

**South Prairie Creek Floodplain & Habitat Restoration**  
**Existing Conditions - 100-year flow Depth**  
 RiverFLO-2D hydraulic model output representing 100 year recurrence discharge of 9404 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)

David French, NSD Date: 4/21/2014 Path: N:\Projects\South Puget Sound Salmon Enhancement Group\S\_South Prairie Creek GIS Maps\mxd\2D Results\F100\_Depth.mxd

122°7'30"W

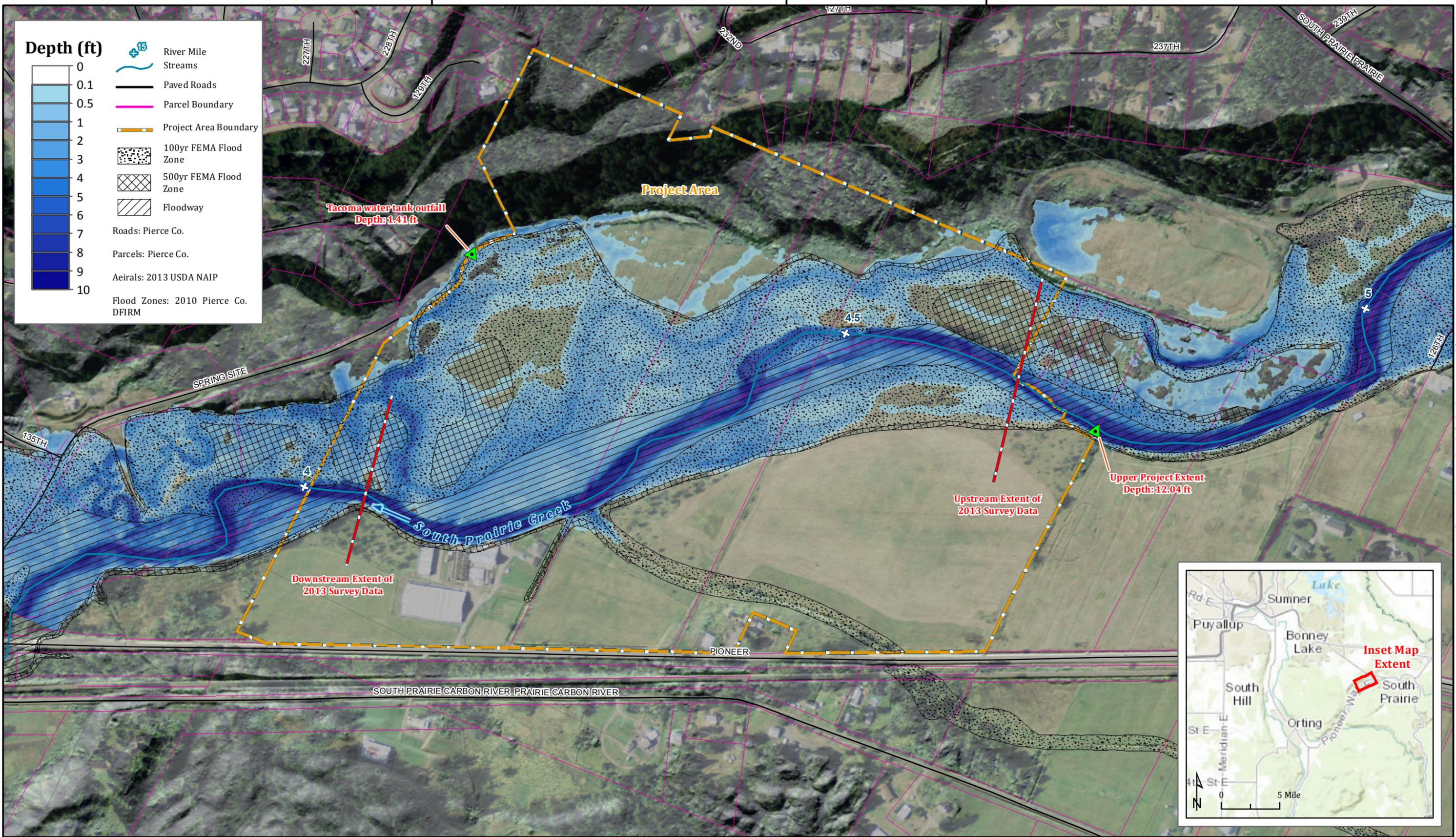
47°8'30"N

122°7'0"W

**Depth (ft)**

0  
0.1  
0.5  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10

- River Mile Streams
- Paved Roads
- Parcel Boundary
- Project Area Boundary
- 100yr FEMA Flood Zone
- 500yr FEMA Flood Zone
- Floodway
- Roads: Pierce Co.
- Parcels: Pierce Co.
- Aerials: 2013 USDA NAIP
- Flood Zones: 2010 Pierce Co. DFIRM



Tacoma water tank outfall  
Depth: 1.41 ft

Project Area

Downstream Extent of  
2013 Survey Data

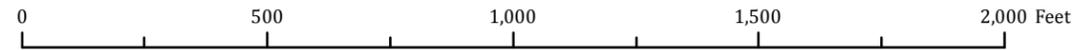
Upstream Extent of  
2013 Survey Data

Upper Project Extent  
Depth: 12.04 ft



South Prairie Creek Floodplain & Habitat Restoration  
Existing Conditions - 100-year flow Depth

RiverFLO-2D hydraulic model output representing 100 year recurrence discharge of 9404 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)



Lambert conformal conic projection, NAD 1983  
State Plane Coordinate System (WA South Zone)



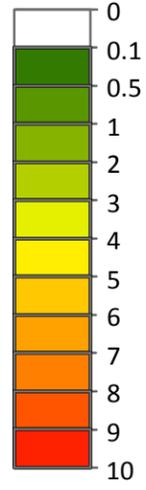
David French, NSD Date: 4/21/2014 Path: N:\Projects\South Puget Sound Salmon Enhancement Group\S\_South Prairie Creek GIS\Maps\mxd\2D Results\F100\_Depth\_wFEMA\_hatched.mxd

