

Attachment A: Abridged Scope of Work

Task 1 – Background Data Review

Review of prior hydrologic, hydraulic, habitat, and geomorphic data and studies of the Big Wood River completed by Rapp, Biota, the US Geological Survey, Idaho Department of Water Resources, Idaho Department of Fish and Game (IDFG), and others, with the goal of being consistent with prior studies where appropriate and incorporating information if relevant to this effort.

Task 2 – Geomorphic Assessment

The geomorphic assessment will investigate historical channel behavior in the Big Wood River in response to land development, bank armoring, flooding, and fire. This task will delineate reach breaks according to geologic and geomorphic considerations, characterize each reach using quantitative metrics, delineate the historical channel migration zone, and identify areas at risk of channel migration or erosion. Analysis will utilize 2 LiDAR data sets (2016, 2017) and multiple sets of georectified historical aerial photos (years TBD).

*Channel migration and erosion hazard areas will consider only major infrastructure (i.e., roads, bridges and maintained levees) as barriers to natural migration patterns. Smaller, localized bank treatments and rock armoring will not be inventoried as part of this project and will not be evaluated as potential barriers to erosion or channel migration barriers.

Task 3 – Flood Hazards Assessment

The flood hazards assessment will evaluate the flooding potential of valley areas adjacent to the river corridor. As no hydraulic modeling is being completed as part of this scope of work, flood hazards shall be evaluated by comparing floodplain topography to either the Federal Emergency Management Agency's (FEMA's) base flood elevation (BFE) or through other agreed-upon surface comparison. Hazard rankings shall be determined following a review of the LiDAR and elevation differencing within each reach, and then the hazard zone shall be applied.

Task 4 – Habitat Assessment

The habitat assessment will consider the effects of long-term river management in the Big Wood valley on the availability and quality of aquatic habitat. An underlying assumption of this assessment is that the Big Wood River is home to a valuable recreational trout fishery and that river management activities should be conducted in a manner that preserves existing high-quality habitats, restores habitat where feasible, and minimizes habitat degradation.

Task 5 – 2019 Field Reconnaissance

Following completion of the three-tiered assessment (i.e., geomorphic, flood, and habitat assessment) during winter 2018/2019, the project team will conduct a targeted field reconnaissance of the project reach in spring or early summer 2019. The objective of the field reconnaissance is to validate the results of the desktop analysis, collect site-specific data, ground-truth areas of uncertainty, and visit high-priority or high-hazard areas. The project team will consist of an integrated multidisciplinary team specializing in hydrology, geomorphology, fisheries, and engineering.

Task 6 – Reach-Specific Project Prioritization

The purpose of this task is to synthesize data collected in prior tasks and validated during the field visit to conceptualize flood risk management and ecosystem restoration projects in high-opportunity or high-risk areas on a reach-by-reach basis. Priority areas will be identified that have the opportunity to:

- > Decrease high water impacts to communities within the study area,
- > Decrease erosion along the Big Wood River, and
- > Enhance ecosystem health along the Big Wood River and its tributaries, with special emphasis on reconnecting the floodplain and restoring natural river function.

*Project types will be identified and prioritized on a reach-by-reach basis based on how they will address physical and biological limiting factors. In some cases, specific project areas could be identified, while in others only concept-level projects will be identified. This assessment does not include site-level detailed project evaluation or feasibility review.

Task 7 – Identification of Best Management Practices and Reach-Appropriate Design Concepts

Cardno will develop a suite of design treatments and project measures that can be implemented throughout the watershed to address flood and erosion risk in a manner that is most consistent with aquatic habitat needs and restoration of normative channel processes. A library of BMPs will be developed and included in the atlas. These “typical” project types will be presented at a concept scale, not intended for construction.

Task 8 – Atlas Development

The atlas mapbook design and content concepts will be developed via an integrated process that occurs over the course of the project. Ecosystem Sciences will lead the atlas development and be a key member of the project team throughout the course of the project. Cardno will work closely with ES early on and during the analysis phase of the work to develop a vision for the atlas that is consistent with data collection and analysis. ES will maintain close coordination with Cardno during project kick-off and all phases of data analysis to help guide the assessment efforts for consistency with final deliverables.