National Association of Flood & Stormwater Management Agencies

2023 Innovative Water Projects Award Application

For Projects Started after January 1, 2018, and completed by March 31, 2023

March 31, 2023, 11:59pm EST Deadline for Application Submission

Award Applications can only be submitted electronically at
nafsma2023awards@NAFSMA2022.onmicrosoft.com

If this is a partnered project, please list both entities and contact information for both.

Agency/Company: Los Angeles County Public Works
Project Name: Ladera Park - Stormwater Improvement Project
Contact Name(s): Bruce Hamamoto
Address: 900 S Fremont Avenue
Email(s): BHamamo@dpw.lacounty.gov
City: Alhambra State: CA Zip: 91803
Phone: (626) 484-9826

For Public Agencies – Service Population: ☑ More Than 250,000 ☐ Less Than 250,000 (Check One)

For Private Firms – Number of Employees: ☐ More Than 30 ☐ Less Than 30 (Check One)

Please submit one combined PDF document with your completed application form, written description and supporting graphics. **Your PDF file size should be no larger than 5MB. Please note that all entries may be used in a video that will be widely distributed.**

Submission Criteria:

Submittal must be made digitally and contain each of the following:

1) Completed application form.
2) Written explanation of why the submission should be considered *(please limit to 3,000 words).*
3) Supporting graphics
   (limit is 10 items; examples: photos, diagrams, plans, charts, tables, etc.).

Please address the following points in the written explanation portion of your submission.

- Project Description (site plan or diagram required plus description; limit 500 words)
  - What was the purpose of the project – water quality, drainage or urban flooding, flood risk management, all, or other?
  - What were the requirements for the project? How did the project go above and beyond the requirements?
- What Were the Benefits – **Stress Unique Multi-Purpose Benefits** (limit 500 words)

  Examples of features and benefits that can be highlighted in project submissions include (but are not limited to) environmental justice, economic, water conservation, recreation, enhanced human health and well-being, endangered or protected species habitat creation, use of natural features and green infrastructure, and community enhancement.
  - What were the benefits?
  - What issues were addressed?
- Economic Impact (limit 400 words)
  - What constraints helped shape the project?
  - What was the cost of the project?
  - What were the funding sources for the project?
  - Is the project a retrofit or new construction?
- Outreach Efforts (limit 400 words)
  - How was the project promoted to other resource professionals and developers?
  - What creative methods were used to provide education to public audiences both short and long term?
  - How was outreach evaluated, and what audiences were most successfully reached?
  - Include copies of promotional pieces if applicable
- Results (limit 500 words)
  - What integration and/or coordination with various regulatory agencies was required for the project?
  - How does the project demonstrate an efficient use of resources?
- Maintenance (limit 400 words)
  - Describe: Monitoring , Upkeep, Costs and Reporting
- Conclusion (limit 300 words)
  - What constraints or challenges were overcome?
  - How was quality of life affected positively?

I consent that my application submission can be used in Awards Video. ☑

Please contact Dusty Williams: dustyw2015@gmail.com or 951-313-0257; Sunny Simpkins sunnys@nafsma.org or 503-705-4944 with questions.

2023 Innovative Projects Award Application
Ladera Park Stormwater Improvements Project

Project Description

- **What was the purpose of the project – water quality, drainage or urban flooding, flood risk management, all, or other?**
- **What were the requirements for the project? How did the project go above and beyond the requirements?**

The Ladera Park Stormwater Improvements Project (Project) is an innovative stormwater capture project located within the densely urbanized Ballona Creek Watershed in the unincorporated community of Ladera Heights in Los Angeles County. The Project integrates both below-ground and above-ground infrastructure to capture stormwater runoff from a 110-acre urban drainage area to attain multiple benefits. The primary goal of the Project is to improve the water quality of the downstream waterbodies by diverting polluted urban runoff. The Project also incorporated additional benefits, including enhancing water conservation, improving recreational amenities, and providing educational signage for the local community.

The below-ground features of the project include a diversion structure to divert water from a storm drain, a pre-treatment system to treat the diverted water, and 20 dry wells to infiltrate the treated water into the ground. The Project is estimated to capture approximately 40-50 acre-ft urban runoff on an annual basis. The Project also features a unique water harvesting system that further treats a portion of the captured water and reuses it for irrigation of the above-ground landscape. The water harvesting system features a 1,500-gallon storage chamber.