122°7'30"W

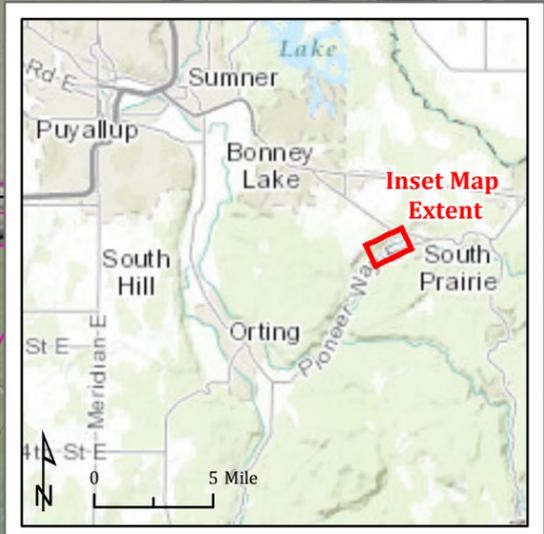
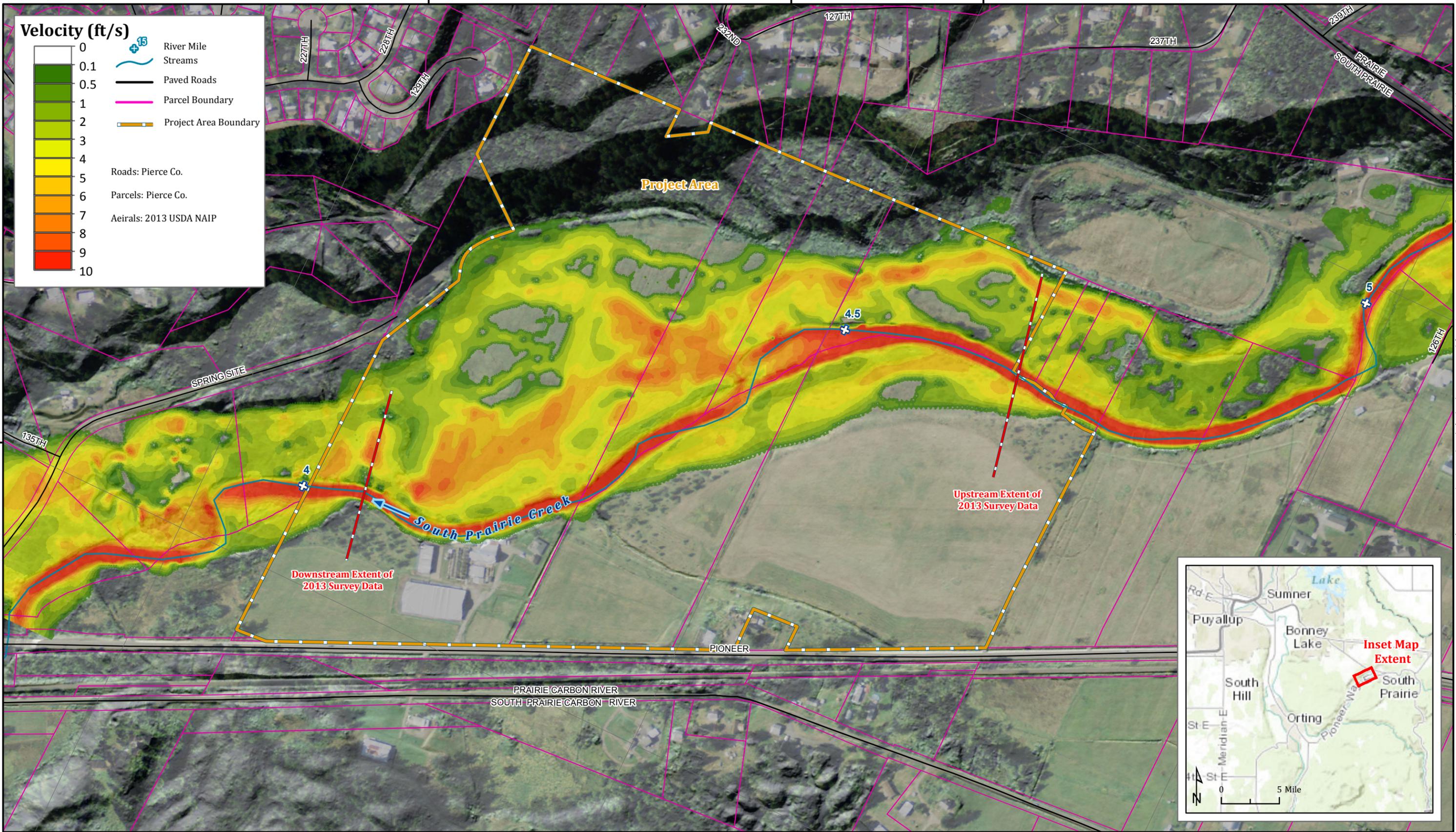
47°8'30"N

122°7'0"W

### Velocity (ft/s)



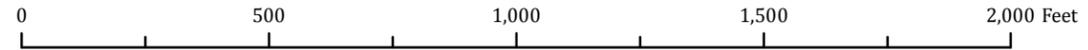
- River Mile Streams
- Paved Roads
- Parcel Boundary
- Project Area Boundary
- Roads: Pierce Co.
- Parcels: Pierce Co.
- Aerials: 2013 USDA NAIP



## South Prairie Creek Floodplain & Habitat Restoration

### Existing Conditions - Preliminary 100 year flow Velocity

RiverFLO-2D hydraulic model output representing 100 year recurrence discharge of 9700 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)

