

4 Partnership and Multi-benefit Opportunities

Implementation of projects is the vehicle to attaining the objectives and planning targets discussed in Section 3. Integration and collaboration can help these projects achieve synergies and increase their cost-effectiveness in meeting multiple objectives. The GLAC IRWM Region provides a wealth of potential multi-benefit project opportunities for partnership projects including:

- **Local Supply Development:** Alternative supply development such as distributed stormwater capture and recycled water projects are often too costly for a water supply agency to construct on their own for water supply purposes only. The near-term unit cost can be well in excess of the cost of imported water. However, other funding partners focused on the other benefits (like water quality) these projects could provide are often available to help with funding for implementation.
- **Improving Stormwater Quality:** The GLAC Region has prioritized drainage areas based on their ability to improve water quality for the coastal and terrestrial waters. Integrated projects that can provide water quality benefits can be cited relative to that prioritization to achieve the highest benefits.
- **Integrated Flood Management:** Earlier studies, such as the Sun Valley Watershed Plan, demonstrated the potential for similar cost-effective synergies between flood control, stormwater quality management, water supply, parks creation and habitat opportunities. Flood control benefits usually reached through a significant pipe construction project can be accomplished with alternative multi-benefit projects.
- **Open Space for Habitat and Recreation:** When habitat is targeted for restoration, there are often opportunities for cost-effective implementation of flood control, stormwater management and passive recreation walking and biking trails as well.

These synergies and cost effectiveness outcomes can best be attained when the unique physical, demographic and agency service area attributes of the region are considered in meeting the multiple objectives of the IRWM Plan. The GLAC IRWMP has developed tools to assist the GLAC IRWM Region in identifying areas and partnerships conducive to both inter-subregional and intra-subregional integrated project development. This section discusses these tools as well as some preliminary analyses on the South Bay Subregion's potential partnerships and integrated project opportunities.

4.1 GLAC IRWMP 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 (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.

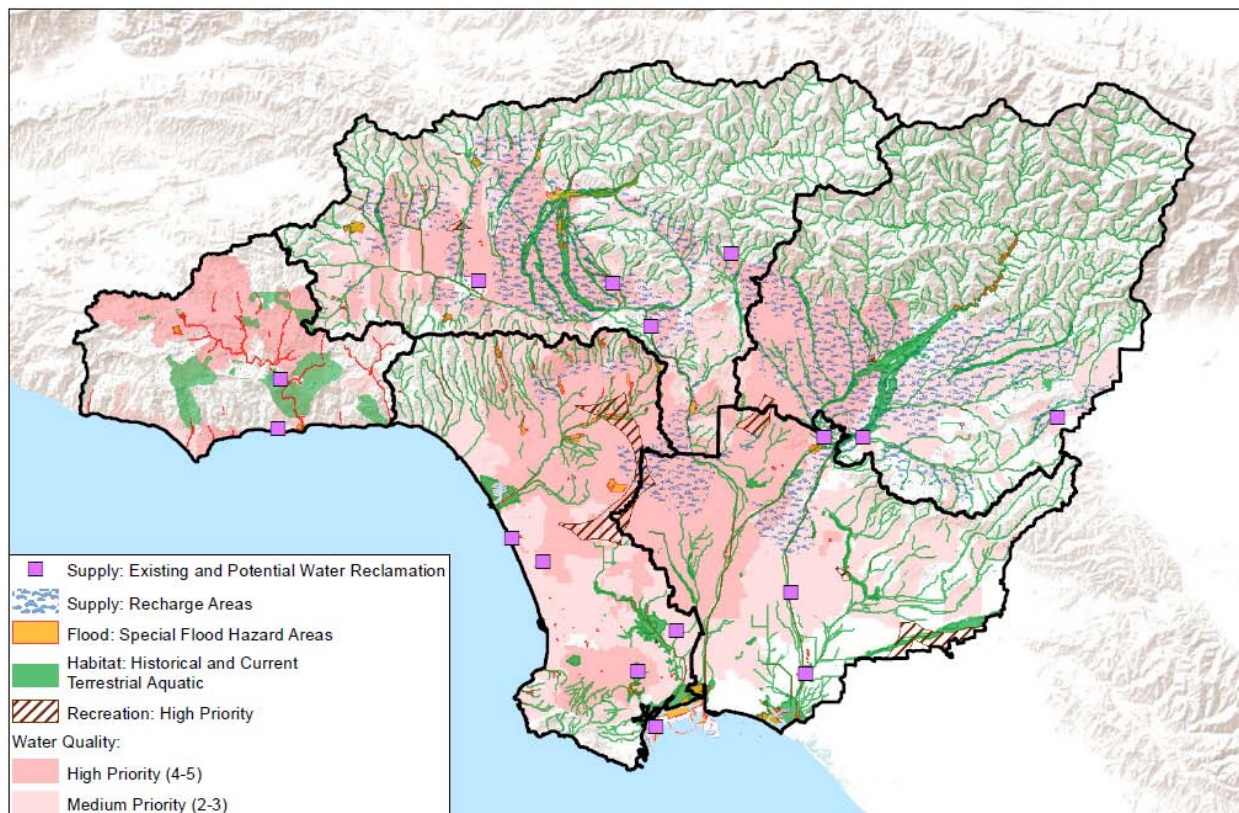
Potential Benefits Geodatabase

The GLAC IRWMP Potential Benefits Geodatabase is a dynamic tool that should be updated as new data is made available in order 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

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Plan, current data layers were overlaid and analyzed. The key layers used are shown in Figure 15 and described in Table 12. It should be noted that these datasets may not be complete or in need of further refinement – 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.