The above-ground improvements include the replacement of over 12,500 square-feet of water consuming turf with a demonstration garden, consisting of approximately 3,000 drought-tolerant plants, 8 new trees, educational signages, a shade structure, benches, and a walking path to provide passive recreation to the local community.

Overall, the Project not only improves the water quality of the downstream Ballona Creek and ocean waters by reducing bacteria, toxic pollutants, and trash, but also goes above and beyond to provide a multitude of other benefits to the local community, including water conservation, recreational amenities, and educational garden.

Benefits & Issues Addressed

Environmental Justice/Health - The Project's primary benefit is improving the water quality of downstream waterbodies by diverting polluted urban runoff into an underground infiltration

system. Poor water quality can lead to long-term and short-term impacts on the wellness of residents, wildlife, aquatic life, and the environment. As such, the Project effectively reduces the amount of debris, trash, bacterial, toxic, and metal pollutants being discharged into Centinela Creek and ultimately Ballona Creek, and Santa Monica Bay.

Economic - The above-ground improvement to the park would result in an increased number of people visiting the park and utilizing its amenities for recreational purposes, social gathering, and other events. This increase in park usage and visitors can attract and encourage more local business and commercial activities. In addition, the construction of this project has implemented the County's Local and Targeted Worker Hire Policy which states that projects with a budget greater than $2.5M, at least 30% of total California construction labor hours worked on each project must be performed by a qualified Local Resident and at least 10% of total California hours worked on each project shall be performed by County residents classified as a Targeted Worker facing barriers to employment.

Water Conservation - The Project is expected to infiltrate up to 40-acre-feet (13 million gallons) of stormwater per year and provide up to 149,000 gallons of irritation water per year on average. Prior to this Project, portable water was used as the primary source for irrigation of the park. This Project effectively reduces the reliance on portable water use by replacing irrigation water sources with treated stormwater. The remaining stormwater will percolate underground to help replenish the local groundwater. In addition, the above ground improvements such as shade structures, drought tolerant landscape, and trees help reduce local heat island effect and reduce water consumption in the park.

Recreation/Community Enhancement - The Project provides community enhancements by constructing a watershed themed educational demonstration garden with low-impact development (LID) features. Approximately 3,000 new drought-tolerant plants and eight trees were planted to enhance urban greening. The demonstration garden features bioswales, a walking path, a shade structure, and benches. The Project also included the installation of educational signages to promote public awareness of water quality and conservation, and further encourage community expressions and stewardship.

Centinela Creek, Ballona Creek, and Santa Monica Bay were identified by the Los Angeles Regional Water Quality Control Board as impaired waterbodies for not meeting water quality standards. As a result, Total Maximum Daily Loads (TMDLs) have been established for these waterbodies. To effectively address these water quality concerns, Los Angeles County is implementing regional best management practices (BMPs) to capture polluted urban dry weather runoff and 85th percentile 24-hour storm event volume from heavily developed areas of unincorporated County.

Ladera Park was strategically selected as a favorable location for a regional BMP site to address water quality concerns for runoff from 110 acres in the Ballona Creek Watershed. The Project also created opportunities to enhance park amenities for nearby communities and encourage recreation.

Economic Impact

- **What constraints helped shape the project?**
- **What was the cost of the project?**
- **What were the funding sources for the project?**
- **Is the project a retrofit or new construction?**

Constraints

The primary constraint for this project has been finding the right location and space that would help to capture runoff from a large area as much as possible. The space constraint has led to the use of an underground infiltration system. Another constraint has been addressing the local communities' needs that shaped the above-ground design of the project, including recreational amenities and an educational garden. Construction of the Project also took place during the Coronavirus (COVID-19) pandemic when we encountered supply chain challenges from out of state. Lastly, finding funding has been a great challenge, which led to seeking grants from various sources.

Cost and Funding

The total cost of the project is $10.2 million. Funding for the project was obtained from various sources, including the Safe Clean Water Program ($2M), State Proposition 84 grant ($3.7M), and the County's Capital Projects Fund ($4.5M). The operation and maintenance (O&M) cost for the project is estimated to be approximately $360K per year.

Retrofit/New Development

The Project involved retrofitting existing facilities as well as adding new infrastructure.

Outreach Efforts

How was the project promoted to other resource professionals and developers?

The Project received support from multiple local municipality and non-government organizations including City of Los Angeles Bureau of Sanitation, Los Angeles County Department of Regional Planning, Heal the Bay, Los Angeles County Department of Parks and Recreation (Parks and Recreation), and Water Replenishment District.

