

SR 410 Widening 214TH AVE. E. TO 234TH AVE. Fennel Creek Mitigation Site

Carl Ward

WSDOT Olympic Region
Biology Program Manager

Paula Hammond

Secretary of Transportation

Project Overview:

- Permanent impact to 6 wetlands
- 0.16 ac (7,053 sq ft) of permanent wetland impact
- Most of the impacts are to Cat III, PEM/PSS, and Depressional wetlands
- All impacts occur within Fennel Creek Watershed
- Mitigation required by State and Federal rules

Mitigation Site Search:

- Looked at 85 different parcels within the general project area
- Most of these parcels were not suitable for mitigation due to:
 - No possible wetland hydrology
 - Existing forest
 - No habitat connectivity
 - Not large enough
 - Existing development
 - Already wetland (only enhancement opportunity)
 - Already a high quality wetland (no enhancement opportunity)
 - Future or existing stormwater ponds

Selected mitigation area identified in:

- Fennel Creek Corridor Master Plan and Development Standards report
- Mid-Puyallup Basin Plan
- Environmental Analysis of the Fennel Creek Corridor (Foster Wheeler)
- Various other reports, studies, and communication.

Mitigation Site Overview:

- 20.17 acre site
- Adjacent to existing WSDOT 5.75 acre mitigation site (1994)
- Adjacent to existing Pierce County ~0.5 acres mitigation site
- Contains 150 foot corridor on both sides of Fennel Creek
- Is an out-of-kind resource tradeoff
- The plan is modeled after the USDA Conservation Reserve Enhancement Program (CREP). CREP is a program that helps agricultural producers protect environmentally sensitive land, decrease erosion, restore wildlife habitat, and safeguard ground and surface water.







Out-of-Kind Resource Tradeoff:

- Involves replacing an affected wetland with habitats or ecosystems other than wetlands
 - Flood storage creation areas (0.23 acres)
 - Riparian enhancement
 - Upland buffer enhancement, including riparian areas
 - 1,150 linear feet of stream enhancement (addition of large woody material and plantings)

Problems identified in the basin include:

- Stormwater impacts (water quality, temperature, and flooding)
- Degraded riparian habitat
- Bank instability
- Lack of a functional wildlife corridor
- Low frequency of pools
- Tree cover
- Lack of instream woody material
- Installation of drain tiles

Stormwater

- Fennel Creek receives stormwater runoff from SR 410, surrounding roads, and development.
- SR 410 Widening project is installing stormwater treatment for the SR 410 runoff within the project area.
- Planted buffer will limit the ability of adjacent pollutants from reaching the creek.
- Planted buffer will uptake nutrients that are already present within the creek.

Stormwater

- Widening project stormwater ponds will help regulate flooding.
- Flood storage creation area will allow some of the flood water to be temporarily stored on the mitigation site.
- Planted woody vegetation will help slow down the flood water and will intercept rainfall.
- Planted vegetation will help stabilize banks and reduce erosion.

