

# **Streamlining Permitting and Mitigation Processes to Improve SCDOT Project Delivery**

## **FINAL REPORT**

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16. Abstract The South Carolina Department of Transportation (SCDOT) identified three areas that have significant effect on its ability to deliver projects on time and on budget: (1) inconsistent permit application submittals among consultants that led to delay in approval by the U.S. Army Corp of Engineers, (2) inability to consistently identify “red flags” early in the project development process, and (3) lack of mitigation credit coverage. The objective of this project is to reduce risks in these areas by updating tools originally developed during Phase 1, which have been in use by SCDOT staff and consultants since July 2022. These updated tools include the Project Screening Tool (ArcGIS web app), Mitigation Forecasting Tool (ArcGIS web app), Jurisdictional Determination (JD) Tool (ArcGIS web app), JD web-based smart form, and General Permit web-based smart form. In Phase 2, four additional compliance-related tools were developed: (1) the Project Tracking smart form, (2) Pre-Letting Checklist smart form, (3) Commitment Log smart form, and (4) Inspection Report smart form. These compliance tools have been adopted and used by SCDOT staff and consultants as of July 2023.			
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## EXECUTIVE SUMMARY

In Phase 2 of this project, our team built upon the foundation established in Phase 1 to further support the South Carolina Department of Transportation (SCDOT) in streamlining environmental review processes and improving project delivery timelines. During Phase 1, we developed three ArcGIS-based web applications: (1) the Mitigation Forecasting Tool (MFT), Project Screening Tool (PST 2.0), and Jurisdictional Determination (JD), as well as two app-based smart forms to support JD and General Permit applications. These tools addressed critical challenges faced by SCDOT, including inconsistent general permit submittals and inability to consistently identify “red flags” early in the project development process.

In Phase 2, we focused on refining and enhancing these tools based on feedback from SCDOT staff and consultants who actively used them to screen projects and apply for Section 404 general permits for approved projects. Updates included improved user interfaces, expanded functionalities, and enhanced data validation. A key focus of Phase 2 was the development of four new app-based smart forms designed to help the Environmental Services Office (ESO) monitor and manage environmental commitments throughout the lifecycle of a project. Using ArcGIS Survey123, we created the Project Tracking app, Pre-Letting Checklist app, Commitment Log app, and Inspection Report app. These tools allow ESO staff to collect real-time data from active projects and document compliance activities in a standardized and accessible format. All compliance data are subsequently fed into an interactive Power BI dashboard that ESO designed to visualize project-specific compliance metrics and provide SCDOT leadership with a centralized, real-time view of statewide environmental performance.

By integrating GIS technology, smart forms, and performance dashboards, our team has helped the SCDOT ESO transition from fragmented, paper-based workflows to a fully integrated digital ecosystem. Collectively, the applications developed in Phase 1 and the enhancements made during Phase 2 have significantly advanced SCDOT’s ability to identify project risks early, ensure regulatory compliance, and support the timely delivery of transportation projects. These efforts have resulted in several tangible benefits: the external MFT has improved transparency and strengthened relationships between SCDOT and the mitigation banking community, thereby significantly reducing mitigation-related project risks; the PST 2.0 has saved ESO staff 20 to 25 hours per month by streamlining feasibility reporting and project screening tasks; and the e-permit has saved contracted consultants 30 to 40 hours per month and accelerate U.S. Army Corps of Engineers approval timelines, with most general permits approved within two months. Together, these tools have not only reduced administrative burdens but also established a more proactive, data-driven approach to environmental oversight that strengthens project accountability and accelerates decision-making across the agency.

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## LIST OF ACRONYMS

<b>CWA</b>	Clean Water Act
<b>e-Permit</b>	Electronic Permitting
<b>ESO</b>	Environmental Services Office
<b>GP</b>	General Permit
<b>JD</b>	Jurisdictional Determination
<b>MFT</b>	Mitigation Forecasting Tool
<b>NEPA</b>	National Environmental Policy Act
<b>PRM</b>	Permittee-Responsible Mitigation
<b>PSIC</b>	Project Steering and Implementation Committee
<b>PST</b>	Project Screening Tool
<b>SCDOT</b>	South Carolina Department of Transportation
<b>USACE</b>	US Army Corps of Engineers
<b>Webapp</b>	Web Application
<b>WOUS</b>	Waters of the US

## **CHAPTER 1: INTRODUCTION**

The South Carolina Department of Transportation (SCDOT) routinely undertakes infrastructure projects that unavoidably impact wetlands, streams, and other aquatic resources. These impacts require compliance with state and federal environmental regulations, including the National Environmental Policy Act (NEPA) and Sections 401 and 404 of the Clean Water Act (CWA), which mandate compensatory mitigation to offset ecological losses. However, project delivery has frequently been hindered by inconsistent permit application submittals, a lack of standardized workflows, and limited access to integrated digital tools that support environmental planning and compliance. Permit packages often vary in format and content depending on the consultant preparing them, leading to delays in review and approval by the U.S. Army Corps of Engineers (USACE). Additionally, the absence of centralized, user-friendly tools made it difficult for Environmental Services Office (ESO) staff to identify potential environmental risks early in the project development process and to proactively address mitigation needs. These challenges introduced unnecessary risks to project schedules, increased staff workload, and complicated coordination across teams.

To address these issues, Phase 1 of this research project focused on developing a suite of custom GIS-based web applications and app-based smart forms tailored to SCDOT ESO's operational workflows. These tools were designed to improve permitting consistency, enhance early environmental screening, and support mitigation planning. Specifically, Phase 1 delivered three ArcGIS-based web applications: (1) the Mitigation Forecasting Tool (MFT), Project Screening Tool (PST 2.0), and Jurisdictional Determination (JD), as well as two app-based smart forms to support JD and General Permit applications. These applications were deployed in July of 2022 and used by ESO staff and consultants to help streamline the permitting process, reduce delays, and improve overall project efficiency.

Building on the foundation established in Phase 1, the focus of Phase 2 was twofold. The first was to refine and expand these tools based on feedback from end users and to introduce new applications to support compliance monitoring. Enhancements to the original tools included improved user interfaces, expanded functionalities, and enhanced data validation. The second focus of Phase 2 was to develop four new compliance-focused app-based smart forms: Project Tracking, Pre-Letting Checklist, Commitment Log, and Inspection Report. These apps enabled ESO staff and consultants to document and track environmental commitments and inspection findings in real time throughout the project lifecycle.

The remainder of this report provides a detailed account of the work completed during Phase 2. Subsequent chapters describe the enhancements made to the original suite of applications developed in Phase 1, followed by the design, functionality, and implementation of the new compliance-focused app-based smart forms. The report concludes with an assessment of the benefits realized to date, lessons learned during development and deployment, and recommendations for future improvements and system expansion.

## **CHAPTER 2: REVIEW OF DIGITAL ENVIRONMENTAL TOOLS**

### **2.1 Summary of Previous Findings**

In Phase 1, a comprehensive literature review highlighted the challenges of site selection for wetland mitigation and underscored the growing role of GIS-based tools in supporting environmental decision-making. Studies from agencies such as the National Cooperative Highway Research Program, Maryland Environmental Service, and several state DOTs demonstrated that poor site selection, often driven by economic constraints (e.g., cost and land availability) or limited data, can lead to mitigation failures. Tools like the Watershed Resources Registry developed by the Maryland Environmental Service showed how geospatial analysis can be used to identify potential sites for restoration and/or preservation, and the GIS Screening Tool developed by the Texas DOT showed how a GIS-based screen tool can be used to make informed decisions regarding the locations for environmental protection.

In addition to GIS-based tools for mitigation planning and project screening, several state transportation and environmental agencies have begun transitioning from paper-based permit submittals to digital, web-based e-permitting systems. These systems are designed to streamline the submission, tracking, and review of environmental permit applications, particularly for Section 404 general permits. For example, the Pennsylvania Department of Transportation's Keystone Environmental ePermitting System (KEES), developed in collaboration with the state Department of Environmental Protection, enables real-time application tracking, integration with existing databases, and improved coordination between applicants and reviewers. Similarly, Florida's ePermitting platform facilitates the submission of general and individual permits online and allows users to manage application documents, payments, and communications in a centralized portal. These systems aim to reduce review times, improve consistency across submittals, and enhance transparency in the permitting process.

While the tools and platforms developed by other states provided valuable insight into emerging best practices, the research team and Project Steering and Implementation Committee (PSIC) determined that off-the-shelf or agency-developed solutions from other DOTs could not be directly adopted by the SCDOT. This is due to differences in internal processes and system integration preferences. For example, SCDOT wants to utilize its existing ProjectViewer (a GIS-based map of all programmed projects) on the front end and to leverage Power BI on the back end for interactive data analysis, performance monitoring, and real-time dashboard reporting to support decision-making. As a result, our team focused on developing custom applications tailored to SCDOT ESO's specific operational workflows. These tools were designed to integrate with SCDOT's existing systems, align with ESO's permitting practices, and meet ESO's operational needs for early risk identification, proactive mitigation planning, streamlined application workflows, and consistent, high-quality permit submittals.

### **2.2 Expanded Review**

An updated literature review was conducted early in Phase 2 of this project, which began in 2022, to identify newly developed digital tools and systems used by other state DOTs for project screening, Section 404 permit submittals, and environmental compliance management. The review included searches of recent publications from the Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO),

state DOT reports, and academic journals such as *Transportation Research Record* and the *Journal of Environmental Management*. The goal was to identify innovations or advancements beyond those documented during Phase 1.

The results of the updated literature review reaffirmed the findings from Phase 1, with no major new systems or technologies identified that extended beyond those previously documented. During this time, the PSIC Chair, Sean Connolly, actively shared information about SCDOT's environmental tools with members of the Transportation Research Board (TRB) Standing Committee on Environmental Analysis and Ecology in Transportation, as well as the Southern Association of State Highway and Transportation Officials (SASHTO). Feedback from these professional networks further confirmed that SCDOT was at the forefront of digital innovation in environmental management. Several state DOTs expressed strong interest in learning more about SCDOT's tools. The uniqueness and practical impact of these applications were further validated through multiple national and regional awards, which highlighted their role in modernizing environmental permitting processes and improving overall project delivery.

In conclusion, findings from the updated literature review, along with direct engagement with peer agencies, confirm that SCDOT remains at the forefront of digital innovation in environmental permitting. It also became clear that most existing tools, both at SCDOT and in other states, have focused primarily on project screening and permitting. Recognizing this gap, SCDOT saw an opportunity to expand its toolset to include compliance-focused applications. The next chapter outlines the technology platforms selected to support the development of these tools during Phase 2, with detailed descriptions of each application provided in Chapter 4.

## CHAPTER 3: APPLICATION DEVELOPMENT PLATFORMS

### 3.1 Introduction

ESRI's Survey123 continued to serve as the platform for managing the JD and ePermit applications and was also used to develop the four new compliance apps introduced in Phase 2. The workflow automation tool, Integromat, used to generate emails and reports, was replaced with Microsoft Power Automate to comply with SCDOT's IT policies. Lastly, because ESRI officially deprecated Web AppBuilder in favor of its next-generation platform, Experience Builder, the PST 2.0, MFT, and JD web applications were migrated accordingly. This shift was not a project-driven decision, but rather a transition initiated by ESRI to modernize its app development framework. The following sections provide a brief overview of each platform and its role in supporting the tools maintained and developed during Phase 2.