What creative methods were used to provide education to public audiences both short and long term?

Los Angeles County Public Works (Public Works) conducted public outreach alongside Parks and Recreation to disseminate information to the community on the purpose and benefits of the Project, and to solicit input, concerns, and comments from the community. Public Works held three community meetings during the project planning and design to solicit community support and input. In addition, prior to construction, informational flyers were posted and made available to the affected communities. Educational signage has been installed at the project location informing park patrons/residents of the Project and the benefits provided. Public Works also created a website for the Project to help provide updates to the community regarding upcoming community meetings, construction updates, construction documents, schedule, and display a drone video highlighting the project components. Additionally, Watershed Coordinators hired through the Safe Clean Water Program for the Central Santa Monica Bay Watershed Area have assisted with public engagement for the Project by setting up field tours and providing transportation to the site. The watershed coordinators engaged and attracted underserved communities throughout the Central Santa Monica Bay Area. The Project was also featured in news articles. Public Works will continue to keep the public educated about the Project's benefits through field tours and Project website.

How was outreach evaluated, and what audiences were most successfully reached?

During the outreach efforts, Public Works sent out mailers to residents that lived within a half mile radius of the Project site. In addition, Public Works also posted information on the upcoming community meetings on their social media sites and Project website. The community meetings were held at a community center that was walking distance from the Project location. Overall, there was a great turnout during the meeting where residents had the opportunity to provide their feedback and help aid in the development of the Project concept.

Results

What integration and/or coordination with various regulatory agencies was required for the project?

How does the project demonstrate an efficient use of resources?

The Project has been included in the Ballona Creek Watershed Management Program (WMP) as a priority project. The WMP was developed to meet the requirements of the Municipal Separate Storm Sewer System (MS4) Permit and has been approved by the Los Angeles Regional Water Quality Control Board.

Since Ladera Park falls under Parks and Recreation's jurisdiction, the Project Team coordinated and involved DPR throughout project development. A memorandum of understanding (MOU) has been prepared between Public Works and Parks and Recreation to ensure all maintenance responsibilities are clearly identified.

In highly urbanized Los Angeles, the land is very expensive. To this end, the utilization of County-owned parks has resulted in significant cost-savings. By keeping the stormwater system underground, the park's recreational space has been retained and enhanced.

Public Works conferred with Public Health regarding the safety standards needed to use stormwater for park irrigation. It was determined that Project treatment systems were sufficient for sub-surface irrigation. The local Vector Control District also reviewed Project plans so as to mitigate vectors, specifically mosquitoes.

Maintenance

Monitoring, Upkeep, Costs and Reporting

Public Works is committed to conducting monitoring and maintenance of the Project to ensure the meeting of goals. Monitoring will assess the overall effectiveness of the Project's stormwater components with the metrics specific to improving water quality and increasing water conservation. A monitoring plan and O&M manual has been developed for the Project. The annual monitoring cost is estimated at $120,000 and the annual O&M cost is estimated at approximately $360,000.

The above-ground amenities, such as the demonstration garden, shade structure, benches, plants, and LID features are maintained by Parks and Recreation. With a landscape of drought tolerant plants, the above-ground maintenance is expected to be minimal without special care or attention once the plants have been established.

The Project's below-ground infrastructure, such as the diversion system, pre-treatment system, storage chamber, splitter structure, and infiltration wells will be maintained by Public Works. These components will require specialized staff, equipment, or training in order to properly operate and maintain them. Public Works will also maintain the Project's water harvesting system.

Conclusion

What constraints or challenges were overcome? How was quality of life affected positively?

The Project is a regional multi-benefit project that aims to primarily improve and address water quality concerns by reducing pollutants in Centinela Creek, Ballona Creek, and ultimately Santa Monica Bay. The Project also features multiple other benefits that bring positive impacts to the nearby communities and residents of Ladera Heights. These benefits include increased water conservation, enhanced recreational opportunities, increased public awareness and local educational amenities, and local business growth.

