Field of Green

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Background

- Develop a Collaborative Effort between Universities and Municipalities
- Reduce Dependency on Imported Water
- Improve Security of Water Supply
- Prevent Over Drafting
- Develop Reliable Local Water Supply

Where Southern California Gets its Water

Source: Metropolitan Water District of Southern California

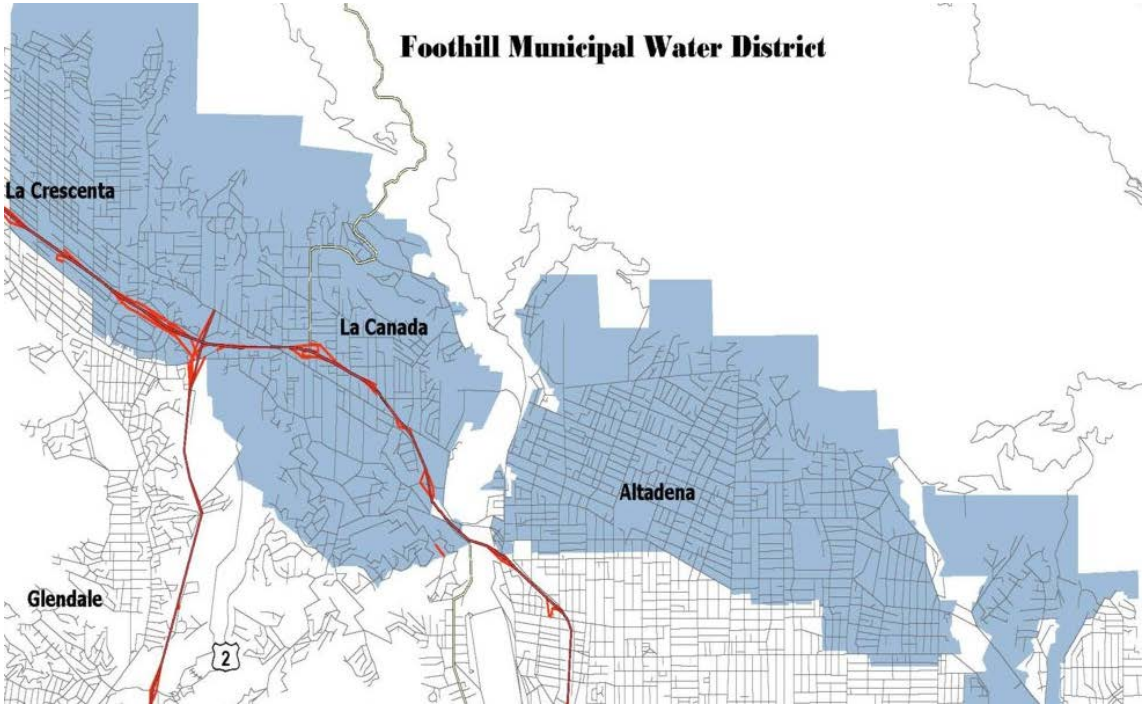
Collaboration

- Foothill Municipal Water District (FMWD)
- La Cañada United Methodist Church
- La Cañada Unified School District
  - La Cañada High School
- City of La Cañada Flintridge
- Los Angeles County Sanitation Districts
- California State Polytechnic University – Pomona
  - College of Engineering
    - Civil Engineering Department
  - College of Environmental Design
    - Landscape Architecture
    - Urban Planning

CAL POLY POMONA

Foothill Municipal Water District

- Distributes Metropolitan Water District to meet 60% of the Communities Water Needs
- Remaining sources:
  - Groundwater basins: Verdugo and Raymond Basins
  - Canyon Runoff
  - Recycled Water