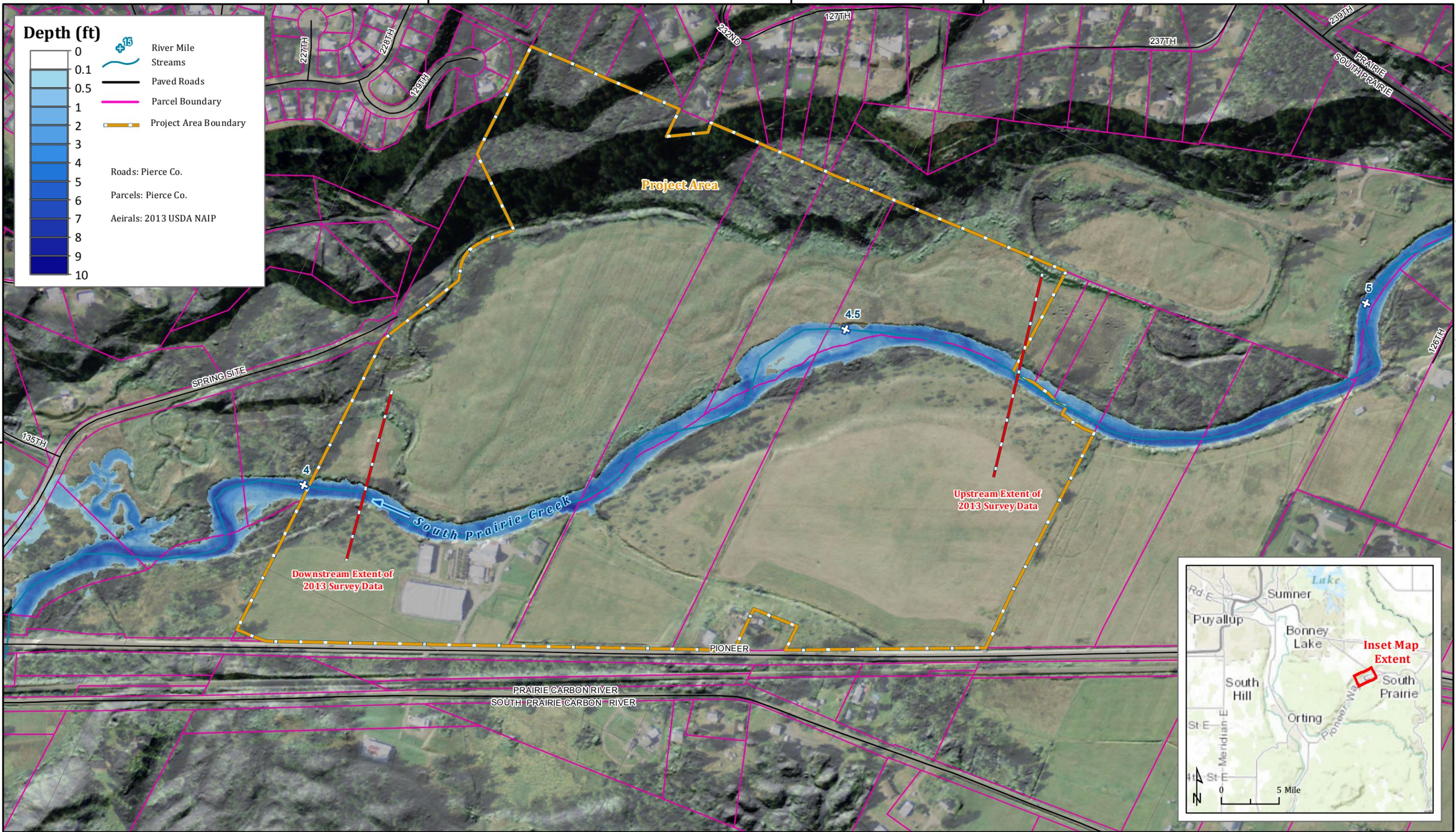


Lambert conformal conic projection, NAD 1983  
State Plane Coordinate System (WA South Zone)



David French, NSD Date: 1/15/2014 Path: N:\Projects\South Puget Sound Salmon Enhancement Group\S\_South Prairie Creek GIS Maps\mxd\2D Results\F100\_Velocity.mxd

122°7'30"W 47°8'30"N 122°7'0"W



**Depth (ft)**

0
0.1
0.5
1
2
3
4
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7
8
9
10

- River Mile
- Streams
- Paved Roads
- Parcel Boundary
- Project Area Boundary

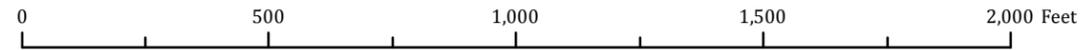
Roads: Pierce Co.  
 Parcels: Pierce Co.  
 Aerials: 2013 USDA NAIP



**South Prairie Creek Floodplain & Habitat Restoration**

**Existing Conditions - 1.1 year flow Depth**

RiverFLO-2D hydraulic model output representing 1.1-year recurrence discharge of 1484 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)

