

Response to SRFB Review Panel October 2012 Comments

Project Number: 12-1843

Project Name: Nason N1-KDIZ3 Floodplain Reconnection

Review Panel Comment:

Evaluation criterion #4 applies to this project: The project has a high cost relative to the anticipated benefits and the project sponsor and lead entity have failed to justify the costs.

Sponsor Response:

In January 2011, CCNRD presented an alternatives analysis for this project area to the UCRTT. The preferred alternative was to re-locate Highway 207 to restore full channel migration processes. At 10 - 22 million, the costs of SR 207 re-location exceeded sources available for salmon recovery funded projects. In addition, the road relocation options with the highest biological benefit were more expensive and lacked WSDOT and community support (CCNRD 2012 Attachments #12 and 13 PRISM).

The hydraulic reconnection of the N1 floodplain was the second alternative supported by UCRTT members during the January 2011 meeting. The N1 floodplain reconnection is a much lower cost than Highway 207 relocation and it can be combined with other reach-based actions to improve habitat in Lower Nason Creek. The following actions are proposed in this reach: floodplain fill removal (near RM 4.7), placement of instream wood (near RM 3.7), habitat enhancements actions in the 2007 oxbow (near RM 3.5-3.9), and N1-KDIZ3 floodplain reconnection (RM 4.3 – 4.6). This proposal is seeking funding for the N1-KDIZ3 floodplain reconnection while a separate proposal seeks funds for remaining reach based actions.

The project construction cost, \$516,000, is typical for two large culverts to be installed under a State Highway embankment. Working under and within WSDOT highways requires additional coordination, design effort, and elements incorporated into the design due to WSDOT standards such as safety requirements and road surface quality. Costs are comparable to those incurred for two similar floodplain reconnection projects constructed in Lower Nason Creek in 2007 and 2009. These past projects have been successful in hydraulically reconnecting historical channel and floodplain habitats as evident from monitoring of the RM 3.5 – 3.9 (2007 Oxbow) site which has documented salmonid abundance ranging from 2-16 salmonids/100m² (Figure 19, DOE 2011 PRISM attachment #10).

Highway 207 currently disconnects historical floodplain habitats in Lower Nason Creek. This project proposes to re-connect a floodplain side channel to Nason Creek by installing a 30' diameter box culvert within the SR 207 road prism at the downstream end of the historical floodplain. This will provide fish access to a 600' long side channel/off-channel habitat for 3 months/year (April-June) with water depths > 1' deep. A 10' diameter metal pipe will be installed at the upstream end of the floodplain to provide a seasonal flow-through connection during high water events; this will help increase floodplain connectivity, increase fish access, and flush fine sediments from the channel. This project will reconnect a 4.6 acre high flow through channel plus over 9 acres of adjacent forested floodplain habitat. This project provides off-channel or side channel habitat for high flow refugia and rearing for juvenile spring Chinook, bull trout, and steelhead during typical spring conditions.

Review Panel Comment:

What would make this a technically sound project according to the SRFB's criteria?

The proposed side channel reconnection to provide high flow refuge appears to provide only limited benefits for the costs. The proposed design would disturb a large amount of existing riparian vegetation which would limit the near-term function of the restored habitats.

Sponsor Response:

The RTT has listed side channel and off-channel connection that addresses limiting factors such as high flow and rearing refugia as the highest restoration priority in the Wenatchee basin (UCRTT priorities table 2009). Spawning habitat is not limited in Nason Creek, however, juveniles lack slow water areas for rearing during spring high flows and deep pools that provide temperature refugia for over-wintering juvenile habitat. Thus, this project addresses one of the limiting factors in Nason Creek by providing off-channel or side channel habitat for high flow refugia and rearing for juvenile spring Chinook, bull trout, and steelhead.