### 3.2 ArcGIS Survey123

ArcGIS Survey123 is a form-centric, mobile-friendly data collection platform developed by Esri. It allows survey creators to design smart forms that can be completed on computers, smartphones, or tablets using Esri's dedicated Survey123 field app. All submitted data is stored securely on Esri's cloud infrastructure, removing the need for local server deployment and ongoing server maintenance.

Survey123 was selected as the platform for developing the JD and ePermit applications, as well as the four new compliance apps, for several key reasons:

1. No Server Deployment Required. Because all forms and data are stored on Esri's servers, SCDOT did not need to purchase, configure, or maintain its own hosting infrastructure.
2. Ease of Development and Maintenance. Surveys are created using Excel spreadsheets that follow the XLSForm schema. While there is a learning curve, especially for more complex forms, Survey123 allows forms to be developed without advanced programming skills. Once trained, staff can independently create, edit, and maintain forms using the spreadsheet-based interface.
3. Cross-Platform Support. Survey123 forms can be completed on a wide range of devices, including desktops (Windows, macOS, Linux), smartphones, and tablets (iOS and Android). The apps are freely available through major app stores including the Apple App Store, Google Play, Amazon Appstore, and Microsoft Store. This mobility supports in-field data collection, which SCDOT identified as a key need for the compliance apps, specifically, the Inspection Report app.
4. Low Implementation Burden for IT Staff. Survey123 is a natural fit given the agency's existing use of ArcGIS. Since staff in SCDOT's IT department, Road Data Services office, and Environmental Services Office are already well-versed in ArcGIS tools, and other units are already using Survey123, it would not be a heavy lift for IT staff to support its use.

#### 3.2.1 Survey123 Development

The Survey123 spreadsheet, based on the XLSForms schema, is highly flexible. It allows the project team to define various data types (e.g., strings, numbers, and locations), customize the survey appearance using HTML snippets, incorporate a wide range of question types (e.g., text,

checkbox), implement complex calculations to autofill fields, and enable users to upload files in multiple formats (e.g., .doc, .pdf, .zip) as part of their responses.

Survey123 also supports custom report generation through the use of templates created in Microsoft Word. These templates use Esri's built-in syntax to reference survey fields and allow for the inclusion of formatted text, tables, embedded photos, and conditional logic. This feature was used to generate tailored reports for the JD, ePermit, Project Tracking, Pre-Letting Checklist, Commitment Log, and Inspection Report applications. Because the templates are Word-based, they can be easily edited by staff familiar with Survey123's reporting syntax, without requiring advanced programming skills. This makes it possible for both technical and non-technical users to maintain and update report formats as needed.

The report templates are updated whenever changes are made to the corresponding form. Once revised, the updated templates are uploaded to Survey123.arcgis.com, and a copy is stored in the deployment folder on ProjectWise. The first page of each report is included in Appendix A. Note that the JD and General Permit applications each include a cover letter.

### 3.2.2 Survey123 Limitations

Due to Survey123 not being a full-fledged computer programming language, it has several limitations:

- Reports cannot include attachments. While Survey123 can generate custom reports in Word or PDF format, the generated report only includes form field responses. It does not support merging uploaded attachments (e.g., PDF or Word files) into the same document.
- Lack of email functionality. Survey123 cannot be configured to send emails automatically as part of the submission process. For example, the system cannot automatically email a copy of the generated report to the user upon submission.
- Lack of workflow automation. Survey123 does not support workflow automation features such as triggering actions based on form submissions (e.g., retrieving or routing a generated report).

To overcome these limitations, the project team used Microsoft Power Automate, which integrates with Survey123 via Esri's REST API. Power Automate enabled the implementation of automated workflows, including retrieving reports, merging attachments, and sending email notifications. The setup and configuration of these workflows are described in the next section.

### **3.3 Power Automate Workflow Automation**

Microsoft Power Automate was used to support the automation of workflows triggered by Survey123 form submissions. A separate Power Automate flow was developed for each app: JD, ePermit, Project Tracking, Pre-Letting Checklist, Commitment Log, and Inspection Report. Each workflow is automatically triggered when a user submits a response in the corresponding Survey123 form. For example, the ePermit flow is activated when a user submits the General Permit application using the field app. Once triggered, the workflow follows a standard sequence of steps designed to automate report generation, file handling, and notification processes.

Most of the workflows follow the same basic set of steps:

1. Workflow starts when a form submission is received (setup via a webhook call).
2. It calls Survey123 back to log in, get access token.
3. Using the access token, it asks Survey123 to create a report. Report templates have been pre-uploaded to Survey123 for each survey form.
4. It waits for the report to get generated, then fetches when ready.
5. Fetches any other PDF files submitted by the user that need to be appended to the report.
6. If there are extra PDF files, merge them into one PDF file using the Encodian service. SCDOT has a subscription for Encodian.
7. Send an email to the appropriate person(s) with the report and the merged PDF as an attachment.

MS Power Automate maintains a detailed log for every workflow execution. This includes timestamps, actions taken, and any errors encountered. These logs allow the project team to validate successful deliveries and determine where in the process the workflow failed.

The workflow structures are shown in Appendix B. Workflow configurations are stored on Microsoft Power Automate (<https://flow.microsoft.com>) under the SCDOT account *envservices@scdot.org*.

### **3.4 ArcGIS Web AppBuilder**

Web AppBuilder was used to develop the three ArcGIS-based web applications: MFT, PST 2.0, and JD. It is a browser-based application development platform provided by Esri that allows users to build interactive web mapping applications. It offers a collection of configurable widgets, such as query tools, screening tools, charts, and printing utilities, that can be integrated into custom apps through a user-friendly drag-and-drop interface. Web AppBuilder offers the following advantages:

- A wide range of ready-to-use widgets, including tools for reporting and printing
- Built-in support for custom JavaScript to extend core functionality. The JavaScript extensions allowed the project team to implement custom features that went beyond the capabilities of the default widgets.
- Fast processing of large datasets and map layers for efficient report generation.
- Simple configuration of dashboard widgets and layout elements.
- Real-time updates to graphs and maps in response to user input.
- Extensive documentation and support from an active user community.

#### **3.4.1 PST 2.0 Web App**

Some of the features requested by SCDOT exceeded the capabilities of the standard Web AppBuilder widgets. To meet these needs, the project team developed custom JavaScript code to extend the platform's functionality. For instance, the default screening widget can only analyze a predefined set of layers. To allow users to screen all available layers, the team combined the Query and Screening widgets—passing results from the Query widget into the Screening widget for analysis.

SCDOT also requested the ability to screen projects based on starting and ending mile points along a roadway, a feature not natively supported by Esri. This functionality was implemented through custom development. Another unique requirement was the ability to group multiple data layers

and perform screening at the group level, rather than individually, to improve efficiency. This too was achieved using custom code.

#### **3.4.1 Mitigation Forecasting Tool**

SCDOT requested that the banking community be restricted from zooming in on maps or accessing detailed project information. To accommodate this, the project team modified the JavaScript code associated with the Dashboard's infographic widget to disable these capabilities in the MFT app.

#### **3.4.2 Jurisdictional Determination Webapp**

Like the PST 2.0 and MFT web apps, the JD web app required custom code to generate seven maps, each displaying a specific feature of the project. For larger projects, it was also necessary to produce an index map along with a series of supporting map sheets. This, too, was implemented through custom coding.

### **3.5 ArcGIS Experience Builder**

With the deprecation of Web AppBuilder by Esri, all three web applications (MFT, PST 2.0, and JD) were migrated to ArcGIS Experience Builder late in Phase 2. Experience Builder is Esri's next-generation web application development platform designed to provide greater flexibility, modern user interface design, and improved performance. Like Web AppBuilder, it is a browser-based environment, but it allows for more dynamic layouts, customizable widgets, and seamless integration of 2D and 3D content within a single application. Experience Builder is built on the ArcGIS API for JavaScript 4.x, which supports modern web standards and advanced visualization capabilities. The following are key advantages of using Experience Builder:

- Drag-and-drop interface with support for responsive, multi-page layouts.
- Built-in widgets for mapping, charting, filtering, and data visualization.
- Ability to connect multiple data views and actions across widgets.
- Support for custom widget development using the latest JavaScript framework.
- Enhanced integration with ArcGIS Online and Enterprise content and services.
- Improved performance and user experience across devices and screen sizes.



## CHAPTER 4: WEB APPLICATIONS AND SMART FORMS

### 4.1 Introduction

The following section outlines the key features and functionalities of the developed web apps and smart forms.

### 4.2 Mitigation Forecasting Tool

The external MFT webapp is an ArcGIS Dashboard application designed to provide the banking community with projected wetland and stream impacts across the state and by individual watershed in South Carolina. Figure 4-1 shows a screenshot of the dashboard. As illustrated, the interface includes two text widgets (for the title and disclaimer), four infographic widgets displaying key impact metrics, a listing widget showing relevant transportation projects, and a selection widget that allows users to filter results by watershed.

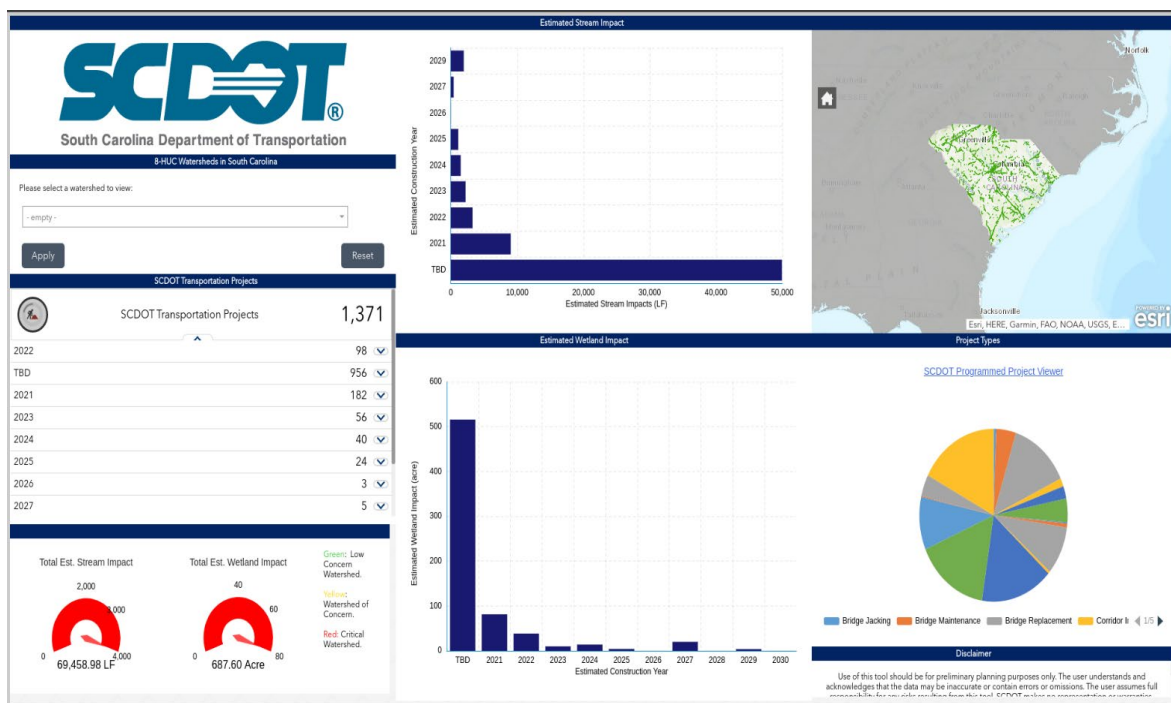


Figure 4-1. External MFT dashboard

By default, the dashboard displays projected impacts for the entire state. To view impacts by watershed, the user can use the selection widget to choose a specific watershed, as shown in Figure 4-2. Once a watershed is selected, the data in the four infographic widgets automatically updates to reflect the selected area. Additionally, users can hover over the charts within each infographic widget to reveal more detailed information.