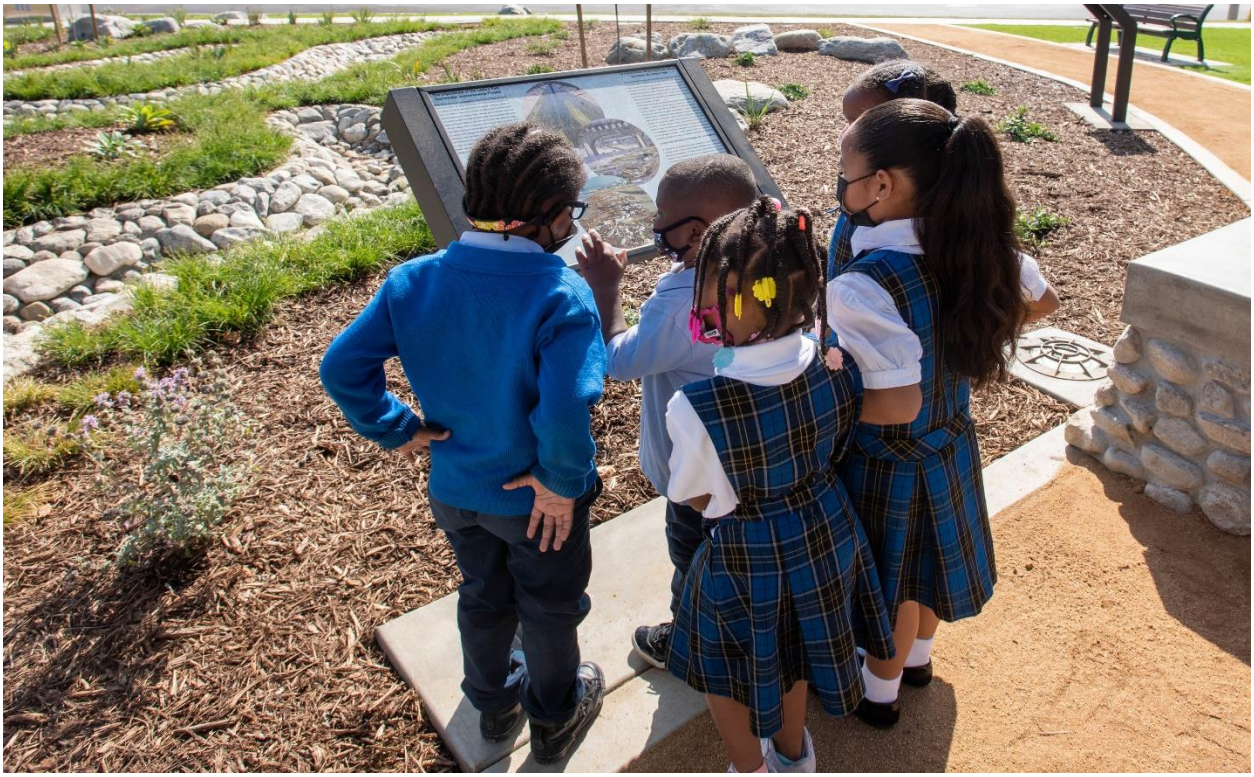
The Project is composed of above- and below-ground improvements. The below-ground improvement includes diversion, pre-treatment, and infiltration systems, all will be maintained