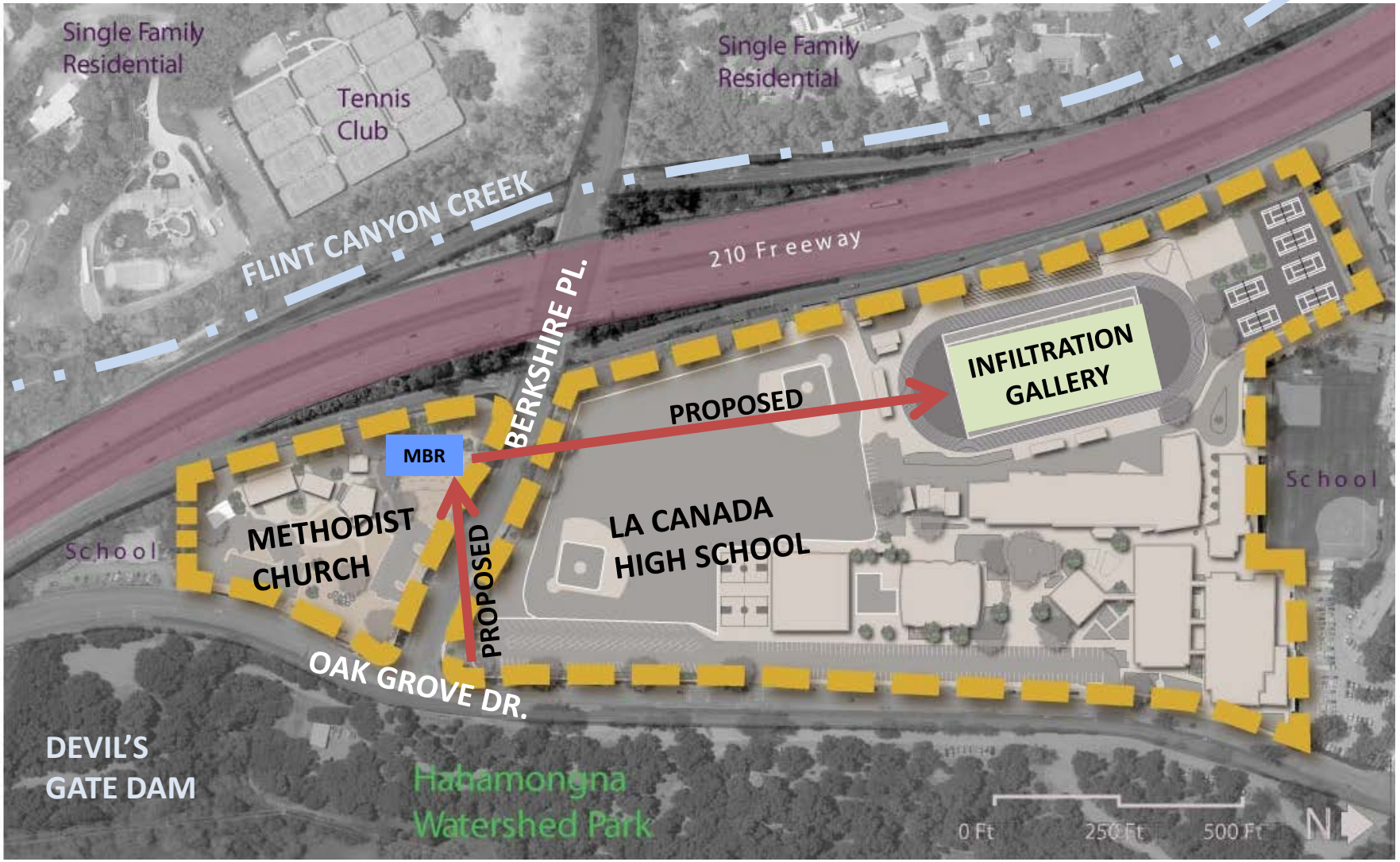


Source: Foothill Municipal Water District

Foothill Municipal Water District Recycled Water Demonstration Project

CAL POLY POMONA – INNOVATIVE SOLUTION

Project Scope



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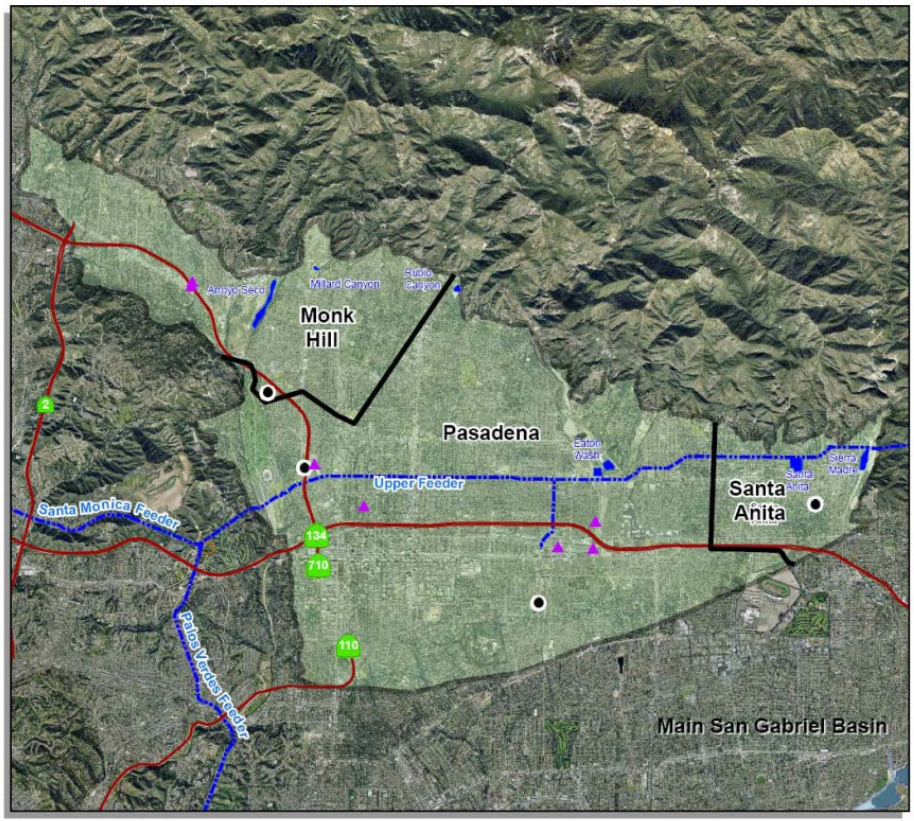
Groundwater Basin

