



**FLORIDA SOUTHEAST CONNECTION PROJECT
UPLAND EROSION CONTROL, REVEGETATION, AND
MAINTENANCE PLAN (PLAN)**



FLORIDA SOUTHEAST CONNECTION PROJECT
UPLAND EROSION CONTROL, REVEGETATION, AND
MAINTENANCE PLAN

TABLE OF CONTENTS

I. APPLICABILITY 1
II. SUPERVISION AND INSPECTION 1
A. ENVIRONMENTAL INSPECTION 1
B. RESPONSIBILITIES OF ENVIRONMENTAL INSPECTORS 2
III. PRECONSTRUCTION PLANNING 4
A. CONSTRUCTION WORK AREAS 4
B. DRAIN TILE AND IRRIGATION SYSTEMS 4
C. GRAZING DEFERMENT 4
D. ROAD CROSSINGS AND ACCESS POINTS 5
E. DISPOSAL PLANNING 5
F. AGENCY COORDINATION 5
G. SPILL PREVENTION AND RESPONSE PROCEDURES 5
H. RESIDENTIAL CONSTRUCTION 6
I. WINTER CONSTRUCTION PLANS Error! Bookmark not defined.
IV. INSTALLATION 6
A. APPROVED AREAS OF DISTURBANCE 6
B. TOPSOIL SEGREGATION 7
C. DRAIN TILES 8
D. IRRIGATION 8
E. ROAD CROSSINGS AND ACCESS POINTS 8
F. TEMPORARY EROSION CONTROL 9
1. Temporary Slope Breakers 9
2. Temporary Trench Plugs 9
3. Sediment Barriers 10
4. Mulch 10
V. RESTORATION 11
A. CLEANUP 11
B. PERMANENT EROSION CONTROL DEVICES 12
1. Trench Breakers 12
2. Permanent Slope Breakers 13
C. SOIL COMPACTION MITIGATION 13
D. REVEGETATION 14
1. General 14
2. Soil Additives 14
3. Seeding Requirements 14
VI. OFF-ROAD VEHICLE CONTROL 16
VII. POST-CONSTRUCTION ACTIVITIES AND REPORTING 16
A. MONITORING AND MAINTENANCE 16
B. REPORTING 17

FLORIDA SOUTHEAST CONNECTION PROJECT UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN (PLAN)

I. APPLICABILITY

- A. Florida Southeast Connection (“FSC”) intends to adopt FERC’s Upland Erosion Control, Revegetation, and Maintenance Plan (“Plan”) in its entirety. These adopted procedures will be referred to as FSC’s Upland Erosion Control, Revegetation, and Maintenance Plan (“FSC Plan”). The FSC Plan identify baseline mitigation measures for minimizing erosion and enhancing revegetation.

FSC does not intend to seek any variances to the measures in these FSC Plans. However, if site-specific conditions arise that necessitate a variance, FSC will provide to The Director of the Office of Energy Projects (Director) a written variance request providing the following about the variance:

1. provides equal or better environmental protection;
2. is necessary because a portion of this Plan is infeasible or unworkable based on project-specific conditions; or
3. is specifically required in writing by another federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

FSC will request and receive written approval for any variances in advance of construction.

Project-related impacts on wetland and waterbody systems are addressed in FSC’s Wetland and Waterbody Construction and Mitigation Procedures (“FSC Procedures”).

II. SUPERVISION AND INSPECTION

A. ENVIRONMENTAL INSPECTION

1. At least one Environmental Inspector will be assigned for each construction spread during construction and restoration (as defined by section V). The number and experience of Environmental Inspectors assigned to each construction spread will be appropriate for the length of the construction spread and the number/significance of resources affected.

2. Environmental Inspectors will have peer status with all other activity inspectors.
3. Environmental Inspectors will have the authority to stop activities that violate the environmental conditions of the FERC's Orders, stipulations of other environmental permits or approvals, or landowner easement agreements; and to order appropriate corrective action.

B. RESPONSIBILITIES OF ENVIRONMENTAL INSPECTORS

At a minimum, the Environmental Inspector(s) will be responsible for:

1. Inspecting construction activities for compliance with the requirements of this Plan, the Procedures, the environmental conditions of the FERC's Orders, the mitigation measures proposed by FSC (as approved and/or modified by the Order), other environmental permits and approvals, and environmental requirements in landowner easement agreements.
2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;
3. Verifying that the limits of authorized construction work areas and locations of access roads are visibly marked before clearing, and maintained throughout construction;
4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;
5. Identifying erosion/sediment control and soil stabilization needs in all areas;
6. Ensuring that the design of slope breakers will not cause erosion or direct water into sensitive environmental resource areas, including cultural resource sites, wetlands, waterbodies, and sensitive species habitats;
7. Verifying that dewatering activities are properly monitored and do not result in the deposition of sand, silt, and/or sediment into sensitive environmental resource areas, including wetlands, waterbodies, cultural resource sites, and sensitive species habitats; stopping dewatering activities if such deposition is occurring and ensuring the design of the discharge is changed to prevent reoccurrence; and verifying that dewatering structures are removed after completion of dewatering activities;

8. Ensuring that subsoil and topsoil are tested in agricultural and residential areas to measure compaction and determine the need for corrective action;
9. Advising the Chief Construction Inspector when environmental conditions (such as wet weather or frozen soils) make it advisable to restrict or delay construction activities to avoid topsoil mixing or excessive compaction;
10. Ensuring restoration of contours and topsoil;
11. Verifying that the soils imported for agricultural or residential use are certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner;
12. Ensuring that erosion control devices are properly installed to prevent sediment flow into sensitive environmental resource areas (e.g., wetlands, waterbodies, cultural resource sites, and sensitive species habitats) and onto roads, and determining the need for additional erosion control devices;
13. Inspecting and ensuring the maintenance of temporary erosion control measures at least:
 - a. on a daily basis in areas of active construction or equipment operation;
 - b. on a weekly basis in areas with no construction or equipment operation; and
 - c. within 24 hours of each 0.5 inch of rainfall;
14. Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts;
15. Keeping records of compliance with the environmental conditions of the FERC's Orders, and the mitigation measures proposed by the project sponsor in the application submitted to the FERC, and other federal or state environmental permits during active construction and restoration;
16. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase; and
17. Verifying that locations for any disposal of excess construction materials for beneficial reuse comply with section III.E.