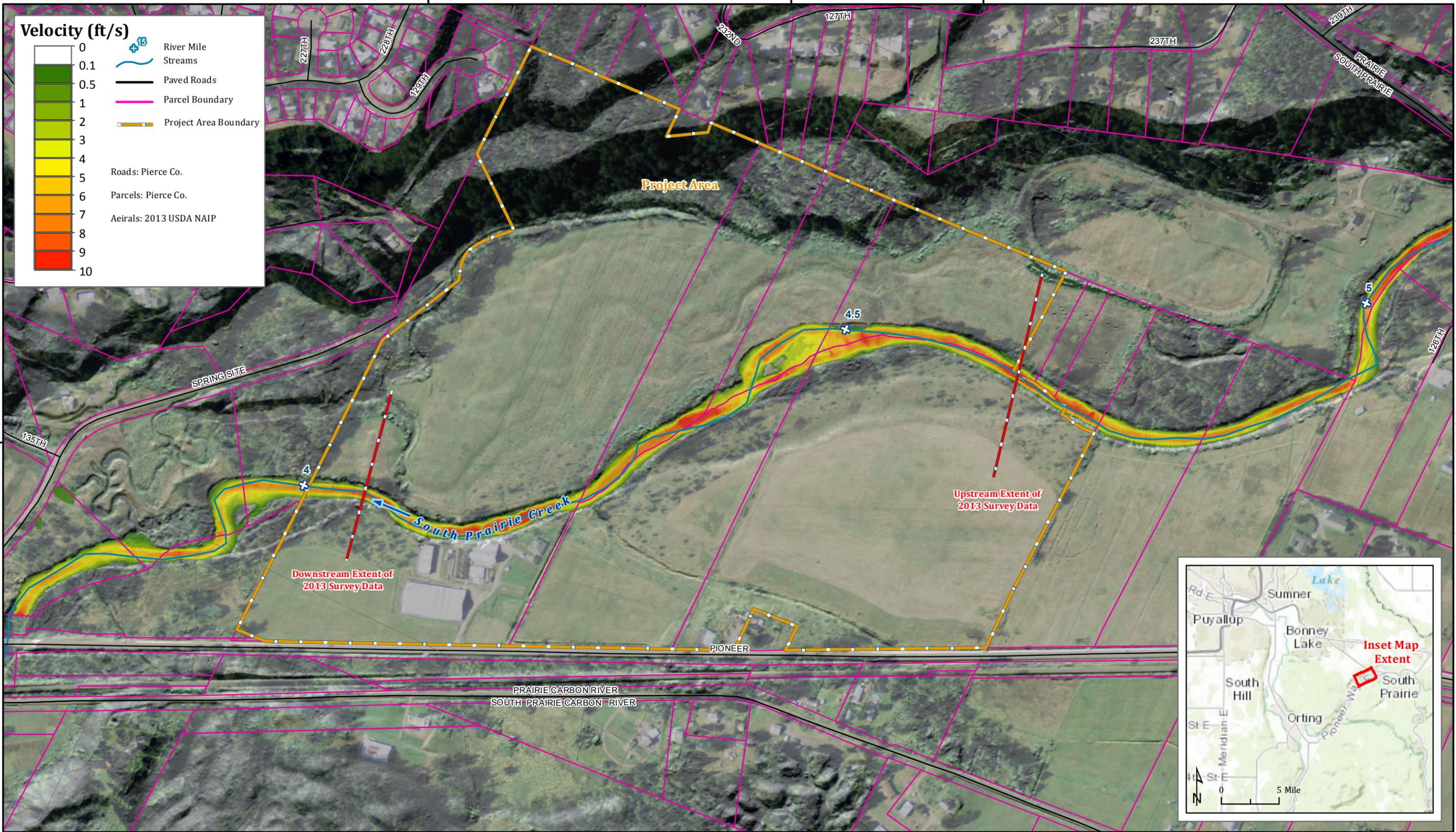


Lambert conformal conic projection, NAD 1983  
State Plane Coordinate System (WA South Zone)



David French, NSD Date: 4/21/2014 Path: N:\Projects\South Puget Sound Salmon Enhancement Group\S. Prairie Creek\GIS\Maps\mxd\2D Results\FCTVr\_Depth.mxd

122°7'30"W 47°8'30"N 122°7'0"W



47°8'0"N

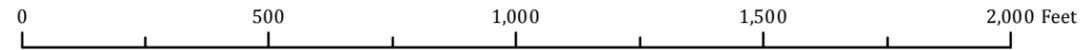
David French, NSD Date: 4/21/2014 Path: N:\Projects\South Puget Sound Salmon Enhancement Group\S\_South Prairie Creek\GIS\Maps\mxd\2D Results\FCTVr\_Velocity.mxd



### South Prairie Creek Floodplain & Habitat Restoration

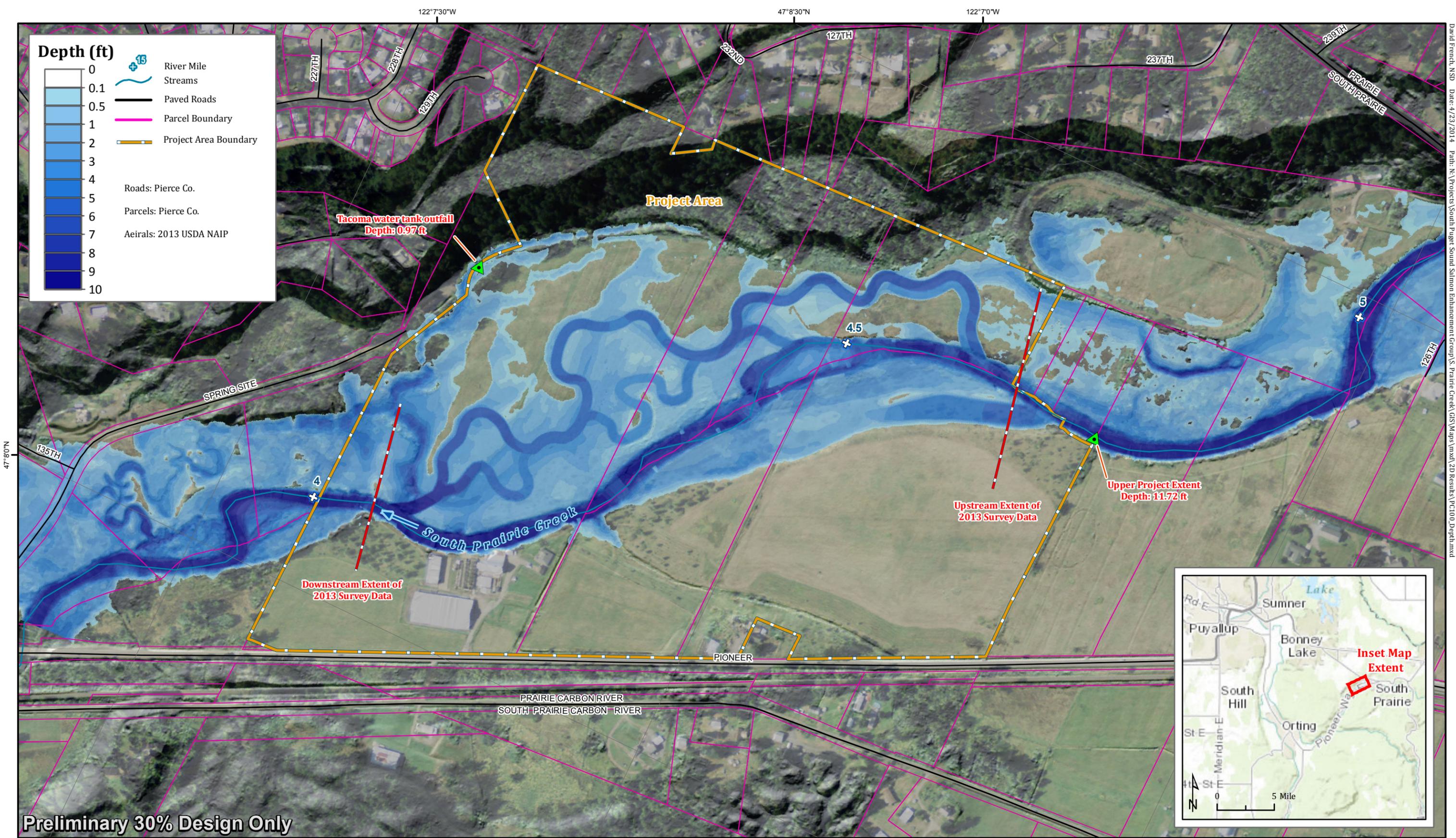
#### Existing Conditions - 1.1-year flow Velocity

