Section 3
Environmental

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COLORADO
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3.01 Introduction

3.01.01 Environmental Clearance

Environmental Clearance is required for every project before final design is complete, right of way can be purchased and advertised, or purchased before advertisement This introduction describes how to navigate the environmental clearance process for the National Environmental Policy Act (NEPA) projects**.** Following the introduction are individual sections for each environmental resource, presenting resource-specific information to aid in the clearance process. Information includes a description of the resource, its associated regulations, a list of tasks that should be completed by the environmental resource specialist, a list of tasks to be completed by the Resident Engineer, a general timeline for clearance of each resource, and a list of potential red flags. Red flags are generally considered to be those things that would significantly lengthen the project schedule or be costly to mitigate. These sections are for informational purposes; your regional environmental resource specialist, or the Colorado Department of Transportation (CDOT) Headquarters Division of Transportation Development/Environmental Programs Branch (EPB) resource specialist, will assist you with impact analysis, permitting and mitigation.

More detailed information on the resource clearance processes, and the entire NEPA process, can be found in the CDOT NEPA Manual; your Region Planning and Environmental Manager (RPEM) (region 1 has two people doing this job—a Region Environmental Manager [REM] and a Region Planning Manager [RPM]) or associated region Environmental staff, or CDOT EPB Environmental staff, or both should be consulted on every project.

3.01.02 Overview of NEPA

NEPA requires that federal agencies use a systematic, interdisciplinary approach to decision-making when actions may affect the quality of the human environment. NEPA is implemented by the Council on Environmental Quality (CEQ) through Title 40 Code of Federal Regulations (CFR) Section 1500–1508. To address the NEPA responsibilities established by CEQ, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) jointly issued regulations, Environmental Impact and Related Procedures (FHWA and FTA, 23 CFR 771 Section 771.101–771.131). The FHWA and FTA NEPA process allows transportation officials to make project decisions that balance engineering and transportation needs with social, economic, and natural environment factors.

Transportation projects vary in type, size, complexity, and can have impacts ranging from negligible to significant to both the natural and human environment. To account for the variability of project impacts, there are three basic classes of action that prescribe the level of documentation required in the NEPA process:

Class I—Environmental Impact Statement (EIS)

Class II—Categorical Exclusion (CATEX)

Class III—Environmental Assessment (EA)

Table 3-1 summarizes the definition, examples, requirements, and general schedules for the different classes of action. Most Colorado Department of Transportation (CDOT) projects are completed through the CATEX process. The class of action for larger projects is determined by the Federal Highway Administration (FHWA), in consultation with CDOT (typically the Region Planning and Environmental Manager [RPEM]), through a formal process. More detailed information for each class of action can be found in the CDOT National Environmental Policy Act (NEPA) Manual.

Table 3-1 NEPA Classes of Action (following pages)

Class 1 Environmental Impact Statement (EIS)	Class 2 Categorical Exclusion (CATEX)	Class 3 Environmental Assessment (EA)
Required for actions likely to have significant environmental effects that cannot be mitigated. An EIS details the process through which a transportation project is developed, including consideration of a range of reasonable alternatives and detailed analysis of the potential impacts to the environment resulting from each alternative.	Required for actions that do not individually, nor cumulatively, have a significant environmental effect or have substantial controversy. Necessary environmental studies and compliance with all applicable requirements are still required for the project. There are two types of CATEX's: the programmatic CATEX that the Colorado Department of Transportation (CDOT) can sign as authorized by the Federal Highway Administration (FHWA); and the non-programmatic CATEX that requires FHWA signature.	Required for actions that do not qualify as CATEX, but where there is insufficient information to determine whether the project's impacts warrant an EIS. The EA should concentrate attention on environmental resources with impacts that may be significant or that could be a discerning factor in alternative selection; therefore, this approach should result in a much shorter and more focused document than with an EIS. An EA details the process through which a transportation project is developed. This could include the consideration of a range of reasonable alternatives and detailed analysis of the potential impacts and mitigation effectiveness resulting from each.

Class 1 Environmental Impact Statement (EIS)	**Class 2 Categorical Exclusion (CATEX)**	**Class 3 Environmental Assessment (EA)**
Examples include: A new, controlled- access freeway/highway A project having substantial public controversy on environmental grounds New construction or extension of fixed rail transit facilities	Examples include: • Pedestrian facilities • Landscaping • Routine maintenance, including resurfacing • Intersection improvements • Bridge replacement/rehab Minor widening	Examples include: • Actions that are not clearly Class II Categorical Exclusion (CATEX) • Actions that are not clearly Class I Environmental Impact Statement (EIS) • New construction of highway interchange Adding capacity
Upon completing the EIS, the Federal Highway Administration (FHWA) signs a Record of Decision (ROD) that presents the basis for the determination, summarizes any mitigation measures to be incorporated in the project, and documents any Section 4(f) approval (see Section on 4(f) for further information). No EIS level project can proceed to final design without a signed Record of Decision (ROD).	Colorado Department of Transportation (CDOT) and FHWA approval is required on all CATEX projects. In Colorado, FHWA has "programmatically" delegated approval of some CATEX's to CDOT so that no FHWA signature is required. CATEX's are recorded using CDOT Form 128 Categorical Exclusion Determination, and may have associated documentation. Non-programmatic CATEX's tend to require more documents. No CATEX project can go to ad without a signed CATEX).	In coordination with FHWA, CDOT determines whether a Finding of No Significant Impact (FONSI) is appropriate for a completed EA study or if further study is required in an EIS. No EA project can proceed to final design without a signed FONSI.

Class 1 Environmental Impact Statement (EIS)	**Class 2 Categorical Exclusion (CATEX)**	**Class 3 Environmental Assessment (EA)**l
Schedule: An Environmental Impact Statement (EIS) is the longest environmental process. Both the Draft EIS and the Final EIS must go out for public review. These documents require a formal public hearing and legal sufficiency review from the Federal Highway Administration (FHWA) HQ in Washington DC. EIS's can take years to prepare and complete the pre-National Environmental Policy Act (NEPA) and NEPA process.	Schedule: A Categorical Exclusion (CATEX) is typically the shortest environmental process. A clearance can take just a few weeks or up to 1.5 years or more. The typical clearance is four–six months (See the example schedules for a Simple Categorical Exclusion Example and Complex Construction Engineering (CE) Example project). Those CATEX's that require FHWA signature can take longer to clear. These non-programmatic CATEX's are usually more complex projects and time is needed to coordinate with FHWA and other agencies.	Schedule: An Environmental Assessment (EA) can take nine months to two years to complete. Only the Final EA and Finding of No Significant Impact (FONSI) goes out for public review. Legal sufficiency review is done at the local FHWA office in most cases. They do not require a formal public hearing unless requested by the public.

Additionally, any of these classes of actions could require a re-evaluation of the analysis with FHWA if: there is a change to the design approved by or is similar to the original NEPA document; it has been three years or more since the document was approved and the project is moving on to the next phase of Right of Way (ROW), design or construction; or there has been a change in regulation, policy, the environment, or the project. Sometimes, a quick re-evaluation can document that none of these conditions exist so the project can move forward without risk of surprises during project advertisement. Most re-evaluations move fairly quickly unless there has been a significant change in the project impacts (due to a change in environment or design) or regulation. The re-evaluation is completed during final design by the Region Planning and Environmental Manager (RPEM) (and sometimes FHWA) and must be

signed before the project can advance to advertisement. The Colorado Department of Transportation (CDOT) has Re-evaluation form, Form 1399, to document this process.

3.01.03 More on Categorical Exclusion (CATEX's)

CATEX's are by far the most common type of National Environmental Policy Act (NEPA) projects for CDOT and so this section will focus on the process and schedule for that class of action. CATEX's are actions that:

1. Do not induce significant impacts to planned growth or land use for the area.
2. Do not require the relocation of significant numbers of people.
3. Do not have a significant impact on any natural, cultural, recreational, historic or other resource.
4. Do not have significant impacts on travel patterns.
5. Do not involve substantial public controversy on environmental grounds.

It is important to note that even if a project action is listed as a Categorical Exclusion (CATEX), it will not qualify if the criteria listed above is not met. Even if a project is not expected to have significant impacts, a large amount of public controversy on environmental grounds can require an Environmental Assessment (EA) or Environmental Impact Statement (EIS) action as appropriate.

CATEX actions are generally categorized as either programmatic or non-programmatic.

Programmatic actions are those that, based on past experience, do not individually or cumulatively have a significant impact on the environment. Based on this past experience, a Federal Highway Administration (FHWA) signature is not required to clear these projects. A full list of programmatic and non-programmatic actions can be found in FHWA's NEPA implementing procedures (23 Code of Federal Regulations [CFR] Part 771.117) as referenced online on the Programs site under Intergovernmental Agreements, Categorical Exclusions Programmatic Agreement, Updated 2022.

Non-programmatic CATEX's are actions that meet the criteria for a CATEX in the Council on Environmental Quality (CEQ) regulations (CEQ, 40 CFR Section 1508.4) if they are appropriately analyzed, documented, and approved by FHWA. Therefore, FHWA signature is required on the front part (part B) of the Form 128 Categorical Exclusion Determination to clear these projects (more information on Form 128 is included below). Some non-programmatic actions not specifically listed in 23 CFR Section 771.117 may also qualify as a CATEX if it is known that no significant impacts will occur as a result of the action. Detailed information on all CATEX's can be found in CDOT's NEPA Manual.

Provided here are two example Categorical Exclusion (CATEX) schedules. One depicts the timeline for a “simple” CATEX. These are projects with minimal environmental resources present in the project area and do not require much agency coordination. The other depicts a “complex” CATEX. These are projects that may have environmental resources in the project area requiring more intensive agency coordination and mitigation. It should be noted that these are examples and will likely vary depending on the type of project. These timelines are useful to identify the resources with the critical path in the overall project schedule. Some projects will likely include a combination of “simple” and “complex” environmental resource timelines. Project managers must work with the Region Planning and Environmental Manager (RPEM) or resource specialists, or both to create individual project schedules and update them as the project progresses.

Simple Categorical Exclusion Example 030923.pdf

Complex Construction Engineering (CE) Example 030923.pdf

Since CATEX projects have no significant impacts on the environment, National Environmental Policy Act (NEPA) requirements are substantially less stringent than those for an Environmental Assessment (EA) or Environmental Impact Statement (EIS). For example, public involvement and alternatives analysis are not explicitly required, and the level of documentation for Federal Highway Administration (FHWA) approval is greatly reduced. Although not explicitly required for programmatic or non-programmatic CATEX’s, the Resident Engineer should consider some sort of public involvement, particularly for those projects that include Right of Way (ROW) acquisition, construction impacts that affect the public, road closures or detours, etc.