III. PRECONSTRUCTION PLANNING

FSC will do the following before construction:

A. CONSTRUCTION WORK AREAS

1. Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads) that will be needed for safe construction. FSC will ensure that appropriate cultural resources and biological surveys are conducted, as determined necessary by the appropriate federal and state agencies.
2. Consider expanding any required cultural resources and endangered species surveys in anticipation of the need for activities outside of authorized work areas.
3. Plan construction sequencing to limit the amount and duration of open trench sections, as necessary, to prevent excessive erosion or sediment flow into sensitive environmental resource areas.

B. DRAIN TILE AND IRRIGATION SYSTEMS

1. Attempt to locate existing drain tiles and irrigation systems.
2. Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction.
3. Develop procedures for constructing through drain-tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.
4. Engage qualified drain tile specialists, as needed to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area, if available.

C. GRAZING DEFERMENT

Develop grazing deferment plans with willing landowners, grazing permittees, and land management agencies to minimize grazing disturbance of revegetation efforts.

D. ROAD CROSSINGS AND ACCESS POINTS

Plan for safe and accessible conditions at all roadway crossings and access points during construction and restoration.

E. DISPOSAL PLANNING

Determine methods and locations for the regular collection, containment, and disposal of excess construction materials and debris (e.g., timber, slash, mats, garbage, drill cuttings and fluids, excess rock) throughout the construction process. Disposal of materials for beneficial reuse will not result in adverse environmental impact and will be subject to compliance with all applicable survey, landowner or land management agency approval, and permit requirements.

F. AGENCY COORDINATION

FSC will coordinate with the appropriate local, state, and federal agencies as outlined in this Plan and/or required by the FERC's Orders.

1. Obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control and revegetation specifications.
2. Develop specific procedures in coordination with the appropriate agencies to prevent the introduction or spread of invasive species, noxious weeds, and soil pests resulting from construction and restoration activities.
3. Develop specific procedures in coordination with the appropriate agencies and landowners, as necessary, to allow for livestock and wildlife movement and protection during construction.
4. Develop specific blasting procedures in coordination with the appropriate agencies that address pre- and post-blast inspections; advanced public notification; and mitigation measures for building foundations, groundwater wells, and springs. Use appropriate methods (e.g., blasting mats) to prevent damage to nearby structures and to prevent debris from entering sensitive environmental resource areas.

G. SPILL PREVENTION AND RESPONSE PROCEDURES

FSC will develop project-specific Spill Prevention and Response Procedures, as specified in section IV of the FERC staff's Procedures. A copy will be filed with the Secretary of the FERC (Secretary) prior to construction and made

available in the field on each construction spread.

H. RESIDENTIAL CONSTRUCTION

For all properties with residences located within 50 feet of construction work areas, FSC will: avoid removal of mature trees and landscaping within the construction work area unless necessary for safe operation of construction equipment, or as specified in landowner agreements; fence the edge of the construction work area for a distance of 100 feet on either side of the residence; and restore all lawn areas and landscaping immediately following clean up operations, or as specified in landowner agreements. If seasonal or other weather conditions prevent compliance with these time frames, temporary erosion controls (sediment barriers and mulch) will be maintained and monitored until conditions allow completion of restoration.

IV. INSTALLATION

A. APPROVED AREAS OF DISTURBANCE

1. Project-related ground disturbance will be limited to the construction right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the FERC's Orders. FSC will seek Director approval prior to any project-related ground disturbing activities outside these areas with the exception of activities needed to comply with the Plan and Procedures (i.e., slope breakers, energy-dissipating devices, dewatering structures, drain tile system repairs) or minor field realignments and workspace shifts per landowner needs and requirements that do not affect other landowners or sensitive environmental resource areas. All construction or restoration activities outside of authorized areas will be subject to all applicable survey and permit requirements, and landowner easement agreements.
2. The construction right-of-way width for the Project will not exceed 75 feet or that described in the FERC application unless otherwise modified by a FERC Order. However, in limited, non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions (e.g., side-slopes) or soil limitations require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland or non-forested areas for truck turn-arounds where no reasonable alternative access exists.

Project use of these additional limited areas is subject to landowner or land management agency approval and compliance with all applicable survey and permit requirements. When additional areas are used, each one will be identified and the need explained in the weekly or

biweekly construction reports to the FERC, if required. The following material will be included in the reports:

- a. the location of each additional area by station number and reference to previously filed alignment sheets, or updated alignment sheets showing the additional areas;
- b. identification of the filing at FERC containing evidence that the additional areas were previously surveyed; and
- c. a statement that landowner approval has been obtained and is available in project files.

FSC will request prior written approval of the Director when the authorized construction right-of-way width would be expanded by more than 25 feet.

B. TOPSOIL SEGREGATION

1. Unless the landowner or land management agency specifically approves otherwise, FSC will prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in:
 - a. cultivated or rotated croplands, and managed pastures;
 - b. residential areas;
 - c. hayfields; and
 - d. other areas at the landowner's or land managing agency's request.
2. In residential areas, importation of topsoil is an acceptable alternative to topsoil segregation.
3. Where topsoil segregation is required, FSC will:
 - a. segregate at least 12 inches of topsoil in deep soils (more than 12 inches of topsoil); and
 - b. make every effort to segregate the entire topsoil layer in soils with less than 12 inches of topsoil.
4. Separation of salvaged topsoil and subsoil will be maintained throughout all construction activities.

5. Segregated topsoil will not be used for padding the pipe, constructing temporary slope breakers or trench plugs, improving or maintaining roads, or as a fill material.
6. Topsoil piles will be stabilized and loss due to wind and water erosion minimized with use of sediment barriers, mulch, temporary seeding, tackifiers, or functional equivalents, where necessary.