RiverFLO-2D hydraulic model output representing 1.1 year recurrence discharge of 1484 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)



Lambert conformal conic projection, NAD 1983  
State Plane Coordinate System (WA South Zone)

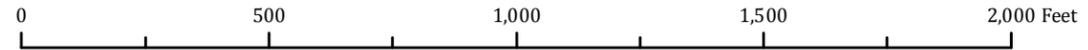




**Preliminary 30% Design Only**

**South Prairie Creek Floodplain & Habitat Restoration  
Proposed Conditions - 100-year flow Depth**

RiverFLO-2D hydraulic model output representing 100 year recurrence discharge of 9404 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)



Lambert conformal conic projection, NAD 1983  
State Plane Coordinate System (WA South Zone)



David French, N.S.D. Date: 4/23/2014 Path: N:\Projects\South Puget Sound Salmon Enhancement Group\S\_South Prairie Creek\GIS\Maps\mxd\2D Results\PC100\_Depth.mxd

122°7'30"W

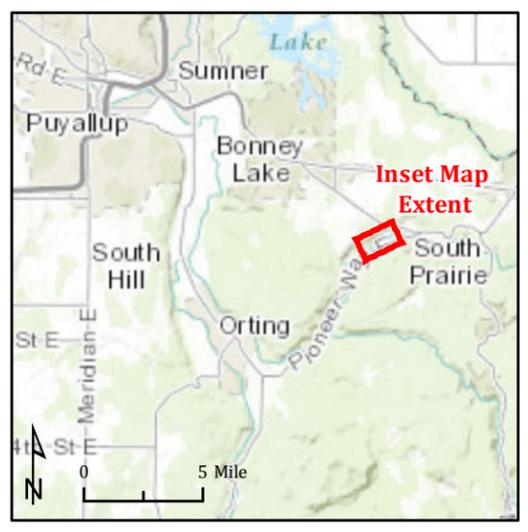
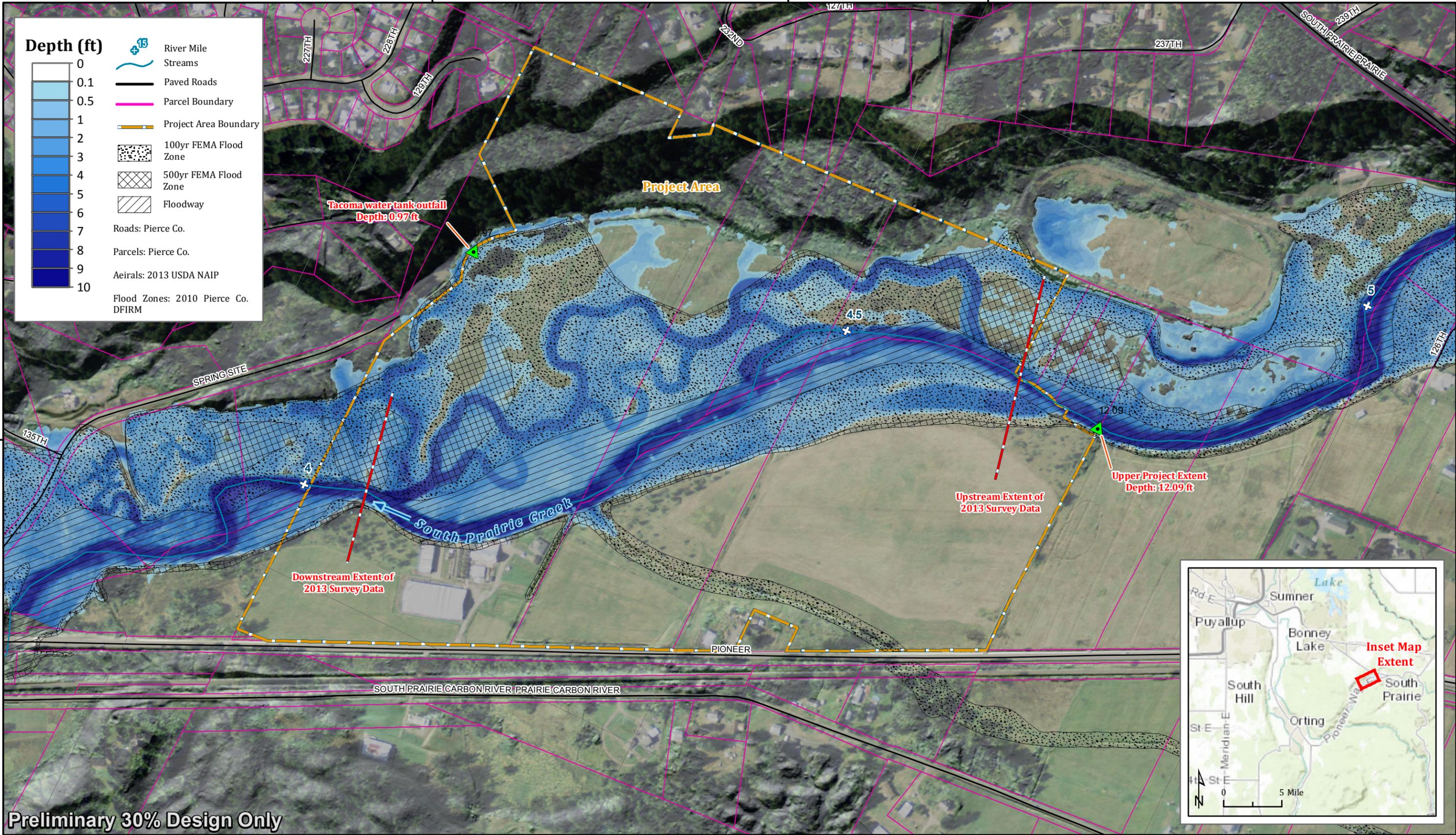
47°8'30"N

122°7'0"W

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- River Mile
- Streams
- Paved Roads
- Parcel Boundary
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- 100yr FEMA Flood Zone
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**South Prairie Creek Floodplain & Habitat Restoration**

