CONCEPTUAL
COMPENSATORY MITIGATION PLAN

for wetland losses

Teton County Idaho
Reconstruction of W6000S, from Chapin Lane to W5750S

May 21, 2015

Prepared for:
Teton County Idaho
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INTRODUCTION

The following Compensatory Mitigation Plan is proposed to ensure compliance with Section 404 of the Federal Clean Water Act and to fulfill the Army Corps of Engineers request in a letter from Rob Brochu, Senior Project Manager, dated April 13, 2015. The mitigation proposed herein is for 1.8 acres of wetland losses caused by the activities of the proposed reconstruction of W6000S, from Chapin Lane to W5750S. The Mitigation Plan was prepared by Brian Remlinger, certified Professional Wetland Scientist, and Krissy Copeland, Certified Wetland Delineator, with Alder Environmental LLC.

PROPOSED MITIGATION LOCATIONS

The proposed Mitigation Areas are located within the Teton River Watershed. Below are several options for mitigation opportunities.

1 Darby Creek at County Road S100E

- Problem: Culverts not sized accordingly and preventing adequate flow through resulting in seasonal erosion and s possible fish passage barrier
- Solution: Install properly sized culverts and or free-spanning bridges (e.g. bottomless arch culvert) to allow adequate flow under the road crossings.
- Mitigation Component: Improved conveyance of natural surface waters, fish passage improvements, wetland and riparian enhancements as a result of revegetatation of eroded areas, floodplain and bankfull areas with wetland and riparian vegetation along section of Darby Creek. Sediment inputs from roadway and erosion to Darby Creek reduced or possibly eliminated.

Figure 1. Location of culvert replacement.

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Figure 2. Existing culverts at Darby Creek.

2 Heimerl Property

- Problem: No existing issues or problems to address. Existing oxbow of Fox Creek, wetland area is a highly functioning. Culverts under roadway are being replaced to improve hydrologic connectivity to Fox Creek.
- Mitigation Component: Expand existing scrub shrub wetland on property through excavation and plantings. This may be a possible source of gravel for road project.

Figure 3. Location of possible wetland mitigation along W6000S.

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Figure 4. Existing oxbow on the Heimerl's property. Mitigation would extend beyond oxbow.

3 Woolstenhulme Property

- Problem: Fox Creek parallels W6000S and has little to no sinuosity in this section. It appears the initial construction of W6000S may have relocated Fox Creek into it's existing channel or limited its lateral movement through the years. Rip rap and other hard bank stabilization methods have been used to stabilize this section.
- Solution: Restore Fox Creek sinuosity, wetland bench and riparian zone by relocating into the adjacent agricultural meadow. Alternatively, the wetland bench and riparian vegetation could be added to the existing channelized section of Fox Creek.
- Mitigation Component: Create floodplain and wetland benches and revegeate with wetland and riparian specific plant species resulting in a net increase of functional aquatic and riparian habitat and a reduction of sediment load to Fox Creek.

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MITIGATION OBJECTIVE

The proposed wetland establishment and surface water enhancements will mitigate losses of palustrine emergent (PEM) and palustrine scrub-shrub (PSS) wetlands filled due to the construction activities of the proposed reconstruction of W6000S. The proposed Mitigation Areas will direct surface and groundwater connectivity to Waters of the US within the Teton River Watershed and wetland impact area.

AQUATIC RESOURCES INVENTORY

Wetlands and surface waters were identified and delineated within the sixty foot road corridor of W6000S, but would need to be extended in the proposed mitigation areas.

MITIGATION DESIGN

The below design standards will be applied to any mitigation site that is chosen.

Hydrology

Supplemental water for the wetland Mitigation Areas is not planned as the basic hydrology needs for the sites will be supplied passively through groundwater discharge and interflow between adjacent existing wetlands and Waters of the US.

Vegetation

Wetland Herbacous Layer: The wetland Mitigation Areas herbaceous layer will be revegetated passively by using the stripped sedge sod and topsoil from the impacted wetland areas along the 6000S roadway corridor. The dominant herbaceous plants in the impacted wetland areas include Nebraska sedge (*Carex nebrascensis*) (OBL), Northwest Territory sedge (*Carex utriculata*) (OBL), Wooly sedge (*Carex pellita*) (OBL) and Artic rush (*Juncus articus*) (FACW).