C. DRAIN TILES

1. Locations of drain tiles damaged during construction will be marked.
2. All drainage tile systems will be probed within the area of disturbance to check for damage.
3. Damaged drain tiles will be repaired to their original or better condition. Filter-covered drain tiles will not be used unless the local soil conservation authorities and the landowner agree. Qualified specialists will be used for testing and repairs.
4. For new pipelines in areas where drain tiles exist or are planned, that the depth of cover over the pipeline will be ensured to be sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, the new pipeline will be installed with at least the same depth of cover as the existing pipeline(s).

D. IRRIGATION

Water flow in crop irrigation systems will be maintained, unless shutoff is coordinated with affected parties.

E. ROAD CROSSINGS AND ACCESS POINTS

1. Safe and accessible conditions at all road crossings and access points will be maintained during construction.
2. If crushed stone access pads are used in residential or agricultural areas, the stone will be placed on synthetic fabric to facilitate removal.
3. FSC will minimize the use of tracked equipment on public roadways. Any soil or gravel spilled or tracked onto roadways will be removed daily or more frequently as necessary to maintain safe road conditions. Any damages to roadway surfaces, shoulders, and bar ditches will be repaired.

F. TEMPORARY EROSION CONTROL

Temporary erosion controls will be installed immediately after initial disturbance of the soil. Temporary erosion controls will be properly maintained throughout construction (on a daily basis) and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or until restoration is complete.

1. Temporary Slope Breakers

- a. Temporary slope breakers are intended to reduce runoff velocity and divert water off the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, or sand bags.
- b. Temporary slope breakers will be installed on all disturbed areas, as necessary to avoid excessive erosion. Temporary slope breakers will be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from waterbody, wetland, and road crossings at the following spacing (closer spacing will be used if necessary):

<u>Slope (%)</u>	<u>Spacing (feet)</u>
5 - 15	300
>15 - 30	200
>30	100

- c. The outfall of each temporary slope breaker will be directed to a stable, well vegetated area or construct an energy-dissipating device at the end of the slope breaker and off the construction right-of-way.
- d. The outfall of each temporary slope breaker will be positioned to prevent sediment discharge into wetlands, waterbodies, or other sensitive environmental resource areas.

2. Temporary Trench Plugs

Temporary trench plugs are intended to segment a continuous open trench prior to backfill.

- a. Temporary trench plugs may consist of unexcavated portions of the trench, compacted subsoil, sandbags, or some functional equivalent.

- b. Temporary trench plugs will be positioned, as necessary, to reduce trenchline erosion and minimize the volume and velocity of trench water flow at the base of slopes.

3. Sediment Barriers

Sediment barriers are intended to stop the flow of sediments and to prevent the deposition of sediments beyond approved workspaces or into sensitive resources.

- a. Sediment barriers may be constructed of materials such as silt fence, staked hay or straw bales, compacted earth (e.g., driveable berms across travelways), sand bags, or other appropriate materials.
- b. At a minimum, temporary sediment barriers will be installed and maintained across the entire construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody, wetland, or road crossing until revegetation is successful as defined in this Plan. Adequate room will be left between the base of the slope and the sediment barrier to accommodate ponding of water and sediment deposition.
- c. Where wetlands or waterbodies are adjacent to and downslope of construction work areas, sediment barriers will be installed along the edge of these areas, as necessary to prevent sediment flow into the wetland or waterbody.

4. Mulch

- a. Mulch will be applied on all slopes (except in cultivated cropland) concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Mulch will be spread uniformly over the area to cover at least 75 percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent, unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing.
- b. Mulch can consist of weed-free straw, wood fiber hydromulch, erosion control fabric, or some functional equivalent.
- c. All disturbed upland areas will be mulched (except cultivated cropland) before seeding if:
 - (1) final grading and installation of permanent erosion control measures will not be completed in an area within

20 days after the trench in that area is backfilled (10 days in residential areas), as required in section V.A.1; or

- (2) construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.
- d. If mulching before seeding, mulch application will be increased on all slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre of straw or equivalent.
- e. If wood chips are used as mulch, FSC will not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release).
- f. FSC will ensure that mulch is adequately anchored to minimize loss due to wind and water.
- g. When anchoring with liquid mulch binders, rates recommended by the manufacturer will be used. Liquid mulch binders will not be used within 100 feet of wetlands or waterbodies, except where the product is certified environmentally non-toxic by the appropriate state or federal agency or independent standards-setting organization.
- h. Synthetic monofilament mesh/netted erosion control materials will not be used in areas designated as sensitive wildlife habitat, unless the product is specifically designed to minimize harm to wildlife. Erosion control fabric will be anchored with staples or other appropriate devices.

V. RESTORATION

A. CLEANUP

- 1. Cleanup operations will commence immediately following backfill operations. Final grading, topsoil replacement, and installation of permanent erosion control structures will be completed within 20 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, temporary erosion controls (i.e., temporary slope breakers, sediment barriers, and mulch) will be maintained until conditions allow completion of cleanup.
- 2. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in section IV.F. and inspected and maintained as

specified in sections II.B.12 through 14. When access is no longer required, the travel lane will be removed and the right-of-way restored.

3. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench will be considered construction debris, unless approved for use as mulch or for some other use on the construction work areas by the landowner or land managing agency.
4. Excess rock will be removed from at least the top 12 inches of soil in all cultivated or rotated cropland, managed pastures, hayfields, and residential areas, as well as other areas at the landowner's request. The size, density, and distribution of rock on the construction work area will be similar to adjacent areas not disturbed by construction. The landowner or land management agency may approve other provisions in writing.
5. The construction right-of-way will be graded to restore pre-construction contours and leave the soil in the proper condition for planting.
6. Construction debris will be removed from all construction work areas unless the landowner or land managing agency approves leaving materials onsite for beneficial reuse, stabilization, or habitat restoration.
7. Temporary sediment barriers will be removed when replaced by permanent erosion control measures or when revegetation is successful.