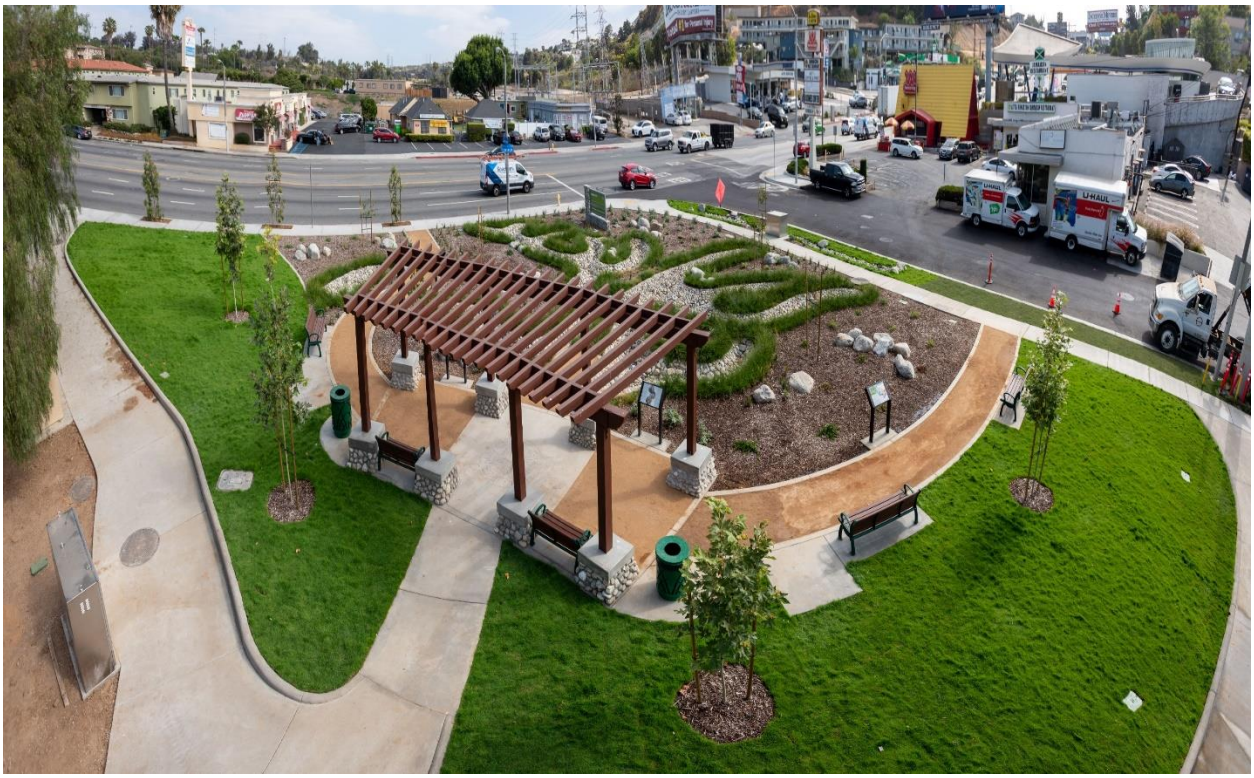
and overseen by Public Works. These underground improvements will divert polluted urban runoff with the goal to improve the water quality of downstream waterbodies by preventing debris, trash, bacteria, and toxic chemicals from reaching these waterbodies. The diverted water will be treated and used for augmenting local groundwater as well as for irrigating the local landscape. The above-ground improvements, including the demonstration garden, shade structure, benches, walking path, and trees will serve to improve the wellbeing and quality of life for the nearby communities.

The Project overcame various challenges, including funding, the COVID-19 pandemic, and regulatory deadlines. The COVID-19 pandemic hit following the start of project construction, which impacted material supply. Further, the owner of the construction company unexpectedly passed away during construction. Despite these challenges, the construction company worked closely with Public Works to ensure the successful completion of the Project.

