

MERCED AVENUE GREENWAY IMPLEMENTATION PROJECT

WaterSMART CWMP Phase II, FOA No. BOR DO 21 F002
November 17, 2020



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COUNCIL FOR
**WATERSHED
HEALTH**

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I. Executive Summary

Date: November 17th, 2020

Primary Applicant: The Council for Watershed Health

Secondary Applicant: City of South El Monte

City, County, State: City of South El Monte, Los Angeles County, California

The Council for Watershed Health submits this funding request to implement a water quality treatment train made up of stormwater Low Impact Development (LID) Best Management Practices (BMPs) along 0.65 miles of Merced Avenue in the City of South El Monte, California. The Merced Avenue Greenway Implementation Project will accomplish WaterSMART Cooperative Watershed Management Program Phase II goals by addressing water quality concerns for downstream receiving water bodies and promoting sustainable watershed management practices. This Project is a result of CWH's Capacity Building Technical Assistance effort with the local community-based organization, ActiveSGV. CWH partnered with ActiveSGV, Climate Resolve, and the City of South El Monte to secure funding from a diverse group of stakeholders to support the design and eventual construction. The Project location within City of South El Monte, a highly urbanized and severely disadvantaged community located in the San Gabriel Valley of Los Angeles County, is bounded by three major water features – the Rio Hondo River to the west (a tributary of the Los Angeles River), the San Gabriel River to the east, and to the south, Legg Lake within Whittier Narrow Recreation Area, a 1,492-acre park. The street's existing single-purpose design lacks the appropriate infrastructure to capture and treat urban stormwater runoff before it reaches these water bodies. Project funds will support the installation of bioretention stormwater BMPs, which are a key component of the water quality treatment train. The Project's treatment train will capture, slow, treat, and infiltrate storm and dry weather runoff along Merced Avenue, reducing pollutant loads and volumes discharged to downstream receiving waters, improving water quality, and contributing to groundwater augmentation of the San Gabriel East Basin. The Project will capture and treat the entire 85th percentile runoff event from 45.71 acres of the contributing Drainage Management Area (estimated 21.5 acre-feet per year), and infiltrate approximately 6.48 acre-feet per year. The Project is expected to reduce annual pollutant loads entering downstream receiving waters, reducing metals by 50% and total suspended solids (TSS) by 83%, thereby helping to meet regional watershed management goals for the 303(d) listed Rio Hondo and the Los Angeles River Total Maximum Daily Loads (TMDLs). The Project promotes enhanced watershed management by re-establishing processes of the natural hydrologic cycle and enhancing habitat. The Project's quantifiable benefits will incentivize agencies to further explore and implement similar projects that improve regional self-reliance, water security, and adaptation to climate change. As a green street, the Project is a programmatic element of the Enhanced Watershed Management Plan for the Upper Los Angeles River Watershed and the project has been incorporated into the Greater Los Angeles County Integrated Regional Watershed Management Program. WaterSMART Cooperative Watershed Management Program Phase II grant activities will be completed within two years of grant award, with work being conducted from approximately September 2021 through March 2023. The project is not located on Federal lands or on a Federal facility.

II. Project Location

Provide detailed information on the proposed project location or project area including a map showing the specific geographic location.

The Merced Avenue Greenway Implementation Project is located in the City of South El Monte, within Los Angeles County, California. The project latitude is 34.04711N and longitude is -118.05127W.

See Appendix I for the project map.

III. Technical Project Description

How the project will address critical water supply needs, water quality concerns, and restoration needs of the watershed

The City of South El Monte (City) lies at an important crossroads from both a geographic, hydrologic, and historical perspective. The City is bounded on two sides by the San Gabriel Valley's two major drainage features – the Rio Hondo River on the west and the San Gabriel River on the east. Originally known as “the wooded place between the rivers,” the two major drainage features drew people to the area, provided habitat for plant and animal life, supplied water for agriculture, and offered recreational opportunities. To the south lies Whittier Narrows Recreation Area -

“Shaping the bottom of the San Gabriel Basin, the Whittier Narrows forms a division between the San Gabriel Basin to the north and the Central Basin and the Los Angeles Coastal Plain to the south. It is an area of geologic uplift between the Puente-Chino Hills complex on the east and the Montebello Hills on the west. This formation provides a barrier to groundwater movement. It is a natural collection and convergence point for both surface water and groundwater...Its moist conditions result in significant expanses of oak, sycamore and willow riparian woodlands and associated wetlands” (San Gabriel River Master Plan).

The Project area is within the 33,747 acre Alhambra-Rio Hondo Watershed (HUC 180701050303) and overlies the Main San Gabriel Groundwater Basin (4-013). The watershed area drains to the Rio Hondo, then into the Los Angeles River, and finally out to the Pacific Ocean. The land use in the watershed is predominantly forest in the upper watershed and urban land use (residential, commercial, and industrial) on the alluvial plain. Historically, the diverse environments of the watershed supported many species, both terrestrial and aquatic. The San Gabriel River itself once functioned as a major habitat corridor, but urban development has fragmented remaining habitat along the river corridor and throughout the watershed. Only small patches of habitat remain along the river, one of which being the Whittier Narrows Recreation Area.

Throughout the 1930s, the City and much of the region was agricultural, in part as a result of these local water sources. During and after World War II, the City, due to its location adjacent to rail lines and new freeways, successfully attracted a broad base of industrial users. The industrialization and urbanization of the City replaced many of these natural resources and brought increased vehicular use to the Merced Avenue Corridor. Development at the time resulted in wide streets and intersections favoring large trucks, long blocks with few safe pedestrian crossings, widened driveways designed for delivery vehicle access, and large industrial flat roof structures and hardscapes that lack permeable surfaces, vegetative cover, and sufficient stormwater infrastructure to manage runoff from the nearby industrial land uses. Although many businesses and industries remain today, the corridor experiences significantly less traffic than in prior years, thus creating an opportunity for enhanced watershed

management, redesigning the street to reestablish natural hydrologic processes, improving stormwater management and water quality, climate change adaptation, and environmental health.

Currently on Merced Avenue, stormwater runoff is routed predominantly north to south and is collected within roadway gutters, directed to a stormwater collection system consisting of catch basins, access maintenance holes, and existing below-grade closed conduit gravity storm drain pipes before entering Legg Lake and the Rio Hondo. Pollutants found in runoff from the City, including the Project area, are representative of urban areas, including sediments, nutrients, bacteria, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons (PAHs), trash, and pesticides. These pollutants impact beneficial uses related to aquatic biota (e.g., toxicity, habitat degradation); pose a public health risk (e.g., pathogens); limit recreational uses (e.g., odors, aesthetics, trash); and interfere with municipal, industrial, and recreational uses that rely on moderate to high quality water. The stormwater runoff from the Project area is also higher in volume and flow rate than the natural, pre-urban condition, which causes downstream hydromodification impacts (e.g., erosion, scour) that adversely impacts habitat. Urban runoff sources include: motor oil, antifreeze, brake pad dust, metals (source: vehicles); nutrients and toxic chemicals (source: fertilizers and pesticides); sediment (source: erosion, construction); trash (various urban sources); fecal bacteria (source: pets, human, urban farms and wildlife); detergents (source: car washing); increased runoff temperatures (source: loss of native vegetation and increased impervious surfaces); and heavy metals (source: roofing material). Impervious cover characterizes the City and Project area and refers to roads, parking lots, driveways, asphalt, and any surface cover that precludes the infiltration of precipitation into the soil. Pollutants deposited on impervious surfaces have the potential of being entrained by discharges of water from storm flows, wash water, or excess lawn irrigation, etc. and routed to Whittier Narrows without undergoing treatment. Urban impervious surfaces are also the source of hydromodification impacts due to increased volume and rates of flow to this valuable ecological area. Ammonia, DDT, Odor, PCBs, pH, and trash are identified as impairing pollutants for Legg Lake. Legg Lake has established beneficial uses that include groundwater recharge and habitat related beneficial uses, which include warm freshwater habitats, cold freshwater habitat, wildlife habitat, and wetland habitat. The Rio Hondo and Whittier Narrows, immediately downstream of the site, are both impaired by indicator bacteria, iron, dissolved oxygen, and cyanide. The established beneficial uses for the Rio Hondo, a tributary of the Los Angeles River, includes established rare, threatened, or endangered species and wetland beneficial uses. Potential and intermittent uses along this reach of the Rio Hondo include: municipal, warm-water habitat, wildlife habitat, and groundwater recharge.

The Project will capture urban storm runoff along 0.65 miles using stormwater Best Management Practices (BMPs) such as bioretention, biofiltration, permeable pavement, and infiltration chambers located along the length of the street right-of-way. The open bottom infiltration chambers allow runoff to infiltrate into native soil and provide opportunities for local water supply augmentation. The bioretention and biofiltration soil media filters pollutants thereby increasing the quality of runoff flowing to the local water bodies. This treated runoff

results in improved water quality benefits to the habitat and restoration efforts at Whittier Narrows.

The Project will utilize a series of BMPs, that will act as an infiltration and treatment train to encourage groundwater recharge and improve water quality. Permeable pavers located on the interior edge of the parking aisles are the first line of treatment. Runoff from adjacent properties will be intercepted by the permeable pavers and will infiltrate into the soil. Once the permeable pavers reach retention capacity, excess runoff will flow through the second line of treatment- curb cuts and bioretention cells located adjacent to the parking aisles. The runoff captured by bioretention cells will filter through the bioretention soil media for treatment and then to a subsurface aggregate layer for additional storage capacity. Volumes captured in the aggregate layer will infiltrate through the FocalPoint media, a highly porous substrate capable of infiltrating high volumes of water. Once infiltration capacity is reached, water will flow into underdrains, which will direct the treated water and route it to existing catch basins and storm drains. If capacity is reached throughout the green street treatment train (in excess of the 85th percentile, 24-hour event), runoff will enter overflow pipes within the biofiltration areas and flow to the existing storm drain system. All volumes not retained in the bioretention and biofiltration BMPs are eventually discharged to Whittier Narrows as occurs in the current condition. See Appendix II for a Process Flow Schematic illustrating the project function and Appendix III (Plan Sets) for the location of construction elements, routing, and sizing.

Design Considerations and Constraints

Site Investigations: Site Investigations were conducted to support Project stormwater BMP siting and sizing and ensure water quality performance goals. Site information was obtained through existing data and studies or through field investigations as part of the City of South El Monte's Proposition 1 Coastal Conservancy Grant to prepare plans, designs, environmental analyses, and permit applications for creation of the Merced Avenue Greenway Implementation Project. A topographic survey, utility survey, and geotechnical analysis was conducted to identify the appropriate BMPs to achieve Project goals (see link to Preliminary Design Report for more information on design considerations and process in Appendix IV).

- **Topographic Survey:** Detailed topographic survey data collection was performed at all intersections to characterize the existing infrastructure.
- **Utilities:** Horizontal and vertical point data was also collected for all surface utilities. All existing utilities were located and compiled into a utility index map.
- **Geotechnical analyses:**
 - The potential for surface rupture due to faulting during the design life of the Project is considered low and earthquake-induced landslide is not considered a hazard to the site.
 - Groundwater was not encountered during the geotechnical exploration. The historic high groundwater level ranges at a depth of 5 to 10 feet based on the State of California Seismic Hazard Zone Report for the El Monte 7.5-minute Quadrangle. Based on additional groundwater data from local groundwater wells, the geotechnical report concludes that groundwater at the site ranged

from 6.4 feet at the south end of the project site to over 45 feet at the north end. Due to these groundwater levels, the report recommended that infiltration facilities, except for permeable pavement with subdrains, not be considered for the Project along Merced Avenue between Lerma Road and Alesia Street.

- Soil and percolation testing indicated that the Project area infiltration rate ranged between 0.1 and 1.0 inches per hour. Five of the six percolation borings complied with the minimum acceptable infiltration rate of 0.3 inches per hour required by the LACDPW guidelines. A design infiltration rate of 0.3 inches per hour was used, meaning stormwater infiltration was identified as a feasible option in portions of the Project area with the exception of exclusion areas identified as having low infiltration rates and low depth to groundwater.

Pre-Design Monitoring: Pre-design monitoring was conducted on March 2, 2018 and March 10, 2018. Four sampling locations were chosen; two on the north end and two on the south end. Metals, specifically copper and zinc, were determined to be pollutants of concern, exceeding their water quality objectives (WQOs). Fecal indicator bacteria (*E. coli*) concentrations were variable but were generally elevated. These elevated concentrations are most likely due to the location’s urban environment and usage (pesticides, wearing of car tires, pet waste, street trash, etc).

Drainage Management Area (DMA) Delineation and Runoff Routing: DMAs were delineated using a digital elevation model to determine the direction of flow for runoff in the vicinity of the Project in conjunction with digital inventory data and aerial imagery. The Los Angeles County Watershed Management Modeling System (WMMS) was used within the Loading Simulation Program C++ (LSPC) to simulate the runoff volume to project drainage areas.

Materials, equipment, and work to be conducted to complete the project

The Project includes construction of new stormwater BMP infrastructure to support water quality performance goals and objectives along 0.65 miles of Merced Avenue. Construction activities as part of this funding request include installation of bioretention and biofiltration facilities, infiltration chambers, and permeable pavement. Key construction elements to achieve the Project water quality treatment train function and performance are summarized in Table 1.

Table 1. Project construction elements.

Water Quality Treatment Train Construction Elements	Funding Request from USBR CWMP Phase II	Funded by Project Match
	<ul style="list-style-type: none"> ● 6,830 sq ft of stormwater bioretention BMPs 	<ul style="list-style-type: none"> ● 10,420 sq ft of permeable pavement ● 1,907 sq ft of Focal Point biofiltration areas with high-infiltration media ● 25.91 cubic feet of infiltration chambers

Discussion on why construction elements are technically appropriate

Project elements were selected based on technical feasibility, site constraints, long-term maintenance requirements, cost-benefit, and alignment with the performance goals for the site. The ULAR EWMP outlines key design parameters for green streets: 1) bioretention/biofiltration is 4-ft wide, 2) permeable pavement/subsurface storage is 5-ft wide and used in tandem with bioretention/biofiltration, 3) 50% of street length retrofittable, and 4) underdrains required if subsoil infiltration rate less than 0.3 in/hr. Infiltration-based Project elements were appropriately located in areas more suitable for infiltration and over 10 feet depth to groundwater. To account for low infiltration areas, allow adequate drawdown time, and manage vector issues, flow-based BMPs with underdrains were used to effectively treat stormwater runoff with bioretention media or innovative high-infiltration media before discharging into the conventional storm drain system. The Project components, as decentralized LID BMPs, can be sited within the existing street right-of-way. Existing utilities do not present technical or cost feasibility challenges. Information from GeoTracker and EnviroStor does not indicate any contamination concerns that would prohibit use of infiltration-based BMPs.

