water Supply	Los Angeles Department of Water & Power
Upper LA	Groundwater Treatment Facilities	Water Supply	LADWP

Table 5-3: GLAC IRWMP Approved Projects (as of April 2013)

Subregion	Project Title	Primary Benefit	Implementing Organization
Upper LA	Hansen Dam Golf Course Water Recycling Project	Water Supply	LADWP
Upper LA	Hansen Dam Water Conservation and Supply	Water Supply	The River Project
Upper LA	Hansen Dam Water Conservation Project	Water Supply	Los Angeles County Flood Control District
Upper LA	Headworks East Reservoir	Habitat/Open Space	LADWP
Upper LA	Headworks Ecosystem Restoration	Habitat/Open Space	LADWP
Upper LA	Humboldt Stormwater Greenway	Water Quality	City of Los Angeles, Bureau of Sanitation/ Watershed Protection Division
Upper LA	Johnny Carson Park Stream Restoration and Park Revitalization	Habitat/Open Space	City of Burbank
Upper LA	LA River Sixth Street Bridge Greenway	Water Quality	City of Los Angeles, Bureau of Engineering
Upper LA	Lopez Spreading Grounds Improvement	Water Supply	Los Angeles County Flood Control District
Upper LA	Los Angeles River Center and Gardens Green Conference Center	Water Quality	Mountains Recreation and Conservation Authority
Upper LA	Los Angeles River Natural Park	Water Quality	City of Los Angeles Bureau of Sanitation/ Watershed Protection Division
Upper LA	Los Angeles River Revitalization Master Plan 32 Mile Channel and Easement Greening	Habitat/Open Space	City of Los Angeles, Bureau of Engineering
Upper LA	Los Angeles State Historic Park Water Recycling Project	Water Supply	LADWP
Upper LA	Marsh Park, Phase II	Habitat/Open Space	Mountains Recreation and Conservation Authority
Upper LA	Mission Hills Green Belt	Water Supply	The River Project
Upper LA	Mission Wells Improvement	Water Supply	Los Angeles Department of Water and Power
Upper LA	Pacoima Neighborhood Retrofit	Water Supply	The River Project
Upper LA	Pacoima Reservoir Sediment Removal	Flood	Los Angeles County Flood Control District
Upper LA	Pacoima Spreading Grounds Improvements	Water Supply	Los Angeles County Flood Control District
Upper LA	Pasadena Recycled Water Project	Water Supply	Pasadena Water and Power
Upper LA	San Rafael Creek Restoration	Habitat/Open Space	Arroyo Seco Foundation
Upper LA	Santa Fe Spillway Basins	Water Supply	Los Angeles County Flood Control District
Upper LA	Septic-To-Sewer Drinking Waterwell Protection Project	Water Quality	City of Los Angeles Bureau of Sanitation/ Wastewater Engineering Services Division
Upper LA	Sepulveda Basin Sports Complex Multi-Purpose Open Space Project	Habitat/Open Space	City of Los Angeles, Bureau of Engineering
Upper LA	Sepulveda Basin Sports Complex Riparian Buffer	Habitat/Open Space	City of Los Angeles, Bureau of Engineering
Upper LA	Sheldon Pit	Water Supply	LADWP
Upper LA	Silver Lake Reservoir Bypass & Regulator Station	Habitat/Open Space	Los Angeles Department of Water & Power
Upper LA	Sun Valley Watershed Strathern Wetlands Park Project	Habitat/Open Space	Los Angeles County Flood Control District
Upper LA	Taylor Yard River Park Parcel G2	Habitat/Open Space	City of Los Angeles, Bureau of Engineering
Upper LA	Valley Generating Station Stormwater Recharge Project	Water Supply	LADWP