## 8-HUC Watersheds in South Carolina

Please select a watershed to view:

- empty -

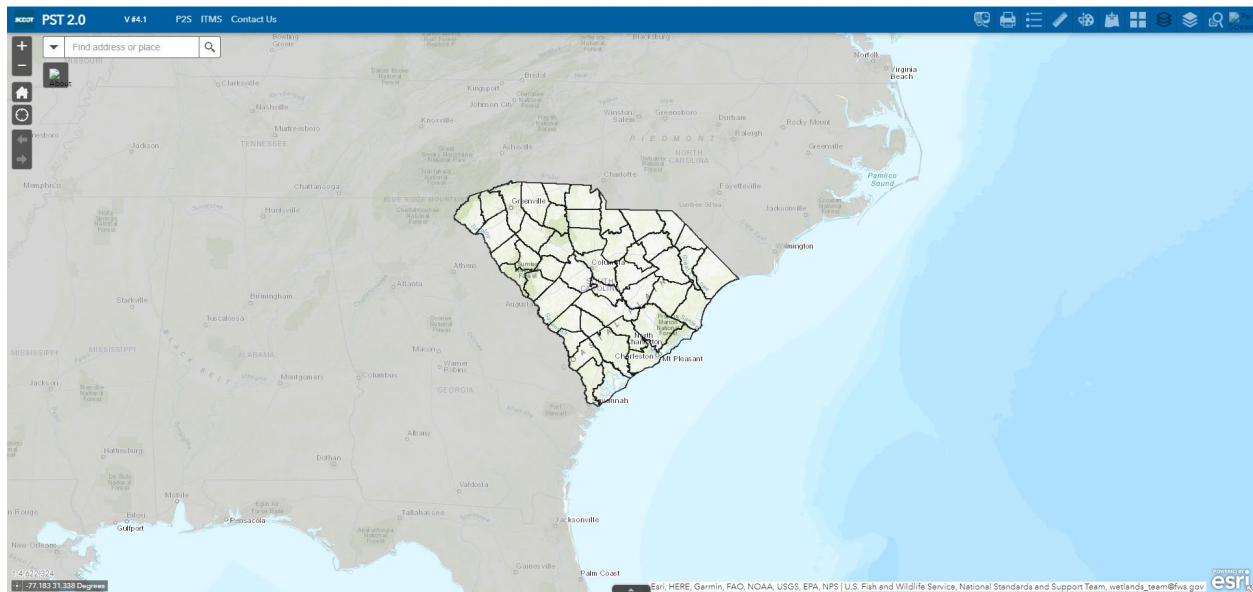
Apply

Reset

**Figure 4-2. Selection widget to filter results by watershed**

### 4.3 Project Screening Tool (PST 2.0)

Figure 4-3 displays the default view of PST 2.0, which is accessible only to authorized SCDOT staff, including ESO personnel and select individuals outside of ESO. This view appears after the user successfully logs in with a valid ArcGIS Portal or ArcGIS Online account and accepts the disclaimer. With the exception of the external MFT webapp, all other web applications and smart forms require an active Esri license.

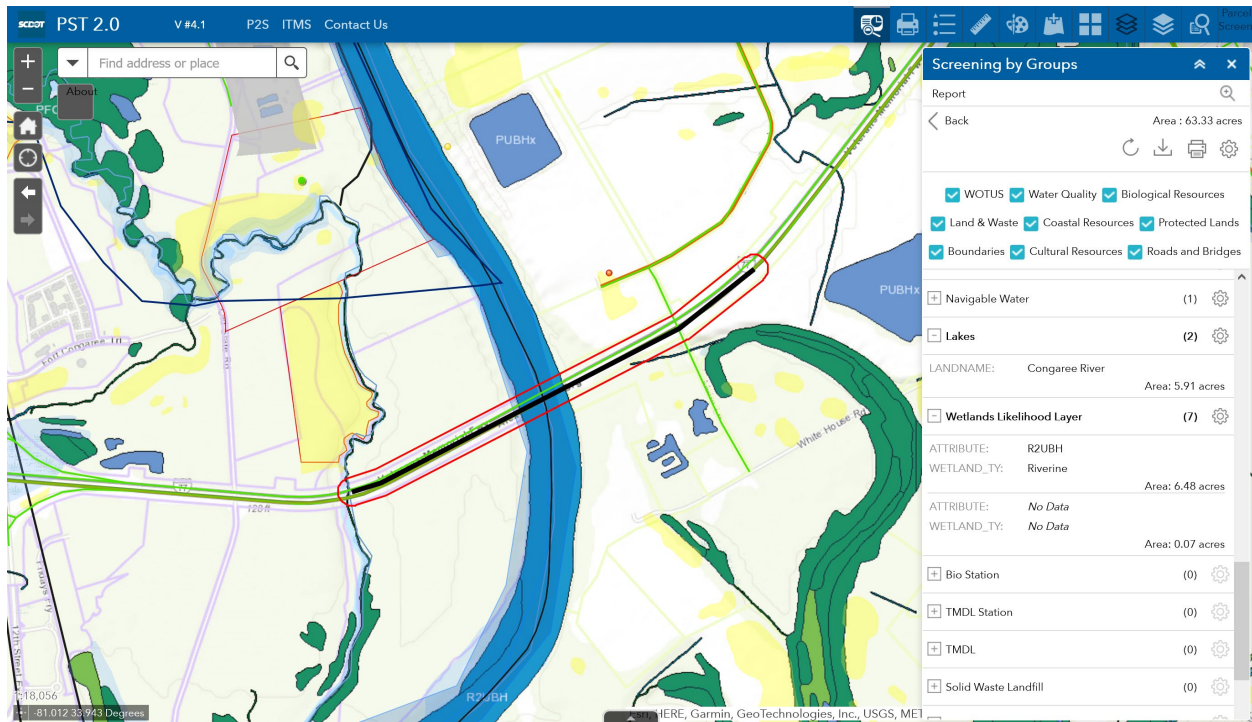


**Figure 4-3. PST 2.0 default view**

The user can screen a project using a number of options: 1) enter the project ID or project name in the “Find address or place” within the “Screening by Groups” widget, 2) draw the project’s centerline and indicate a buffer or draw the project’s boundary, 3) upload the shapefile of the project, or 4) using the Query widget and specify the route type, route number, beginning mile point, ending mile point, and county. Once the desired project/area is specified, the screening results can be obtained by clicking on the “Report” button.

The screening analysis uses the following data layers: 1) Water (WOUS), 2) water quality, 3) biological resources, 4) land and waste, 5) coastal resources, 6) protected lands, 7) boundaries, 8) cultural resources, and 9) roads and bridges. By default, all these data layers are selected. However, users may unselect some of these if they are not needed for the screening report.

Once the screening analysis is complete, users can view the project's environmental impacts, as shown in Figure 4-4. If any impacted data layers are identified (i.e., the analysis returns a non-zero value), users can expand those layers to view additional details.



**Figure 4-4. PST 2.0 screening analysis results showing data layers being impacted**

The screening report can be obtained by clicking on the “Print” button. Page one of the report shows a map of the project area (see Figure 4-5). This is followed by a summary of the impacts and detailed information about each impact as illustrated in Figure 4-6.

The majority of the data layers in PST 2.0 are dynamically linked through Representational State Transfer (REST) services provided by other organizations. The advantage of using this approach is that when the data are updated by other agencies, they are automatically updated in PST 2.0. Table 4-1 provides the source of each data layer. The layers associated with cultural resources were downloaded from ArchSite (<http://www.scarhsite.org/>). The SCDOT ESO will be responsible for monitoring changes to the data layers and will coordinate with IT/GIS staff to have the necessary layers updated.



### Area of Interest (AOI) Information

Area : 3.21 acres

Buffer: 15 Feet

Feb 8 2022 10:33:00 Eastern Standard Time



Figure 4-5. Page 1 of PST 2.0 report showing project area

## Summary

Name	Count	Area(acres)	Length(ft)
Other Roads	1	N/A	12.90
Watershed	1	3.21	N/A
Ecoregion	1	3.21	N/A
Historic Structures	1	N/A	N/A
Survey Lines	1	N/A	1,913.41
Navigable Water	1	N/A	31.90
USGS Streams	1	N/A	31.90

## Other Roads

#	STREET_NAM	ROUTE_TYPE	ROUTE_NUMB	Length(ft)
1	BRYANT CIR	L-	3,731	12.90

## Watershed

#	Basin	HUC 8	Area(acres)
1	Catawba	03050101	3.21

## Ecoregion

#	L4_KEY	L3_KEY	Area(acres)
1	45b Southern Outer Piedmont	45 Piedmont	3.21

## Historic Structures

#	Site_Numbe	Report_Tit	NR_Eligibi	Address	Count
1	3844	Phase I Cultural Resources Survey of the US 321 Bridge over Allison Creek	Not Eligible	US 321/ Filbert Highway at Allison Creek	1

## Survey Lines

#	Survey_nam	Survey_Dat	Length(ft)
1	Phase I Cultural Resources Survey of the US 321 Bridge over Allison Creek	2017	1,913.41