A watershed assessment, hydrology modeling (WMMS), and design alternative assessment modeling (EPA SUSTAIN model) were conducted to select the appropriate BMPs and ensure the retention capacity and drawdown time meets performance objectives. In accordance with the MS4 Permit, the ULAR EWMP states that stormwater capture projects be sized, where feasible, to retain the 85th percentile, 24-hour storm to achieve multiple benefits above and beyond water quality improvement, such as flood protection, local water supply augmentation, and water quality benefits in compliance with MS4 permit and TMDLs. The Project elements will attain comprehensive yet cost-effective pollutant reduction, and will perform in the long term under variable storm types and sizes. Runoff capture was designed to occur upstream of existing storm drain infrastructure inlet points to meet the water quality goals for the project. Due to the magnitude of runoff produced by the 85th percentile, 24-hour storm event, the Project design uses an innovative combination of LID BMP elements to fully capture the 85th percentile, 24-hour storm event and average annual runoff volume from the contributing DMA. Additional technical rationale for the appropriateness of the proposed Project elements are as follows:

Bioretention and Biofiltration Areas: Bioretention areas are vegetated, shallow depressions that capture and temporarily store stormwater runoff. The captured runoff infiltrates through approximately 2 feet of soil media that has an infiltration rate capable of draining the bioretention area within a specified design drawdown time, usually within 48 hours. The soil media treats the stormwater using filtration, adsorption, and biological uptake. The combination of elements in a bioretention BMP (soil media, compost or mulches, plants and root networks, beneficial microbes, and invertebrates) all work together to mimic natural soil and hydrologic processes to the benefit of local water quality. These processes address pollutants in the runoff such as pathogens, oils, metals, and pesticides. Bioretention areas can be integrated into the street right-of-way and become part of a multi-benefit transportation system. Advantages with using this technology include aesthetics, effectiveness in capturing and treating metal pollutants and nutrients, and restoration of pre-project hydrology by reducing the surge of stormwater into the receiving body of water or river. The bioretention areas were

designed following the recommendations of the geotechnical analysis, which found that a minimum 6-inch layer of gravel should be placed beneath the bioretention soil media with geotextile separating the bioretention media from the gravel. It also recommended that the bottom layer of infiltration trenches be composed of 6 inches of clean sand compacted wet to approximately 87% of relative compaction. The Focal Point biofiltration areas contain high-infiltration media, which provides 100 inches of treatment per hour (see Appendix V for Focal Point Biofiltration brochure).

Permeable Pavement: Permeable pavement can infiltrate stormwater into underlying soil while simultaneously providing a stable load-bearing surface. Permeable pavement can dramatically reduce impervious surface coverage without sacrificing intensity of use. Permeable pavement comes in different types and can be used in a wide array of applications, including the parking lanes on Merced Ave. The Preliminary Design Report (Appendix IV) details the analyses conducted to determine the appropriate permeable pavement type for the Project based on the minimum recommended structural sections for the various permeable pavement types at various traffic indexes. Geotextile R-tanks with gravel reservoirs shall be installed below permeable pavement applications.

Underground Infiltration Chambers: Underground infiltration chambers are volume-based BMPs that harvest and infiltrate stormwater runoff. Temporary storage is provided within the chambers and within the crushed stone placed below and above the chambers. The open bottom allows infiltration into surrounding soil, achieving runoff reduction objectives while preserving existing surface space. Runoff is reduced or eliminated, and groundwater recharge can occur. Infiltration chambers require a competent native soil layer below the units with an infiltration rate capable of draining the reservoir within a specified design drawdown time (usually up to 72 hours).

Trees and Vegetation: Substantial research has been conducted regarding the value of trees to benefit humans and the environment including energy conservation, air quality improvement, carbon storage, stormwater runoff reduction, wildlife habitat, and urban heat island mitigation. Trees also provide social, economic, aesthetic, and health benefits. Trees are often part of street landscaping and are technically appropriate to use for the Project. The landscape concept for the Project emphasizes the use of native and climate-appropriate plants, which will require minimal irrigation beyond establishment. Plants were selected that will not place an undue maintenance burden on the City, that are compatible with stormwater catchment areas, and provide additional habitat and shade on the roadway.

Operations and maintenance

A major consideration for the Project design was ensuring the City's ability to easily operate and maintain (O&M) the Project to perform as designed for at least 20 years. O&M activities, types, and frequencies had to be financially viable as well as consisting of protocols that the City can implement or contract. The City will ensure the long-term operation and maintenance of the Project by utilizing its staff, and may determine it is more cost-effective to enter into an agreement and will manage the agreement. The San Gabriel Valley Conservation Corps (SGVCC)

employs, educates, and trains youth from the surrounding communities on environmental stewardship and landscape maintenance. The Project will coordinate with SGVCC on the opportunity to hire youth from their training program to assist with planting and vegetation establishment. A maintenance manual will be developed as part of the construction phase and will include a checklist and O&M details for each BMP type. By connecting to the existing purple pipe system at Rush Street, the Project will have access to recycled water for supplemental irrigation of the landscape and vegetated LID BMPs to ensure plant establishment and survival while reinforcing the Project’s water conservation goals. Immediately after construction, the Project will start out treating slightly greater than the 85th percentile, 24-hour storm. The Project was planned so that if over time the maintenance operations were neglected, the treatment capacity will still meet the 85th percentile value.

Expected outcomes of the project

The Project is expected to capture, treat, and infiltrate 100% of the drainage management area (DMA) up to the 85th percentile, 24 hour storm event. Detailed expected outcomes of the Project are presented in Table 2.

Table 2. Estimated Project stormwater captured, treated, and infiltrated.

Metric	Unit
Drainage Management Area (acres)	45.71
85 th percentile runoff volume (cubic feet)	68,599
85 th Percentile capture provided by project (cubic feet)	68,599
Portion of DMA managed for the full 85 th percentile	100%
Total average annual volume captured and treated (AFY)	21.5
Total average annual volume infiltrated (AFY)	6.47

IV. Evaluation Criteria

A. Project Benefits

i. Improve water quality and alleviate water quality concerns.

The primary goal of this Project is to improve water quality within the Merced Avenue Corridor and for downstream receiving waters, which include the Whittier Narrows Recreation Area, Legg Lake, Rio Hondo, and Lower Los Angeles River. The Project BMPs will act as a treatment train, capturing and treating 100% of runoff from storms up to and including the 85th percentile, 24-hour event, which is considered the water quality design storm and required by the ULAR EWMP guidelines. Small rain events, below the 8th percentile storm event, cumulatively carry the largest portion of the annual pollutant loads and volumes to downstream receiving waters. The Project stormwater BMPs will remove pollutants via physical, biological, and biochemical processes; and reduce the volume and velocity of stormwater runoff that causes downstream habitat and water quality degradation. The Project will reduce pollutant loading, including 303(d) listed parameters. Ammonia, DDT, Odor, PCBs, pH, and trash are identified as impairing pollutants for Legg Lake. The Rio Hondo and the Whittier Narrows, immediately downstream of the site, are together impaired for indicator bacteria, iron, dissolved oxygen, and cyanide. Estimated pollutant load reductions are presented in Table 3. Annual pollutant loads from the contributing DMA will be reduced between 30-85%, depending on the constituent (Table 3).

Table 3. Project average annual pollutant load reductions.

Metric	Project Average Annual Load Reduction (lbs. unless noted)	Average Annual Loading from 45.7 -ac DMA	Average Annual Percent Reduction from 45.71-ac DMA
Total Suspended Solids	4641.44	5612.75	83%
Copper	0.67	1.69	57%
Zinc	4.64	9.06	51%
Nitrate	24.67	81.85	30%
Fecal Coliform (MPN)	2.46 x 10 ¹²	5.57 x 10 ¹²	44%

Pollutant loading reduction is consistent with the performance objectives of the ULAR EWMP (see Evaluation Criteria, Section B) as runoff from critical bacteria storms (first flush) is retained prior to discharge to receiving water. As the City of South El Monte is a permittee of the ULAR EWMP's 2012 Municipal Separate Storm Sewer System (MS4) Permit (Order No. R4-2012-0175; National Pollutant Discharge Elimination System [NPDES] Permit No.CAS004001), the Proposed Project, will help the City meet the ULAR EWMP's NPDES MS4 permit requirements and water quality compliance targets. The Project will manage the full average annual runoff from the

contributing DMA, 21.5 AFY, and will thus comprise a significant portion of the City’s total required structural BMP capacity to be compliant with the EWMP by 2037 (58 AFY target).

ii. Help water infrastructure systems adapt to climate change.

Developing green infrastructure such as the proposed Project is critical to creating a more climate resilient landscape for human habitation and achieving shared goals for public health and the environment. The Project augments existing conventional infrastructure to better address anticipated climate change disruptions. Storms are projected to increase in intensity with climate change so additional adaptation efforts are necessary. According to the California Water Plan Report (DWR) “flooding is likely to become more frequent, severe, and unpredictable under climate change scenarios as more precipitation is delivered by intense storms.” The use of decentralized LID stormwater infrastructure helps address localized flooding and impacts associated with anticipated short-duration, high-intensity storm events by absorbing rainfall, reducing peak flow rates, infiltrating stormwater, and protecting existing conveyance systems from being overwhelmed. The trees planted in the bioretention facilities function as a part of the urban water infrastructure by providing rainfall interception and runoff reduction.

iii. Incentivize water agencies throughout each watershed to collaborate.

The City, located in Los Angeles County, is bounded on two sides by the San Gabriel Valley’s two major drainage features – the Rio Hondo on the west and the San Gabriel River on the east. Heavy urbanization in this area has resulted in increased runoff flow, volumes, and pollutant loads to these receiving waters. The City’s valuable location amidst these two major drainage features creates the opportunity to develop sustainable water management practices that support habitat and beneficial uses of these surface waters. The East San Gabriel groundwater basin underlies the City, providing a significant portion (95%) of the water supply for the City. The City and regional partners face strong incentives to prioritize watershed management strategies that preserve the surrounding valuable surface water and slow, capture, and infiltrate water to augment the local groundwater supply. The Project provides an example of design, operation, and performance of a large-scale municipal green street project implemented in the Southern California region. Managing street surface flows and meeting water quality standards are increasingly challenging in developed urban areas. While there are regulations that require certain management practices on new and redeveloped infrastructure, there is little incentive to retrofit the existing infrastructure that covers most of the urbanized area. A neighborhood-scale project like Merced Avenue Greenway is intended to provide a real-world model of watershed-based design that integrates many ongoing efforts in the region to address flood management, water quality, and climate resilience. As the first green street in the City, this Project will create a “scalable model” that can be replicated both within the City of South El Monte and other parts of the Los Angeles River Watershed. The Project will demonstrate how LID BMPs can be incorporated into the existing residential and industrial street infrastructure, and can improve the availability of high-quality water supplies to increase regional self-reliance and water security. In addition to the above, the Project will use less potable water for irrigation by connecting to San Gabriel Valley Water Company’s recycled water (purple) line on Rush

Avenue. The quantified cost and benefit data from the Project will serve as an incentive for water resource managers, including the GLAC IRWM group, to identify and prioritize similar projects throughout this subregion. Furthermore, this Project represents an ongoing, innovative partnership to address common goals for stormwater management between the City of South El Monte and three non-profit groups: Council for Watershed Health (Applicant), ActiveSGV, and Climate Resolve. This innovative partnership provides a model for collaboration among agencies, municipalities, and community NGOs for future green stormwater infrastructure projects. By leveraging multiple efforts and resources, this Project will demonstrate that this unique partnership between smaller cities, non-governmental organizations, and community groups can provide a model for other jurisdictions that may not have the capacity, funding, and/or expertise to oversee these types of green infrastructure and watershed management projects.

iv. Provide multiple benefits.

Sustainable stormwater design treats urban runoff as a valuable resource, balancing urban development and redevelopment to preserve or re-create natural hydrological functions of healthy ecosystems. The Project repurposes stormwater as a water resource and, in addition to capturing and treating stormwater runoff, the Project's stormwater BMP components including soil, vegetation, and trees will reduce greenhouse gas emissions, sequester carbon, mitigate the urban heat island effect, and benefit the general public. Low water use and native trees and plants planted within the bioretention BMPs will create connections and increase habitat for pollinators, native insects, and birds. The Project will provide a connection to Whittier Narrows Recreation Area, one of Los Angeles County's largest and most popular recreation areas and a major flood control facility as well as wildlife habitat and open space. The Project provides employment opportunities related to design, construction, and long-term operation and maintenance.

B. Watershed Restoration Planning

i. Describe your watershed restoration plan.

- *When was the restoration plan prepared and for what purpose?*

Upper Los Angeles River Enhanced Watershed Management Program (EWMP): The ULAR EWMP, of which the project drainage area is a part, was developed in 2016 to facilitate a robust, comprehensive approach to stormwater planning for the Upper Los Angeles River watershed cities and County.

"The planning area for the ULAR EWMP is the largest of all the EWMPs being developed in the Los Angeles (LA) region, representing 485 square miles of watershed and over 50 miles of mainstem LA River from its headwaters to just above the estuary. The LA River watershed has been subject to numerous water quality planning and compliance efforts, and the EWMP leveraged those efforts and identified additional projects to address water quality issues in the Upper LA River. The vision for development of the EWMP was to utilize a multi-pollutant

approach that maximizes the retention and use of urban runoff as a resource for groundwater recharge and irrigation, while also creating additional benefits for the communities in the ULAR watershed. This EWMP presents a toolbox of distributed and regional watershed control measures to address applicable stormwater quality regulations.” (EWPM Page ES - 1)

Greater Los Angeles County Region Integrated Regional Water Management Plan: The GLAC IRWM was developed in 2013 to provide “a 20-year pathway for the Greater Los Angeles County Region and to facilitate and conduct collaborative planning”, as stated in its preface. The City of South El Monte is within the GLAC IRWM Planning Region and Upper San Gabriel River Watershed Management Area subregion. The IRWMP includes goals, objectives, and priorities for regional water resource management including ecosystems, groundwater, climate adaptation, flood management, and disadvantaged community participation in regional water resource management. The Plan was developed to be a living document and updates are planned. Projects are added to the project database and prioritized accordingly on an ongoing basis after being presented and accepted to each subregion’s committee.

- *What types of watershed management issues are addressed in the plan? For example, does the restoration plan address water quantity issues, water quality issues, and/or issues related to ecosystem health or the health of species and habitat within the watershed?*

Upper Los Angeles River Enhanced Watershed Management Program (EWMP): The EWMP emphasizes implementation of regional projects, particularly those that are able to retain the 85th percentile, 24-hour storm event. The ULAR EWMP includes 128 regional BMPs, including multi-benefit regional projects that retain the stormwater volume from the 85th percentile, 24-hour storm for the drainage areas tributary to the multi-benefit regional projects. In addition, the EWMP includes regional projects on private land to assure required pollutant reductions are achieved. Institutional control measures: these control measures can be cost-effective because they prevent transport of pollutants in the watershed without building structures. The MS4 Permit requires Group Members to implement minimum control measures (MCMs), which are a subset of institutional control measures that may be enhanced over the course of EWMP implementation.