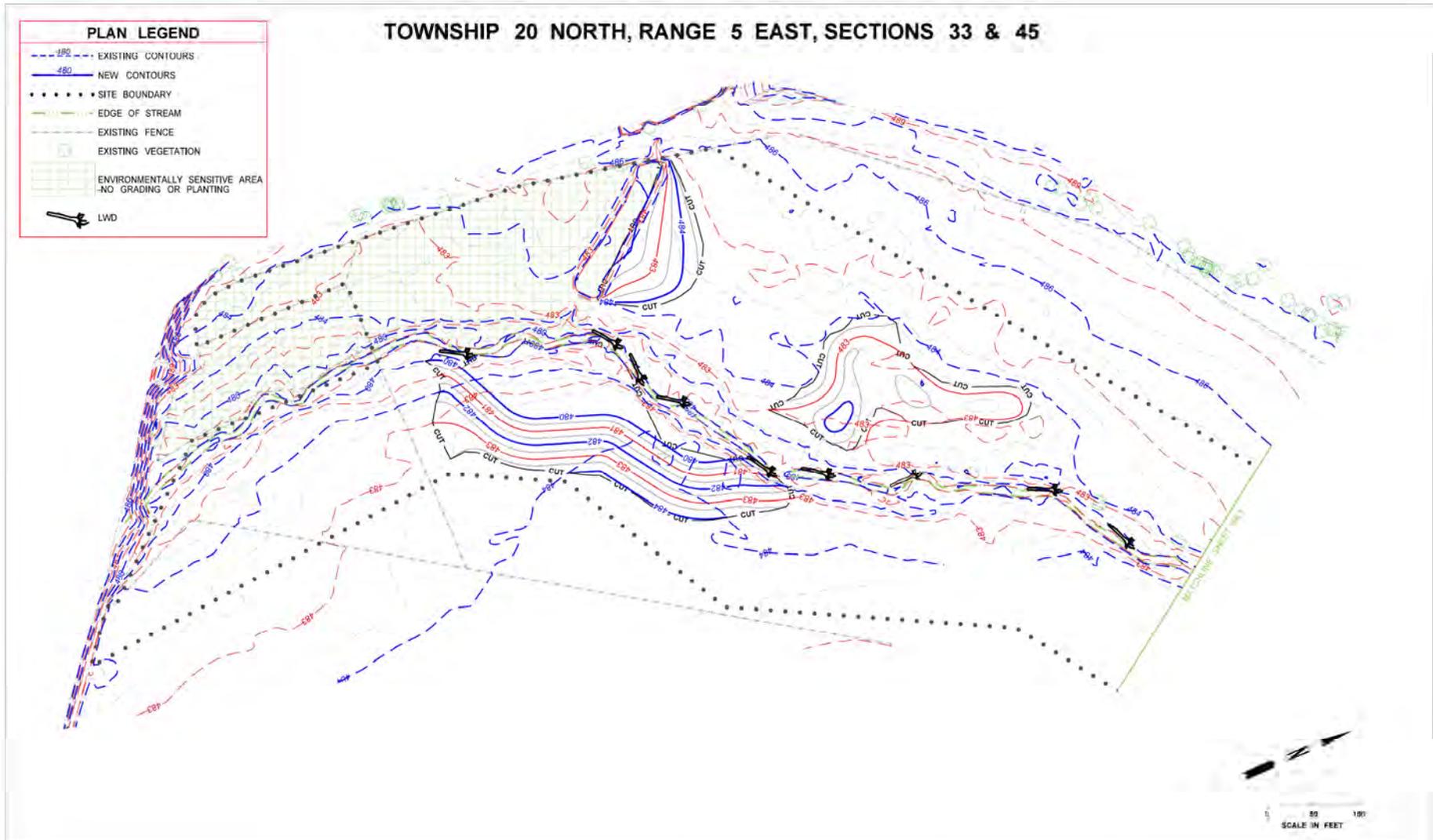
Flood Storage Creation



Flood Storage Creation



Grading Plan