## Navigable Water

#	NAME	GNIS_Name	Length(ft)
1	Allison Creek	No Data	31.90

## USGS Streams

#	NAME	Length(ft)
1	Allison Creek	31.90

**Figure 4-6. PST 2.0 report showing summary and detailed impact information**



**Table 4-1. List of data layers in PST 2.0 and their sources**

<b>Group</b>	<b>Layer</b>	<b>Attribute Naming</b>	<b>Source</b>
Boundary	Counties	County ID; County Name; Engineering District	SCDOT Server
	Cities	Name	SCDOT Server
	COG	Name	SCDOT Server
	Watershed	Name; 8 Hydrologic Unit Code	USGS - Rest Service
	Ecoregion	Level 3 Ecoregion	SCDOT Server
Roads & Bridges	Statewide Bridges	Route Type; Route Number; Structure ID; Mile Point	SCDOT Server
	Other Roads	Street Name; Route Type; Route Number	SCDOT Server
	State Highways	Route Number; Route Type; Street Name	SCDOT Server
Biological Resources	T & E Species	Scientific Name; Common Name; National Ranking; Occurrence Location	<a href="#">U.S. Fish &amp; Wildlife Service - Rest Service</a>
	Statewide Element Occurrence's	Scientific Name; Common Name; Category; Federal Protection; Date Last Observed	<a href="#">U.S. Fish &amp; Wildlife Service - Rest Service</a>
	T & E Critical Habitat	Common Name; Scientific Name; Listing Status	<a href="#">U.S. Fish &amp; Wildlife Service - Rest Service</a>
	Oyster Habitat Corridor		<a href="#">U.S. Fish &amp; Wildlife Service - Rest Service</a>
	Bald Eagle Nests		<a href="#">U.S. Fish &amp; Wildlife Service - Rest Service</a>
Cultural Resources	Archaeological Point	Site Number; National Register of Historic Places Status	USC - Rest Service
	Civil War Earthworks	Resource Number; Report Title	USC - Rest Service
	Historic Structures	Site Number; Report Title; National Register Eligibility; Address	USC - Rest Service
	National Register Points	Resource Number; Certification; Address	USC - Rest Service
	Restricted National Register Points	Resource Number; Certification;	USC - Rest Service

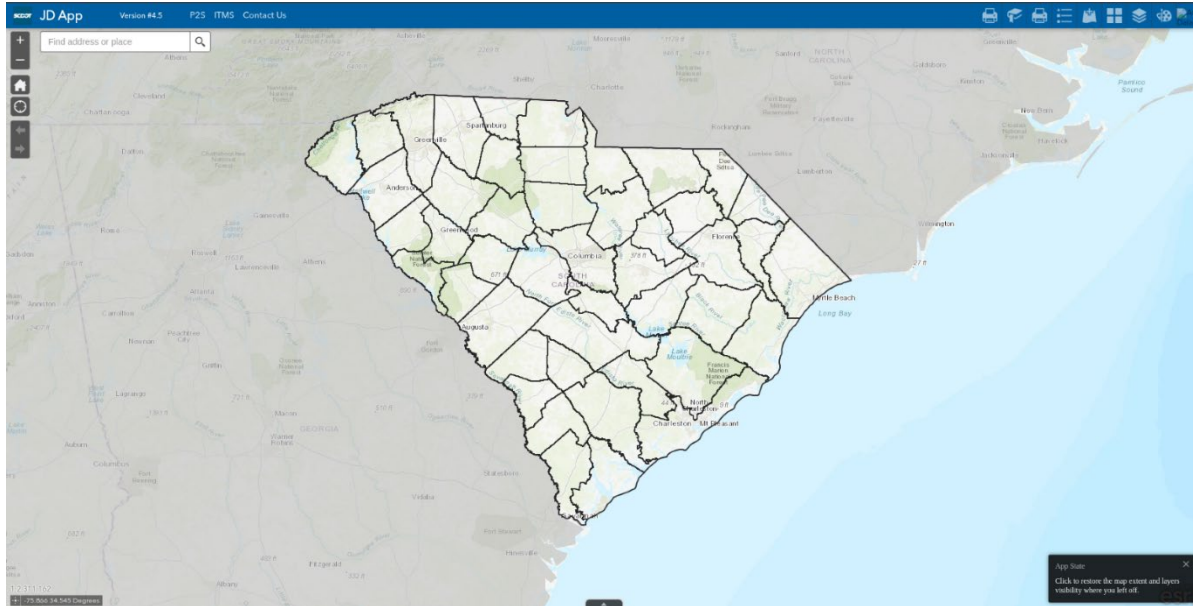
Group	Layer	Attribute Naming	Source
	Survey Lines	Survey Name; Survey Date	USC - Rest Service
	Archaeological Site	Project; Site Number	USC - Rest Service
	Survey Areas	Survey Name; Survey Date	USC - Rest Service
	Historic Areas	Site Number; Resource Number; National Register Eligibility; Report Title	USC - Rest Service
	National Register Polygon	Resource Number; Address; Certification	USC - Rest Service
	Restricted National Register Polygon	Resource Number	USC - Rest Service
Coastal Resources	Shellfish Monitoring Station		SCDNR - Rest Service
	Critical Area Boundary		SCDNR - Rest Service
	Shellfish Classification		SCDNR - Rest Service
	SCDNR Oyster Habitat		SCDNR - Rest Service
	SCDNR Oyster Beds		SCDNR - Rest Service
Protected Lands	NWF Wildlife Refuges Area	Name	NWF- Rest Service
	NRCS Easements	Easement Name	NRCS - Rest Service
	Heritage Preserves	Name	USFS - Rest Service
	Parks	Name	USFS - Rest Service
	US Forest	Name	USFS - Rest Service
	Wildlife Management Areas	Name	NWF- Rest Service
WOTUS	Navigable Water	Name; GNIS Name	USGS - Rest Service
	Lakes	Lake Name	SCDNR - Rest Service
	NWI		NWI - Rest Service
	Wetlands Likelihood Layer		USC - Rest Service

<b>Group</b>	<b>Layer</b>	<b>Attribute Naming</b>	<b>Source</b>
Water Quality	DHEC 303 D Listed Stream	Station; Description; Waterbody Use; Status; Impairment	SCDHEC - Rest Service
	Bio Station	Station	SCDHEC - Rest Service
	Station	Station	SCDHEC - Rest Service
	TMDL	Technical Report & TMDL; Waterbody	SCDHEC - Rest Service
Land and Waste	Solid Waste Landfill		SCDHEC - Rest Service
	Underground Storage Tank		SCDHEC - Rest Service
	Above Ground Storage Tank	Main Point; Name; Site	SCDHEC - Rest Service
	CERCLA	EPA ID Number; Site Name; Site Type	SCDHEC - Rest Service
	Compliance and Enforcement	File Name; EPA ID Number; Address	SCDHEC - Rest Service
	Dry Cleaners	Facility; Address; Project Number	SCDHEC - Rest Service
	Leaking Underground Storage Tank	Site Number; Local Address	SCDHEC - Rest Service
Others	minority	Name	SCDHEC - Rest Service
	Soil Classification	Soil Name; Soil Symbol; Soil Key	USGS - Rest Service

#### 4.4 Jurisdictional Determination Webapp

Figure 4-7 shows the default view of the JD webapp. This view is shown after the user has provided a valid ArcGIS Portal/Online login credential and accepted the disclaimer.





**Figure 4-7. JD webapp default view**

To create the standard seven maps that are needed for every JD application, the user will first need to upload four different shapefiles: 1) wetland boundary shapefile (polygon), 2) non-wetland water shapefile (can be line or polygon), 3) project data points shapefile (multipoint), and 4) project boundary shapefile (polygon). The uploaded files must follow a specific naming convention as indicated in the app. Once the shapefiles are uploaded, the maps' header information, such as author, project name, project ID, and acreage, can be specified by selecting the JD Print widget. Clicking on the "Print ePermit Maps" button will generate seven maps in PDF format: 1) location map, 2) project location map, 3) aerial photo map, 4) topographic map, 5) soil survey map, 6) NWI map, and 7) jurisdictional feature map. These maps will need to be downloaded onto the local drive and uploaded when completing the JD application using the JD smart form.

#### **4.5 Jurisdictional Determination App**

Figure 4-8 shows a condensed view of the JD app after the user has provided a valid ArcGIS Portal/Online login credential. As shown, the first three sections of the smart form are identical to those of the paper form. The questions within each section are also identical to those found in the paper form. Only the method of completing the form is different. The use of the smart form facilitates data entry. For example, by using the provided map to indicate the project site, the city, county, latitude, and longitude will be auto populated. Also, by selecting the name of the SCDOT requestor, the phone and email address of the selected person will be auto populated, as well as the address of the SCDOT.

The last two sections of the JD smart form are added functionalities. The section titled "Supporting Documentation" requests the user to upload: 1) maps for the project (these are the seven maps generated by the JD webapp), 2) source files / shapefiles used to create the maps, 3) summary feature table, 4) wetland determination data form, and 5) photo log. In the section titled "Review Status," if the user indicates the application is ready for SCDOT review, then the SCDOT requestor will also receive a copy of the email and JD report. Otherwise, only the user will receive the email and copy of the JD report.

ArcGIS Survey123

Jurisdictional Determination

**SCDOT**  
South Carolina Department of Transportation

- Property and Agent Information
- Reason for Request
- Type of Request
- Supporting Documentation
- Review Status

✓

Figure 4-8. JD smart form condensed view

#### 4.6 General Permit App

Figure 4-9 shows the first page of the GP app after the user has provided a valid ArcGIS Portal/Online login credential. Unlike the JD smart form, the layout and structure of the GP smart form differ significantly from the original paper form in terms of sections and questions. However, the final output, the generated report, closely mirrors the format and content of the original paper version.

ArcGIS Survey123

General Permit

**SCDOT**  
South Carolina Department of Transportation

**Basic Project Information**

Project ID *	Project Title *
Project Type	Is there a NEPA document?
Construction obligation date	Please upload joint federal and state application <a href="#">form</a> . File size cannot exceed 10 MB. Break up document as needed using logical break points.