- Infiltration water enters underlying soil
- Flows to groundwater table
  - Raymond Basin
    - Monk Hill Sub-basin
- Stored for later use as drinking water source



Raymond Basin

Source: Metropolitan Water District of Southern California

Urban Planning
Policy and Challenges of Recycled Water

- Regulated by Title 22 of the California Code of Regulations since 1978
- California Department of Public Health (CDPH) in the process of adopting new policy
- Variable water sources and a growing population
- Potential resources for water security
- Community perceptions of Recycled Water
- Expanding resources and advocating for funds
- Contaminants of Emerging Concern
  - Meeting treatment requirements
  - Establish monitoring program
  - Particular concerns with subsurface spreading direct to source

Policy Approach

- Tier One
  - Obtain a waiver from California Water Resources Control Board and California Department of Public Health
- Tier Two
  - Obtain special permit for the US Environmental Protection Agency
- Tier Three
  - Obtain new state legislation that would allow recycled water projects of this kind

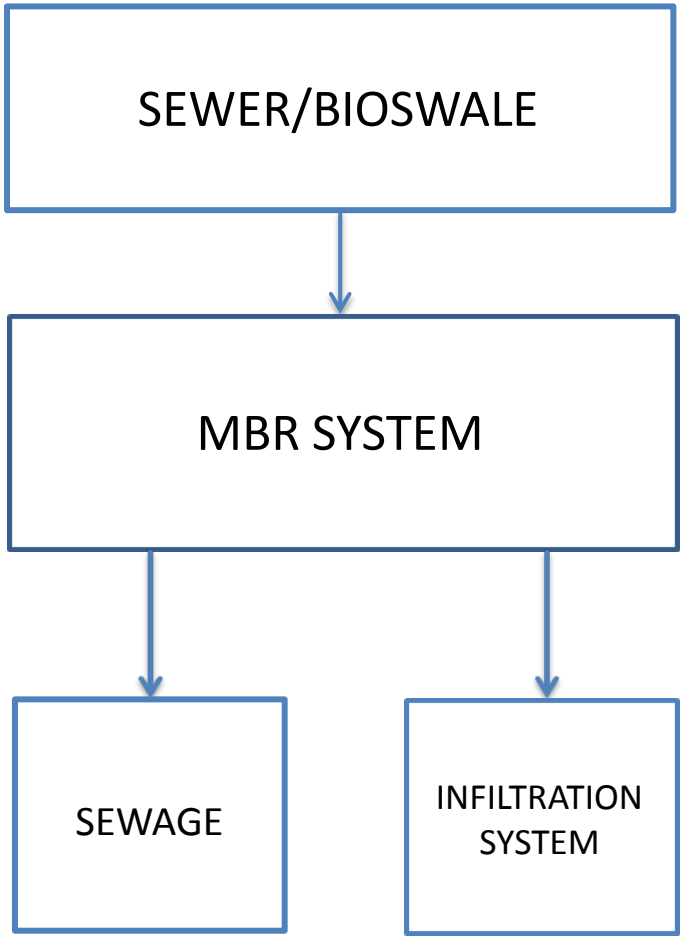
Urban Planning
Educational Outreach

- Educate public on important resource issues
- Community outreach on human innovation in water management
- Promoting community and global stewardship

Source: La Canada High School

Civil Engineering Design

- Access Sewage from Oak Grove and Storm water from School and Church
- Treat Storm Water and Waste Water using Membrane Bioreactor Systems (MBR's)
- Infiltration Galleries At La Canada High School to recharge groundwater