This EWMP is a toolbox of distributed and regional watershed management priorities that address water quality issues including strategies like the Merced Avenue Greenway’s Low Impact Development (LID) control measures implemented near residential parcels to retain stormwater runoff during rain events. (EWMP Page 1-1 and 1-2)

Greater Los Angeles County Region Integrated Regional Water Management Plan: The mission of this IRWM Plan is to “address the water resources needs of the Region in an integrated and collaborative manner to improve water supplies, enhance water supply reliability, improve surface water quality, preserve flood protection, conserve habitat, and expand recreational access in the Region.”

“This IRWMP is an outgrowth of ongoing efforts to develop plans, projects, and programs at regional levels, and utilize an integrated approach to water and other resource management issues and acknowledges that for the Region to meet its future needs, water supply planning must be integrated with other water resource strategies. These strategies consist of water conservation and urban stormwater runoff management, wastewater quality improvements and expanded use of recycled water, maintenance of flood protection, and other environmental needs including habitat and open space conservation and the provision of sufficient park space.” (IRWMP Page 1-1 and 1-2)

- *Who was involved in preparing the plan? Was the plan prepared with input from stakeholders with diverse interests (e.g., water, land or forest management interests, and agricultural, municipal, tribal, environmental, recreation uses)? What was the process used for interested stakeholders to provide input during the planning process?*

Upper Los Angeles River Enhanced Watershed Management Program (EWMP): The City of South El Monte joined the EWMP’s original 18 Group members through a letter of intent submitted February 26, 2015. “Through a collaborative approach, an EWMP for the Upper Los Angeles River (ULAR) Watershed Management Area (EWMP area) was developed by the ULAR EWMP Group. The ULAR EWMP Group is comprised of the cities of Los Angeles (lead coordinating agency), Alhambra, Burbank, Calabasas, Glendale, Hidden Hills, La Cañada Flintridge, Montebello, Monterey Park, Pasadena, Rosemead, San Fernando, San Gabriel, San Marino, South El Monte, South Pasadena, and Temple City and the County of Los Angeles (Unincorporated County) and the Los Angeles County Flood Control District (LACFCD).” (EWMP Page ES-1)

Greater Los Angeles County Region Integrated Regional Water Management Plan: “The majority of stakeholder input to the IRWM Plan is conducted at the Subregional level...With this structure, and under the guidance of the SC’s (Steering Committees), stakeholders are provided an opportunity to participate in the IRWM process including activities specific to the Plan Update such as creating subregional objectives and targets, developing and reviewing projects and updating both the regional and subregional descriptions. Section 1.7 (IRWM Plan Page 1-22) describes the Plan Update process in greater detail.”

Stakeholder groups included: Federal agencies, various state departments and agencies, state conservancies, special districts, county departments, over 80 cities, councils of government, and the following non-governmental stakeholders: “non-profit organizations (trusts, foundations, conservancies, associations, societies, coalitions, alliances, councils); joint powers authorities, businesses, property owners; financial institutions; businesses and industry associations; Chambers of Commerce; educational institutions; civic organizations; environmental groups; environmental justice organizations; watershed councils; homeowner associations, and interested individuals.”

Disadvantaged Communities were also well represented in the IRWM process. “The 2006 IRWM Plan focused efforts to identify and encourage participation from members of disadvantaged

communities (DAC)s and other stakeholders. That effort mapped DACs in each Subregion and generated meetings, individual phone conversations, and presentations with local community coalitions connected to DAC representative groups (such as the Environmental Justice Coalition for Water, the Los Angeles Working Group on the Environment, and the Los Angeles Department of Neighborhood Empowerment). In 2008, the Region prepared an interim DAC Outreach Plan that identified a basic (Subregion-focused) process for conducting DAC outreach. At the direction of the SC and with direct input by the five subregional steering committees, a DAC Subcommittee was formed to oversee and review the creation of the DAC Outreach Plan. Outreach was defined as a meaningful exchange between project initiators, project implementers and members of DAC. The DAC Subcommittee recommended approval of the interim Outreach Plan recognizing that a significant information gap remained about the needs of DAC relative to the IRWMP. As the Outreach Plan was being implemented, it became clear that given the geographic size and large population within each Subregion and the Region as a whole, identifying representatives that could speak to the issues faced by members of DAC relative to water management was incredibly challenging.

Tribal Outreach was conducted as part of the Plan Update to determine tribal stakeholders and interests in the Region.” A full accounting of the Stakeholders can be found on page 1-12 and 1-13 of the [IRWM Plan](#).

- *If the restoration plan was prepared by an entity other than the watershed group, explain why the watershed group did not prepare its own plan. In cases where the applicant did not prepare the restoration plan, the applicant must provide documented support for the proposed project by the entity that authored the plan.*

Upper Los Angeles River Enhanced Watershed Management Program (EWMP): City of South El Monte, CWH’s Project partner and sole land owner within the project area, is a participating member of the ULAR EWMP. The City of South El Monte joined the original 18 Group members through a letter of intent submitted February 26, 2015. The Los Angeles and San Gabriel River Watersheds are complex and no one agency or NGO is well suited to develop a management plan. Collaborative decision making and community engagement requires a multi-city and multi-organizational planning and implementation approach.

Greater Los Angeles County Region Integrated Regional Water Management Plan: Council for Watershed Health participated in the Los Angeles County IRWM process since its inception, publishing the Department of Water Resources Outreach Evaluation Study in 2013. CWH sat on the leadership committee from 2008-2015 and was a co-chair on the Upper Los Angeles River GLAC IRWM Sub-region Committee from 2008-2017. In addition, CWH is currently a technical consultant via TreePeople’s contract with West Basin Municipal Water District to support its CA State DWR Prop 1 Disadvantaged Community Involvement Program for the Greater LA, Ventura and Santa Clara River IRWM areas.

ii. Describe how the existing restoration plan provides support for your proposed watershed management project.

- *Does the proposed project implement a goal or need identified in the restoration plan?*

- *Describe how the proposed project is prioritized in the referenced restoration plan.*

Upper Los Angeles River Enhanced Watershed Management Program (EWMP): The Enhanced Watershed Management Plan identifies green streets as a key programmatic element for achieving regional restoration and watershed management objectives (EWMP Page ES-4). The Project was designed based on the recommendations and performance guidelines emphasized in this Plan. As a green street, the proposed Project is included as a programmatic element on the ULAR EWMP. This project is in accordance with the applicable Basin Plan's goals of reducing discharge from storm drains and beneficially using stormwater and the Plan's Nonpoint Source Pollution Control Program. The Project supports compliance with the ULAR EWMP's 2012 Municipal Separate Storm Sewer System (MS4) Permit (Order No. R4-2012-0175; National Pollutant Discharge Elimination System [NPDES] Permit No. CAS004001 by reducing pollutants that contribute to 303(d) and Total Maximum Daily Load elements impairments.

The EWMP is an ongoing program that identifies strategies and prioritizes projects on a rolling basis. While this project is not listed in the EWMP, this type of Green Street project is supported and prioritized. "The ULAR EWMP includes two primary types of green infrastructure – LID and green streets... (EWMP) Appendix 5.A in the EWMP provides fact sheets explaining both green streets and LID practices. Low Impact Development: these are distributed structural practices that capture, infiltrate, and/or treat runoff at the parcel-scale (normally less than 10 tributary acres. Common LID practices include bioretention, permeable pavement, and other infiltration BMPs that prevent runoff from leaving a parcel. Rainfall harvest practices such as cisterns can also be used to capture rainwater - that would otherwise run off a parcel - and use it to offset potable water demands. The types of LID incorporated into the EWMP are the LID ordinance, residential LID, and LID retrofits of public parcels." (EWMP Page 5-1)

Greater Los Angeles County Region Integrated Regional Water Management Plan: The IRWMP is used to identify and prioritize regional needs that could be addressed by specific multi-benefit stormwater projects. "The GLAC Region maintains a website at www.lawaterplan.org to facilitate the accessibility of IRWMP information to stakeholders. The website provides overall program information and all public documents produced by the Region including the Plan and Plan Update, reports and Technical Memoranda (TM), grant applications, DWR notifications, and meeting agendas and minutes. The newly developed GLAC IRWM project database has a web access user interface that is linked to the GLAC website as a means to provide a more dynamic and interactive interface for posting current and temporal information regarding upcoming meetings, announcements and is the main tool used for documenting and viewing both conceptual and IRWM projects and information". (IRWMP Page 1-16)

The project was vetted and approved by the GLAC IRWM committee which prioritizes projects for regional watershed management and restoration efforts. Although the project is not written into the IRWM plan itself, the project has gone through the IRWM process: the Project was presented, submitted, and accepted by the IRWM Upper San Gabriel subregion committee and was listed on the IRWM prioritized project list on March 17, 2019. The project can be found in the OPTI Project Database website for the IRWMP at: <https://opti.woodardcurran.com/irwm/la/>

(NOTE: reviewer will need to create a login to view the Merced Avenue Greenway Implementation Project in the IRWM OPTI database.)

C. Stakeholder Support

The Project concept development and design was supported through a diverse group of agency and funding stakeholders: Water Foundation Capacity Building Grants (from June 2016 through June 2019), and California Coastal Conservancy through Proposition 1 funds (from June 2017 through October 2020).

A unique City/non-profit/community-based organization partnership was formed to build engagement from the initial community outreach initiatives in 2015 through the entire design phase ending in June 2020. Multiple touch points were built into the design process to present, listen, gather feedback, illustrate what we learned, report on, and gather more feedback as the design moved forward. Our engagement was built around multiple community workshops, demonstrations, and meetings held at City Hall and on the street itself as well as door-to-door surveys, tabling community events and platicas, bike rides, and hosted community surveys. The surrounding neighborhood had the opportunity to vote on three design alternatives at 30%. The resulting 100% design is based on the design alternative both the residents and local businesses overwhelmingly selected. A community advisory committee will continue to be the voices on the ground during construction. Ongoing engagement with community members will focus on project status, construction updates, and education efforts about the multiple benefits of the project. The Project team will use a similar approach to the design phase, where engagement activities are thoughtful, culturally competent, and in the requisite languages. The two additional Project non-profit partners, ActiveSGV and Climate Resolve, have decades of experience facilitating project meetings with diverse constituencies and stakeholders. Their staff continually improves practices to make use of participants' time efficiently. ActiveSGV, with support from Climate Resolve, developed and implemented a multi-pronged, multi-lingual public outreach and communications plan to engage a broad cross section of Project-area residents. Key components included Community Advisory Committees (CACs), tabling of public events, door-to-door canvassing, presentations to community groups, pop-up events, social media content, further development of the MercedAveGreenway.org, and media engagement. The City is committed to bilingual/multicultural outreach, and other methods to ensure inclusive community engagement. Planned team engagement around Project implementation will include:

Pre-construction:

- Maintain the website and develop educational materials to distribute to all residents and businesses along the corridor focused on the project timeline and current status.
- Distribute surveys to neighborhood residents, including business stakeholders, to take inventory of complaints and/or concerns, and work with City staff to address these concerns.
- Hold community workshops to update on Project progress and gather community feedback.

During Construction:

- Hold community workshops to assess construction effects on the community, and collect feedback to guide the process going forward.

Post-construction:

- Organize and participate in community celebration events in coordination with the entire Project team.

D. Readiness to Proceed

The Project is at 100% design phase. Engineering drawings, details, and specifications are provided in Appendix III (Plan Set), which include cross-sections and longitudinal profiles of improvements; grading and utility plans; locations indicating exactly where the project components will be built; elevations of the construction elements; and detailed landscaping, irrigation, and road striping design plans. Field visits were conducted by professional and licensed engineers who concluded that the design is appropriate for the site. The plans are consistent with the rest of the application documentation and were reviewed at multiple stages by the design team and City to ensure construction and O&M feasibility, and ability to achieve the intended performance. The Project development process, including early and consistent engagement with the surrounding community, the 100% design phase, and close collaboration between the design team and City staff means that upon grant award, the Project can progress efficiently to construction phase with low likelihood of any design revisions or other delays.

E. Performance Measures

The Council for Watershed Health (CWH) is working with the City of South El Monte to prepare Monitoring Plans (MP) and Quality Assurance Project Plans (QAPP) that evaluate conditions pre- and post-construction for a minimum of 1 year after demobilization. The Monitoring Plan will include a description of pre- and post-construction monitoring objectives, the methodology and criteria for monitoring activities, the constituents to be monitored, the sampling locations, and the number of monitoring events. Data collection will be focused on quantifying the efficacy of the constructed LID BMPs, with an emphasis on water quality and capture, and in better assessing the variables associated with LID BMP performance.

Monitoring Methods

Project performance will be measured by monitoring water quality before and after construction. The constituents monitored are impairing to downstream receiving waters, including the 303d-listed Legg Lake at Whittier Narrows and the Rio Hondo, which drains to the Lower Los Angeles River. Impairments for Legg Lake include trash and nutrients; impairments for the Lower Los Angeles River include metals, bacteria, and nutrients.

CWH will monitor the water quality of two (2) locations prior to the construction of the LID BMPs. After construction is completed, CWH will capture project performance by collecting stormwater samples a) before flows enter the LID BMPs and b) at the south end of Merced

Avenue, at which point stormwater runoff has intercepted multiple LID BMPs. Grab samples will be taken for one (1) pre-construction and up to three (3) post-construction wet-weather events to better characterize LID BMP performance given variability in storm size and pollutant loads. Samples will be brought to a certified laboratory and analyzed for heavy metals, nutrients, pesticides, suspended sediments, and fecal indicator bacteria. In-situ stormwater measurements like pH, conductivity, and trash counts will be conducted during sample collection using field probes and visual assessment. Results will be compared to water quality objectives set forth in the Basin Plan for the Los Angeles Region (Los Angeles Regional Control Board). Water capture will be estimated based on the LID BMP design and using storm flows for the 85th percentile storm, extrapolated for the year.

In addition, soil properties, plant health, and microbial communities are important for infiltration, productivity, and pollutant uptake. CWH will monitor the pore water and soils in each catchment area of the project prior to project implementation and during or shortly after storm events. Soil and pore water analytes include general chemistry, nutrients, metals, microbial productivity, and general soil characteristics. Plant health will be assessed using visual surveys and plant cover transects. Soil and porewater samples will be sent to a certified lab for analysis. Onset HOBO level loggers will be used to determine infiltration rates of the bioretention areas during dry and wet-weather events and LogTag devices will be used to measure continuous temperature and soil moisture over the duration of the sampling period.

Data Collection and Quality Assurance

All water samples will be collected and analyzed in accordance with quality assurance and quality control (QA/QC) procedures documented in the Project MP and QAPP. Data collected for the purposes of this project will undergo QA/QC through the comparison with established standards, outlier analysis, and comparison to published works.

