

## **Appendix D-Best Management Practices**

### **General**

- Construction activities will comply with all applicable laws and regulations.
- To the extent practicable, construction will avoid wetlands; federal, state, and local wildlife areas; designated critical habitats; migratory bird habitat during nesting brood-rearing season; known historic properties; hazardous materials sites; and other resource sensitive areas.
- Construction limits will be clearly marked with stakes or fencing before beginning ground disturbing activities. No disturbance will occur beyond these limits other than non-destructive protection measures for erosion and sediment control.
- Construction will typically occur during daylight hours, although these hours may be extended if needed for certain work aspects.
- Material and equipment storage will be only within well-defined, designated staging areas placed outside of wetlands and other sensitive areas.
- Structures affected by construction, including utilities, roads, highways, rivers, canals, railroads, agricultural irrigation facilities, fences, and other structures, will be replaced, repaired, or restored to current condition or better after construction.
- Construction debris will be hauled from the work site to a disposal location approved by Reclamation or Colorado Parks and Wildlife.
- Collocate utilities in common corridors and align them along roadways to reduce habitat loss and fragmentation.

### **Water Quality**

- Erosion control measures, grade controls, and practices to prevent or reduce erosion, soil loss, and non-point source pollution include but are not limited to silt fencing, filter fabric, sediment logs, hay bales, temporary sediment ponds, check dams, and/or immediate mulching of exposed areas to minimize sedimentation and turbidity effects as a result of construction activities. The placement and specific measures used will be dictated by site specific conditions. Erosion control measures will be inspected regularly and repaired as needed.
- Disturbed portions of riverbanks and riverbeds, and other waterways will be protected by rock riprap of adequate size and type to minimize erosion and scour. Any slopes greater than 3:1 will be protected with erosion-control blankets after seeding.
- Equipment or vehicles will not be refueled within 100 feet of rivers, streams, or identified wetlands.

### **Aquatic Life**

- Identified potential habitat for state threatened, endangered, and special concern species will be avoided if feasible.
- To minimize effects on fisheries and stream habitat from bank improvements, recommendations from Colorado Parks and Wildlife would be followed.
- Any equipment used previously in a water body or wetland will be disinfected to prevent the spread of invasive aquatic species. Disinfection methods will follow U.S. Army Corps of Engineers Section 404 requirements.

## **Wetlands and Riparian Areas**

- Permanent and temporary effects on jurisdictional wetlands will be avoided to the extent practicable in compliance with Section 404 of the Clean Water Act.
- Erosion control measures will be employed as appropriate in riparian areas and along stream banks during construction. Replant riparian areas as soon as construction is completed and based on suitable site conditions.
- All temporarily disturbed jurisdictional and non-jurisdictional wetlands and riparian areas will be reestablished following construction by doing the following;
  - Restore contours to previous elevations
  - Compact trenches sufficiently to prevent drainage along the trench or via bottom seepage
  - Salvage and replace topsoil
  - Backfill in such a manner as to not drain wetland or stream
  - Reestablish wetlands to similar type of wetland and wetland function
  - Monitor for success of reestablishment annually for a period of 3 years and take remedial actions as necessary until successful

## **Vegetation**

- Sensitive vegetation communities, native prairie, or areas with sensitive plant species will be avoided to the extent possible. If these areas are disturbed during construction, topsoil will be replaced, and re-vegetation plans will be specifically designed to reestablish a similar type and quality of native vegetation. Monitor for success of reestablishment annually for a period of 3 years and take remedial actions as necessary until successful.
- Vegetated areas temporarily disturbed by construction will be revegetated with species appropriate to the surrounding area's ecological conditions of, and in a manner that prevents erosion and noxious weed invasion. Revegetation will occur as soon as practicable after construction and will follow all pertinent local and state regulations. Temporary seeding may be required when areas remain disturbed for more than 30 days.
- Topsoil will be removed and stockpiled separately from surface soils for reapplication following construction.
- Install protective fencing to exclude foot or bike traffic from sensitive areas or areas being re-vegetated.
- Topsoil, soil amendments, fertilizers, mulches, and biodegradable erosion blankets will be reapplied selectively, as appropriate, before revegetation during favorable plant establishment climate conditions to match site conditions and r-revegetation goals.
- Re-vegetation will be found to be successful with a cover of local native species, obtains 90% established cover and will be monitored for a minimum of 3 years following reseeded. Areas will be reseeded as necessary for success.
- Control velocity of runoff in drainages by using appropriate grade controls and methods such as the use of buffers/filter strips, grassed swales, terraces, and water bars. Placement, materials,

and spacing would be determined on-site at each location. Monitoring constructed controls, maintenance, and adjustments would be on-going.