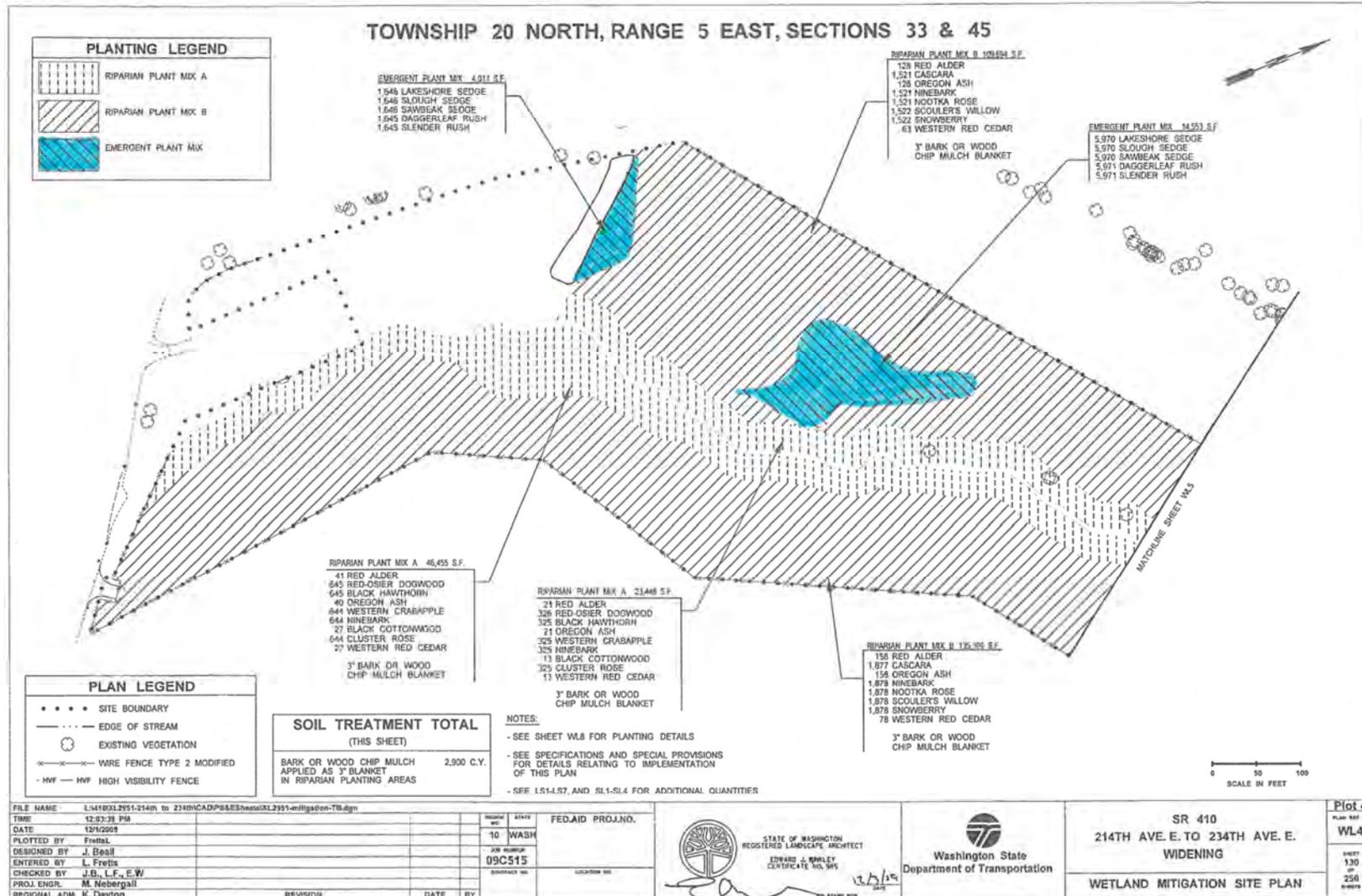
Planting

Planting will address the following problems that are identified:

