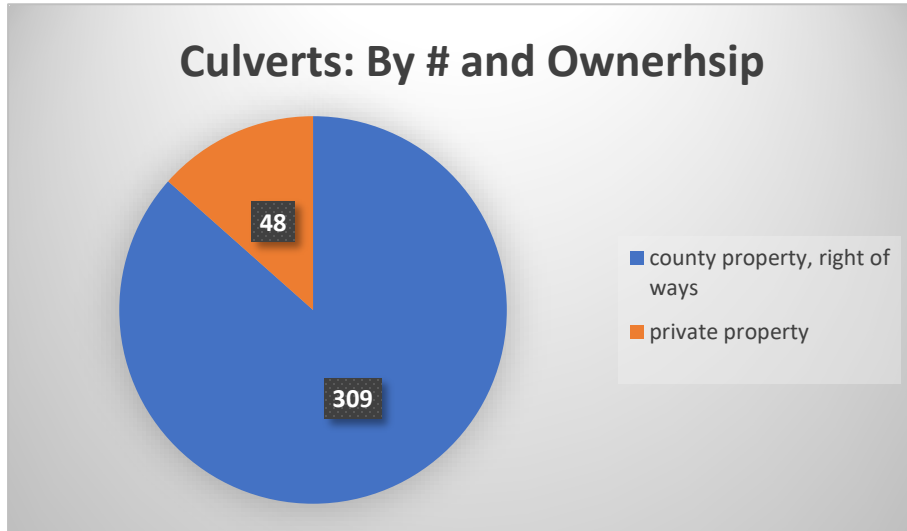


1.1.4: Culverts

Current Condition

Desired Condition by 2048

Figure 5. Culverts: By # and Ownership



There are 357 known culverts within the SVAPD identified on public and private property (see Figure 5). While an in-depth analysis of culvert functionality on private lands in the APD does not yet exist, WDFW maintains data on 48 culverts on private property in the SVAPD, of which 18 have been replaced since 2015 by KC ADAP, SVWID and KCD, at the rate of approximately 3 culverts each year, but with 14 more needing replacing¹.

Costs for culvert replacement on farmland can vary based on the length, diameter, and culvert construction as well as the complexity of the project. The average costs of installing a 3’ to 4’ foot culvert is \$7,000, while installation of a farm bridge in place of a culvert costs on average \$30,000. Funding for culvert replacement is most often tied to fish passage but can also be part of a drainage project. If all 14 culverts on private land are replaced, it would cost approximately \$100,000 and take about 5 years to complete, at the current replacement rate.

In addition, there are 309 culverts on county property, primarily right of ways in the APD, that have been evaluated by King County for fish passage barriers which we are correlating roughly with poor drainage. The evaluation shows many barriers including 42 problem culverts (see Map 5 below for sites and analysis), for which the County is developing a priority implementation plan and timeline².

Culverts on public and private property are maintained, replaced, and removed as prioritized to ensure proper drainage, vehicle passage throughout the year, and safe fish passage when applicable.

Timeline

- 2025: Pursue additional funding from Flood Control District and other sources, exploring options for funding multiple, FFF bundled/multi-benefit projects that improve drainage.
- 2027: Wild Fish Conservancy to complete assessment of private property culvert functionality and any barriers to drainage or fish passage
- 2030: Develop plan for regular inspection and maintenance of culverts: permits required, landowner permission, funding resources
- 2032-2048: Implement plan and replace/remove non-functional culverts throughout APD

Background

Service Providers

Priority

Damaged or undersized culverts can slow or stop water flow, affecting drainage from agricultural fields. Culvert replacement on private land is most often conducted by SVWID and ADAP when damaged or poorly performing culverts are encountered while conducting waterway maintenance. Service providers work with KC fish passage restoration program, KC Road Services Division, KC Parks, Wild Fish Conservancy, and WDFW. A WDFW Hydraulic Permit Approval (HPA) and a King County floodplain development permit from Department of Local Service (DLS) Permitting Division is required for all culvert replacement projects, in addition to a large wood installation required by the Tulalip Tribes. SVWID culvert replacement

- Lead:
- Snoqualmie Valley Watershed Improvement District (SVWID)
- Partners:
- King County Integrated Drainage Program