Location

33.997°N 81.035°W

Columbia

1 of 10

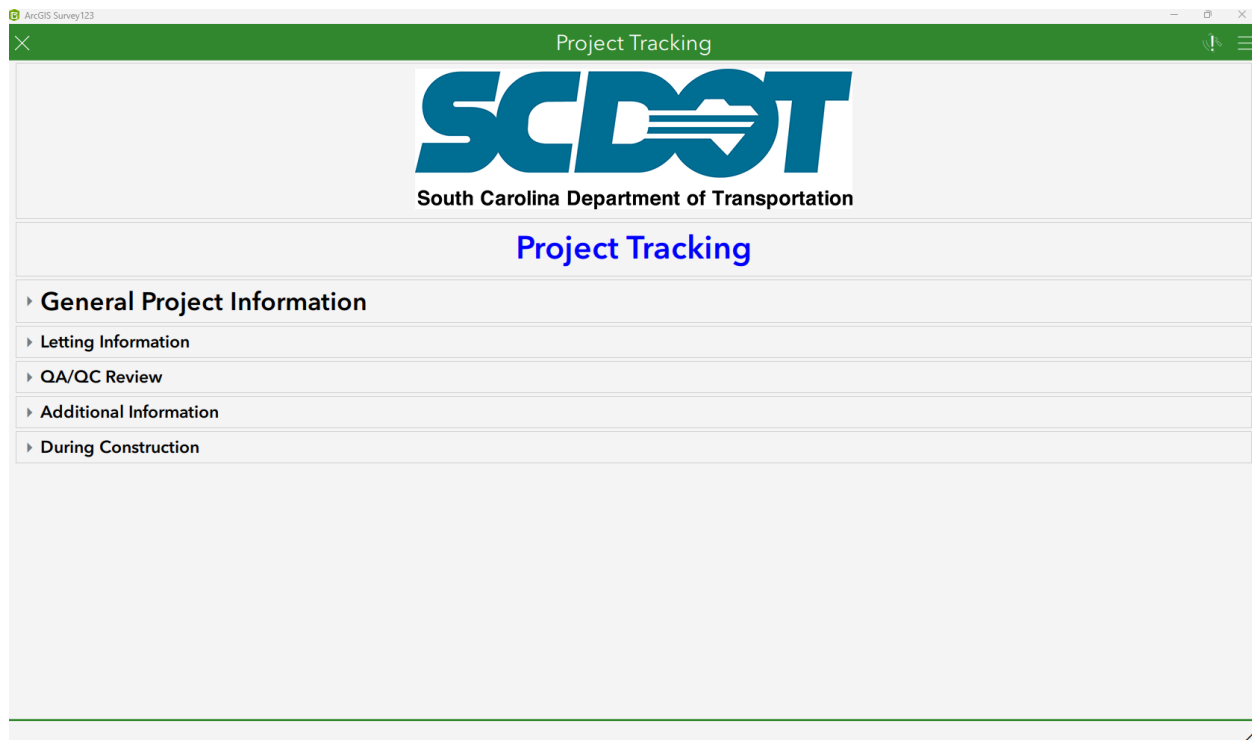
✓

Figure 4-9. Page 1 of GP smart form

As shown in Figure 4-9, page 1 of the GP smart form requests the user to provide basic project information. Page 2 requests detailed project information. Pages 3, 4, and 5 request project impacts information for freshwater wetlands, tidal wetlands, and streams. These pages implement the mitigation credit table and worksheet. Page 6 shows the overall project impacts based on entry on pages 3, 4, and 5. Page 7 requests the user to indicate the avoidance and minimization measures taken for the project. This page was designed to allow the SCDOT to take credit for the avoidance and measures taken without complicating the data entry process. Pages 8, 9, and 10 request information regarding mitigation for freshwater wetlands, tidal wetlands, and streams, respectively. These pages appear only if the user had indicated an impact on pages 3, 4, or 5. Page 11 requests the user to provide supplemental information, including: 1) endangered species act, 2) essential fish habitat, 3) section 106 properties, 4) floodplains, 5) critical area delineation, and 6) permit drawings. The last page asks for names and email addresses of the consultant and SCDOT requestor. As is the case with the JD smart form, if the user indicates the application is ready for SCDOT review, then the SCDOT requestor will also receive a copy of the email and GP report. Otherwise, only the consultant will receive the email and copy of the GP report.

#### **4.7 Project Tracking App**

Figure 4-10 shows a condensed view of the Project Tracking app after the user has provided a valid ArcGIS Portal/Online login credential. The Project Tracking app allows the SCDOT to journal important details for each project as it progresses through pre-construction, construction, and nears completion. Once a project approaches letting (contractor bid), this app is used to record information such as dates of letting, NEPA completion, permit expirations, and pre-construction meeting. Information regarding quality control and assurance review, particularly checklist status, is also entered into this app. As construction starts, details of the construction progress including bridge demolition completion and stop work orders are noted in this app. This app serves as a centralized source for tracking and communicating a project's environmental status, ensuring that all parties share a clear understanding of its progress and requirements. After submitting the form, the user receives an email with a formatted report in PDF or WORD format that presents the submitted data in a structured table format.



**Figure 4-10. Project Tracking condensed view**

#### 4.8 Pre-Letting Checklist App

Figure 4-11 shows the first page of the Pre-Letting Checklist app after the user has provided a valid ArcGIS Portal/Online login credential. The Pre-Letting Checklist app is used to perform an in-depth quality control review before letting. Each page of the app goes through specific components of the project. The questions ensure that the Compliance Division has identified common issues early in the process when project managers can field questions, communicate with engineers, and alter details before construction. This is the most comprehensive of the four compliance-focused apps, and as a result, also the longest. In order, the checklist goes through NEPA, USACE permits, navigational permits, construction plans, contract/proposal, MOA/MOU, and compliance inspection determination. Full reviews of the project are essential for fully understanding the project and communicating the necessary environmental commitments. After submitting the form, the user receives an email with a formatted report in PDF or WORD format that presents the submitted data in a structured table format.

Pre-Letting Checklist

**SCDOT**  
South Carolina Department of Transportation

**Pre-Letting Checklist**

General Project Information

Project Name \*

SCDOT PIN

Contract ID \*

Location

33°60'N 81°2'W

Latitude of Project Center Point

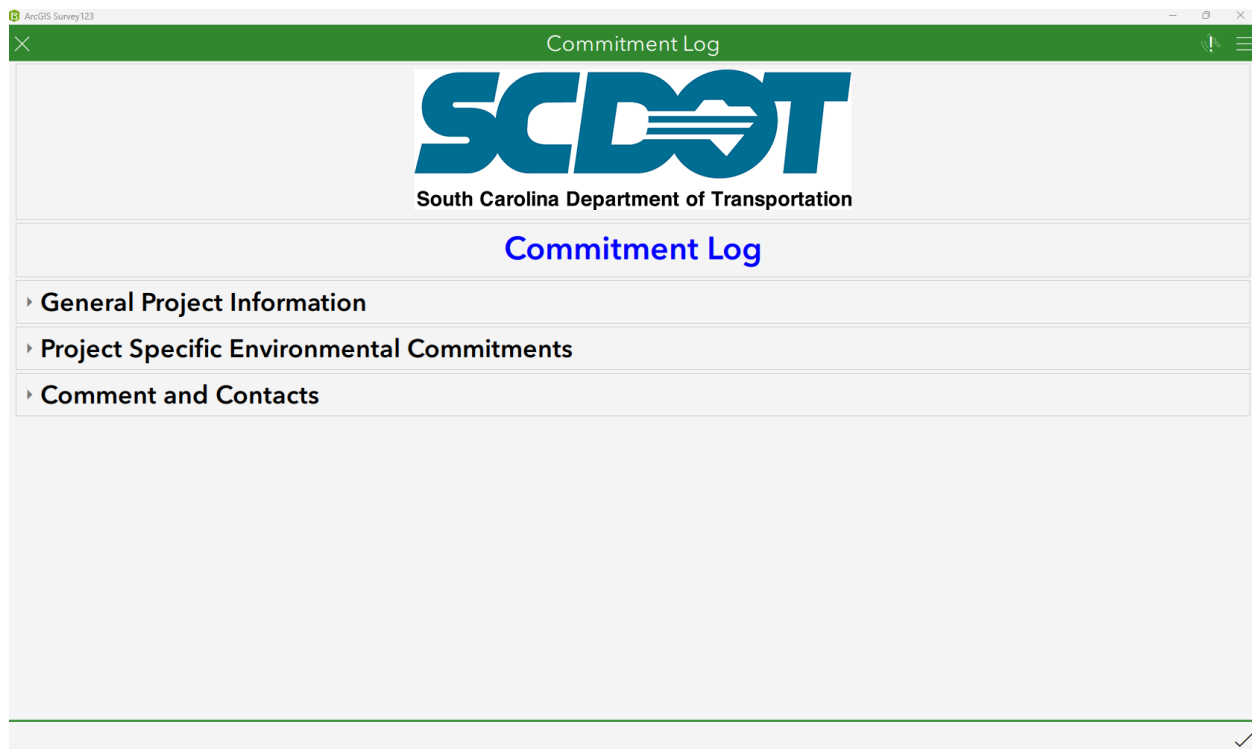
33.996732

1 of 8

**Figure 4-11. Page 1 of Pre-Letting Checklist app**

#### 4.9 Commitment-Log App

Figure 4-12 shows a condensed view of the Commitment-Log app after the user has provided a valid ArcGIS Portal/Online login credential. The Commitment Log app allows for documentation of all permit or NEPA commitments, actions, and completion dates. The entry of specific environmental documents and commitments is available as dropdown options to ensure consistency in the documentation of each commitment. Users can document both the “Commitment” and corresponding “Commitment Action” directly within the app. After submitting the form, the user receives an email with a formatted report in PDF or WORD format that presents the submitted data in a structured table format.



**Figure 4-12. Commitment-Log app condensed view**

#### **4.10 Inspection Report App**

Figure 4-13 shows a condensed view of the Inspection Report app after the user has provided a valid ArcGIS Portal/Online login credential. Environmental Inspectors and SCDOT compliance staff utilize the Inspection Report app to document areas of concern or highlights of the project. The report covers the basics of the project and details of the inspection, which includes the environmental status, permit compliance information, observed offsite impacts, along with uploaded pictures with remarks regarding issues or resolutions. Inspectors/users are required to provide their signatures to complete the report. The report provides inspection status colors for effective and efficient construction tracking, highlighting specific areas of the project that require attention. After submitting the form, the user receives an email with a formatted report in PDF or WORD format that presents the submitted data in a structured table format.

ArcGIS Survey123

Inspection Report

**SCDOT**  
South Carolina Department of Transportation

**Inspection Report**

▸ General Project Information

▸ Inspection Information

General Comments

▸ Report Format

▸ Consultant's Signature

✓

**Figure 4-13. Inspection Report condensed view**

#### **4.11 Summary of Compliance Apps**

The Inspection Report and Commitment Log apps are primarily used by inspectors and consultants, while the Tracking and Pre-Letting Checklist apps are primarily used by internal SCDOT environmental staff. Information entered into the apps is stored in a centralized workspace, allowing users to easily search app inboxes and access prior submissions, regardless of who entered them. This centralized structure ensures continuity and transparency across projects. The apps also enable the tracking of review milestones, identification of recurring issues in project development, and more effective communication between ESO staff and project teams. Data collected from all four applications is integrated into Power BI, enabling the SCDOT Environmental Compliance Division to analyze project trends and make decisions on where to focus efforts to achieve and maintain environmental compliance throughout the State.

## **CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusions**

Phase 2 of this project focused on expanding and enhancing SCDOT's digital environmental management tools to further reduce project delivery risks and strengthen compliance processes. The previously developed tools (MFT, PST 2.0, and JD web apps; JD and ePermit smart forms) were updated based on feedback from end users. Enhancements included improvements to the user interface, functionality, and reporting capabilities. In addition, four new smart form applications were developed: Project Tracking, Pre-Letting Checklist, Commitment Log, and Inspection Report. These tools were deployed in July 2022 and are now actively used by SCDOT staff and on-call consultants. Collectively, these tools position SCDOT among leaders in the U.S. in the use of digital platforms for environmental permitting and compliance.

The implementation of the digital tools developed in this project has delivered several measurable and operational benefits for SCDOT. One of the most significant outcomes has been the improved relationship between SCDOT and the mitigation banking community through the use of the external MFT. By providing visibility into projected wetland and stream impacts across watersheds, the MFT has helped reduce mitigation-related risks and encouraged the development of new mitigation banks, with several additional banks currently under review for approval.