No mature trees (> 6" DBH) will be removed east or west of SR 207 as part of the downstream culvert connection or floodplain excavation. West of Highway 207, the culvert location was sited so that construction would not involve tree removal. East of Highway 207, there is a band of shrubby riparian vegetation consisting of dogwood and willows that would be disturbed by project construction. Photo 1 depicts the shrubby vegetation adjacent to Highway 207.

Vegetation removal resulting from excavation within this shrubby area will be less than 0.25 acres. Behind this row of shrubby vegetation, the majority of the excavation proposed east of Highway 207 (approximately 0.65 acres) is dominated by herbaceous species (See photo 2 below). All excavation proposed will be designed to minimize impacts to existing native shrubs and trees. If needed, the excavation footprint can be reduced (made narrower) to minimize vegetation impacts. Another way to minimize vegetation impacts would be to just cut, rather than remove, shrubby vegetation for site access; most of the willows and dogwood will just re-grow from cut stems. These best management practices will be developed and described in more detail as a later stage of design.

This project proposes to restore the hydrologic connection between Nason Creek and a historic floodplain side channel. This side channel was likely activated on an annual basis similar to what is proposed with the improved culvert connection. A series of aerial photographs have been compiled to document historic conditions, successional vegetation patterns, and current conditions in the floodplain.

In the 1940's, Highway 207 re-location disconnected the N1 floodplain area from the mainstem of Nason Creek. The active floodplain area is still visible in the 1966 aerial photograph, Figure 1. The 1966 aerial photograph is the oldest aerial photograph for the project area as the 1936 and 1949 aerial photos found during the searches do not quite cover the project area. The 1981, 1992, and 2012 aerial photographs (Figure 2-4) document vegetation succession in the floodplain that has resulted from the floodplain disconnection resulting from Highway 207 construction. However, the 50+ foot wide break in canopy cover that remains at the downstream end of the floodplain is visible in Figures 2-5. This area remains wet through the spring due to elevated groundwater discharge from the surrounding hillsides. Photo 5 in the final project proposal documents current levels of spring inundation in the floodplain area.



Photo 1: Break in tree canopy and shrubby vegetation located in the proposed excavation area at the downstream floodplain connection area.



Photo 2: Break in tree canopy and herbaceous vegetation located in the proposed excavation area at the downstream floodplain connection area.

Review Panel Comment:

What would make this a technically sound project according to the SRFB's criteria?

The proposal has inconsistencies in the cost estimate. One table identifies permitting cost of \$129,000, while another table lists the permitting costs as \$52,000. The total project costs are identical in the two tables. Clarify the project costs. If permitting is more than the \$52,000 estimate, please explain.

Sponsor Response:

The budget discrepancy is due to the limited ability to provide accurate information about tasks as part of the worksite cost estimate in PRISM. Please refer to the accurate project budget provided as attachment # 6 in PRISM. CCNRD is requesting \$52,000 for remaining permitting costs as outlined in that line item budget. There have been approximately \$77,000 in costs previously incurred as part of project development that are also considered permitting tasks.

Thus, $\$77,000 + \$52,000 = \$129,000$

The \$77,000 is part of the \$85,000 budget line item listed as BPA match as part of the 2012 feasibility study. Tasks covered under this work include preliminary USFS NEPA evaluation, geomorphic site assessment, and a geology survey. Information from all of these documents will be used to prepare permit submittal documents.

