Fauntleroy Creek Culverts Replacements

Presented to the Fauntleroy Community Association

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City of Seattle
**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
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 Fauntleroy watershed
- Providing safer working conditions for maintenance crews

Photo of spawning salmon in Fauntleroy 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.

- **Options Analysis**
  - 2019 - Early 2020
- **Design**
  - Early 2020 - Spring 2021
- **Construction**
  - 2021 - 2024*

* For completion of both culverts. Construction will likely be staggered.
## Evaluation Criteria ➔ Value

<table>
<thead>
<tr>
<th>Permanent Impacts Criteria</th>
<th>Value</th>
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<tbody>
<tr>
<td>Impacts to access and parking</td>
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<td>Stakeholder impacts</td>
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<td>Acquisition Requirements</td>
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<td>Service Equity and Community Benefit</td>
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<td>Habitat Criterion</td>
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<td>Overall Stream Channel Benefit</td>
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<td>Temporary Construction Impacts Criteria</td>
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<td>Ability to construct &quot;in the dry&quot;</td>
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<td>Short term construction impacts</td>
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<td>O&amp;M Criteria</td>
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<tr>
<td>Operations and Maintenance Access (length of closed culvert)</td>
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<tr>
<td>Church Criterion</td>
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<tr>
<td>Fauntleroy Church Community Preferences</td>
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# Class 4 Cost Estimating

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

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 Fauntleroy Creek Culverts Replacement project.