The Project Screening Tool (PST 2.0) has led to substantial time savings for ESO staff, with an estimated reduction of 20 to 25 hours per month. This gain is based on the average monthly volume of one feasibility report and four to five project screenings. Similarly, the ePermit smart form has helped reduce consultant time on contract by approximately 30 to 40 hours per month, based on an average of two general permits submitted monthly. These efficiencies translate to meaningful cost savings for SCDOT. Beyond time and cost savings, the use of the ePermit tool reduced the review time of general permits by USACE from an average of 119 days in 2022 to 70 in 2023 and 44 in 2024.

Phase 2 also introduced four new app-based smart forms for the Compliance Division: Project Tracking, Pre-Letting Checklist, Commitment Log, and Inspection Report. These tools were deployed in July 2023 and are now actively used by SCDOT staff and on-call consultants to document, monitor, and track environmental commitments and inspection results throughout the project lifecycle. When combined with Power BI, the data from these applications provides the Compliance Division with a real-time view of project status, enabling it to focus efforts where they are most needed. Collectively, these tools have strengthened SCDOT's ability to achieve and maintain environmental compliance statewide.

### **5.2 Recommendations**

Building on the successes of Phases 1 and 2, it is recommended that SCDOT continue advancing its digital permitting, mitigation, and compliance tools through the Phase 3 work plan. The overarching goal is to optimize these systems by maintaining and enhancing existing applications, integrating additional datasets from USACE and other SC agencies, and exploring emerging technologies to further streamline environmental review and compliance processes.

Key recommendations include:



1. Migrate to Experience Builder: With ESRI retiring Web AppBuilder in 2025, migrate GIS-based applications (PST, MFT, and JD) to Experience Builder and deploy them on SCDOT's new ArcGIS Server. This transition will improve functionality, adaptability, and integration with future technologies.
2. Upgrade PST 3.0 to incorporate sister agencies' review requirements, including the key criteria they prioritize during project evaluations, and aim to replicate the USACE platform and screening process.
3. Enhance the JD mapping program to improve usability and add index mapping features that support larger projects.
4. Update the ePermit Tool: Revise the ePermit application to meet updated USACE requirements, including the integration of the Stream Quantification Tool for mitigation credit calculations, and prepare it for the new General Permit form anticipated in 2025.
5. Explore Emerging Technologies:
  - Develop standardized templates for permit drawings and evaluate AI-assisted review capabilities for error detection and compliance verification.
  - Create AI models to predict wetland impacts using multispectral imagery, elevation data, and deep-learning techniques.
  - Explore AI-driven auto-generation of Categorical Exclusion NEPA documents.
  - Enhance ePermit reports with AI-generated summaries of technical findings.
6. Develop a Mitigation Tracking Database: Create a centralized, map-enabled system for tracking mitigation credits across the state's mitigation banks. This tool will provide real-time visibility into available credits, geographic service areas, and historical usage trends.

### **5.3 Implementation Plan**

All Phase 2 applications (updated MFT, PST 2.0, and JD web apps; enhanced JD and ePermit smart forms; and four new compliance-focused smart forms) have been transferred to SCDOT IT for long-term hosting and maintenance. During Phase 2, when updates to the web apps were required, the project team placed deployment files in the designated ProjectWise folder for SCDOT IT staff to deploy. Updates to the smart forms were provided directly to SCDOT IT via email for deployment.

Because the enhancements were introduced incrementally in response to SCDOT's specific requests, formal training was generally unnecessary. Instead, brief demonstrations of new functionality were provided to SCDOT users, who then relayed the information to on-call consultants.

Freshdesk, a cloud-based customer support platform set up by SCDOT IT for this project, continues to serve as the primary system for end users to report issues with any of the web apps or

smart forms. Reported issues are first addressed by the project team and escalated to SCDOT IT when they involve server access, user credentials, or other IT-related matters.

The migration of the web apps from ArcGIS Web AppBuilder to ArcGIS Experience Builder began near the end of Phase 2 but was not completed within the project timeframe. The remaining migration tasks will be finalized in Phase 3.

## **APPENDIX A: REPORT TEMPLATES**

1. JD
2. General Permit
3. Project Tracking
4. Pre-Letting Checklist
5. Commitment-Log
6. Inspection Report



August 10, 2025

Mr. Brad Cary  
U.S. Army Corps of Engineers  
Regulatory Division  
69-A Hagood Avenue  
Charleston, SC 29403

**Re:** Request for Jurisdictional Determination  
Old Mount Holly Road Improvements  
Berkeley County, South Carolina  
SCDOT Project ID: P044222

Dear Mr. Cary:

The South Carolina Department of Transportation (SCDOT) or a contracted consultant performed a jurisdictional delineation of the project study area associated with the Old Mount Holly Road Improvements project in Berkeley County, South Carolina. Waters of the U.S. were identified and delineated within the approximate 26-acre project study area following the accepted methodology of the U.S. Army Corps of Engineers (USACE). Please see the enclosures for additional details.

In compliance with the Section 404 permitting process, we are requesting regulatory agency verification of these delineations. If additional information is needed and to schedule an on-site review of the project area as necessary, please feel free to contact me at BeckhamJC@scdot.org or 803-737-1332. Thank you in advance for your assistance with this project.

Sincerely,

Chris Beckham  
Environmental Permits Manager

Enclosures

**cc:** M. Sean Connolly, SCDOT,

File: Env

Post Office Box 191  
955 Park Street  
Columbia, SC 29202-0191



www.scdot.org  
An Equal Opportunity  
Affirmative Action Employer  
855-GO-SCDOT (855-467-2368)

U.S. Army Corps of Engineers – Charleston District - Regulatory Division  
**REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD) / DELINEATION**  
(For Jurisdictional Status and Identifying Wetlands and Other Aquatic Resources)

**I. PROPERTY AND AGENT INFORMATION**

» **A. Site Details/Location**

Site Name: Old Mount Holly Road Improvements	
Date: July 7, 2025 9:56 AM	Acreage: 26
City/Township/Parish: Goose Creek	County: Berkeley County
Latitude: 33.0327366	Longitude: -80.0509238
Tax Map Sequence (TMS) #(s):	Property Address(es):

» **B. Requestor of Jurisdictional Determination/Delineation**

Name: Chris Beckham	
Company Name (if applicable): SCDOT	
Address: 955 Park Street, P.O. Box 191, Columbia, SC 29201-3959	
Phone: 803-737-1332	
Email: BeckhamJC@scdot.org	
Property Ownership:	<input type="checkbox"/> I currently own this property
	<input type="checkbox"/> I plan to purchase this property
	<input checked="" type="checkbox"/> Other

» **C. Agent/Environmental Consultant Acting on Behalf of the Requestor**

Consultant/Agent Name: JonMarc Smith
Company Name: HDR
Address: 400 Leeds Ave Suite 450, North Charleston, SC 29405
Phone: 843-608-4712
Email: jonmarc.smith@hdrinc.com

**II. REASON FOR REQUEST** *(Check all that apply)*

- ☐ I intend to construct/develop a project or perform activities on this site which would be designed to avoid all aquatic resources.
- ☐ I intend to construct/develop a project or perform activities on this site which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
- ☒ I intend to construct/develop a project or perform activities on this site which may require authorization from the Corps, and the Jurisdictional Determination would



August 10, 2025

Mr. Brad Cary  
U.S. Army – Corps of Engineers  
Charleston District - Regulatory Division  
69-A Hagood Avenue  
Charleston, SC 29403-5107

Re: Application for Section 404/401 General Permit RGP 4  
SC 133 Bridge Replacement over Crow Creek , Pickens County  
SCDOT Project ID P038324, USACE SAC-2023-00776  
Total Impacts: 0.51 acres of wetland and 0 LF of stream impacts

Dear Mr. Cary:

The South Carolina Department of Transportation (SCDOT) is requesting authorization under Regional General Permit, RGP 4, for unavoidable impacts to jurisdictional waters of the United States associated with the above referenced project.

If necessary, SCDOT will obtain and provide to USACE a copy of all appropriate State certifications and/or authorizations (i.e., 401 Water Quality Certification, State Navigable Waters Permit) prior to commencement of work. In addition, SCDOT agrees to submit a signed compliance certification to USACE within 30 days following completion of the authorized work to include evidence that any required mitigation has been executed.

SCDOT hereby requests that this project be authorized under RGP 4. As SCDOT agrees to meet all terms and conditions of the GP, we respectfully request your concurrence that the proposed work qualifies for authorization under this GP. Please contact me at 737-0940 or SicheloffJA@scdot.org with any questions concerning this GP submittal. Thank you in advance for your assistance with this project.

Sincerely,

Jeff Sicheloff  
Environmental Permits Manager

Enclosures

cc: M. Sean Connolly, SCDOT  
Laura Stevens, Parrish and Partners



## Pre-Construction Notification Form for SCDOT GP RGP#2-8

### » Project Name: S-727 (Shop Road) Widening

<b>Project City:</b> Columbia	<b>Project County:</b> Richland
<b>Latitude of Center Point:</b> 33.963617	<b>Longitude of Center Point:</b> -80.992943
<b>Project ID:</b> P028862	<b>SAC Number:</b> SAC-2018-09922
<b>Project Type:</b> Road Widening	<b>RGP #:</b> RGP 2
<b>Construction Obligation Date:</b> 12/01/2025	<b>SCDOT Engineering District:</b> 3

### » Project Description:

**General Description:** Richland County, in coordination with the SCDOT, proposes to widen a portion of S-727 (Shop Road) located in Columbia, South Carolina. The proposed project begins its intersection with S-15 (George Rogers Boulevard) and extends approximately 2.2 miles to its intersection with South Beltline Boulevard. Bike lanes and sidewalks will also be included in the widening of Shop Road. **Existing Facility:** From George Rogers Boulevard to just past Eastway Drive, Shop Road is a 2-lane roadway with a central designated turn lane. From just past Eastway Drive to Harvest Hope Food Bank, Shop Road is strictly a 2-lane roadway with no designated turn lanes. From Harvest Hope Food Bank to South Beltline Boulevard, Shop Road becomes a 4-lane roadway. The current posted speed limit along Shop Road is 35 mph. The existing roadway includes 12-foot travel lanes with sections of earth shoulders and ditches. No bicycle or pedestrian accommodations currently exist within the project limits except for a section of buffered sidewalks along Shop Road at The Woodlands of Columbia apartment complex. Existing rights-of-way for the majority of the project corridor is 37.5 feet on each side of the centerline. Two (2) railroad corridors cross at-grade (not bridged) along the project vicinity, both located along Shop Road; one crossing right before its intersection with George Rogers Boulevard and one crossing right before its intersection with South Beltline Boulevard. **Proposed Facility:** The project proposes to widen Shop Road to a four-lane roadway with 2:1 slopes, including a central median and a designated



# SCDOT Project Tracking

General Project Information	
Project Name:	Bridge Replacement - S-11-793 over Providence Creek
SCDOT PIN #:	P038059
Contract ID:	1170970
County:	Cherokee
District:	District 4
SCDOT RCE Representative:	
Project Type:	Bridge Replacement
Funding Source:	Federal
Project Bid Type:	Bid Build
Does the project required an Environmental Compliance plan (ECP)?	NA
Date of Approval:	NA

Letting Information	
Initial Letting Date:	June 10, 2025
Revised Letting Date:	June 10, 2025
Actual Letting Date:	June 10, 2025

