

Environmental Compliance Inspection Program Manual

VDOT Governance Document
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1.0 INTRODUCTION

The Virginia Department of Transportation (VDOT) is committed to preserving the Commonwealth's valuable natural resources while implementing its mission to construct and maintain the state roadways. The Environmental Division fulfills a critical role for the Department through the identification, tracking, inspection and compliance evaluations of Environmental Commitments for construction and larger maintenance projects.

Environmental commitments are made throughout the project development process to avoid, minimize and mitigate impacts to protected resources or to otherwise comply with federal and state laws and regulations. A summary of potential applicable laws and regulations is found in the Laws and Regulations module of this manual. Many of these commitments are identified in the National Environmental Policy Act (NEPA) documents, as water quality permit conditions and/or included as construction contract specifications.

The objectives of the Environmental Compliance Inspection Program are:

- Identifying environmental commitments;
- Tracking, inspecting and monitoring environmental commitments;
- Communicating, documenting and reporting environmental commitments;
- Providing technical support for implementation of environmental commitments;
- Evaluating program implementation and compliance;
- Improving regulatory compliance and coordination;
- Improving contractor performance related to implementation of environmental commitments;
- Enhancing collaboration between Construction, Location and Design, Bridge and Environmental Divisions; and,
- Enhancing collaboration between Central Office Environmental and District Environmental.

This ECI Program Manual provides the District Environmental Manager (DEM), Assistant District Environmental Manager (ADEM), and Environmental Compliance Inspectors (ECIs) with training modules and guidance on how environmental commitments will be identified, tracked, communicated, documented, reported, implemented, and evaluated for compliance on VDOT's construction projects. The manual provides other parties such as Construction Inspectors, Construction Managers, Area Construction Engineers and other district management with an understanding of the Environmental Compliance Inspection Program.

2.0 PROGRAM MANUAL ADMINISTRATION

The Environmental Compliance Inspection Program Manual is a living document and, as warranted, will be reviewed and updated to include new or modified tasks and procedures or to address changes in regulatory requirements. Hyperlinks in the Manual will be reviewed annually (either manually or with a link checking software) and corrected as needed.

A record of Manual revisions is provided in Table 16-1, below.

Table 16-1: Record of Manual Revisions

Date	Amended By	Summary of Manual Revisions
6/10/2022	David Wilson	finalized ECI manual distributed

3.0 ROLES AND RESPONSIBILITIES

The ECIs communicate with many federal and state agencies in the performance of their duties. The U.S. Army Corps of Engineers (USACE), the U.S. Fish and Wildlife Service (USFWS), the Virginia Department of Environmental Quality (VDEQ), and the Virginia Marine Resource Commission (VMRC) to name a few. Interactions with regulatory personnel from VDEQ may involve corrective actions, reporting sediment discharges and coordinating inspections. The ECIs also coordinate and communicate with many individuals across VDOT, within the District and with Central Office (CO). The following list is a description of the roles and responsibilities of the individuals that the ECIs may interact with while performing their duties.

3.1 Environmental Division

Environmental Division Director: Leads and directs the entire Environmental Division in the CO. Within the ECI Program the Division Director or designee:

- Provides concurrence for Orange classification transitions;
- Provides justification for Red classification to the Chief of Policy for Executive concurrence; and,
- Participates in Executive Level and/or District Level Compliance Classification Briefings.

Assistant Environmental Division Director: Manages Water Resources, Biological Resources, Mitigation / TMDL, and Compliance Programs. Also responsible for Project Implementation.

Environmental Program Manager - Compliance Program: Responsible for project implementation and manages the CO Compliance Section/Team and is responsible for the ECI, Facility Compliance, Compliance Training, Hazardous Materials and Industrial Hygiene Programs.

Environmental Compliance Inspection Program Manager (ECI PM): The ECI Program Manager:

- Monitors the implementation of the Environmental Compliance Inspection Program to ensure program effectiveness and remedy deficiencies;
- Identifies new technologies and Department initiatives to benefit the Program;
- Oversees the Environmental Division elements of the EPP, and assesses the need for new or updates to guidance documents;
- Coordinates with the DEMs to determine District ECI workloads and assess the need for additional resources;
- Provides the DEM with guidance on project selection for ECI assignment;
- Conducts program training, as necessary, to District Staff;

- Collaborates with DEM and Division Leadership to resolve compliance issues with projects classified as Orange and Red. Activities include:
 - Conducting Root-cause analyses;
 - Developing and reviewing corrective action plan;
 - Participating in project conference calls;
 - Preparing recommendations to Division and Executive Leadership for Orange and Red Compliance Classification Transitions;
 - Preparing compliance recovery requirements documents; and,
 - Providing Central Office ECI Inspection support to the Districts.

- Serves as the Environmental Division's EPP liaison with the Construction, Location and Design and other Divisions;
- Informs Division Leadership of egregious and significant project compliance issues and serves as the liaison between Division Leadership and District Management; and,
- Collaborates with the DEMs, ECIs, and ECI Program Coordinator to ensure Program Documents and Guidance are updated as needed to support program implementation.

- Environmental Compliance Inspection Program Coordinator: The ECI Program Coordinator:
 - Supports the ECI Program Manager;
 - Manages the monthly ECI calls;
 - Provide periodic reviews ECI Inspection Reports to ensure completion timeliness, consistency, quality, etc.;
 - Provides inspection support to the Districts;
 - Updates the Weekly Executive Summary for Orange and Red Projects;
 - Collaborates, at the direction of the ECI Program Manager, with the DEMs and District ECIs to resolve compliance issues, develop and review corrective action plans, prepare Classification Recovery documents, participates in project calls, reviews project submittals;
 - Assists with developing and maintaining program guidance and tools (CEDAR, PlanGrid, etc.); and,
 - Performs District ECI duties, as assigned, during District workload challenges.

Water Resource, Biological Resource, Cultural Resource, Hazardous Materials, NEPA, Mitigation, and Air and Noise Program Managers: Subject Matter Experts (SMEs) for their particular program area. These SMEs are resources for unique or complex circumstances relevant to their program area.

3.2 District Environmental

District Environmental Manager (DEM): The DEM or designee is responsible for supervising the role of the District ECI and, in most cases, being the first line of contact when the ECI needs additional guidance. With the ECI Program, the DEM or designee:

- Performs QA/QC review of procurement and construction contract documents and/or construction plans to ensure inclusion of environmental commitments;
- Reviews documentation of environmental commitments in CEDAR for accuracy and completeness and determines which projects require inspections;
- Establishes individual project compliance inspection frequencies after reviewing the project environmental commitments in CEDAR and evaluating the risks associated with the commitments;
- Assigns an Environmental Compliance Inspector (ECI) to serve as the primary resource on all assigned construction projects at least two weeks prior to the Pre-Construction Meeting and notifies the Area Construction Engineer (ACE), Construction Manager (CM), or Project Manager (PM);
- As warranted based on risk factors such as permit type, resource type, complexity, regulatory oversight, public perception, commitments, and ECI workloads, the DEM should use their best professional judgement to assigns an ECI to inspect maintenance, bridge, and materials-administered projects (including state-force, RAPP, on-call, and hired-equipment contracts);
- Communicates ECI Program training needs with ECI Program Manager;
- Uploads the environmental commitments for Design-Build projects into CEDAR within ten (10) business days of receipt from the Design Builder. *Note: water quality permits shall be uploaded prior to release of work in the vicinity of jurisdictional areas;*
- Confirms the ECI Reports are completed in CEDAR within two (2) business days of actual inspection date (site visit); including the supporting documents - PlanGrid Reports, agency correspondence, photos, etc;
- Reviews and approves ECI Reports and inspection compliance classification within three (3) business days following receipt of the applicable alert in CEDAR;
- Ensures ECI Reports are distributed to appropriate project recipients per ECI Program Guidance Manual;
- Adheres to the Communications Protocol for Reporting Environmental Incidents on Construction Projects to address internal and external agency reporting needs, including ENVReport;
- For Design-Build and P3 projects, advises the ACE, VDOT/Consultant PM and/or VDOT/Consultant Construction Manager (CM) of identified compliance issues which require the Design-Builder/Concessionaire to self-report to the regulatory agencies and documents this communication in CEDAR in the relevant documents tab of the associated or most recent inspection;

- Collaborates with the project team to resolve issues with a Yellow, Orange or Red classification;
- Coordinates with the ECI Program Manager to support decision-making for elevating a project from Yellow-to-Orange or Red Status or return to Yellow Status; and,
- Collaborates with the project team, the ECI, and the ECI Program Manager to resolve individual issues associated with an Orange or Red Classification.

Environmental Compliance Inspector (ECI): Responsible for evaluating and tracking how Environmental Commitments are being implemented on active construction projects. The ECI may be a contract employee, (Construction Engineering Inspector (CEI) or consultant contracts) or part time or full time employee in a District Environmental Section. Within the ECI Program, the District ECI:

- Serves as the DEM's or designee project representative and relays pertinent project information to the DEM or designee and project team;
- Reviews project-specific commitments report, permits, special provisions, permit sketches, plan sheets, maps, miscellaneous guidance documents, project contact information, etc. prior to the pre-construction meeting;
- Attends Pre-Construction Meetings for all assigned projects; confirms at the Pre-Construction Meeting that all project environmental commitments are current and accurate and answers any questions related to environmental commitments; and notifies the DEM of any discrepancies;
- Contacts Construction staff prior to entering the job site;
- Conducts project inspections at the established frequency;
- Determines the overall project compliance classification score for DEM or designee and/or ECI Program Manager concurrence (if orange or red);
- Investigates (and/or coordinates with other environmental staff) incidents related to environmental commitments reported on projects;
- Conducts an inspection debriefing with VDOT construction staff while on-site to communicate preliminary inspection observations and any remedy(s) for non-compliant findings that require immediate attention;
- Completes ECI Reports in CEDAR within two (2) business days of the inspection date and requests DEM approval for findings of non-compliance;
- Distributes ECI Reports to appropriate project recipients per ECI Program Guidance Manual;
- Conducts follow-up visits per DEM guidance and/or Inspection Amplification Schedule detailed in the Compliance Matrix, Classification Table and Recovery Guide to confirm corrective actions are being implemented to address findings of non-compliance;

- Coordinates with environmental program technical area experts to address program specific compliance issues;
- Participates in regulatory coordination at the direction of the DEM;
- Follows the Communications Protocol for Reporting Environmental Incidents on Construction Projects in the ECI Program Guidance Manual, related to internal and/or external agency notification or reporting requirements; and,
- Coordinates the closure of commitments in CEDAR once inspections are no longer required; and,
- Provides Compliance Assistance to project teams related to implementation of environmental commitments associated with the projects.

Permit Coordinator: Responsible for coordinating permit development, delineating wetlands and streams, obtaining Water Quality (WQ) permits and performing Threatened and Endangered Species assessments. Permit Coordinators are also a resource for coordinating permit modifications, although this may vary by District.

Regional Managers/Staff: Regional Cultural Resources (CR) Program Staff or Hazardous Materials (Hazmat) Program Managers who provide guidance and assistance to the Districts they work in. In most cases, the regional managers/staff will be responsible for the implementation and management of CR and Hazmat commitments during the construction phases.

3.3 Construction Division:

Please refer to the link to the Construction Division's Construction Manual in module 6.2 Project Inspection Resources for a detailed discussion on the various roles/responsibilities of the parties identified in this section.

State Construction Engineer: Responsible for advertisement, procurement, and delivery of the VDOT's construction program.

Assistant State Construction Engineer, Project Delivery: Provides programmatic oversight for the execution of the VDOT's construction program and works with the District Construction Engineer (DCE), Area Construction Engineer (ACE) and other stakeholders during the development and delivery stages of projects.

3.4 District Construction

District Construction Engineer (DCE): Reports to the District Engineer or Administrator (DE/DA) and is responsible for the oversight of all construction projects in the district and has the responsibility of ensuring that all construction projects are being constructed in compliance with the plans and Specifications.

Area Construction Engineer (ACE): Provides leadership and professional engineering advice to the Construction Manager and construction inspection staff to ensure the project's success with respect to safety, quality, schedule, and budget. The ACE will serve as the responsible charge engineer to highway construction functions. In most cases, the ACE is the Permittee on the various water quality permits and should be kept informed of the status of the environmental commitments.

Responsible Charge Engineer (RCE): Responsible for leading and guiding the Construction Manager, inspection staff and contract consultants in administering construction contracts. The RCE manages a wide range of construction projects of varying complexity related to roadways, structures, and drainage, and also manages environmental issues. The RCE should be made aware of any concerns the ECI and/or DEM have about implementation of the environmental commitments.

(Please note: the RCE and the ACE may be two separate roles. In some cases, the RCE may be part of the contract consultant's team, thus, the RCE will report to the ACE. Please refer to the description for the ACE for a description of additional duties.)

Construction Manager (CM): Responsible for managing assigned elements of the construction project to assure quality of the contractor's compliance with the plans and contract documents, manages project personnel staffing, project inspection and contract administration under the ACE. The ECI should keep the CM informed of the status of the environmental commitments. The CM should be made aware of the ECI's planned inspection schedule and any concerns that the ECI has about implementation of the environmental commitments.

Lead/Senior Construction Inspector (SCI): Monitors and performs all types of inspection work on complex and routine highway projects or acts as a specialist and advisor on certain phases of work requiring specialized talent and experience. The SCI is responsible for assigning and assisting inspectors in a manner that all phases of work will be given adequate inspections. The SCI is supervised by the CM or the ACE and authority is limited in that changes to the plans and specifications requested or recommended must be reviewed and approved by the RCE.

Construction Inspector (CI): Inspects all phases of construction under the supervision of SCIs, construction project inspectors or other supervisory personnel.

3.5 Location and Design Division

State Location & Design (L&D) Engineer: Principal executive officer with signatory authority for the General Virginia Pollution Discharge Elimination System (VPDES) Permit for Discharges of Stormwater Construction Activities, also referred to as the [Construction General Permit \(CGP\)](#), where VDOT is the activity operator on active construction projects. The individual provides leadership for the program that implements and oversees CGP and erosion and sediment control (ESC) aspects.

Assistant L&D Engineer: Responsible for supervising the L&D Water Resources Program Manager. Assists and coordinates on matters relating to CGP and erosion and sediment control (ESC) policy and regulatory compliance; particularly on programmatic or technical subject areas that are unique or challenging and with projects that are orange or red in color classification. This individual also serves as the Division Point of Contact (POC) for the Environmental Performance Program (EPP) Dashboard development and coordinates with the State L&D Engineer.

L&D Water Resources Program Manager: In coordination with the Assistant L&D Engineer, establishes policies for CGP and ESC oversight responsibilities for VDOT administered projects with coverage under the CGP through Instruction and Informational Memorandum (IIM)-LD-256, IIM-LD-242 and the VDOT Drainage Manual. The L&D Division Water Resources program team coordinates with Environmental and Construction Divisions and serves as a resource to District National Pollution Discharge Elimination System (NPDES) Coordinators on technical matters and regulatory compliance related issues, particularly for projects with color classifications of orange or red.

3.6 District Planning

District Planning Engineer: Supervises DEM & NPDES Coordinator. Each District Planning Engineer is responsible for the corresponding District's preliminary engineering project delivery to construction. Some Districts may have different organizational structures, reference the InsideVDOT Organizational Chart for more details.

NPDES Coordinator: Responsible for assisting and coordinating the implementation of VDOT's NPDES program activities, performing facility and CGP inspections, developing corrective action recommendations and training district staff on the NPDES program requirements.

3.7 District Bridge

District Bridge Engineer: Lead engineer responsible for engineering, project development, safety and maintenance associated with the Structure and Bridge program for each district. The District Bridge Engineer or designee is an important contact for permit modifications (when related to structures), Environmental Commitment Plan Set (ECPS), and other structure and bridge issues.

3.8 Design Build Projects

Project Manager (PM): VDOT's designee for managing all phases of project development and administering the Design-Build contract. The PM is responsible for the scope, schedule and budget of the project.

Quality Assurance Manager (QAM): Inspection performed by the QAM to independently evaluate all sampling, equipment, and testing procedures used by quality control that are

used in the acceptance program. This may include split samples, calibration checks and/or observations. The QAM will (organizationally through services independent of production forces) provide the QA inspection normally provided by the Department or its consultant on a traditional Design-Bid-Build project.

Quality Assurance (QA): The overall process performed independently of the construction contractor (contractor's production forces) for the purpose of determining the conformance of the work by examining the QC data and/or providing objective evidence (independent sampling and testing), to verify the contractor's quality control sampling and testing.