- Reduce runoff by incorporating Low-Impact Development designs and methods for landscaping and development at new facilities and buildings. Methods include techniques for maintaining hydrologic functions for infiltration, depression storage, and interception using landscape features.
- To prevent introducing, and minimizing spread of, nonnative vegetation and noxious weeds, the following measures will be implemented during construction:
  - Minimize soil disturbance.
  - Pressure wash and/or stream clean construction equipment before entering construction zones from off-site locations and before moving from an infested site to a non-infested site within the construction zone.
  - Cover haul tracks bringing fill materials to prevent seed transport.
  - Vehicles and equipment will only be parked in construction sites or approved staging areas.
  - Use fill, rock, and topsoil that is weed-free.
  - Minimize fertilizer in seeded areas.
  - Use certified weed-free seed and mulch.
  - Use weed-free straw bales for erosion control.
  - Monitor and follow-up on treatment of exotic vegetation after construction.
  - A vegetation management plan will be drafted and approved by Reclamation and Colorado Parks and Wildlife.

## **Wildlife**

- Identified potential habitat for federal or state threatened, endangered, and sensitive species will be avoided if feasible.
- If threatened or endangered species are identified and encountered during construction, all ground-disturbing activities in the immediate area will be stopped to consult with the U.S. Fish and Wildlife Service and determine appropriate steps to avoid affecting the species.
- Incorporate powerline and pole or tower designs, including burial, to minimize the risk of raptor electrocution as outlined in Avian Protection Plan Guidelines (APLIC 2012) developed by the U.S. Fish and Wildlife Service and industry.
- Effects on migratory birds will be avoided and minimized during construction, including completing pre-construction surveys.
- Use of timing restrictions for construction will be April 15 to July 15, or as appropriate, including seasonal restrictions.
- If an active nest is detected, a buffer zone between the nest and the limit of construction will be flagged and avoided during the nesting season, or construction will be scheduled outside of the nesting season.
- Avoidance of raptors and nests during construction consists of:
  - Conducting nest surveys before construction.

- Establishing reasonable site-specific buffers and seasonal restrictions.
- Implement seasonal restrictions to avoid and minimize disturbance.

### **Noise and Vibration**

- Construction and operation activities will comply with state and local noise ordinances.
- Night construction will be avoided near residential and populated areas.

### **Visual Resources**

- Constructed structures, facilities, and features will be designed to blend with the architectural characteristics of surrounding structures.

### **Air Quality**

- All construction equipment will be maintained in proper working order.
- Apply water with standard construction practices to control airborne fugitive dust within construction areas.

### **Cultural Resources**

- Direct disturbance to historical properties will be avoided to the extent feasible and in accordance with Section 106 of the National Historic Preservation Act (NHPA).
- If a burial or cemetery is encountered during construction, Reclamation will comply with the Native American Graves Protection and Repatriation Act, and Colorado Unmarked Burial Law, if graves are discovered.
- If unrecorded cultural resources or traditional cultural properties are encountered during construction, all ground disturbance activity within the area will be stopped, Reclamation and appropriate authorities will be notified, and all applicable stipulations of Section 106 of the NHPA will be followed. Activities in the area will resume only when compliance has been completed.
- If soil and/or groundwater contamination is encountered during construction, mitigation procedures will be implemented to minimize the risk to construction workers, the public, and to future operations.

### **Hazardous Materials**

- A Hazardous Spill Plan or Spill Prevention, Control and Countermeasures Plan, whichever is appropriate, will be in place, stating which actions will be taken in the event of a spill, notification measures, and preventative measures to be implemented, such as the placement of refueling facilities, storage, and handling of hazardous materials.
- All equipment will be maintained in a clean and well-functioning operating condition to avoid or minimize contamination from automotive fluids. Oil, hydraulic fluids, antifreeze or other chemicals will not be drained to the ground.
- If on-site fuel tanks are used, approved containment devices will be required.
- Monitor and minimizing spread of lead by incorporating the Environmental Protection Agency's Best Management Practices and develop a site-specific management plan for lead, prior to construction.

- If soil and/or groundwater contamination is encountered during construction, mitigation procedures will be implemented to minimize the risk to construction workers, the public, and to future operations.