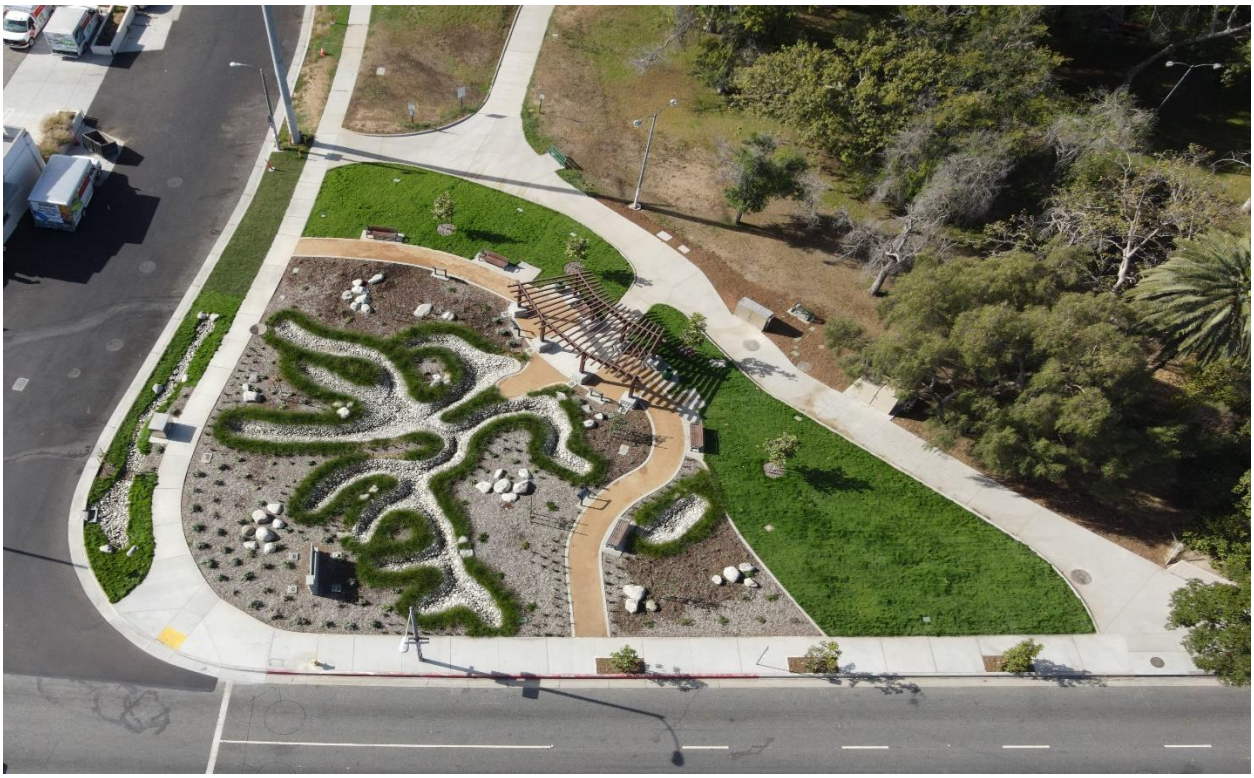
Supporting Graphics

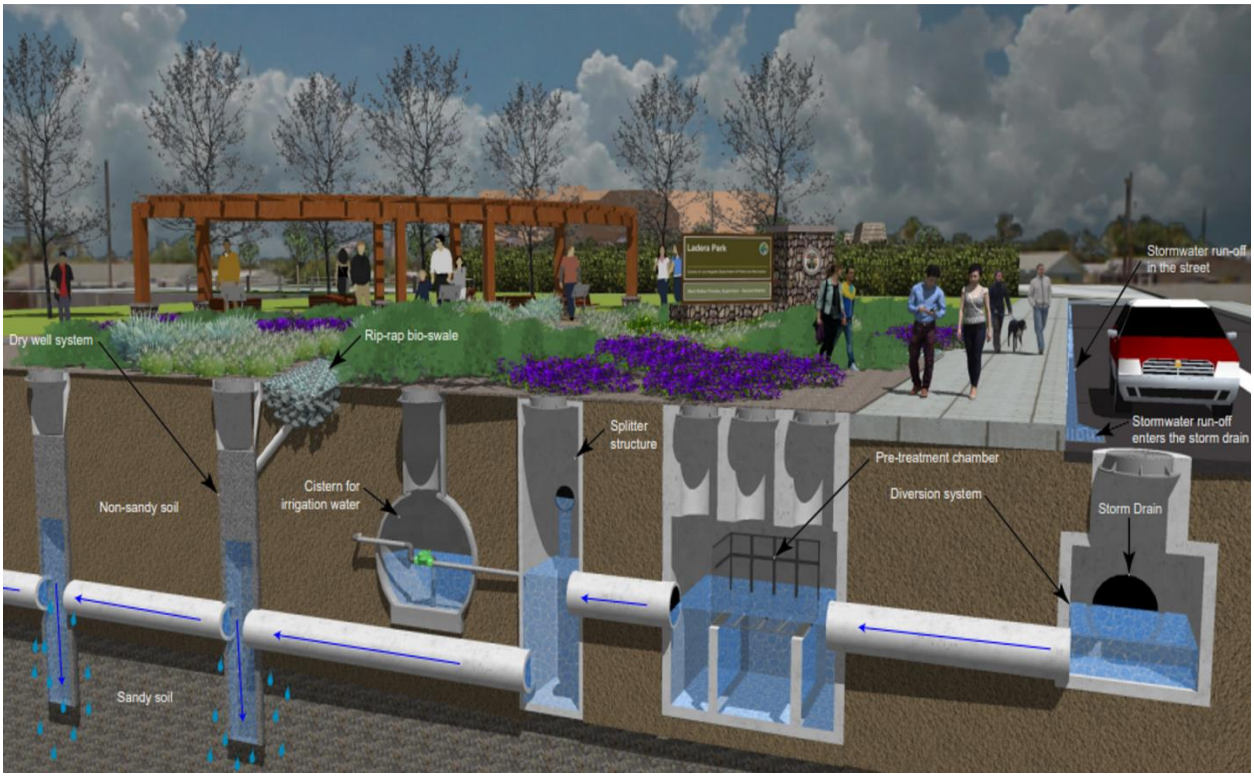
- See Pages 7-10 for Photos & Renderings
- **Video URL:** Ladera Park_Video.mp4