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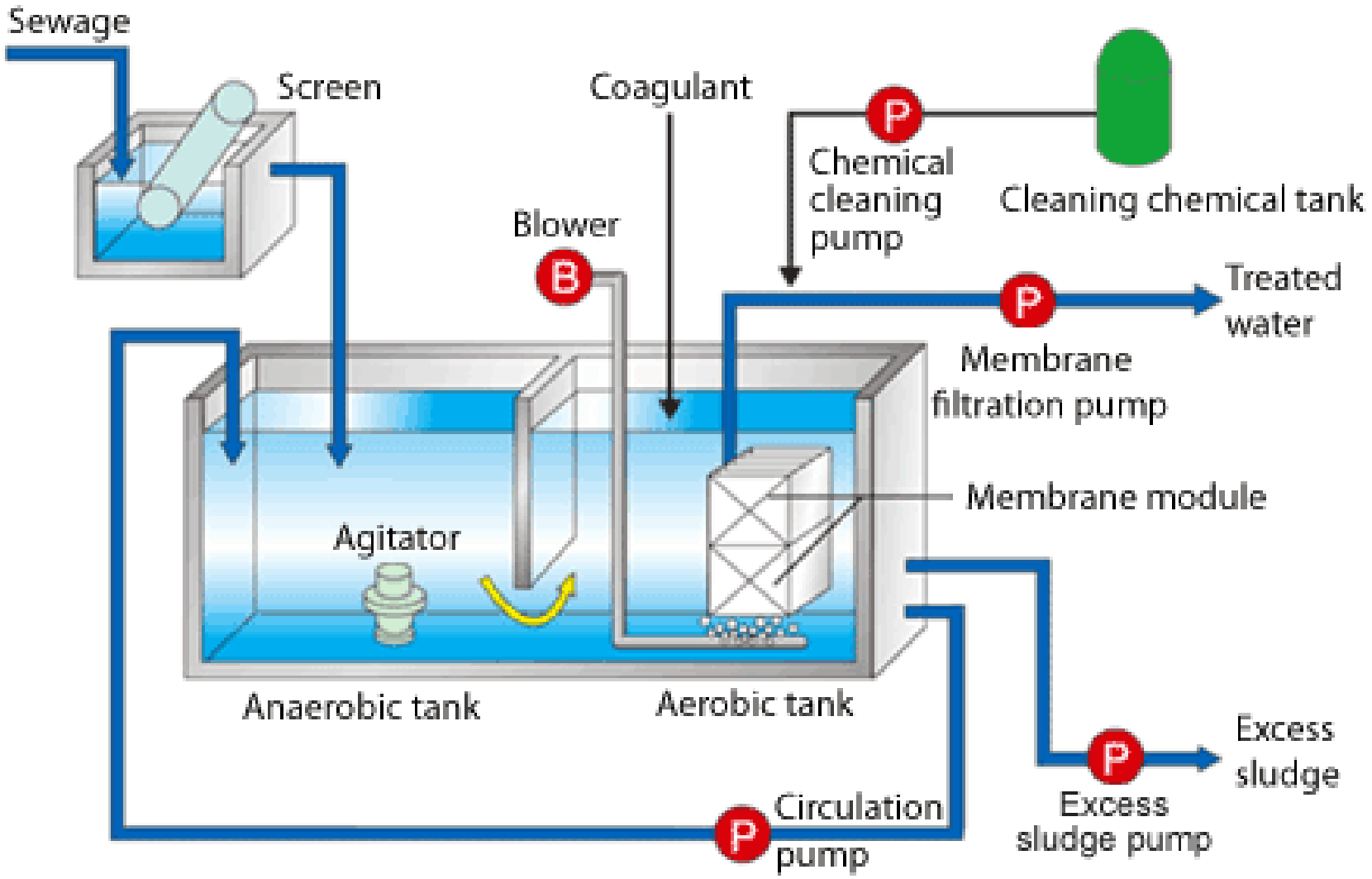
I-210
Clearwell "E"
Bioswale
MBR
La Canada High School
Berkshire Place
Wetwell "B"
Manhole "A"
Existing Sewer
Oak Grove Drive

