Hermosa Greenbelt Infiltration Facility Overview

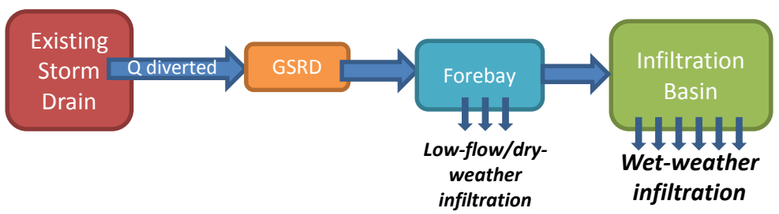
A volume reduction BMP is planned for the Hermosa Greenbelt site. Infiltration galleries function similarly to subsurface storm water detention systems but are constructed with a permeable base and sides designed to infiltrate stormwater runoff. It is usually not practical to infiltrate runoff at the same rate that it is generated; therefore, these facilities generally include both storage and drainage components. Infiltration basins remove pollutants from stormwater network by infiltrating stormwater into highly permeable engineered soil beneath the system.

Existing Site Conditions

Photo credit: www.traillink.com

The site is part of the 3.5-mile long Hermosa Valley Green Belt Trail in the City of Hermosa Beach.

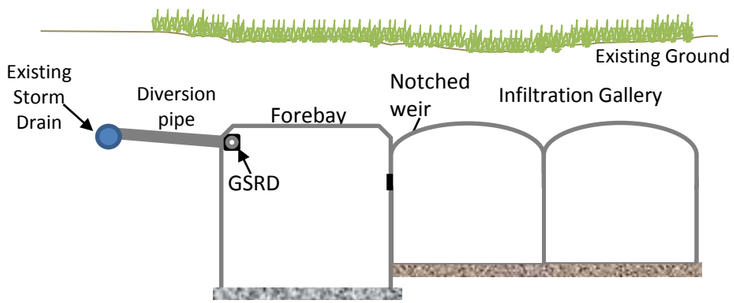
Treatment Process



The BMP will consist of a diversion structure, conveyance pipes, a gross solids removal device (GSRD), a forebay, and an infiltration gallery. Dry- and wet-weather flows will be diverted from the existing storm and flow into the forebay through the conveyance pipe and GSRD and begin to infiltrate into native soil. Flows exceeding infiltration rate at the forebay will fill the forebay and ultimately overflow via a notched weir into the infiltration gallery, where additional infiltration will occur. The system will fill until inflows no longer exceed loss rates, at which time the basin will drawdown. When persistent flows fill the system to storage capacity, runoff in the storm drain will bypass the diversion until capacity is regained by ways of infiltration losses.

Site Configuration

Plan View (Preliminary Footprint – Subject to Change)

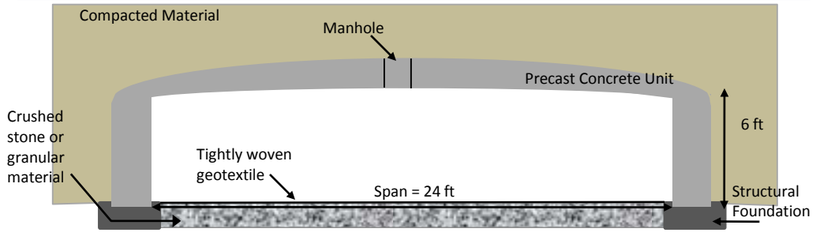


Profile (not to scale)

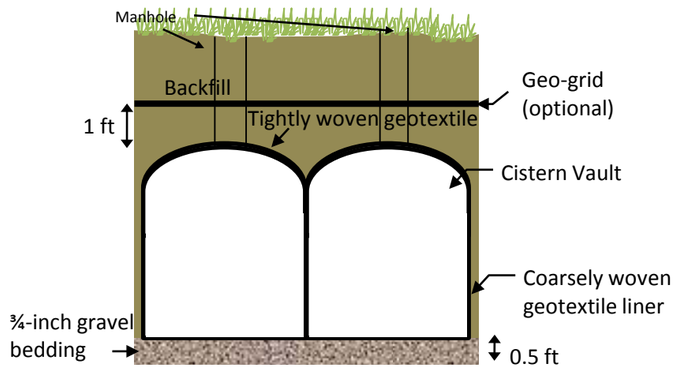
Design Parameters

General			
Tributary Area (ac)	2914	Drawdown Time (hrs)	72
Storm Drain Diverted	21" RCP	Sat. Hyd. Cond. (in/hr)	12
Design Criteria			
Max. Diversion Flow Rate (Q_{dmax}) (cfs)	47	Cumulative Loss Rate (cfs)	0.64
Design Storage Volume (AF)	7.3	Infiltration Footprint (ft²)	63800
Design Parameters			
Pretreatment		***Infiltration Gallery***	
GSRD Length (24" diam.) (ft)	15	Gallery Footprint (ft²)	63780
Forebay Footprint (ft²)	4185	Gallery Length (ft)	600
Forebay Length (ft)	30	Gallery Width (ft)	150
Forebay Width (ft)	150	Gallery Ponding Depth (ft)	5
Forebay Ponding Depth (ft)	6		

Typical Details



Forebay – Cross-section (not to scale)



Infiltration Gallery – Cross-section (not to scale)