Quality Control (QC): Performed by the Concessionaire/Design-Builder to assess and adjust design, production, and construction processes to ensure conformance with contract requirements and to control the level of quality being produced in the Project. The purpose of QC is to measure those quality characteristics and to inspect those activities that affect the production at a time when corrective action can be taken to substantially decrease the likelihood that appreciable non-conforming material will be incorporated in the Project.

Owner Independent Assurance (OIA): Oversight performed by the Department (or agent) to satisfy VDOT and FHWA's requirements for documenting that proper QC and QA management is being performed. This oversight provides an independent assessment of Concessionaire/Design-Builder's implementation of and compliance with the approved Quality Control and Quality Assurance plan. This may include split samples, calibration checks, certification verification, and/or observations.

4.0 ENVIRONMENTAL COMMITMENTS & CONTRACTS

This module will provide an overview of the type of projects with commitments the ECI may inspect, the mechanisms used to track and communicate commitments with the in contract documents, project meetings and ECI considerations prior to, during and after construction.

4.1 Routine Commitment Examples

Environmental commitments cover a wide range of environmental concerns, from the manmade to natural environment. A few examples of Environmental Commitments include:

- Cultural Resources: Archaeological Site fencing to prevent construction activity from disturbing the designated Site.
- Threatened and Endangered Species: Mussel Relocation - notification by the contractor in advance in-stream work prior to completion of freshwater mussel relocation.
- Hazardous Materials: Petroleum Contaminated Soil and Groundwater Management
- WQ Permits: Monitor compliance with all aspects of WQ permit requirements.

Since the requirements for implementing and managing the environmental commitments may vary from project to project, it is important for the ECI to be skilled in various approaches for assessing compliance with the environmental commitments on an assigned project. Thus, it is essential that an ECI has a broad understanding of the various project aspects, starting with the minimum requirements for implementation and management of environmental commitments through the potential aspects that may result in a non-compliant situation.

Having this broad understanding will help the ECI select efficient approaches during commitment inspection and corrective action selection. If the ECI is not certain about the minimum requirements of a particular commitment, the DEM and/or the SME who identified and documented the commitment (e.g. Regional CR/Hazmat Manager) may be able to assist.

4.2 Project Types

There are various types of projects and delivery approaches that an ECI might encounter. Links are provided to the applicable pages for more information:

- Design Bid Build*: VDOT administered construction and designed
 - Design Build*: VDOT administered construction and contractor designed
 - <https://www.virginiadot.org/business/design-build.asp>
 - (P3): Private entity administered and contractor designed
 - Locally Administered: Locality administered construction and VDOT assistance with preliminary engineering
 - On-call*: Projects issued by task order. Each task, under the same contract, might have different commitments
 - Maintenance*: Routine maintenance and projects performed by state forces or hired equipment
 - <https://covgov.sharepoint.com/sites/MAINTHub-VDOT>
 - Rural Rustic: improvements or maintenance to rural roads
 - http://www.virginiadot.org/business/resources/local_assistance/Rural_Rustic_Road_Program_Manual_2014_Update_-_Recodification.pdf
 - Capital Outlay: State facilities projects
- *Routinely inspected by ECIs if assigned by DEM

4.3 CEDAR Commitments Tab

The Comprehensive Environmental Database and Reporting System (CEDAR) is used to document environmental commitments and compliance inspections throughout the life of a project. After entering a UPC or project number into CEDAR, the commitments tab is located near the top right of the window as shown in the follow screenshot:

Commitments						
<input type="checkbox"/> Date	Task Related	Identified By	Name	End Date	Status	Assigned To Inspector
<input type="checkbox"/> 02/15/2017	No	Richmond District Env. Mgr.	Hazardous Materials	02/20/2019	Complete	No
NATURAL RESOURCES						
<input type="checkbox"/> 02/15/2017	No	Richmond District Env. Mgr.	T&E / Fish, Plants and Wildlife Resources	01/08/2018	Complete	No
NOISE						
<input type="checkbox"/> 02/15/2017	No	Richmond District Env. Mgr.	Completion of FDNA and construction of any feasible and reasonable barriers	08/20/2019	Complete	No
WATER QUALITY PERMITS						
<input type="checkbox"/> 02/15/2017	No	District Environmental	Permit Acquisition and Compliance		In Progress	Yes

While in the commitments tab, hover over the icons below the blue commitment header to display their function. Clicking the blue date under the specific program area for a corresponding commitment will generate a new window with a more detailed

commitment description and user options, as shown in the following screenshot:

The screenshot shows a software window titled "Commitment Properties". It has four tabs: "Project Info", "Commitment", "Inspection", and "Supporting Docs". The "Commitment" tab is selected. The form contains the following fields:

- Date Entered:** 06/09/2020
- Commitment Status:** Complete
- Relevant Program Area:** Natural Resources
- Commitment Name:** Avoidance of wetlands
- Description:** To ensure the protection of wetland areas, post tree clearing, no construction activities such as grubbing, vehicle traffic, stockpiling, staging, etc., shall be permitted on the delineated wetlands on parcel 001.

ECI inspections and the related documentation are entered on the commitments tab. Based on the inspections and commitments information, ECI reports can be generated from the commitments tab. Reference the CEDAR Inspection and Reporting Guidelines module for more detailed information on entering CEDAR inspections.

4.4 Environmental Commitment Plan Sets

Environmental Commitment Plan Sets (ECPS) provide a summary and graphical depiction of environmental commitments for awareness in the project's plan set. Determining the applicability of the ECPS for a project should start at the end of the scoping phase and all documentation required for inclusion in the plan set should be submitted by Field Inspection (FI) and/or Pre-advertisement Conference (PAC). ECPS are intended to be a tool for on-site recognition of environmental commitments. ECPS do not override the controlling environmental documents (permits, special provisions, etc.), which should be consulted for specific detail. Rather they provide graphical representation of the commitments on the plan set and a summary of the applicable commitments for the project. For more detailed information on ECPS see [EM-421](#) and the [ECPS SHED-4](#). Here is the practical [ECPS process](#) guide and the [ECPS Process Flow Chart](#).

The links below provide an overview of how projects are developed prior to advertisement and construction. This knowledge may assist the ECI with having a broader project lifecycle perspective that may be valuable in troubleshooting compliance issues during construction.

[VDOT Project Development Process](#)

[VDOT Project Development Process by Division](#)

Concurrent with the ECPS process, a constructability review with a focus on environmental commitments may also be valuable. The constructability review can be integrated into the project milestone reviews. While reviewing constructability, it is

important to pay attention to the permit limits, LOD, steep slopes or work near Waters of the U.S. (WOTUS) and work in close proximity to other commitments.

A few examples of preliminary engineering commitments for constructability review:

- Review permit sketches for constructability relative to temporary and permanent impacts or construction footprint and logical access pathways (WQ);
- Review the roadside development sheet or contract pay items for WL seed mix if temporary WL impacts are present (WQ);
- Review the culvert design for aquatic organism passage to meet permit conditions (WQ); and,
- Ensure that the surveyed Limits of Disturbance being used in the field matches the permit boundaries and ESC boundaries (WQ).

4.5 CONSTRUCTION DOCUMENTS

It is important to be familiar with the contract and plan set for every project. Contracts and plan sets are the results of a multi-discipline preliminary engineering process. The contract contains important information which can be generic or project specific. The plan set is the technical document that details exactly what will be done and where. A project's contract can be found in Projectwise or PlanGrid.

4.5.1 PROJECTWISE

ProjectWise is the current online file room for VDOT's plan sets and contracts. New users will need to request access by completing [LD-899](#) - Request access to the ProjectWise Cloud. ProjectWise is a tool that every ECI needs to have access to project plans and contracts. When the access to ProjectWise is granted you will login using COV\yourfirstname.yourlastname (this could be different due to others with similar names). The password will be your COV password. For additional information regarding ProjectWise and support go to the [L&D ProjectWise Page](#). The plans and other documents will also be located in PlanGrid.

4.5.2 CONTRACTS

Each contract starts with the pay items for the project, which are specifically described units of work for which a price is provided in the Contract Schedule of Items. It is important to know the pay items in the contract because the project will be limited to using these items and the noted quantities to complete the work (unique circumstances could result in a work order for the project outside of the pay items). Note the specification reference for each pay item in the following figure from a Contract Pay Item List:

Proposal Line Number	Spec No.	Item ID Description	Approximate Quantity and Units
0010	513	00100 MOBILIZATION	LUMP SUM
0020	517	00101 CONSTRUCTION SURVEYING CONSTRUCTION	LUMP SUM
0030	301	00110 CLEARING AND GRUBBING	LUMP SUM
0040	301	00112 CLEARING AND GRUBBING	4.000 UNIT
0050	303	00120 REGULAR EXCAVATION	25,730.000 CY

The table of contents (depicted in the following graphic) will likely be located after the pay items. The next section of the contract will contain various Special Provisions, Specifications and Copied Notes applicable to the work that is going to take place.

SEC. 107.02(a) GENERAL (FAA Crane Erect/Operate Clearance) 7-30-18 (SPCN)	6
SEC. 700—GENERAL (Measurement and Payment for Conduit) 7-12-16 (SPCN)	6
SEC. 512—MAINTAINING TRAFFIC (Repair of failing traffic signals) 7-11-18 (SPCN)	7
SECTION 700—GENERAL 5-25-18 (SPCN)	7
SP109-000100-02 ASPHALT MATERIAL PRICE ADJUSTMENT 4-28-17	95
SP109-000110-00 OPTIONAL ADJUSTMENT FOR FUEL R-7-12-16	98
SP109-000120-00 PRICE ADJUSTMENT FOR STEEL R-7-12-16	100
SP302-000120-00 JACK AND BORE 10-27-16	109

In general, the special provisions related to Environmental and the WQ permits are located towards the end of the contract and typically are designated in the 522 number series.

4.5.3 PLAN SET

Highway construction plans can be challenging to read. One valuable resource to assist with interpreting highway construction plans or a quick reminder on reading cross sections is the VDOT Plan Reading Manual located at:

<https://www.virginiadot.org/business/locdes/training-planreading.asp>

In addition to what is located in the Plan Reading Manual, there are a few things an ECI should know about the plans for a project:

- In general, the following sheets will be most helpful: index sheet, drainage descriptions, pipe profiles, drainage summary, roadside development, erosion

- control summary, sediment trap or basin detail, bridge profile and cross sections, roadway plan, planting plans and ESC;
- It is important to be familiar with the ESC sheets to determine if controls are installed per plan near jurisdictional areas;
 - Drainage descriptions and profiles will have more detail for each drainage location;
 - Roadside development will have the seeding mixtures, timeframes and other stabilization information; and,
 - Plans sheets might have redlined sheets which show field changes to the plans.

4.5.4 Document Hierarchy

During inspections, it is important to understand the order of precedence for controlling documents in a Contract. According to VDOT Spec. 105.12 there is a document hierarchy. The ECI may run into a situation where the specifications, plans and contract do not match. Environmental commitments and permits (and the corresponding permit conditions) are usually on the A or B level of the document hierarchy, so what is in the contract takes precedence. In the case of a discrepancy, the following order of priority will apply, with the highest governing item appearing first and the least governing item appearing last:

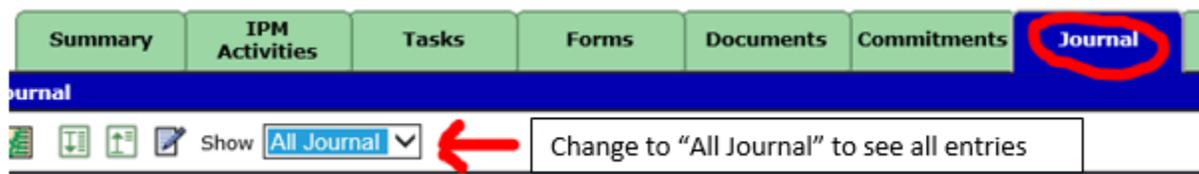
- a) Special Provision Copied Notes. The Contract items, units and unit prices listed in the Contract's Schedule of Items have the same status as Special Provision Copied Notes;
- b) Special provisions;
- c) Plans;
- d) Supplemental Specifications. Those present in the physical, executed Contract will govern over those published in the annual supplemental volume;
- e) Specifications; and,
- e) Standard Drawings (including all revisions issued through the date of Advertisement).

5.0 PROJECT ASSIGNMENT

The DEM (or designee) typically takes the lead on project assignment to the ECI. Through coordinated risk analysis, workload analysis, and with general guidance, the inspection frequency can be determined and priorities established for the ECI on an assigned project.

5.1 DEM Guidance for ECI Assignments

The DEM should use their best professional judgement when considering which projects should be inspected and consider the following risk factors in the assigning inspections: permit type, resource type, complexity, regulatory oversight, and public perception. An additional consideration includes the ECI's workload. Where workload is a factor, there may be support from ECIs from other Districts, consultant ECIs or CO ECI PC who can help to maintain the required inspection frequency. If there is a project with high priority compliance issues, it should be given precedence. If a project has permits or commitments and it is not going to be assigned for inspection a note should be placed in the Journal Tab with a brief explanation, as depicted in the following graphic:



ECI assignment guidance:

- It is the DEM's discretion whether projects with non-reporting permits and/or other environmental commitments (e.g. Hazardous Materials, Cultural Resources, etc.) warrant ECI inspections;
- The DEM should always consider assigning a project to the ECI when it contains some type of reporting water quality permit (including those projects reported on the monthly VDEQ spreadsheet); and,
- If a commitment has high risk for regulatory and public involvement or there are complex and/or multiple commitments, the project shall be assigned for inspections.

5.2 Inspection Frequency

A monthly frequency is a good baseline inspection frequency. There may be certain commitments or project activities that warrant the ECI visiting the project more frequently or on an as needed basis, like water quality monitoring for grouting or installation of a stream diversion. Also, consider inspecting the project at certain phases differently, if the

project is clearing and actively taking impacts, this may warrant inspecting a project more frequently. The DEM should use their best professional judgment and, where needed, seek advice from SMEs for each particular commitment. Technical assistance project visits can also be utilized per request or as needed to help solve and prevent issues on a project. It is recommended, it may be beneficial to the project to coordinate inspections with the NPDES coordinator.

If a project is in a classification other than Green the general monthly inspection frequency should increase as shown below until issues are resolved:

- Yellow – bi-weekly
- Orange – weekly
- Red – weekly

5.3 Project Schedule and Scope Changes

The ECI should monitor the project's construction schedule since certain types of environmental commitments may impact the construction schedule (e.g. time of year work restrictions) and certain construction activities pose a higher environmental risk. Early anticipation of such issues by the ECI should be discussed with the DEM to determine the appropriate action. By monitoring the construction schedule the ECI can be present during critical moments of the construction project such as; pre-construction and project kick-off meetings, when permitted impact areas are being worked in, in-stream work is taking place and when work is being prosecuted near an environmental commitment. The ECI and/or DEM should discuss with the CM the appropriate method for monitoring any changes to the construction schedule so the ECI inspection frequency/schedule may be adjusted in a timely manner.

VDOT Specification 108.03 details the requirements of the progress schedule and the Two Week Look-ahead (TWLA). The progress schedule and TWLA are resources the ECI can request from construction to monitor the project progress and schedule inspections accordingly.

In addition to monitoring the project schedule, the ECI needs to be aware of any changes to the project scope of work since such changes could affect the environmental commitments and result in noncompliance issues. The ECI shall report any such changes to the DEM so the environmental commitments may be re-evaluated to determine if notifications to, or coordination with, regulatory agencies is necessary. In addition to understanding the environmental commitments and conducting effective inspections, the ECI needs to also understand the necessary corrective actions to remedy non-compliance. Proposed corrective actions, where required, shall be coordinated with the regulatory agencies and/or NPDES Coordinator (where the action may impact the CGP).

6.0 CONSTRUCTION PHASE PREPARATION

This module contains information to help the ECI be prepared for a project before it begins construction and through the project life cycle. The pre-construction meeting, commitments, post construction preparation, relevant specs for how work progresses during construction and collaboration with the NDPES Coordinator are all topics discussed in this module.

6.1 Pre-Construction Preparation

Prior to the pre-construction meeting (“pre-con”), the DEM and ECI review the current project scope of work, construction schedule and the environmental commitments, to support the project and evaluate compliance. Based on this review they can make an informed decision on the anticipated ECI inspection schedule for the project. The ECI then develops a clear understanding of the various environmental commitments for the project and can then effectively convey that information to the construction team. A subject matter expert may be included in the pre-con to provide technical assistance on the identified environmental commitments. Prior to the meeting, the DEM or ECI should collaborate with the NPDES Coordinator (if applicable or warranted) to discuss the Environmental Commitments, the VPDES [Construction General Permit](#) (if applicable to the project) and an effective approach for communicating the requirements to the construction team.