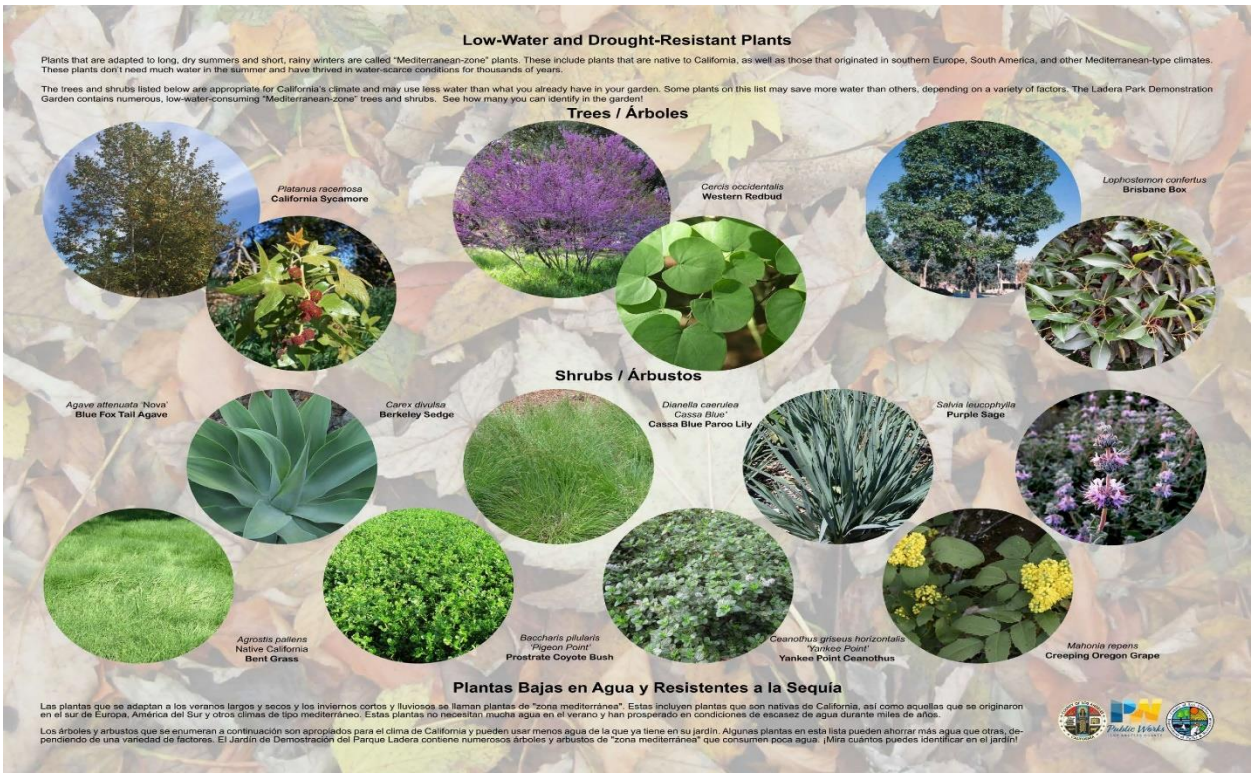


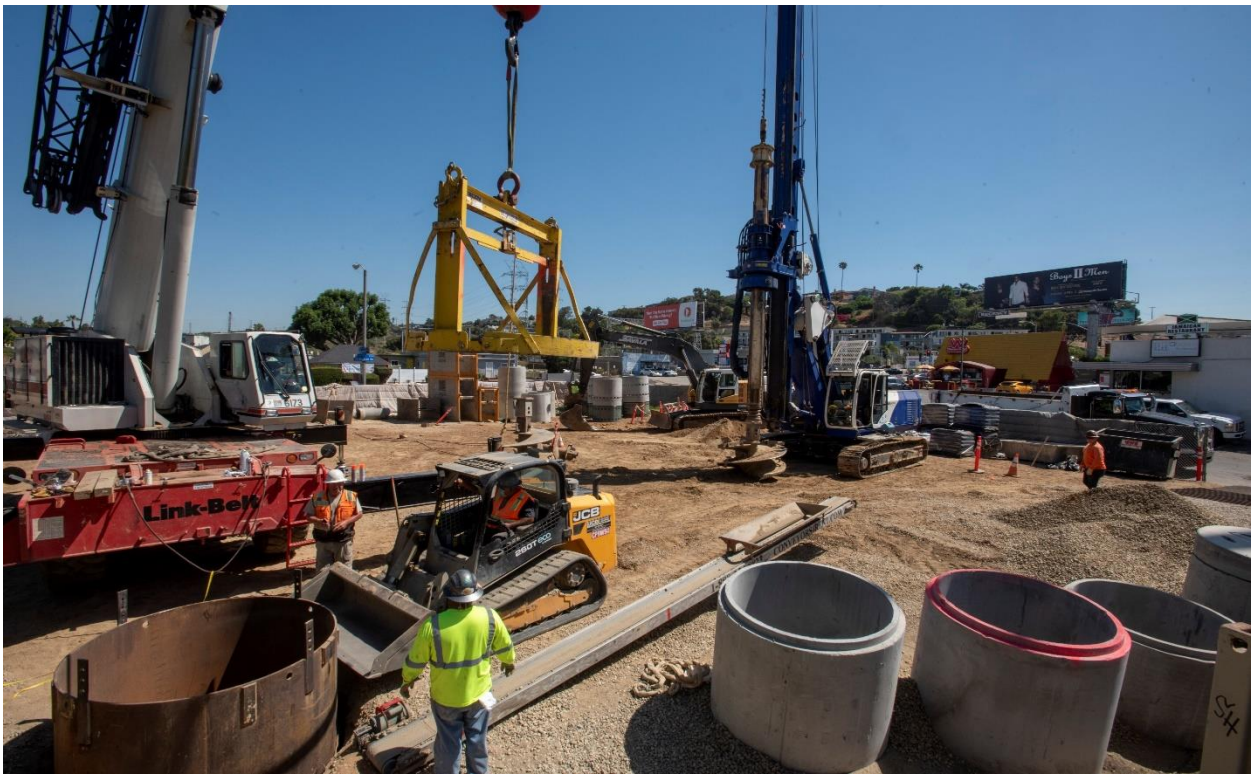



Ladera Park
County of Los Angeles - Department of Parks and Recreation




Ladera Park
Stormwater run-off in the street
Dry well system
Rip-rap bio-swale
Splitter structure
Stormwater run-off enters the storm drain
Pre-treatment chamber
Diversion system
Storm Drain
Cistern for irrigation water
Non-sandy soil
Sandy soil


Low-Water and Drought-Resistant Plants
Plants that are adapted to long, dry summers and short, rainy winters are called "Mediterranean-zone" plants. These include plants that are native to California, as well as those that originated in southern Europe, South America, and other Mediterranean-type climates. These plants don't need much water in the summer and have thrived in water-scarce conditions for thousands of years.
The trees and shrubs listed below are appropriate for California's climate and may use less water than what you already have in your garden. Some plants on this list may save more water than others, depending on a variety of factors. The Ladera Park Demonstration Garden contains numerous, low-water-consuming "Mediterranean-zone" trees and shrubs. See how many you can identify in the garden!
Trees / Árboles
Platanus racemosa
California Sycamore
Cercis occidentalis
Western Redbud