Membrane Bioreactor System



Source: Hitachi Plant Technology

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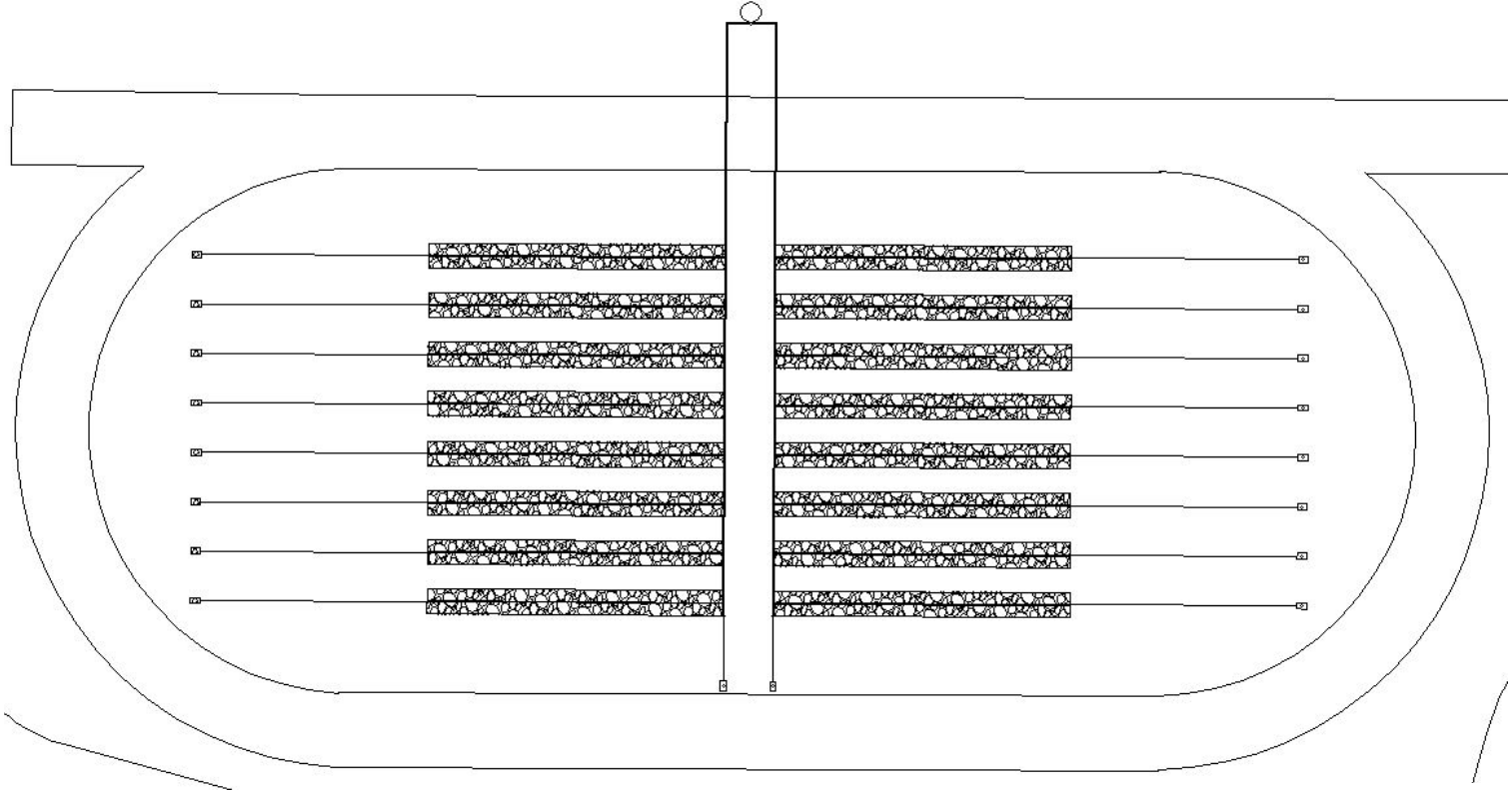