If the ECI is not certain how to evaluate the compliance of an environmental commitment, then the ECI shall seek additional guidance from the DEM regarding the interpretation of the environmental commitment. Depending on the complexity of the project or types of environmental commitments involved, a separate Environmental pre-con meeting may be necessary with appropriate team members prior to the start of construction.

The DEM and ECI will track how pre-construction, construction and post-construction environmental commitments are implemented. On assigned projects, the ECI shall provide support for contractors during pre-construction or construction, monitor or inspect for compliance with permit conditions or environmental commitments through all phases of the project. Environmental commitments are also found embedded in the permit conditions, and if addressed during the pre-construction review, may prevent permit violations or reduce the need for permit modifications.

A few examples of Pre Construction environmental commitments include:

- Provide notification to the regulatory agencies about a pre-construction meeting or start of construction (Water Quality (WQ));
- Mark/stake the clearing limits and/or sensitive areas (WQ,Cultural Resources (CR));
- Conduct a baseline survey, collect data, provide photo documentation, etc. For example, collect a baseline water sample for zinc when a bridge coating project is within ½ mile of a commercial or research shellfish hatchery (Threatened and Endangered Species (T&E), WQ);
- There is a State Historical Marker located within the limits of the project and it must be removed prior to construction, and replaced, as close as possible to its original location (CR); and,
- VDOT shall record the existing bridge on the DSS Intensive Level Survey form and 3x5 or 4x6 color photos and digital photos saved to a CD sent to VDHR for their review and approval prior to demolition of the structure (CR).

6.2 Pre-Construction Meeting

The CM is responsible for making arrangements for the pre-construction “pre-con” meeting soon after the award of the project. The ECI shall attend the pre-con meeting (also referred to as the pre-con conference), and/or any other relevant project meetings at the direction of the DEM. On certain projects, there may be a separate environmental pre-con meeting. The environmental objectives during a pre-con meeting include:

- Meet the construction team and contractor staff;
- Establish joint expectations, not just what the ECI expects from the project but what can the project expect from the ECI; Examples include:
 - Coordinating inspections before arriving on-site;
 - Discussing and resolving issues, as much as possible, while on-site. and,
 - Always be available for technical assistance.
- Review and discuss the environmental commitments and expectations for compliance associated with the project;
- Ensure that the construction team has been provided with a complete/accurate set of environmental commitments;
- Address any compliance issues/concerns associated with the applicable environmental commitments;
- Discuss the specific role of the ECI during all phases of the project;
- Discuss the anticipated inspection schedule and availability to provide technical assistance outside of the routine inspection schedule; and,

- Discuss the distribution list for the ECI reports.

If the ECI notices any discrepancies in the construction teams' set of environmental commitments, then the ECI shall address these discrepancies and determine appropriate actions with the DEM. The pre-construction meeting is an opportunity for the ECI to reiterate the importance of implementation of all environmental commitments to the construction team. An important perspective the ECI should keep in mind is that the construction team was not involved in the preliminary engineering phase of the project when most of the project specific environmental commitments were identified. In certain situations, it may be helpful for the ECI to discuss the background/history of the environmental commitments with the construction team in order to provide clarification and perspective of the importance each environmental commitment represents. In the event that such discussion is necessary, the DEM may consider organizing a separate pre-construction meeting dedicated to discussing environmental commitments (or request that the ECI attend a field visit). Click [here](#) to access an example of an ECI Program Pre-Con Notebook

6.2.1 Pre-Construction Field Visit

In addition to a pre-con meeting, the ACE, CM and Inspectors may set up field visits to the project site prior to the pre-construction conference to ensure all parties have a complete understanding of the contract documents, requirements and existing field conditions. The DEM and ECI should contact Construction to determine if the ECI should be a part of such field visits, which may enhance Construction's understanding of the environmental commitments. Additionally, the field visit is a good opportunity to go over the Environmental Commitments Plan Set and Environmental Plan Sheet(s), which may enhance the ACE, CM and Inspectors' understanding of the environmental commitments. If determined to be necessary as part of this phase, the ECI shall track how pre-construction environmental commitments are being evaluated and implemented. The ECI should make time to take pre-construction photos of any outfalls, streams, wetlands or other applicable environmental commitments. Pre-construction photos are to each project stakeholders benefit and can help solve future disagreements over site conditions.

If the ECI did not participate in any of the field visits (or such field visits were not scheduled), then the ECI shall become familiar with the current conditions of the project site and surrounding areas prior to or during the pre-construction phase. It is recommended that the ECI make arrangements for an initial site visit of the project to determine any potential problems associated with the environmental commitments and/or project plans. In other words, what can go wrong with the project? Observe the areas adjacent to and/or around the project site to become familiar with those areas. Is there anything that could pose a risk to the project that was not considered during the scoping and/or preliminary engineering phases of the project? If the ECI observes a site condition that does not appear to be consistent with the project plans and associated commitments, the ECI shall discuss it with the DEM and/or the ECI Program Manager before elevating it to the Construction Division.

6.3 Commitments During Construction

Below are a few examples of the environmental commitments that the ECI may encounter during the construction phase of the project. (Please note: the environmental commitments listed below may not apply to all projects since many of the environmental commitments are project specific.) A few examples of environmental commitments found during Construction include:

- All pipes and culverts must be countersunk at both the inlet and outlet ends. Pipes or culverts that are 24-inches or less in diameter shall be countersunk 3-inches below the natural stream bottom. Pipes or culverts that are greater than 24-inches shall be countersunk 6-inches below the natural stream bottom (WQ);
- A time-of-year restriction for fish and/or mussels prohibits in-stream work between March 15 to July 31 and August 15 to September 30 of any year (T&E);
- The DEM should be notified if karst features (such as caves and sinkholes) are encountered during construction (Natural Resources (NR));
- Final stain colors are to consist of colors that shall give an appearance as close as possible to the rocks adjacent to the bridge crossing (CR);
- The face of the rock fill along the west side of the immediate bridge approaches shall be covered with soil two feet deep and planted with native vegetation (WQ);
- An earthwork sits to the west of the existing bridge on both the north and south sides of the road. VDOT Cultural Resources staff recommends that the earthwork is marked and protected with safety fencing during construction (CR); and
- If petroleum-contaminated soil or groundwater are encountered during the project, immediately contact the Regional Hazardous Material Manager (Hazardous Materials (HM))

The DEM and ECI should discuss how to assess compliance with the appropriate approaches for monitoring the project. It is important for the ECI to develop a plan to monitor project commitments for each project. For example, the ECI will need to determine how to confirm countersinking or under what circumstances work is allowed during a time-of-year restriction (TOYR). Understanding how to identify karst features or who to contact to assist in evaluating stain colors may be required to comply with the commitment examples listed above.

In the context of detailed permit requirements that may be applicable to construction phase commitments that may be associated with ECI inspections, below are some references that can provide additional information regarding water quality permits.

<u>Virginia Code Chapter 210. Virginia Water Protection Permit Program Regulation</u>	<u>Virginia Code Chapter 260. Water Quality Standards</u>
<u>VWP Permit Manual Chapter 11 Compliance</u>	<u>Federal Code Part 131 Water Quality Standards</u>

6.4 Stabilization, Sequencing and Completion of Work

Early coordination by the DEM or ECI with the construction team can identify potential issues before they become a problem, saving time and money on the project by preventing compliance issues. Construction sequencing issues can potentially impact environmental commitments. If there are sequencing issues on a project, the ECI should consult with the DEM and the project’s Construction Management team. Outlined below are a few important considerations the ECI should be familiar with:

- For permit modifications on Design Bid Build (DBB) projects, the Contractor shall be responsible for designing and supplying the DEM with all sketches and notes necessary to acquire any permit modification required for changes in the proposed construction methods. (Reference Spec 107.2 #10(m)). The DEM will obtain the necessary permit modifications. Check with the District Permit Coordinator, CO Water Quality or the [Water Quality Permit Manual](#).
- Demarcation of environmentally sensitive or protected areas is specified in the Special Provision for Demarcation. If the Special Provision is included in the contract for the project, the Contractor will be responsible for marking the appropriate buffer per the permit requirements prior to starting work such as clearing and grubbing.
- VDOT specifications relevant to stabilization, sequencing and completing work are noted below:
 - 107.16 - Should the Contractor, as a result of negligence or noncompliance, fail to provide soil stabilization in accordance with these specifications, the cost of temporary soil stabilization in accordance with Section 303 shall be at the Contractor’s expense. If the delay in stabilizing an exposed area of land is due to circumstances beyond the Contractor’s control, the Department will be responsible for the expense.

- 107.16 - Temporary measures shall be coordinated with the work to ensure effective and continuous erosion and sediment control. Permanent erosion control measures and drainage facilities shall be installed as the work progresses.
- 108.01 - Prosecution of Work: Once the Contractor has begun work, the Contractor shall prosecute the Work continuously and to the fullest extent possible except for suspensions authorized or ordered by the Engineer according to Section 108.05. If approval is given to temporarily suspend the work, the Contractor shall notify the Engineer at least 24 hours in advance of resuming operations.
- 108.02 - The Contractor shall conduct work in a manner and sequence that will ensure its expeditious completion and shall not open any work to the prejudice or detriment of work already started.
- 301.02 - The Contractor shall install erosion and siltation control devices prior to beginning clearing or grubbing operations. Such devices shall be functional before upland land-disturbing activities take place.
- 301.02 - The Contractor shall confine the grubbing of root mat and stumps to that area of land on which the Contractor shall perform excavation or other land disturbance activities within 14 days following grubbing operations.
- 303.03b – Soil stabilization: (as opposed to 14 day requirement) Areas within 100 feet of the limits of ordinary high water or a delineated wetland are excluded from this requirement, but the work shall be continuously prosecuted until completed, and then stabilized immediately upon completion of the work in each impacted area. Soil stabilization includes: temporary and permanent seeding, riprap, aggregate, sod, mulching, and soil stabilization blankets and matting in conjunction with seeding. The applicable type of soil stabilization shall depend upon the location of areas requiring stabilization, time-of-year, weather conditions, and stage of construction operations.
- 303.06 - Temporary erosion and siltation measures required to correct conditions created because of the Contractor's negligence, carelessness, or failure to install permanent controls in accordance with the plans and sequence for performance of such work will not be measured for payment.

6.5 Post Construction Requirements

The ECI shall track how the post-construction environmental commitments are being evaluated and implemented. The DEM should consider how the ECI may provide assistance in implementing any of the post-construction environmental commitments.

The DEM shall review post-construction activities handled by District Environmental staff to determine which activities may be assigned to the ECI. The DEM shall inform the Project Manager of any confirmed or anticipated post-construction environmental commitments which will require the assistance of an ECI to ensure the project's budget is appropriately forecasted. In the event post-construction commitments are not identified until after the award of the contract, then the DEM shall consult with the ACE and/or CM to determine how such environmental commitments will be implemented and captured in the project's budget. The DEM shall alert the NPDES Coordinator about the late identification of post-construction environmental commitments to determine whether the post-construction activity conflicts with terminating the VDEQ VPDES Construction General Permit (e.g. post-construction activity that may involve some level/type of land disturbance or impact a permanent Stormwater Management (SWM) Best Management Practice (BMP)). The following are a few examples of post-construction commitments:

- Compensation site monitoring and reporting as required by the regulatory agencies (WQ);
- Areas will be revegetated with species identified in the Wetland Mitigation Plan (WQ);
- Restore temporarily impacted wetland acres to pre-existing contours, revegetating barren areas with native vegetation, mechanically loosening soils if wetland compaction or rutting occurs (WQ);
- VDOT and FHWA are responsible for installation of a Virginia State Historical Marker as well as implementation of the VA SHPO approved interpretive program to be completed within 12 months after construction (CR);
- VDOT shall fund and erect one Virginia State Historical Marker along or in the vicinity of the new roadway alignment (CR);
- Develop a landscape plan with the SHPO. Implement plan within one year of completion of construction and maintain for one year following installation (CR); and,
- Collect a final set of water samples to monitor for zinc when a bridge coating project is within ½ mile of a commercial or research shellfish hatchery (as identified as a data layer in CEDAR). (Please refer to the SPCN for Water Monitoring.) (HM)

6.6 Project Closeout

The USACE, VDEQ WQ and VMRC permit closeout process can be coordinated by the ECI, Construction Team and the Contractor to create a punch list by inspections and documentation. Once construction is complete and all areas are stabilized within the authorized impact areas, the agencies can be invited for a final closeout inspection on a case by case basis.

Permit conditions may include:

- Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations;
- The affected areas must be revegetated according to permit requirements;
- Any temporarily impacted wetlands, streams or surface waters must be restored to pre-construction conditions upon completion of the work; and,
- All temporarily impacted areas shall be restored in accordance with the Special Provision for “Temporary Wetland Impact Restoration”.

When corrective items identified in the project close out inspections are completed, and the as-built plans are accepted, then all permit-associated closeout forms can be submitted, which are:

- VDEQ: Construction Status Update Form, Monthly Permit Inspection Checklist (Status Form and Permit Checklist may be requested) , Termination of Coverage Letter;
- USACE: Termination of Coverage Letter, Certificate of Compliance; and,
- VMRC: Termination of Coverage Letter must be sent within 30 days after construction is completed in all authorized areas if applicable.

Best practices for project close out include:

- Effective communication and transparency among the key team members helps to facilitate the process;
- Rolling closeout inspections to allow for a more manageable list of items. As work in impact areas is completed, those areas would be inspected and corrective actions documented. Checking off the impact plates as work is completed helps to make the task list more manageable;
- Coordinate with the PM before the C-5 project closeout corrective items have been completed; and,
- Review the [Environmental Division Practices for Project Closeout Presentation](#).

6.7 CGP and the ECI

Compliance with the CGP is the responsibility of the NPDES Coordinator and compliance with environmental commitments is the responsibility of the ECI. If situations arise where it is unclear which role is responsible for a particular issue, the NPDES Coordinator and ECI should communicate together and find a collaborative solution. Establishing and

maintaining a positive working relationship with the NPDES Coordinator will result in a more effective Environmental Performance Program.

6.7.1 Construction Runoff Control Inspections

Each construction project that disturbs greater than one acre of land is required to obtain a VPDES General Permit for Discharges of Stormwater from Construction Activities (the CGP). As part of the CGP, there is a requirement to conduct periodic project compliance and oversight inspections. These compliance inspections can occur once or twice a week depending on the selected frequency. The self-inspections are typically completed by the contractor, and verified by the VDOT Project Inspector using the Construction Runoff Control Inspection Form (the C-107 form) Part I. The oversight inspection is programmatic in nature; it is typically completed every 60 days by VDOT's ACE or the designee independently from the day-to-day project team, and is documented on Part II of the C-107. The C-107 Part I inspections satisfy the inspection requirements of the Construction Permit.

6.7.2 NPDES Collaboration

The primary role of the NPDES Coordinator is to inspect the project for compliance with the CGP and SWPPP/PPP. Collaboration by the ECI with the NPDES Coordinator is important at all phases of a project, from early scheduling and phasing planning, and particularly during construction and post-construction. If there are ESC or SWM issues that directly impact jurisdictional areas the ECI should note them as observations in their report, but if the ESC or SWM issues do not pose a risk to jurisdictional areas it should be left to the NPDES Coordinator to handle. If the ESC/SWM Plans conflict with an environmental commitment then work with your DEM and NPDES Coordinator in reference to the Document Hierarchy found in VDOT Spec 105.12 to find a solution. A good working relationship with the NPDES Coordinator is important for effective implementation of the EPP. Attempt to coordinate and schedule inspections with the NPDES Coordinator if possible. Consider including the NPDES Coordinator on all Agency notifications/reports, color classification changes and relevant project related details.

7.0 ECI TECHNICAL ASSISTANCE AND INSPECTIONS

Once a commitment inspection frequency has been established, the ECI will begin inspecting a project. It is important to understand that the role of the ECI does not replace any of the inspection roles by such parties as the NPDES Coordinator (if applicable), construction inspectors etc. on VDOT's active construction projects. For example, the ECI will not be responsible for conducting inspections under the CGP (e.g. inspection of erosion & sediment/stormwater management controls on the entire construction site) or updating the project's SWPPP.

The ECI is responsible for inspections and monitoring of environmental commitments from the NEPA documents, permit conditions, and other special provisions and contract terms. The most common way of tracking and assessing compliance is sequential photo documentation with a detailed inspection narrative. See the [EPA Digital Camera Guide](#) for some tips regarding site photographs. Some commitments may have conditions that require specific monitoring techniques. A few examples of environmental commitments that require specific monitoring techniques include the following:

- WQ - Countersinking - using a transit to confirm elevations;
- WQ - Water quality monitoring - using a meter to measure pH, dissolved oxygen;
- WQ - General conditions - using a scale and known plan locations with wheel or tape measurements, or GPS, to cross reference with the permit plates for assessing permit impact limits;
- T&E -Cofferdams - removing fish before dewatering; and,
- HM - Soil contamination - using a scale and known plan locations with wheel or tape measurements to cross reference with the Phase 2 maps.