**Proposed Conditions - 100-year flow Depth**

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Lambert conformal conic projection, NAD 1983  
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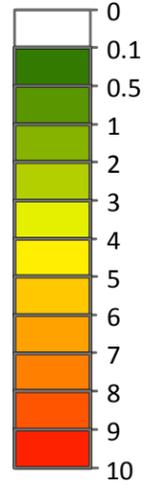
David French, N.S.D. Date: 4/23/2014 Path: N:\Projects\South Puget Sound Salmon Enhancement Group\S. Prairie Creek GIS Maps\mxd\2D Results\PC100\_Depth\_wFEMA\_hatched.mxd

122°7'30"W

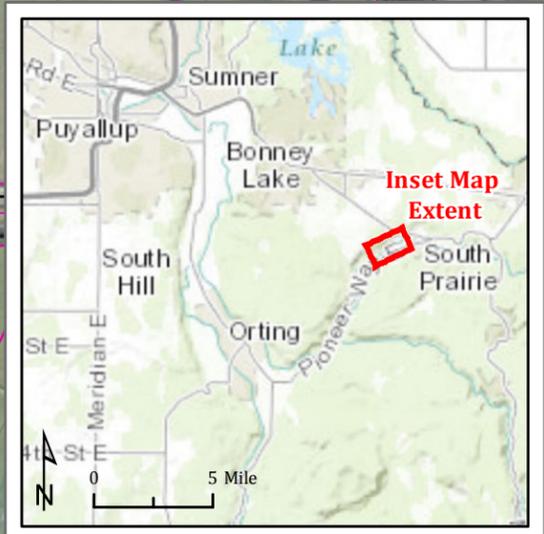
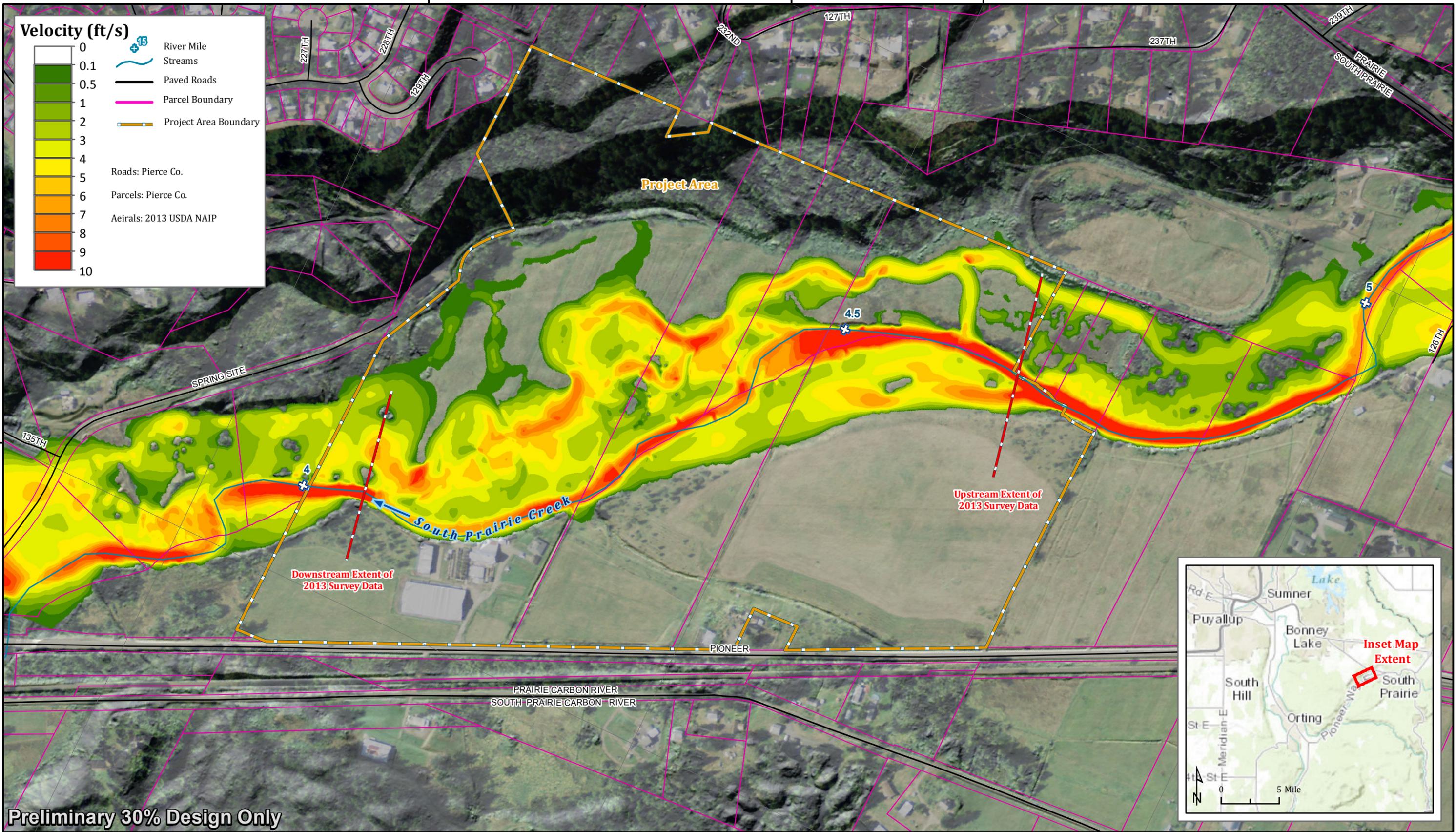
47°8'30"N

122°7'0"W

### Velocity (ft/s)



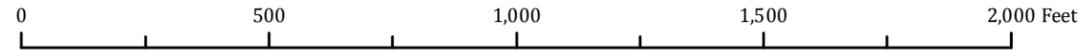
- River Mile
- Streams
- Paved Roads
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- Project Area Boundary
- Roads: Pierce Co.
- Parcels: Pierce Co.
- Aerials: 2013 USDA NAIP



