

SCDOT ENVIRONMENTAL CONSTRUCTION COMPLIANCE PROGRAM

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ABSTRACT. The South Carolina Department of Transportation (SCDOT) applies for and receives numerous permits under Section 404 of the Clean Water Act for wetland and stream impacts associated with roadway and bridge construction projects. These permits vary from minor nationwide permits with impacts of less than one tenth of an acre to individual permits that can permanently impact several or more acres of wetlands, especially on new roadway construction projects. These permits and their related National Environmental Policy Act (NEPA) documents carry specific conditions that must be met before, during, and after construction. These include, but are not limited to, mitigation debits, avoidance of archaeological sites, threatened and endangered species special requirements, avoidance of nesting migratory birds, and Best Management Practices (BMPs). To ensure that these requirements are met throughout the duration of construction, SCDOT recognized that a detailed and methodical environmental construction compliance program was needed.

BACKGROUND

Regulatory Environment

The Clean Water Act (CWA) of 1972 was implemented to restore and maintain chemical, physical and biological integrity to all Waters of the United States. Its purpose was to eliminate uncontrolled pollutants and discharges into Waters of the United States. The United States Army Corps of Engineers (USACE) is responsible for administering the permit program that regulates impacts to Waters of the US, commonly referred to as the "404 program". A permit under this program is required to place fill/dredge material into Waters of the US, including wetlands. Other regulated activities include: dredging, discharge of dredged or fill materials, mechanized clearing, draining/altering wetlands, and the damming of streams and rivers. The South Carolina Department of Health and Environmental Control

(SCDHEC) oversees the Water Quality Certification program pursuant to Section 401 of the CWA. This section requires the state to issue a certification for any activity that requires a federal permit and may result in a discharge to State waters, including wetlands.

Additionally, all Federal Highway Administration (FHWA) actions require compliance with the National Environmental Policy Act (NEPA) of 1969. NEPA is an overall framework for the environmental evaluation of federal actions to promote efforts to prevent or eliminate damage to the environment (42 USC 4321 et seq.).

Permitting at SCDOT

The mission of SCDOT is to provide a safe and efficient transportation system for the state of South Carolina. This is accomplished through building and maintaining roads and bridges for the citizens of the state. Projects vary in nature to include major interstate widenings, interchange improvements, shoulder construction, bridge replacements, intersection upgrades, bicycle/pedestrian access, and state/federal route widenings. Impacts related to these project types include a wide range of effects with varying degrees of intensity. Wetlands are often cleared of vegetation to provide access for construction equipment, particularly cranes during bridge construction. Clearing may include cutting trees flush with the ground, to full stump and root removal by grubbing and root raking. Fill dirt is regularly added to portions of wetlands and streams to support road widening, culvert extensions and bridge abutments. Many construction sites encompass several acres of uplands that are disturbed with equipment, resulting in loose sediment that can move into adjacent wetlands and waterbodies if proper Best Management Practices (BMPs) are not in place. With more than 4 million acres of wetlands and over 2,800 miles of shoreline in South Carolina (Dahl, 1999), numerous projects have impacted and will impact wetlands and

other jurisdictional waters within the state. With over 85 projects currently underway (<http://dbw.scdot.org/activeprojects/Default.aspx>), SCDOT is responsible for maintaining compliance with numerous permits. From an operational standpoint, SCDOT coordinates with the Charleston District of the USACE, as well as with SCDHEC to obtain permits for its construction projects. In addition to active SCDOT projects, there are many local projects sponsored by counties and towns that provide improvements to state-owned and state-maintained facilities. Permits for these local projects are often issued directly to SCDOT, or as a co-permittee with a local jurisdiction. It is the responsibility of SCDOT to distribute these permits to the project general contractors and to ensure that all special and general permit conditions are applied to the project.

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Permitting Compliance Challenges

Environmental compliance at the construction site requires the general contractor to understand and follow general and special conditions of 404 permits issued by USACE, 401 water quality certifications issued by SCDHEC, NEPA document environmental commitments, provisions of Storm Water Pollution Prevention Plans, and conditions of borrow pit permits. A recently completed interstate project (I-520 in Aiken County, SC) was constructed with over 3 dozen environmental requirements and almost 50 pages of specific plan sheets addressing work in and around wetlands and streams (SCDHEC 2006, SCDOT 2003, USACE 2007).

