

APPENDIX D
STANDARD AVOIDANCE AND MITIGATION MEASURES

General Avoidance and Minimization Measures – During Site Selection and Design

- ◆ Areas known as major flyways or migratory resting spots should be avoided whenever feasible.
- ◆ To minimize the likelihood of bird collisions, the Applicant should coordinate with the USFWS to identify areas where marking of transmission line shield wires and/or alternate structures are appropriate.
- ◆ Unless otherwise permitted or approved, sensitive resources (including prairie remnants and threatened and endangered species) should be avoided during siting, construction, maintenance, and operations.
- ◆ Wetlands will be spanned, where possible. If necessary, structures should be placed at the edges of wetlands (where avoidance is not feasible) in order to minimize disturbance.

Avoidance and Mitigation Measures – During Construction

EROSION CONTROL MEASURES

PERFORMANCE REQUIREMENTS

- ◆ Construction shall not start until affected areas such as wetlands, rivers, and streams are protected by appropriate and effective erosion control devices as identified in any NPDES permits and SWPPP required for certain parts of the project (particularly at substations).
- ◆ Erosion control work shall be performed concurrently with earthwork, final grading, and turf establishment operations. In cases involving relatively small site developments, this work shall be completed as soon as practical.
- ◆ The Applicant shall establish and complete all permanent erosion control structures required for the site development. All temporary measures shall remain in place to the extent practical, until permanent erosion control structures are effective.
- ◆ The Applicant shall establish and complete or rework erosion control items to the extent necessary to correct conditions which develop during the sequence of work on the site. These efforts shall be maintained until permanent turf establishments, drainage facilities or controls incorporated into the grading drawings are complete and operative.
- ◆ The Applicant will assign personnel to manage the installation and maintenance of erosion control measures. These personnel will develop plans and work with the crews to ensure the commitments listed in this section are followed. As required, reports will be prepared outlining measures installed, inspections undertaken, and any issue resolution that occurred, such as unanticipated major weather events. These personnel will also be available to work with the crews to install erosion control measures that may be necessary during construction.

TEMPORARY EROSION CONTROL MEASURES

- ◆ If there are areas of exposed erodible soil in the course of any earthwork operations associated with substation construction, they shall be shaped to permit storm runoff with minimum erosion.
- ◆ In order to maintain sheet flow and minimize rills and/or gullies, there shall be no unbroken slope length of greater than 75 feet for slopes with a grade of 3:1 or steeper.
- ◆ Temporary berms, slope drains, diversion mounds, and sedimentation basins shall be required in accordance with the NPDES permits where possibilities for water pollution exist and permanent erosion controls are not completed or operative.
- ◆ Sedimentation barriers shall be required around the perimeter of the construction limits of the substation sites, as necessary, to prevent sediment from leaving the site and entering wetlands.
- ◆ Temporary erosion control measures also will be installed along the transmission line route where the potential for sediment entering wetlands or waterbodies may occur.
- ◆ Where silt fence is installed, one of the three following installation methods may be used:
 - (1) Machine-sliced silt fence.
 - (2) Hand-installed preassembled silt fence, with the bottom of the fabric anchored in a 6" by 6" trench.
 - (3) Geotextiles supported by steel posts with securing pins at the base may be used. The geotextile material shall be a woven pervious plastic yarn and shall allow water transmission and retention of soils native to the site.
- ◆ Where soils are too soft to allow the installation of silt fence, slopes are too steep or surface water is present, staked hay bales may be substituted for silt fence.
- ◆ If drainageways are constructed (associated with substations), rock check dams shall be installed at the outlet of the drainageways to stabilize the ditches.
- ◆ Where work continues beyond the growing season for turf establishment, all exposed soils on slopes and ditches shall be dormant seeded and mulched.