3.01.04 Schedule Implications

The length of time required to complete environmental clearances will depend on the necessary class of action, availability and type of funding, resources present and extent of impacts, unexpected changes in project scope/footprint, schedule conflicts with other projects (the Colorado Department of Transportation [CDOT] priority of the project), and even the time of year. The resource sections identify tasks that must be done at a certain time in order to avoid schedule impacts.

3.01.05 Project Funding

Most CDOT projects and local agency projects with CDOT involvement have a federal funding source, or a potential for federal funding. In addition to funding, some projects may have another federal nexus such as projects that involve the interstate system or projects that will require a federal permit. All of these projects are required to go through the NEPA process as described above. Additionally, a federal nexus triggers the need to complete a Section 4(f) analysis (see the Section 4(f) resource section for details on Section 4(f) properties). NEPA

and Section 4(f) can require some of the same steps, such as alternatives analysis and public involvement, which are sometimes done concurrently but may require additional time.

Sometimes, but not very often, a project may be funded only with state or local funds and not have any other federal nexus. In these cases, Colorado Department of Transportation's (CDOT's) Environmental Stewardship Guide and some state and federal regulations still require CDOT to consider environmental impacts for projects whether or not there is a federal nexus that requires a formal National Environmental Policy Act (NEPA) review; therefore, CDOT follows the intent and requirements of NEPA on all projects to cover those other environmental regulations, although there is some flexibility regarding how this is conducted if there is no federal nexus. There are some state and federal regulations for some resources that need to be considered regardless of funding; these requirements are described in the specific resource sections of this document.

All projects require the identification of funding sources in order to get the required environmental clearance needed for project advertisement. For larger projects requiring Environmental Assessment (EA's) or Environmental Impact Statements (EIS's), it is only necessary to show that the next phase of a project is funded; this could be final design, Right of Way (ROW), or an actual construction project. However, even when a project is phased, a reasonable plan for obtaining the rest of the funding is required to get a signature for the environmental document. If a funding source cannot be identified, the project may be a good candidate for a Planning and Environmental Linkages (PEL) study. A PEL study does not require a funding source to be identified, but still allows for the project to proceed with alternatives analysis, environmental analysis, or public and agency coordination, or both. Upon identification of a funding source, the information from the PEL study can then be used in the NEPA study, saving time and money. Additional information on PEL's can be found in CDOT's PEL Handbook.

3.01.06 Internal Coordination

While every project is different and will present unique environmental challenges, there are basic steps that must be completed for all projects. It will be necessary to coordinate with CDOT region or Environmental Programs Branch (EPB) staff in order to meet certain NEPA milestones such as Scoping; however, it is equally important to the project schedule and budget to continue that coordination through the life of the project.

1. **Early Notice of Impacted Area:**
   As early as possible, the Resident Engineer should prepare a map or aerial photograph with an outline showing the outside extent of possible ground disturbance, to be given to the Region Planning and Environmental Manager (RPEM) or their designee. The RPEM will assign an environmental project manager to the project that can begin work on the clearance process and inform the Engineer of any

issues that should be considered during design. The final extent of the project limits may not be known this early in the process so the study area should include locations that have the potential of being added, if additional funds are found. For example, if Intelligent Transportation Systems (ITS) is needed in the project area and funding could occur in the near future, include that area on the map as “may be added if funded” so that the clearances can be pursued. It is easier to remove an area from the study than it is to add it later. The study area should also include any staging areas and borrow pits needed by the project, if known at this stage of design.

2. **Early Notice of Impacted Right of Way (ROW) Needs:**
   If the Resident Engineer knows that Right of Way (ROW) may be required for the project, advance notice of parcel addresses and extent of the impacted area should be given to the Region Planning and Environmental Manager (RPEM) or their designee. The environmental project manager can then coordinate environmental resource work with the ROW right of entry permission process, including searching appropriate databases for historical resources, hazardous materials, or other environmental issues that may affect the conditions of purchasing the property. In addition, all temporary and permanent easements should be included in the notice to the RPEM.

3. **Immediate Notice if Design Changes:**
   If there are changes to the project design (additions, deletions, or moving a feature) the Resident Engineer should inform the environmental project manager immediately as it may affect the clearances for the project. Some examples of changes that alter a clearance include: moving a noise barrier location or changing its height; changing the elevation of a road or bridge; a change in the roadway alignment; changing the area of disturbance; changing the location of landscaping sprinkler valves; and modifying a design from a retaining wall to a 3:1 slope. This is not an all-inclusive list and the Resident Engineer should inform the environmental project manager of all changes.

National Environmental Policy Act (NEPA) regulations state that actions cannot be taken, such as the purchase of ROW, which would predetermine the outcome of the NEPA analysis. However, environmental staff can begin investigating project impacts as soon as they are given information about project limits. Only a map of the outer most potential project limits is needed for this but preliminary plans are helpful. If any environmental issues are identified within the project area, such as (but not limited to): the project is over one acre and in a Municipal Separate Storm Sewer System (MS4) permitted area; the project has historical resource impacts, the project has prairie dogs living within the project area; or the project is in potential paleontologically rich substrate, then more advanced plan designs are required before all environmental clearances can be obtained. Environmental staff need to see the planned project impacts to determine such things as:

location and design of permanent water quality features; the mitigation of prairie dogs; or location and depth of disturbance for paleontological monitoring during construction. Once these criteria are addressed within the project's plans and specifications, the required environmental clearance can be completed and Right of Way (ROW) can proceed, if needed, so the project can be advertised.

3.01.07 Form 128 Categorical Exclusion Determination Approval

The Categorical Exclusion (CATEX) approval form, the Colorado Department of Transportation (CDOT) Form 128, is filled out by region environmental staff in PMWeb. The form is divided into five sections but is generally considered to be divided into a "front part" and "back part". The front part (parts A and B) of Form 128 provides a project description and list of environmental clearances to be completed. If new ROW will need to be acquired as part of the project, the ROW plan authorization and obligation of funds for ROW acquisition cannot begin until the front part (part B) is signed. It may be possible that early acquisition of ROW could be approved even before the front part is complete if it can be shown that it would not predetermine the National Environmental Policy Act (NEPA) decision and if no federal funds will be used for the ROW acquisition. The region's ROW manager should be consulted regarding early acquisition; the ROW Manual outlines options for early acquisition of ROW and environmental clearance requirements if that becomes necessary for a project.

The back part (parts C, D, and E) tracks environmental permits, ensures environmental commitments are in the final plans and specifications, and is needed for project advertisement and obligation of funds for construction. Although this form is primarily used for CATEX approval, signature on the back part (part E) is called the Environmental Project Certification signature and marks the completion of the CATEX process.

For detailed information on how to walk through the CATEX approval process, please see the CDOT NEPA Manual. Information on how to complete the process for programmatic CATEX projects, is located in Section 5.2.4, and for non-programmatic CATEX projects, it is located in Section 5.3.4.

Additional Resources:

On CDOT's Programs site: CDOT NEPA Manual

On CDOT's Programs site: Region Environmental Staff

CDOT's Environmental Programs Branch list of staff: CDOT Environmental Programs Branch Organizational Chart

Form 1399 Re-evaluation form: Form 1399_2019_Fillable

Categorical Exclusions Programmatic Agreement, 2022: Categorical-exclusion-programmatic-agreement-2022-update_signed-jf-3.pdf

Planning and Environmental Linkages (PEL) Handbook, 2022: Planning and Environmental Linkages (PEL) Handbook.pdf

Environmental Resource Information

The following sections provide resource-specific information on the most common environmental resources that need to be analyzed for each project. Information provided for each resource includes what the resource is, who/what regulates it, what is needed from the Resident/Project Engineer, what the environmental resource specialist needs to do in order to complete the clearances, and what potential red flags to the schedule or budget the resource could represent. Your regional resource specialist/Environmental Programs Branch (EPB) specialist, will assist you with impact analysis, permitting, and mitigation for these resources.

3.02 4(f) Properties

3.02.01 What are Section 4(f) properties?

Section 4(f) properties are (one) publicly owned parks, recreational resources and wildlife/waterfowl refuges, and (two) historic properties regardless of ownership.

3.02.02 Why do we evaluate this resource?

49 US Code (USC) 303, United States (US) Department of Transportation Act, prevents the US Department of Transportation from “using” any Section 4(f) properties unless the secretary of the US Department of Transportation (DOT) determines that no feasible and prudent alternative to the use exists, and that the project includes all possible planning to minimize harm to the property. Any project that receives federal funds from the Federal Highway Administration (FHWA) must therefore comply with Section 4(f) requirements.

3.02.03 Who regulates this resource?

FHWA provides final approvals. However, the Official With Jurisdiction (OWJ) over the property must be consulted for approval in this process. For historic properties, the OWJ is the State Historic Preservation Office (SHPO) Officer. For publicly-owned parks, recreational resources and wildlife/waterfowl refuges, the OWJ is generally the public entity with most direct control over the property.

3.02.04 What does the environmental resource specialist need to do?

1. Identify all historic properties or all publicly owned properties, or both within the project area. This includes those within or part of the transportation system.
2. Identify officials with jurisdiction for each property.
3. Determine if Section 4(f) is applicable to the property and if there is a use for the property.
4. Determine appropriate Section 4(f) evaluation type (e.g., exception, de minimis, programmatic, full) for Section 4(f) property.
5. Complete Section 4(f) evaluations (e.g., exception, de minimis, programmatic, full) including any necessary consultations and approvals.
6. For Section 4(f) de minimis, programmatic, or full evaluations, complete the necessary reviews and approvals with Federal Highway Administration (FHWA).
7. For Section 4(f) exceptions, complete the appropriate site form for each property evaluated and submit to FHWA Colorado Division for their files
8. Document Section 4(f) evaluation process and approvals in project file

3.02.05 What does the Resident/Project Engineer need to do?

1. Develop project description and design elements, including the locations and extent of temporary or permanent easements and potential right of way acquisitions.
2. Work with the resource specialist to explore potential alternatives that avoid use of any Section 4(f) properties and develop justifications if avoidance is not possible.
3. When avoidance of a Section 4(f) property can't be accomplished, work with the resource specialist to determine measures to minimize harm to resources where use is anticipated. This can include project scheduling, phasing, possible design variances, and compensation as appropriate.
4. Assure that all measures to minimize harm and avoidance commitments are included in project plans and requirements.

3.02.06 What is the general clearance schedule for this resource?

Completing Section 4(f) consultation and document approval may take anywhere from one month to 24 months, depending on the process used, due to the different federal review requirements. Below are general time frames for the different types of Section 4(f) evaluation methods:

For review which leads to avoidance: one month

De minimis: three to six months

Programmatic: three to twelve months

Full evaluation: twelve to twenty-four months

3.02.07 What are the red flags for this resource?

1. Public controversy on the project.
2. A determination of adverse effect on a historic property.
3. Access closures or inability to provide for public access to parks/recreational resources during construction.
4. High number of all types of property acquisitions (right of way purchases), large number of Section 4(f) properties where there is a use.
5. Changes to project scope that result in use of Section 4(f) property.
6. Official With Jurisdiction (OWJ) not supportive of project or actively adverse to the project.
7. Design changes.