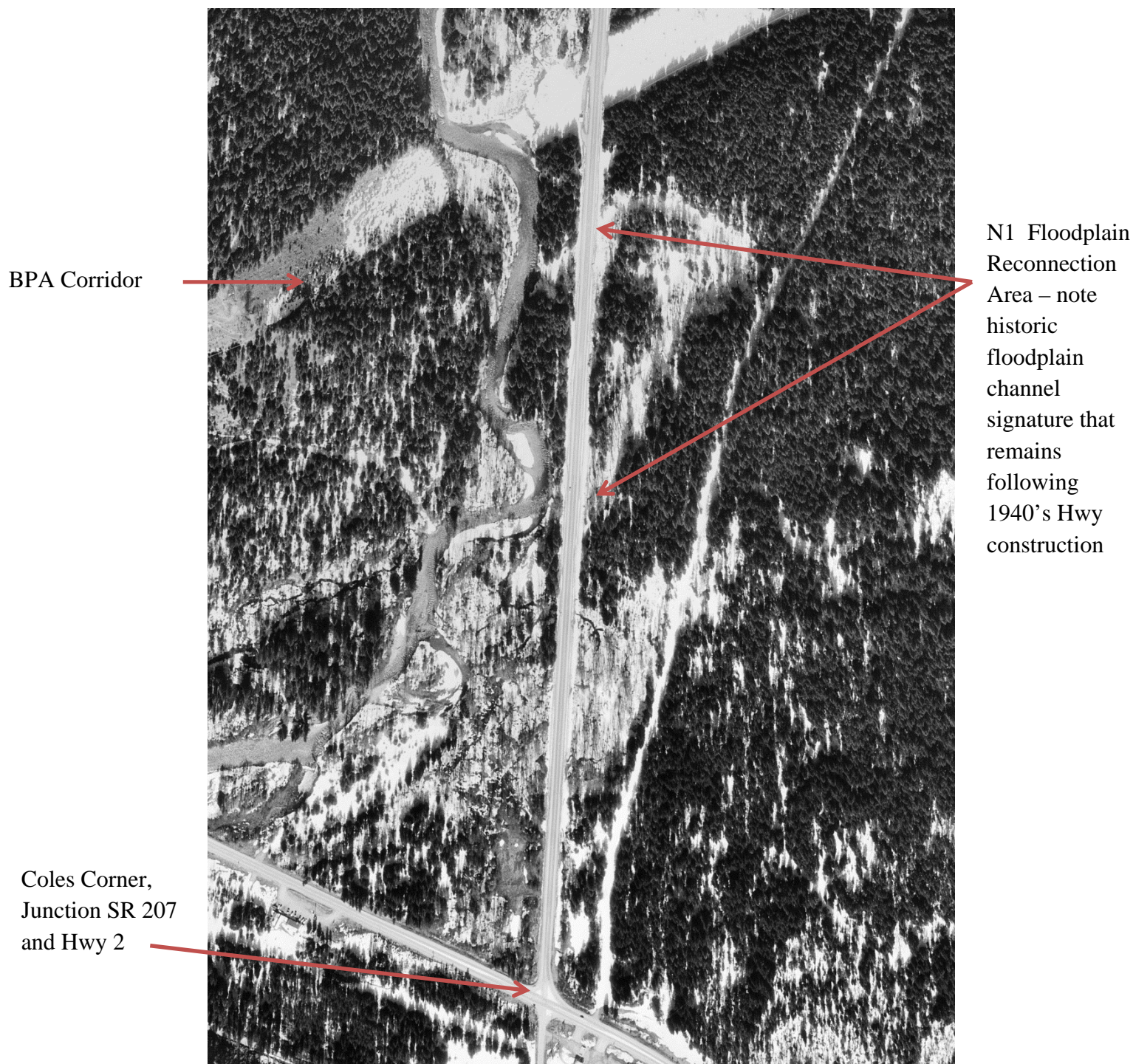


Figure 1: 1966 Aerial Photograph of the N1 Floodplain Reconnection site. Source UW. Note the active floodplain channel path in the vicinity of the project area.

