

Fauntleroy Creek Culverts Replacements

Presented to the Fauntleroy Community
Association

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Project Overview

Replacement of two culverts at 45th Ave SW and California Ave SW

- Over 100 years old
- At-risk of failure
- New culverts must meet fish passage requirements
- Sized for climate change



1. 45th Ave SW Culvert

2a. Public (SPU-owned) portion of the California Ave SW culvert

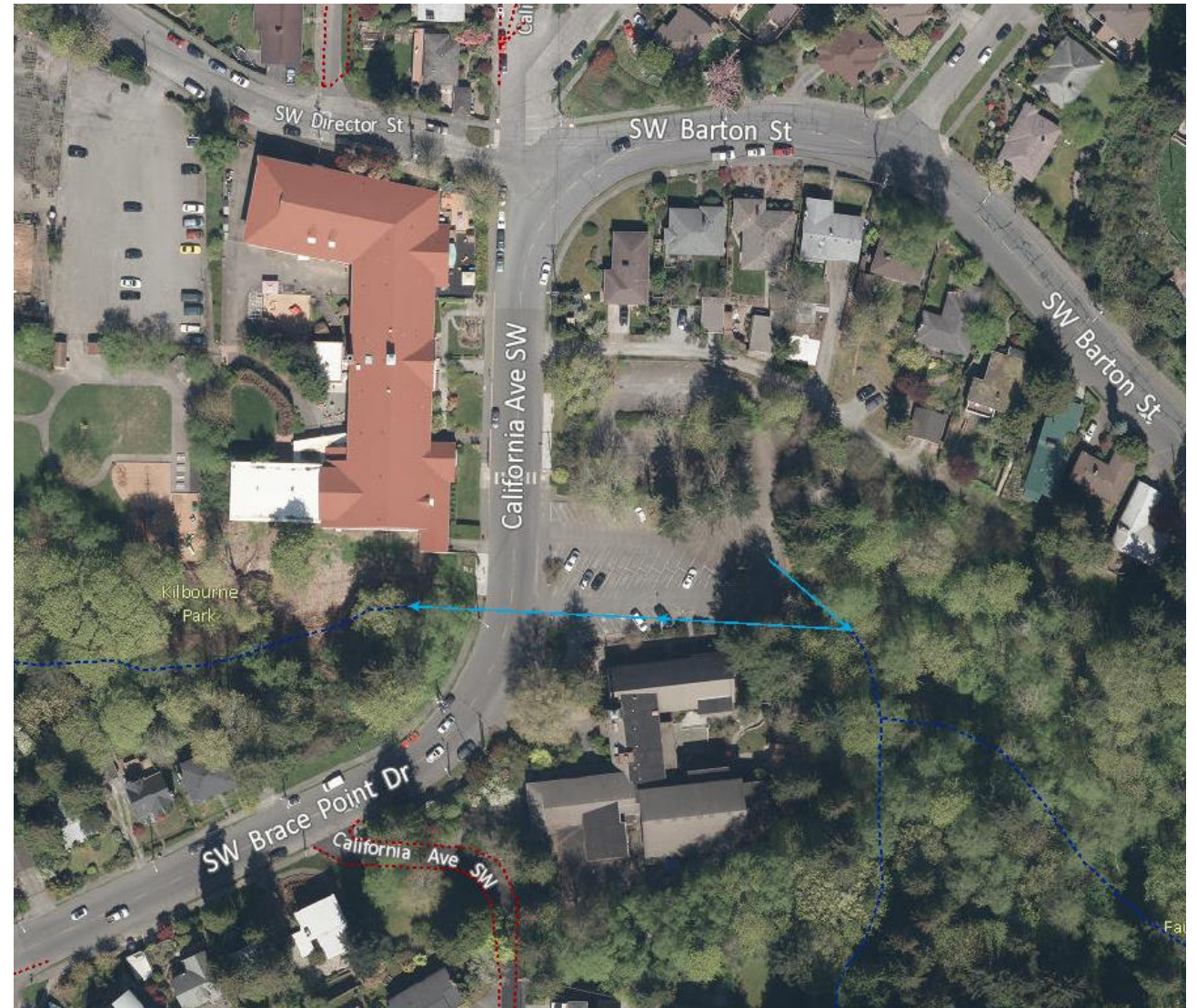
2b. Private (Fautleroy Church-owned) portion of the California Ave SW culvert