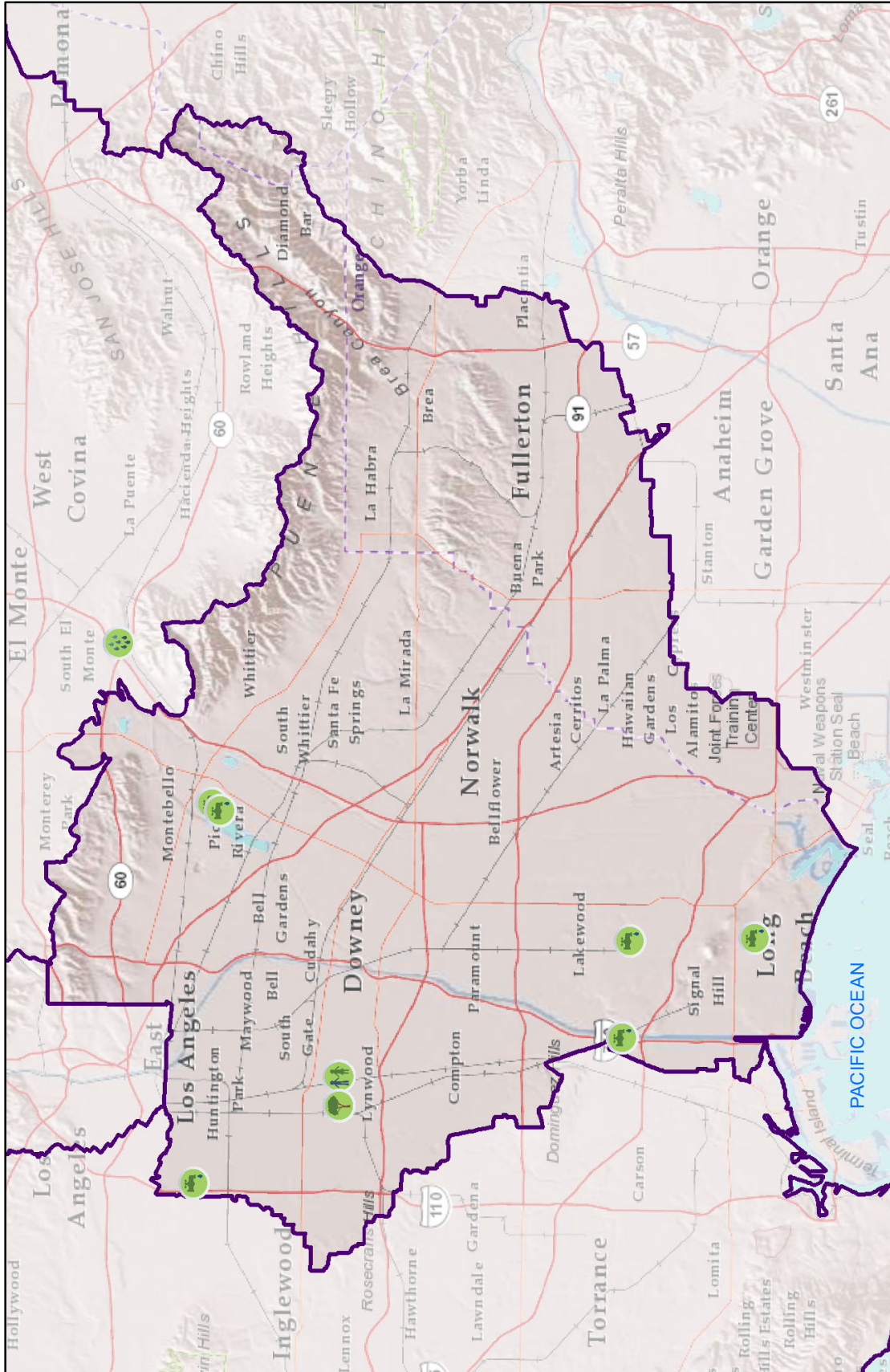
Table 5-3: GLAC IRWMP Approved Projects (as of April 2013)