7.1 Technical Assistance Coordination and Implementation

Technical assistance is an important element of the ECI program. Technical assistance is a customer service based tool that ECIs can use to help projects navigate the complex and changing nature of construction. Technical assistance site visits are not required to be documented as official compliance inspections. The ECI should consider mentioning this option at the pre-construction conference and offer it during early visits to the site. In addition to the role of evaluating compliance, the ECI is also a technical resource for all of the environmental aspects of a project. The ECI does not have to have all the answers but can be a conduit to help solve issues in each program area.

Technical Assistance Tips:

- “Stay in your lane” - Avoid situations where the Contractor is asking the ECI to direct work - this is the role of the Construction Division. Offer technical assistance to VDOT Construction representatives so it can be appropriately communicated to the Contractor by Construction;
- Common questions: Is this reportable? Where are the limits of the wetland/stream/CR area? Can I do X in the wetland or stream?;
- Adopt the technical assistance mindset - If it is suspected that instream work could be conducted in a more efficient manner, for example, silt fence placed up-slope of an area, work with Construction and the DEM to save the project the time and money;
- Be on the lookout for high risk issues that can arise based on the current site conditions. Bring these up to Construction to avoid issues beforehand; and,
- Be upfront - If there is a significant compliance issue that would warrant reporting to the Agencies that is identified during a technical assistance visit, we still have to report it. But the responsiveness and proactive communication from the project to seek technical assistance from the ECI can be a factor in deciding a color classification.

Always document the results of a technical assistance visit in CEDAR by using either the technical assistance field in the inspection form or a journal entry to document the relevant details of each technical assistance visit.

7.2 Project Inspections

Routine ECI inspections are conducted at the frequency determined by the DEM to evaluate how the environmental commitments are being implemented and managed by the Construction Team for Construction Project and the District or Residency Staff on Maintenance Projects. When a question about commitment compliance arises, an initial resource for the ECI to determine the compliance status, categorical scoring and reporting requirements is the [Compliance Matrix Table](#). The DEM and ECI Program Manager can address questions related to the application and/or interpretation of Commitment Compliance Matrix Tables and its application to specific unique situations that may not be addressed in the Table.

Upon identification of a compliance issue, the routine inspection frequency will most likely be increased, per the Inspection Frequency Table detailed in the bottom right corner of the [Compliance Classification Recovery Pathways](#). Once the non-compliance finding is resolved to the satisfaction of the ECI and/or DEM/ECI Program Manager (depending on the compliance classification), then the inspection schedule should return to the original schedule as outlined in the [Compliance Classification Recovery Pathways](#).

In most situations, field observations will provide the ECI with the information needed for assessing compliance. However, field observations should be supplemented by discussions with the NPDES Coordinators (if applicable), ACE and/or CM to confirm that all relevant facts are being considered. It is suggested that the ECI conduct the site visit with the Project Inspector and/or CM so compliance issues may be discussed at the time of identification. In addition to field observations, the following approaches may be necessary:

- Photo-documentation of project/site conditions prior to the start of construction (taken during situations in which the ECI is not present);
- Review of records and logs maintained by the construction team and/or available in Site Manager;
- Review of the NPDES Coordinators findings/inspection reports that may impact jurisdictional areas;
- Participation in ACE’s weekly progress meetings (if applicable);
- Review of inspection reports provided by the regulator (if the visit was not coordinated with the ECI); and,
- Review of rain gauge data (or other source or rain/storm data).

Communication and coordination with the construction team is essential, starting with identifying roles and responsibilities, establishing expectations in terms of inspection frequencies, documentation and reporting. It is important to remember that timely feedback is critical as the ECI recommended actions may impact a project’s budget and/or schedule. Depending on the project, it can be helpful to hold inspection debrief meetings to review the results of the inspection and agree on timeframes and parties responsible for implementation. Anticipate project closeout issues or deadlines at least 60 days before the C-5. Here are some references for construction related resources:

<u>Approved Materials List</u>	<u>Virginia Erosion and Sediment Control Handbook</u>	<u>Construction Manual</u>	<u>Post Construction Manual</u>
<u>VDOT Drainage Manual</u>	<u>R&B Standards</u>	<u>2020 VDOT R&B Specifications</u>	<u>Construction Inspection Manual</u>

7.2.1 Safety First

Safety is the first priority for all VDOT Employees. For a detailed explanation of VDOT’s Safety Culture and Practices, visit the [Safety and Health Manual](#).

Quick ECI Safety Tips include:

- Communicate intended leaving and returning schedule when going out of the office;
- Be prepared for and aware of ticks, mosquitos, snakes, and other potentially harmful fauna;
- Be prepared for and aware of Poison Ivy, Giant Hogweed and other potentially harmful flora;
- Avoid and never touch suspicious or out of place items while out in the field (woods, roadsides, construction sites, etc.);
- Do not let a phone/tablet become a distraction while out in the field;
- Avoid walking on riprap when possible;
- Follow all confined space rules and regulations;
- Be familiar with the requirements and procedures associated with any Hazardous Materials-related commitments;
- Be aware of the surroundings while out in the field. Pay attention to all construction equipment and activities;
- Wear proper PPE at all times; and,
- Consider the weather when planning your activities (plan for water on hot days, sunscreen/hat, avoid working in the woods on windy days, thunder storms, etc.).

7.2.2 Inspection Strategy

Every inspector will have their own style or perspective but in general, the following tips are recommended to help an inspector to perform effectively:

- Apply a balanced approach to inspections. It is important to be thorough but also recognize when a project is being proactive and demonstrates ownership of environmental performance, and where warranted, integrating a risk-based inspection style for recommended corrective actions;
- Documentation is key. Consider taking before and after construction photos;
- Being an ECI demands a certain amount of technical competency. However, when on-site or sending out reports, remember that there is a need to communicate clearly and without environmental jargon with the individual(s) who will perform the work you are suggesting.;
- Become familiar with the plans and contract documents for each project. With PlanGrid it should be easy to carry them to the project with you, but if not available, carry a folder with the relevant plan sheets and contract documents to the project;
- Approach inspections with a team perspective. An inspection does not have to be an exhaustive inventory of every minor issue on a project. Rather, an ECI inspection is intended to evaluate the overall health of environmental

compliance. Each inspection is an opportunity to learn, improve environmental performance and reduce the risk of regulatory involvement;

- Communicate through the VDOT Construction staff (ACE, CM, Inspector) rather than directly to the Contractor to keep the line of communication clear;
- Dealing with difficult situations or people can be a challenge. Ask for help when such situations arise. One can always call on another ECI or the ECI Coordinator, to discuss the situation; and,
- As various problems are resolved or managed, consider their future applicability for additions to the Lessons Learned module 11.0

7.3 Regulatory Inspections

One of the goals of the ECI program is to anticipate regulatory concerns and implement the program with integrity, irrespective of routine regulatory interactions on the project. Effective communication with regulators is essential to build a good working relationship so they understand that VDOT is managing the environmental commitments appropriately. It is important to keep these interactions as non-confrontational, to document all actions or interactions and to keep the DEM informed after every interaction with the regulatory agencies.

Site inspections by regulatory agencies such as Virginia Department of Environmental Quality (VDEQ), Virginia Marine Resources Commission (VMRC) or the United States Army Corps of Engineers (USACE) may occur without notification, but are typically announced beforehand. It is standard practice to accompany the inspector with the minimal number of appropriate staff to assist with the inspection. Pre-inspection planning may assist the regulator to identify the appropriate areas of concern, but they will generally direct where they want to inspect. When regulatory offices are shorthanded, inspections may be infrequent and brief, but no less important. Photos and documentation, along with GPS locations will assist with resolving any issues, as will discussion and documentation of any proposed or required corrective actions.

7.4 ECI Inspection Reports

ECI inspection reports should be completed and submitted to the DEM (or designee) for review and approval within 2 business days of the site visit. The DEM should review and approve the ECI inspection within 3 days once the inspection is submitted. If no review is required, the inspection report shall be distributed to the project upon completion. After completing the ECI inspection report there are various project stakeholders that can receive the report. Depending on the project, the distribution list can vary greatly.

For Design Bid Build projects typical distribution will look like:

- Construction - Project ACE, CM and Inspector(s)
- NPDES Coordinator
- Environmental - DEM, ADEM

For Design Build projects, the distribution list is likely going to be unique to each project. Work with the Project Manager to determine who should receive the ECI report for each Design Build project. More details can be found in the CEDAR Inspection and Report Guidance Module 13.0.

7.4.1 ECI Report Writing

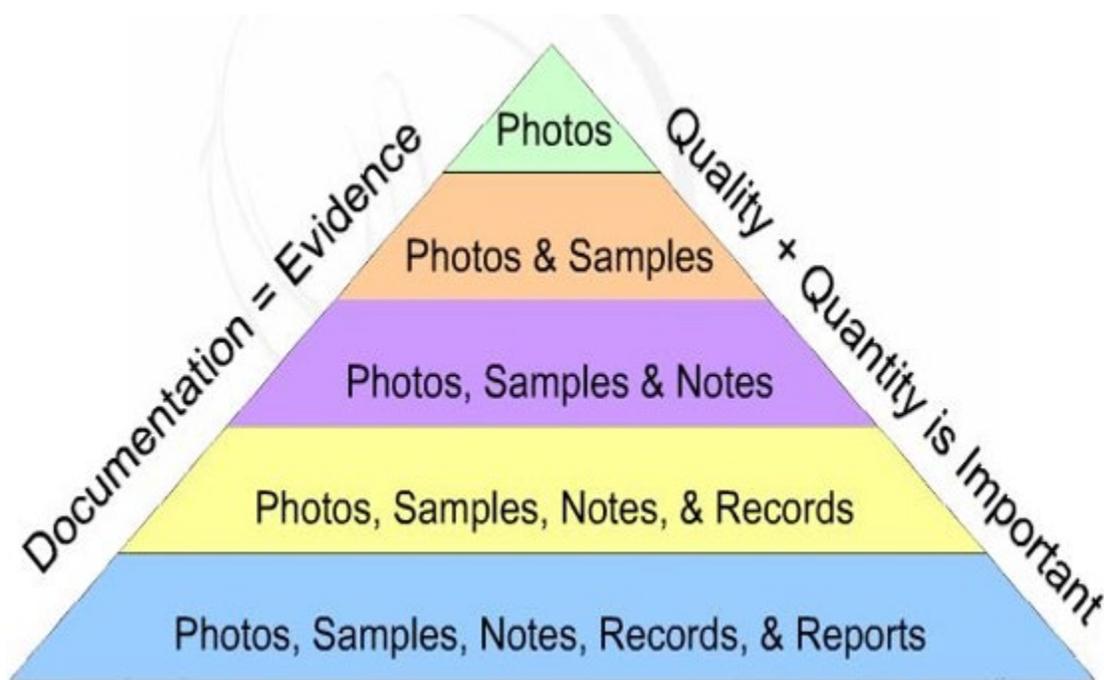
Report writing may be as simple as capturing a few statements in the “Inspector Remarks” section of the Commitment Inspection Form in CEDAR or may entail preparing a formal memo in which significant non-compliance matters are described. Regardless of the format, the ECI shall ensure accurate information is being captured in the applicable report. It is important to remember that as a government employee all of the applicable records may be subject to Freedom of Information Act (FOIA) requests by the public. State employees can be called into court as an expert witness and reports can be admissible in court as evidence. A few best practices for note taking include the following:

- Make all notes factual and objective, do not draw conclusions;
- Take notes as close to the events taking place as possible;
- Document the people present during your inspection;
- Record the date and time of arrival and departure;
- Note the weather conditions;
- Include notes from any conversations;
- Use clear, concise language;
- Do not make subjective assumptions, opinions or conclusions;
- Use observations of alleged correctable or non-compliant items;
- Define any acronyms used;
- Request peer review; and,
- Save and distribute as a read-only file such as a .pdf file.

The ECI shall capture as much information as possible while on the construction site to ensure an accurate description of the site conditions is being portrayed. When possible, if internet service and time allows, the inspection form should be completed while on the project site. However, challenging project sites or schedule time constraints may prohibit the ECI from being able to complete the electronic form while still on the site. If this is the case, the inspection report should be completed within 2 business days of the actual inspection date (site visit). The ECI shall adequately photo-document the existing site conditions and save such photographs on the Report Images Tab, create a photo guide in a Word application, or utilize Plan Grid for the applicable inspection. The photographs should aid the ECI in clarifying field notes while providing the report audience with a clear

understanding of the site conditions. Additionally, the photographs should have a caption describing the location, the compliance issue, the repairs, etc. with a clear visual representation pointing to the area of concern if it is not easily noticeable in the photograph itself.

When writing a report about the site's findings and observations, the ECI needs to treat the report as a legal document and write in a manner which is legible, accurate and objective. It is extremely important to identify why an observation may need corrective action. Thus, when making note of an observation, always reference the controlling source (permit section, code, regulation, etc.), and photo document the finding. In addition to documenting an observation, the ECI needs to clearly state the recommended corrective action, name of party responsible for the corrective action, confirmation of communication with responsible party, and timeline for implementation of correction action. The following graphic depicts a few examples of the documentation pyramid from a VDEQ compliance program presentation:



Further, the ECI shall document whether such observations warrant self-reporting to a regulatory agency. In the event self-reporting to a regulatory agency is required by laws, permits or regulations, the ECI shall ensure all necessary documentation is captured in the report and distributed to the appropriate agencies. (quantity of released material, quantity of tree removal if a T&E violation has occurred, date of report to agencies, responsible party, copy of actual report/notice to agencies, etc.).

If the quantity released is unknown, effort shall be made to reasonably estimate a quantity to provide perspective on the magnitude of the event to the regulatory agency. The purpose of agency notification/reporting is to abide by regulations and demonstrate ownership and control over the event. Agency notifications/reports without quantities, pictures and proactive measures to prevent future occurrences may demonstrate a lack of control over such events. Therefore, the ECI/DEM should make every effort to demonstrate ownership in Agency correspondence. If the ECI/DEM are not the party responsible for notifications/reports, like on DB or P3 projects, the ECI/DEM should reiterate the contract requirements that all notifications and reports are to be submitted as described above by the Permittee. If a release is reported it is recommended that the ECI be on site as soon as is reasonable, in order to determine the amount released and the circumstances surrounding the release. It is advisable to establish agreement between all parties involved regarding the quantities and circumstances surrounding the event.

The ECI should use a concise and consistent writing style for all reports. The ECI is expected to use the appropriate terms and language when describing findings and observations and include specific location information. The following is an example of how to effectively capture a finding:

As a result of the storm on the night of {date} at approximately {time}, there was a breach in the silt fence at station number_____ which resulted in a Type 1 release of sediment into the adjacent PEM wetland. The area of impact was approximately 2' x 2' and 1" in depth, which is approximately {calculate an estimated quantity}. The sediment was removed with hand tools, the area was stabilized with the appropriate wetland seed mix and silt fence immediately repaired by the Contractor. Please see the before and after photo labeled_____. Per the VDEQ Permit #_____ and COE IP Permit #_____, written notification was provided to both agencies within 24 hours. Copies of notices are included as part of this report.

It is important to frame inspection findings as observations instead of conclusions since observations remove subjectivity or opinions from the inspection report. If an inspection is likely to produce findings that are going to result in regulatory enforcement it is even more critical to state the findings as observations. Stating inspection items as conclusions may undermine the credibility and enforceability of an entire inspection report according to the Administrative Process Act (APA), Va. Code § 2.2-4001. While performing an inspection, observations are made by the inspector, and conclusions surrounding those observations will be made later within the final case decision if the inspection report is used for evidence in the regulatory enforcement process. Therefore, it is critical to use factual and specific observations and not subjective conclusions while writing inspection reports.

The following examples provide scenarios for appropriate wording or documentation of conclusions vs. observations in the ECI report:

- **Conclusion:** Contractor X is not non-compliant with their VDEQ permit because they neglected to install silt fence near the wetlands adjacent to the project.
Observation: VDOT Staff inspected Contractor X's site on xx/xx/xxxx. It was observed during the inspection that the silt fence was not installed as described in the contract documents. Wetland X is directly downstream of the area where the silt fence is shown to be installed.
- **Conclusion:** Since Contractor X did not install silt fence near the wetlands there was a sediment discharge after a recent rain event.
Observation: During the inspection on xx/xx/xxxx for UPC xxxxxx, 2" of sediment was measured in wetland X. A storm on xx/xx/xxxx produced x.xx" of rainfall. During the storm event on xx/xx/xxxx silt fence was not installed per the approved plan.