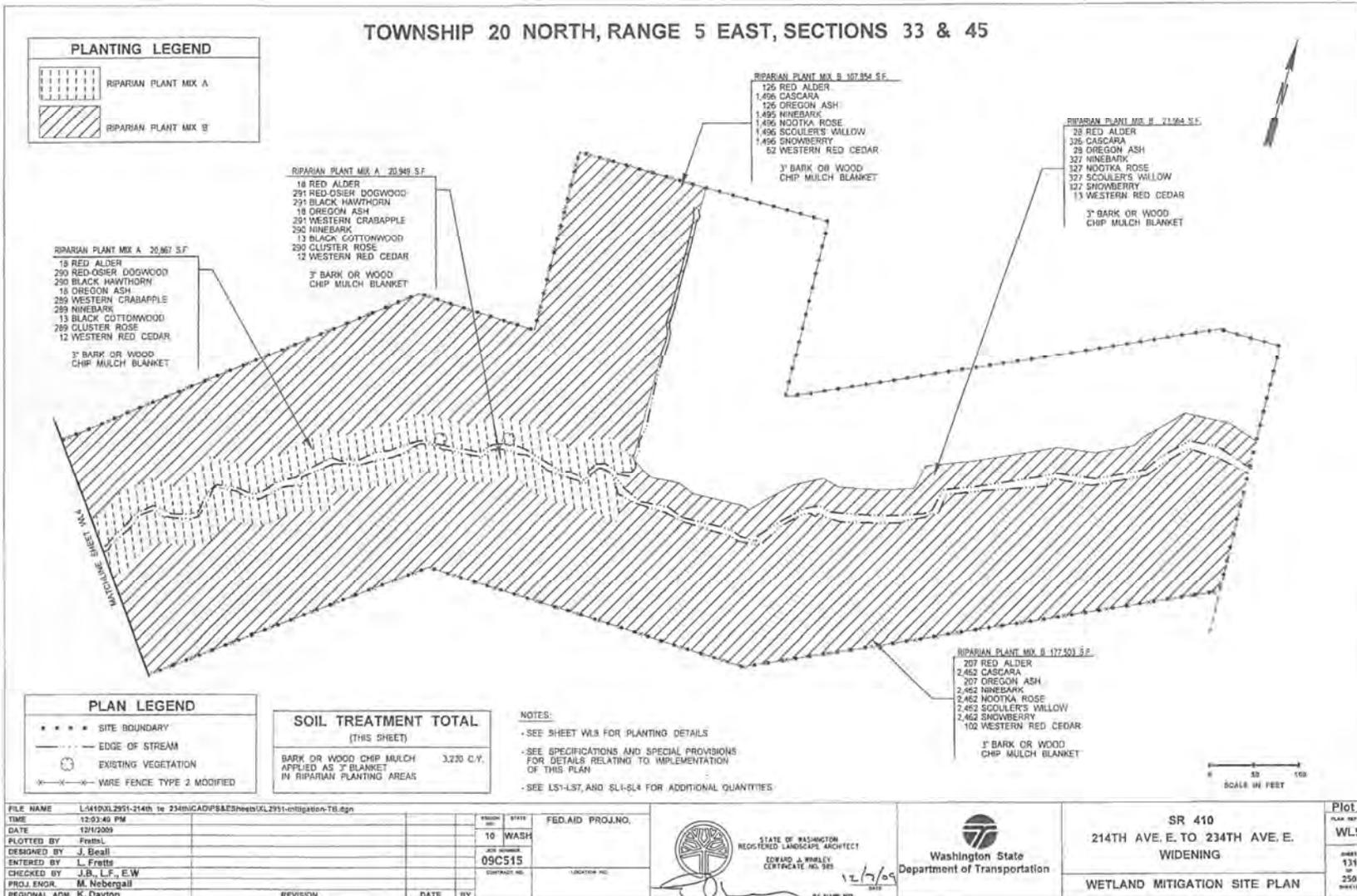
- Flooding
 - Bank instability
 - Degraded riparian habitat
 - Lack of a functional wildlife corridor
 - Tree cover
 - Lack of instream woody material
-
- 48,105 woody plants & 38,080 emergent plants will be installed (total of 86,185 plants).



Planting Plan



Planting Plan



Emergent Planting Area



Habitat Structures

- 10 pieces of instream large woody material
 - Will be spread along 1,150 linear feet of the creek channel
- 30 brush piles
- 7 perch poles
- 3 bat houses