**Preliminary 30% Design Only**

### South Prairie Creek Floodplain & Habitat Restoration Proposed Conditions - 100-yr Flow Velocity

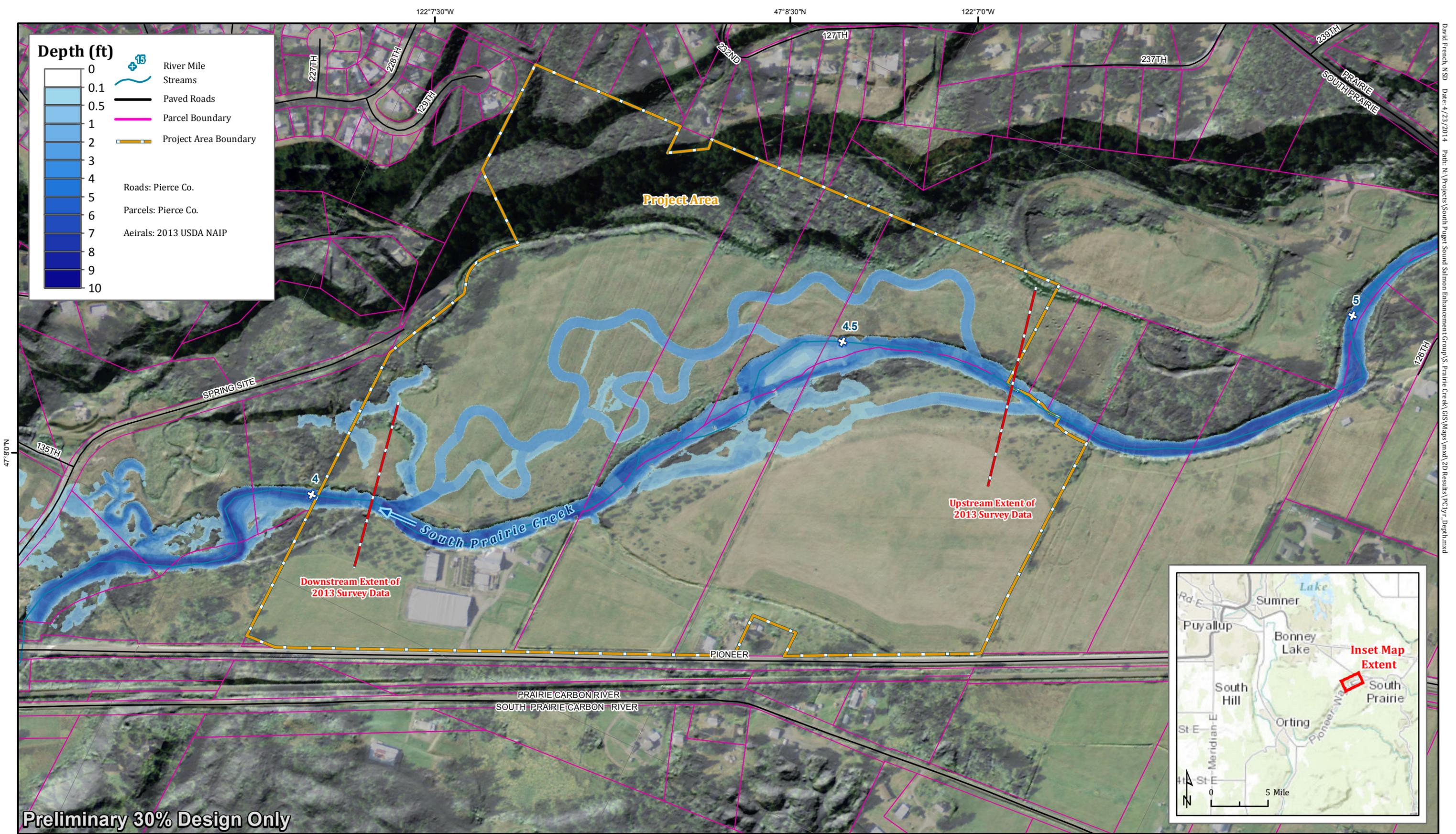
RiverFLO-2D hydraulic model output representing 100 year recurrence discharge of 9404 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)



Lambert conformal conic projection, NAD 1983  
State Plane Coordinate System (WA South Zone)



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**Preliminary 30% Design Only**

**South Prairie Creek Floodplain & Habitat Restoration**

**Proposed Conditions - 1.1 year flow Depth**

RiverFLO-2D hydraulic model output representing 1.1-year recurrence discharge of 1484 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)



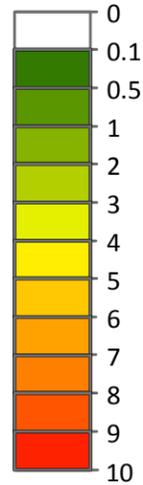
David French, N.S.D. Date: 4/23/2014 Path: N:\Projects\South Puget Sound Salmon Enhancement Group\S\_South Prairie Creek GIS\Maps\mxd\2D Results\PC1yr\_Depth.mxd