Statewide, SCDOT recognized that more frequent and in-depth oversight was needed to work with its contractors to keep sites in compliance. Permit drawings were often hard to read or presented confusing information. Contractors would seek guidance on drawing interpretation, but with the volume of active projects, receiving a timely answer was difficult. There were numerous violations at project sites, ranging from incidental fill of wetlands or streams due to substandard erosion control methods, to more significant violations such as major changes in construction methods in jurisdictional waters. Permit amendment requests were becoming common, leading to dissatisfaction from the USACE. This also resulted in unplanned mitigation needs, making it more difficult for SCDOT to budget and prepare for site restoration or mitigation bank use.

Permitting Compliance Solutions

SCDOT recognized that these challenges could be eliminated or drastically reduced with increased communication between the SCDOT resident construction engineers (RCEs), SCDOT inspectors, contractors, environmental personnel, and USACE staff members. Several complex projects were assigned full-time biological monitors; however, it is not cost-effective or necessary for all active construction projects to have a daily biological monitor. SCDOT developed a system that divided the state into four geographic regions based on the boundaries of its engineering districts. To build one-on-one relationships with the district staff in these areas, SCDOT assigned four consulting firms to conduct regular site visits for projects in these regions. With input from staff members at SCDOT and USACE, the SCDOT Environmental Management Office developed a standardized process that has significantly increased oversight for construction projects. From pre-construction and partnering meetings to regular weekly or biweekly site visits, environmental oversight has become increasingly beneficial for SCDOT and its contractors. Environmental Compliance reports are created with each regular site visit and copies are given to both RCEs and inspectors electronically after each visit. Any potential problems are discussed with SCDOT staff so they can be communicated to the contractor. An escalation procedure was created and agreed upon by SCDOT project staff members in cases where compliance issues were not addressed in a timely manner.

Following construction completion, an Environmental Close-Out report is created. This report summarizes all environmental commitments and conditions and documents compliance throughout the duration of the project. Any incidents, both minor and major, and their associated actions are recorded.

Challenges and Future Actions

With a wide range of projects and project types, it is often difficult to keep track of all upcoming projects in addition to on-going projects in each district. Therefore, each consultant is invited to each pre-construction meeting for projects that involve USACE and SCDHEC permits. These meetings allow the consultant to discuss the permits with both prime and sub-contractors before any work begins. At these meetings, any special conditions related to the permits or NEPA documents are discussed. Additionally, construction methods are reviewed for any potential compliance issues that may arise.

SCDOT headquarters also now requires all new plan sets to have check boxes for NEPA documents, USACE

permits, SCDHEC 401 Certification and SCDHEC – Office of Coastal Resource Management (OCRM) coastal zone certifications. This will allow RCEs, inspectors and environmental compliance personnel to quickly determine if a project has any permit requirements.

While compliance with all of these USACE and SCDHEC permit regulations can be fairly complicated, most permit violations are unintentional. In fact, compliance with another permit, the SCDOT Construction General NPDES Permit, would prevent many accidental and unintentional permit violations. Improper BMPs and lack of consistent BMP maintenance are two of the most common problems on construction sites with stream and wetlands violations. To date, SCDOT does not provide much incentive to contractors to maintain and replace BMPs that fail in a timely manner. For contractors, BMP maintenance and replacement is costly and takes away from their bottom line. Unstable sediment and fill material has a tendency to enter streams and wetlands if protections are inadequate, leading to permit violations.

SCDOT's next step is to provide further in-house education to RCEs, inspectors and contractors to reduce future wetlands violations. This will include a review of common permitting special conditions, maintenance of BMPs and a review of the environmental compliance program. This program has been created to provide support for any field-related questions that may arise through the course of a project.

CONCLUSION

The SCDOT Environmental Construction Compliance program was established in spring of 2011 to reduce the number of 404 and 401 permit violations. There have been many expected successes, and some unexpected success from this program. Permits are being properly applied statewide on construction projects. Some SCDOT construction inspectors use this program as a complement to routine inspections from headquarters personnel. Inspectors recognize that they are being graded on environmental conditions at their sites and they work with their assigned environmental staff to look for areas to improve upon. The majority of projects that were underway in 2011 were reviewed for compliance and there were no significant work stoppages to improve environmental conditions. Construction contractors have been open to the program and have worked cooperatively to improve their sites. A more in-depth and better understanding of what is needed during the construction stage has helped the SCDOT with their new permit applications, hopefully leading to fewer

requests for permit modifications in the future. Consultants with regional oversight have maintained close communications to ensure consistency throughout the state. To-date, the program has helped to alleviate problems in the field, as well as provide support to RCEs, inspectors and contractors. The program is still in its infancy, but as it continues to develop, SCDOT and its contractors will see a decrease in violations and a more focused attention to detail.

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