All ECIs understand that certain projects can be challenging. If a project is in a challenging stage it is important to keep the inspection reports objective and factual to avoid an accusatory tone. Accusatory language in the inspection report distracts from the observations noted. Please see the following example:

- **Accusation:** Contractor X has not maintained the silt fence at impact area 2 and should know by now it is required maintenance since it has been noted on the last two inspection reports. This maintenance activity could be easily accomplished.
Observation: The silt fence at impact area 2 requires maintenance per VDOT standard EC-5 . This observation was noted on xx/xx/xxxx and xx/xx/xxxx.

7.4.2 PlanGrid and Tablet Based Inspection

PlanGrid licenses and tablet assignments are specific to the designated user. All tablet-based inspections should be conducted in a manner that is in compliance with the user-device agreement. Tablets cannot be shared with other users. Be aware of your surroundings while using the tablet on a construction site. Project assignment can be arranged through District resources or by econstruction@vdot.virginia.gov.

Tablet-based inspections are an evolving effort within the ECI program. For the latest guidance and status contact the DEM, the ECI Program Manager or the ECI Program Coordinator.

Link to [E-construction Sharepoint Site](#)

[PlanGrid Youtube Playlist](#): Click to see the PlanGrid Training specific Youtube Playlist.

[PlanGrid eLearning](#): Click to go to VDOT-U and access our PlanGrid eLearning Modules.

Click [HERE](#) for the full PlanGrid User Guide

- [Chapter 1: Accessing PlanGrid](#)
- [Chapter 2: Mark-Ups](#)
- [Chapter 3: Progress Photos](#)
- [Chapter 4: Tasks](#)
- [Chapter 5: General Collaboration](#)
- [Chapter 6: Field Reports](#)
- [Chapter 7: Plan Revisions](#)
- [Chapter 8: Exporting As-Builts from PlanGrid](#)

Common Question:

Q: Does the ECI have to fill out two reports now?

A: The PlanGrid Report will replace the current cumbersome process of inserting pictures into a word document and converting it to a PDF. The PlanGrid Report is a consistent and convenient document to enhance the ECI's report.

8.0 Reporting Procedures

This module contains the methods and resources for consistent external reporting.

8.1 Type I/II Reporting

In 2018, the Environmental Division collaborated with the VDEQ to develop an incident reporting and corrective action summary for discharges termed “Type I and Type II Discharges”. The purpose of the document was to establish both consistent reporting protocols to support the proper project compliance classification and standard corrective actions for incidents involving a release of sediment or other pollutants to water or the ground surface.

It is important to note that it applies to all projects even if there are no water quality permits on the project, and does not supersede the regulatory requirements of the VDEQ VWP Program, nor limit the enforcement discretion of the VDEQ or USACE to require additional corrective actions beyond those actions outlined. The summary document provides agency responses that could be reasonably expected based on incidents where unusual or sensitive conditions (T&E, water supply, public concerns, hydrology, etc.) are not involved. Link to [Type I/II Discharge Guidance](#).

8.2 Agency Reporting & ENVreports protocol

Whenever a discharge of sediment, grout or construction debris occurs within jurisdictional waters or wetlands, it is required by the regulatory agencies to be reported within 24 hours by an email to the appropriate regulatory contact(s) and to VDOT via ENVreports. Other circumstances like exceeding permitted limits or fish kills could also trigger notification/reporting to the agencies, so be sure to be familiar with the reporting requirements for each commitment. Whenever an Agency reporting event occurs the ECI should evaluate and document the incident with a project visit and inspection report unless otherwise directed by the DEM or designee. Copy the ENVreports distribution (envreports@vdot.virginia.gov) on all agency notifications/reports and relevant agency correspondence for matters concerning the ECI program. The ENVreports email goes to select managers in the CO Environmental, Construction and Location and Design Divisions. Regulatory agencies also require 24 hour notice by email and it has been an accepted practice to then provide a follow up email within five days. The date, time, location and amount of discharge should be included. It is not acceptable to report an “unknown” amount of discharge unless the amount is actually unknown, or cannot be estimated. The following five-day notification (required under the VPDES CGP but can be adopted by the ECI as necessary) should include a proposed corrective action plan or detail what corrective actions were already taken. If a discharge happens over a holiday

or weekend, every effort should be made to contact the appropriate VDOT staff by phone and email.

The ECI may encounter a hesitation to report to the Agencies, but the ECI should reassure all project stakeholders that agency communication only takes place as required by the permit/commitment and the likely result of such communication only continues to build VDOT's credibility. However, there may be significant consequences if VDOT is found withholding information that should be communicated. Refer to the [Incident Communication Protocol](#) and the [Reporting Quick Reference Guide](#) for reporting guidance.

9.0 COMPLIANCE CLASSIFICATION AND RECOVERY

The purpose of the Categorical Scoring Classifications is to provide all parties involved with a perspective of the severity of the situation. Accordingly, minor problems can be treated as correctable and classified with Green or Yellow; whereas, major problems will likely be treated as reportable and result in an Orange or Red classification. A correctable finding may or may not result in some level of informal communication (e.g. phone call or brief email) with the applicable regulatory agency, and a reportable finding will result in a more formal method of communication with the regulatory agency (e.g. formal memorandum from the DEM supplemented with the CEDAR Commitments Performance Report). The compliance classification color also signifies the level of VDOT personnel resources allocated to the project until the matter is resolved. For example, a project classified as Yellow will have District oversight and an Orange project will have oversight by CO while the compliance matter is being resolved. A project elevated to Red will have Executive level oversight to resolve significant compliance issues. The main purpose of the elevated level of oversight is to ensure that the appropriate level of resources are being provided to the Construction Team.

9.1 Compliance Matrix

The [Compliance Matrix Table](#) is a tool that will assist the ECI to make consistent decisions about the project's performance in implementing and managing Environmental Commitments. The compliance matrix shows the variety of issues which may be encountered on a construction project along with programmatic recommendations on the potential compliance classification. The matrix was evaluated by CO Environmental Program Managers, along with various DEMs, to validate the classifications for the various situations. The compliance matrix will not address every situation that may be encountered by the ECI, as it is impossible to predict each and every situation. Accordingly, the ECI should consider applying the matrix to similar situations encountered in the field, while understanding that the chart is intended to be a general guide and professional judgement should be used based on project-specific nuanced situations.

9.2 Compliance Classification Recovery Pathways

The [Compliance Classification Recovery Pathways](#) provides the framework of how a project will return to a different ownership-level classification. The chart also provides guidance on the number of additional inspections required once a project receives a non-complaint classification. As with the [Compliance Matrix Table](#), it provides the general process framework for Classification transitions, but project-specific circumstances may influence the final transition steps.

9.2.1 Inspection Frequency Table:

The Inspection Frequency Table represents the suggested number of follow-up inspections based on compliance classification level. The DEM may require additional inspections based on the project specific compliance classification. However, the DEM shall consult with CO prior to reducing the number of inspections for the Orange classification. If the appropriate information has been provided and documented in order to confirm completion of a corrective action, an in-person follow-up inspection may not be warranted. However, if the requested information is not provided in a timely manner, repeat and follow up inspections may be warranted.

Inspection Frequency Table	
Status	Recommended Inspection Frequency
Green	Monthly
Yellow	Bi-weekly
Orange	Weekly
Red	Weekly

9.2.2 Ownership Responsibilities

In the Green Compliance Classification Status, the District Project Team is engaged and implementing the environmental commitments adequately. The District ECI interacts with the Project Team to provide compliance assistance and scheduled inspections per the frequency established by the DEM. The DEM evaluates appropriate changes to the inspection schedule based on project progress and compliance.

The [Compliance Classification Recovery Pathways](#) complements the [Compliance Matrix Table](#) and represents the process a project follows to demonstrate improvement in environmental performance after an evaluation of the project commitments move beyond Green or Yellow. The chart provides a general process framework and may be amended due to project-specific situations after consultation with CO.

9.2.2.1 Yellow Compliance Classification

In the Yellow Compliance Classification Status, the District Leadership is engaged in project compliance oversight:

- District Environmental works with District Construction and the Project Team to resolve the compliance issues identified during ECI inspections;
- District Environmental increases the ECI inspections in accordance with the

Inspection Frequency Guidance in the ECI Program Guidance Manual until all corrective actions are complete and compliance issues are resolved;

- District Environmental coordinates with the ECI Program Manager for support and inspection assistance, where warranted; and,
- The DEM or designee makes recommendations for Orange Classification to the ECI Program Manager.

9.2.2.1 Orange Compliance Classification

When in the Orange Compliance Classification Status, the Environmental Division leadership is contacted and is involved in project compliance oversight to support the District's efforts:

- District Environmental ensures that appropriate due diligence and/or follow-up inspections have occurred to document and support the Orange Classification recommendation, in particular where compliance issues such as sediment discharges or other non-compliant events have been reported by project construction staff and not yet verified by the District ECI;
- The ECI Program Manager and DEM or designee review project issues and develop documentation to support Orange classification transitions;
- The ECI Program Manager obtains Division Leadership concurrence for classification change and communicates the decision to District Environmental prior to formal color change to Orange in CEDAR;
- The ECI Program Manager works with District Environmental/Construction to develop root-cause analysis, corrective actions and classification recovery plans; and,
- The ECI Program Manager assists the District with classification recovery deliverable reviews, compliance inspections and regulatory discussions.

The Environmental Division actions may include, but are not limited to: 1) increased inspection frequency by District and/or CO ECIs; 2) recommendations to Construction for full/partial project shutdown until compliance issues are addressed; 3) increased training of Contractor staff and subcontractors; 4) environmental-related hold-point meetings, and 5) recommendation for a Red Classification to Executive Leadership.

An [Orange Classification Concurrence Form](#) can assist the DEM to provide information to CO staff as a means to efficiently communicate the information needed to effect a compliance classification transition to Orange, and obtain concurrence from CO.

If a project is classified as Orange and significant environmental issues are not being resolved, the DEM and CO will explore additional options to improve compliance. A

weekly executive summary is prepared by CO Env PM and PC to track the status of Orange projects.

9.2.2.3 Red Compliance Classification

When in Red Compliance Classification Status, executive leadership becomes engaged in project compliance oversight to support the District's and Division's efforts. If a project is recommended for a Red classification, the District and CO Compliance Program management will need to collaborate in providing justification for the classification to executive leadership. A Red classification will ultimately be decided at the executive leadership level. The Environmental Division Director obtains concurrence from executive leadership for Red classification transitions. The justification documentation should consist of a project performance summary with a detailed environmental timeline of the following:

- Brief overview of the Permits/Commitments and their corresponding Agencies;
- Efforts VDOT took to prevent a Red classification; and,
- All performance related facts and dates including:
 - Color classification changes;
 - Non-compliance findings as determined by VDOT or the Agencies;
 - Project shutdowns to address non-compliance issues;
 - Recommended corrective actions that are not addressed in subsequent inspections; and,
 - Agency correspondence, inspections and formal determinations.

For a more detailed example of an [ECI Performance Summary Red/Orange Justification Executive-Level Actions](#), may include, but are not limited to:

- Discussions with the Contractor Executive Management;
- Project shutdown pending field activities to correct compliance deficiencies;
- Removal and/or suspension of the Contractor from the bidders list;
- Request for changes in key project personnel;
- Require an increase in Contractor resources to address compliance deficiencies;
- Liquidated damages; and/or,
- Other actions, as appropriate.

9.2.3 Compliance Recovery Plan Process

The [Compliance Classification Recovery Pathways](#) chart involves the steps needed to return a project to compliance. The following bullets provide an overview of the major points to consider when navigating from one classification to the next.

Red to Orange:

- If the corrective action is completed prior to receipt of the Warning Letter or Notice of Violation, and the regulatory agency does not require any further action, an Orange classification will be considered by executive leadership provided follow-up inspections demonstrate the commitments are being fully implemented and the project warrants reclassification;
- In cases where the corrective action is not completed prior to receipt of a Warning Letter or Notice of Violation, the ECI and/or DEM will need to consult with regulatory agencies to determine appropriate action (if such action is not specified in the Warning Letter or Notice of Violation);
- The DEM, in consultation with CO, will determine the appropriate number of follow up inspections by the ECI to confirm that project commitments are being implemented and reclassification is warranted;
- CO will seek input from executive leadership before concurring that project reclassification is warranted. Please note that executive leadership concurrence may include project-specific stipulations or requirements that the project must meet in order to achieve or maintain a new classification; and,
- Depending on project specifics, a project may not completely advance back to Green from the Red level classification. However, in the event a full compliance classification recovery is not authorized by the executive leadership, CO will consult with the DEM to determine the necessary steps, plan of action, etc. (CO intends to keep the DEM involved in the decision making process).

Orange to Yellow:

- Under an Orange classification, CO involvement in the project and collaboration with the District to resolve and ensure follow-up inspections and corrective actions are appropriate. Additionally, project commitments are implemented prior to reclassification as Yellow;
- The DEM shall consult with CO once corrective actions are complete and accepted by the ECI and Agency (if applicable) prior to approving a project for Yellow classification;

- The DEM shall consult with CO on recommended inspection frequency; and,
- The project shall remain at the Orange classification until CO & the DEM concur that the Path to Yellow is complete and the project can sustain a Yellow compliance classification.

The following link is an example of a [Project Reclassification Template](#).

Yellow to Green:

- The District has control of the project compliance when a project is rated Yellow.

The DEM/ECI will determine appropriate corrective action and required follow-up inspections.

10.0 ROOT CAUSE ANALYSIS AND CORRECTIVE ACTIONS

This module contains information on developing effective corrective action plans, the various elements that could be included in corrective action plans and an example method of documentation.

10.1 Root Cause Analysis

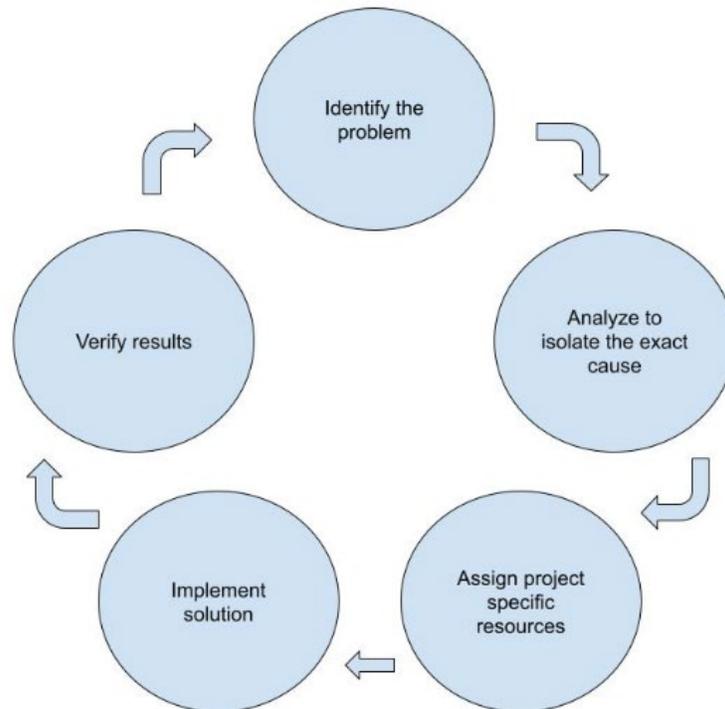
Many effective Corrective Action Plans (CAP) begin with a root cause analysis. Root cause analysis is a risk management method to determine the original set of circumstances that resulted in an actual or anticipated error. When there are significant or repetitive issues that arise, using this approach can help cure the problem, not just treat the symptoms. The overall project performance will benefit from this approach because resources can be allocated to solve a problem once and prevent them from reoccurring. Some problems like routine maintenance are not able to be solved indefinitely, but when applied properly, root cause analysis can improve the EPP's team performance, save taxpayer money and deliver a high quality product.

Some practical examples of root cause analysis are:

- Making sure the right ESC/SWM solution is in place based on the site characteristics;
- Checking the plans where unauthorized impacts occur and determining why the boundaries were not clear to the operators prosecuting the work; and,
- In light of the current phase of construction, define what risks are relevant and which steps could be taken to prevent a common issue from occurring.

Whatever the problem is, the ECI should work with the construction management (bid item quantities are in the contract) to see what resources are available to address the issue. Likewise, the ECI shall not direct work and only recommend solutions that are available to the project.