3.03 6(f)

3.03.01 What is Section 6(f)?

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act prohibits property acquired or developed with LWCF grants to be converted to a non-recreational purpose. Importantly, Section 6(f) applies to all transportation projects involving possible conversions of the property whether or not federal funding is being utilized for the project. Normally, any federally funded transportation project requiring the conversion of recreational or park land covered by Section 6(f) will also involve Section 4(f).

3.03.02 Why do we evaluate this resource?

1. To preserve the intended use of public funds for land and water conservation.
2. To comply with Colorado Department of Transportation's (CDOT's) environmental stewardship policy, which ensures that the statewide transportation system is constructed & maintained in an environmentally responsible, sustainable, and compliant manner.
3. To comply with several legal mandates that pertain to the LWCF, Section 6(f)(3).

3.03.03 Who regulates this resource?

Section 6(f) is administered by the Department of Interior National Park Service (NPS). Section 6(f) directs the NPS to ensure that recreational or park lands impacted by a transportation project are compensated with replacement lands of equal value, location, and usefulness. NPS

delegates its authority to Colorado Parks and Wildlife (CPW) to provide initial coordination with CDOT.

3.03.04 What does the environmental resource specialist need to do?

1. If Right of Way (ROW) acquisition of public land is anticipated, the specialist will investigate CPW's list of 6(f) grants and list of Land and Water Conservation Fund (LWCF) resources.
2. Upon identification of impacts to 6(f) land, the region's ROW group, in cooperation with the local government land owner, will identify replacement land of equal value, location, and usefulness before a transfer of property under Section 6(f) can occur. More flexibility exists in cases where the total conversion is less than five acres per project phase.
3. Once land has been identified as a comparable replacement, the following steps are required:

    a. The region and the local government must develop a written plan, which demonstrates that the replacement land is acceptable to the local government. The plan must also include any special conditions, mutually agreed to and as deemed necessary, to bring about equal value, location and usefulness in the replacement land.
    b. Upon agreement of a written plan by the region and the local government, the specialist will submit the Section 6(f) Land Replacement Plan to CPW for concurrence. The specialist will coordinate with CPW during the process of the draft and final Section 6(f) evaluations.
    c. Upon acceptance of the written plan, CPW will submit the plan to the National Park Service (NPS) for approval.
    d. Once NPS approval has been obtained, CPW will send a concurrence letter to the Region Planning and Environmental Manager (RPEM) and the local government.

4. The resource specialist will then include information on the Section 6(f) property and the written plan in the Section 6(f) evaluation. The written plan and the CPW concurrence letter should be incorporated into the appendix of the Section 6(f) evaluation.

3.03.05 What does the Resident/Project Engineer need to do?

1. Inform and involve ROW as early as possible on any potential impacts to recreational or park lands.
2. Explore alternatives during the design process that minimize or avoid harm to the Section 6(f) resource.

3. If necessary, assist with the location of potential mitigation/replacement land.

3.03.06 What is the general clearance schedule for this resource?

Coordination, development and approval of a written plan with Colorado Parks and Wildlife (CPW) and National Park Service (NPS), as described above, can take over a year. Approval of the written plan must occur before the RPEM can issue Environmental Clearance on the front portion (part B) of the Form 128 Categorical Exclusion Determination. The conversion of the Section 6(f) land to a transportation use and the acquisition of the replacement land both occur during the Right of Way (ROW) acquisition phase; some exceptions could apply so work with your Section 6(f) specialist regarding mitigation requirements for impacts to Section 6(f) properties. The Resident Engineer will need to work with the region's ROW group to develop a schedule for the ROW clearance.

3.03.07 What are the red flags for this resource?

1. Anticipated ROW acquisition of public land including recreational, wildlife refuge, open space, or otherwise undeveloped could contain 6(f) funded assets.
2. Temporary closure of or loss of access to recreational properties that last longer than six months could affect the use of the 6(f) properties as well as make the 4(f) companion protections have more requirements.

3.04 Air Quality

3.04.01 What is air quality?

Air quality addresses the emissions of pollutants from transportation systems that can be harmful to human health, other living organisms, or man-made materials. Emissions may also contribute to regional haze and degrade visibility. In addition, Greenhouse Gases (GHG's) cause global warming and climate change. Rising temperatures, fires, droughts, flooding, and severe weather that are exacerbated by climate change stress transportation infrastructure.

Three categories of air pollutants are associated with highway projects: criteria pollutants, Mobile Source Air Toxics (MSAT's), and GHG's. Projects may require air quality analysis of one or more category of these pollutants under federal and state laws and guidance. Applicability depends on factors including where the project is located or the project National Environmental Policy Act (NEPA) classification or both. Details about which laws or guidance, or both apply and how the analysis is conducted are provided in the 2019 Colorado Department of Transportation (CDOT) Air Quality Project-Level Analysis Guidance. The following five paragraphs provide an overview of the air quality analysis, which is completed

under the National Environmental Policy Act (NEPA). The remaining three paragraphs of this section pertain to construction air quality requirements.

Projects developed, funded, or approved under Title 23 US Code (USC) or the Federal Transit Act (49 USC 1601 et seq.) that are in nonattainment areas and some maintenance areas[1] must comply with transportation conformity under 40 Code of Federal Regulations (CFR) 93 (also known as the "conformity rule"). The conformity rule applies to criteria pollutants. Compliance requires showing that the project meets regional and project-level conformity unless the project is exempt from the conformity rule. Projects may be exempt from regional conformity but not project-level conformity. Regional conformity analyses are conducted prior to NEPA, as part of the planning process. In urban transportation planning regions, regional analyses are conducted by the Metropolitan Planning Organization (MPO) and are applied to the MPO's planning process. Project-level conformity analyses include confirming that the regional analysis was completed and may include project-level hot-spot analyses.

Transportation Capacity projects that are Regionally Significant must comply with Colorado Revised Statute (CRS) 43-1-128 if the project environmental decision document (e.g., Finding of No Significant Impact [FONSI]) will be signed after July 1, 2022. The CRS requires that transportation air pollutants (i.e., criteria pollutants, Mobile Source Air Toxics [MSAT's], and Greenhouse Gases [GHG's]) be modeled.

Projects that are classified as Environmental Assessments (EA's) or Environmental Impact Statements (EIS's) must evaluate MSAT's under the Federal Highway Administration's (FHWA's) guidance. An MSAT analysis is either qualitative or quantitative (i.e., require emissions modeling). A general guideline is that projects with Annual Average Daily Traffic (AADT) of 150,000 or more that are in populated areas may need a quantitative analysis. However, an air quality specialist and FHWA must be involved in determining which type of analysis applies. If a project requires quantitative MSAT's analysis and the Colorado Revised Statute (CRS) also applies, MSAT's are only modeled once and the analysis is used to comply with both requirements.

Projects that are classified as EA's or EIS's must evaluate GHG's under Colorado Department of Transportation's (CDOT's) NEPA Manual, as of 2022. GHG project-level analysis requirements may change in 2023 or later. As of 2022, GHG analyses are qualitative for EA's and quantitative for EIS's (i.e., require emissions modeling). If a project requires quantitative GHG analysis and the CRS also applies, GHG's are only modeled once and the analysis is used to comply with both requirements.

[1] As of December 2023, only two maintenance areas in Colorado still need to comply with conformity; those in Steamboat Springs (through 11/24/2024) and Lamar (through 11/25/2025). There is not currently an end date for compliance within the ozone nonattainment area. It is possible that the Environmental Protection Agency (EPA) could designate new nonattainment areas.

Regardless of whether a project is required under law or guidance to do a project-level hot-spot analysis or other type of quantitative analysis, such analyses may be required on a project-by-project basis as recommended by the Colorado Department of Transportation (CDOT) executive management.

Construction Phase Air Quality Requirements: Projects must comply with Code of Colorado Regulations (CCR), 5 CCR 1001-5, which contain air quality requirements for emission sources. As a result, Contractors are responsible for submitting a land development Air Pollutant Emissions Notice (APEN) to the Air Pollution Control Division (APCD) prior to construction unless the project will last less than six months and the project footprint is less than 25 acres. If predicted emissions exceed air permit thresholds, an air permit must also be obtained from APCD prior to construction. The APEN form includes detailed information on the Fugitive Dust Control Plan (FDCP). An air permit, if required, will specify the type of dust control measures that were included in FDCP. Projects may also need to submit APEN's and obtain air permits for stationary sources associated with the project, such as concrete batch plants.

Prior to construction, projects that must comply with Colorado Revised Statute (CRS) 43-1-128 (projects defined as regionally significant transportation capacity projects in the 10-year plan) will need to monitor transportation criteria pollutants and develop a construction air quality plan. **During construction**, project requirements under the CRS include monitoring particulate matter, reporting monitoring concentrations to the public, alerting the public of exceedances, and implementing the construction air quality plan (e.g., requires mitigating construction emissions).

If the project includes demolishing a bridge or structure, Contractors may need to obtain a demolition permit from APCD of Colorado Department of Public Health and Environment (CDPHE). The permit could come with other requirements, so the construction schedule should allow for the proper handling of these activities. Depending upon the location, city or county, or both permits may need to be obtained prior to demolition.

3.04.02 Why do we evaluate this resource?

The 1990 Clean Air Act Amendments were passed by the United States (US) Congress to protect air quality and prevent the violation of National Ambient Air Quality Standards (NAAQS). Since then, federal and state governments have developed requirements for other types of air pollution, including Mobile Source Air Toxics (MSAT's) and Greenhouse Gases (GHG's). Requirements to reduce GHG emissions are meant to slow global warming and climate change.

3.04.03 Who regulates this resource?

The United States Environmental Protection Agency (EPA) administers the Clean Air Act Amendments; authorization is delegated to the Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment (CDPHE). In addition, the Federal Highway Administration (FHWA), the State of Colorado, and the Colorado Department of Transportation (CDOT) have issued air quality requirements as described in this Section (3.04).