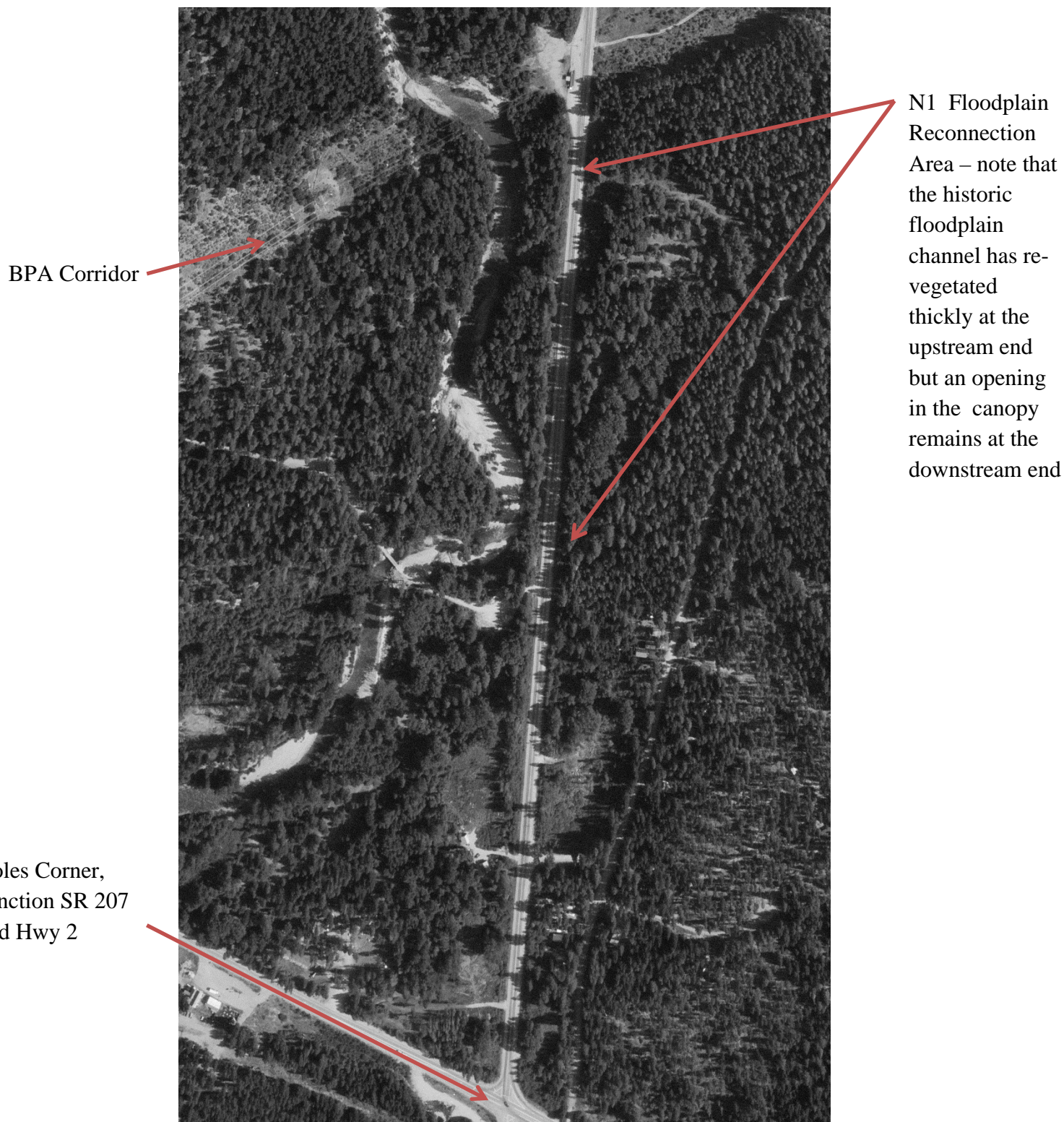


Figure 2: 1981 Aerial Photograph of the N1 Floodplain Reconnection site. Source UW.