Wetland Shrub Layer: Mature native willows (*Salix spp.)* will be transplanted from the impacted wetland sites when feasible according to *USDA-NRCS Technical Note No.42 Willow Clump Plantings, Dec. 2003 (Appendix B)*. A 15' on-center-spacing of willows shall be successfully established at the Mitigation Area. If transplanted willows are not sufficient, 15 gallon containerized nursery grown willows shall be used. If containerized willows are not desired, willow pole cuttings from local plants may be used. The willow pole cuttings shall be collected and planted according to *Chapter Four - Vegetation Selection and Procurement* of *USDA-NRCS Practical Streambank Bioengineering Guide, May 1998* (Appendix B).

Riparian Herbaceous Layer:
The contoured slope between the wetland Mitigation Area and existing uplands shall be broadcast seeded with the following native seed mix. Twice the seed supplier's recommended rate shall be used. The seed mix was selected to cover a broad range of soil moisture requirements to ensure full coverage.

Nebraska Sedge (*Carex nebrascensis*) (OBL)
Arctic Rush (*Juncus arcticus*) (FACW)

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Tufted Hair Grass (*Deschampsia caespitosa*) (FACW)
Idaho fescue (*Fustuca idahoensis*) (FACU)
Streambank wheatgrass (*Elymus lanceolatus*) (FAC)

The seed shall be broadcast onto loose topsoil followed by lightly raked into the soil.

Erosion Control
Soil erosion and sediment control will be achieved by placement of a straw wattle along the entire length of the existing wetland and proposed Mitigation Area. The straw wattle shall have the following specifications

DIAMETER..... 12”
CORE..... Agriculture, certified noxious weed free straw
NETTING TYPE..... Photo or biodegradable material

The contoured slope between the Mitigation Area and existing uplands shall receive loose weed free straw crimped into the seeded soil sufficient to achieve 50% cover.

Reclamation of Haul Route and Stockpile Area
Disturbed upland areas including the temporary Haul Route and Stockpile Area shall be seeded with the following species at a rate twice the seed supplier’s recommendation. The seed shall be broadcast onto loose topsoil followed by lightly raked into the soil.
Idaho fescue (*Fustuca Idahoensis*) (FACU)
Western wheatgrass (*Pascopyrum smithii*) (FACU)

Weed Control
Noxious weeds as listed by the State of Idaho and Teton County will be controlled by appropriate mechanical and chemical methods as determined necessary to prevent establishment. Weeds will be managed if they comprise more than 10% of a monitoring sample area as described below. Weed control will occur the first growing season after construction and annually thereafter as needed and determined by the annual monitoring.

MONITORING

Section 404 permits typically require monitoring of the Mitigation Area as a condition with the submission of annual reports. Monitoring and report compilation will be accomplished by a qualified individual with experience in wetland mitigation. Annual reports for a period of 3 to 5 years will be submitted to the Idaho District Office of the Army Corps of Engineers.

Success Criteria/Performance Standards
The Mitigation Area must meet 1987 Corps of Engineers Delineation Manual criteria to be considered as wetlands. The target wetland type is a palustrine scrub-shrub with a minimum 30% willow shrub cover and at least 80% wetland native herbaceous plant cover (>50% OBL and FACW species). Depending on hydrologic conditions at the site, shallow open water may comprise greater than 20 %.

Sampling Protocols
Vegetation, hydrology and soil sampling will occur at a minimum on an annual basis during the months of June or July.

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Vegetation: A random quadrat sample plots will be evaluated. Total cover and relative cover per species will be recorded and correlated to impact wetland data.
Hydrology: Excavation of test pits to determine groundwater levels will be conducted. Monitoring will be done during the known or projected peak of the hydrograph and/or seasonal high groundwater, typically mid- June. Documentation of low water period elevations in August may also be required.
Soils: Excavation of soil pits and examination for redoximorphic features will take place when hydrologic conditions are evaluated. Soil profile data will be logged with depth of features found. While hydric soil indicators may not become evident within the required monitoring period, demonstration of how hydric soil conditions are concluded as being present or absent will be stated.

Report Content

Reports will clearly identify success criteria and how the Mitigation Area compares to those criteria. Reports will include a comparison of actual wetland mitigation acreage to proposed acreage as well as to wetland impact acreage. Mitigation Areas will be broken down based on type (Cowardin classification). Reports will include author's interpretation of data and discussion as to how mitigation is determined to be demonstrating success or failure. Problems that arise will be identified in the reports as well as corrective measures that have been implemented or proposed. Corrective actions will be coordinated with the Army Corps of Engineers prior to implementation.
Reports will include:

- Routine wetland delineation data forms, or similar Army Corps of Engineers approved forms which contain appropriate data fields
- Plan view map
- Color photos of mitigation site from permanently established locations

CONTINGENCY PLAN

In the event the site does not perform as expected, the following management strategy will be implemented.