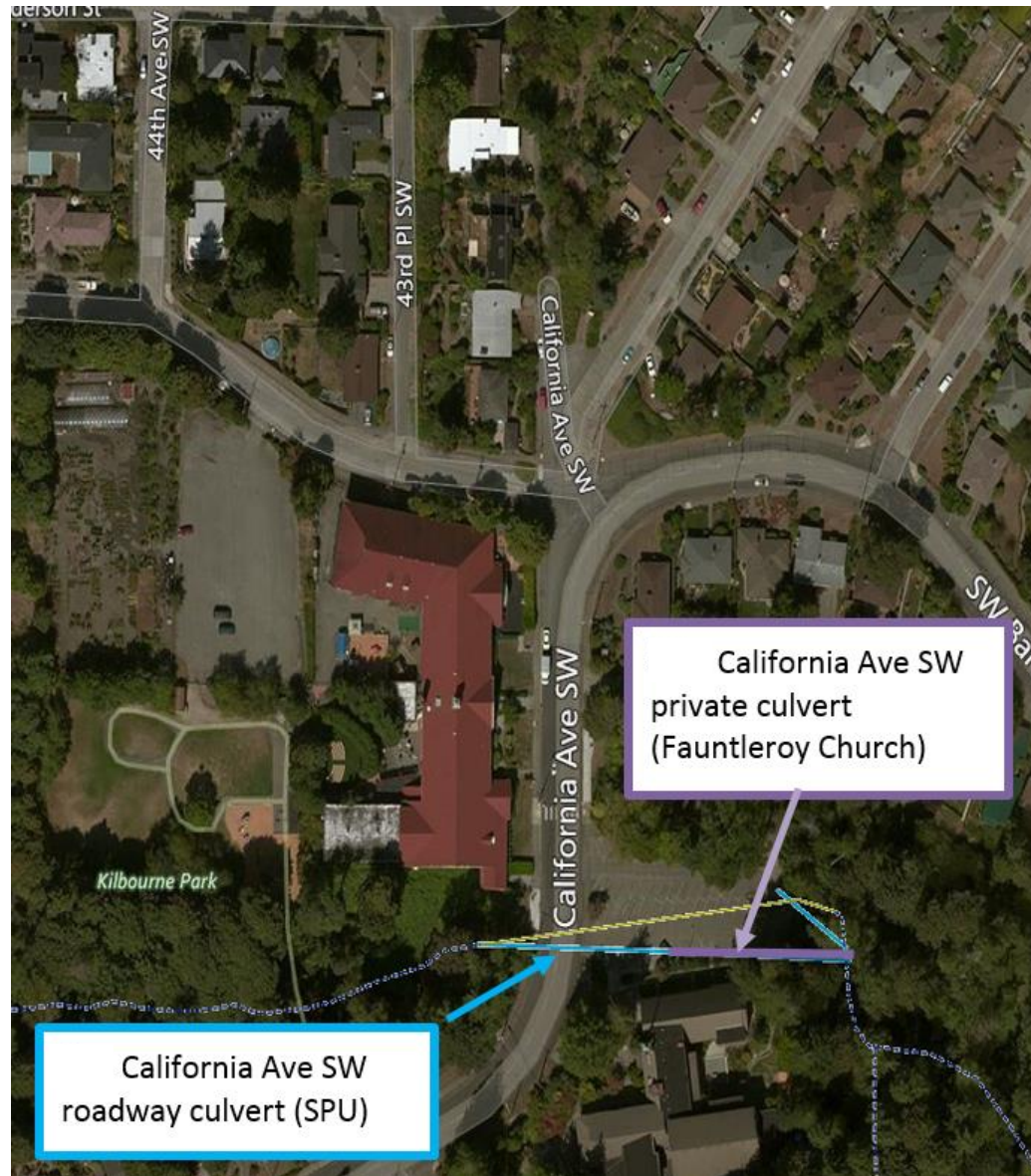
City of Seattle

Project Challenges

- Developed residential area complicates design and construction
- Deep ravines and lack of established access
- Culvert ownership is both public and private (California site)
- 2-3 month in-water construction window to minimize impacts on fish







Project Opportunities

- Reducing the risk of culvert failure
- Improving drainage capacity and creek resiliency to higher flows from anticipated climate change
- Restoring fish passage, which supports tribal treaty rights and SPU's commitment to racial and social justice
- Considering community safety in culvert design
- Enhancing the community's connection to the Fautleroy watershed
- Providing safer working conditions for maintenance crews



Photo of spawning salmon in Fautleroy Creek Courtesy of Whitney Fraser

What's Happening Now?