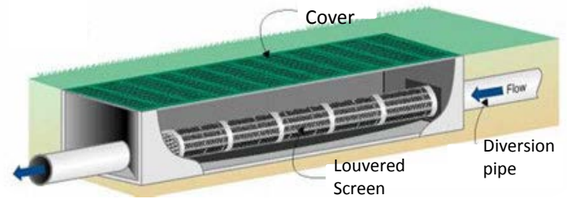


Photo credit: Roscoe Moss Company
Product shown: StormFlo™*

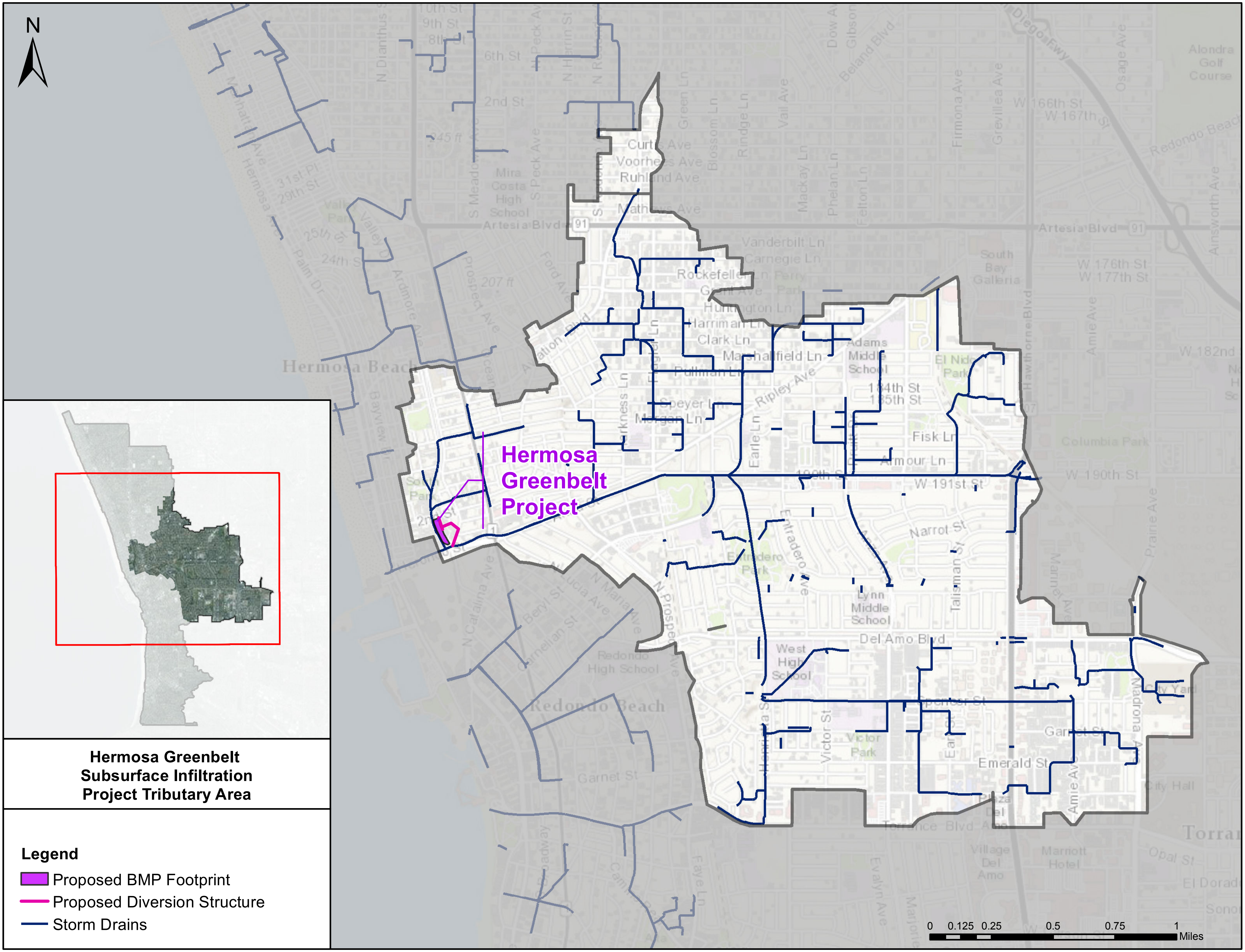
GSRD – Isometric view (not to scale)

Photo credit: www.conteches.com
Product shown: CON/SPAN ®

Stormwater Chambers

DRAFT	**Hermosa Greenbelt Subsurface Infiltration Facility Conceptual Design (10% Design): Hermosa Beach**	
March 2016	LA0298	Geosyntec consultants

*Products shown above were used as examples for sizing and cost analyses; other equivalent products may be used.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Hermosa Greenbelt Project
Hermosa Greenbelt Subsurface Infiltration Project Tributary Area
Legend
Proposed BMP Footprint
Proposed Diversion Structure
Storm Drains
0 0.125 0.25 0.5 0.75 1
Miles
Hermosa Beach
Redondo Beach
Artesia Blvd
Del Amo Blvd
Torrance Blvd
West High School
Lynn Middle School
Adams Middle School
Columbia Park
Entradero Park
Victor Park
El Nido Park
South Bay Galleria
Redondo High School
Mira Costa High School
Alondra Golf Course
W 190th St
W 191st St
Narrot St
Spencer St
Garnet St
Emerald St
Hawthorne Blvd
Ripley Ave
Prospect Ave
Madrona Ave
Anza Ave