3.04.04 What does the air quality specialist need to do?

1. Determine which air quality regulations and guidance apply based on information from the project manager, including the project funding stream and project scope.
2. Provide information on the air quality scope and any analysis required to the environmental project manager for inclusion in consultant contracts, if requested.
3. Coordinate air quality interagency consultation Environmental Protection Agency (EPA), APCD, FHWA and local agencies and Metropolitan Planning Organizations (MPO's) as appropriate.
4. Attend meetings to discuss air quality analyses.
5. Review and approve air quality technical reports, which are prepared by consultants, if applicable.
6. Write project clearance letters or emails, or both (may only be required for Categorical Exclusions [CATEX's]) and review air quality sections of Environmental Assessment (EA) or Environmental Impact Statement (EIS) documents.
7. Prepare General Notes to be included in project plans, if requested.
8. Review applications for CDOT Permits and provide comments/questions regarding the potential air quality impacts of the proposed project or development, if requested.
9. Respond to public inquiries related to air quality.
10. Prepare and submit a conformity concurrence request letter to APCD (after approval of Air Quality Technical Report), when applicable. Concurrence is needed for these scenarios:
    a. Projects in a nonattainment or maintenance area for particulate matter for which the conformity rule applies; the project was not exempt from conformity; and either the project needed quantitative analysis (regardless of National Environmental Policy Act [NEPA] classification) or, for EA's and EIS's, the project did not need quantitative analysis.
    b. Projects that required a quantitative analysis for Mobile Source Air Toxics (MSAT) under FHWA guidance.

3.04.05 What does the Resident/Project Engineer need to do?

1. Confirm accuracy of project funding stream.
2. Go over the details of the project scope with the air quality specialist. Confer with the environmental manager, who must confirm whether the project meets the applicability criteria for Colorado Revised Statute (CRS) 43-1-128.
3. For projects requiring project-level conformity air dispersion modeling:
   a. Supply any traffic reports that show existing and future traffic volumes, turning movements, signal timing, and level of service analyses for signalized intersections within the project boundary.
   b. Provide design files (e.g., Computer Aided Design [CAD], MicroStation) showing proposed intersection designs and project roadway configuration, striping, and turning lanes.
4. For projects requiring Mobile Source Air Toxics (MSAT) modeling under Federal Highway Administration (FHWA) guidance or Greenhouse Gas (GHG), or both emissions modeling under the National Environmental Policy Act (NEPA) Manual: Provide the average speed distribution, Vehicle Miles Traveled (VMT) data, and Geographic Information Systems (GIS) data file or spreadsheet with the links being inventoried and hourly annual daily traffic volumes by hour and speeds on each link. If a spreadsheet is submitted, the length of each link, in miles, should be listed.
5. For projects requiring air pollutant modeling under Colorado Revised Statute (CRS) 43-1-128:
   a. If MSAT modeling is required under FHWA guidance and if air dispersion modeling is not required per Colorado Department of Transportation (CDOT) executive management, no additional information needs to be provided. The FHWA MSAT emissions model can also be run for other air pollutants and use the same inputs.
   b. If MSAT modeling is not required under FHWA guidance and air pollutants will be modeled using an emissions model, provide the information that would be used for the FHWA MSAT analysis.
   c. If air dispersion modeling is required per CDOT executive management, provide the information that is required for project-level conformity air dispersion modeling.

3.04.06 What is the general clearance schedule for this resource?

If an air quality technical report is not needed, the clearance can generally be provided quickly (e.g., two days). This is true for Categorical Exclusions (CATEX's) that do not need to comply with CRS 43-1-128 and are either exempt from the conformity rule or for which the conformity rule does not apply. Otherwise, an air quality technical report is required and the following schedule applies:

- Project-level analyses and report:
  - eight weeks if modeling is not required;
  - nine weeks if emissions modeling is required;
  - nine months if air dispersion modeling is required

- Preparation of conformity concurrence request letter and submittal to the Air Pollution Control Division (APCD), if applicable: three days
- APCD air quality technical report review and issuance of concurrence, if applicable: eleven business days, minimum

Total = If air quality technical report is needed: eight weeks to more than one year.

3.04.07 What are the red flags for this resource?

It is critical that if the conformity rule (40 Code of Federal Regulations [CFR] 93) applies, a project must be accurately described in the most recent Regional Transportation Plan (RTP) and funding be identified and programmed in the Transportation Improvement Program (TIP) or Statewide Transportation Improvement Program (STIP) prior to expected National Environmental Policy Act (NEPA) completion. A letter of conformity concurrence will not be issued by the Air Pollution Control Division (APCD) and the NEPA project cannot be completed until the project sponsor has met these conditions. Another key part of the concurrence is that APCD must agree with the conformity and Federal Highway Administration (FHWA) Mobile Source Air Toxics (MSAT) analyses. Modeling with an air dispersion model rather than an emissions model under 40 CFR 93 or Colorado Revised Statute (CRS) 43-1-128, if required, will have a large impact on how long it takes to complete the air quality analysis. The Region Planning and Environmental Manager (RPEM) or their designee must confirm if the project meets the criteria for a Regionally Significant project to see if the CRS applies. If the CRS applies, additional project funding will be needed to comply with NEPA and construction phase requirements.

3.05 Farmland

3.05.01 What is farmland?

Farmland is land used for agricultural crop production. Farmland may be classified as prime, unique, that of state importance, and that of local importance. Farmland is classified “prime” mainly based on soil characteristics. Soils that are known to produce a high yield of important crops are considered prime by the Natural Resources Conservation Service (NRCS). The term “unique” refers to the high value crops that a farm produces. Colorado areas that are known for certain crops fall into this category. For example, Palisade peaches or Rocky Ford melons may fall into this category.

3.05.02 Why do we evaluate this resource?

The Federal Farmland Protection Policy Act, 7 Code of Federal Regulations (CFR) Part 658, requires federal agencies to consider the adverse effects a project may have on the preservation of farmland. The Act protects “prime” and “unique” farmland. Farmlands of state and local importance also fall under protection of this Act.

3.05.03 Who regulates this resource?

The NRCS regulates this resource but coordination with local agricultural extension is also required to determine if a farmland qualifies for protection under the Act.

3.05.04 What does the environmental resource specialist need to do?

Complete Form AD 1006 (See National Environmental Policy Act [NEPA] Manual Chapter Nine, Appendix G, Farmland Conversion Impact Rating.pdf; or Form NRCS-CPA-106.pdf, should be used if it is a corridor project.

3.05.05 What does the Resident/Project Engineer need to do?

- Work closely with the resource specialist to develop alternatives to avoid prime or unique farmland.
- If avoidance is not possible, prepare an estimate of the number of farmland acres the project will impact.

3.05.06 What is the general clearance schedule for this resource?

- Determine if impacted farmlands are prime, unique, or of statewide/local importance: two weeks
- Develop avoidance and minimization alternatives: two weeks
- Prepare Form 1006 and send to the Natural Resources Conservation Service (NRCS): one week
- NRCS has 45 days to respond to the conclusion on Form 1006: 45 days

Total = nine weeks.

3.05.07 What are the red flags for this resource?

The NRCS Soil Survey for the area will give the resource specialist a good indication when prime or unique soils are present at the project site. Projects that impact farms that produce

special high value crops are red flags (i.e., Olathe corn, Rocky Ford melons, Palisade peaches).

3.06 Floodplains

3.06.01 What are floodplains?

A floodplain is lowland adjacent to water bodies such as a river, creek, stream, or lake. Floodplains are designated by the size and frequency of floods large enough to cover them. Flood frequency is often described by the potential occurrence in a given year (percentage probability of flooding each year). For example, the 100-year flood has a one percent chance of occurring in any given year. Floodplains are mapped primarily for the purpose of establishing risk for flood insurance purposes.

3.06.02 Why do we evaluate this resource?

Executive Order 11988 Floodplain Management dictates how floodplains should be regulated for federal projects. Floodplains need to be regulated as construction within a floodplain can alter flooding patterns, causing damage to neighboring properties. Damage can be either physical damage as a result of flooding, or financial damage as a result of causing a property owner to have an increase in flood insurance rates.

3.06.03 Who regulates this resource?

The Federal Emergency Management Agency (FEMA) manages the regulation of floodplains, in cooperation with local counties and municipalities.

3.06.04 What does the environmental resource specialist need to do?

1. Obtain current regulatory floodplain maps, hydrology and hydraulics information.
2. Evaluate whether the geometry of the construction will alter the floodplain, and if so, evaluate opportunity to minimize or eliminate encroachment. When encroachment can’t be changed, perform hydraulic analysis of the channel to determine magnitude of impacts.
3. Work with residency to minimize impacts and ensure that floodway elevation increase is less than one foot. The floodway is the central portion of a flooded area and differs from the floodplain in that it is the portion of the floodplain with higher flow velocities that cause more damage than just inundation.
4. Judge whether a Conditional Letter of Map Revision/Letter of Map Revision (Conditional Letter of Map Revision [CLOMR]/Letter of Map Revision [LOMR]) submittal is necessary for the scope of impact.

5. If needed, prepare a Conditional Letter of Map Revision (CLOMR) submittal prior to advertisement.
6. If needed, prepare a Letter of Map Revision (LOMR) submittal after construction.

3.06.05 What does the Resident/Project Engineer need to do?

1. Provide geometry of the roadway, structures or embankments, or both that impinge into the floodplain.
2. For any floodplain impacts, provide channel cross-sections to allow for hydraulic analysis in accordance with the Colorado Department of Transportation (CDOT) Drainage Manual.

3.06.06 What is the general clearance schedule for this resource?

Floodplain modification approval can take a variable amount of time, depending upon the complexity.

A simple project, with minimal encroachment into an existing floodplain, with no change to floodway elevation, and no Federal Emergency Management Agency (FEMA) submittal: two to four weeks for evaluation.

A complex CLOMR application can take up to a year. A CLOMR is a submittal of the plans and hydraulic analysis of the planned improvements. This submittal is done prior to construction to get conditional approval of the proposed change. A LOMR is the submittal of the as-built geometry and hydraulic analysis after construction is complete. and the LOMR finalizes the change in the regulatory floodplain.

3.06.07 What are the red flags for this resource?

Any detrimental change to a floodplain, horizontally or vertically, on property outside the right of way, will result in the necessity to purchase property rights (either a floodplain easement or purchase acquisition) to allow that change to occur. Any increase of a floodway elevation of one foot or greater is prohibited and will not be approved by FEMA.

3.07 Hazardous Materials

3.07.01 What are hazardous materials?

The term hazardous materials is an all-inclusive term for materials that are regulated as a solid waste, hazardous waste, and other wastes contaminated with hazardous materials, radioactive materials, petroleum fuels, toxic substances, and pollutants.

3.07.02 Why do we evaluate this resource?

The Colorado Department of Transportation (CDOT) strives to identify contaminated facilities early in the project development process to protect worker health and safety, to limit public and environmental exposures, and to comply with laws that require investigation and remediation (clean-up).

Contamination above regulatory levels requires notification of and possible ongoing involvement by various federal, state, or local agencies, depending on the type of contaminant.

3.07.03 Who regulates this resource?

Hazardous materials are regulated primarily by the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), although a myriad of other laws and regulations may apply depending on the contaminant, or contaminants present.

