

Objectives

The Ed P. Reyes River Greenway was funded, conceptualized, and implemented by The City of Los Angeles Bureau of Sanitation (LA SAN) Watershed Protection Division (WPD). This Stormwater Greenway demonstrates an innovative and cost-effective solution to multiple challenges and unifies environmental, social, and water quality objectives. Since its completion in 2013, the project has become a model and operational storm water facility that has cost-effectively managed public, ecological, and regulatory objectives.

The site of approximately one-acre consists of a “paper-street” that terminates at a railway easement along the north bank of the Los Angeles River, and two parcels that were dedicated for project use by LA SAN. The combined parcels and street end had become an illegal dumping ground after being ineffectively fenced off, and at times had been reported to host various “criminal encampments”. An existing 36-inch concrete storm drain that had spanned the project site delivered runoff from a 135-acre sub-drainage area to an outfall into the Los Angeles River. Sources of runoff include: Highway & Streets, Industrial, Multi-family Residential, and Commercial.

Water quality objectives were defined as part of a stakeholder-led task force that included environmental groups and regulators. On July 15, 2010 the task force released a report based on site monitoring and analysis that identified the site as a major contributor of bacteria flowing to the Los Angeles River (LAR) Reach 2. Subsequently the Los Angeles Regional Quality Control Board promulgated the Bacteria TMDL for this reach that became effective March 23, 2012.

Construction funding (\$3.4M) was provided by LA SAN.

A Los Angeles River bacteria TMDL and other factors contributing to the project needs include a USACE feasibility study, with a goal of removing concrete from the LAR channel to enhance water

quality, supply, recreational and beneficial uses; a locally disadvantaged and park-poor community; as well as enthusiastic environmentalists and recreational entrepreneurs seeking to expand on any future allowable (REC-1) activities, such as kayaking, fishing, and wading in the LAR. The combined objectives, along with a LA SAN's mission of public education, have led to a storm water solution that has rehabilitated a brownfield site, and provided an ecological resource closer to a natural tributary and pre-development floodplain than a traditional right-of-way. The complete transformation has become a dramatic example of what a multi-benefit stormwater greenway project can achieve.

The Stormwater Greenway treatment begins near the intersection of Avenue 19 and Humboldt Street where 100% of dry weather flow is diverted to a green infrastructure system that consists of (1) a hydrodynamic separator; (2) a solar pump that lifts runoff from a wet well to a level spreader & spillway or "waterfall"; (3) a vegetated forebay; (4) a dry-basin with a gravity fed infiltration gallery on its flow line that leads to a (5) sub-surface collection vault, which either recirculates back to the forebay from the lowest point; or builds, to flow above grade where (7) an overflow standpipe returns larger flows to the original stormdrain, and to the LAR outfall.

In dry weather, flows are skimmed and recirculated within the forebay, where they are leveled by a recycled water source to produce a "water feature" that also provides year-round support for amphibians, mosquitofish (*Gambusia*), and riparian plant species. Unlike the drought resistant plants on the banks, the plant materials in the forebay thrive in moist soils, and so can be sustained and cultivated in the forebay, making them available after times of drought, to recolonize the dry-basin downstream.

In larger, or wet-weather events storm flows overtop a rock weir between the forebay, and dry basin to infiltrate to a sub-surface bio-infiltration gallery beneath 18" of vegetated soils. Depending on volume, flows may rise above grade to the standpipe, original stormdrain, and LAR outfall.

The wet-forebay and dry-basin allows the system to adapt to various flow scenarios, with the option to bypass the entire system in large events.

This approach demonstrates an effort by LA SAN to execute the visions of our City elected officials to become green sustainable leaders, and environmental stewards.

LA SAN has sought and identified alternatives to protect the facility, and on-site equipment since project completion. The project operations balance site protection with sharing and opening the new storm water facility with the community. Through effective outreach to residents, church groups, and the neighborhood council, LA SAN and our City elected office have demonstrated leadership and environmental stewardship. Collaboration was a key factor in insuring that all parties objectives were met within the operational imperatives of a "Stormwater Greenway Facility" rather than a "Passive Park". Ongoing coordination between stormwater utility crews, monitoring and operational training has spurred changes in long-term practices.

The project opened in November 2013, and in the months that followed it has hosted plein aire events, community walks, nature discussions, plantings, with a number of enthusiastic reviews on local websites. From April-October the facility is now open to public use from 7:00 AM to 7:00 PM, and from 9:00 AM to 5:00 PM November to March. The efforts that were directed by LA SAN towards extending environmental services with regulatory and funding requirements, have offered a much needed resource for a blighted community, and have demonstrated the commitment by LA SAN to storm water quality as well as its environmental and social missions.

The Department of City Planning (DCP) has designated Humboldt Street as an “Innovation Corridor” [*Cornfields Arroyo Seco Specific Plan*, (CASP)]. And CASP has modeled a new street cross-section called a “Stormwater Greenway” within CASP. DCP’s *Complete Streets Manual* is set to be released in 2015. This and the CASP document have proposed this project as a model for Stormwater Greenways to host stormwater basins, bio-swales, or other green infrastructure in the public right-of-way.

Conclusion

With innovation and collaboration, effective alignment of environmental and social objectives can result in cost-effectiveness. A multi-benefit approach such as used to execute the Ed P. Reyes River Greenway has met funding and environmental objectives, the goals of the stakeholder study, water quality objectives, the community open space objectives, and LA SAN’s environmental enhancement and stewardship objectives. This effort represents a milestone for future operations and for promulgation of green infrastructure within the City of Los Angeles. It has demonstrated the capacity of the LA SAN to move smoothly from conception to execution of an environmental project through systematic design, technical revisions, and a comprehensive outreach program driven by environmental and public service commitments. The result of this approach was demonstrated by the Ed P. Reyes River Greenway project, and has become an elegant model of a cost-effective, and sustainable environmental solution.