Subregion	Project Title	Primary Benefit	Implementing Organization
Upper LA	Verdugo Hills Stormwater Project	Habitat/Open Space	City of Los Angeles, Bureau of Sanitation/ Watershed Protection Division
Upper LA	Whitnall HWY Powerline Easement Stormwater Capture Project	Water Supply	LADWP
Upper SG & RH	Big Dalton Spreading Grounds Improvements	Water Supply	Los Angeles County Flood Control District
Upper SG & RH	Cogswell Dam Inlet/Outlet Works Rehabilitation Project	Flood	Los Angeles County Flood Control District
Upper SG & RH	Eaton Spreading Grounds Intake Improvements	Water Supply	Los Angeles County Flood Control District
Upper SG & RH	Eaton Wash Dam Inlet/Outlet Works Rehabilitation Project	Flood	Los Angeles County Flood Control District
Upper SG & RH	Improvements to San Gabriel River Diversion and San Gabriel River Water Committee Canal and Appurtenances	Water Supply	Azusa Light and Water
Upper SG & RH	Indirect Reuse Replenishment Project	Water Supply	Upper San Gabriel Valley Municipal Water District
Upper SG & RH	Live Oak Spreading Grounds Improvement Project	Water Supply	Los Angeles County Flood Control District
Upper SG & RH	Miller Pit Spreading Basins	Water Supply	Los Angeles County Flood Control District
Upper SG & RH	Olive Pit Water Conservation Park	Water Supply	Los Angeles County Flood Control District
Upper SG & RH	Peck Water Conservation Improvement Project	Water Supply	Los Angeles County Flood Control District
Upper SG & RH	Puddingstone Diversion Dam Inlet/Outlet Works Rehabilitation	Flood	Los Angeles County Flood Control District
Upper SG & RH	Regional Water Supply Reliability Program Phase 1b	Water Supply	Puente Basin Water Agency
Upper SG & RH	San Gabriel Valley Water Recycling Project (Phase I - Rose Hills Expansion)	Water Supply	Upper San Gabriel Valley Municipal Water District
Upper SG & RH	Santa Anita Dam Seismic Rehabilitation	Flood	Los Angeles County Flood Control District
Upper SG & RH	Sawpit Debris Dam Seismic Strengthening Project	Flood	Los Angeles County Flood Control District
Upper SG & RH	South El Monte Recycled Water Expansion Project	Water Supply	Upper San Gabriel Valley Municipal Water District & San Gabriel Valley Water Company
Upper SG & RH	Walnut Creek Spreading Basin Improvements	Water Supply	Los Angeles County Flood Control District
Upper SG & RH	Well 15	Water Supply	San Gabriel County Water District

Location of Projects

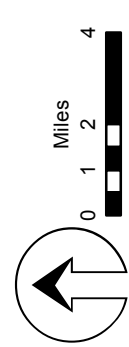
Maps 5-7 through 5-11 show the general location of stakeholder-identified and approved projects within each subregion. In some instances, multiple projects occur at the same locations, which may suggest additional opportunities for project integration. Regional projects and projects located in multiple Subregions, are not depicted on the maps.

The areas with the greatest number of projects in DACs are the Upper LA Subregion and the Lower LA & SG Subregion. The North SM Bay Subregion has no DACs.