F. Department of the Interior and Reclamation Priorities

Department of Interior Priorities

Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment

The Department of the Interior (DOI) aims to ensure that it delivers data, tools, techniques, and analyses that advance understanding of natural resources. DOI recognizes that research, monitoring, and remote sensing are necessary to understand and detect changes that affect land resources. More specifically, monitoring, assessments, and research are critical to understand and predict changes in the quality and quantity of water resources in response to land-use and management scenarios. Council for Watershed Health's (CWH) mission aligns closely with this DOI priority. A key part of CWH's mission is to advance the health and sustainability of our region's watersheds through science-based research. The proposed Project will utilize science-based analyses to inform the site assessment and to select the most appropriate stormwater BMP construction elements for alleviating the site's water quality

concerns. Pre-design monitoring conducted by CWH informed current runoff pollutant loads and project BMP design. Based on these pre-design assessments, the Project will improve water quality and restore elements of natural hydrologic function best through the implementation surface and subsurface green infrastructure retrofits and native revegetation, including bioretention and biofiltration technology. Furthermore, CWH will employ science-based methods to ensure successful Project performance by monitoring water quality before and after Project construction. Through mimicking natural processes and utilizing scientific research and monitoring methods, the Project will increase groundwater recharge, emphasize water supply reliability, and improve the quality of water flowing through communities and larger water bodies.

Restoring trust with local communities:

- a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands*

CWH works to improve watershed health through research, education, management, development, and community engagement. By establishing relationships with related entities and stakeholders, CWH encourages stakeholders from all sectors to contribute to project development and benefit from project completion. For this Project, CWH will serve its role to improve dialogue and communication between partner stakeholders. The Project will leverage a long-term relationship between the City, our local community-based organization partner Active SGV, and the residents of Merced Avenue, who will be the stewards of the Project.

- b. Expand the lines of communication with governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, tribes, and local communities*

CWH serves to coordinate agencies through inclusive stakeholder engagement to advance common watershed management goals. CWH work experience builds on agency partnerships to develop projects which benefit local communities, including providing technical assistance funded by the California State Water Resources Control Board to seven small municipalities across California. The proposed Project is one such example of coordinated communication across multiple sectors. The Project design was developed and will be constructed with support from a wide array of stakeholders including the California Natural Resources Agency, County of Los Angeles Public Works, and the local City of South El Monte community.

Modernizing our infrastructure

The DOI prioritizes modernizing infrastructure through removing impediments to infrastructure projects serving American needs, coordinating across bureaus and with other federal and nonfederal partners, and workforce development. As the effects of climate change are felt in our communities, CWH recognizes the critical need to modernize our infrastructure to provide multiple benefits with respect to watershed management and climate resilience. Green infrastructure is a cost effective, low maintenance means to achieving this modernization goal. The Project will work towards modernizing infrastructure to build climate resiliency and provide

multi-benefits that improve quality of life for communities by replacing ageing grey infrastructure with green infrastructure elements. Through environmental analyses and compliance assessments, the Project has been designed to ensure that the stormwater infrastructure is successful in capturing and treating stormwater from Merced Avenue. Additionally, the project will serve as a means for coordination between partners and will provide an opportunity for maintenance of new and existing infrastructure. In Southern California, municipalities and water regional agencies face strong incentives to prioritize watershed management strategies that preserve the surrounding valuable surface water and slow, capture, and infiltrate water to augment the local groundwater supply. The Project provides an example of design, operation, and performance of a large-scale watershed-based design that integrates many ongoing efforts in the region to address flood management, water quality, and climate resilience. The Project will demonstrate how LID BMPs can be incorporated into the existing residential and industrial street infrastructure, and can improve the availability of high-quality water supplies to increase regional self-reliance and water security.

Bureau of Reclamation Priorities

Leverage Science and Technology to Improve Water Supply Reliability to Communities

The Bureau of Reclamation recognizes that the American West faces serious water challenges such as wide-spread drought, increased populations, aging infrastructure, and environmental requirements, all straining existing water resources. The Project will address and work towards the goals of the Bureau's WaterSMART Program (specifically working with state, local, and tribe entities to implement actions that increase water supply through investments to modernize existing infrastructure). The Project will treat 21.5 acre-feet of stormwater runoff per year along 0.65 miles using bioretention, biofiltration, permeable pavement, and infiltration chambers located along the length of the street right-of-way. Through mimicking natural processes and utilizing scientific research and monitoring methods, Project outcomes will provide quantified, science-backed benefits that will incentivize water agencies and municipalities in the region to replicate and implement similar infrastructure technology in communities throughout our region to improve water supply reliability and promote climate resilience.

Address Ongoing Drought

The Project directly aligns with the Bureau of Reclamation's Drought Response Program which supports a proactive approach to drought by providing assistance to water managers to develop and update comprehensive drought plans and implement projects that will build long-term resilience to drought. The Project will utilize a variety of stormwater best management practices to capture and infiltrate stormwater. By increasing water capture, the Project will support groundwater recharge and water conservation efforts, crucial to drought management planning and drought resilience.

V. Project Budget

A. Funding plan and letters of commitment

This multi-purpose collaborative project cost-share will be funded by a non-Federal partner, California Natural Resources Agency, and in-kind contributions from the City of South El Monte, in addition to the generous support of the U.S. Bureau of Reclamation. The California Natural Resources Agency Green Infrastructure Grant award announcement, including the Merced Avenue Project, can be viewed by clicking [here](#). The Project funding plan is provided in Table 4.

Table 4. Funding plan for the Merced Avenue Greenway Implementation Project

Funding Sources	Detail	Status	Amount
Third Party In-Kind Contribution			
City of South El Monte	In-kind from General Fund for construction management staffing and administration. Also include \$1,000 contingency for Reclamation environmental review.	Secured (included in City's budget). See attached letter of support.	\$160,186
State of California Funding Entities			
California Natural Resources Agency (CNRA) GI-Prop 68	Capital costs related to demolition, site prep, and materials for vegetation and biofiltration facilities, permeable pavement, and planting areas.	Awarded in April 2020, awaiting contract. See award announcement from CNRA.	\$3,000,000
Federal Entities			
Requested USBR WaterSMART CWMP Phase II Funding	Water quality treatment bioretention facilities		\$300,000
TOTAL FUNDING SOURCES			\$3,460,186
Total Project Cost			\$3,460,186

Whether the budget proposal includes any project costs that have been or may be incurred prior to award

The budget proposal will include costs that *may* be incurred during the award process. Elements of the bioretention underdrain features may need to be purchased prior to final contracting, depending on availability, although no such costs have yet been incurred. The bioretention underdrain feature is essential to the function of the Project’s water quality treatment process. The Applicant will notify the grant administrator of any such costs if they are incurred prior to the start of the award.

Other Federal Funds

CWH has not requested or received other federal funding for this project.

Pending Funding Requests

Additional opportunities for local or federal match are currently being reviewed.

Operations & Maintenance Funding Plan

Operations and maintenance cost of the Project, after construction, will be sourced from the City’s General Fund and staff personnel time. The City is currently responsible for the ongoing operations and maintenance of existing street services throughout the City. This Project has been developed in close coordination with City staff to design a system that meets the current maintenance and operations capacity of staff and contractors.

B. Budget proposal

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$300,000
Costs to be paid by the applicant	\$0
Value of third-party in-kind contributions	\$3,160,186
TOTAL PROJECT COST	\$3,460,186

DESCRIPTION	QTY	UNIT	UNIT PRICE	USBR REQUEST	MATCH	TOTAL
Contractual/Construction						
Construction Administration	450	HR	\$120		\$54,000	\$54,000
Construction Management	865	HR	\$185		\$160,025	\$160,025
Mobilization/Demobilization (5% of Costs)	1	LS	\$142,763		\$142,763	\$142,763
AC Pavement Removal	112,082	SF	\$8		\$896,656	\$896,656
Concrete Curb and Gutter Removal	6,730	LF	\$10		\$67,300	\$67,300
Additional Excavation for Bioretention	1,265	CY	\$12		\$15,180	\$15,180
Additional Excavation for Infiltration Gallery	93	CY	\$8		\$744	\$744
Additional Excavation for Permeable Pavers	965	CY	\$6		\$5,790	\$5,790
Additional Excavation for Planters	1,641	CY	\$6		\$9,846	\$9,846
Hauling	2,323	CY	\$12		\$27,876	\$27,876
Monolithic Wall at Bio Planters	8,150	LF	\$60		\$489,000	\$489,000
Curb Cuts	102	EA	\$100		\$10,200	\$10,200
Infiltration Gallery	1,037	CF	\$9		\$9,333	\$9,333
Gravel (Additional 1.5' Below Infiltration Gallery)	627	CF	\$2.50		\$1,568	\$1,568
Grated Curb Inlet - Guardians	9	EA	\$10,000		\$90,000	\$90,000
Junction Structure (connection to Storm Drain System)	5	EA	\$10,000		\$50,000	\$50,000
Storm Drain Pipe Penetration	8	EA	\$500		\$4,000	\$4,000
Storm Drain Manhole Junction Structure (in Focal Points)	2	EA	\$10,000		\$20,000	\$20,000
Grated Inlet (focal overflow)	6	EA	\$10,000		\$60,000	\$60,000
Biofiltration Clean-Out	29	EA	\$1,000		\$29,000	\$29,000
High Infiltration Biofiltration Media	1,907	SF	\$15		\$28,605	\$28,605
Permeable Pavers (AC)	53,000	CF	\$2.50		\$132,500	\$132,500
RTANK	53,000	CF	\$2.50		\$132,500	\$132,500
Remodel Large Existing Catch Basin	3	EA	\$25,000		\$75,000	\$75,000

Remodel Large Existing Catch Basin	3	EA	\$15,000		\$45,000	\$45,000
Bioretention with Underdrain	2,643	SF	\$17.50	\$46,253		\$46,253
Trenching for Drain Connection to Storm Drain	559	LF	\$4	\$2,236		\$2,236
4" Underdrain	356	LF	\$70	\$24,920		\$24,920
18" RCP Storm Drain	386	LF	\$70	\$27,020		\$27,020
Bioretention without Underdrain	4,187	SF	\$17.50	\$73,273		\$73,273
15-gal tree+ deepwell irrigation	40	EA	\$600	\$24,000		\$24,000
Shrubs, grasses, & groundcover	19,447	SF	\$12	\$81,960	\$151,404	\$233,364
15-gal tree	93	EA	\$400		\$37,200	\$37,200
Treevault structural root system	7,691	SF	\$23		\$176,893	\$176,893
Soil Prep and Amendment	1	LS	\$10,000		\$10,000	\$10,000
Irrigation POC (inc. meter, backflow)	1	LS	\$9,000		\$9,000	\$9,000
Irrigation Controllers and Misc. Irrigation Equipment	4	EA	\$5,000		\$20,000	\$20,000
Shrub & groundcover irrigation	19,447	SF	\$10.00		\$194,470	\$194,470
O&M Manuals	1	LS	\$3,334		\$3,334	\$3,334
SUBTOTAL CONSTRUCTION				\$279,661	\$3,159,186	\$3,438,847
CWH Labor						
Project Manager	270	HR	\$46	\$12,420		\$12,420
Director of Finance	18	HR	\$48	\$864		\$864
Fringe Benefits						
Project Manager	270	HR	\$17	\$4,590		\$4,590
Director of Finance	18	HR	\$21	\$378		\$378
Travel						
Mileage	414	MI	\$0.575	\$238		\$238
Supplies and Materials						
n/a	0	--	\$0.00	\$0		\$0
Environmental and Regulatory Compliance						
Review	1	EA	\$1,000		\$1,000	\$1,000

Others						
n/a	0	--	\$0.00	\$0		\$0
SUBTOTAL DIRECT LABOR				\$18,490	\$1,000	\$19,490
<i>INDIRECT LABOR (10%)</i>				\$1,849	\$0	\$1,849
TOTAL				\$300,000	\$3,160,186	\$3,460,186

C. Budget narrative

Salaries and Wages

The Project Manager is Jason Casanova, Director of Planning and Information Design. Mr. Casanova's responsibilities in this role include contracting, grant oversight (reporting and deliverables), and coordination with City staff and the construction manager on construction activities and expenditures. Approximately 270 hours over the course of 1.5 years at \$46/hr are estimated for project management.

The Director of Finance is Rumi Yanakiev, and she is responsible for contract review, financial oversight, and invoicing preparation. Approximately 18 hours over the course of 1.5 years at \$48/hr are projected for invoicing and review.

See budget proposal above under CWH Labor for details.

Fringe Benefits

CWH fringe benefits include health, vacation, holiday, and sick pay benefits, workers compensation, and all state taxes. Rates are based on each individual employee's benefit package which varies according to employee preferences, age, etc. See the budget proposal above for specific rates for each employee.

Travel

Anticipated travel includes 7 visits to the Project site from the CWH office in Pasadena (59 miles roundtrip) using the current 2020 federal mileage reimbursement rate (\$0.575/mi).

Equipment

CWH will not purchase equipment under this grant. All equipment rental costs for construction will be included in the construction contractor bid package.

Materials and Supplies

Specific materials and supplies costs for construction will be included in the contractor bid. The 100% Design engineering cost estimates for materials and installation combined are included in the contractor/construction section of the budget proposal.

Contractual/Construction

Contract expenses outlined in the budget proposal will cover construction oversight and management as well as the installation of water quality BMP features. As required by the CNRA grant match, the City of South El Monte will use a public bid process to select a construction firm. Construction figures presented in the budget proposal are taken from the 100% Design Engineering Estimates. The USBR request will specifically fund the installation of the bioretention areas (6830 sq. ft.) within the treatment train (as discussed in Section III). The installation of all other water quality/water capture BMPs (ie. permeable pavement, Focal Point biofiltration areas, infiltration chambers, and planting areas) will be covered under the CNRA grant.

Third-Party In-Kind Contributions

Match for this request is being provided by a \$3M California Natural Resources Agency Proposition 68 (Green Infrastructure) grant as well as in-kind services (\$159,186) from the City of South El Monte. The CNRA grant will cover costs related to mobilization, demobilization, and demolition of all water quality/water capture BMPs (“the treatment train”). The grant will also cover the installation of the permeable pavement and high biofiltration BMPs within the treatment train. The City of South El Monte’s in-kind services are for staffing construction administration and management on the project.

Environmental and Regulatory Compliance Costs

All environmental and regulatory compliance for the project has been completed. Because the project area is focused on a heavily urbanized transportation corridor (a neighborhood street retrofit) and the project is unique to the CWMP request, CWH believes the Reclamation review for compliance will not require a significant amount of resources. A \$1,000 contingency was added as in-kind to cover potential review expenditures.

Other Expenses

No additional expenses will be incurred.

Indirect Costs

CWH does not have a federally negotiated indirect cost rate. The accepted 10% MTDC rate was applied for those allowable indirect costs (see Budget Proposal).

VI. Environmental and Cultural Resources Compliance

A CEQA Notice of Exemption was finalized in December 2019. Monica Heredia (City of South El Monte Public Works Analyst) and Jose Jimenez (Community Development Director) coordinated the CEQA process. No additional consultation is required. The project is expected to be classified as Categorical Exempt for the National Environmental Policy Act (NEPA). No other Federal environmental and cultural resource laws or other regulations are applicable for the proposed project given the Project location.