122°7'30"W

47°8'30"N

122°7'0"W

### Velocity (ft/s)

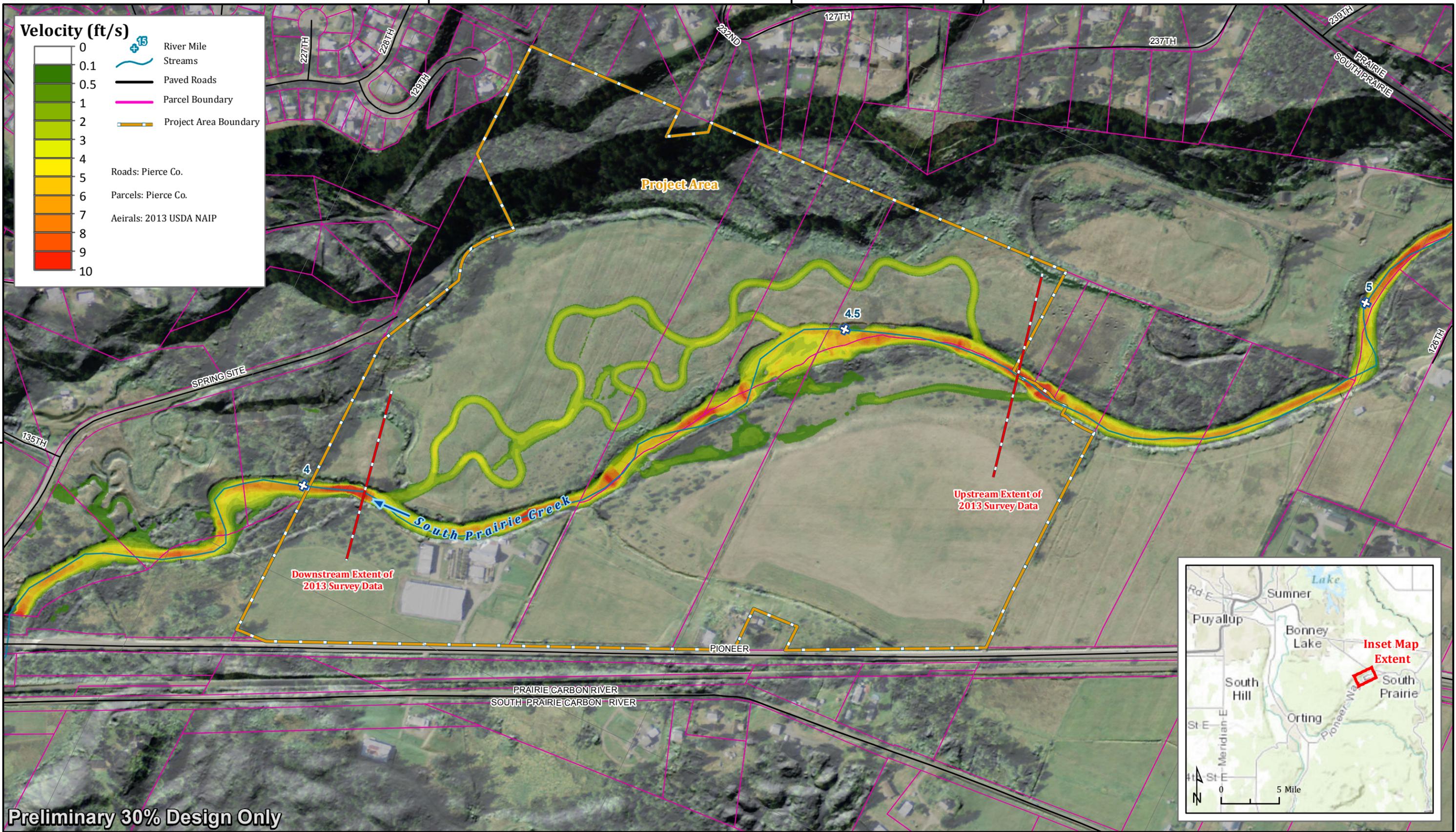


- River Mile
- Streams
- Paved Roads
- Parcel Boundary
- Project Area Boundary

Roads: Pierce Co.

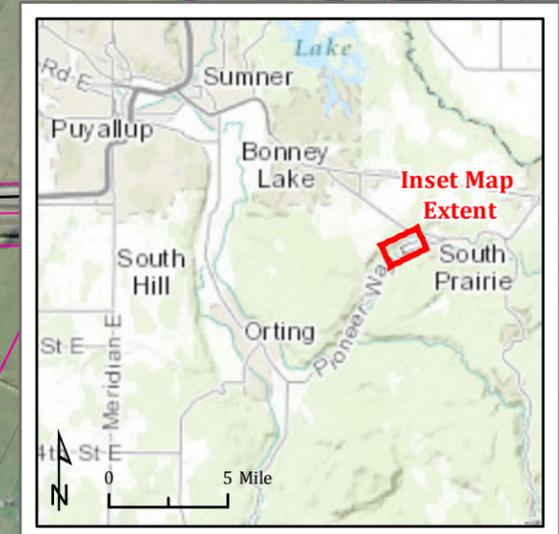
Parcels: Pierce Co.

Aerials: 2013 USDA NAIP



Downstream Extent of 2013 Survey Data

Upstream Extent of 2013 Survey Data



## Preliminary 30% Design Only

### South Prairie Creek Floodplain & Habitat Restoration

#### Proposed Conditions - 1.1-year flow Velocity

RiverFLO-2D hydraulic model output representing 1.1 year recurrence discharge of 1484 cfs. Existing conditions surface rendered from: 2011 LiDAR DEM (Puget Sound LiDAR Consortium); 2013 topographic survey of the project site (Larson and Associates); and 1976 cross-section data of upstream and downstream channel segments (USGS)

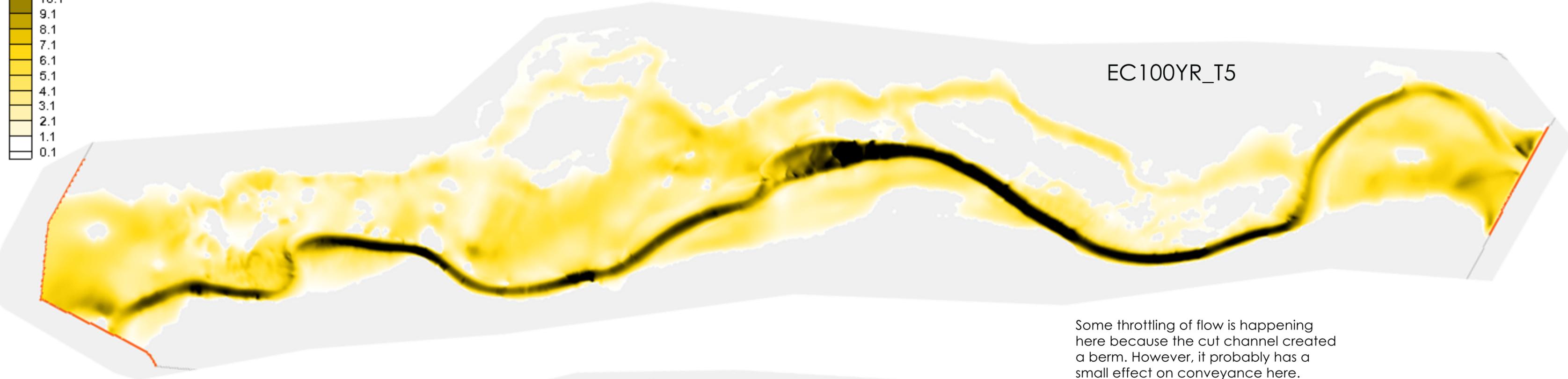
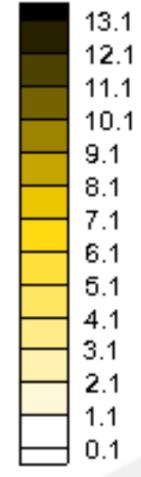


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Mesh Module Velocity Mag



Some throttling of flow is happening here because the cut channel created a berm. However, it probably has a small effect on conveyance here.

Another consideration is that this fill area may be pinching the floodplain.