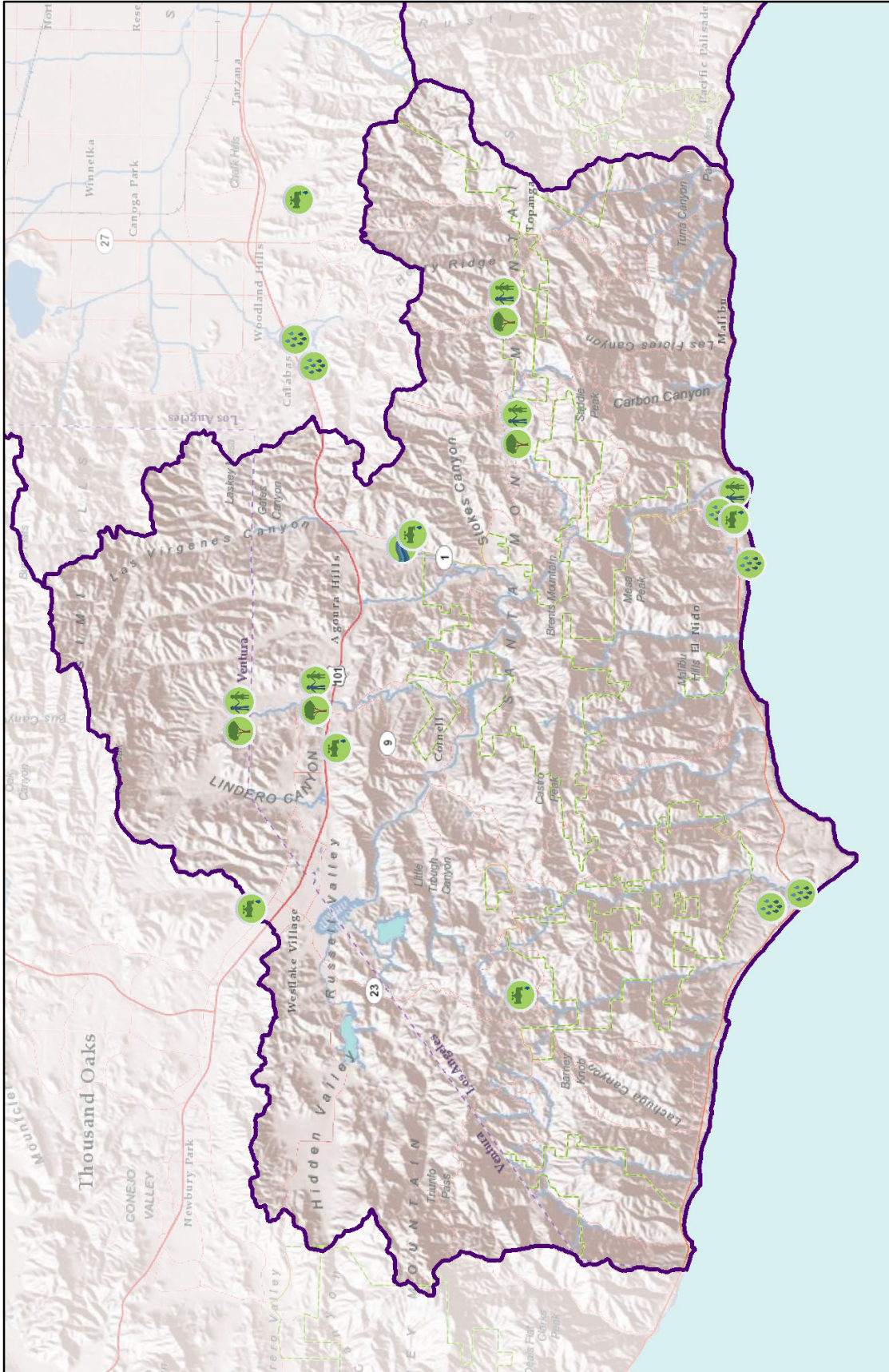


Projects
 Lower San Gabriel & Los Angeles Subregion
 Integrated Regional Water Management Plan
 Map 5-7

- Project Primary Benefits**
- Water Supply
 - Surface Water Quality
 - Flood
 - Habitat/Open Space/Recreation







