Jones Creek Management Plan – Project Description

1 PURPOSE

The project proposes to relocate Jones Creek back into its former (pre-2011 avulsion) location (Corridor No. 1) that has a mature riparian vegetation buffer (Figure 1). As the result of the most recent avulsion in 2011, the stream now flows through an open field (Corridor No. 2) with limited riparian vegetation and limited to no habitat function. This avulsion through Corridor No. 2 was the result of debris flow accumulations within Jones Creek and subsequent berm failure in 2011, resulting in the creek flowing into a large, open field (right bank floodplain) outside of Corridor No. 1. Returning the creek into Corridor No. 1 would improve the habitat potential and overall ecological function of the system.

2 SITE HISTORY

Jones Creek has a history of large debris flows. Over the last 7,000 years, six large debris flows (greater than 100,000 cubic yards) have been documented (KWL 2004). In recent times, larger debris flows were recorded in 1953, 1983 (33,000 cubic yards), and 1990 (KWL 2004). In addition, a large debris flow occurred in January 2009. During this event, an estimated 20,000 to 25,000 cubic yards of material were deposited on the alluvial fan (KWL 2010). Debris from this flow damaged Turkington Road Bridge and a few private properties (KWL 2010). The most recent avulsion occurred in fall 2011 when the creek avulsed from its alignment through the treed riparian corridor (Corridor No. 1) out through the right bank floodplain (Corridor No. 2). Jones Creek continues to occupy this corridor.

3 COLLABORATION WITH WHATCOM COUNTY RIVER AND FLOOD

Whatcom County River and Flood Division have been investigating Jones Creek and means to manage the large debris flows that could impact public and private infrastructure or represent a risk to human life. As the County plan progresses and additional information is available on specific actions that may warrant adjustments to this monitoring and maintenance plan, this plan will be revised or amended and efforts will be made to coordinate subsequent monitoring and maintenance activities.

4 PROPOSED ACTION

The proposed action will remove approximately 1,000 cubic yards of material from the former channel (approximately 200 lineal feet of channel just downstream of the avulsion location). The creek will be relocated back into the former channel. A series of log weirs will be constructed at the avulsion location to maintain flow in the creek during normal flow conditions. During flood events, the creek will be free to flood out into the floodplain. Sediments from the channel and the field (floodplain) will be collected and placed strategically along the right extent of the floodplain on the property. No materials will be exported from the site. Import will be limited to logs to construct the weir.

The Jones Creek Management Plan would be implemented in three phases (Figure 2). The activities proposed for each of the project phases (1 through 3) are described below. Additional phases of work may be added based on evolution of the creek and adaptive management decisions.

The Shorelines Exemption Permit pertains to Phase 2 and 3 only. Phase 1 is located outside of the SMP jurisdictional area.

4.1 Phase 1: Jones Creek Relocation

Phase 1 is the relocation of Jones Creek back into Corridor No. 1 (Parcel Nos. (Geographic Ids): 370506319034 and 370506426230). A natural channel would be excavated to direct the creek back into this corridor. Three log sills and sediment would be placed in the avulsion path through the trees on the right bank floodplain of Jones Creek to help manage future debris flows into Corridor No. 2. Excess sediment excavated during this phase would be placed along the north-south fence line west of the Acme Elementary School (School) and private property in a manner consistent with Whatcom County (County) debris flow hazard reduction goals.

4.2 Phase 2: Hudson Road Ditch Excavation

Phase 2 is the excavation of a roadside ditch along the west side of Hudson Road to the south of the bridge crossing (Parcel Nos. [Geographic Ids]: 370506426230 and 370506444116). Material excavated from the ditch would be placed along the north-south fence line to the west of the School and private property in a manner consistent with County debris flow hazard reduction goals. The roadside ditch would collect stormwater and route it to the creek upstream of the Hudson Road Bridge.

4.3 Phase 3: Hudson Road Bridge Replacement

Phase 3 is the replacement of the existing 12-foot span bridge over lower Jones Creek (Parcel No. [Geographic Id]: 370506426230). The bridge would be replaced with a 40-foot bridge span. The bridge would be designed to meet the Washington Department of Fish and Wildlife (WDFW) stream simulation requirements for fish passage and pass the 100-year discharge without overtopping the road (assuming minimal South Fork backwater). Replacing the bridge would reduce the backwater upstream of the bridge during high flow and allow sediment to be transported more readily into the South Fork.

5 MONITORING

A detailed Monitoring and Maintenance Plan was developed for the Jones Creek Project (Anchor QEA 2015). Annual monitoring will take place for a minimum of 5 years following completion of the Phase I actions. Monitoring of the Phase I actions proposed in the Management Plan will take place in the spring or early summer. The precise timing of the monitoring will depend on a number of factors including the following:

- Discharge/stage in the creek returning to low-flow conditions
- Perceived urgency of needed action

- Availability of the landowner's representative
- Availability of representatives from the County

Efforts will be made to establish a planned monitoring date a minimum of one month in advance to facilitate coordination with the landowner's representative and County personnel.