QA/QC Review		
Latest Review Date:	July 9, 2025	
Checklist Complete?	Complete	
Issue(s):	<input type="checkbox"/> Design <input type="checkbox"/> Contract <input type="checkbox"/> Permit	<input type="checkbox"/> NEPA <input checked="" type="checkbox"/> None
Notes:		
Issue(s) Resolved?	Not Applicable	

Additional Information	
USACE Permit?	Yes
USACE Permit Expiration Date:	September 3, 2026
USACE Permit Type:	GP
Is a Notice of Commencement form required?	Not Applicable
Date Submitted:	
Navigational Permit?	No
Navigational Permit Expiration Date:	N/A
Navigation Permit Type:	N/A
NEPA Document?	Yes





## Environmental Compliance Pre-Letting Checklist

General Project Information	
Project Name:	Bridge Replacement - S-11-793 over Providence Creek
Project ID:	P038059
Contract ID:	1170970
County:	Richland
Project Type:	Bridge Replacement
Checklist Completion Date:	July 9, 2025
Letting Date:	June 10, 2025
RPG PM:	Brian Dix
RCE:	
Funding:	Federal
Type of Review:	<input type="checkbox"/> Partial Project Review <input type="checkbox"/> Full Project Review

### NEPA Review

General	Answer	Task/ Remarks
1. Are all NEPA commitments on file, known, and accounted for?	Yes	
2. Are there Unique NEPA Commitments that need to be included in the Contract?	No	
<b>Environmental Site Assessment - Contamination</b>		
3. UST or Monitoring Wells Onsite?	No	
4. Are UST or Monitoring Well Plan (ESA Phase 1 or 2) included in the Contract and shown on Construction Plans?	No	
<b>Moratoriums</b>		
5. Project Moratoria?	No	
6. Are they accounted for in the Contract?	Yes	
<b>Bird Treaty Act (MBTA)</b>		
7. MBTA included as a NEPA Commitment?	Yes	
8. Does this project need to be on USDA list for MBTA inspection?	Yes	
<b>National Historic Preservation Act (NHPA) Section 4f or Section 6f</b>		
9. Section 4f impacts or Cemeteries listed as a NEPA Commitment?	No	
10. Is temporary barrier fence included in the contract?	N/A	
<b>Endangered Species Act (Section 7)</b>		
11. Section 7 impacts or Endangered Species listed as a NEPA Commitment?	No	



## Commitment Log

General Project Information	
Project Name: S-152 over CSXT Railroad	PIN : P038243
Contract ID: 4368180	USACE Permit Expiration:
Prime Contractor: United Infrastructure Group, Inc.	SCDOT RCE: Wade Warr
Compliance On-Call Consultant: MBI	County: Sumter
Initial Log Date: July 10, 2025	Log Revision Date:

Project Specific Environmental Commitments				
Environmental Document/ Permit	Commitment Category	Commitment	Commitment Action	Completion Date
NEPA-CE	Cultural Resources	The contractor and subcontractors must notify their workers to watch for the presence of any prehistoric or historic remains, including but not limited to arrowheads, pottery, ceramics, flakes, bones, graves, gravestones, or brick concentrations during the construction phase of the project, if any such remains are encountered, the Resident Construction Engineer (RCE) will be immediately notified and all work in the vicinity of the discovered materials and sit work shall cease until the SCDOT Archaeologist directs otherwise.	Monitor and coordinate as needed.	Ongoing
NEPA-CE	UST/ Hazardous Materials	If avoidance of hazardous materials is not viable alternative and soils that appear to be contaminated are encountered during construction, the Department of Environmental Control (DEC) will be informed. Hazardous materials will be tested and removed and/or treated in accordance with the United States Environmental Protection Agency and the DEC requirements, if necessary.	Monitor and coordinate as needed.	Ongoing
NEPA-CE	Cultural Resources	1. Prior to demolition, the existing bridge will be advertised with a thirty day (30) notice period by the SCDOT for alternative used as long as a responsible party agrees to maintain and preserve the bridge. If no third party agrees to maintain and preserve the existing bridge then stipulations two (2) and three (3) will be carried out. 2. SCDOT will fund interpretive display panels at either end of the new bridge. The content of these displays will be determined through coordination between SCDOT and SHPO. The design of the interpretive display will be reviewed and approved by SHPO	Verify that elements of the MOA are implemented.	Ongoing



## Environmental Compliance Inspection Report

General Project Information	
Project Name: I-26 MM 187-194	Project Status: Red <div style="background-color: red; height: 15px; width: 100%;"></div>
Contract ID: 0847050	PIN: P029263
Inspection Date: August 8, 2025	Date of Last Visit: August 4, 2025
On-Call Env. Consultant: CECS, INC	SCDOT RCE: Sarah Gaffney
Contractor Name: Banks	Project Type: Interstate Upgrades/Widening
County: Berkeley	County (if multiple):

Nearest Waterbody:	Timothy Creek, Cypress Swamp, Four Hole Swamp
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**Project Permits (note all that apply):**

<input checked="" type="checkbox"/> NPDES	<input checked="" type="checkbox"/> USACE(404)	<input type="checkbox"/> Nav. Waters	<input type="checkbox"/> Critical Area(BCM)	<input type="checkbox"/> USCG
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Weather Conditions	
Weather Conditions on Day of Inspection:	Cloudy, upper 70s, scattered rain throughout the week

Section 404/401 Compliance	Yes	No	N/A
Work Performed in accordance with project permits:		<input checked="" type="checkbox"/>	
Any Additional Environmental Commitments completed since previous inspection:*		<input checked="" type="checkbox"/>	
Wetlands on site:	<input checked="" type="checkbox"/>		
<i>Jurisdictional:</i>	<input checked="" type="checkbox"/>		
<i>Critical Area:</i>		<input checked="" type="checkbox"/>	
Regulatory Agency Visitors:		<input checked="" type="checkbox"/>	
<i>If yes, who and which agency:</i>			

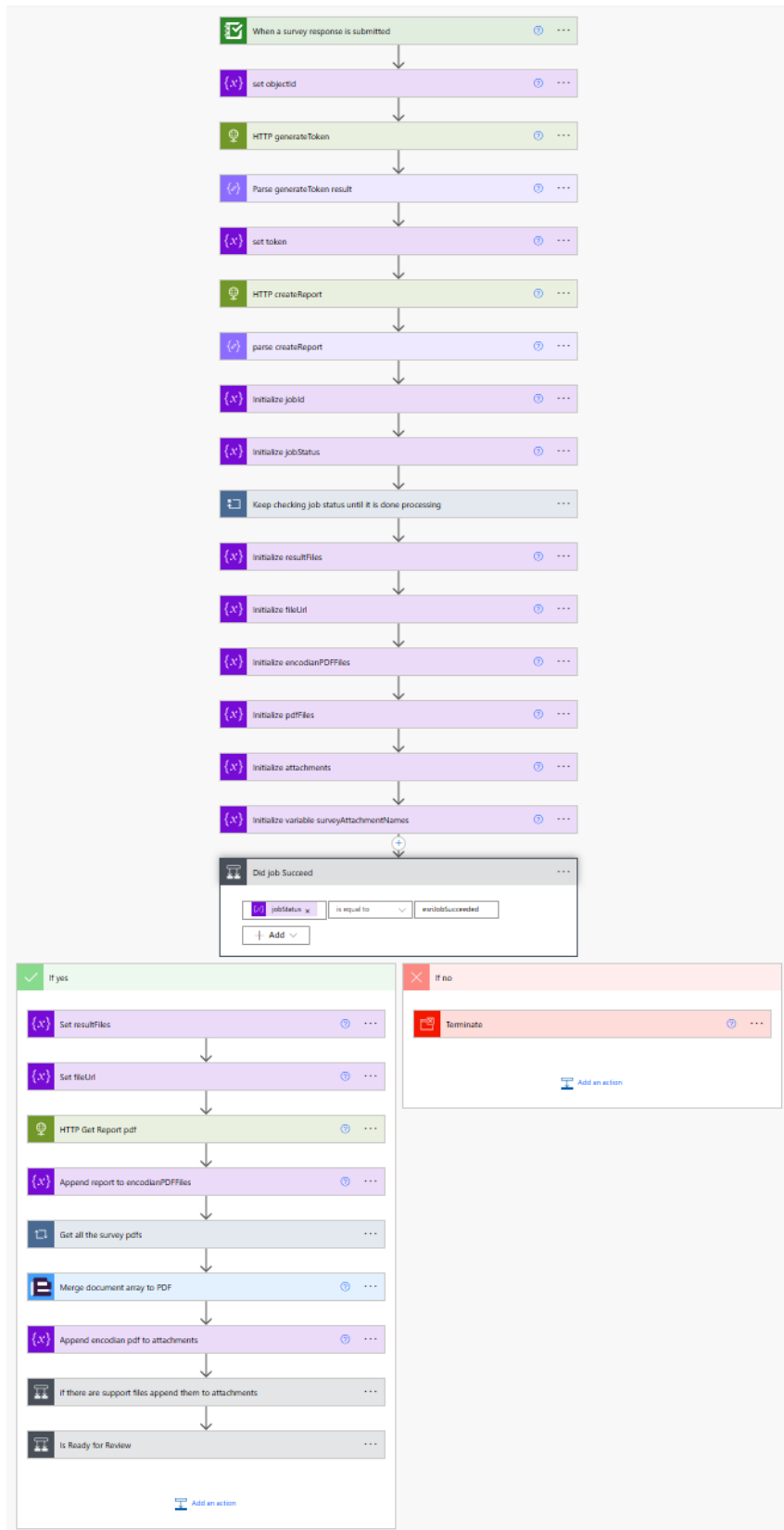
\*If yes, attach updated Commitment Form

Site Observations	Yes	No
Observed Offsite Impacts:	<input checked="" type="checkbox"/>	
How Many Locations?	2	
Observed Offsite Impacts Location and Description: Box culvert 2 (photos 4-6) and lower Rudd Road (photos 16, 17)		
Previous Unresolved Impacts/Concerns:	<input checked="" type="checkbox"/>	
Number of Unresolved Locations:	2	
Notes: Photos 4-6 at box culvert 2 and photo 18 at the Cypress Swamp Bridge		