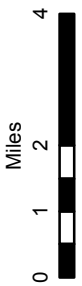
Sources: Cal-Atlas, ESRI, LACDPW



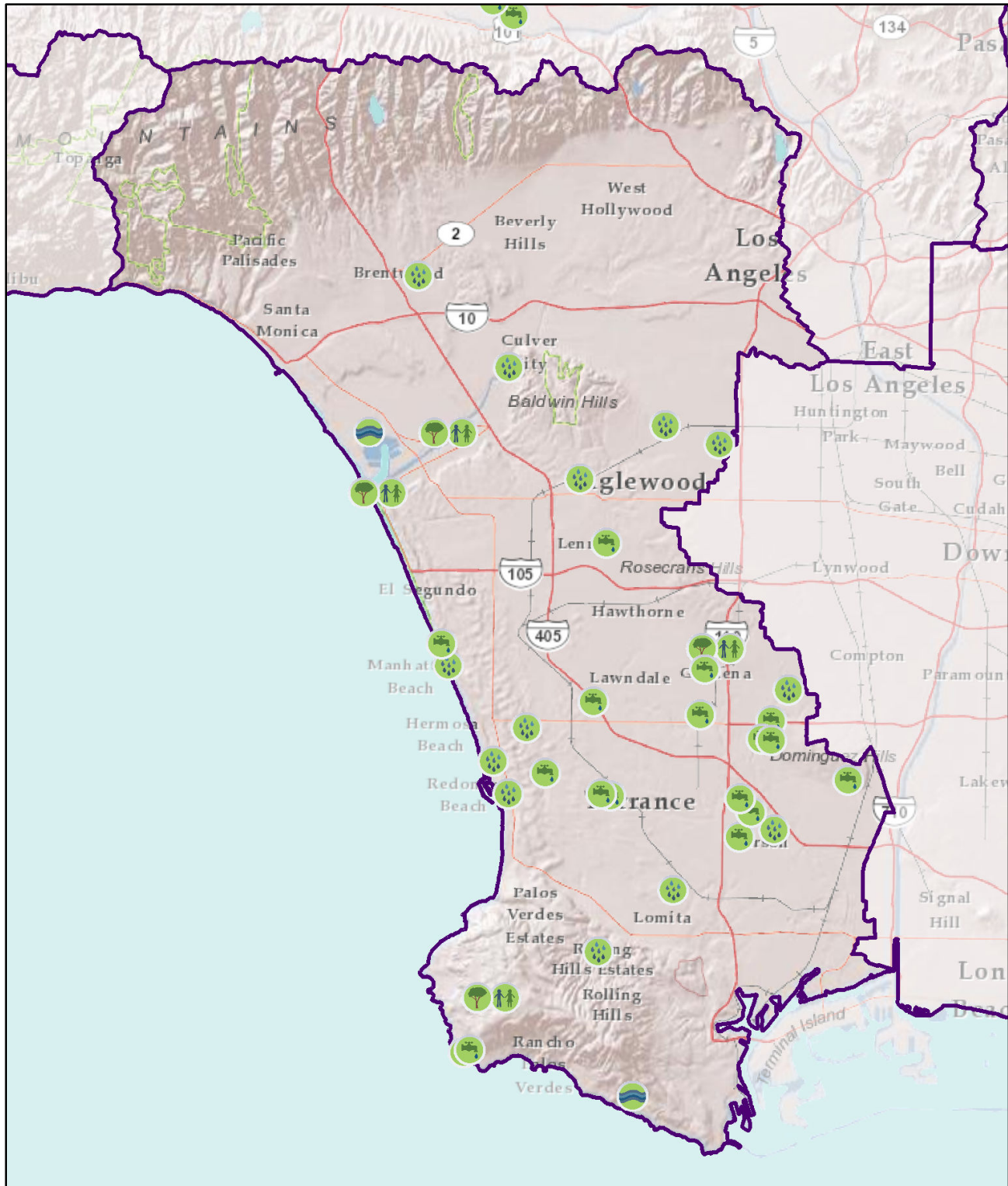
Projects
North Santa Monica Bay Subregion
 Integrated Regional Water Management Plan
 Map 5-8



Project Primary Benefits

-  Water Supply
-  Flood
-  Surface Water Quality
-  Habitat/Open Space/Recreation