B. PERMANENT EROSION CONTROL DEVICES

1. Trench Breakers
 - a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sand bags or polyurethane foam. FSC will not use topsoil in trench breakers.
 - b. An engineer or similarly qualified professional will determine the need for and spacing of trench breakers. Otherwise, trench breakers will be installed at the same spacing as and upslope of permanent slope breakers.
 - c. In agricultural fields and residential areas where slope breakers are not typically required, trench breakers will be installed at the same spacing as if permanent slope breakers were required.

- d. At a minimum, a trench breaker will be installed at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland. Trench breakers will be installed at wetland boundaries, as specified in the Procedures. FSC will not install trench breakers within a wetland.

2. Permanent Slope Breakers

- a. Permanent slope breakers are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent slope breakers may be constructed of materials such as soil, stone, or some functional equivalent.
- b. Permanent slope breakers will be constructed and maintained in all areas, except cultivated areas and lawns, unless requested by the landowner, using spacing recommendations obtained from the local soil conservation authority or land managing agency.

In the absence of written recommendations, FSC will use the following spacing unless closer spacing is necessary to avoid excessive erosion on the construction right-of-way:

<u>Slope (%)</u>	<u>Spacing (feet)</u>
5 - 15	300
>15 - 30	200
>30	100

- c. Slope breakers will be constructed to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, appropriate energy-dissipating devices will be constructed at the end of the breaker.
- d. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where slope breakers extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.

C. SOIL COMPACTION MITIGATION

- 1. Topsoil and subsoil will be tested for compaction at regular intervals in agricultural and residential areas disturbed by construction activities. Tests will be conducted on the same soil type under similar moisture

conditions in undisturbed areas to approximate preconstruction conditions. FSC will use penetrometers or other appropriate devices to conduct tests.

2. FSC will plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, FSC will plow the subsoil before replacing the segregated topsoil.

If subsequent construction and cleanup activities result in further compaction, FSC will conduct additional tilling.

3. FSC will perform appropriate soil compaction mitigation in severely compacted residential areas.

D. REVEGETATION

1. General

- a. FSC will be responsible for ensuring successful revegetation of soils disturbed by project-related activities, except as noted in section V.D.1.b.
- b. All turf, ornamental shrubs, and specialized landscaping will be restored in accordance with the landowner's request, or compensate the landowner. Restoration work will be performed by personnel familiar with local horticultural and turf establishment practices.

2. Soil Additives

FSC will fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Recommended soil pH modifier and fertilizer will be incorporated into the top 2 inches of soil as soon as practicable after application.

3. Seeding Requirements

- a. A seedbed will be prepared in disturbed areas to a depth of 3 to 4 inches using appropriate equipment to provide a firm seedbed. When hydroseeding, the seedbed will be scarified to facilitate lodging and germination of seed.
- b. Disturbed areas will be seeded in accordance with written recommendations for seed mixes, rates, and dates obtained from the local soil conservation authority or the request of the

landowner or land management agency. Seeding will not occur in cultivated croplands unless requested by the landowner.

- c. Seeding of permanent vegetation will be performed within the recommended seeding dates. If seeding cannot be done within those dates, appropriate temporary erosion control measures discussed in section IV.F will be used and seeding will be performed of permanent vegetation at the beginning of the next recommended seeding season. Dormant seeding or temporary seeding of annual species may also be used, if necessary, to establish cover, as approved by the Environmental Inspector. Lawns may be seeded on a schedule established with the landowner.
- d. In the absence of written recommendations from the local soil conservation authorities, all disturbed soils will be seeded within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a through V.D.3.c.
- e. Seeding rates will be based on Pure Live Seed. Seed will be used within 12 months of seed testing.
- f. Legume seed will be treated with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro).
- g. In the absence of written recommendations from the local soil conservation authorities, landowner, or land managing agency to the contrary, a seed drill equipped with a cultipacker is preferred for seed application.

Broadcast or hydroseeding may be used in lieu of drilling at double the recommended seeding rates. Where seed is broadcast, the seedbed will be firmed with a cultipacker or roller after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the Environmental Inspector.

VI. OFF-ROAD VEHICLE CONTROL

To each owner or manager of forested lands, FSC will offer to install and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include:

- A. signs;
- B. fences with locking gates;
- C. slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and
- D. conifers or other appropriate trees or shrubs across the right-of-way.

VII. POST-CONSTRUCTION ACTIVITIES AND REPORTING

A. MONITORING AND MAINTENANCE

1. Follow-up inspections will be conducted of all disturbed areas, as necessary, to determine the success of revegetation and address landowner concerns. At a minimum, inspections will be conducted after the first and second growing seasons.
2. Revegetation in non-agricultural areas will be considered successful if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. In agricultural areas, revegetation will be considered successful when upon visual survey, crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise.

Revegetation efforts will continue until revegetation is successful.

3. Problems with drainage and irrigation systems resulting from pipeline construction in agricultural areas will be monitored and corrected until restoration is successful.
4. Restoration will be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless otherwise approved by the landowner or land managing agency per section V.A.6), revegetation is successful, and proper drainage has been restored.
5. Routine vegetation mowing or clearing over the full width of the permanent right-of-way in uplands will not be done more frequently than every 3 years. However, to facilitate periodic corrosion/leak

surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In no case will routine vegetation mowing or clearing occur during the migratory bird nesting season between April 15 and August 1 of any year unless specifically approved in writing by the responsible land management agency or the U.S. Fish and Wildlife Service.

6. Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, will continue throughout the life of the project. Signs, gates, and permanent access roads will be maintained as necessary.

B. REPORTING

1. FSC will maintain records that identify by milepost:
 - a. method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used;
 - b. acreage treated;
 - c. dates of backfilling and seeding;
 - d. names of landowners requesting special seeding treatment and a description of the follow-up actions;
 - e. the location of any subsurface drainage repairs or improvements made during restoration; and
 - f. any problem areas and how they were addressed.
2. FSC will file quarterly activity reports with the Secretary documenting the results of follow-up inspections required by section VII.A.1; any problem areas, including those identified by the landowner; and corrective actions taken for at least 2 years following construction.