No buildings, structures, or features in the irrigation district are listed or eligible for listing on the National Register of Historic Places. There are no known adverse physical effects from this Project. The proposed project will not impact the surrounding environment as it is retrofitting existing infrastructure. The Project seeks to improve a section of roadway that currently exists, without breaking new ground or physically displacing any residences, businesses, or parking facilities. No earth-disturbing work will be occurring nor any work that will affect the air, water, or animal habitat in the project area. There are no species listed or proposed to be listed as a Federally threatened or endangered species, or designated critical habitat in the project area, and no wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States.” The proposed project will not limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands. The project will not introduce or spread noxious weeds or non-native invasive species known to occur in the area.

The Project is not expected to have a disproportionately high and adverse effect on low income or minority populations. The design phase involved assessment of short and long-term Project impacts on the community, which is classified as a Disadvantaged Community (DAC) based on the California Department of Water Resources Mapping Tool. The overall Project will improve the environmental health within the Corridor and the Whittier Narrows Recreation Area, used by the surrounding underserved/disadvantaged community. The City and its partners will continue to conduct extensive community outreach during all phases of the Project, and will adjust their strategy if it finds community members are being negatively impacted. We believe the Project process will be continually improved with community feedback. The process will continue to be fully transparent to all stakeholders, with regular communication and updates. Although the City and Project team is confident that the Greenway will improve the quality of life in surrounding communities, we do not anticipate this Project contributing to gentrification-based displacement. If, during our outreach efforts, we find that this is occurring, we will alter our approach.

VII. Required Permits or Approvals

The Project is located entirely within the City of South El Monte's public right-of-way. The City of South El Monte will take the lead to secure necessary local construction permits by the end of December 2020. CEQA has been completed. BMPs have been carefully designed around existing utilities. Project public/private property constraints and boundary conditions were assessed and documented prior to Project design. No land acquisition is required to implement the Project. Michael Ackerman (City Engineer) will take the lead on acquiring all remaining construction permits. The Project will require a construction encroachment permit granted by the City, which can be issued same-day. The Project also requires a permit from the San Gabriel Valley Water District to connect to the recycled water line (with a two week turnaround). Other additional construction permitting will include emergency and Metro bus rerouting in coordination with County of Los Angeles.

VIII. Documentation in Support of Applicant Eligibility

A. Watershed Group

The Council for Watershed Health (CWH) group meets the definition of “Watershed Group,” as defined in Section 6001(5) of the Cooperative Watershed Management Act. CWH is a 501(c)3 nonprofit, grassroots, non-regulatory entity. CWH was founded twenty-five years ago by Dorothy Green who sought to change the way Federal, State, and local water agencies, policy makers, and communities think and act with respect to our local water supplies, natural resource management, climate change, and public health. Dorothy Green and the region’s prominent water infrastructure agencies founded CWH to advance the health and sustainability of the Los Angeles region’s watersheds, rivers, streams, and habitats - both in natural areas and urban neighborhoods. This remains CWH’s mission. The services CWH provides advances the organization’s mission, emphasizing inclusive stakeholder engagement, stewardship, scientific research, and collaborative, consensus-based decision-making based on a watershed approach. Our organization has a long history of convening agencies, community-based organizations, and stakeholders to advance the health and resiliency of the LA Region’s watersheds through science-based research, integrated water resource planning and project development, and community-driven outreach, education, and participatory decision making. CWH has extensive knowledge and experience related to watershed management planning processes. CWH promotes more efficient use of water resources, providing leadership, guidance, and assistance to other agencies and organizations to affect science-based watershed planning and management, promoting better coordination and integration of watershed monitoring while measuring and tracking progress towards achieving healthier urban environments, and fostering a regional landscape ethic that reduces water use through the planting of native and regionally appropriate vegetation.

See Appendix VI to view the Council for Watershed Health’s Articles of Incorporation and Bylaws. Our Board of Directors comprises representatives from several key water infrastructure agencies and stakeholders across the Los Angeles region including:

- Metropolitan Water District of Southern California (Regional Water Supplier)
- Los Angeles Department of Water and Power
- California Department of Toxic Substances Control
- Construction Industry Coalition on Water Quality
- County of Los Angeles Department of Public Works
- City of Los Angeles Sanitation & Environment

The Council for Watershed Health maintains a list of over 9,000 stakeholders who receive our communications and invitations to our Symposia events.

The Merced Avenue Greenway Implementation Project was developed with a diverse coalition brought together by CWH including the City of South El Monte staff and residents, and local community-based organizations Active SGV and Climate Resolve. The project design phase was

developed with funds from a diverse array of stakeholders including The Water Foundation, Disney Foundation, Scott's Miracle-Gro Foundation, and the California Coastal Conservancy.

B. Mission statement

Our mission is to advance the health and sustainability of our region's watersheds, rivers and habitats - both in natural areas and urban neighborhoods. We do this through science-based research, education, and inclusive stakeholder engagement. Council for Watershed Health defines watershed health as the art and science of protecting, restoring, and managing water and ecosystems to provide biodiversity benefits, social equity, and wellness.

C. Meetings

Council for Watershed Health hereby certifies that it holds regular board, staff, public stakeholder, and project partner meetings. All of these meetings are important to shaping how CWH implements its mission. CWH's Board of Directors meets quarterly, staff meets weekly, and special working groups, such as the Merced Avenue Greenway Project partners, generally meet on a monthly basis. CWH also routinely hosts a series of symposia and seminars which bring together key stakeholders and the public to discuss timely and important water conservation and stormwater management issues. The topics are driven by the needs of local communities, agencies, policy makers and other stakeholders. These events provide excellent venues to both communicate the results of research and analysis, and facilitate collaborative dialogue and discussion on relevant issues.

D. Watershed management and/or restoration plan

For this Project, there are two relevant watershed management plans that describe the issues of concern related to water resources within the watershed and identify potential solutions: the *Upper Los Angeles River Enhanced Watershed Management Program (EWMP)* and the *Greater Los Angeles County Region Integrated Regional Water Management Plan*. Please see IV. Evaluation Criteria, Section B in this proposal for more information about each plan.

IX. Letters of Project Support

Letters of support from interested stakeholders supporting the proposed project are included as part of this application. Letters are included from CWH Project partners Active SGV and Climate Resolve, and government representatives including California Assemblymember Ian C. Calderon and U.S. Congressperson Linda T. Sanchez. Please see Appendix VII to view these letters of support. Additionally, a Resolution of the City of South El Monte supporting the Project is included.

X. Official Resolution



COUNCIL FOR
WATERSHED HEALTH

**COUNCIL FOR WATERSHED HEALTH
AUTHORIZING RESOLUTION**

RESOLUTION NUMBER: 2020-1

RESOLUTION OF THE **BOARD OF DIRECTORS OF COUNCIL FOR WATERSHED HEALTH** APPROVING THE APPLICATION FOR GRANT FUNDS FROM **US BUREAU OF RECLAMATION - WATERSMART COOPERATIVE WATERSHED MANAGEMENT PROGRAM PHASE II** FOR THE **MERCED AVENUE GREENWAY IMPLEMENTATION PROJECT**.

WHEREAS: WaterSMART Cooperative Watershed Management Program Phase II may be used to implement on-the-ground watershed management projects that address water quality;

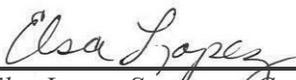
WHEREAS: Council for Watershed Health intends to coordinate and collaborate with the City of South El Monte to assemble and lead a multi-disciplinary project team to manage the Merced Avenue Greenway Implementation Project, which includes the construction of Stormwater Best Management Practices that will increase the water quality of urban runoff.

NOW, THEREFORE, BE IT RESOLVED that *Council for Watershed Health* hereby:

1. Appoints *Eileen Alduenda, Executive Director* as a representative of *Council for Watershed Health* to review and submit the grant application, conduct negotiations, execute, submit, and sign all documents including but not limited to applications, agreements, amendments, payment requests, and other documents which may be necessary for the completion of the proposed project;
2. has the capability to coordinate matching funds and in-kind contributions specified in the funding plan;
3. will work with US Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement;

APPROVED AND ADOPTED the 16th day of November 2020.

I hereby certify that the foregoing Resolution Number 2020-1 was adopted by the *Board of Directors of Council for Watershed Health*.

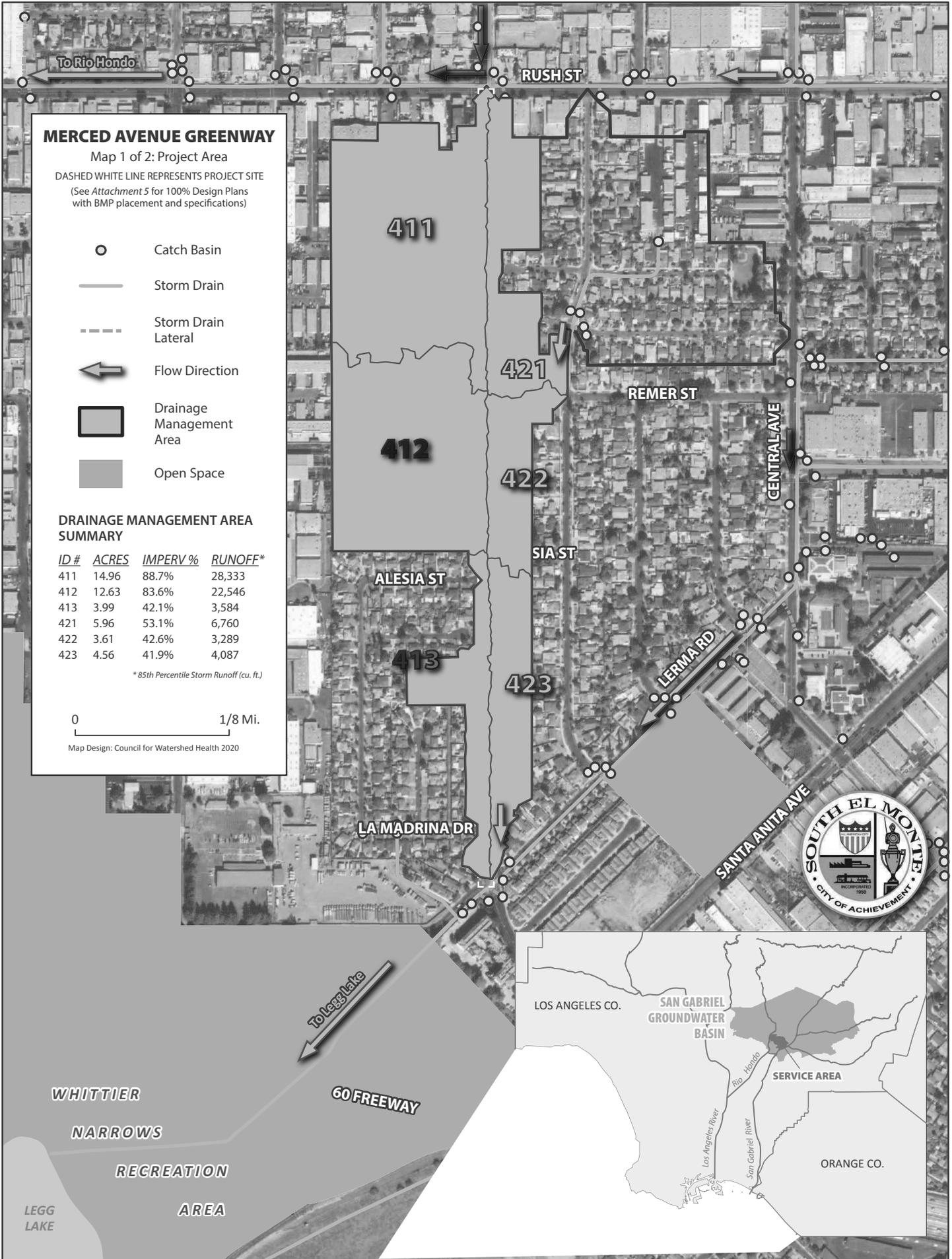


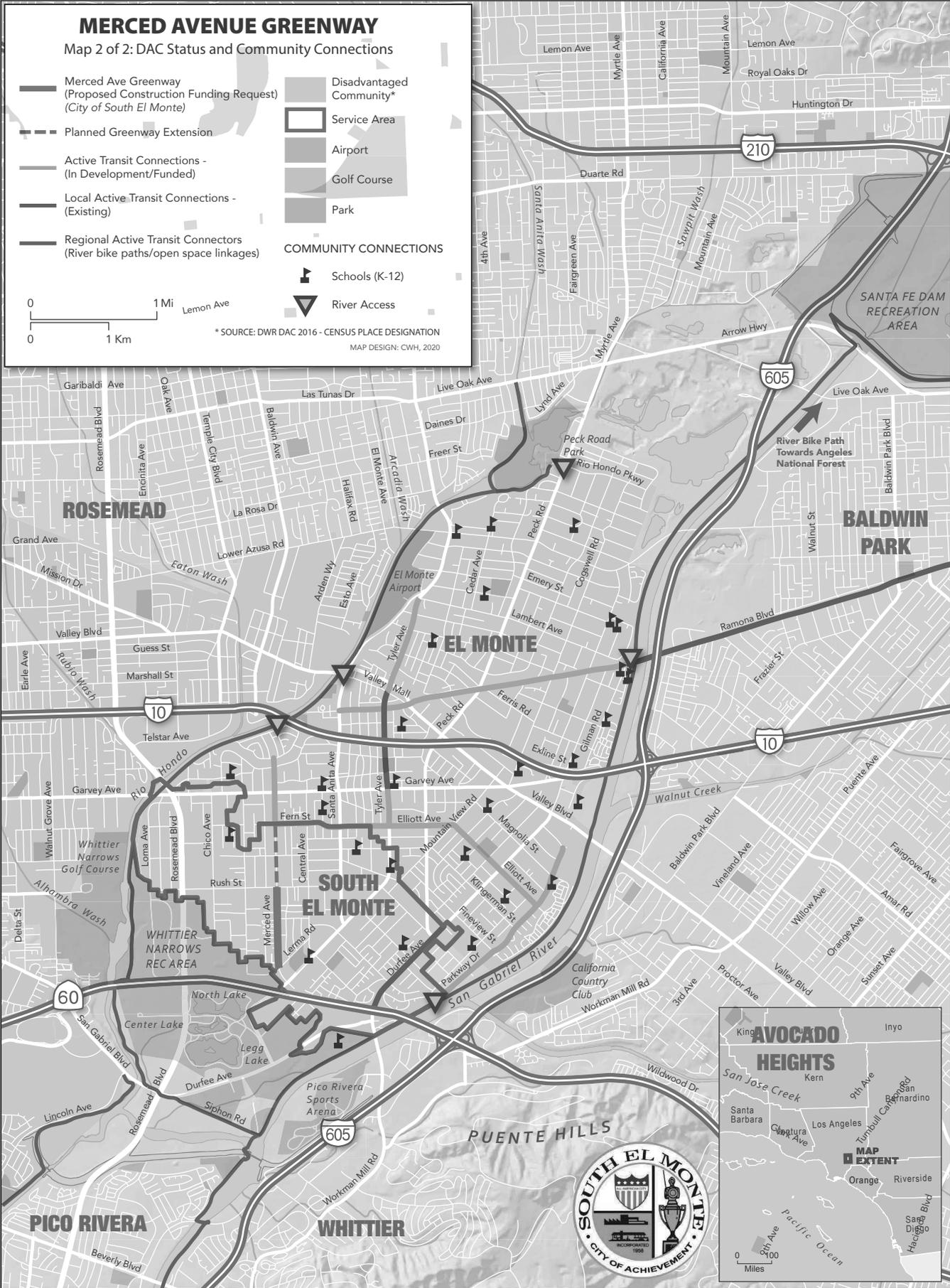
Elsa Lopez, Secretary Council for Watershed Health