Sources: Cal-Atlas, ESRI, LACDPW

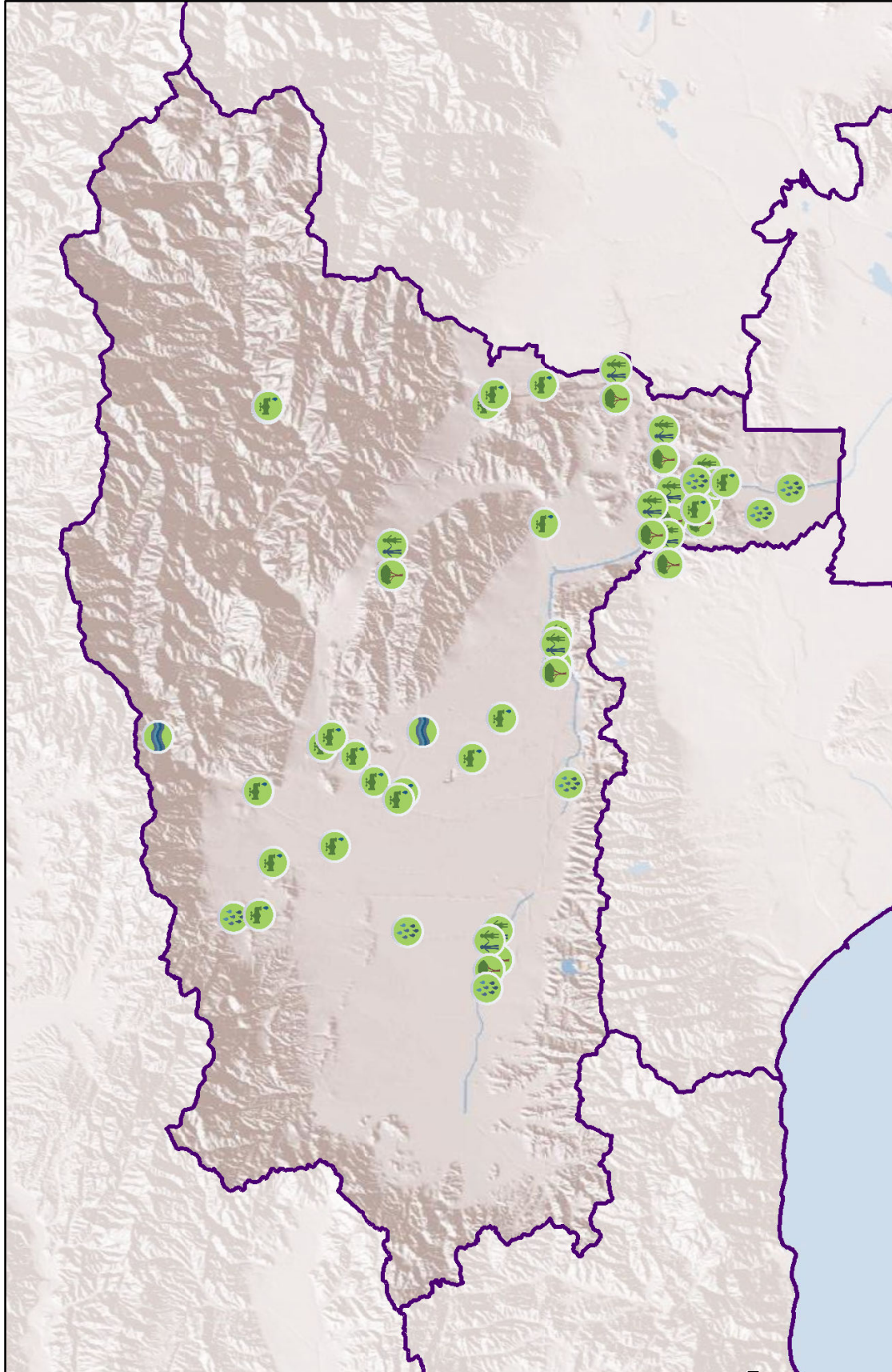





Sources: Cal-Atlas, ESRI, LACDPW

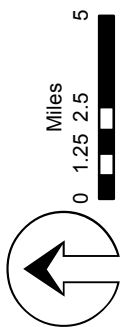
- Project Primary Benefits**
-  Water Supply
 -  Surface Water Quality
 -  Flood
 -  Habitat/Open Space/Recreation