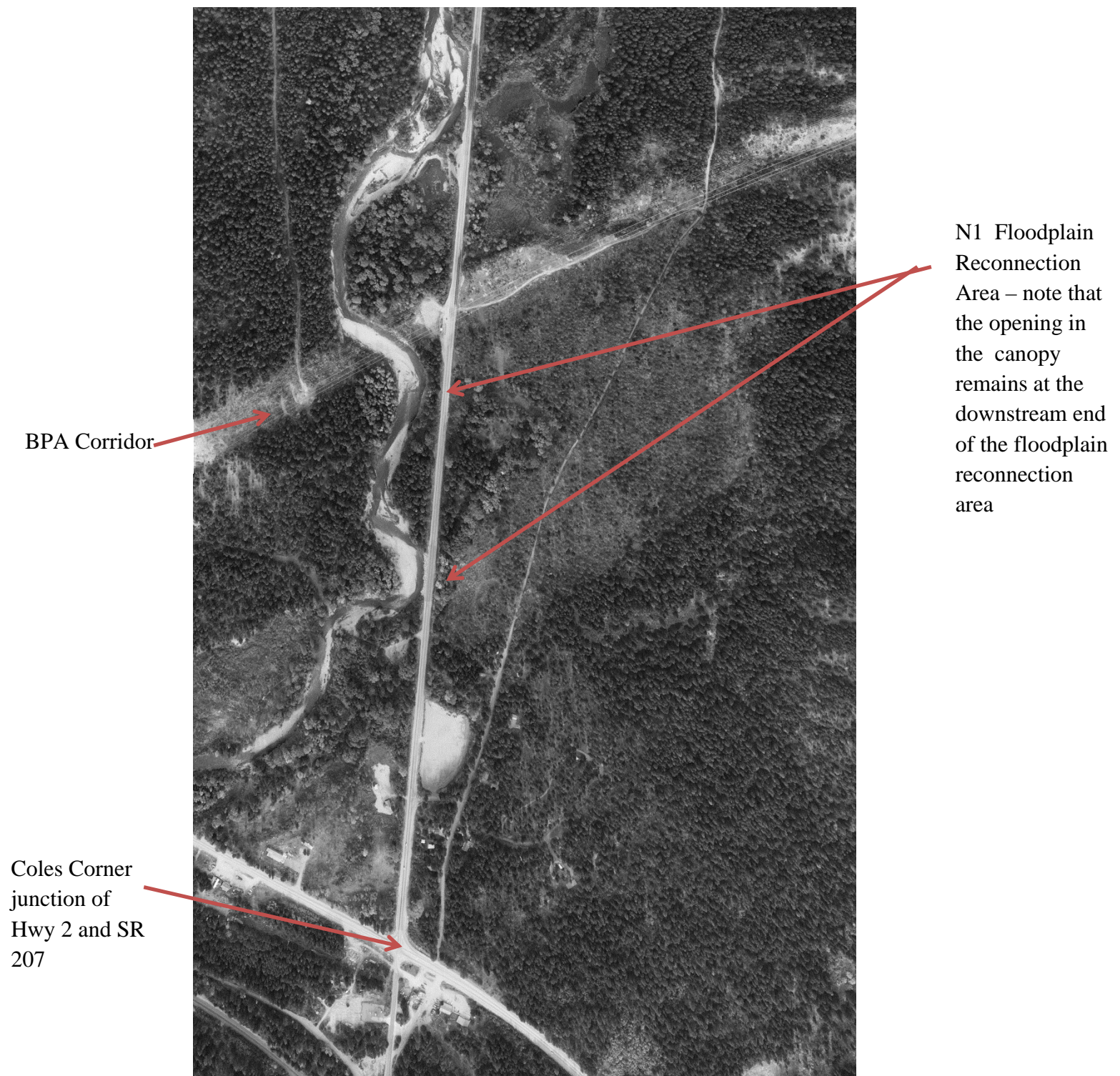
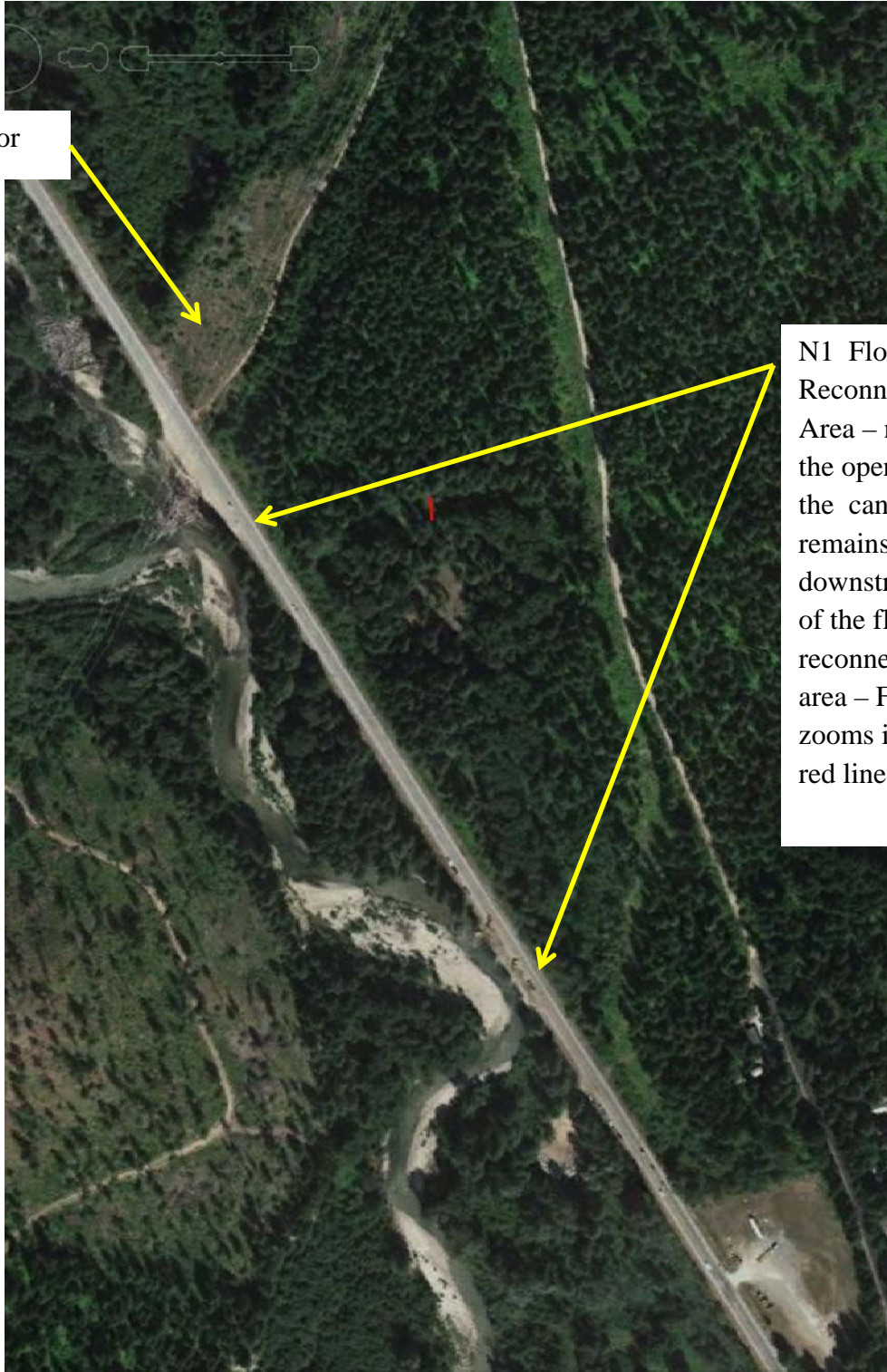


Figure 3: 1992 Aerial Photograph of the N1 Floodplain Reconnection site. Source UW.

BPA Corridor



N1 Floodplain
Reconnection
Area – note that
the opening in
the canopy
remains at the
downstream end
of the floodplain
reconnection
area – Figure 5
zooms in on the
red line

Figure 4: 2011 Aerial Photograph of the N1 Floodplain Reconnection site. Source Google Earth.