## **APPENDIX B: AUTOMATION WORKFLOWS**

1. JD
2. General Permit
3. Project Tracking
4. Pre-Letting Checklist
5. Commitment-Log
6. Inspection Report

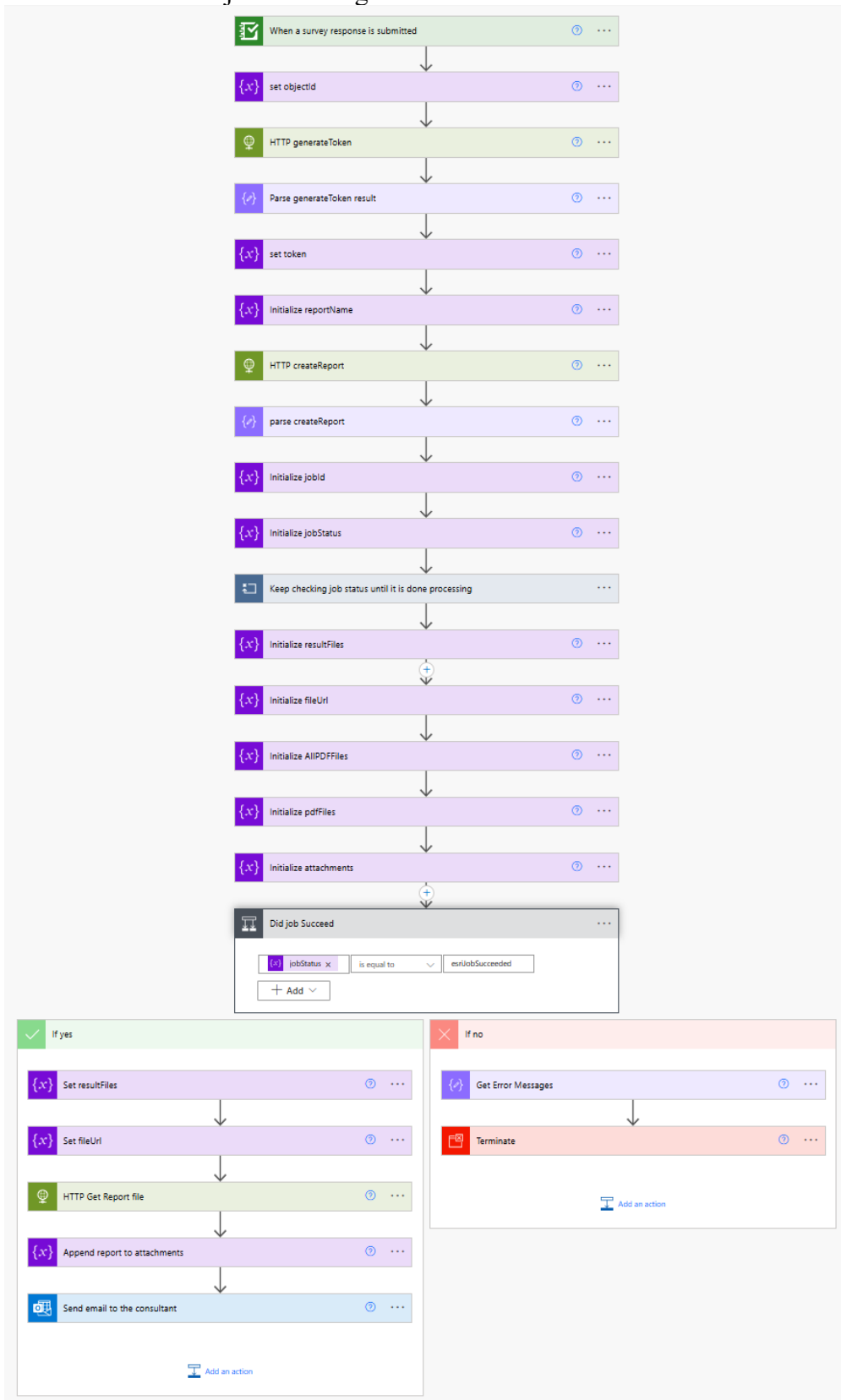
## JD PowerAutomate Workflow



## ePermit PowerAutomate Workflow



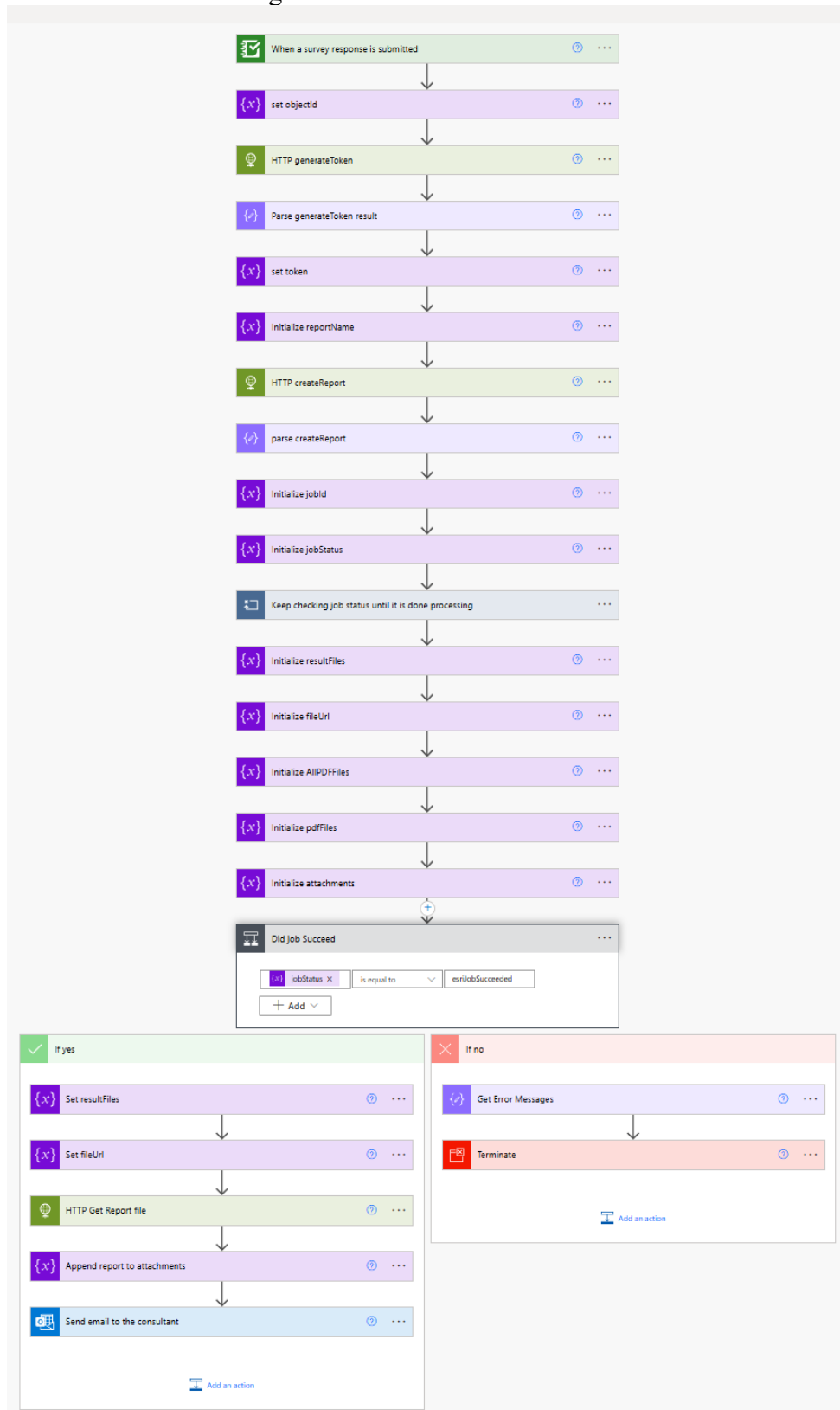
## Project Tracking PowerAutomate Workflow





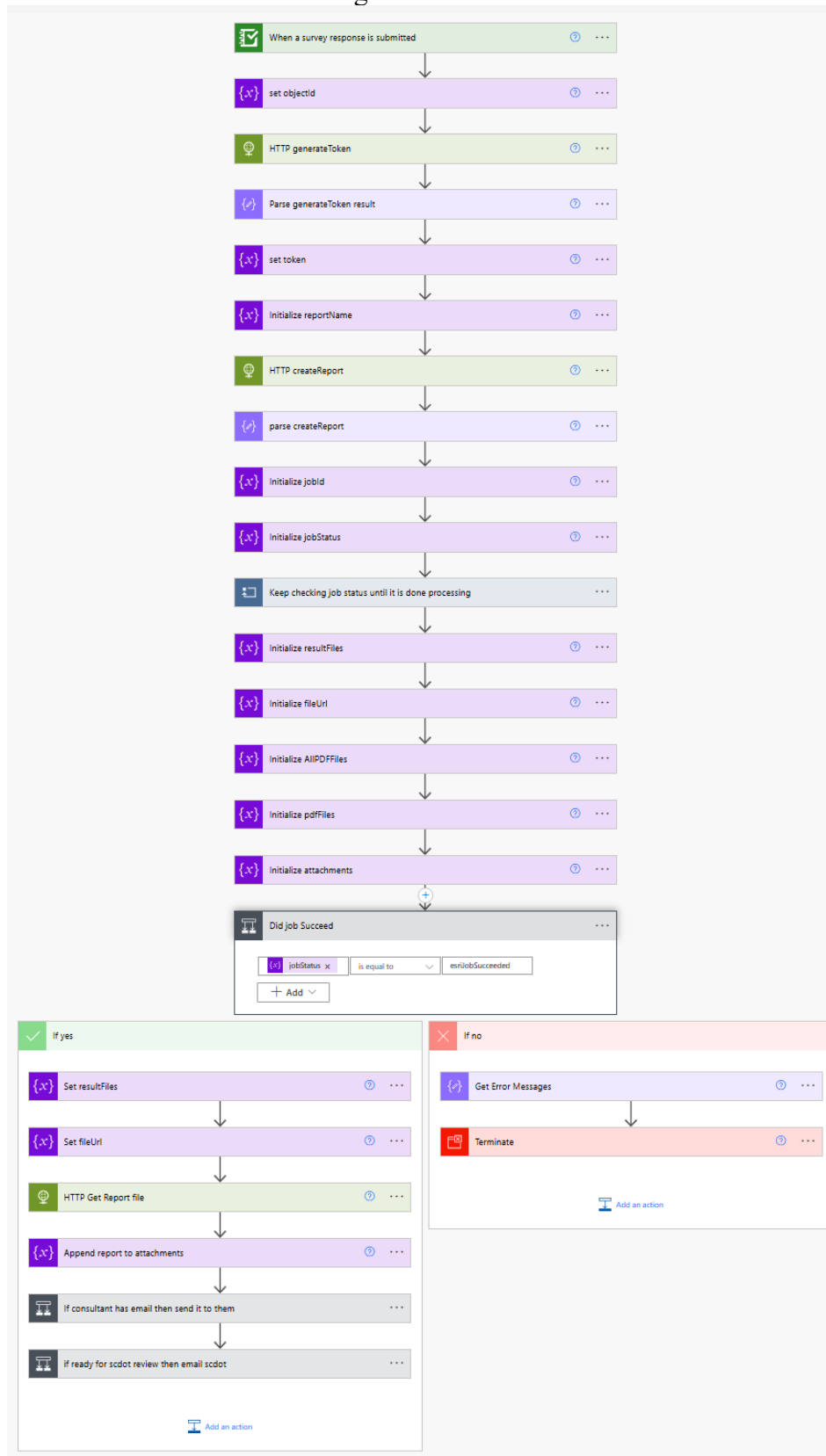


## Pre-Letting Checklist PowerAutomate Workflow





## Commitment-Log PowerAutomate Workflow





## Inspection Report PowerAutomate Workflow