- **Options Analysis** kicked off in 2018 and will continue through early 2020
- SPU is assessing the **feasibility of design** for recommended options and further **refining cost estimates**
- SPU is **working in close partnership with Fauntleroy Church** to discuss options for the California Ave SW culvert (joint public/private ownership)
- SPU is actively **exploring grant opportunities** to supplement project funding

Project timeline

Tentative schedule as of October 2019. Schedule is subject to change.



* For completion of both culverts. Construction will likely be staggered.

Evaluation Criteria → Value

Permanent Impacts Criteria			
Impacts to access and parking	Stakeholder impacts	Acquisition Requirements	Service Equity and Community Benefit
Habitat Criterion			
Overall Stream Channel Benefit			
Temporary Construction Impacts Criteria			
Ability to construct "in the dry"		Short term construction impacts	
O&M Criteria			
Operations and Maintenance Access (length of closed culvert)			
Church Criterion			
Fautleroy Church Community Preferences			



Class 4 Cost Estimating

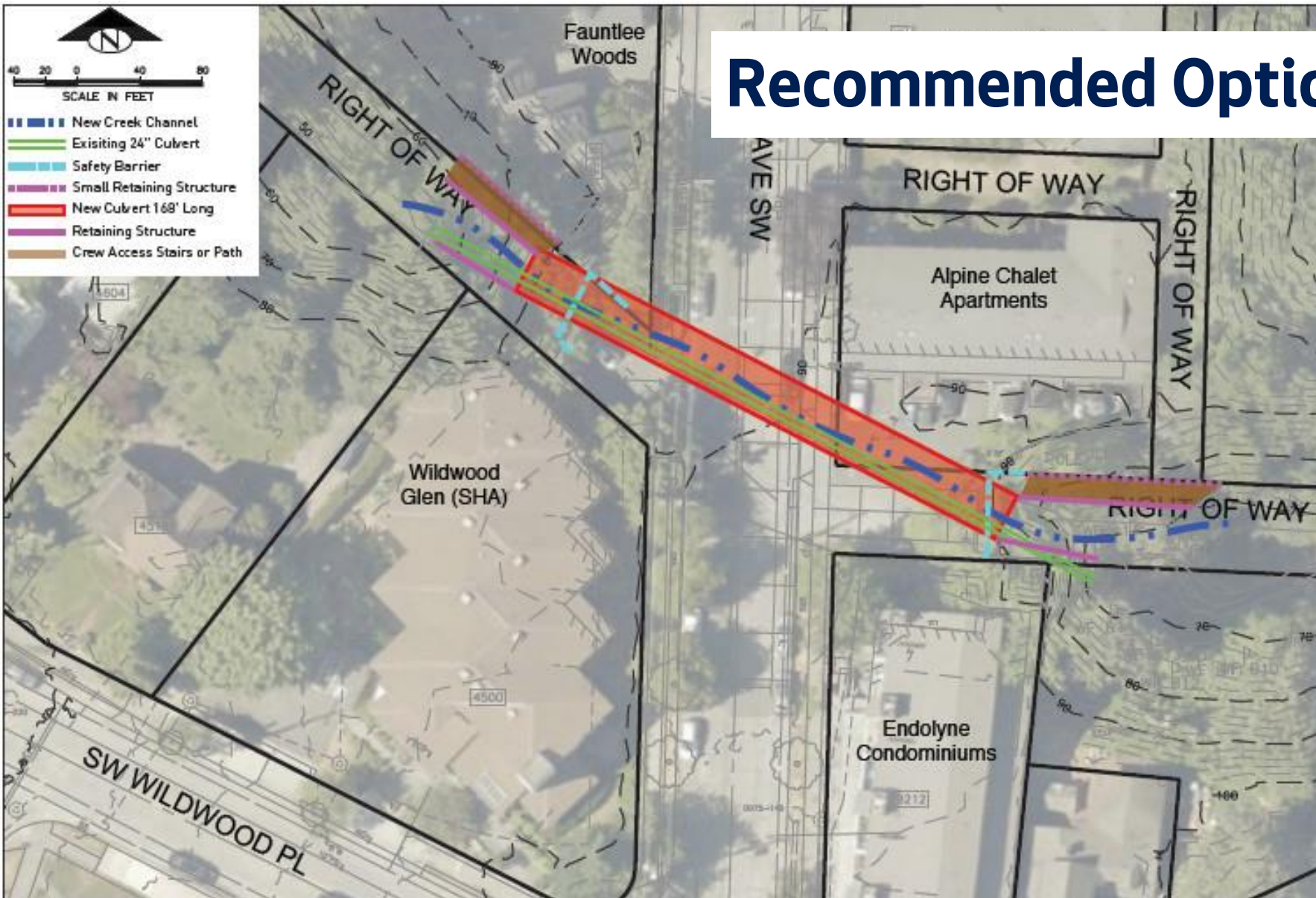
Estimate class	Name	Purpose	Stage
Class 4	Intermediate	Concept study or feasibility	Options Analysis
Class 3	Preliminary	Budget, authorization, or control	30% Design
Class 2	Substantive	Control or bid/tender	100% Design
Class 1	Definitive	Check estimate or bid/tender	Contractor Bids