**FLORIDA SOUTHEAST CONNECTION PROJECT
WETLAND AND WATERBODY CONSTRUCTION AND
MITIGATION PROCEDURES**



**FLORIDA SOUTHEAST CONNECTION PROJECT
WETLAND AND WATERBODY CONSTRUCTION AND
MITIGATION PROCEDURES**

TABLE OF CONTENTS

I. APPLICABILITY1

II. PRECONSTRUCTION FILING2

III. ENVIRONMENTAL INSPECTORS3

IV. PRECONSTRUCTION PLANNING3

V. WATERBODY CROSSINGS5

 A. NOTIFICATION PROCEDURES AND PERMITS.....5

 B. INSTALLATION5

 1. Time Window for Construction5

 2. Extra Work Areas5

 3. General Crossing Procedures.....6

 4. Spoil Pile Placement and Control7

 5. Equipment Bridges7

 6. Dry-Ditch Crossing Methods8

 7. Crossings of Minor Waterbodies9

 8. Crossings of Intermediate Waterbodies10

 9. Crossings of Major Waterbodies10

 10. Temporary Erosion and Sediment Control11

 11. Trench Dewatering11

 C. RESTORATION.....12

 D. POST-CONSTRUCTION MAINTENANCE12

VI. WETLAND CROSSINGS13

 A. GENERAL.....13

 B. INSTALLATION15

 1. Extra Work Areas and Access Roads.....15

 2. Crossing Procedures.....15

 3. Temporary Sediment Control17

 4. Trench Dewatering17

 C. RESTORATION.....17

 D. POST-CONSTRUCTION MAINTENANCE AND REPORTING18

VII. HYDROSTATIC TESTING19

 A. NOTIFICATION PROCEDURES AND PERMITS.....19

 B. GENERAL.....20

 C. INTAKE SOURCE AND RATE20

 D. DISCHARGE LOCATION, METHOD, AND RATE20

FLORIDA SOUTHEAST CONNECTION PROJECT WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

I. APPLICABILITY

- A. Florida Southeast Connection (“FSC”) intends to adopt FERC’s Wetland and Waterbody Construction and Mitigation Procedures in its entirety. These adopted procedures will be referred to as FSC’s Wetland and Waterbody Construction and Mitigation Procedures (“FSC Procedures”). The FSC Procedures identify baseline mitigation measures for minimizing the extent and duration of project-related disturbance on wetlands and waterbodies.

FSC does not intend to seek any variances to the measures in these FSC Procedures. However, if site-specific conditions arise that necessitate a variance, FSC will provide to The Director of the Office of Energy Projects (Director) a written variance request providing the following about the variance:

1. how the variance provides equal or better environmental protection;
2. why the variance is necessary because a portion of these Procedures is infeasible or unworkable based on project-specific conditions; or
3. that the variance is specifically required in writing by another federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

FSC will request and receive written approval for any variances in advance of construction.

Project-related impacts on non-wetland areas are addressed in FSC’s Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

B. DEFINITIONS

1. “Waterbody” includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes:
 - a. “minor waterbody” includes all waterbodies less than or equal to 10 feet wide at the water’s edge at the time of crossing;
 - b. “intermediate waterbody” includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water’s edge at the time of crossing; and

- c. “major waterbody” includes all waterbodies greater than 100 feet wide at the water’s edge at the time of crossing.
2. “Wetland” includes any area that is not in actively cultivated or rotated cropland and that satisfies the requirements of the current federal methodology for identifying and delineating wetlands.

II. PRECONSTRUCTION FILING

- A. FSC will file with the Secretary of the FERC (Secretary) prior to the beginning of construction, for the review and written approval by the Director:
 1. site-specific justifications for extra work areas that would be closer than 50 feet from a waterbody or wetland; and
 2. site-specific justifications for the use of a construction right-of-way greater than 75-feet-wide in wetlands.
- B. FSC will file with the Secretary prior to the beginning of construction the following:
 1. Spill Prevention and Response Procedures specified in section IV.A;
 2. a schedule identifying when trenching or blasting will occur within each waterbody greater than 10 feet wide, within any designated coldwater fishery, and within any waterbody identified as habitat for federally-listed threatened or endangered species. FSC will revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period will be provided for at least 48 hours advance notice;
 3. plans for horizontal directional drills (HDD) under wetlands or waterbodies, specified in section V.B.6.d;
 4. site-specific plans for major waterbody crossings, described in section V.B.9;
 5. a wetland delineation report as described in section VI.A.1, if applicable; and
 6. the hydrostatic testing information specified in section VII.B.3.

III. ENVIRONMENTAL INSPECTORS

- A. At least one Environmental Inspector having knowledge of the wetland and waterbody conditions in the project area will be provided for each construction spread. The number and experience of Environmental Inspectors assigned to each construction spread shall be appropriate for the length of the construction spread and the number/significance of resources affected.
- B. The Environmental Inspector's responsibilities are outlined in the Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

IV. PRECONSTRUCTION PLANNING

- A. FSC will develop project-specific Spill Prevention and Response Procedures that meet applicable requirements of state and federal agencies. A copy will be filed with the Secretary prior to construction and made available in the field on each construction spread.
 - 1. FSC and its contractors will structure operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands. FSC and its contractors will, at a minimum, ensure that:
 - a. all employees handling fuels and other hazardous materials are properly trained;
 - b. all equipment is in good operating order and inspected on a regular basis;
 - c. fuel trucks transporting fuel to on-site equipment travel only on approved access roads;
 - d. all equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary. These activities can occur closer only if the Environmental Inspector determines that there is no reasonable alternative, and FSC and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
 - e. hazardous materials, including chemicals, fuels, and lubricating oils, are not stored within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does

not apply to normal operation or use of equipment in these areas;

- f. concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use. These activities can occur closer only if the Environmental Inspector determines that there is no reasonable alternative, and FSC and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
 - g. pumps operating within 100 feet of a waterbody or wetland boundary utilize appropriate secondary containment systems to prevent spills; and
 - h. bulk storage of hazardous materials, including chemicals, fuels, and lubricating oils have appropriate secondary containment systems to prevent spills.
2. FSC and its contractors will structure operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. At a minimum, FSC and its contractors will:
- a. ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills and unanticipated discoveries of contamination;
 - b. ensure that each construction crew has on hand sufficient tools and material to stop leaks;
 - c. know the contact names and telephone numbers for all local, state, and federal agencies (including, if necessary, the U. S. Coast Guard and the National Response Center) that must be notified of a spill; and
 - d. follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.