HIGH

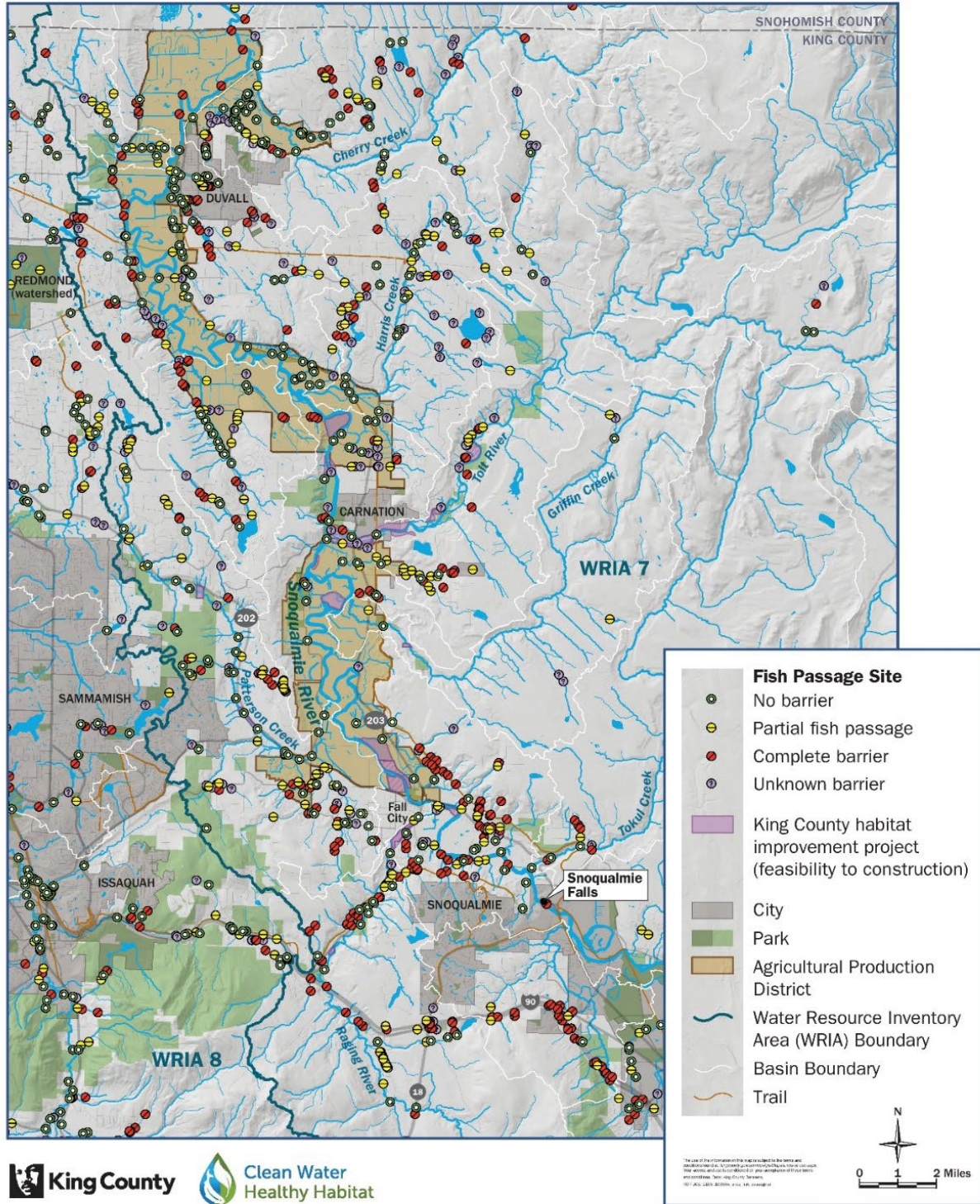
<p>projects within priority sub-basins are identified through outreach to farmers, collaboration with ADAP, or direct requests from farmers.</p>	<ul style="list-style-type: none"> • King Conservation District 	
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Strategies

- Strengthen collaboration between SVWID, KC programs, KCD, and other partners and secure multi-benefit partnerships and long-term funding to increase capacity and efficiency and reduce costs for culvert replacement.
 - Identify or create long-term culvert replacement funding source for improving water quality and hydraulic processes, decoupled from fish passage, riparian buffer width, large woody debris placement, or multiple landowner involvement.
 - Prioritize replacement of culverts that are identified as important fish barriers and are also needed to improve farm drainage systems.
- Pursue additional funding mechanisms that allow for multiple culvert projects with a single funding source.
- Explore options for pre-approval of standard culverts and bridge designs.
- Streamline permitting process to accelerate project timelines.
- Prioritize culvert replacement within the ADAP program.

Map 5. Fish Passage Sites and County Habitat Improvement Projects in the Snoqualmie River Basin. Fish passage sites include culverts, piped systems, bridges, etc.

Fish Passage Sites and County Habitat Improvement Projects in the Snoqualmie River Basin



¹ WDFW has a record of 48 culverts on private property, at least 14 of which are barriers to fish. This record is incomplete and requires a more comprehensive assessment. Wild Fish Conservancy and SVWID have plans to assess private culverts in select sub-basins, in coordination with KC, WDFW, and WSDOT. If successful, this assessment will expand to the entire APD.

² King County Fish Passage teams estimate that 309 culverts are located on County property or rights-of-way in the Snoqualmie Valley APD. While many of these culverts do not always have active streams, 67 of them are known to be fish passage sites and, of those, 42 are barriers to fish passage. This work is in progress at the time of this writing.