Lophostemon confertus
Brisbane Box
Shrubs / Árbustos
Agave attenuata 'Nova'
Blue Fox Tail Agave
Carex divulsa
Berkeley Sedge
Dianella caerulea
Cassa Blue'
Cassa Blue Paroo Lily
Salvia leucophylla
Purple Sage
Agrostis pallens
Native California
Bent Grass
Baccharis pilularis
'Pigeon Point'
Prostrate Coyote Bush
Ceanothus griseus horizontalis
'Yankee Point'
Yankee Point Ceanothus
Mahonia repens
Creeping Oregon Grape
Plantas Bajas en Agua y Resistentes a la Sequía
Las plantas que se adaptan a los veranos largos y secos y los inviernos cortos y lluviosos se llaman plantas de "zona mediterránea". Estas incluyen plantas que son nativas de California, así como aquellas que se originaron en el sur de Europa, América del Sur y otros climas de tipo mediterráneo. Estas plantas no necesitan mucha agua en el verano y han prosperado en condiciones de escasez de agua durante miles de años.
Los árboles y arbustos que se enumeran a continuación son apropiados para el clima de California y pueden usar menos agua de la que ya tiene en su jardín. Algunas plantas en esta lista pueden ahorrar más agua que otras, dependiendo de una variedad de factores. El Jardín de Demostración del Parque Ladera contiene numerosos árboles y arbustos de "zona mediterránea" que consumen poca agua. ¡Mira cuántos puedes identificar en el jardín!


Link-Belt
JCB