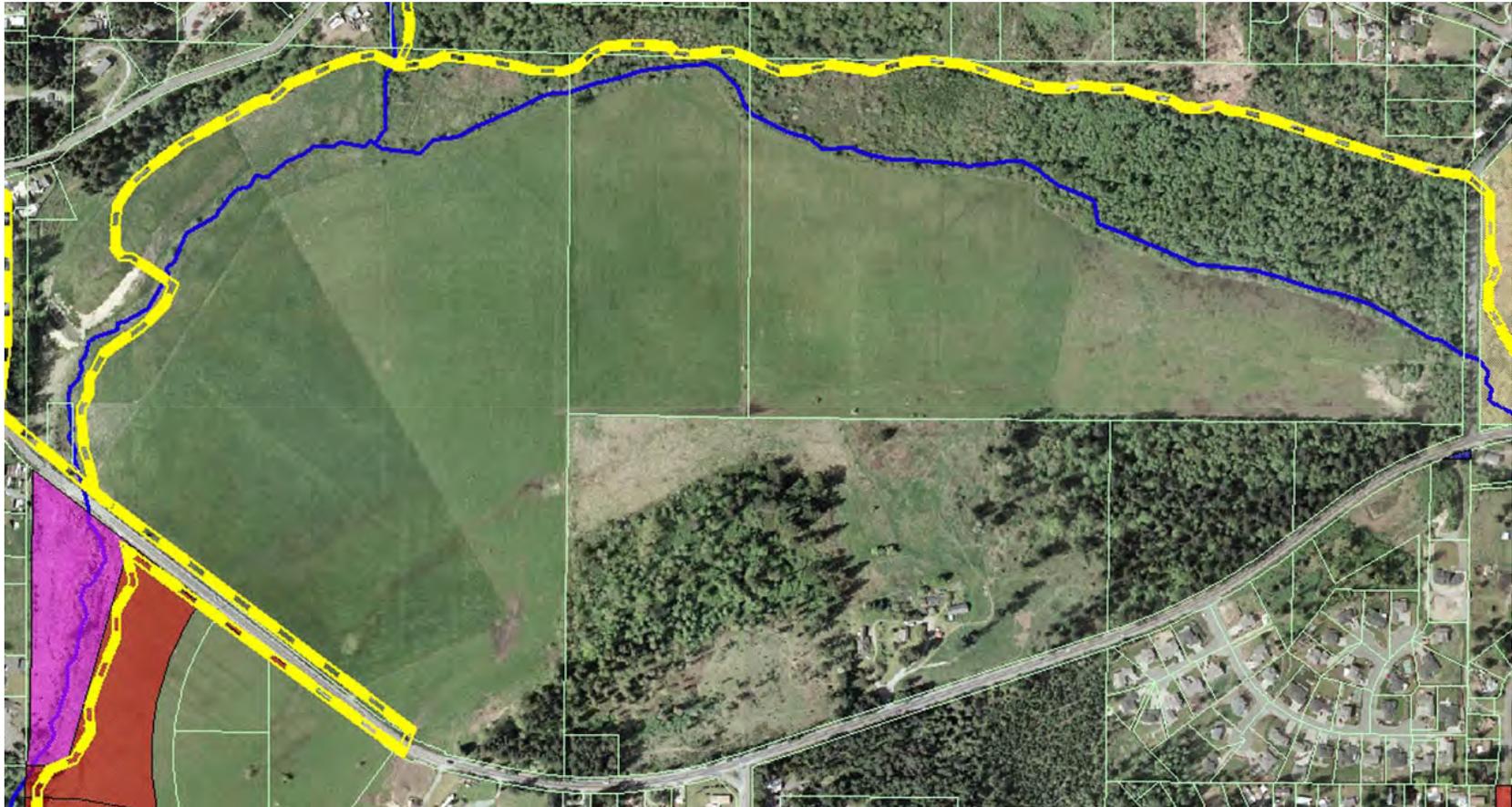
Material for Perch Poles



Material for Instream and Brush Piles



Fennel Creek Trail



Construction Status

- Grading is almost complete
- Perch poles and brush piles are installed
- Planting will happen during this winter
- Instream woody material will be placed next summer

Site Maintenance / Monitoring

- Following Contractor plant establishment, WSDOT OR Restoration Crew will manage the site
- Work will include weed control, replacement planting, plant mulching, watering as needed, fence repair, vandalism repair, etc.
- Site will be actively maintained and formally monitored for 10 years
- After 10 years when the site has reached it's performance standards, the site will be informally monitored and less intensively managed.