Santa Clara Valley Urban Runoff Pollution Prevention Program
Green Stormwater Infrastructure Case Study

HACIENDA AVENUE

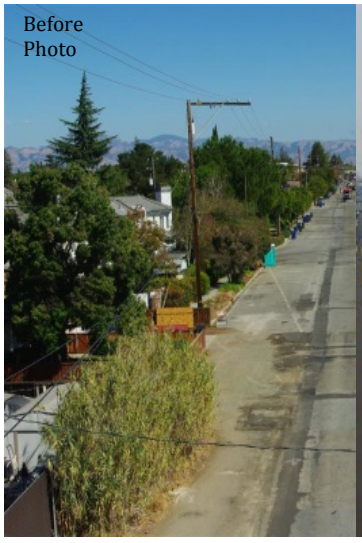
GREEN STREET PROJECT
CAMPBELL, CALIFONRIA

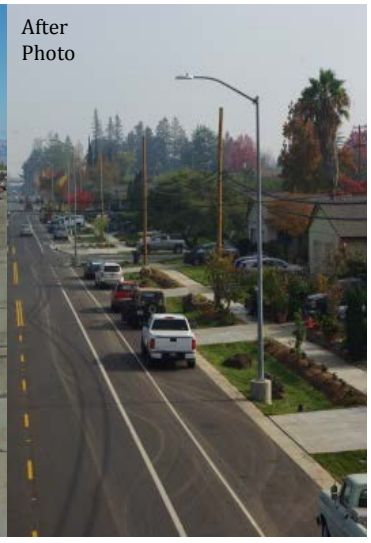
Project Description

The goals of the project were to reconstruct the asphalt pavement, increase pedestrian and cyclist safety, improve connectivity between neighborhoods, install better lighting, encourage more active transportation along the improved linear parkway connecting to Los Gatos Creek County Park and Trail and reduce the roadway carbon footprint. After undergoing the "road diet" project, the pavement width on Hacienda Avenue went from 65-70 feet to 52 feet, accommodating 11-foot vehicle lanes, parking lanes, and new bike lanes.

Key Elements

- Hacienda Avenue is a high capacity, residential collector street
- The project addressed 1.1 miles of road with an 18-acre drainage area.
- 63 biotreatment areas were installed along both sides of the street for a total surface area of 26,000 sq. ft.
- New bulb-outs at intersections calm traffic and improve pedestrian safety by reducing crosswalk distance





Completion Date
November 2015

Project Duration
3 years (design: 2012 - 2014 & construction: 2014-2015)

Costs
Total Project Cost
$6,779,115

Construction
- $5,837,997

Design
- $448,608

Project Management
- $492,510

Funding
$4,145,115
- City Funds (60%)

$2,634,000
- Grants (40%)

Grants
State Department of Water Resources Proposition 84 Chapter 2 Integrated Regional Water Management (IRWM) Grant Program

Valley Transportation Authority's Community Design and Transportation Program

Stormwater Control Measures

Biotreatment

63 biotreatment areas treat stormwater runoff from the street and sidewalk

Other Project Features

Recycled materials

Low H_2O landscaping

New street trees

Bike lanes & bus stops

Traffic calming

LOCATION

Hacienda Avenue from Winchester Boulevard to Burrows Road

Campbell, CA

HACIENDA AVENUE

Key Elements (continued)

- Original roadway had a very wide right of way, no cycling facilities, and discontinuous sidewalks
- Area has highly infiltrative underlying soils
- A flush curb allows roadway runoff to sheet flow into the biotreatment areas sized using SCVURPPP methodology (combination flow and volume approach)
- Roadway pavement was reconstructed with in-place recycled material
- 60 new street trees installed in tree wells in parking lanes reduce roadway heat island effect
- Bay-Friendly low maintenance and drought resistant landscaping
- Continuous sidewalks were added on both sides, separated from roadway by planting areas

Additional Benefits

- Reduced localized flooding
- Energy efficient, durable LED street lighting
- New bike lanes and improved bus stops
- Educational signage
- Project earned Greenroads Silver Certification (Score 43, Silver) and is a Bay-Friendly Rated Landscape (Score 97)

Project Outcomes and Lessons Learned

- Reduced roadway width required driveway extensions. Construction activities were coordinated with property owners to minimize access disruptions.
- Biotreatment areas required lowering of sewer and underground utility service laterals. Utility relocation work was completed before street work to minimize potential delays.
- Biotreatment areas constructed directly above native soils without media fabric. Underdrain not required due to highly infiltrative underlying soils**.** An overflow system connects to storm drain system. Biotreatment areas are lined along the sides to prevent engineered soil from mixing with native soil.
- Cobbles found in the roadway subgrade and biotreatment areas were crushed onsite for use in the roadway base. Excessive size and quantity of cobblestones meant adding rock crushing process and two weeks of roadway closure.
- Full depth reclamation (FDR) approach saved the City half the cost of the conventional alternative to remove and replace the old street by reusing more than 80% of what was there.

Additional Information

City Website
www.cityofcampbell.com/567/Hacienda-Avenue-Green-Street-Improvement Project background, Greenroads and Bay Friendly certification links, and SFEI monitoring report.

Other Project Information
Presentation from SCVURPPP Site Design Awards 2016
www.scvurppp-w2k.com/pdfs/1516/wshop_c3_2016/3_Atre_2016_Site_Design_Awards_final.pdf

PROJECT CONTACTS

Public Works Department
Email:
publicworks@cityofcampbell.com