For example, when contamination originates from a Leaking Underground Storage Tank (LUST) the Colorado Department of Labor and Employment–Division of Oil and Public Safety (OPS) is usually involved. The Colorado Department of Public Health and Environment (CDPHE) is involved when other waste types are identified, such as releases of chlorinated solvents from dry cleaning or manufacturing facilities, the discovery of uncontrolled landfills, or the location of a project within a Superfund site boundary. Involvement and coordination with other federal agencies, such as the United States Environmental Protection Agency (EPA), United States Army Corps of Engineers (USACE), the Nuclear Regulatory Commission (NRC), the United States Geological Survey (USGS), or local regulatory agencies, or both (county or city health departments) may also be required.

3.07.04 What does the environmental resource specialist need to do?

1. For all projects, consult with the Hazardous Materials (HAZMAT) specialist to determine what type of HAZMAT clearance document will be required. Prepare an Initial Site Assessment (ISA) for smaller, less complex projects with no Right of Way (ROW) acquisitions; contract a Modified Environmental Site Assessment (MESA) for larger, more complex projects, or a Phase 1 Environmental Site Assessment, or both if Right of Way (ROW) acquisition is required.
2. If structures (Bridges or buildings) are to be altered or demolished, consult CDOT Property Management on conducting asbestos/heavy metal paint inspections and sampling. In many situations, these requests start with the ROW group during property/building acquisition.The HAZMAT specialist will generally make the request for ISA’s and bridge improvements.
3. Results of the above may include avoidance of contaminated properties, follow-up

site investigations (ex. collect soil and/or groundwater samples during geotechnical sampling), and/or remediation (excavation, disposal, treatment, etc.). Consult Colorado Department of Transportation (CDOT) Property Management during the acquisition phase to assist with this.

4. Prepare or request permitting, if required, for site remediation, structure alteration or demolition, and/or discharge/dewatering of shallow ground water.
5. The resource specialist will notify the Resident Engineer when project specifications and plans need to be modified to include: requiring a materials management plan for minor or suspected contamination (This should be completed as part of three above, prior to going to construction. If it is not completed before going to advertisement, then it is to be completed by the Contractor awarded the project), Force Account contingency funding for possible Hazardous Waste management or disposal, or both and/or Modified CDOT 250 specifications to address known or suspected contamination.
6. Confirm that specifications/plans have been appropriately modified and that permits have been obtained, if necessary.

3.07.05 What does the Resident/Project Engineer need to do?

1. Perform a joint site review with the Hazardous Materials (HAZMAT) specialist, if requested.
2. Provide Field Inspection Review (FIR) plans with a clear project footprint.
3. Inform the specialist of:
    a. structure acquisition, modification, or demolition, bridge or storm water system Municipal Separate Storm Sewer System (MS4) modifications,
    b. temporary or permanent Right of Way (ROW) acquisition, subsurface work such as excavations, drilling, caissons, or utilities,
    c. disturbance depths (feet),
    d. suspected groundwater or dewatering?

4. Prepare information needed for environmental permits as requested by the resource specialist.
5. Edit Final Office Review (FOR) plans and specs with modifications requested by the resource specialist.
6. Schedule the resource specialist to attend the ROW project meeting Right of Way Plan Review (ROWPR), pre-bid or preconstruction conference, or both to present and discuss hazardous materials concerns.

3.07.06 What is the general clearance schedule for this resource?

- Initial Site Assessment (ISA): one to four weeks
- Modified Environmental Site Assessment (MESA): one to three months
- Phase One Investigation: two to six months

- Asbestos / paint inspection and sampling, if required: one to three months (can be done concurrently with Initial Site Assessment [ISA], Modified Environmental Site Assessment [MESA], or Phase 1, or both)
- Permitting, if required: one to three months
- Additional site investigation or clean-up or both, if required: two months to two years +
- Complete clearance: two weeks to three months (may occur concurrently with permitting and site investigation)

Total = two months to two years +.

3.07.07 What are the red flags for this resource?

1. Project is through commercial/industrial corridors that may have contaminated sites or facilities.
2. Project has structure modifications or demolition.
3. Project has Right of Way (ROW) acquisition.
4. Project requires large, deep, or extensive excavation / subsurface work.
5. Project requires dewatering.
6. Ability to access the property.

3.08 Historic Properties Clearances (Archaeology, History, Historic Bridge)

3.08.01 What are historic properties?

Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). This typically applies to properties that are 50 years or older but may also apply to properties that have achieved significance in less than 50 years.

3.08.02 Why do we evaluate this resource?

Section 106 of the National Historic Preservation Act of 1966 requires federal agencies to take into account the effects of their undertakings on historic properties. The Section 106 regulations are published in the Code of Federal Regulations at 36 Code of Federal Regulations (CFR) Part 800, “Protecting Historic Properties,” and provide guidance on requirements federal agencies must meet to comply with the law. Section 106 is a procedural law that involves identifying historic properties, evaluating the effects to properties, and mitigating adverse effects in the context of a federal undertaking.

3.08.03 Who regulates this resource?

The question really is about what age ncies are involved in Section 106 consultation. The Colorado Department of Transportation (CDOT) requests concurrence from the State Historic Preservation Office (SHPO) on Section 106 findings. CDOT also identifies other consulting parties who have a demonstrated interest in historic properties; these can include but are not limited to local historic preservation commissions and boards, local historical societies, and in some cases, individuals. Section 106 also requires consultation with American Indian tribes and Native Hawaiian organizations. When there are adverse effects to properties, the Advisory Council on Historic Preservation (ACHP) must be notified and afforded an opportunity to participate in the process. Mitigation for adverse effects is outlined in a Memorandum of Agreement (MOA) that is signed by CDOT, the Federal Highway Administration (FHWA) and SHPO, as well as ACHP if that agency participates in the process and tribal governments or Native Hawaiian organizations if applicable. Consulting parties and tribal governments and Native Hawaiian organizations must also be given an opportunity to be involved in the review and development of the proposed mitigatios and the MOA.

3.08.04 What does the environmental resource specialist need to do?

Tasks in the clearance process vary depending on the scale of the project (Construction Engineering [CE], Environmental Impact Statement [EIS], Environmental Assessment [EA]), the resource base in the project area, whether a consultant has been hired to complete tasks, and whether SHPO consultation is necessary. Steps eight, nine and ten are only necessary when there is an adverse effect. The general steps include:

1. File search on ACHP Compass database.
2. Identification of consulting parties and if applicable Indian tribes and Native Hawaiian organizations.
3. Development of Area of Potential Effects (APE).
4. Field survey of project APE to identify historic properties.
5. Prepare survey report and site forms.
6. Prepare site eligibility determinations.
7. Prepare effects determinations, as appropriate.
8. Submit survey report and determinations of eligibility and effects to the SHPO and consulting parties for review.
9. Respond to SHPO/consulting parties/tribal government comments or inquiries (if necessary).
10. Submit adverse effect finding to ACHP.
11. Prepare an MOA for properties that are adversely affected and circulate for signatures from Federal Highway Administration (FHWA), SHPO, CDOT and when appropriate, ACHP and concurring parties.
12. Complete mitigation for adverse effects.

3.08.05 What does the Resident/Project Engineer need to do?

1. Provide detailed and updated project description and scope.
2. Provide right of way and temporary and permanent easement information, project plan sheets, conceptual designs, and graphics to assist the resource specialist in evaluating effects to historic properties.
3. Work with the resource specialist on solutions to avoid or minimize effects to historic properties.

3.08.06 What is the general clearance schedule for this resource?

Clearance time frames vary depending on the project scope and resource types, and whether consultation with the involving State Historic Preservation Office (SHPO) and consulting parties is necessary. For minor projects, specialists typically need a minimum of eight weeks to clear a project. For more complex corridor projects, the Section 106 process can take up to one year and sometimes longer depending on the type and number of resources, the associated project impacts, and the nature of the consultation. If there are changes to the project scope–including project limits and proposed work, the time frame for Section 106 consultation may have to start again. The following estimates represent general time frames associated with internal clearance processes (not SHPO consultation) and projects that require SHPO consultation and result in specific findings as defined under Section 106:

Projects that meet the requirements of screened undertakings as defined by the Section 106 Programmatic Agreement: resource specialists typically are given four to eight weeks for clearance requests. This assumes that the resource specialist may have other workload deadlines and cannot immediately address the request. Once it has been determined that a project meets the criteria of a screened undertaking, the time frame to actually provide a clearance can be one to five days or sooner; (no historic properties affected or no adverse effect: 100 calendar days (inclusive of specialist's research and coordination as well as SHPO review time).

Adverse Effect: 285 to 320 calendar days (inclusive of specialist's research and coordination as well as SHPO review time).

3.08.07 What are the red flags for this resource?

There are a variety of issues that could cause delays in the Section 106 clearance process, including:

1. Tight project schedules,
2. Changes in project scope and limits,
3. Inadequate project information, and

4. State Historic Preservation Office (SHPO) or consulting party, or both disagreement over findings.

It is particularly important to provide the specialist adequate time and project information if SHPO consultation is required. SHPO requires 30 days to review projects. If consultation has begun and project scope changes (due to inaccurate or new information) then the consultation period will have to start over again.

3.09 Migratory Birds

3.09.01 What are Migratory Birds?

Migratory Birds are bird species included on the United States Fish and Wildlife Services (USFWS) List of Migratory Birds and are protected by the provisions of the Migratory Bird Treaty Act (MBTA). Migratory Birds generally refer to bird species that are native to the United States which migrate over international boundaries. Over 1000 species are included on the list, including many common species. In Colorado, all species except the house sparrow, feral pigeon, common starling, and non-migratory game birds like pheasants, gray partridge, and sage grouse, are protected. (USFWS maintains the list of migratory birds, both adding and removing species on a regular basis, and is also responsible for enforcement of MBTA.

MBTA makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg of any such bird, unless authorized under a permit issued by the Secretary of the Interior. “Take” is defined in regulations as: “pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.” If a person is found in possession of a protected species or its parts or products (including eggs and nests), or if you remove an active nest, you are automatically in criminal violation of the law. Nests are determined to be active when an egg is laid. The USFWS generally does not provide permits for migratory bird takes associated with construction activity. Construction managers are required to take measures to avoid causing takes of migratory birds. The Colorado Department of Transportation (CDOT) implements increased restrictions on project activities (through the 240 Project Special Provision) during periods when migratory bird nesting activity is most likely, between April 1 and August 31 of any given year. Migratory bird takes can potentially occur during clearing and grubbing of vegetation or during construction activities on bridges or culverts (i.e., overlays, bridge demolition).

3.09.02 Why do we evaluate this resource?

MBTA is the primary legislation in the United States (US) to conserve migratory birds. Migratory birds provide a variety of beneficial functions including bird-watching, hunting, and

photography. These activities contribute nearly $40 billion annually to local economies throughout the United States. Penalties for taking a migratory bird or migratory bird nests are criminal and expensive.