Projects
 South Bay
 Integrated Regional Water Management Plan
 Map 5-9

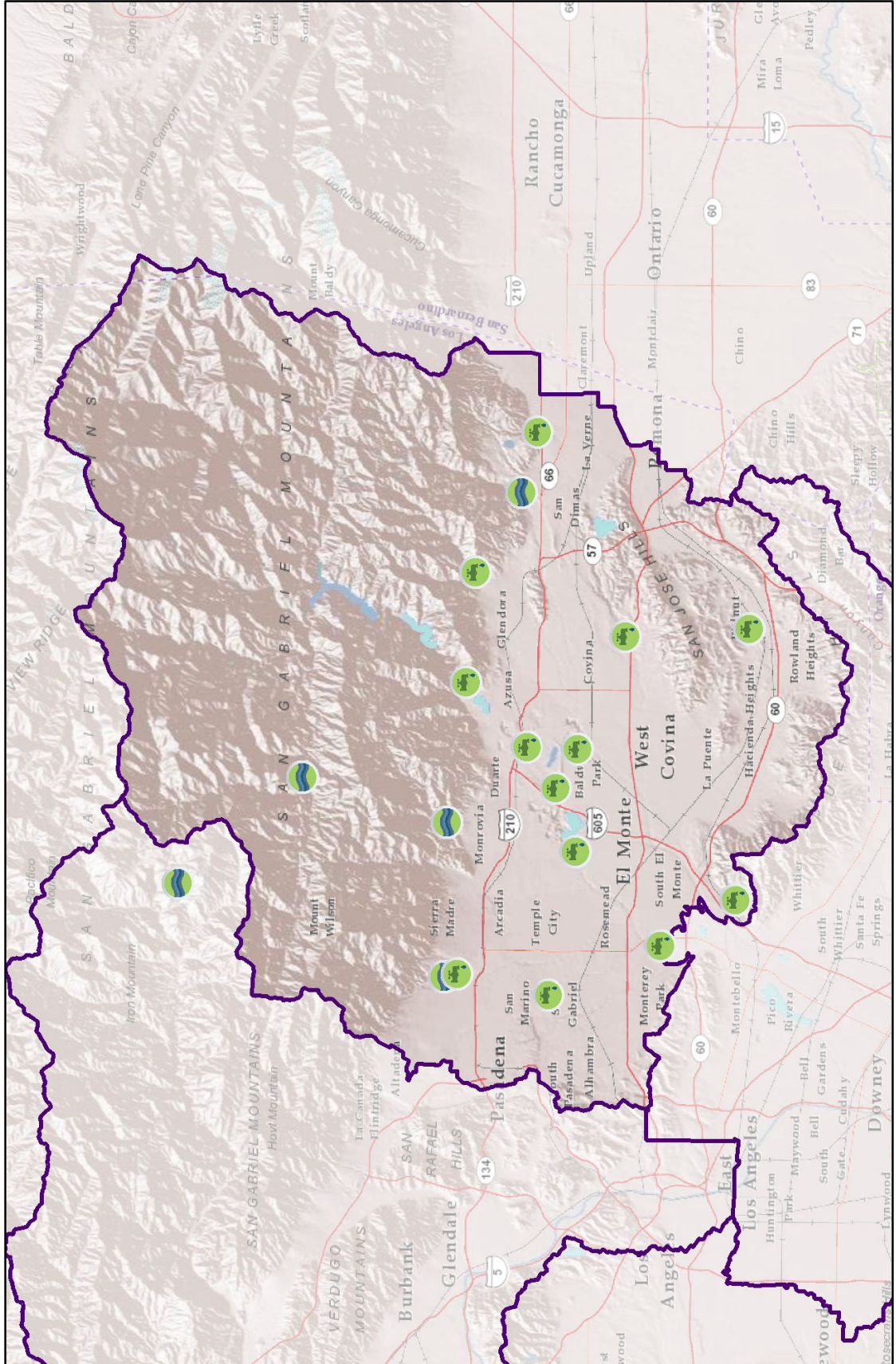


Projects
 Upper Los Angeles River Subregion
 Integrated Regional Water Management Plan
 Map 5-10

- Project Primary Benefits**
-  Water Supply
 -  Surface Water Quality
 -  Flood Habitat/Open Space/Recreation



Sources: CalAtlas, ESRI, LACDPW



Projects
 Upper San Gabriel River & Rio Hondo Subregion
 Integrated Regional Water Management Plan
 Map 5-11

Project Primary Benefits

- Water Supply
- Surface Water Quality
- Flood
- Habitat/Open Space/Recreation

Sources: Cal-Atlas, ESRI, LACDPW, OPTI