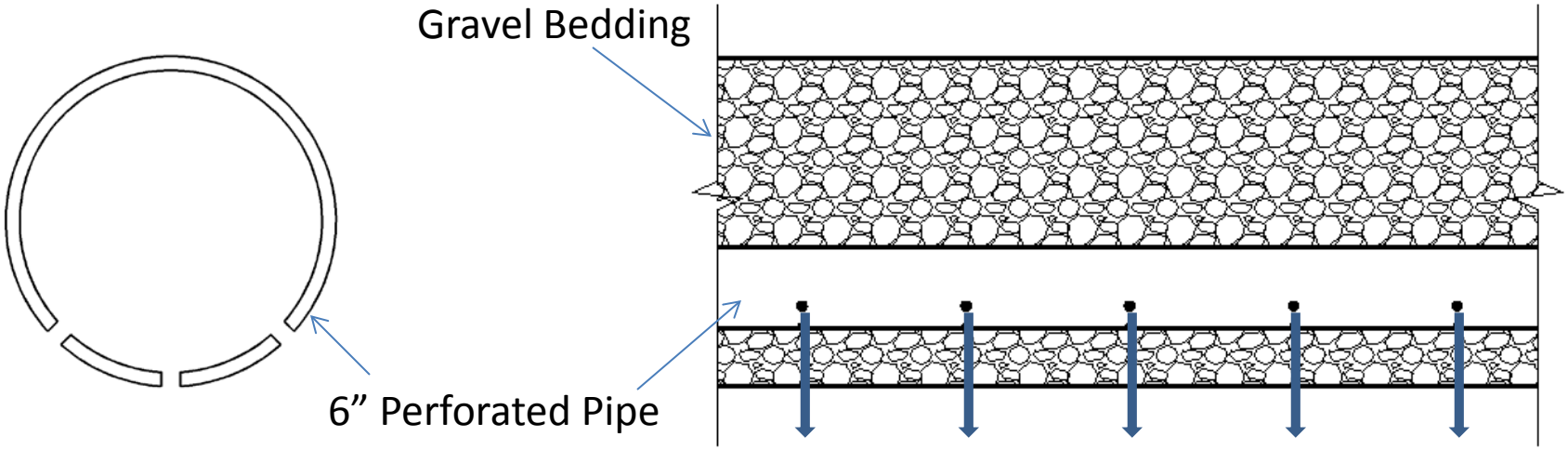

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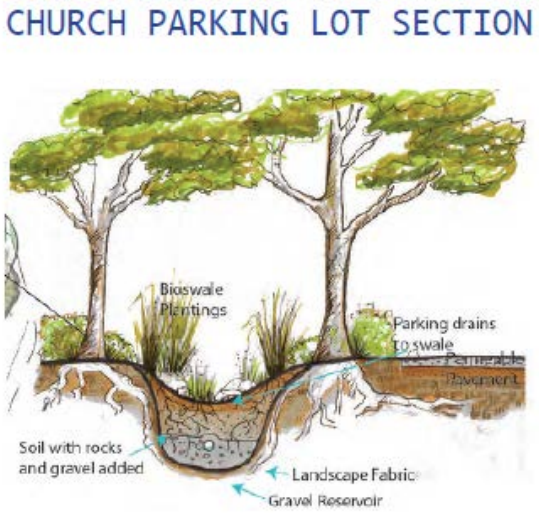
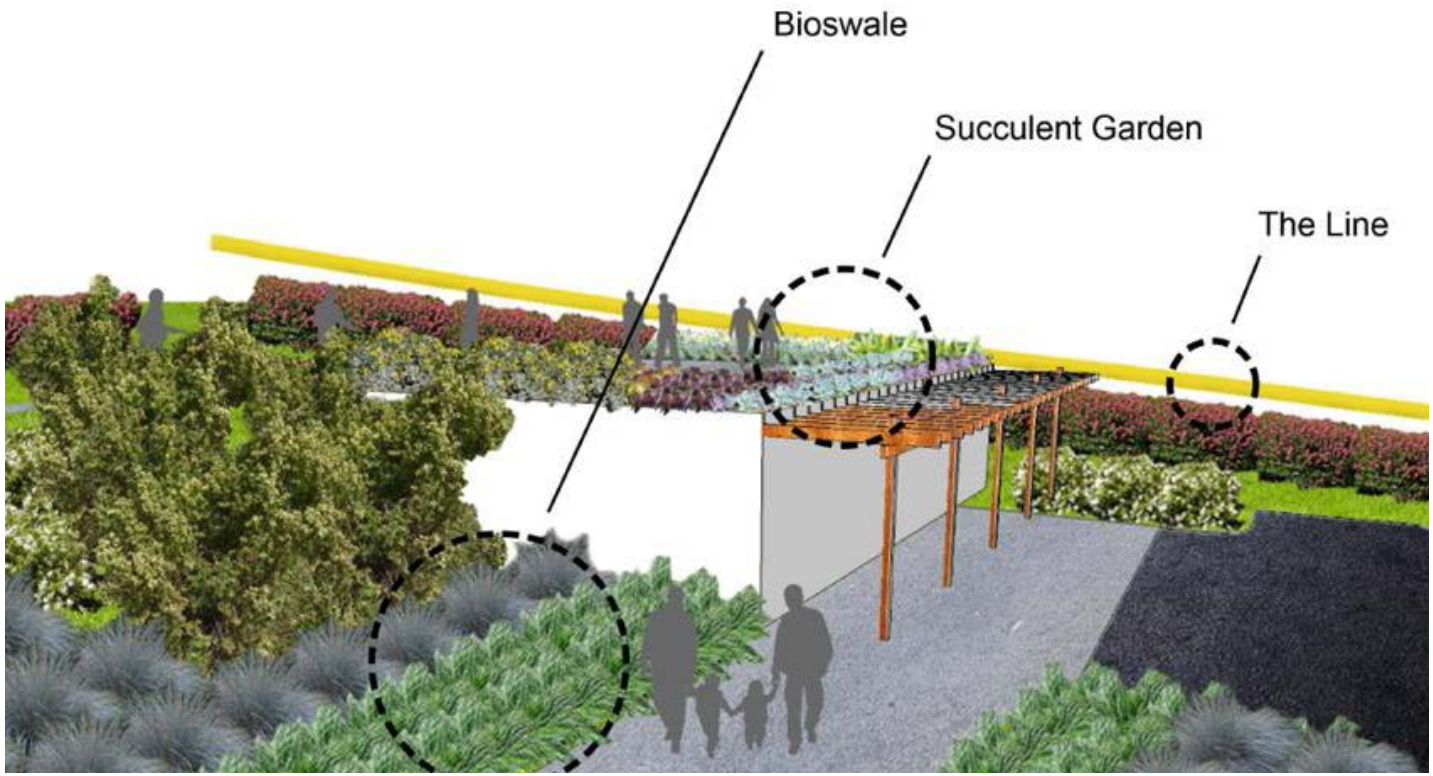
Landscape Architecture
Church Site