Typical monitoring activities will include the following:

- Depositional areas identification
- Sediment deposit volume estimation
- Low-flow channel alignment documentation
- Log sill condition

6 MAINTENANCE THRESHOLDS

Thresholds for maintenance are directly related to the results of the monitoring activities described above. Each threshold is intended to provide a reasonable level at which a maintenance action is recommended. Maintenance activities may be undertaken under any of the following conditions:

- Sediment deposit volume estimation
- Low-flow channel alignment documentation
- Log sill condition

7 MAINTENANCE ACTIONS

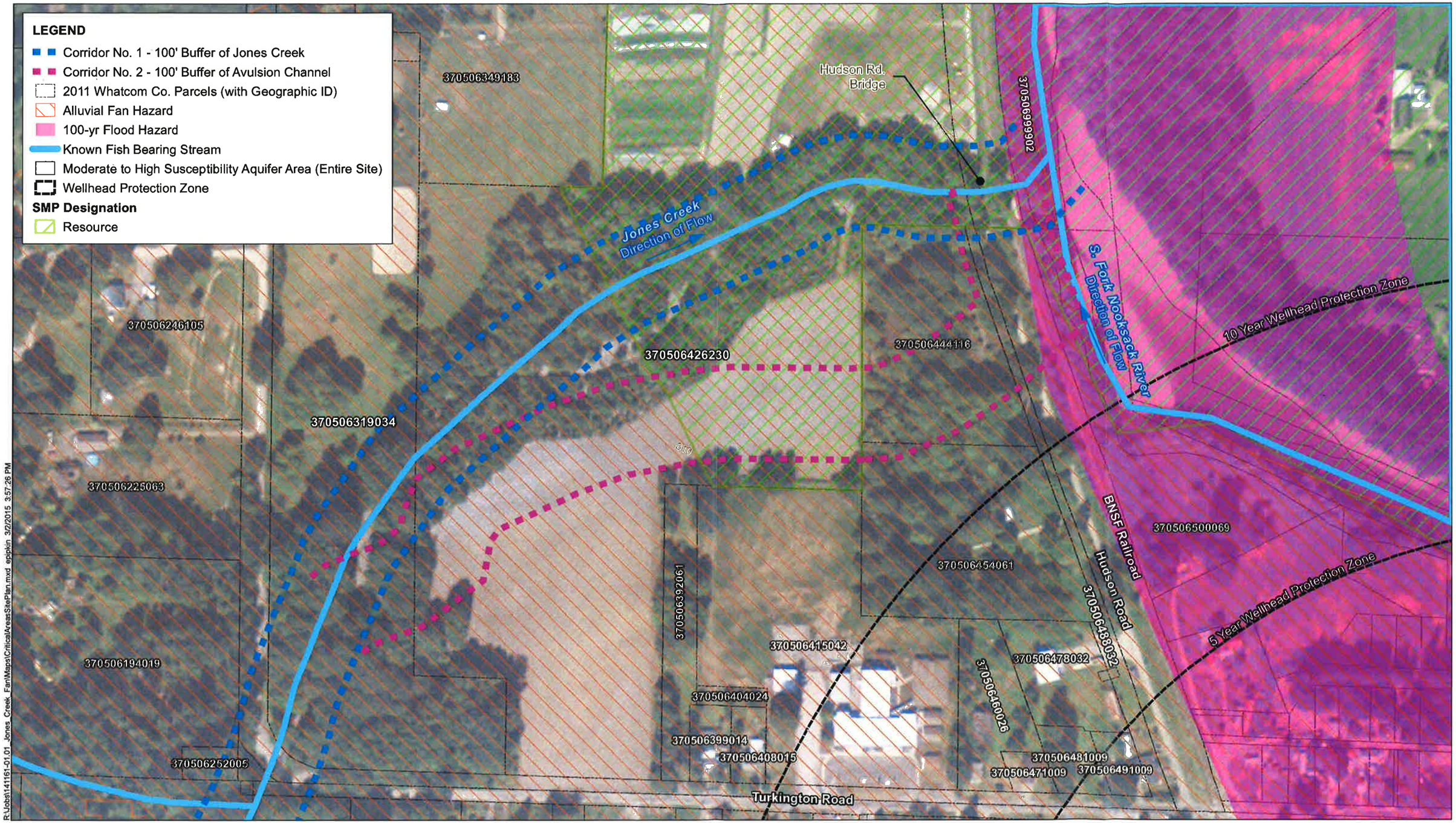
Actions recommended to help meet the objectives of the overall Management Plan are directly related to the particular maintenance thresholds that are met or exceeded. Actions will generally be taken during the summer permitted fish window for the system. However, in the event of a large debris flow, limited duration emergency management work may be prudent. Any maintenance actions proposed outside the fish window will be conducted in close coordination with WDFW and Whatcom County officials, and every effort will be made to minimize potential impacts to aquatic species of concern.