The following figure developed by the ECI Program is a graphical summary of the root cause analysis process:



10.2 Corrective Action Plan (CAP) Elements

Each CAP will contain a unique set of solutions, determined by root cause analysis and risk management to tailor a project specific plan that will improve compliance. A CAP could be developed for a specific instance of non-compliance with regulatory involvement or as elements of a Classification Recovery Plan. The CAP is typically developed jointly by District Environmental and CO (if the project is in Orange/Red). As the CAP is developed it is important to establish buy-in, as much as possible, with the appropriate project stakeholders. For more information regarding a specific example of a CAP, see [Project Reclassification Template](#).

A CAP may include:

- Required training of construction personnel on a specific topic or on environmental commitments in general;
- Focused and strategic hold point meetings (example: [Hold Point Meeting Checklist](#)) prior to initiating work in a sensitive area; or,
- Removal of certain personnel if they are not complying with permit requirements.

10.3 Tracking Corrective Actions

Whenever a project reaches the stage of needing a CAP or multiple CAPs, detailed documentation of the expectations detailed in the CAP(s) and their execution is needed. Always document in CEDAR the status of relevant CAP(s) details such as: the current CAP status, the date expectations were communicated and the milestone completion dates for each task. See the example [Environmental Performance Recovery Plan Tracking Document](#).

11.0 EPP DASHBOARD

The Environmental Performance Program (EPP) is a programmatic effort of the Environmental Division, Location and Design Division, and the Construction Division to ensure the appropriate resources are provided to facilitate and monitor the successful implementation of environmental commitments and project related environmental permits. The program was developed to identify areas of needed improvement and training opportunities at a program level and at the individual project level.

The Environmental, Location and Design, Construction, and Performance Transformation Divisions, in consultation with District staff, developed the EPP Dashboard. It was initially unveiled in 2019 and is now available agency wide to promote transparency around the status or trends of environmental performance.

The EPP and the daily work of Environmental Compliance Inspectors, NPDES Coordinators and Construction Inspectors have succeeded in consolidating the agency's technical expertise regarding storm water management, compliance with water quality permits, protection of endangered species, management of hazardous materials and cultural resources and many other Environmental Commitments.

Additional resources provided on the [EPP SharePoint site](#) promote awareness of environmental performance, provide training opportunities, and offer program support tools, guidance and resource contacts. Implementation of the EPP, together with VDOT's continued proactive collaboration with the construction industry, will ensure the success of a wide range of environmental commitments that we encounter on our construction projects. Here are links to the [EPP Dashboard](#) & [EPP Dashboard User Guide](#).

12.0 LESSONS LEARNED

The combined knowledge of the District ECIs, ADEMs, DEMs and ECI Program staff is a valuable resource. While Bristol has many T&E commitments, Hampton Roads has sandy soils and tidal waters. These various differences between Districts can help shape a knowledge base particular to each area. The ECIs and NPDES Coordinators have the opportunity to see multiple projects that vary by type and complexity in construction from start to finish. Few internal groups at VDOT have this type of project exposure. The experiences of ECIs can help others around the state, improve the program as a whole and deliver projects with less cost and more value. As such, this section provides additional lessons learned that could benefit the ECI Team statewide. Please contact the ECI Program Manager or ECI Program Coordinator with additional anecdotal lessons learned so that we can continue to grow our shared knowledge. Specific lessons learned include:

- As much as it depends on us, it will benefit the process to try to move forward in each step with the most “buy-in”, as much as possible. Consider debriefing meetings after inspections to establish that each item on the report is known beforehand, agreed upon as a legitimate item, and has established expectations for completion. Establish who will inspect or walk with the ECI on their visits;
- Try to cultivate a team perspective. Establish ECI as “us”, not “them”. Be a resource to the project. Nobody likes to be surprised with impromptu inspections, unexpected corrective actions or color classifications;
- If Limits of Disturbance (LOD) issues start to occur, elevate the issue to the project leadership to ensure that the LOD, temporary construction access roads, clearing and grubbing limits or permit limits etc. have all been reconciled;
- It is important to communicate effectively and early in order to make sure the contractor or construction crews are keeping District Environmental informed. Consider requesting a Two or Three week look ahead. Be included in environmental progress meetings. Look out for information “silo-ing” - full disclosure is needed from all parties to work together in the most effective way. Proactive communication with field crews is essential in terms of sequencing or phasing, staging and constructability;
- If problems persist, inquire about the processes in place to communicate requirements to the field staff conducting the work and then try to provide help or support in the processes;
- Make sure consultant inspectors are trained to know when to involve the DEM/Environmental team. They need to be engaged in the ECI Program

from the start. CO Environmental is always available to help train consultants with the ECI program and protocols;

- Evaluate the permit plates or plans early for small unpermitted pocket wetlands or jurisdictional areas that will likely be impacted during construction. It has been observed on multiple projects that small areas carved out for avoidance & minimization were not evaluated for constructability or demarcated and then were impacted during construction;
- Identify and evaluate outfalls early and have a schedule for reviewing. The inspection mindset should include inspection of every out fall, during every inspection. If the project is Design Build, the Design Build team should be inspecting outfalls regularly. The ECI should spot check outfalls where active construction is taking place or where they are at high risk for discharges into jurisdictional areas. Pre-construction photos of outfall areas and other commitments is important and can be taken as applicable by either the ECI or by the Design Build team;
- For larger projects consider hold-point meetings prior to working in proximity to or where there are permitted impacts to jurisdictional/commitment areas. Early submittal and review of water management or diversion plans, preparation of plans to address TOYRs, cultural resource protection commitments or threatened and endangered species commitments and orange safety fence installed and perimeter protection in place can save a lot of trouble, expense and unnecessary delays;
- For large projects consider recommending dedicated ESC and stabilization crews. Stabilization is a cost-effective preventative measure that will save significant time and effort. The more the project focuses on stabilization as the work progresses, the less problems there will be in the future;
- For DB projects, the continuity with the design, permitting and implementation teams is crucial. If you are having consistent issues check to see how these project stakeholders are working together and consult with the DEM and VDOT Construction Management to develop recommendations;
- When emailing out an ECI inspection report, make sure that the cover email or other information attached to inspection is conveyed to all parties in its entirety, as applicable;
- If problems persist, consider starting a log of reporting or notification for environmental incidents to document the who, what, when, where, and why of the incidents;
- When it is required for the project, be familiar with the project's Environmental Management Plan (EMP). Consider how it details training, oversight, and communication requirements;

- Preemptively discuss expectations for more difficult permit conditions such as Aquatic Organism Passage (AOP), countersinking, “working in the dry”, adequate outfall designs, reporting requirements, restoration plans, etc.; and.
- For complex projects consider inquiring about utilizing various technologies like drones and handheld sub-meter GPS units to assist in evaluating project and permit limits.

There are also some common situations where there may be misunderstandings between the ECI and the contractor, such as:

- In-stream work within permitted permanent impact areas still must be done in the dry to minimize sediment discharges during construction. Pump around the impacted work area from clean water upstream to clean water downstream, or to an appropriately sized and located dewatering bag, effectively isolating the disturbed area;
- Protecting the existing stream channel at the point of outfall in order to minimize stream channel erosion is also required;
- Riprap placed in a stream channel is a permanent impact and should not be placed outside of permitted impact limits;
- It is important to emphasize that the 2-year storm threshold is related to ESC/C-107 discharges and not to WQ/404 permits and does not influence reporting; and,
- There is often confusion over temporary vs. permanent jurisdictional impacts. Temporary impacts need to be restored and permanent impacts do not. If an impact is in place for more than a year it is considered to be a permanent impact. Work within permanent impact areas still requires protection of water quality during construction. Contractors may think that since they have obtained permits and paid for mitigation they can do whatever they want within the permitted footprint.

13.0 DESIGN BUILD/PUBLIC-PRIVATE PARTNERSHIP (P3) PROJECTS

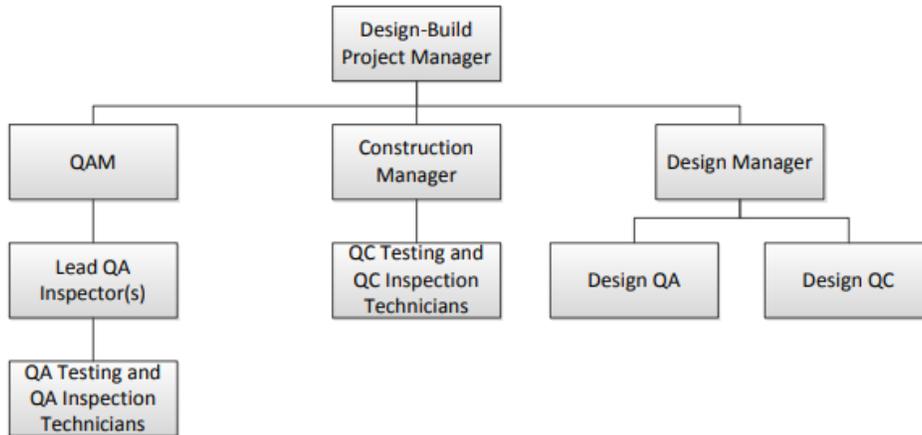
Design Build (DB) and P3 project are methods of alternative project delivery. With Design Build projects, VDOT is administering construction but the contractor is handling the design. P3 projects are another step removed since a private entity will be administering construction and the contractor will be responsible for the design. However, both projects are still fundamentally “VDOT projects.” To learn more about alternative project delivery visit the [VDOT site](#) or the [Design-Build Procurement Manual](#).

For a Design Build project, the Contractor, or in a Public Private Partnership (P3), the Concessionaire, is the permit holder and will obtain permit modifications with VDOT review. This can complicate matters when there are compliance issues. In addition, Design Build and P3 projects often add multiple layers of management and consultants that can complicate the communication process. Pre-emptive contract requirements, environmental management plans and other considerations will require the DEM and ECI to manage the project differently than Design Bid Build projects.

Early and effective communication and coordination with the parties involved is essential. Identifying the key team members early in the pre-construction phases is very important. The designated Project Manager, Environmental Compliance Managers, NPDES Coordinators, Construction Inspectors and Quality Control and Assurance (QA/QC) staff hired by the Contractor and/or Concessionaire should be identified as early as possible. The DB Contractor may have a less defined or more fluid design process which can make it difficult for the ECI or DEM to monitor compliance. Communication with the designated environmental compliance manager for the project is essential. The Design Builder should always include the appropriate District Environmental contacts on relevant correspondence with the regulatory agencies; check the technical requirements for your particular project for the reference of this contractual requirement.

The roles of the QA/QC, the QAM and other various personnel involved with a design build project can be confusing. See the [Minimum Requirements for Quality Assurance](#)

and Quality Control on Design Build and P3 Projects for more information. Below is a typical QA/QC structure for a design build project:



14.0 CEDAR INSPECTIONS AND REPORT GUIDANCE

The Comprehensive Environmental Data and Reporting System (CEDAR) Commitments Module was initially developed in 2015 and established as the main tracking device for environmental commitment inspections for use by the ECI. The Commitments Tab in CEDAR was enhanced to support the ECI Program through the development of the Inspection Tab. The DEM (or designee) can assign an ECI to all of the project commitments or assign multiple ECIs to a project based on the types of commitments identified. Once assigned to a commitment, the ECI can then document inspection results, classify and score the inspection findings, develop reports and upload supporting documentation and photographs through the Inspection Tab.

The Inspection tab is updated to reflect each project inspection by the ECI (routine follow-up or to provide technical assistance). ECI Reports are generated using the various reporting capabilities built into the Inspection tab.

All pertinent data is captured in the appropriate fields on the Inspection tab under the relevant commitment in CEDAR. Pertinent data includes regulatory agency reporting/notification, regulatory inspections and the applicable resolution or results of an environmental incident. The Supporting Documents tab associated with the Inspection tab is used to supplement and support the actual inspection record. However, this feature is not to be used in lieu of capturing the necessary data on the Inspection tab. Supporting Documents may include, but are not limited to charts,

memos, or other reports. Photos can be captured in the Images tab, loaded into the Supporting Documents tab as an annotated PDF, or imported in the Plan Grid Report that is uploaded to the Supporting Documents tab.

The following pages show the various features and functions of the Inspection Component of the CEDAR/Commitments Tab.

Commitment Tab – ECI Assignment Process:

Summary	IPM Activities	Tasks	Forms	Documents	Commitments	Journal	Assets
Commitments							
<div style="display: flex; justify-content: space-between; align-items: center;"> <input type="checkbox"/> Date Task Related Identified By Name End Date Status Assigned To Inspector ? </div>							
DOCUMENTS							
<input checked="" type="checkbox"/>	07/20/2017	No	CO Env. Program Mgr.	Maintenance of a buffer area		In Progress	Yes
WATER QUALITY PERMITS							
<input checked="" type="checkbox"/>	07/20/2017	No	CO Env. Program Mgr.	Authorized Permit Package for Bid Proposal/Contract		In Progress	Yes

Start the ECI Assignment Process by selecting the applicable icon under the “Assigned To Inspector” column. “Yes” means the commitment has been assigned to an ECI; whereas, “No” or “Saved” means the commitment has not been assigned, or the assignment is in the process.

Commitment-Inspector Assignment ?

Commitment Type

Date Assigned: 07/20/2017

Relevant Program Area: Water Quality Permits

Commitment Name: Authorized Permit Package for Bid Proposal/Contract

Description:

Assign To: Russell, Diana N.

Comments:

Technical Assistance:

Planned Start Date: 07/20/2017

Planned End Date: 07/31/2018

Assignment Status: Assigned

Commitment Status: In Progress

Inspection Frequency: Other

Complete the assignment process by selecting this icon.

The above screen represents the actual assignment screen.

Completing an ECI inspection:

Getting to the commitment inspection form: CEDAR link:

<http://cedar/main/jsp/cedarMain.jsp>

CEDAR Main screen:

The screenshot shows the CEDAR Main screen with various navigation icons at the top: PROJECTS, GIS, REPORTS, DOCUMENTS, CONTRACTS, ADMIN, and HELP. The user's name, Nicholas Gerardi, is displayed in the top right. Below the navigation bar, there are tabs for Announcements, Alerts, Project Search (which is active), Common Functions, and Links. The main search area contains several input fields: District (dropdown), City/County (dropdown), Residency (dropdown), Project Number (text), UPC/Temp UPC (text), Project Type (dropdown), Project Name (text), Permit Number (text), CEDAR Status (dropdown), Route Number (text), Route Type (dropdown), Environmental Contact (text), Planned Ad/Est Begin Date (text), Start Date (text), and End Date (text). Search and Reset buttons are located at the bottom of the search area.

Search for the UPC:

This screenshot is identical to the previous one, but with a red arrow pointing to the District dropdown menu and a red circle around the UPC/Temp UPC text input field, which contains the value '115009'. The Search and Reset buttons are visible at the bottom.

Click the UPC:

Navigation: PROJECTS, GIS, REPORTS, DOCUMENTS, CONTRACTS, ADMIN, HELP

Announcements, Alerts, Project Search, Common Functions, Links

District: (Select a District) | CEDAR Status: | City/County: (District not selected) | Route Number: | Residency: | Route Type: | Project Number: | Environmental Contact: | UPC/Temp UPC: 115009 | Start Date: | End Date: | Project Type: | Planned Ad/Est Begin Date: | Project Name: | Permit Number: |

Search | Reset | Add To Watch List | Check All

Project Identifier	State Project #	Jurisdiction	Project Type	Map
115009	0064-M06-033	Hampton Roads District Wide	Construction	

Project main screen – Select the "Commitments" tab

CEDAR (115009) Project Spawn - Projects Window - Internet Explorer

Summary | IPM Activities | Tasks | Forms | Documents | **Commitments** | Journal | Assets

Project Info

Project Name: I-64 HRBT Expansion Project

Project Number: 0064-M06-033, B601, B602, B603, B604, B605, B606, B607, B608, B609, B610, B611, B612, B613, B614, B615, B616, B617, B618, B619, B620, B621, B622, B623, B624, B625, B626, B627, B628, B629, B630, B631, B632, B633, B634, C501, P101, R201 | **UPC:** 115009

Route Number: 64 | **Route Type:** Interstate

District: Hampton Roads | **City/County:** Hampton Roads District Wide | **Residency:**

CEDAR Project Status: Active

IPM Project Status: MONITORING FUNDS

IPM Project Description: I-64 HRBT Expansion Project - Owners Oversight

Additional Project Description: Hampton Roads Bridge Tunnel Expansion Project

Project Type: Construction

Funding Source: State | **Charge Number:**

Project Limit--From: Settlers Landing Road

Project Limit--To: I-564

Latitude: | **Longitude:**

Scroll down and click the date of the commitment the ECI plans to inspect.