PERMANENT EROSION CONTROL MEASURES

- ◆ Apply seed to disturbed soils until vegetation is re-established. Continue to seed until disturbed areas are revegetated to match the density of vegetation in adjacent, undisturbed areas.
- ◆ Once disturbed areas are fully revegetated, remove and dispose of temporary erosion control measures (e.g., silt fence).
- ◆ Where construction results in an increase in stormwater runoff, permanent erosion control measures will be installed as required by applicable NPDES stormwater permit requirements. Stormwater runoff shall be managed to protect downstream water quality by promoting on-site infiltration and retention of stormwater to reduce the volume and velocity of discharges to receiving waters or drainageways.
- ◆ During operation of the substation site, the permanent stormwater measures shall be periodically inspected and maintained. Where necessary, accumulated sediments shall be removed from downstream drainageways, eroded areas restabilized, or additional measures installed to prevent erosion and downstream sedimentation associated with the substation facilities

CONSTRUCTION NEAR STREAMS

- ◆ Clearly identify a buffer on both banks of a stream crossing to prohibit any construction activity, except for the removal of trees necessary for safe operation of the transmission line facilities. Where trees are removed, remove by hand-clearing, if possible.
- ◆ When construction operations occur over the waterway, control the operations in a manner to prevent materials from falling into the water body. If materials do enter the water, they should be promptly removed.
- ◆ Minimize the removal of riparian vegetation. If vegetation must be removed, mulch disturbed soils and reseed or stabilize soils promptly following construction to prevent erosion of the stream bank.

POLLUTION PREVENTION

Spills: Maintain spill kits (e.g., absorbent rags, shovels, plastic bags) on-site to facilitate prompt containment and clean-up of hazardous materials. All spills should be promptly contained and cleaned up. The Contractor shall collect contaminated soils (e.g., in a drum(s)) for proper disposal off site. Spills of hazardous materials greater than 5 gallons shall be reported to the State Duty Officer, as required.

Trash and Debris: The work site shall be kept clean and trash and debris shall not be buried on site. Construction and demolition debris, debris from clearing and grubbing, trash, and other waste shall be collected at least weekly for disposal off site. No on-site burning is allowed unless necessary permits have been obtained. Federal, state, and local requirements for the disposal of solid waste shall be followed.

Hazardous Materials: Oils, fuels, and hazardous substances must be properly stored, including secondary containment for tanks larger than 55 gallons, to prevent spills. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous materials must be in compliance with federal, state, and local regulations.

Truck Washing: If required, a location shall be set aside for washing concrete trucks. Discharge from the wash will be directed into a sediment trap which will also receive waste concrete. The trap shall be cleaned out to prevent overflow and the material disposed off site.

WETLANDS

In areas where a structure will be placed in a wetland, and/or construction will occur in close proximity to a wetland, the following measures will be followed (in addition to the erosion and sedimentation controls listed above) to avoid or minimize the potential for wetland impacts:

- ◆ Access the wetland with the least amount of physical impact to the wetland (i.e., shortest route);
- ◆ Assemble structures in upland areas before bringing into a wetland for installation;
- ◆ When constructing in or through wetlands, use construction mats, low ground weight equipment, or schedule construction to occur under frozen conditions, as necessary or possible, to minimize rutting and ground disturbance;

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- ◆ Avoid wetland crossings and close temporary crossings when they are no longer needed for construction, remove mats, and restore disturbed areas as near as practical to its original grade.
 - ◆ Avoid refueling equipment or the storage of fuel or other hazardous materials within or near wetlands.

INSPECTIONS AND MAINTENANCE

Inspections. Periodic inspections should be conducted of all temporary erosion and sediment controls, infiltration areas, and stabilized areas. Inspections should occur as soon as possible after rainfall events and repairs made as necessary or as specified by applicable NPDES permit requirements. It is the Contractor's responsibility to maintain temporary erosion and sediment controls in working order throughout the project and make repairs as needed. The following inspection and maintenance measures shall be implemented:

- ◆ Excess sediment behind silt fences should be removed and properly disposed on- or off-site when sediments reach 1/3 the height of fence
- ◆ Damaged or downed silt fence should be repaired or replaced within 24 hours of discovery.
- ◆ Tracked sediments should be removed from paved surfaces at the end of each day. Material collected may be disposed of on or off site.
- ◆ Remove sediments from trap(s) and/or rock checks when sediments have reduced the available volume by 50 percent.
- ◆ Off-site disposal sites for collected sediments shall be determined to be acceptable ahead of time, and shall not be in or adjacent to streams or wetlands. Off-site disposal locations must conform to local, state and Federal regulations, and any necessary permits shall be obtained before disposal. If collected sediments are stored on site (within substation area), measures will be taken to prevent erosion and stabilize the sediments as outlined above.