

# Lower Purdy Creek Fish Passage Restoration Feasibility Study

Pierce County Public Works, Surface Water Management, in cooperation with the Washington State Department of Transportation (WSDOT), received Salmon Recovery Funding Board grant funds to study alternatives to remove fish passage barriers in lower Purdy Creek. Figure 1 indicates the project location, and Figure 2 shows existing conditions in the project area. Figure 3 compares historic (based on an 1898 diagram) and current conditions. The primary goals of the project are to:

- Replace existing culverts at State Route (SR) 302 and 144<sup>th</sup> Street NW (Purdy Crescent Road, including the Chevron Station) to restore fish passage for salmon.
- Restore historic estuarine habitat that was filled by the SR 302 road embankment.

Pierce County developed three conceptual alternatives to meet the grant requirements. Figure 4 shows typical stream channel cross-sections applicable to all alternatives. The three alternatives are:

1. Remove gas station, restore historic creek with culverts at SR 302 and 144<sup>th</sup> Street NW (See Figure 5).
2. Route creek east of gas station with culverts at 144<sup>th</sup> Street NW, Purdy Lane NW, and SR 302 (See Figure 7).
3. Route creek east of gas station and permanently block a portion of Purdy Lane NW, with culverts at SR 302 and 144<sup>th</sup> Street NW (See Figure 8).

For each alternative above, a bridge up to 300 ft long could be constructed for SR 302, rather than a culvert (See Figure 6, could be used for any Alternative). Stream routings to the west of SR 302 are less desirable and are not being considered further. The following table summarizes key physical and ecological outcomes for each alternative.

Alternative	Structures Summary	Habitat Score	Socio- Economics	Concept Level Cost Estimate
Existing (Figure 3)	SR 302: 6'Wx70'L 144 <sup>th</sup> Street: 5'Wx300'L	N/A	N/A	N/A
1: Restore Historic Creek (Fig. 5 culvert, 6-bridge)	SR302: 36'x60'L (or bridge) 144 <sup>th</sup> Street: 36'Wx150'L	26 (32* w/bridge)	County buys and removes Gas Station.	\$5,800,000 (\$12,600,000 w/bridge)
2: East Route, Retain Purdy Lane (Figure 7)	SR 302: 36'x60'L (or bridge) 144 <sup>th</sup> Street: 36'Wx100'L Purdy Lane: 36'Wx130'L	21 (27* w/bridge)	County buys 1 parcel.	\$6,800,000 (\$13,600,000 w/bridge)
3: East Route w/Purdy Lane Cul-de-sac (Figure 8)	SR 302: 36'x60'L (or bridge) 144 <sup>th</sup> Street: 36'Wx100'L	37 (42* w/bridge)	Permanently eliminates Purdy Lane access to 144 <sup>th</sup> Street NW. County buys 3 parcels.	\$5,100,000 (\$11,900,000 w/bridge)

- Cost estimates include land acquisition, design, permitting, construction, 20% contingency, no sales tax.
- Proposed culverts: 36-foot-wide open bottom concrete arch structures. Bridge is 50'Wx300'L, 3 spans/2 piers, vertical abutments.
- WSDOT and Pierce County may complete their projects together or separate (to be determined).
- Temporary impacts during construction of culverts will be short duration closures of single traffic lanes (except SR 302 bridge).



Existing culverts at 144<sup>th</sup> Street NW and SR 302      Proposed new culvert concept

Full report available at: [co.pierce.wa.us/purdycreek](http://co.pierce.wa.us/purdycreek)