Commitments							
<input type="checkbox"/> Date	Task Related	Identified By	Name	End Date	Status	Assigned To	Inspector
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Mammal Protection Act Protection of Endangered Bats - Bridge Inventory		In Progress	No	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Protection of Endangered Bats - Inventory Guidelines and Form		In Progress	No	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Benthic species- Avoidance and Minimization Measures		In Progress	No	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Anadromous Fish and Marine Mammals		In Progress	No	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Submerged Aquatic Vegetation - Impact avoidance/minimization		In Progress	No	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Colonial Nesting Bird Management Plan - DB Responsibility Part 1 of 2	11/15/2019	Complete	Saved	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Colonial Nesting Bird Management Plan - DB Responsibility Part 2 of 2	11/15/2019	Complete	Saved	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Limitation of Operation/Protection of Peregrine Falcon		In Progress	No	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Colonial Nesting Bird Management on South Island 03/31/2020 beginning Spring 2019		Complete	Yes	
<input type="checkbox"/> 06/18/2019	No	C.O. Environmental	Protection of Endangered		In Progress	No	

Tab over to Inspection. Scroll down and click “Add commitment performance report”

CEDAR (97565) - Properties Window - Internet Explorer

Commitment Properties						
Project Info		Commitment	Inspection	Supporting Docs		
Report Date	Follow Up Date	Categorical Score	Inspector Remarks	Status	Actions	
04/23/2019	05/07/2019	Green		Compliant	[Grid] [3] [Print] [X]	
04/16/2019	04/23/2019	Green		Compliant	[Grid] [3] [Print] [X]	
04/09/2019	04/16/2019	Green		Compliant	[Grid] [3] [Print] [X]	
04/03/2019	04/09/2019	Green		Compliant	[Grid] [3] [Print] [X]	
Environmental Manager Approval Required **						
Add Commitment Performance Report						

If “Add commitment performance report” is not showing up, check to make sure the inspector assignment is correct.

Blank inspection form:

Commitment Performance Form

Project Info Commitment Inspection Supporting Docs Report Images Journal

Relevant Program Area: Threatened and Endangered Species

Commitment Name: Colonial Nesting Bird Management on South Island beginning Spring 2019

Primary Inspector: Hofmeyer (VDOT Contractor), Craig **Prime Contractor:**

Secondary Inspector:

Report Date: 04/01/2020 **Inspection Date:**

Inspection Frequency: Monthly **Project Phase:** Pre-Construction

Inspection Status: **Amount of Precipitation (inches):** Range

Classification: **Duration:**

Categorical Score: **Type of Storm:**

Follow Up Date:

Project Areas

Project Area Observed: 

Inspector Remarks:

Area of Technical Assistance:

Summary of Assistance Provided:

Completed inspection form: once done with inspection narrative, save. Then add supporting docs and/or report images.

Commitment Performance Form

Project Info | Commitment | **Inspection** | Supporting Docs | Report Images | Journal

Secondary Inspector: Bova, David R

Report Date: 03/29/2019 Inspection Date: 03/28/2019

Inspection Frequency: Monthly Project Phase: Construction

Inspection Status: Non-Compliant Amount of Precipitation(inches): Range

Classification: Correctable Duration:

Categorical Score: Orange Type of Storm:

Follow Up Date: 04/03/2019

Project Areas

Project Area: General +

Type of Discharge: N/A
 Type 1
 Type 2

Inspector Remarks:

The project is still in effort of fulfilling the CAP as agreed upon between VDOT, DEQ and the Corps. No additional corrective items have been identified. The ECI and project inspector team have been working to identify areas that can

Area of Technical Assistance: Individual permit

Summary of Assistance Provided:

The level of technical assistance for addressing the permit conditions to the project inspector team and contractor for both the DEQ and Corps permit has been significant and ongoing.

The inspector's remarks or technical assistance need to be concise, accurate and objective. Corrective actions described should reference the relevant photo and/or location info. Keep in mind ECI's do not direct work. Items that do not meet standard/spec/conditions should be described as an observation in an objective manner and followed up with recommended corrective action. It is also helpful to include relevant details of what work was taking place on the site, construction sequencing and upcoming activities that may impact Environmental Commitments. Make sure to add the expected follow up inspection date.

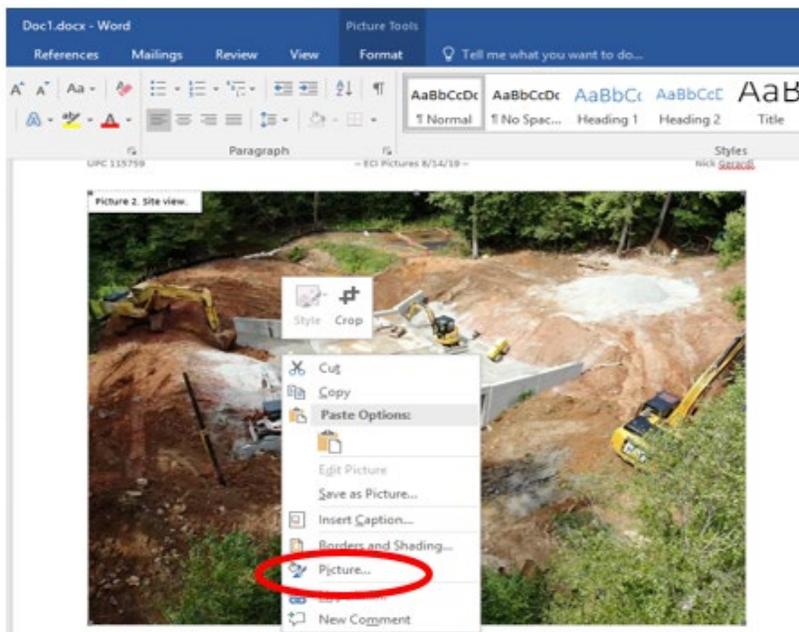
Supporting Documents Tab and Photographs

The Supporting Documents tab provides a place to save a .pdf of photographs of the project or PlanGrid report, and any software program can be used (such as MS Word), as long as it can be easily converted to save as a .pdf file. The .pdf file will easily combine with the inspection narrative when the report is exported.

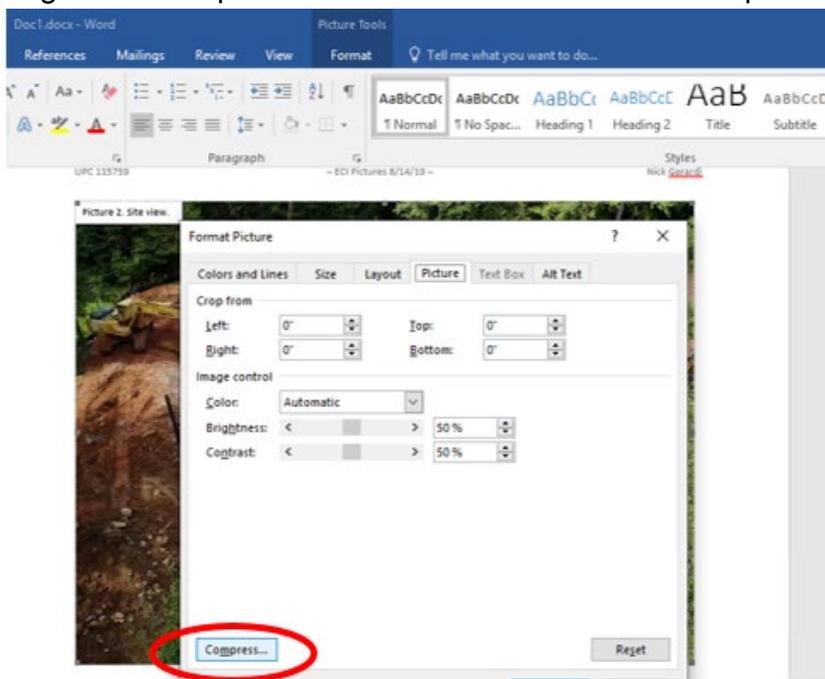
If PlanGrid is not being utilized, then:

1. Import and compile pictures in a Word document;
2. Add location descriptions and applicable information to all pictures; and,
3. Create header and footer with project info.

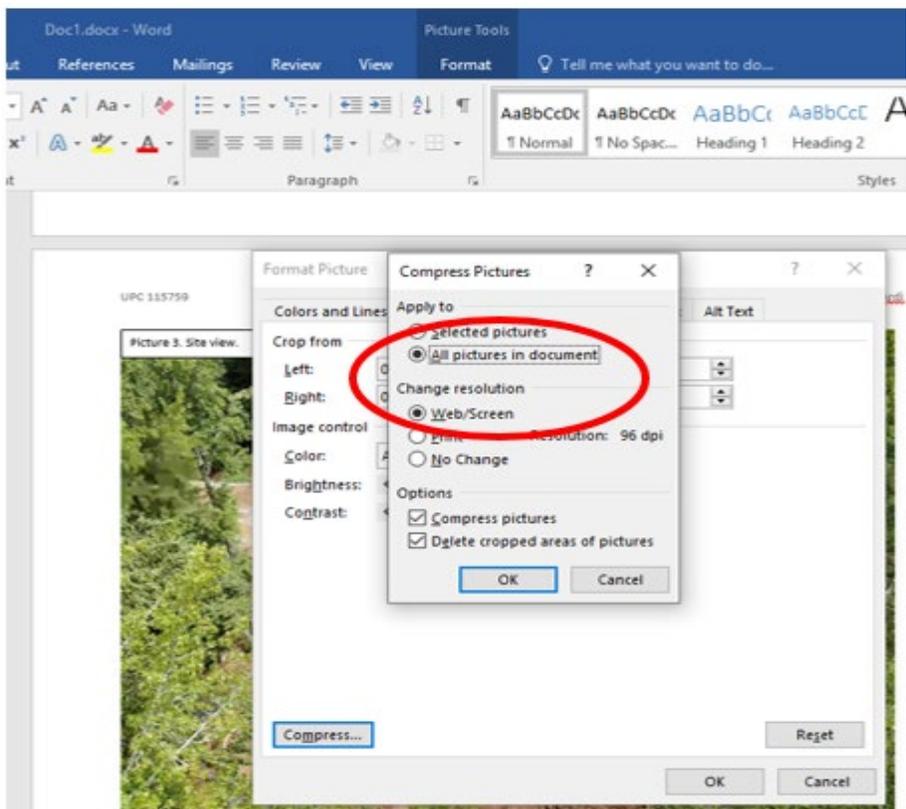
When the photographs have been completed, make them shareable. Photographs should be numbered for easy reference. Each photograph should have a description of location, any corrective action required and any additional information needed to make the picture easily understandable for anyone.



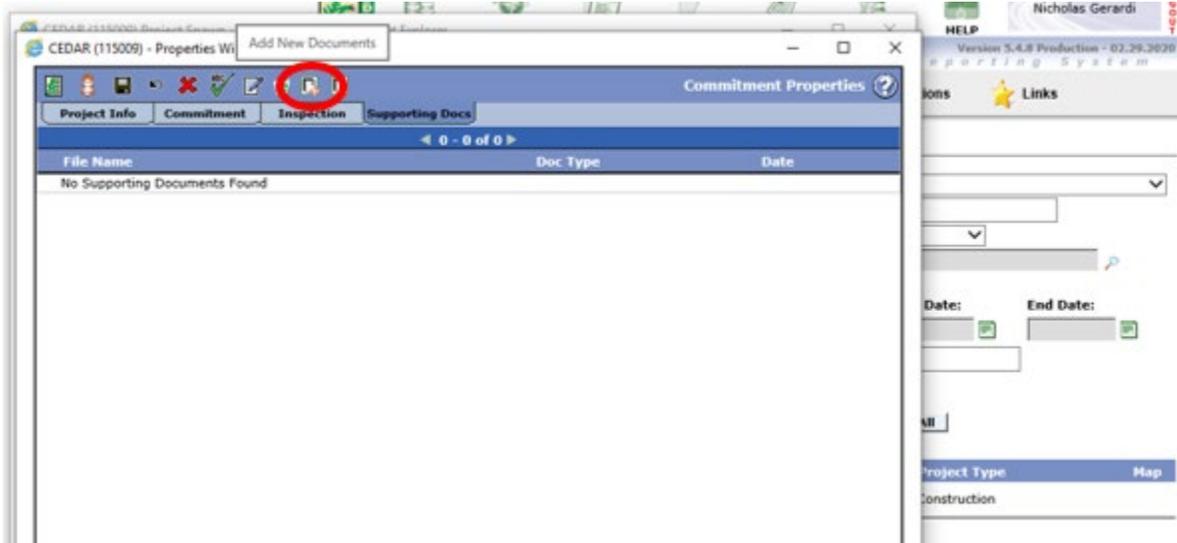
Right click the picture and select “Picture” and “Compress”



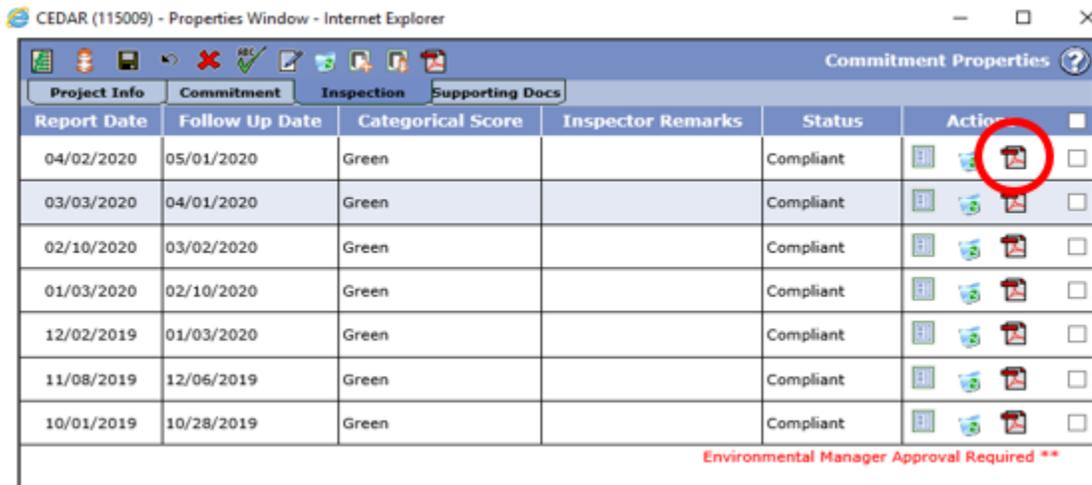
Change settings to “All pictures in document and Web/screen.”
Once the pictures are compressed, save as a .pdf.



Attach the .pdf to the inspection. Save and close.



Export the inspection to distribute.

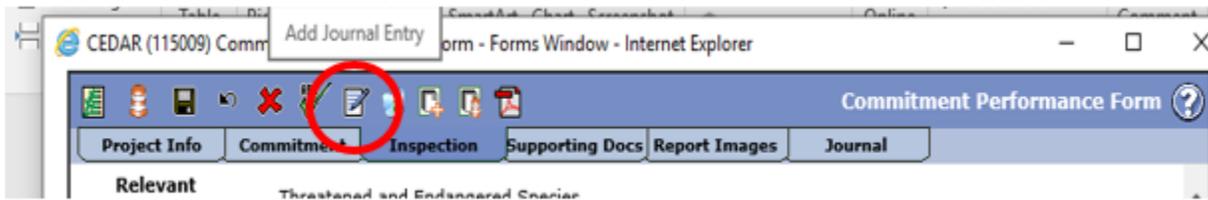


Journal Entries and Additional Documentation

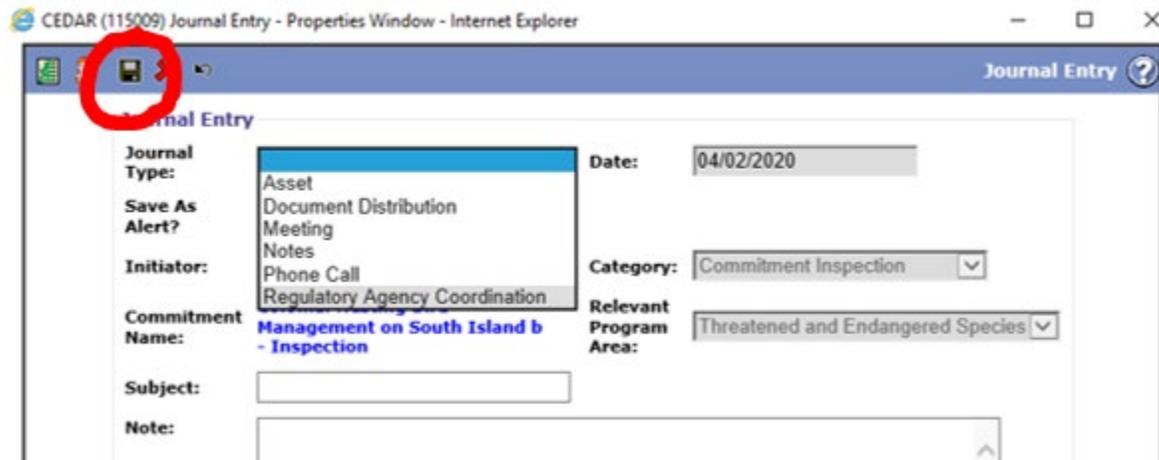
Use the journal entry to document supporting information pertaining to inspections that you want documented.