Class 4 total cost estimate ranges:*

- 45th Ave SW: \$9 million to \$20 million
- California Ave SW: \$10 million to \$21 million

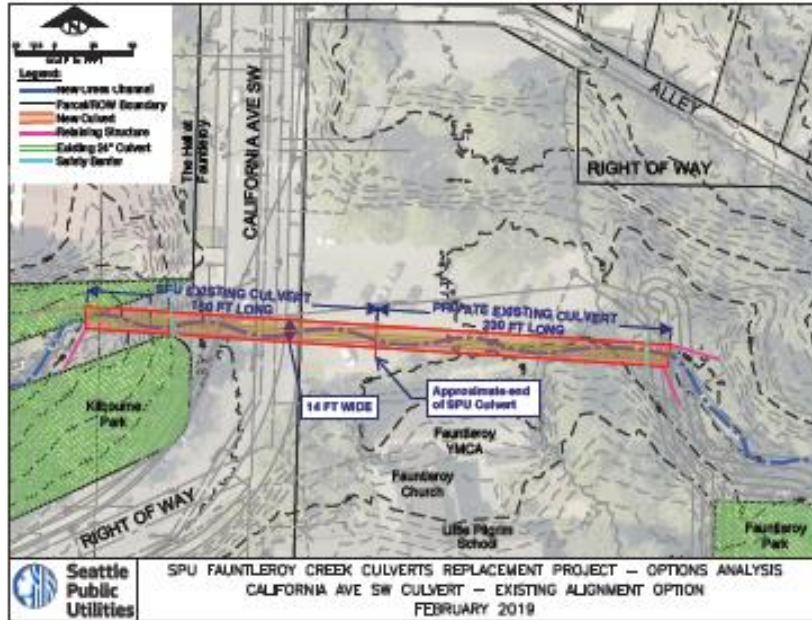
*Class IV construction cost estimates are expected to have a typical accuracy range of 30% under actual cost to 50% over actual cost.