B. AGENCY COORDINATION

FSC will coordinate with the appropriate local, state, and federal agencies as outlined in these Procedures and in the FERC's Orders.

V. WATERBODY CROSSINGS

A. NOTIFICATION PROCEDURES AND PERMITS

1. FSC will apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate wetland and waterbody crossing permits.
2. FSC will provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least 1 week before beginning work in the waterbody, or as otherwise specified by that authority.
3. FSC will apply for state-issued waterbody crossing permits and obtain individual or generic section 401 water quality certification or waiver.
4. FSC will notify appropriate federal and state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in applicable permits.

B. INSTALLATION

1. Time Window for Construction

Unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis, in-stream work, except that required to install or remove equipment bridges, will occur during the following time windows:

- a. coldwater fisheries - June 1 through September 30; and
- b. coolwater and warmwater fisheries - June 1 through November 30.

2. Extra Work Areas

- a. FSC will locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.
- b. FSC will file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from the water's edge, except where the adjacent upland consists of cultivated or

rotated cropland or other disturbed land. The justification will specify the conditions that will not permit a 50-foot setback and measures to ensure the waterbody is adequately protected.

- c. FSC will limit the size of extra work areas to the minimum needed to construct the waterbody crossing.

3. General Crossing Procedures

- a. FSC will comply with the COE, or its delegated agency, permit terms and conditions.

- b. FSC will construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit.

- c. Where pipelines parallel a waterbody, FSC will maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way, except where maintaining this offset will result in greater environmental impact.

- d. Where waterbodies meander or have multiple channels, FSC will route the pipeline to minimize the number of waterbody crossings.

- e. FSC will maintain adequate waterbody flow rates to protect aquatic life, and prevent the interruption of existing downstream uses.

- f. Waterbody buffers (e.g., extra work area setbacks, refueling restrictions) will be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

- g. Crossing of waterbodies when they are dry or frozen and not flowing will proceed using standard upland construction techniques in accordance with the Plan, provided that the Environmental Inspector verifies that water is unlikely to flow between initial disturbance and final stabilization of the feature. In the event of perceptible flow, FSC will comply with all applicable Procedure requirements for “waterbodies” as defined in section I.B.1.

4. Spoil Pile Placement and Control

- a. All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, will be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in section V.B.2.
- b. Sediment barriers will be used to prevent the flow of spoil or silt-laden water into any waterbody.

5. Equipment Bridges

- a. Only clearing equipment and equipment necessary for installation of equipment bridges will be allowed to cross waterbodies prior to bridge installation. The number of such crossings of each waterbody will be limited to one per piece of clearing equipment.
- b. Equipment bridges will be constructed and maintained to allow unrestricted flow and to prevent soil from entering the waterbody. Examples of such bridges include:
 - (1) equipment pads and culvert(s);
 - (2) equipment pads or railroad car bridges without culverts;
 - (3) clean rock fill and culvert(s); and
 - (4) flexi-float or portable bridges.

Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Soil will not be used to construct or stabilize equipment bridges.

- c. Each equipment bridge will be designed and maintained to withstand and pass the highest flow expected to occur while the bridge is in place. Culverts will be aligned to prevent bank erosion or streambed scour. If necessary, energy dissipating devices will be installed downstream of the culverts.
- d. Equipment bridges will be designed and maintained to prevent soil from entering the waterbody.
- e. Temporary equipment bridges will be removed as soon as practicable after permanent seeding.
- f. If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, temporary equipment

bridges will be removed as soon as practicable after final cleanup.

- g. Any necessary approval from the COE, or the appropriate state agency will be obtained for permanent bridges.

6. Dry-Ditch Crossing Methods

- a. Unless approved otherwise by the appropriate federal or state agency, the pipeline will be installed using one of the dry-ditch methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, or federally-designated as critical habitat.
- b. Dam and Pump
 - (1) The dam-and-pump method may be used for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage.
 - (2) Implementation of the dam-and-pump crossing method will meet the following performance criteria:
 - (i) use sufficient pumps, including on-site backup pumps, to maintain downstream flows;
 - (ii) construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);
 - (iii) screen pump intakes to minimize entrainment of fish;
 - (iv) prevent streambed scour at pump discharge; and
 - (v) continuously monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.

c. Flume Crossing

The flume crossing method requires implementation of the following steps:

- (1) install flume pipe after blasting (if necessary), but before any trenching;

- (2) use sand bag or sand bag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required to achieve an effective seal);
- (3) properly align flume pipe(s) to prevent bank erosion and streambed scour;
- (4) do not remove flume pipe during trenching, pipelaying, or backfilling activities, or initial streambed restoration efforts; and
- (5) remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.

d. Horizontal Directional Drill

For each waterbody or wetland that would be crossed using the HDD method, FSC will file with the Secretary for the review and written approval by the Director, a plan that includes:

- (1) site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;
- (2) justification that disturbed areas are limited to the minimum needed to construct the crossing;
- (3) identification of any aboveground disturbance or clearing between the HDD entry and exit workspaces during construction;
- (4) a description of how an inadvertent release of drilling mud would be contained and cleaned up; and
- (5) a contingency plan for crossing the waterbody or wetland in the event the HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary.