During the project, any correspondence pertaining to agency coordination, project issues, or other relevant project information related to Environmental Commitments need to be saved in CEDAR with the corresponding inspection in the Supporting Documents or the applicable commitment in the Supporting Documents.

Click the “Add Journal Entry” icon



Fill out the relevant fields as appropriate and make sure to save the form.



15.0 LAWS AND REGULATIONS

National Environmental Policy Act of 1969, (NEPA): Enacted into Law on January 1, 1970, NEPA directs federal agencies to include environmental considerations into the federal decision making process.

(www.environment.fhwa.dot.gov) (<https://www.epa.gov/nepa>)

Section 4(f) of the Transportation Act of 1966: Section 4(f) limits the FHWA and state DOTs impact the land of publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public/private historical sites unless there is no feasible alternative use of the land, and the action includes planning considerations that minimizes harm to the land due to the proposed use. (<https://www.environment.fhwa.dot.gov/>)

The Clean Water Act (CWA): Enacted in 1972, the CWA was established to maintain the chemical, physical and biological integrity of the Nation's waters - wetlands, streams, estuaries, bays, etc. (also known as Waters of the U.S. (WOTUS)). Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into WOTUS (www.environment.fhwa.dot.gov) and requires issuance of a Water Quality Permit through a regulatory agency or agencies that have jurisdiction of such features. Section 401 pertains to the Water Quality Standards that states "Water quality standards are an effective tool available to States to protect the overall health of their wetlands resources and the valuable functions they provide, including shoreline stabilization, nonpoint source runoff filtration, wildlife habitat and erosion control, which directly benefit adjacent and downstream waters. Water quality standards, including designated uses, criteria, and an antidegradation policy can provide a sound legal basis for protecting wetland resources through State water quality management programs." (<https://www.epa.gov/laws-regulations/summary-clean-water-act>)

The Coastal Zone Management Act: Established in 1972 to encourage coastal states to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." The Commonwealth implemented its own Coastal Zone Management (CZM) Program in 1986 with conservation and management goals. (<https://coast.noaa.gov/czm/act/>)

Rivers and Harbors Appropriation Act of 1899: The Act that prohibits the construction of dams, dikes, bridges and causeways across any navigable water without approval of the U.S. Army Corps of Engineers or U. S. Coast Guard. It is credited with establishing permit requirements to ensure that refuse does not interfere with navigation. (Auditing

Environment Compliance, 2016, The Institute of Internal Auditors)
(<https://www.epa.gov/cwa-404/section-10-rivers-and-harbors-appropriation-act-1899>)

Tennessee Valley Authority (TVA) Act of 1933: The Act addresses a wide range of environmental, economic and technological issues to include providing low-cost electricity in Tennessee and parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina and Virginia. Further, the Act prohibits the construction of any structure or flood control device across, along or in the Tennessee River or any of its tributaries without approval from TVA. (<https://www.tva.com/>)

State Water Control Law: Enacted to protect the quality of all state waters to include permitting public uses and protecting aquatic life. This law requires projects impacting WOTUS (1) protect and restore State waters to promote growth and aquatic life, (2) safeguard waters from pollution, (3) prevent additional pollution, (4) reduce pre-existing pollution, (5) encourage the recycling of wastewater in a safe and healthy manner for humans and the environment, and (6) promote water resource conservation. (<https://www.deq.virginia.gov/water>)

The Chesapeake Bay Preservation Act (CBPA): Enacted by the Virginia General Assembly in 1988 as a critical element of Virginia's nonpoint source management program. The program's goal is to improve water quality in not only the Chesapeake Bay, but the Bay's watershed as well, which consists of a majority of eastern, northern, and central Virginia, while enhancing economic development at the same time.

(<https://law.lis.virginia.gov/vacodefull/title62.1/chapter3.1/article2.5/>)

(<https://www.deq.virginia.gov/water/chesapeake-bay>)

National Historic Preservation Act (NHPA): The Act establishes "a national preservation program and a system of procedural protections which encourage the identification and protection of cultural and historic resources of national, state, tribal and local significance". (www.preservationnation.org/information-center/law-and-policy/legal-resources)

(<https://www.achp.gov/digital-library-section-106-landing/national-historic-preservation-act>)

Resource Conservation and Recovery Act (RCRA): The Act gives the EPA the authority to control the generation, transportation, treatment, storage and disposal of hazardous waste, and establishes a framework for management of non-hazardous waste. The Act also authorizes the EPA to address problems that could result from underground

storage tanks (USTs) containing petroleum products, solvents or other hazardous substances. (<https://www.epa.gov/rcra>)

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): Also known as “Superfund”, CERCLA was enacted in 1980 to focus on cleaning up abandoned or uncontrolled hazardous waste sites and determining the potentially responsible party (PRP) required to fund or reimburse EPA for the mandatory clean-up as directed by the federal government. EPA will, however, clean-up what is called an “orphan facility” if a PRP cannot be identified, the PRP cannot afford the clean-up, or if they fail to act. Under this legislation, state and local governments are typically involved in the remediation and response efforts to ensure the clean-up is to their standards. (<https://www.epa.gov/superfund/superfund-cercla-overview>)

Superfund Amendments and Reauthorization Act (SARA): SARA was amended from CERCLA in 1986, the Act stresses the importance of permanent remedies and innovative treatment technologies regarding waste sites deemed hazardous. The Act also offered new enforcement authorities and tools; enhanced state involvement in the Superfund program; increased the dollar amount of the trust fund; and required EPA to amend the Hazard Ranking System to make sure it accurately addressed the risk posed the human health and the environment. (<https://www.epa.gov/superfund/superfund-amendments-and-reauthorization-act-sara>)

Spill Prevention, Control & Countermeasures (SPCC): The SPCC established requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and shoreline. Most VDOT facilities have an enacted SPCC due to the quantity and size of tanks as well as the type of chemicals stored in tanks on VDOT owned property. The EPA and U.S. Coast Guard are the regulatory agencies that respond to inland waters and coastal waters oil spills, respectively. It is important to know which agency to report an incident to as both inland and coastal water resources are located within VA’s boundaries. (<https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations>)

Aboveground Storage Tanks (AST) Regulations under VDEQ’s Land Protection and Revitalization Division, the state of Virginia has implemented regulations for ASTs that may also fall under an EPA SPCC. (<https://www.deq.virginia.gov/land-waste/petroleum-tanks/storage-tanks/aboveground-storage-tanks>)

Underground Storage Tanks (UST) Regulations: Located in the 1984 Hazardous and Solid Waste Amendments under RCRA, these regulations include state and federal regulations concerning USTs in terms of releases, capacity, clean-up, etc. The UST laws regulate commercial and industrial USTs that contain petroleum products,

solvents, and or hazardous wastes. Small heating oil tanks are typically exempt from these regulations; however, when a release is discovered from a small heating oil UST, the DEQ will become involved in the clean-up. UST regulations are important to understand at VDOT for many reasons, but two main ones include: (1) many of our facilities maintain USTs that are needed for everyday activities (i.e. gas for vehicles); and, (2) (un)marked USTs many be encountered during construction activities that need to be properly removed from the ground in accordance with applicable regulations. UST regulations went into effect by EPA in the 1980's and many states implemented their own regulations through their environmental agencies.

(<https://www.deq.virginia.gov/land-waste/petroleum-tanks/storage-tanks/underground-storage-tanks>)

Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP):

Federal regulation that specifies work practices for demolition and renovations of structures, bridges, buildings, etc. that contain asbestos containing materials (ACM). The regulation requires an ACM survey in order to determine the type and quantity of ACM prior to the material being disturbed through demolition or renovations. The regulation also requires preparation of an asbestos abatement plan and provide proper disposal of the material to limit the release of ACM and it's fiber into the environment.

(<https://www.epa.gov/compliance/national-emission-standards-hazardous-air-pollutants-compliance-monitoring>)

Federal Endangered Species Act (ESA): Enacted in 1973, the Act was established to protect plant and animal species from extinction and provide for the recovery of listed endangered or threatened (T&E) species. The ESA makes it illegal "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct", also known as "take", for a species identified as a federal threatened or endangered species. Throughout the Act's history, protective measures have been set-up to minimize adverse impacts to T&E species from construction and human activities. The federal agency with jurisdiction under this act is the U.S. Fish and Wildlife Service (USFWS or FWS). (<https://www.fws.gov/endangered/laws-policies/>)

Migratory Bird Treaty Act of 1918: Enacted between the United States and Great Britain to protect migratory birds. The Act "makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. Over 800 species of migratory bird species are protected under the Act and the list is provided in Section 50 CFR 10.13 of the Act. The USFWS is the permitting agency and issues permits if a prohibited activity is required.

(<https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php>)

Endangered Plant and Insect Species Act: Enacted in the Commonwealth in 1979, the Virginia Department of Agriculture and Consumer services was mandated to “conserve, protect and manage endangered and threatened species of plants and insects”. (<http://www.vdacs.virginia.gov/plant-and-pest.shtml>)

State Endangered Species Law: This regulation is the State’s equivalent of the Federal ESA, but protects species the Commonwealth has deemed state threatened or endangered species. Similar to the Federal ESA, the State’s law prohibits the taking, transportation, possession, sale of, or offer for sale of the listed state and/or federally listed species within the State.” The protective measures enacted by the law have been set-up to minimize adverse impacts to T&E species from construction and/or human activities. (<https://law.lis.virginia.gov/admincode/title4/agency15/chapter20/section130>)

Virginia’s Air Pollution Control Law: Comprised of the “air regulations” which cover “stationary sources such as industrial facilities and other fixed-emission resources, mobile resources such as vehicle emissions, and regulations to ensure the certain projects conform with federal requirements”. (<https://www.deq.virginia.gov/Programs/Air/Laws,Regulations,Guidance.aspx>)

The State Noise Abatement Policy: Developed to implement the requirements of 23 Code of Federal Regulations (CFR) Part 772 Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2011), FHWA’s Highway Traffic Noise Analysis and Abatement Policy and Guidance (December 2011), and the noise related requirements of The National Environmental Policy Act of 1969. ([https://www.virginiadot.org/projects/resources/noisewalls/State Noise Abatement Policy.pdf](https://www.virginiadot.org/projects/resources/noisewalls/State%20Noise%20Abatement%20Policy.pdf))

16.0 FEDERAL AND STATE AGENCIES

16.1 Jurisdiction over jurisdictional Waters of the U.S (WOTUS)

- The **U.S Army Corps of Engineers (USACE)** is the federal agency with jurisdiction over streams, wetlands, and other WOTUS. (<https://www.nao.usace.army.mil/>)
- The **Virginia Department of Environmental Quality (VDEQ or DEQ)** is the state agency that has jurisdiction over non-tidal streams, wetlands, and other WOTUS within the Commonwealth. The DEQ also takes jurisdiction over isolated wetlands, which the USACE does not regulate, and a permit may be needed for impacts to an isolated wetland through the DEQ. (<https://www.deq.virginia.gov/>)
- The **Virginia Marine Resource Commission (VMRC)** is the regulatory agency with jurisdiction over impacts in, on, over, or under subaqueous and tidal WOTUS features or features that have a drainage area greater than 5 square miles. (<https://www.mrc.virginia.gov/>)
- The **National Oceanic and Atmospheric Administration (NOAA)** is a federal agency that has jurisdiction over impact in, on, over, or under coastal wetlands (i.e. freshwater and saltwater marshes, seagrass beds, swamps, bays, estuaries, etc.) (<https://www.noaa.gov/>)

16.2 Jurisdiction over protected flora and fauna

- The **U.S Fish and Wildlife Services (USFWS)** is a federal agency with jurisdiction over federally listed Threatened and Endangered (T&E) species. (<https://www.fws.gov/>)
- The **Virginia Department of Wildlife Resources (VDWR)** is the state agency that has jurisdiction over the preservation of state T&E vertebrate (and some special invertebrate) species. (<https://www.virginia.gov/agencies/departments-of-wildlife-resources/>)
- The **Department of Conservation and Recreation (DCR), Division of Natural Heritage**, documents the Commonwealth's natural resources and ecologically significant sights. These sights include, but are not limited to, stream conservation areas, T&E plant

communities, National Park Service lands, etc.
(<https://www.dcr.virginia.gov/natural-heritage/>)

- The **Virginia Department of Agriculture and Consumer Services (VDACS)** is the Commonwealth's regulatory agency that preserves T&E plants and insects. (<https://www.vdacs.virginia.gov/>)
- The **Virginia Department of Environmental Quality (DEQ)** enforces the Air Pollution Control Law, which constitutes the "air regulations" covering "stationary sources such as industrial facilities and other fixed-emission resources, mobile resources such as vehicle emissions, and regulations to ensure the certain projects conform with federal requirements". (<https://www.deq.virginia.gov/permits-regulations/permits/air>)

Additional guidance may be found on the Environmental Division's SharePoint site: [Environmental - Home \(sharepoint.com\)](https://covgov.sharepoint.com/sites/ENVHub-VDOT) <https://covgov.sharepoint.com/sites/ENVHub-VDOT> which contains program specific guidance for such programs as Air and Noise, Cultural Resources, Hazardous Materials, and Natural Resources (Environmental Commitments and Compliance Assistance; Fish, Plant & Wildlife Resources; Water Quality Permits; Streams; and Wetlands). The ECI should become familiar with the various resources available on this site.

17.0 ACRONYMS

The following glossary of acronyms are commonly used in environmental review and documentation. The list below is provided to assist the ECI with familiarizing themselves with acronyms they may encounter during their involvement on a project.

A	
AASHTO	American Association of State Highway and Transportation Officials
ADEM	Assistant District Environmental Manager
AHQ	Area Headquarters
ASD	Administrative Services Division
ACE	Area Construction Engineer
AOP	Aquatic Organism Passage
B	
BMPs	Best Management Practices
C	
CAA	Clean Air Act
CDR	Critical Design Review
CE	Categorical Exclusion
CEDAR	Comprehensive Environmental Data and Reporting System
CEI	Construction Engineering and Inspection
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Resource, Compensation and Liability Act of 1980
CFR	Code of Federal Regulations
CIPP	Cured-in-place pipe
CM	Construction Manager
CO	Central Office
COE	Corps of Engineers
CQIP	Construction Quality Improvement Program

CR	Cultural Resource
	D
DA/DE	Division or District Administrator/Engineer
DB	Design Build
DBB	Design Bid Build
DCE	District Construction Engineer
DCR	Department of Conservation and Recreation
DEM	District Environmental Manager
(V)DEQ	VA Department of Environmental Quality
DWR	Department of Wildlife Resources
DGS	Department of General Services
DHRM	Department of Human Resources Management
DOF	Department of Forestry
	E
EA	Environmental Assessment
EIS	Environmental Impact Statement

EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
	F
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FOIA	Freedom of Information Act
	G
GIS	Geographic Information Systems
GPS	Global Positioning System
	H
HAZMAT	Hazardous Material
	I
IA	Independent Assurance
IACM	Interagency Coordination Meeting

ITS	Intelligent Transportation Systems
L	
L&D	Location and Design
LAP	Locally Administered Projects
LOD	Limits of disturbance
LWCF	Land and Water Conservation Fund
M	
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer Systems

N	
NAAQS	National Ambient Air Quality Standards
NBI	National Bridge Inventory
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O	
OSHA	Occupational Safety and Health Administration
P	
PCE	Programmatic Categorical Exclusion
PE	Preliminary Engineering or Professional Engineer
PM	Project Manager
PMO	Project Management Office
PPE	Personal Protective Equipment
P3	Public-Private Partnership
Q	

QA	Quality Assurance
QAM	Quality Assurance Manager
QC	Quality Control
	R
RA/RE	Residency Administrator/Engineer
RAAP	Regular Advertisement and Award Process
RCRA	Resource Conservation & Recovery Act of 1976
ROD	Record of Decision
ROW or R/W	Right of Way
	S
SOC	Sequence of Construction
	T
T&E	Threatened and Endangered (species)
TMDL	Total Maximum Daily Load
TYOR	Time of Year Restriction
	W
WOTUS	Waters of the United States