Recommended Option: 45th Ave SW

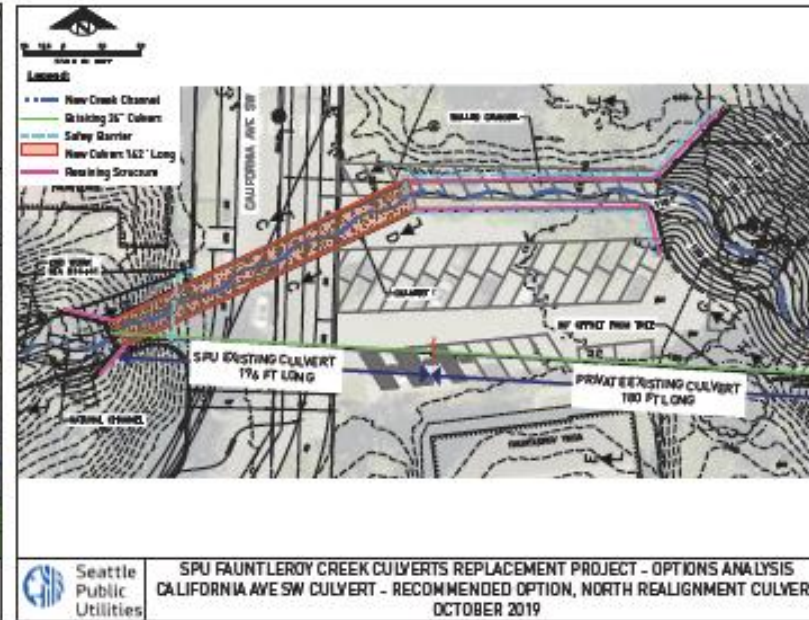


California Ave SW Replacement Options

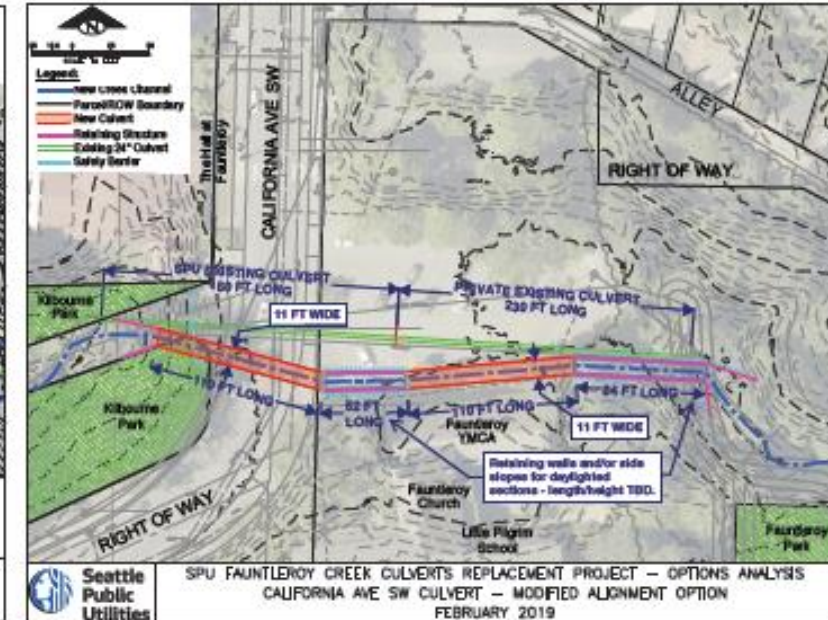
Existing alignment option



North realignment option (revised)



Modified alignment option



Detailed culvert designs are available online

Project Next Steps Heading into Design

- SPU continues to gather community feedback on options
- Land Survey
- Geotechnical Investigation
- Structural Analysis
- Trenchless Technology Feasibility Study
- Value Engineering
- **30% Design development**
- Project decisions on funding and design



Grant Opportunities

- SPU is actively exploring government grants and loans to help reduce costs
- SPU will apply to the State Fish Passage Barrier Board for design funding
- SPU may submit an additional application later for construction funding and may consider grants to fund additional features that serve neighborhood and/or environmental groups

Value Engineering

- Ensures choosing the best process and materials for implementing the chosen design
- Third party evaluation of the design and cost estimate
- Multidisciplinary team of 5-10 people including SPU staff, project design consultants, consulting technical professionals, personnel from other agencies as appropriate.

VE Study seeks to improve a project's function and construction via attention to constraints, risks and design elements.

Crime Prevention Through Environmental Design (CPTED)

Consultation with Seattle Police Department, West Precinct

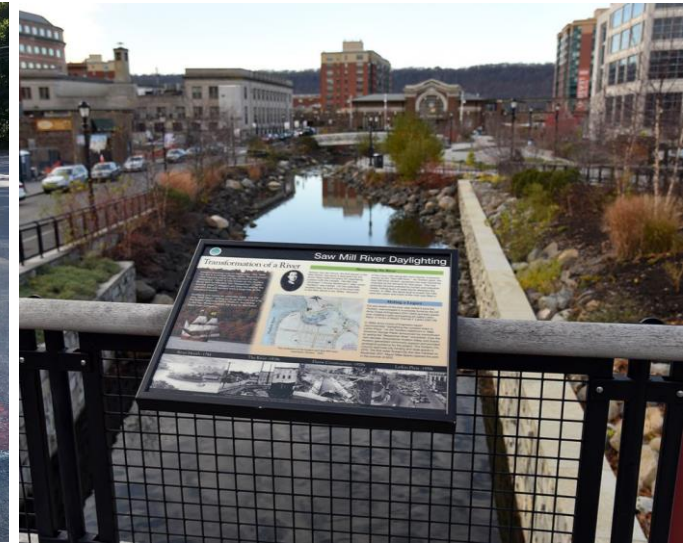
Jennifer Danner, Crime Prevention Officer

- ✓ General safety – fences, gates, railings, bollards
- ✓ Improve sight lines – culvert entrances
- ✓ Culvert design – rectangular vs. round
- ✓ Channel design – woody debris and 2-man boulders
- ✓ Lighting – near culvert entrances, stairs or railings
- ✓ Landscaping – bushes and trees at the right height

Engagement During Design

Opportunities:

- Connection to urban creek habitat and wildlife
- Maintain safety
- Wayfinding through signage, paths, landscaping, and/or art
- Educational tools through signage and overlooks
- Enhanced habitat
- Removal of fish passage barriers
- Potential for Parks to own property at the upstream end of the channel



Sample imagery of potential community benefits from the Fautleroy Creek Culverts Replacement project.

Questions?