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Landscape Architecture
Oak Grove Drive

Landscape Architecture
Outdoor Classroom

Image Rendered By: Landscape Architecture

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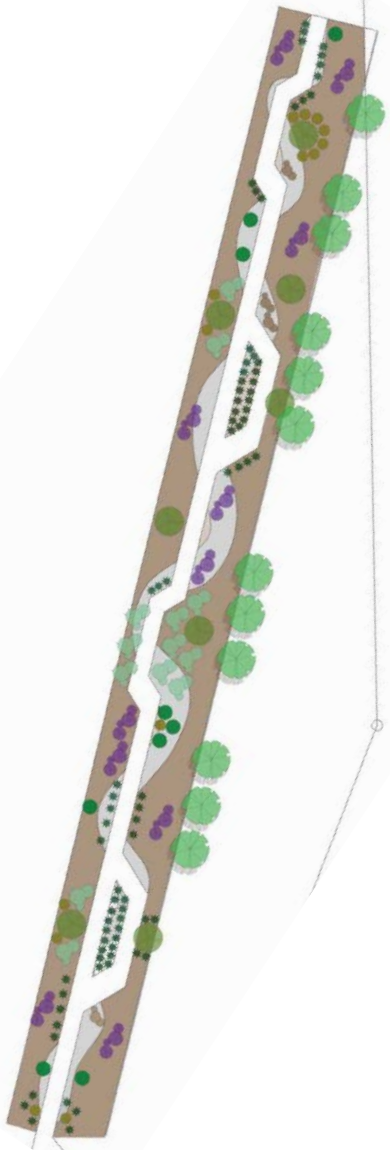
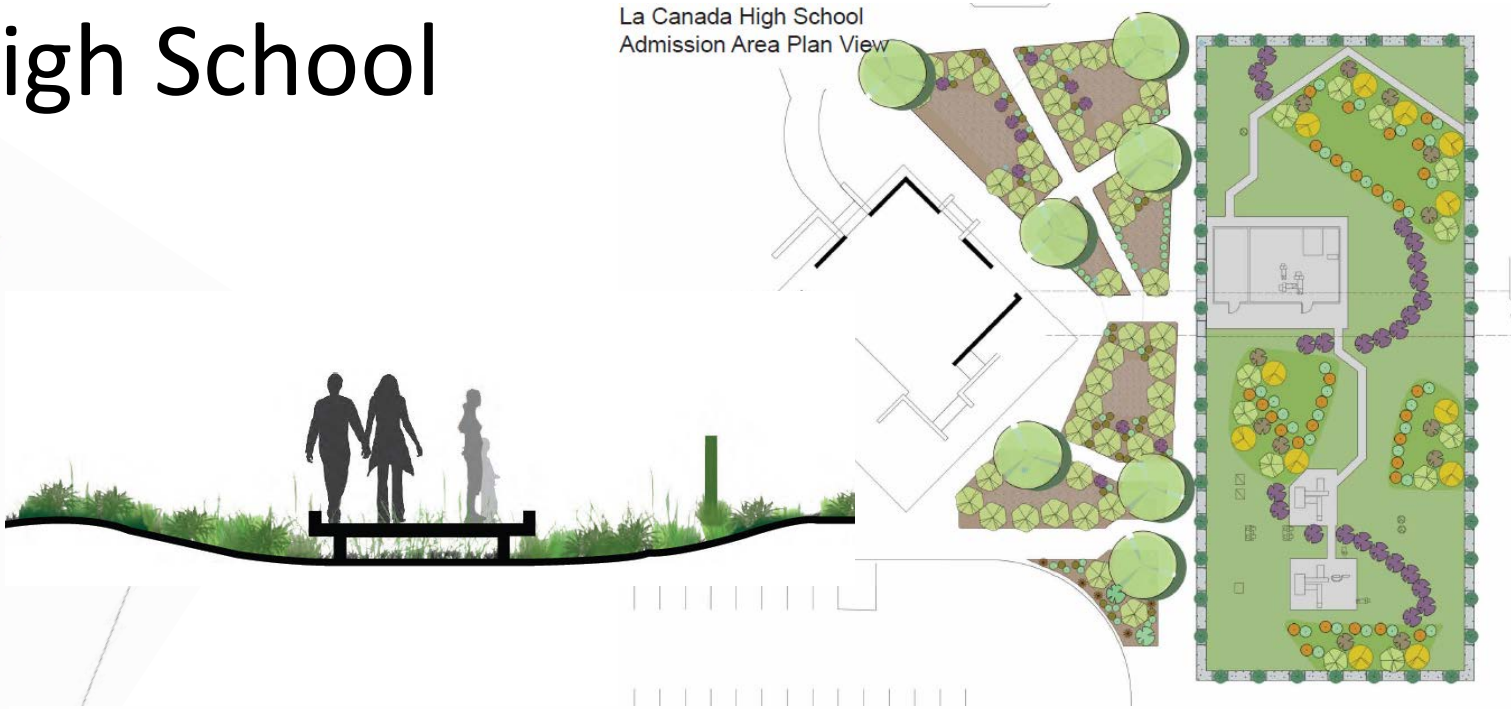