7. Crossings of Minor Waterbodies

Where a dry-ditch crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

- a. except for blasting and other rock breaking measures, instream construction activities (including trenching, pipe installation, backfill, and restoration of the streambed contours) will be completed within 24 hours. Streambanks and unconsolidated streambeds may require additional restoration after this period;
- b. use of equipment operating in the waterbody will be limited to that needed to construct the crossing; and
- c. equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification or protected status (e.g., agricultural or intermittent drainage ditches). However, if an equipment bridge is used it will be constructed as described in section V.B.5.

8. Crossings of Intermediate Waterbodies

Where a dry-ditch crossing is not required, intermediate waterbodies will be crossed using the open-cut crossing method, with the following restrictions:

- a. instream construction activities (not including blasting and other rock breaking measures) will be completed within 48 hours, unless site-specific conditions make completion within 48 hours infeasible;
- b. use of equipment operating in the waterbody will be limited to that needed to construct the crossing; and
- c. all other construction equipment will cross on an equipment bridge as specified in section V.B.5.

9. Crossings of Major Waterbodies

Before construction, FSC will file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan will be developed in consultation with the appropriate state and federal agencies and shall include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.

The Environmental Inspector may adjust the final placement of the erosion and sediment control structures in the field to maximize effectiveness.

10. Temporary Erosion and Sediment Control

Sediment barriers (as defined in section IV.F.3.a of the Plan) will be installed immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan; however, the following specific measures will be implemented at stream crossings:

- a. sediment barriers will be installed across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. Removable sediment barriers (or driveable berms) will be installed across the travel lane. These removable sediment barriers can be removed during the construction day, but will be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;
- b. where waterbodies are adjacent to the construction right-of-way and the right-of-way slopes toward the waterbody, sediment barriers will be installed along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the waterbody; and
- c. temporary trench plugs will be used at all waterbody crossings, as necessary, to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody.

11. Trench Dewatering

The trench will be dewatered (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in silt-laden water flowing into any waterbody. The dewatering structures will be removed as soon as practicable after the completion of dewatering activities.

C. RESTORATION

1. Clean gravel or native cobbles will be used for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries.
2. For open-cut crossings, waterbody banks will be stabilized and temporary sediment barriers will be installed within 24 hours of completing instream construction activities. For dry-ditch crossings, streambed and bank stabilization will be completed before returning flow to the waterbody channel.
3. All waterbody banks will be returned to preconstruction contours or to a stable angle of repose as approved by the Environmental Inspector.
4. Erosion control fabric or a functional equivalent will be installed on waterbody banks at the time of final bank recontouring. Synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat will not be used unless the product is specifically designed to minimize harm to wildlife. Erosion control fabric will be anchored with staples or other appropriate devices.
5. Application of riprap for bank stabilization will comply with COE, or its delegated agency, permit terms and conditions.
6. Unless otherwise specified by state permit, the use of riprap will be limited to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric.
7. Disturbed riparian areas will be revegetated with native species of conservation grasses, legumes, and woody species, similar in density to adjacent undisturbed lands.
8. A permanent slope breaker will be installed across the construction right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the waterbody, or as needed to prevent sediment transport into the waterbody. In addition, sediment barriers will be installed as outlined in the Plan.

In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.

9. Sections V.C.3 through V.C.7 above also apply to those perennial or intermittent streams not flowing at the time of construction.

D. POST-CONSTRUCTION MAINTENANCE

1. Routine vegetation mowing or clearing will be limited adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating will be cut and removed from the permanent right-of-way. No routine vegetation mowing or clearing will be conducted in riparian areas that are between HDD entry and exit points.
2. Herbicides or pesticides will not be used in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency.
3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of riparian areas.

VI. WETLAND CROSSINGS

A. GENERAL

1. FSC will conduct a wetland delineation using the current federal methodology and file a wetland delineation report with the Secretary before construction.

This report will identify:

- a. by milepost all wetlands that would be affected;
- b. the National Wetlands Inventory (NWI) classification for each wetland;
- c. the crossing length of each wetland in feet; and
- d. the area of permanent and temporary disturbance that would occur in each wetland by NWI classification type.

The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including workspace and topsoiling requirements, apply to these agricultural wetlands.

2. The pipeline will be routed to avoid wetland areas to the maximum extent possible. If a wetland cannot be avoided or crossed by following an existing right-of-way, the new pipeline will be routed in a manner that minimizes disturbance to wetlands.
3. The width of the construction right-of-way will be limited to 75 feet or less. Prior written approval of the Director will be obtained where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process FSC will identify site-specific areas where excessively wide trenches could occur and/or where spoil piles could be difficult to maintain because existing soils lack adequate unconfined compressive strength.
4. Wetland boundaries and buffers will be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.
5. In the event a waterbody crossing is located within or adjacent to a wetland crossing, FSC will implement the measures of sections V and VI. If all measures of sections V and VI cannot be met, FSC will file with the Secretary a site-specific crossing plan for review and written approval by the Director before construction. This crossing plan will address at a minimum:
 - a. spoil control;
 - b. equipment bridges;
 - c. restoration of waterbody banks and wetland hydrology;
 - d. timing of the waterbody crossing;
 - e. method of crossing; and
 - f. size and location of all extra work areas.
6. Aboveground facilities will not be located in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation regulations.

B. INSTALLATION

1. Extra Work Areas and Access Roads

- a. All extra work areas (such as staging areas and additional spoil storage areas) will be located at least 50 feet away from wetland boundaries, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.
- b. FSC will file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from wetland boundaries, except where adjacent upland consists of cultivated or rotated cropland or other disturbed land. The justification will specify the site-specific conditions that will not permit a 50-foot setback and measures to ensure the wetland is adequately protected.
- c. The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats).

In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access roads in upland areas do not provide reasonable access, limit all other construction equipment to one pass through the wetland using the construction right-of-way.

- d. The only access roads, other than the construction right-of-way, that may be used in wetlands are those existing roads that can be used with no modifications or improvements, other than routine repair, and no impact on the wetland.