Appendices

Appendix I.	Project Map
Appendix II.	Project Process Flow Schematic
Appendix III.	Project Plan Set / 100% Design
Appendix IV.	Preliminary Design Report (PDR)
Appendix V.	Focal Point Biofiltration Brochure
Appendix VI.	Articles of Incorporation & Bylaws
Appendix VII.	Letters of Support

Appendix I. Project Maps



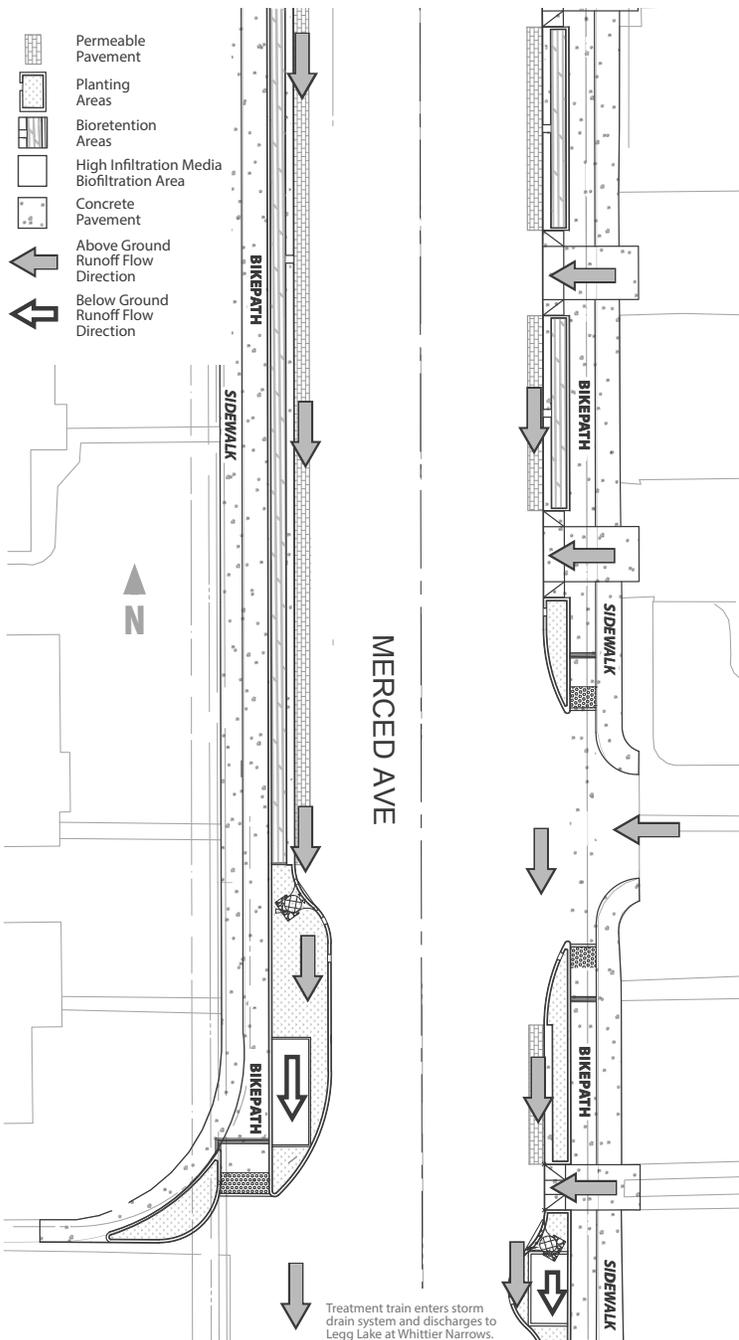




Appendix II. Process Flow Schematic MERCED AVE GREENWAY IMPLEMENTATION PROJECT

Existing Conditions: The drainage management areas (45.71 acres) along the 0.65-mile Project site generate 68,600 ft³ of runoff in an 85th percentile, 24-hr storm event. Land use varies throughout the project area where impervious surfaces make up 89% of the north commercial/industrial end and 41% of the south residential end. Water runs off properties into a traditional curb/gutter system along Merced Avenue and flows in a southern direction into conventional catch basins that are connected to the City's storm drain system, discharging into Legg Lake at Whittier Narrows Recreation Area.

Project Improvements: Sample section of the Greenway delineates treatment train and flow of street runoff. See Attachment 5 for draft 100% design plans for sizing specifications and construction details.



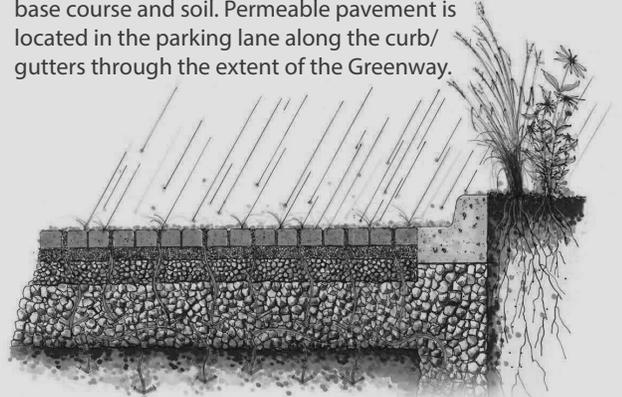
Treatment Train Storm Water BMPs:

- 4,187 ft² - Bioretention Areas (conventional)
- 2,643 ft² - Bioretention Areas (with underdrain)
- 1,907 ft² - High Infiltration Media Biofiltration Areas
- 10,420 ft² - Permeable Pavers (with infiltration chambers)
- 11,078 ft² - Planting Areas (sump 6" stormwater)
- 132 new street trees

TOTAL DESIGN VOLUME CAPTURED: 21.5 AFY

1

Permeable pavement is the first line of treatment, intercepting sheet flow from adjacent properties and infiltrating runoff into the underlying reservoir base course and soil. Permeable pavement is located in the parking lane along the curb/gutters through the extent of the Greenway.



USDA-NRCS (Natural Resources Conservation Service); illustration by Doug Adamson.

2

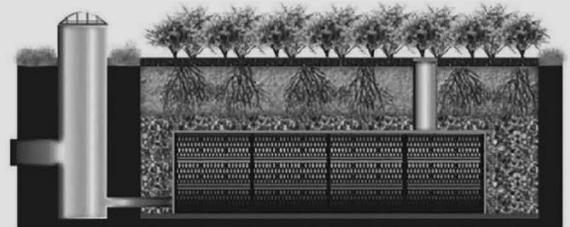
Once the permeable pavement is saturated, excessive water flow will be diverted into a second line of treatment through the gutter and into **planting areas** (6" sump) and larger **bioretention areas** from a series of curb cuts. Depth to groundwater goes from 45 ft on the north end of the street down to 6 ft on the south end; therefore, there are a combination of both offline and online bioretention areas depending on the location.



Rendering: Alta Design + Planning, Inc.

3

High infiltration media biofiltration areas are placed on eight select street corner bulbs-outs to capture and treat larger flows before the water enters the storm drain system and discharges to Legg Lake at Whittier Narrows. The FocalPoint System media is highly porous and allows for infiltration rates at 100 in/hr.



Rendering: ACF Environmental

Appendix III. Project Plan Set / 100% Design

Please use the link below to access the Plan Set:

<https://drive.google.com/drive/folders/1tKN8b3PvsQvA-gvICu3Cn79jhNM-fG6M?usp=sharing>

Appendix IV. Preliminary Design Report (PDR)

Please use the link below to access the Preliminary Design Report:

<https://drive.google.com/drive/folders/1tKN8b3PvsQvA-gvICu3Cn79jhNM-fG6M?usp=sharing>

Appendix V. Focal Point Biofiltration Brochure

Next Generation Bioretention

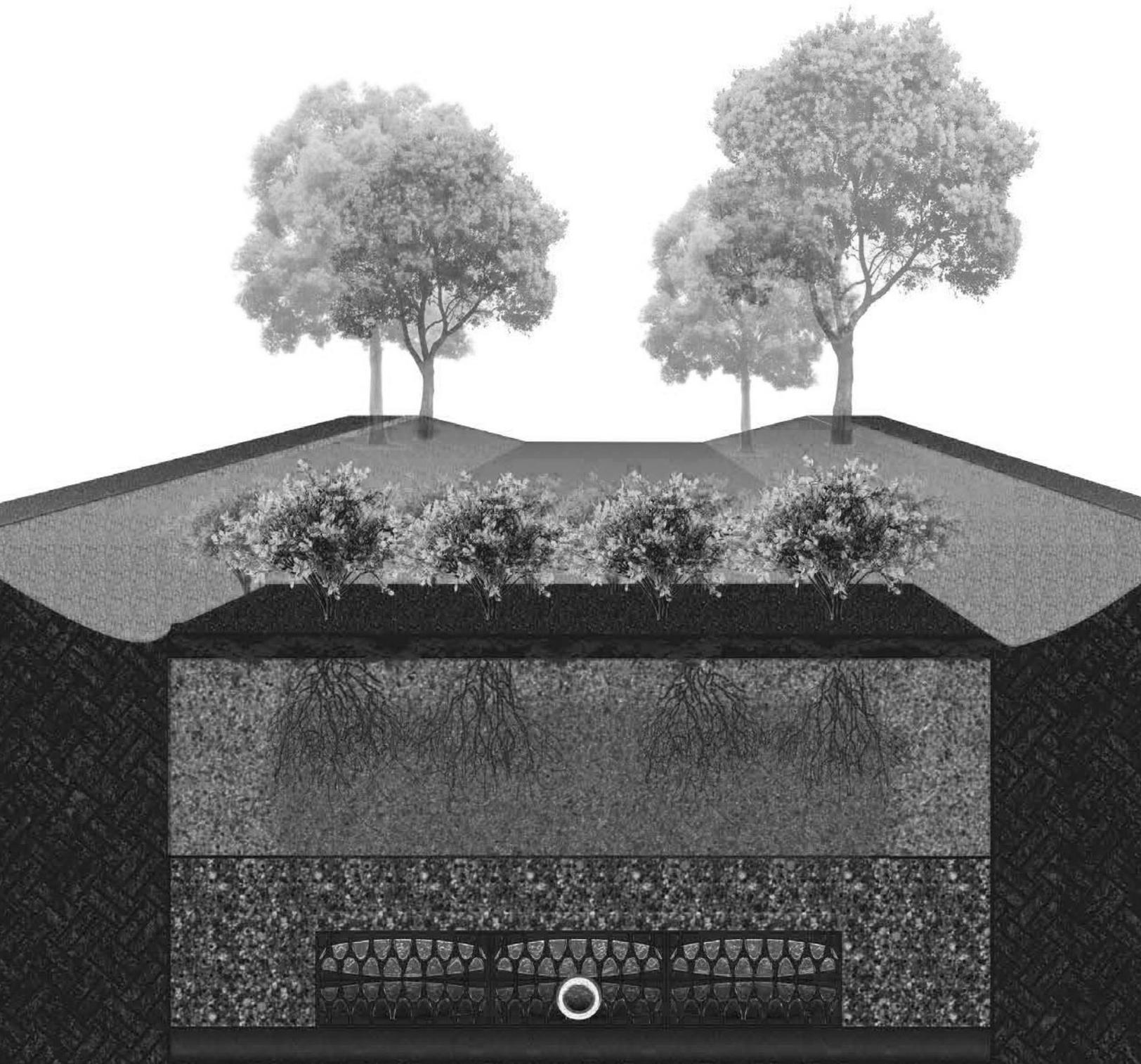
High Performance Modular
Biofiltration Systems



FocalPoint
BIOFILTRATION SYSTEMS



FocalPoint High Performance Modular Biofiltration Systems (HPMBS) is a scalable biofiltration system which combines the efficiency of high flow rate engineered soils with the durability and modularity of a highly pervious expandable underdrain/storage/infiltration system. The modular FocalPoint HPMBS is a complete, integrated system with a demanding specification that insures functionality, performance and maintainability. With rigorous quality assurance standards and post-construction in-situ performance verification, FocalPoint HPMBS provides guaranteed performance.





Uniquely Specified, Site Built

System Components

High Flow Media

At the heart of every FocalPoint HPMBs is its high performance engineered soil blend. Developed by LID pioneer, Larry Coffman, advanced high flow rate biofiltration media utilizes physical, chemical and biological mechanisms of the soil, plant and microbe complex, to remove pollutants found in stormwater runoff. Infiltration rates at 100" per hour or more, overcome many of the challenges inherent in traditional slow flow rate media and creates design flexibilities that drive lower costs and greater application opportunities.

Separation Layer

A wide aperture mesh layer is utilized to prevent bridging stone from entering the underdrain system. A separation layer which utilizes the concept of 'bridging' to separate the biofiltration media from the underdrain without the use of geotextile fabrics.

Open Cell Underdrain

A modular, high infiltration rate underdrain/storage system which is designed to directly infiltrate or exfiltrate water through it's surface. The modular underdrain overcomes the limited collection capacity of traditional stone and pipe underdrains. A 95% open surface area accepts water significantly faster and can be extended to accommodate any volume needs.