3.09.03 Who regulates this resource?

The United States Fish and Wildlife Service has the legal responsibility to maintain healthy migratory bird populations and enforce the provisions of the Migratory Bird Treaty Act (MBTA). The Service is authorized by more than 25 primary conventions, treaties, and laws to ensure the conservation of migratory birds.

3.09.04 What does the environmental resource specialist need to do?

1. Determine if migratory bird or migratory bird nests are likely to occur on a project site.
2. Determine if construction activities are likely to occur during periods of the year when migratory birds are nesting.
3. The resource specialist can sometimes remove inactive nests or install nest exclusion devices to ensure that migratory birds do not begin using structures as a nest site.
4. Provide and revise the Section 240 Project Special Provision for the Protection of Migratory Birds.
5. Assist Contractors and consultants on implementing nest surveys as appropriate and maintaining nest free work sites without causing takes.

3.09.05 What does the Resident/Project Engineer need to do?

Design

1. Incorporate Section 240 specification in project specification packages.
2. Budget for nest prevention, removal and monitoring activities.
3. Incorporate resource specialist notes/specs.

Construction

1. Contact resource specialist to address migratory birds.
2. Manage project construction to assure all aspects of MBTA notes, the Section 240 Project Special Provision, and plan sheets are followed by the Contractor.

3.09.06 What is the general clearance schedule for this resource?

Unless stated elsewhere, migratory bird nest prevention, removal, monitoring is only required during the migratory bird nesting season (April 1–August 31).

Clearances are obtained during the environmental review process. Migratory bird clearances are conditional on the timing and location of the individual project and specifics are addressed through the inclusion of the Section 240 Specification and appropriate general notes as recommended by the resource specialist.

3.09.07 What are the red flags for this resource?

1. The presence of migratory birds has the potential to delay projects since active nests must be monitored until they can be determined to be inactive and then removed. Under some situations, construction work may also have to be stopped if nests are found active during construction, and may only resume when the nests are determined to be inactive.
2. Projects that involve clearing and grubbing of vegetation or construction activity on bridge or culverts have the potential to cause a migratory bird take. Some bridge structures are too large for any known, practical implementation of nest removal or nest exclusion activities or have extensive nesting habitat in places difficult to monitor. Other projects could impact grassland or woodland migratory bird species depending on the extent of clearing and grubbing. Sometimes these problems require phasing a project to avoid activity during the April 1–August 31 breeding season.
3. Projects that start after April 1 and before August 31 require survey and monitoring for bird nesting activity using a credentialed wildlife biologist on a two times per week basis until construction begins in the impacted area. The project can avoid bi-weekly monitoring if nest-building prevention methods are implemented such as netting, or if the areas can be cleared (or trees cut down) prior to April 1. Hiring a wildlife biologist results in additional costs to a project.
4. Projects that are not advertised until after April 1, but are given a notice to proceed before August 31, could find active migratory birds already on-site before the Contractor has an opportunity to prevent the establishment of active nests.

3.10 Noise Analysis

3.10.01 What is noise analysis?

Noise is defined as unwanted or excessive sound. Projects are evaluated to determine whether noise analysis is necessary. Some projects require a memorandum to show that analysis is not necessary, usually to show that travel lanes are not shifting closer to sensitive receptors so much that the horizontal distance is halved. If a project requires analysis, a noise technical report documents it. These types of projects may require analysis:

- Adding roadway capacity (e.g., via new pavement or restriping),
- Changing the vertical profile,

- Removing shielding such that a line-of-sight is exposed between a receptor and the roadway,
- Adding an auxiliary lane (except a turn lane),
- Making interchange modifications,
- Moving a travel lane horizontally closer to sensitive receptors, and
- Adding or substantially altering a weigh station, rest stop, ride-share lot, or toll plaza.

Evaluation of abatement, most commonly a noise wall, is required if the noise analysis shows that noise will be impacted. A noise impact occurs if the project increases noise by ten decibels or more over existing background noise or if future noise levels meet or exceed the Noise Abatement Criteria (NAC). The NAC pertain to outside activities and land uses for six categories of noise receptors (activity categories A through G), except as noted here:

- A: 56 decibels—areas of serenity;
- B: 66 decibel—residential;
- C: 66 decibels—examples include parks, trails, campgrounds, churches, schools, and auditoriums;
- D: 51 decibels—selected noise sensitive indoor activity category C land uses;
- E: 71 decibels—examples include hotels, offices, and restaurants; and
- F: no NAC—examples include industrial, agriculture, shops, and government managed land; and
- G: no NAC—undeveloped lands that are not permitted

Noise abatement that is determined to be feasible and reasonable must be constructed at the same time as the project aspects that triggered the noise analysis. If the project sponsor cannot afford the abatement, the project cannot be built.

3.10.02 Why do we evaluate this resource?

As defined in 23 Code of Federal Regulations (CFR) 772, the Federal Highway Administration (FHWA) requires that noise is evaluated for projects that require FHWA approval, regardless of funding sources, and for projects funded with federal-aid highway funds.

Although adherence to 23 CFR 772 is only required for federal or federal-aid highway projects, Colorado Department of Transportation (CDOT's) Environmental Stewardship Guide broadens the applicability of traffic noise analyses. As described in the 2020 CDOT Noise Analysis and Abatement Guidelines, CDOT requires noise analyses for some state, local, and public-private partnership projects overseen by CDOT or requiring CDOT approval:

- Projects that add capacity via through lanes, if the lane(s) requires additional pavement beyond the existing roadway geometry profile. The existing profile includes medians and inside shoulders.
- Projects that are adjacent to prior projects to which 23 Code of Federal Regulations (CFR) 772 applied and for which noise abatement was built, if the current project meets any Type I criteria.

3.10.03 Who regulates this resource?

Noise analysis and mitigation is regulated by the Federal Highway Administration (FHWA). Construction noise is regulated by the State of Colorado. Some local municipalities also have noise ordinances. The project must comply with whichever construction noise regulation that is more stringent during project construction.

3.10.04 What does the environmental resource specialist need to do?

1. Determine if a noise consultant needs to provide any documents (i.e., a noise memorandum or technical report). A technical report is required if an analysis is required.
2. If a memorandum is required, work with the noise consultant and project manager to ensure that correct receptor locations are used in the distance calculations.
3. If analysis is required:

    - Work with the noise consultant to determine where field noise measurements will be taken and which receptors should be included in the noise model, if requested.
    - Review noise technical reports and noise models.
    - If noise abatement is recommended, work with the noise consultant and project manager to survey property owners, who make the final decision on whether abatement will be built.
    - If noise abatement will be constructed, review final-design level noise reports and noise model, which will provide engineering with noise barrier dimension details and siting for final design.
    - After noise wall construction has begun, enter the year provided by the project manager into the Staff Bridge asset management database.

3.10.05 What does the Resident/Project Engineer need to do?

1. Provide clarification about the project scope, when needed, to help the noise specialist determine if a noise memorandum or noise analysis is needed.

2. If a memorandum is required, work with the noise specialist and noise consultant to ensure that correct travel lane edge locations are used in the distance calculations.
3. If a technical noise report is required:

    - Provide existing and final design plan sheets including terrain, elevations, planned roadway elements, adjacent buildings.
    - Provide existing and design year traffic volumes, and vehicle fleet mixes.
    - Provide guidance on noise barrier material selection, clear zone requirements, and final barrier siting, utilities, other critical items affecting location.
    - Coordinate the owner survey of any recommended noise barriers with noise specialist; this determines if it gets built.
    - Coordinate public outreach for noise abatement with noise specialist, if necessary (e.g., noise barrier appearance).
    - Notify the noise specialist when noise wall construction begins, so that the specialist can enter the year noise wall construction began into the Staff Bridge asset management database.

3.10.06 What is the general clearance schedule for this resource?

If a project does not require a noise analysis, it also does not require a noise technical report and noise barriers would not be considered. If the project will shift travel lanes horizontally towards noise sensitive receptors, a memorandum may be needed to show that a noise analysis is not required.

- Project does not require noise report or noise memorandum: two days
- Project requires noise memorandum: two weeks
- Project requires noise technical report:
    1. Project-level analyses and report: eight to nine weeks
    2. Owner survey, if needed: five weeks
    3. Public outreach, if needed: two weeks

Total = If noise technical report is needed: eight weeks minimum but could be many more.

3.10.07 What are the red flags for this resource?

1. Public disagreement with project noise technical report (e.g., units of high-density housing may not be accurately reported in the noise report, triggering remodeling after the noise report becomes public).
2. High existing noise levels, which could lead to noise barriers being recommended even if the project itself does not cause noise impacts.

3. Building a new road in a new location would make it more likely that noise levels would increase by 10 decibels or more, which could lead to noise barriers being recommended even if the Noise Abatement Criteria (NAC) are not being exceeded.

3.11 Noxious Weeds

3.11.01 What are noxious weeds?

Noxious weeds are alien aquatic and terrestrial plant species that have been designated by rule as being noxious and meet one or more of the following criteria: (a) Aggressively invades or is detrimental to economic crops or native plant communities; (b) Is poisonous to livestock; (c) Is a carrier of detrimental insects, diseases, or parasites; (d) The direct or indirect effect of the presence of this plant is detrimental to the environmentally sound management of natural or agricultural ecosystems.

3.11.02 Why do we evaluate this resource?

The Federal Noxious Weed Act and the Colorado Noxious Weed Act mandate control or eradication, or both of designated noxious weeds.

3.11.03 Who regulates this resource?

The Colorado Department of Agriculture governs Colorado's noxious weed program.

3.11.04 What does the environmental resource specialist need to do?

1. For Environmental Assessment (EA) or Environmental Impact Statement (EIS) projects, the consultant or Contractor will be required to submit a noxious weed management plan.
2. Look for noxious weed infestations at scoping and inform the Resident Engineer of the need for an herbicide treatment pay item.

3.11.05 What does the Resident/Project Engineer need to do?

1. Work with the resource specialist and landscape architect to calculate area, species, and bid item hours.
2. Include treatment area on Stormwater Management Plan plan sheets, if necessary.

3.11.06 What is the general clearance schedule for this resource?

There are no formal clearances for this resource.

3.11.07 What are the red flags for this resource?

Wildlife issues may restrict timing and location of herbicide application.

3.12 Paleontology

3.12.01 What is paleontology?

Paleontology is the study of plant and animal life of past geologic time, including its evolutionary history, and its paleoecological interrelationships. This area of study does not include prehistoric human remains and their associated cultural artifacts (e. g., stone tools, pottery), which are the domain of archaeology.

3.12.02 Why do we evaluate this resource?

The Historical, Prehistorical, and Archaeological Resources Act (Colorado Revised Statute [CRS] 24-80-401 et al.) (State Antiquities Act) protects all fossils on state-owned lands and lands controlled by any subdivision of state government. Title to fossils on state-owned lands is reserved to the state. Permits are required to collect, damage, or destroy fossils covered under the State Antiquities Act. While the requirement to locate and assess the scientific importance of fossils on state-owned lands is not stated explicitly in the law, it is implicit in the requirement to avoid any damage to, destruction or removal of the resource without a permit.