2. Crossing Procedures

- a. FSC will comply with COE, or its delegated agency, permit terms and conditions.
- b. FSC will assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.
- c. FSC will use “push-pull” or “float” techniques to place the pipe in the trench where water and other site conditions allow.

- d. FSC will minimize the length of time that topsoil is segregated and the trench is open. The wetland will not be trenched until the pipeline is assembled and ready for lowering in.
- e. Construction equipment operating in wetland areas will be limited to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way.
- f. Vegetation will be cut just above ground level, leaving existing root systems in place, and removed from the wetland for disposal.

FSC may burn woody debris in wetlands, if approved by the COE and in accordance with state and local regulations, ensuring that all remaining woody debris is removed for disposal.

- g. Pulling of tree stumps and grading activities will be limited to directly over the trenchline. Stumps or root systems will not be removed or degraded from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way.
- h. The top 1 foot of topsoil will be segregated from the area disturbed by trenching, except in areas where standing water is present or soils are saturated. Immediately after backfilling is complete, the segregated topsoil will be restored to its original location.
- i. Rock, soil imported from outside the wetland, tree stumps, or brush riprap will not be used to support equipment on the construction right-of-way.
- j. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, low-ground-weight construction equipment will be used, or normal equipment will be operated on timber riprap, prefabricated equipment mats, or terra mats.
- k. All project-related material used to support equipment on the construction right-of-way will be removed upon completion of construction.

3. Temporary Sediment Control

Sediment barriers (as defined in section IV.F.3.a of the Plan) will be installed immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c, sediment barriers will be maintained until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan.

- a. Sediment barriers will be installed across the entire construction right-of-way immediately upslope of the wetland boundary at all wetland crossings where necessary to prevent sediment flow into the wetland.
- b. Where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, sediment barriers will be installed along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the wetland.
- c. Sediment barriers will be installed along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands. These sediment barriers will be removed during right-of-way cleanup.

4. Trench Dewatering

The trench (either on or off the construction right-of-way) will be dewatered in a manner that does not cause erosion and does not result in silt-laden water flowing into any wetland. The dewatering structures will be removed as soon as practicable after the completion of dewatering activities.

C. RESTORATION

1. Where the pipeline trench may drain a wetland, trench breakers will be constructed at the wetland boundaries and/or the trench bottom will be sealed as necessary to maintain the original wetland hydrology.
2. Pre-construction wetland contours will be restored to maintain the original wetland hydrology.

3. For each wetland crossed, a trench breaker will be installed at the base of slopes near the boundary between the wetland and adjacent upland areas. A permanent slope breaker will be installed across the construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the wetland. In addition, sediment barriers will be installed as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.
4. Fertilizer, lime, or mulch will not be used unless required in writing by the appropriate federal or state agency.
5. FSC will consult with the appropriate federal or state agencies to develop a project-specific wetland restoration plan. The restoration plan will include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of invasive species and noxious weeds (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. This plan will be provided to the FERC staff upon request.
6. Until a project-specific wetland restoration plan is developed and/or implemented, the construction right-of-way will be temporarily revegetated with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present).
7. All disturbed areas will be successfully revegetated with wetland herbaceous and/or woody plant species.
8. Temporary sediment barriers located at the boundary between wetland and adjacent upland areas will be removed after revegetation and stabilization of adjacent upland areas are judged to be successful as specified in section VII.A.4 of the Plan.

D. POST-CONSTRUCTION MAINTENANCE AND REPORTING

1. Routine vegetation mowing or clearing will not be conducted over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating will be selectively cut and removed from the permanent right-of-way. No routine vegetation mowing or clearing in wetlands that are between HDD entry and exit points will occur.

2. Herbicides or pesticides will not be used in or within 100 feet of a wetland, except as allowed by the appropriate federal or state agency.
3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of wetland areas.
4. Monitoring and recording the success of wetland revegetation will be conducted annually until wetland revegetation is successful.
5. Wetland revegetation will be considered successful if all of the following criteria are satisfied:
 - a. the affected wetland satisfies the current federal definition for a wetland (i.e., soils, hydrology, and vegetation);
 - b. vegetation is at least 80 percent of either the cover documented for the wetland prior to construction, or at least 80 percent of the cover in adjacent wetland areas that were not disturbed by construction;
 - c. if natural rather than active revegetation was used, the plant species composition is consistent with early successional wetland plant communities in the affected ecoregion; and
 - d. invasive species and noxious weeds are absent, unless they are abundant in adjacent areas that were not disturbed by construction.
6. Within 3 years after construction, a report will be filed with the Secretary identifying the status of the wetland revegetation efforts and documenting success as defined in section VI.D.5, above.

For any wetland where revegetation is not successful at the end of 3 years after construction, a remedial revegetation plan will be developed and implemented (in consultation with a professional wetland ecologist) to actively revegetate wetlands. Revegetation efforts will be continued and a report filed annually documenting progress in these wetlands until wetland revegetation is successful.

VII. HYDROSTATIC TESTING

A. NOTIFICATION PROCEDURES AND PERMITS

1. FSC will apply for state-issued water withdrawal permits, as required.

2. FSC will apply for National Pollutant Discharge Elimination System (NPDES) or state-issued discharge permits, as required.
3. FSC will notify appropriate state agencies of intent to use specific sources at least 48 hours before testing activities unless they waive this requirement in writing.

B. GENERAL

1. FSC will perform 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands.
2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetland, FSC will address secondary containment and refueling of these pumps in the project's Spill Prevention and Response Procedures.
3. FSC will file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location.

C. INTAKE SOURCE AND RATE

1. The intake hose will be screened to minimize the potential for entrainment of fish.
2. State-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, will not be used unless appropriate federal, state, and/or local permitting agencies grant written permission.
3. Adequate flow rates will be maintained to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.
4. Hydrostatic test manifolds will be located outside wetlands and riparian areas to the maximum extent practicable.

D. DISCHARGE LOCATION, METHOD, AND RATE

1. Discharge rate, will be regulated using energy dissipation device(s), and installed sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive streamflow.

2. No discharge will occur into state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and local permitting agencies grant written permission.