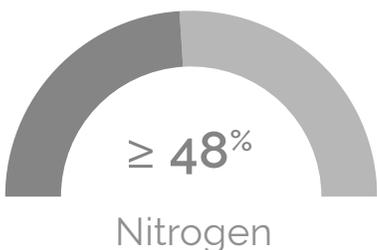
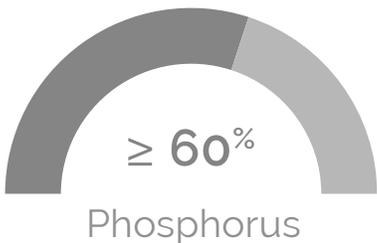
Mulch

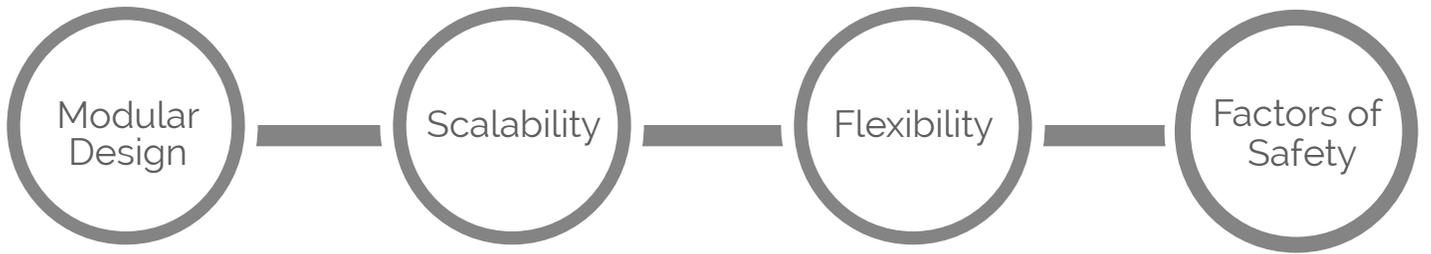
Shredded, hardwood mulch acts as a pre-treatment mechanism, capturing silt, sediment and certain other pollutants, and preventing trash from entering the system. Removal and replacement of mulch is typically necessary at 6-12 month intervals and is the most significant maintenance activity required with the FocalPoint HPMBs.

Plants

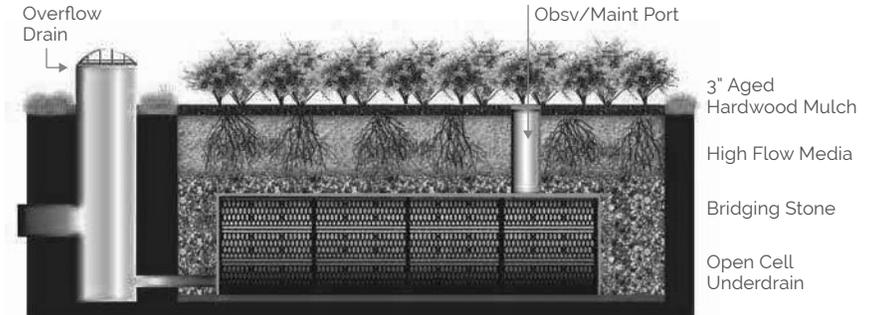
Native plants are preferred, but a broad palette of plants which thrive in FocalPoint HPMBs systems exist. They are typically characterized by rhizomatous root systems and tolerate both drought and inundation.

Pollutant Removal Efficiency



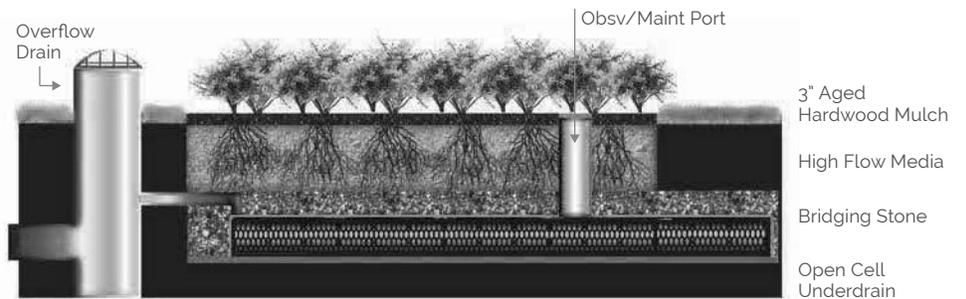


The FocalPoint's modular underdrain, unlike a traditional perforated pipe, not only supports the flow rate of the media, but can be expanded beyond the footprint of the media bed to provide unlimited underground detention, infiltration and/or storage for water reuse/infiltration.



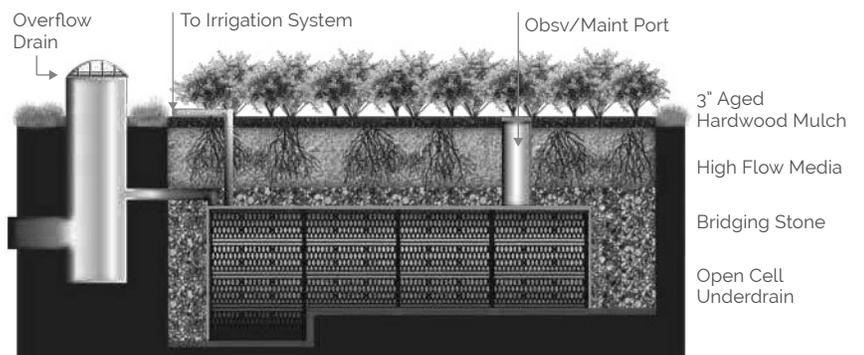
Expanded Detention

FocalPoint HPMBS gives designers maximum flexibility in meeting both water quality and volume requirements



Expanded Infiltration

The system can be used in combination with traditional LID BMPs such as grassy swales and vegetated depressions. It enables implementation of green streets using urban sidewalk planters; which because of the small footprint can support designs with large trees. These systems are also used for downspout planters, replacing underground treatment systems and are an easy retrofit for failed traditional bioretention systems. FocalPoint provides unlimited application opportunities for new construction and redevelopment.



Rainwater Harvesting

'Cap & Seal' Protection

During Ongoing Construction Activity

Protecting the FocalPoint HPMBs during construction is of the utmost importance. The 'Cap & Seal' protection ensures a viable system regardless of the construction sequencing by sealing off the media bed until the contributing drainage area is stabilized. Solving this problem solves one of the most problematic issues in bioretention. Due to its small scale, FocalPoint HPMBs can be capped and sealed, allowing installation to take place early in the project construction cycle when other site utilities are installed.



Convergent Water Technologies guarantees post-construction performance and we make sure your client gets it.



Performance Guaranteed

Post-Installation Verification

The first year's maintenance is included in all FocalPoint HPMBs installations to insure that the system is given the best opportunity to succeed, and low cost annual maintenance contracts are available.

The potential of failure for most LID/GI BMP's is highest within the first year and success and failure is often dependent on whether the system is being properly inspected and maintained. Convergent's commitment to system success doesn't stop when the installation is complete.

Maintenance In Mind

Simple & Cost Effective

This hydraulic conductivity test procedure measures the entire media profile under saturated conditions to produce a reliable and accurate result.

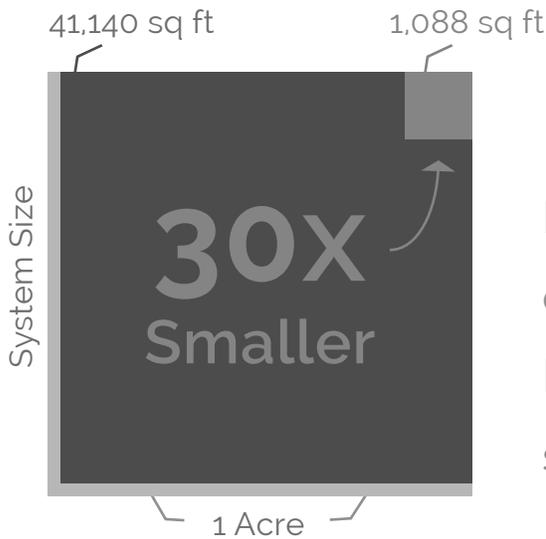
To ensure the highest level of effectiveness, Convergent specifies that the FocalPoint HPMBs be tested within 90 days of activation and we recommend the system be tested annually thereafter to provide ongoing quality assurance.

The Economic Case

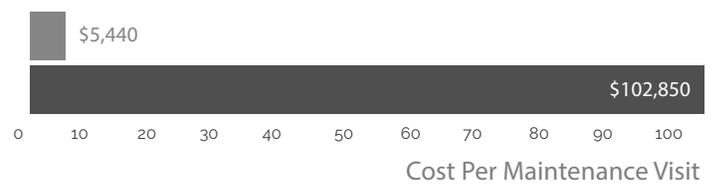
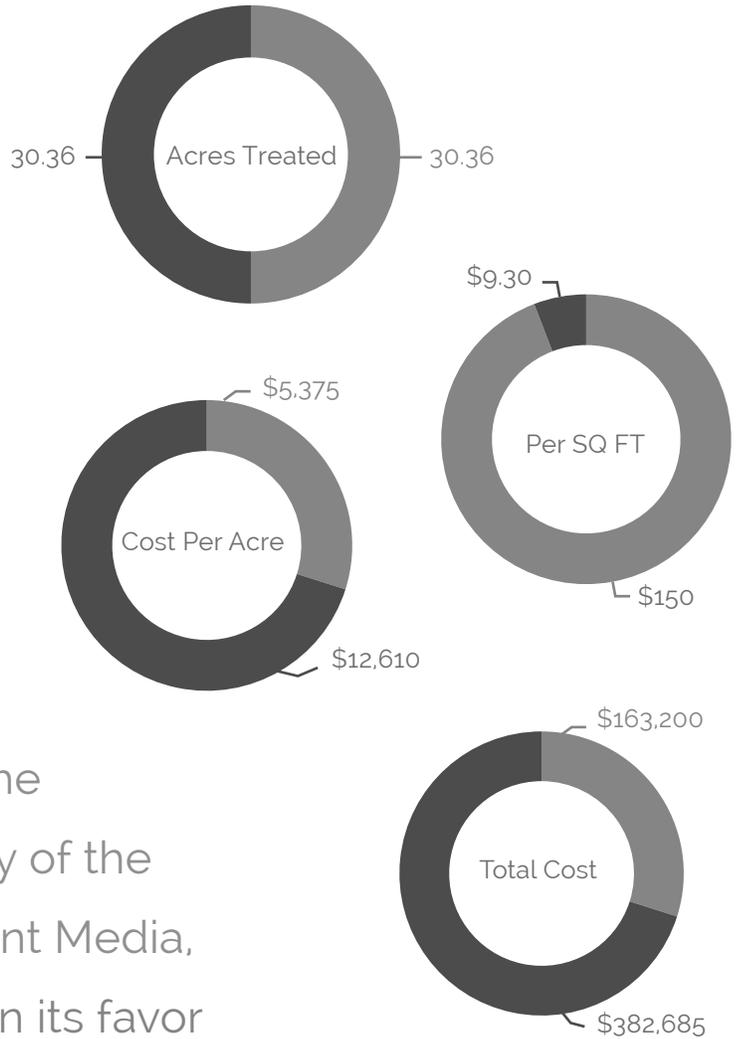
FocalPoint HPMBS vs Traditional Bioretention Soils

- FocalPoint HPMBS
- Traditional Bioretention

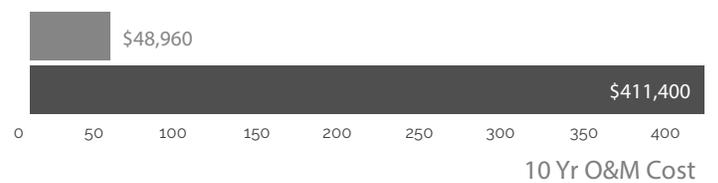
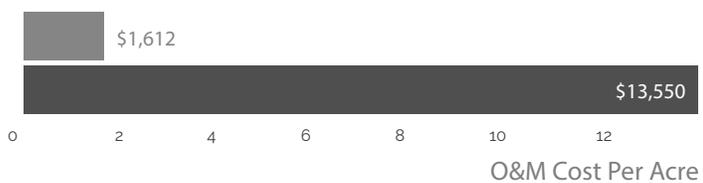
The typical economic case for the FocalPoint HPMBS is demonstrated on both the up front and life cycle cost of a recent project. Both the FocalPoint HPMBS and Traditional Bioretention system were budgeted by a contractor specializing in the installation of Low Impact Development Systems. Although the price per square foot of FocalPoint is many times higher than traditional bioretention, the efficiency of the FocalPoint High Performance Media makes the system more than 30 times smaller, per acre treated, resulting in a 50% cost savings per acre treated.



Due to the efficiency of the FocalPoint Media, scale is in its favor



Due to the size maintenance is a fraction of the cost.





GreenRoads Silver Certified

Bagby Street, Houston, TX

Midtown Redevelopment

The design teams goal for Bagby Street was to provide large street trees within the right of way while also removing pollutants such as heavy metals, floatables, sediment and oil and grease from the roadway stormwater runoff before it outfalls to nearby Buffalo Bayou. With the FocalPoint HPMBs high flow-rate engineered media, the designers didn't need to fill the entire planter box with a bioretention media and underdrain system. This allowed placing the HPMBs away from the tree roots and allowed the design team to meet their objective of having both street trees and biofiltration. The result was an award winning project.

Multi-Family Development

Queenston Manor Apartment

At Queenston Manor Apartments, all of the drainage areas are also common areas and courtyards so it was imperative that the system drain within 24 hours of a rain event. The FocalPoint HPMBs was placed at the lowest elevation in the four landscaped swale systems on site to provide a reliable drainage, detention and water quality solution. The design team was able to decrease the surface storage volume requirements enough to reclaim the land needed to build two additional apartment buildings. For the developers, the 48 additional apartment units was the difference between success and a canceled project.

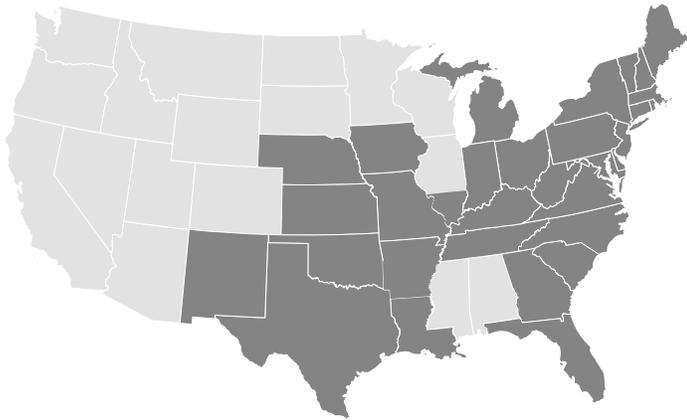
Parking Lot Retrofit

Sugarland Conference Center

A complete parking lot retrofit incorporates a combination of bioswales, FocalPoint HPMBs, and an expanded underdrain Rainwater Harvesting System. This Low Impact Development and Green Infrastructure retrofit has increased aesthetic appeal, increased time of concentration and decreased peak flows. The reuse system reduces annual potable water use by over 50% and the FocalPoint HPMBs removes more than 80% of the TSS from the discharge along with hydrocarbons, phosphorus, nitrogen and other pollutants before delivering it to the harvesting system.

VAR Connection

Changing Stormwater Systems Distribution



The Convergent Value-Added Reseller (VAR) network consists of regional organizations that focus on cost-effective answers to all manner of stormwater problems, utilizing innovative systems that deliver value that's greater than the sum of their parts.

Convergent provides its VARs with the latest technologies, guidance and innovations, and like Convergent, these VARs are firms whose value-added approach has required them to take a non-traditional path in the stormwater industry; it's a path that leads to the experience, diverse relationships and solutions orientation that is so rare and critically needed in the stormwater industry.