Typical maintenance actions will include the following:

- Excavation of recently deposited sediment
- Low-flow channel shaping
- On-site material placement
- Off-site haul of materials

8 REFERENCE

Anchor QEA, 2015. *Draft Monitoring and Maintenance Plan*. Jones Creek Management Plan. Prepared for Acme Farming, LLC. Bellingham, Washington.

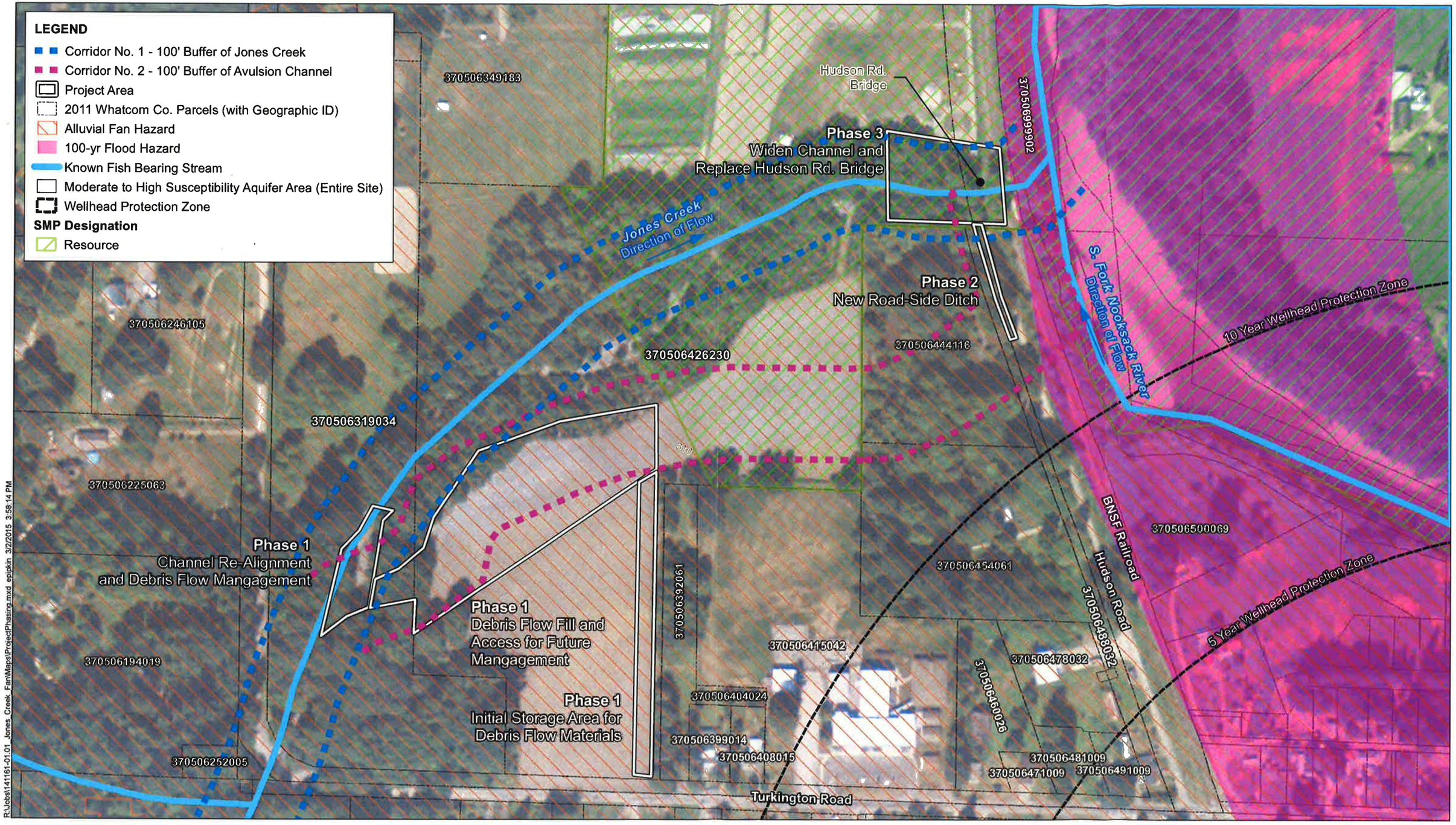


NOTES:
1. Horizontal datum: WA State Plane North, NAD83, Feet.
2. 2011 Aerial photo provided by BING via ESRI.
3. Flow paths approximated and digitized from LiDAR hillshade and contours.
4. SMP designations provided by Whatcom County.
5. Critical area designations provided by Whatcom County.

ANCHOR QEA

Feet
0 100 200

Figure 1
Site Map
Jones Creek Management Plan
Acme Properties, Acme, WA



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Feet
0 100 200

Figure 2
Project Phasing
Jones Creek Management Plan
Acme Properties, Acme, WA