Response to October Review Panel Comments
Project Number: 12-1438
Project Name: Lower Nason Creek Reach Based Restoration RM 3.7 – 4.7

SRFB Review Panel Comment:
The following Evaluation Criteria apply to this project:

#2. Information provided or current understanding of the system is not sufficient to determine the need for or benefit of the project.
#11. The project design is not adequate or the project is sited improperly.

Sponsor Response:
The location of the ELJ as described in the project application was sited based upon recommendations made in a geomorphic analysis (Cardno-Entrix 2012). The technical memorandum has been added as attachment #12 in PRISM. The following text has been taken from the technical memorandum to explain the proposed location of the ELJ near RM 3.7:

> The forced relocation of the channel between RM 3.5 and 4.0 reduced the abundance of wood, relative to the historic corridor, and resulted in a channel that lacked geomorphic complexity. Incipient changes are evident in the new channel and an increase in wood recruitment has been initiated at RM 3.8. The presence of large trees on eroding terraces has been a critical factor in the formation of functional wood accumulations.
>
> Note that options to add stable wood or excavate new flow paths into existing terrace areas (particularly near RM 3.4 to 3.8) could have a large impact on the area and distribution of habitat types without moving SR 207.
>
> A key finding of the present study is that there are multiple opportunities to improve both habitat conditions and road protection by strategic placement of wood structures. Large wood accumulations add roughness to the channel boundary, reduce velocity, increase water surface elevation and create distinctive patterns of alluvial bedforms which generally increase the complexity of the channel. Adding wood to select locations can increase water surface elevations by 0.5-1.0 meter and dramatically influence the spatial extent of side channel habitats under both alternatives. General reconnaissance of the study area and review of LIDAR based topographic data suggests that the extent of side channel habitat could be increased by as much as 50% compared to existing conditions by adding wood in strategic placements and limited grading of floodplain surfaces.

Thus, the ELJ proposed near RM 3.7 would be designed to mimic the channel migration patterns that have started near RM 3.8 as a result of recent wood accumulations. The ELJ would also reduce entrenchment in the excavated portion of the channel and increase floodplain interaction on river left. That said, this is a design and construction proposal so modeling to document increased side channel activation has not been completed yet. In addition, additional locations for the ELJ could be evaluated as part of the project design. SRFB could include a design-review milestone to approve the final location of the ELJ. The ELJ will not be located such that the purpose is for bank stabilization.

SRFB Review Panel Question:

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

The Review Panel was initially under the impression that the proposed large wood jam at RM 3.7 was located at the inlet of an existing side channel. An examination of the Lidar DEM, however, suggests that the wood jam would be located at the outlet of a side channel that is already at or below Nason Creek's bankfull elevation. The project sponsor should justify the placement of the proposed ELJ at this location and clarify how the proposed structure would increase the extent and duration of inundation in this floodplain feature.

Sponsor Response:

The exact location of the ELJ proposed near RM 3.7 would be determined based upon more detailed modeling and design for this project. The goal would be to design this structure to mimic the channel migration patterns that have started near RM 3.8 as a result of recent wood accumulations. The ELJ would also reduce entrenchment and increase floodplain interaction on river left. This is a design and construction proposal so modeling to document increased side channel and/or floodplain activation has not been completed yet.

The LIDAR indicates that there are active high flow channels throughout the river left floodplain from RM 3.4 – 4. Figure 8 in the Cardno-Entrix memo (and attached) depicts the relative elevation of these floodplain channels. Placement of a large wood structure near RM 3.7 would increase floodplain interaction near that location. Modeling results would indicate the upstream and downstream extent of increased floodplain interaction on river left. Modeling results could be provided to SRFB as a review milestone prior to the final selection of the ELJ location.

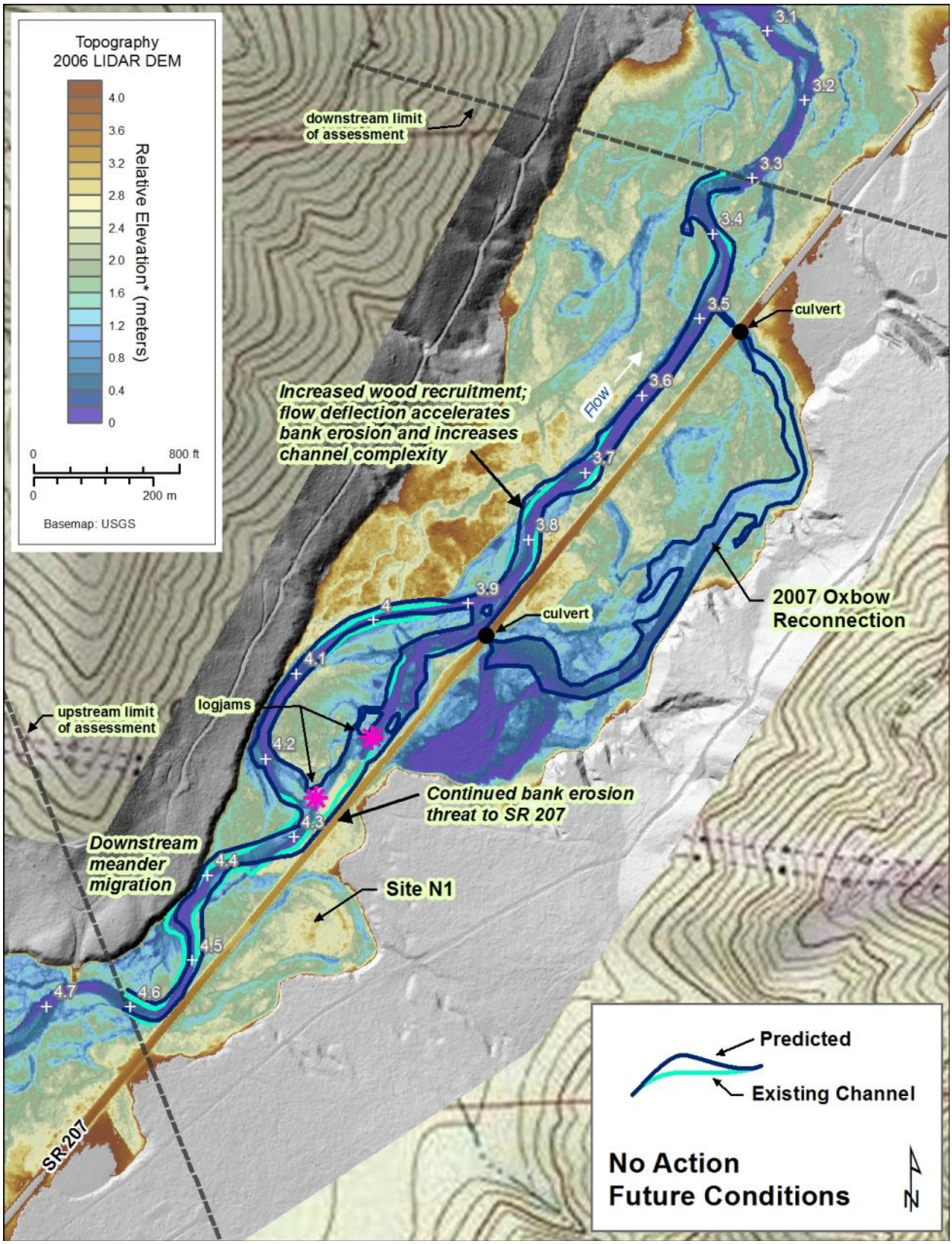

Figure 8. Anticipated channel changes in the next 20 years under the No Action alternative.