Figure 15: GLAC Region Potential Benefits Geodatabase Layers



Using the Geodatabase

The Geodatabase is a dynamic visual tool. The data layers and maps shown in this Section 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 has web-based project database (OPTI) that geo-references 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 OPTI for public viewing. Either way, by overlaying the current projects on top of the potential benefit layers, additional benefits could be added to existing project or linked to other projects and proponents through those benefits.

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Table 12: 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.
Supply: Existing and Potential Water Reclamation ²	Shows locations of existing wastewater and 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 sources of wastewater 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).

4.1 Integration Opportunities in Upper Los Angeles River

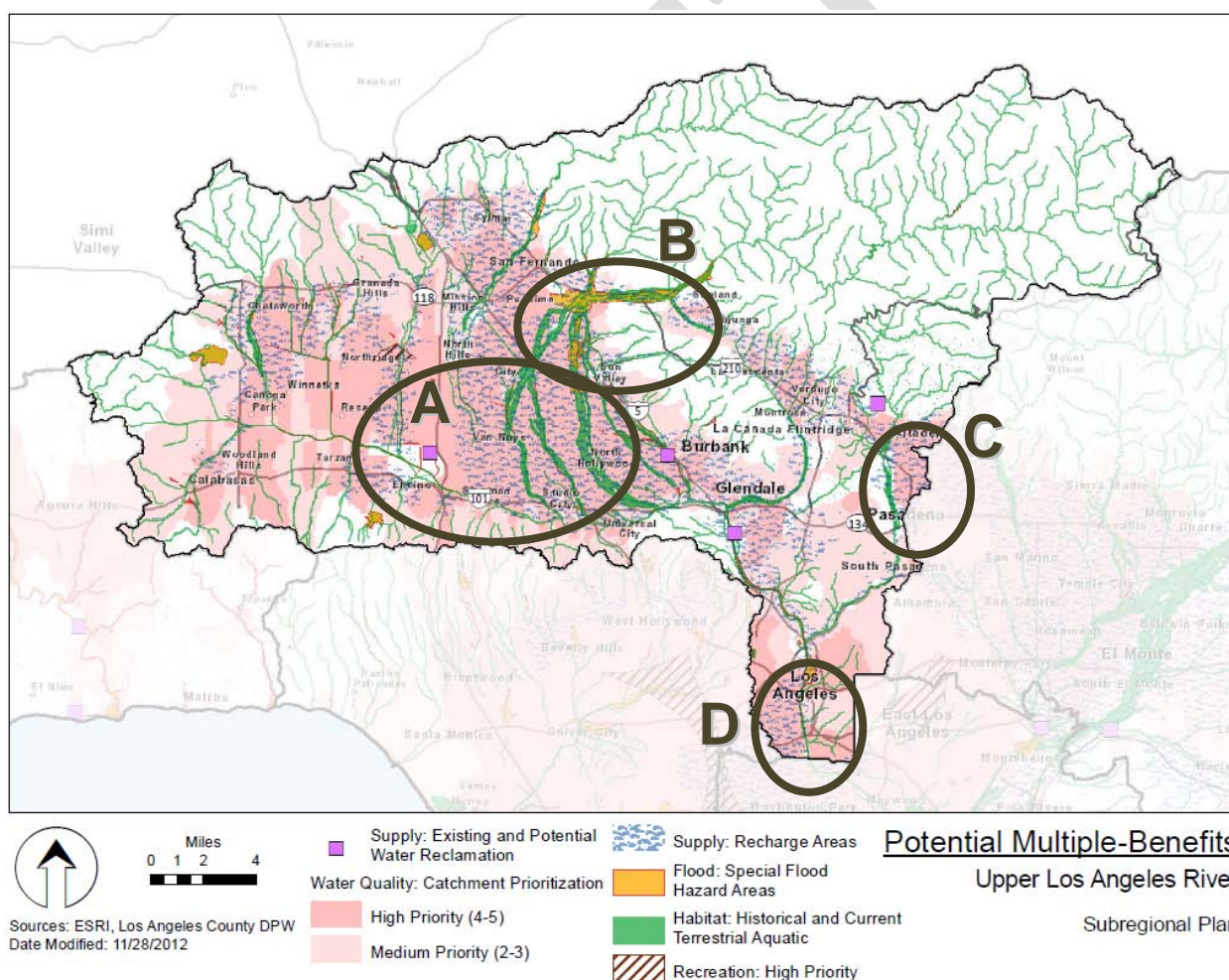
Planning for the GLAC Region is primarily done on a sub-regional level, given that each subregion has a unique set of physical opportunities and stakeholders that create opportunities for project identification and collaboration. Therefore, the Geodatabase layers are more useful when examined and discussed on a subregional scale. Figure 16 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. These areas described here are meant to provide examples of potential multiple benefits areas and are not meant to be a comprehensive inventory of opportunities.

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The Upper Los Angeles River 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 maintain flood control.

Figure 16: Upper Los Angeles River Subregion Potential Multiple-Benefits



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.

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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 Figure 16. 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.

Figure 16 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, LAC FCD and other NGO's 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.

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

Although nearly the entire San Fernando Valley has recharge and water quality improvement potential, there are also some areas that also provide the potential for habitat benefits given historical and current habitat map layers developed in the Open Space for Habitat and Recreation Plan (OSHARP) as well as increased flood management. As Figure 16 shows the Tujunga Creek/Hansen Dam are 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 LAC FCD 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 ULAR and USGRH 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 ULAR Subregion is downtown Los Angeles. As Figure 16 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 LLAR Subregion along with the Water Replenishment District of Southern California and NGOs.