Convergent's VARs are locally rooted and deeply connected in the communities they serve. They know the local regulations and act as agents of beneficial change. On average, Convergent VAR firms have been in business for 21 years; old enough to know their markets well and experienced enough to recognize and respond quickly to the LID/Green Infrastructure paradigm that is remaking our industry.

Capitalizing on the power of collaborative effort VAR network firms are able to respond rapidly to changing regulations, access 'lessons learned' by network peers and respond to the opportunity to be a driving force for innovation in the stormwater marketplace.

The firms which make up this network serve in exclusive territories, and incorporate both sales and service elements (directly or indirectly) in their operations. Every VAR will provide installation, oversight, verification and maintenance for Convergent Systems. Like Low Impact Development itself, the Convergent VAR network is cumulatively powerful and can deliver more cost-effective solutions than traditional distribution.



804.275.4126
acfenvironmental.com



800.869.9600
aspent.com



800.597.2180
d2lwr.com



832.456.1000
ecosvs.com



1-616.836.3535
interface20.com



800.362.2245
quicksupplydm.com



800.465.0900
sitefabric.com

FOCALPOINT PERFORMANCE GUARANTEE & IN-SITU TESTING

While biofiltration & bioretention systems provide unmatched ability to treat stormwater runoff, they also have a history of problems. Two of the primary reasons for these problems are that the media used in the systems don't flow as they're supposed to, or that the systems are contaminated during the construction process.

FocalPoint eliminates these two issues through the use of a generic, performance-based specification that requires post-installation testing and verification of the system. Testing the installed system guarantees both that the quality of the installed components meet the specification, and that the system is functioning properly. Here's section II C 3 of the FocalPoint Specification:

"Within 90 days after project completion, the infiltration rate shall be confirmed at the manufacturer or installer's expense, by a wetted condition hydraulic conductivity test.

- Failure to pass this test will result in removal and replacement of all media in the system at no cost to the project owner/operator.
- Test must utilize the equipment and follow the standard operating procedures found in the Harris County, Texas manual entitled, Low Impact Development & Green Infrastructure Design Criteria for Stormwater Management (2011).
- Replacement media, if required, must be taken from a different batch than the original."

The hydraulic conductivity test itself is performed using a Rub-I Infiltrometer (see picture below). The test measures the time required to pass a given head of water through the system in a saturated condition. For more information on the test and to see an actual test being performed on a live site, click the link below.

<http://youtu.be/1SP2-g4vkWk>

By testing the installed system after the project has been completed, all involved parties are protected:

- Protects the engineer by ensuring the system is flowing as designed, limiting overflows.
- Protects the contractor by demonstrating the functionality of the system and eliminating the possibility of construction stage contamination.
- Protects the regulator by ensuring the right volume of runoff is being treated, which impacts TMDL requirements.
- Protects the developer by guaranteeing a working system has been delivered on the project.

Implementing aggressive quality assurance measures on the installed system helps make FocalPoint a true, 2nd Generation Biofiltration System.



FOCALPOINT HP PERFORMANCE SPECIFICATION:

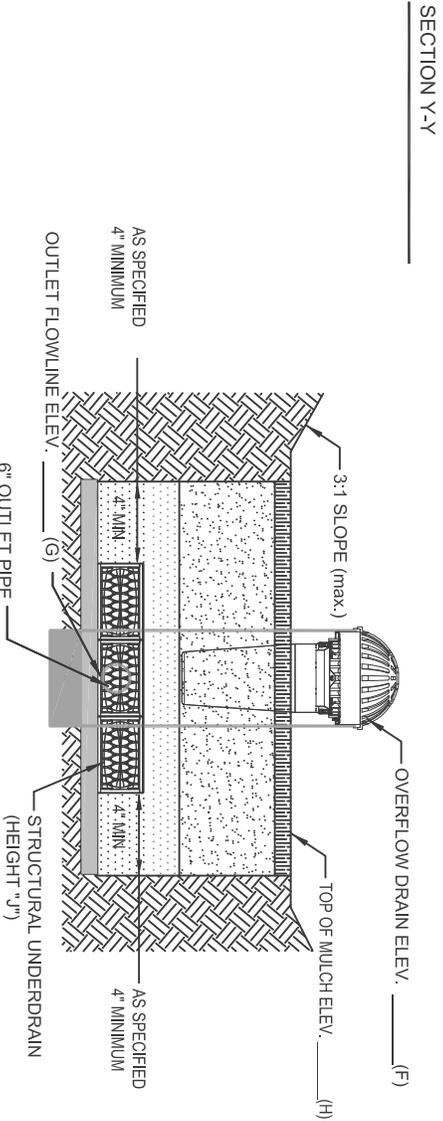
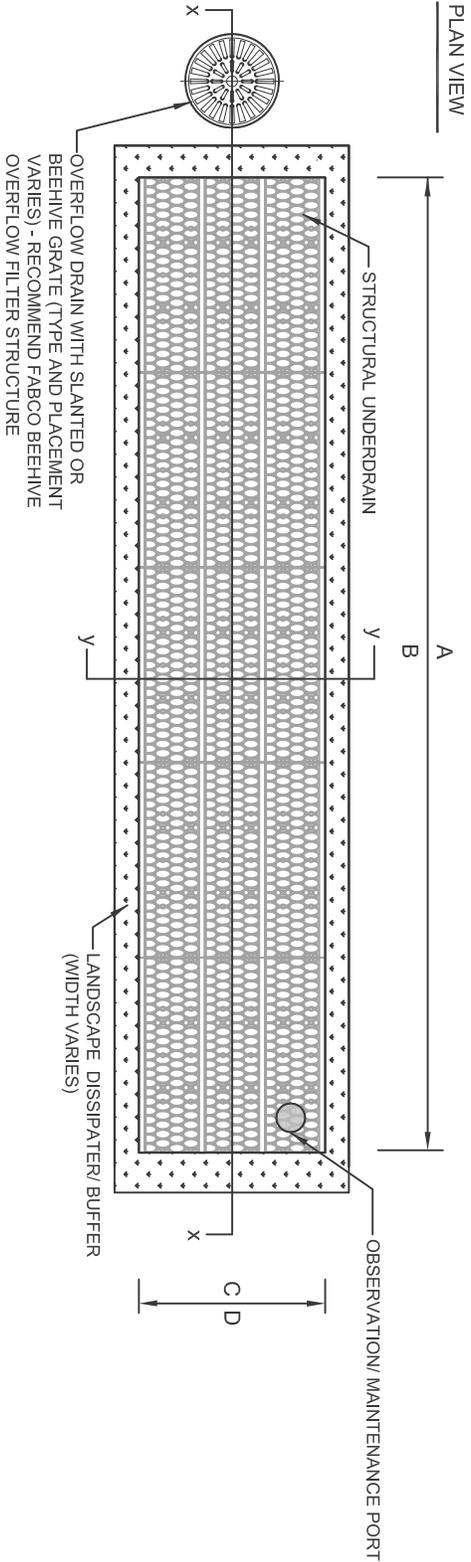
HIGH PERFORMANCE MEDIA

HIGH PERFORMANCE MEDIA MUST MEET A MINIMUM OF 100" PER HOUR INFILTRATION RATE. FIELD HYDRAULIC CONDUCTIVITY TESTING MUST BE CONDUCTED WITHIN 30 DAYS OF INSTALLATION. FIELD TEST MUST BE CONDUCTED WITH PROSCRIBED INFILTROMETER AND SOP (SEE SPECIFICATION). FAILURE TO MEET FIELD TESTING WILL RESULT IN THE REMOVAL OF MEDIA AND REPLACEMENT FROM ALTERNATE BATCH.

HIGH PERFORMANCE STRUCTURAL UNDERDRAIN

MUST HAVE A MINIMUM OF 19 SQUARE INCHES OF ORIFICE OPENING PER SQUARE FOOT. MUST MEET H2O LOADING REQUIREMENTS. MUST BE MODULAR IN NATURE AND ASSEMBLED ON SITE. MUST HAVE MINIMUM 90% INTERIOR VOID SPACE.

FOCALPOINT HP CONSTRUCTION GUIDE	
A	FOCALPOINT LENGTH
B	# UNDERDRAIN LONG
C	FOCALPOINT WIDTH
D	# UNDERDRAIN WIDE
E	WATER QUALITY VOLUME
F	OVERFLOW ELEVATION
G	OUTLET FLOWLINE
H	TOP OF MULCH
I	TOP OF GABION (OPTIONAL)
J	UNDERDRAIN HEIGHT



FOCALPOINT HP CONSTRUCTION GUIDE

FOR MORE INFORMATION CONTACT ACF ENVIRONMENTAL
 WWW.ACFENVIRONMENTAL.COM
 800.448.3636



REVISED
 MARCH 2015

Appendix VI. Articles of Incorporation & Bylaws

State of California



SECRETARY OF STATE

CORPORATION DIVISION

I, *BILL JONES*, Secretary of State of the State of California, hereby certify:

That the annexed transcript has been compared with the corporate record on file in this office, of which it purports to be a copy, and that same is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this

JUL 19 1996



Bill Jones

Secretary of State

1787543

ENDORSED
FILED

in the office of the Secretary of State
of the State of California

JUL 18 1996


BILL JONES, Secretary of State

ARTICLES OF INCORPORATION
OF THE
LOS ANGELES & SAN GABRIEL RIVERS WATERSHED COUNCIL

ARTICLE I

The name of this corporation is the Los Angeles & San Gabriel Rivers Watershed Council.

ARTICLE II

This corporation is a nonprofit public benefit corporation and is not organized for the private gain of any person. It is organized under the Nonprofit Public Benefit Corporation Law for public purposes.

ARTICLE III

The specific purpose of this corporation is to facilitate a comprehensive, multi-purpose, stakeholder-driven consensus process to preserve, restore and enhance the many beneficial uses, economic, social, environmental and biological, of the Los Angeles and San Gabriel Rivers watersheds eco-system through education, research, planning and mediation.

ARTICLE IV

The name and address in the State of California of this corporation's initial agent for service of process is:

Dorothy Green
801 Holmby Avenue
Los Angeles, CA 90024

State of California

A489169

SECRETARY OF STATE

I, *BILL JONES*, Secretary of State of the State of California, hereby certify:

That the annexed transcript has been compared with the corporate record on file in this office, of which it purports to be a copy, and that same is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this

MAR 20 1997



Bill Jones

Secretary of State

A489169

LOS ANGELES & SAN GABRIEL RIVERS
WATERSHED COUNCIL
801 HOLMBY AVENUE, LOS ANGELES, CA 90024
310-270-4151 FAX: 310-270-4152

February 14, 1997

ENDORSED
FILED
In the office of the Secretary of State
of the State of California

FEB 24 1997

CERTIFICATE OF AMENDMENT
OF
ARTICLES OF INCORPORATION


BILL JONES, Secretary of State

The undersigned certify that:

1. They are the president and the secretary, respectively of

----- *Los Angeles & San Gabriel Rivers Watershed Council,*
a California Corporation # 1787543

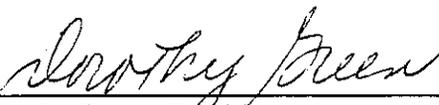
2. Article III of the Articles of Incorporation of this corporation are amended to include an additional sentence here shown in italics:

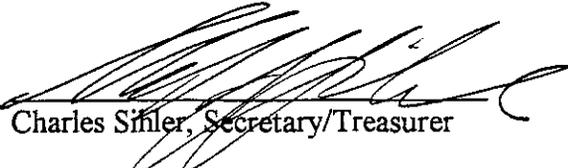
The specific purpose of this corporation is to facilitate a comprehensive, multi-purpose, stakeholder-driven process to preserve, restore and enhance the many beneficial uses, economic, social, environmental and biological, of the Los Angeles and San Gabriel Rivers Watersheds eco-system through education, research, planning and mediation. *Important to this purpose is the preservation of land for scientific, historic, educational, recreational and open space opportunities.*

3. The foregoing amendment of Articles of Incorporation has been duly approved by the board of directors. The corporation has no members.

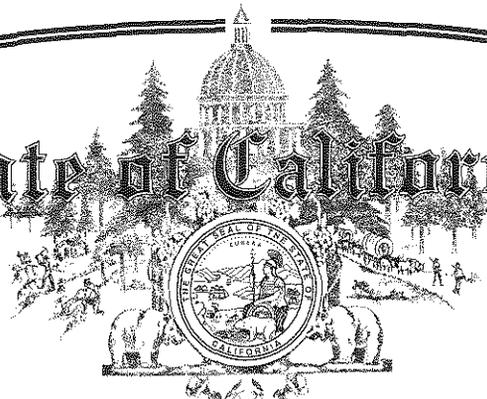
We further declare under penalty of perjury under the laws of the State of California that the matters set forth in this certificate are true and correct of our own knowledge.

DATE: February 14, 1997


Dorothy Green, President


Charles Sifler, Secretary/Treasurer

State of California



SECRETARY OF STATE

I, *BILL JONES*, Secretary of State of the State of California, hereby certify:

That the attached transcript of 1 page(s) has been compared with the record on file in this office, of which it purports to be a copy, and that it is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this day of

DEC 11 2001



Bill Jones

Secretary of State

NOV 21 2001

BILL JONES, Secretary of State

CERTIFICATE OF AMENDMENT
OF
ARTICLES OF INCORPORATION

The undersigned certify that:

1. They are the president and the secretary, respectively, of The Los Angeles & San Gabriel Rivers Watershed Council, a California Corporation # 1787543.
2. Articles VI and VII of the Articles of Incorporation of this corporation are amended to read as follows:

ARTICLE VI

The property of this corporation is irrevocably dedicated to scientific, charitable and educational purposes meeting the requirements for exemption provided by Section 214 of the Revenue and Taxation Code, and no part of the net income or assets of this corporation shall ever inure to the benefit of any director, officer or member thereof or to the benefit of any private person.

ARTICLE VII

Upon the dissolution or winding up of the corporation, its assets remaining after payment, or provision for payment, of all debts and liabilities of the corporation, shall be distributed to a nonprofit fund, foundation or corporation which is organized and operated exclusively for scientific, charitable and educational purposes meeting the requirements for exemption provided by Section 214 of the Revenue and Taxation Code, and which has established its tax exempt status under Section 501 (c) (3) of the Internal Revenue Code.

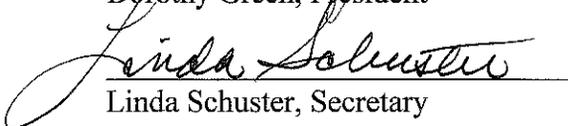
3. The foregoing amendment of Articles of Incorporation has been duly approved by the board of directors.
4. The corporation has no members.

We further declare under penalty of perjury under the laws of the State of California that the matters set forth in this certificate are true and correct of our own knowledge.

DATE: November 2, 2001



Dorothy Green, President



Linda Schuster, Secretary