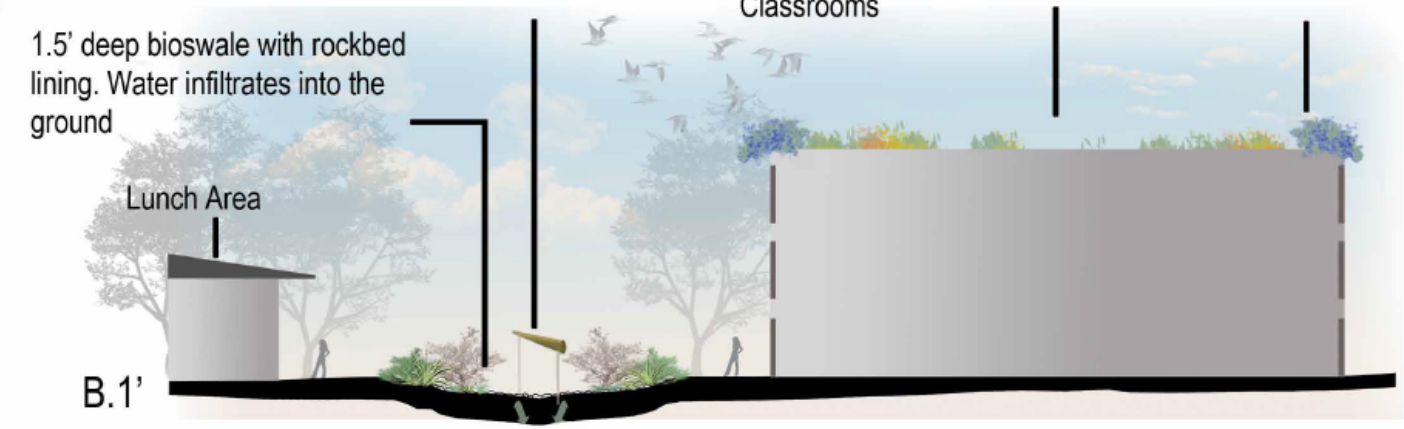
Landscape Architecture
High School







Future Direction

- Continue to Work with FMWD on the proposed project
- Research pilot equipment opportunities
- Develop a monitoring plan on performance of the infiltration galleries
- Develop educational material that can be used within the community