1. Vegetation not establishing – nursery grown material will be planted
2. Hydrology not sufficient to maintain hydrophytic vegetation – site will be excavated deeper to groundwater table or supplemental surface water will be introduced into the wetland area
3. If 1 & 2 above are not successful, abandonment of the Mitigation Area and new wetland construction at another site will be implemented.

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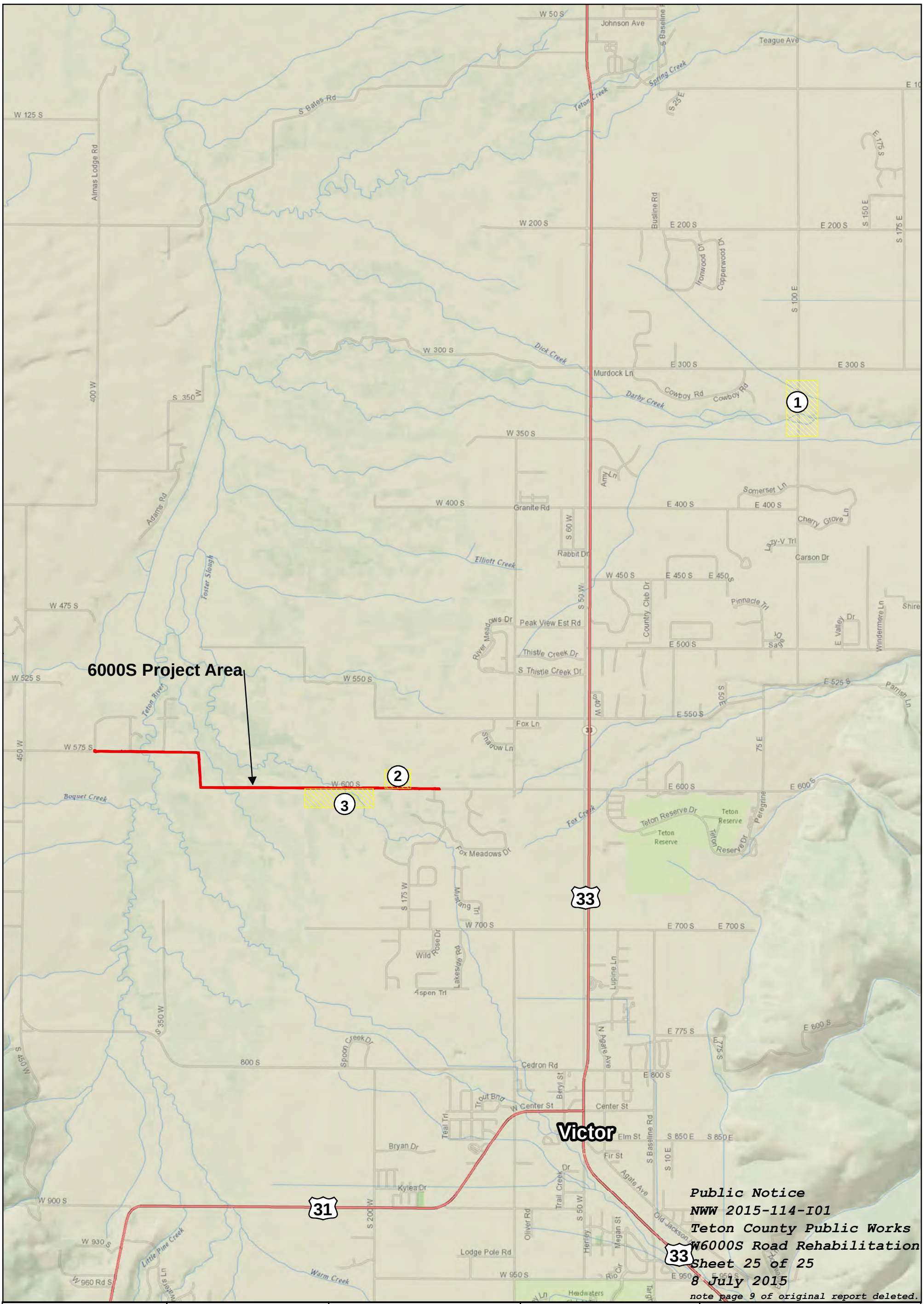

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Road Project

MITIGATION OPTIONS

Teton County, ID

MAP 1:

Proposed Mitigation Sites

May 21, 2015

Legend:

- W6000S Project Corridor
- State Highway
- (1) Mitigation Site (Proposed)

List sources of data and other information here

1 inch = 1 miles

0 0.25 0.5 1 Miles

NORTH

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