3.12.03 Who regulates this resource?

The Office of the State Archaeologist, Colorado (OSAC) administers the State Antiquities Act.

3.12.04 What does the environmental resource specialist need to do?

1. Identify potentially fossiliferous deposits and previously recorded fossil localities within the project limits.
2. If required, conduct on-the-ground reconnaissance for previously unrecorded fossil localities within the project limits.
3. Determine the scientific significance of any recorded fossil localities within the project limit.
4. Using Field Inspection Review (FIR)/ Final Office Review (FOR) level plans, determine the location and scope of impacts to any scientifically significant fossil localities within the project limits.
5. Using FIR/FOR level plans, determine the probable location and scope of impacts to presently buried, scientifically important fossils.

6. Develop a plan for preconstruction or during construction, or both for mitigation of construction impacts to scientifically important fossils.

3.12.05 What does the Resident/Project Engineer need to do?

Design

Incorporate all general notes and special revisions to Subsection 107.23 (Archaeological and Paleontological Discoveries) identified by the resource specialist that provide direction to the Contractor to construct the project in compliance with the State Antiquities Act.

Construction

Manage project construction to assure that all general notes and special revisions to Subsection 107.23 are followed by the Contractor.

3.12.06 What is the general clearance schedule for this resource?

It may take between eight and ten weeks to clear this resource. More time may be required if weather conditions are not conducive to any needed surveys.

3.12.07 What are the red flags for this resource?

1. Project is located at least partially on lands administered by federal agencies, which have additional resource specialist report and interagency coordination requirements.
2. Project has Right of Way (ROW) acquisition, requiring rights of entry acquisition in order to permit performance of on-the-ground reconnaissance (if necessary).
3. Clearance request is issued during winter/spring months when snow cover may prevent performance of on-the-ground reconnaissance (if necessary).
4. Project requires large, deep, or extensive excavation/subsurface work.
5. Project is located near well-known fossil localities.

3.13 Senate Bill 40 (SB 40)

The Colorado Department of Transportation's (CDOT's) requirements under SB 40 are defined in a Memorandum of Agreement (MOA) between the Colorado Departments of Natural Resources (DNR) and CDOT. Colorado Parks and Wildlife (CPW) is the office within DNR that reviews plans and provides certification for actions that fall under the jurisdiction of SB 40. Programmatic and non-programmatic certifications are dependent on the types of projects and potential to impact state waterways. General and special conditions are addressed within the MOA for incorporation

into project plans and specifications. Project specific conditions may be provided by Colorado Parks and Wildlife (CPW) for non-programmatic projects requiring formal certification.

3.13.01 What does the environmental resource specialist need to do?

1. Review Field Inspection Review (FIR) and Final Office Review (FOR) level plans to identify project impacts to streams that fall under Senate Bill (SB) 40 jurisdiction.
2. Develop measures to mitigate potential impacts to water quality, fishery reproduction, wildlife resources, and wetlands.
3. Assure incorporation into project plans any general notes to address timing restrictions and Best Management Practices (BMP's) to reduce resource impacts, and specifications that incorporate by reference all SB 40 General, Specific and Certification Conditions.
4. Submit project summary letter that addresses alternatives considered, mitigation measures, reclamation/revegetation plan along with applicable plan sheets and cross sections, Section 404 Permit application, and SB 40 application (non-programmatic only).

3.13.02 What does the Resident/Project Engineer need to do?

Design

Incorporate all general notes, specifications, and any required plan sheets identified by the resource specialist that provide direction to Contractor to construct the project in compliance with SB 40 conditions.

Construction

Manage project construction to assure all aspects of SB 40 notes, specifications, and plan sheets are followed by the Contractor.

3.13.03 What is the general clearance schedule for this resource?

SB 40 Certification can be initiated with FIR or FOR level plans provided that activities that impact SB 40 resources are defined and finalized. Once the plan sheets that show the general notes, specifications, and impact specific sheets are developed, the associated letter and application forms can be prepared. If a project requires a Section 404 Permit applicable correspondence with the United States Army Corps of Engineers (USACE) should be attached.

- Application preparation: five days
- CPW response: 30 days

Total = 35 days (from receipt of necessary design information).

3.13.04 What are the red flags for this resource?

1. The Senate Bill (SB) 40 Application must be submitted to Colorado Parks and Wildlife (CPW) between the Field Inspection Review (FIR) and Final Office Review (FOR) and as close to FIR as practicable.
2. Seasonal restrictions to avoid trout spawning, avian and/or threatened and endangered species may conflict with engineering schedules that identify maximum work days or completion dates.

3.14 Environmental Justice and Equity

3.14.01 What is Environmental Justice and Equity?

Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Equity in transportation seeks fairness in mobility and accessibility to meet the needs of all community members.

3.14.02 Why do we evaluate this resource?

1. To maintain compliance with federal Executive Order 12898, and Colorado Senate Bill 21-260, as well as United States Department of Transportation (DOT) Order 5610.2(b).
2. To comply with the Colorado Department of Transportation's (CDOT's) environmental stewardship policy, which ensures that the statewide transportation system is constructed & maintained in an environmentally responsible, sustainable, and compliant manner.
3. To comply with several legal mandates that pertain to environmental justice and equity.

3.14.03 Who regulates this resource?

Federal requirements of EJ are administered by the the Federal Highway Administration (FHWA) and state requirements of equity are administered by CDOT. Federal EJ requirements state that any project which has disproportionately high and adverse impacts on low income or minority communities must be approved by FHWA Headquarters. State equity requirements are that "disproportionately impacted communities" (low income, minority, cost-burdened

households), must be given the opportunity to fully participate in transportation decisions that affect health, quality of life, and access.

3.14.04 What does the environmental resource specialist need to do?

1. All projects must be given to an environmental specialist to analyze if the project is exempt from Environmental Justice (EJ) or equity analysis.
2. If the project has actions that require EJ or a state equity analysis, the specialist will determine if populations protected by federal EJ requirements are present in the study area.
3. Once populations protected by EJ or by state equity requirements are identified within the study area, proactive efforts to ensure meaningful opportunities for public participation must occur.
4. If populations protected by EJ are within the study area, then the project actions must be analyzed to determine if the actions would have disproportionately high and adverse impacts on low income or minority communities.
5. If there is a disproportionately high and adverse effect on an EJ population, after taking benefits and mitigation into account, Federal Highway Administration (FHWA) will approve the proposed action only if it determines no such practicable measures exist to avoid or reduce the disproportionately high and adverse effect.

3.14.05 What does the Resident/Project Engineer need to do?

1. Inform and involve the environmental team for proactive public involvement as early as possible—especially for all projects which require residential or non-residential relocations.
2. Explore alternatives during the design process that minimize or avoid harm to populations protected by EJ or equity.

3.14.06 What is the general clearance schedule for this resource?

Coordination, development and approval of a written EJ and equity memo, with the appropriate public involvement as described above, can take up to six months. Approval of the final EJ and equity memo must occur before the Region Planning and Environmental Manager (RPEM) can issue Environmental Clearance on the top portion of the Form 128 Categorical Exclusion Determination.

3.14.07 What are the red flags for this resource?

1. The project primarily negatively impacts low-income or minority communities, or both and cost-burdened household populations.

2. The project will require relocations and/or acquire residential or minority owned businesses or businesses that serve a specific demographic.
3. The project will remove a community service (i.e., free medical clinic, library, post office, etc.) or remove or change access to employment, grocery stores, and other essential services.

3.15 Social Resources

3.15.01 What are Social Resources?

Social resources generally refer to the built human environment and can include land use, visual resources, and socioeconomics. **Land use** is defined as the way land is developed and used for various activities (e.g., residential, commercial, industrial, parks, etc.). **Visual resources** include the viewers (e.g., neighbors and travelers), features that define the character of an area, and visual quality of the area. The visual characteristics can be natural features, vistas, vegetation or mountains, but also urban characteristics such as architecture, skylines, or other elements that define the character of the landscape. **Socioeconomics** include a variety of factors that may affect an area's economy including employment and tax base, access to businesses, housing stock, property value, public services, infrastructure and utilities.

3.15.02 Why do we evaluate this resource?

Land use—Zoning, future land use and growth management areas, conservation easements, urban infrastructure service boundaries, annexation plans, and past, existing and future development trends can affect transportation needs.

Visual resources—Visual resources and aesthetics are important because they are unique to each area and may be associated with strong emotions in viewers. Such special places often provide a sense of place or community to the residents of an area, attract tourism by leaving an impression and help drive its economy.

Socioeconomics—Transportation projects can have an effect on the ability to access employment, grocery stores, and other essential services. If a project needs additional right of way it could affect the availability of housing and employment.

3.15.03 Who regulates this resource?

Land use is regulated by the local agency (city, town, or county). **Visual resources** and **socioeconomics** are regulated by the Federal Highway Administration (FHWA) and the Colorado Department of Transportation (CDOT).

3.15.04 What does the environmental resource specialist need to do?

The resource specialist will evaluate impacts and determine if mitigation measures are necessary. Since social resources tend to be more qualitative, dynamic, and intangible, public involvement and coordination with local communities may be required to gather adequate information to address these resource areas. Visual resources should also be coordinated with the planning team to be evaluated early in the National Environmental Policy Act (NEPA) process through public involvement to determine community values and needs. For visual resources, refer to the Programs site, Visual Impact Assessment (VIA) Guidelines, and complete the scoping questionnaire to determine the project impacts, if any, and if visual impact assessment is necessary.

3.15.05 What does the Resident/Project Engineer need to do?

The Engineer should ensure recommended mitigation measures are incorporated into the design and specifications and carried out through construction. It is important to remember that mitigation measures were developed as part of the stakeholder involvements as commitments to the community to avoid, minimize or mitigate project impacts.

3.15.06 What is the general clearance schedule for this resource?

This clearance can require an analysis of the population impacted by the project, additional public involvement, revised design, and consultation with Federal Highway Administration (FHWA). This entire process can take up to six months.

3.15.07 What are the red flags for this resource?

1. The project will acquire and relocate residences or businesses.
2. The project will drastically change the land use pattern, impact the views of neighbors or travelers or both, or alter the visual character of the community.

3.16 Threatened and Endangered Species

3.16.01 What are threatened and endangered species?

An endangered species is an animal or plant species in danger of extinction throughout all or a significant portion of its range. A threatened species is an animal or plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. A proposed species is an animal or plant species proposed in the Federal Register for listing under Section Four of the Endangered Species Act (ESA).

A candidate species is an animal or plant species defined by the United States Fish and Wildlife Service (USFWS) as “plants and animals for which the Fish and Wildlife Service has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act (ESA), but for which development or a proposed listing regulation is precluded by other higher priority listing activities. Conservation of these species is important because they are by definition species that may warrant future protection under ESA.” Designated critical habitat, based on the physical or biological features essential to the conservation of the species, may be included with the listing of a species.

3.16.02 Why do we evaluate this resource?

The Endangered Species Act of 1973, as amended (16 US Code [USC] 1531 et seq.), provides for the protection and conservation of threatened and endangered plants,animals and their habitat. ESA requires federal agencies to ensure that actions they authorize or fund will not jeopardize the continued existence of any listed species, or result in the destruction of designated critical habitat for listed species.

3.16.03 Who regulates this resource?

Each Colorado Department of Transportation (CDOT) project is evaluated for impacts to wildlife, including species listed as threatened and endangered by the USFWS, and various other species listed by other resource agencies. Impacts from projects are assessed through the development of Biological Evaluations or Biological Assessments. These documents help determine the effects a project will have on listed species or critical habitat or both, and also determine if consultation with the USFWS is necessary.

3.16.04 What does the environmental resource specialist need to do?

1. Conduct site inventory.
2. Conduct literature review.
3. Prepare Biological Evaluation/Biological Assessment.
4. Submit Biological Evaluation/Biological Assessment with “effects” determination to the USFWS, as necessary.

3.16.05 What does the Resident/Project Engineer need to do?

1. Work with resource specialist to determine impacts, and assist in the avoidance and minimization of impacts. Develop mitigation measures as necessary.
2. Provide plan sheets to include in the Biological Evaluation/Biological Assessment.

3.16.06 What is the general clearance schedule for this resource?

- On-site and literature review: one week to several months (dependent on season)
- Prepare biological document: one month
- USFWS review and concurrence: four months.

Total = six weeks to several months.

3.16.07 What are the red flags for this resource?

1. Avoidance of impacts to listed species may require design modifications or timing restrictions.
2. Any project that "may affect" a species or critical habitat will require further coordination with the USFWS. This additional coordination may lengthen the clearance process by 16 weeks.
3. Not all surveys can be conducted all year round. Some species can only be surveyed at specific times of year. Surveying for plants is especially problematic as they are only blooming for a short time.

3.17 Water Quality

3.17.01 What is water quality?

Water quality analysis includes all the surface water and groundwater in or affected by the project area. Water quality analysis can vary if the project area is in a Municipal Separate Storm Sewer System (MS4) permit area or if it is near impaired waterways. The Colorado Department of Transportation's (CDOT's) MS4 permit includes seven different programs: construction sites, Permanent Water Quality (PWQ), illicit discharge, industrial facilities, public education and outreach, pollution prevention and good housekeeping, and wet weather monitoring. Some MS4 programs are implemented statewide and not just in MS4 permit areas.

Please see your region or Environmental Programs Branch (EPB) water quality specialists, CDOT National Environmental Policy Act (NEPA) Manual, or the specific program guidance for more information on these programs and other water quality permits used to protect water quality.

Note: For projects on federal or American Indian lands, federal permits are needed. Contact your resource specialist for the appropriate forms and templates.

3.17.02 Why do we evaluate this resource?

Clean Water Act (CWA) Sections 303(d), 401, and 402—The CWA established the basic structure for regulating discharges of pollutants into navigable waters. It provides the statutory basis for the National Pollutant Discharge Elimination System (NPDES) permit program and the basic structure for regulating the discharge of pollutants into waters of the United States (US). The CWA also requires the identification of waters for which technology-based effluent limitations and other required controls cannot meet water quality standards (i.e., impaired waters).

Safe Drinking Water Act (SDWA)(40 Code of Federal Regulations [CFR] Parts 141–143)—SDWA protects public health by regulating the nation's public drinking water supply and protecting drinking water and its sources. The Colorado Department of Transportation (CDOT) is a stakeholder in the Colorado Source Water Assessment and Protection (SWAP) program mandated by SDWA.

Erosion and Sediment Control on Highway Construction Projects (25 CFR 650 Subpart B)—All highways funded in whole or in part by the Federal Highway Administration (FHWA) must be designed, constructed, and operated according to standards that will minimize erosion and sediment damage to the highway and adjacent properties and abate pollution of surface and groundwater resources.

Colorado Water Quality Control Act (Colorado Revised Statutes [CRS] Title 25, Article Eight)—The Colorado Water Quality Control Act protects and maximizes the beneficial uses of state waters and regulates pollutant discharges into state waters. It created the Colorado Discharge Permitting System (CDPS) to regulate discharges to Colorado’s state waters.

3.17.03 Who regulates this resource?

It is the responsibility of the United States Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE), Water Quality Control Division (WQCD) to regulate water quality and issue permits.

3.17.04 What does the environmental resource specialist need to do?

1. Determine if the project is in a Municipal Separate Storm Sewer System (MS4) area and if so, proceed with necessary mitigation and engineering notes for project plans.
2. Determine if the project disturbs over an acre or is part of a larger common plan of development. If so, obtain a Stormwater Construction Permit (SCP) from the Colorado Department of Public Health and Environment (CDPHE) or a General Construction Permit (GCP) from the United States Environmental Protection

Agency (EPA). Work with the Project Engineer to insert the appropriate notes and specifications.
3. Determine if the project area discharges to an impaired waterbody.
4. Determine if Permanent Water Quality (PWQ) control measures are needed by identifying the project disturbance amount and added impervious area, and if impaired waters are nearby.
5. If PWQ applies then complete a Permanent Water Quality orm.
6. Ensure the project plans include a Stormwater Management Plan (SWMP), regardless of project size.

3.17.05 What does the Resident/Project Engineer need to do?

1. Consult the decision matrix to determine if water quality modeling is necessary and if so, which model is appropriate.
2. If the project is in an MS4 area, insert notes and specs to follow the program(s) requirements.
3. Work with the water quality specialist to determine if PWQ is required and if so, incorporate early in design and complete the PWQ Form and any maintenance agreements/Intergovernmental Agreements (IGA's). See the Permanent Water Quality Section for additional information.

3.17.06 What is the general clearance schedule for this resource?

Between ten days and two months to acquire permits and complete PWQ Form(s) and reports (after design is far enough along to make conclusions). There are multiple Colorado Discharge Permitting System (CDPS) or National Pollutant Discharge Elimination System (NPDES) permits that may be required, depending on the project details and location. Please see your region or Environmental Programs Branch (EPB) water quality specialist.

3.17.07 What are the red flags for this resource?

1. The receiving water body is on the 303(d) list or has a Total Maximum Daily Load (TMDL).
2. Project is within a Municipal Separate Storm Sewer System (MS4) area. Coordination with local agencies must be done.
3. Project is within federal or Tribal lands. Different permits are required.
4. PWQ is required.

3.18 What is Permanent Water Quality?

3.18.01 What is Permanent Water Quality?

Permanent Water Quality is one of the seven programs in the Colorado Department of Transportation's (CDOT's) Municipal Separate Storm Sewer System (MS4) Permit. The intent of the program is to protect environmental surface waters from highway runoff once construction is complete and in perpetuity. Requirements for the Permanent Water Quality program can be estimated during the National Environmental Policy Act (NEPA) and Design phases.

3.18.02 Why do we evaluate this resource?

Permanent Water Quality is the only MS4 Program that spans all project delivery phases, and Maintenance. The earlier it is considered, the easier it is to meet milestones throughout the project. Although exact project boundaries won't be known during NEPA or Design, Permanent Water Quality requirements can be assessed generally. When in doubt, default to including Permanent Water Quality in a project early and removing it in a later phase.

3.18.03 Who regulates this resource?

The Colorado Department of Public Health & Environment, Water Quality Control Division and region eight Environmental Protection Agency regulate this resource.

3.18.04 What does the environmental resource specialist need to do?

1. Use the Permanent Water Quality webpage as a resource for required forms and processes: Programs, Permanent Water Quality.
2. Use and share the Permanent Water Quality Program Manual with the Resident/Project Engineer. This document outlines requirements per project delivery phase and includes detailed descriptions of tasks related to these requirements.
3. Contact the Headquarters Permanent Water Quality program managers as soon as a project is identified if you need assistance.

3.18.05 What does the Resident/Project Engineer need to do?

1. Contact the environmental resource specialist as soon as a project is identified.
2. Use the Permanent Water Quality Form to assess Municipal Separate Storm Sewer System (MS4) permit requirements, the Permanent Water Quality Program Manual for milestones in each project phase, and the Permanent Water Quality Checklist to

establish transfer from Design to Construction Engineers. Visit the Permanent Water Quality (PWQ) program website for these items: Programs, Permanent Water Quality.
3. Contact region water quality specialists and Headquarters Permanent Water Quality managers as resources as early and as often as needed.

3.18.06 What is the general clearance schedule for this resource?

Project Engineer and water quality specialist can complete Permanent Water Quality Form to assess requirements in the National Environmental Policy Act (NEPA) or Design, or both. The form takes ten minutes to complete. Headquarters Permanent Water Quality Program managers are available to assist as needed.

3.18.07 What are the red flags for this resource?

1. Project is inside the Colorado Department of Transportation (CDOT) Municipal Separate Storm Sewer System (MS4) area.
2. Project disturbs more than one acre.
3. Project increases impervious surface by 20% or more.
4. Project is in the Cherry Creek Drainage Basin.
5. Project drains to an impaired stream for a CDOT pollutant of concern.
6. Project is part of an Environmental Assessment (EA) or Environmental Impact Statement (EIS).

3.19 Stormwater Management Plans (SWMP's)

3.19.01 What are Stormwater Management Plans?

An SWMP is a written plan included in the project plan set that outlines recommended and required control measures and Best Management Practices (BMP's) used to protect "waters of the state" and "waters of the US" by minimizing pollutants coming from the project site. The SWMP must be implemented prior to the start of a construction project (i.e., before ground is broken) and revised as construction proceeds. For public emergency projects, a SWMP needs to be completed no later than 14 days after commencement of construction activities.

The SWMP needs to be prepared in accordance with good engineering, hydrologic, and pollution control practices. A minimum of nine elements plus their subcomponents make up a SWMP. During design, CDOT prepares components six–eight and it is up to the Contractor prior to construction to provide the rest to the Project Engineer for approval because many of these items noted are not known until the project has been awarded.

The components include, but are not limited to:

1. Qualified Stormwater Manager
2. Spill Prevention and Response Plan
3. Materials Handling
4. Potential Pollutants
5. Implementation of Control Measures
6. Site Description/Narrative
7. Site Map
8. Final Stabilization and Long-Term Stormwater Management Permanent Water Quality (PWQ) Inspection Reports

Note: For projects on federal or American Indian lands a federal permit and plan are needed. Contact your resource specialist for the appropriate forms and templates.

3.19.02 Why do we evaluate this Resource?

See Section 3.17.02.

3.19.03 Who Regulates this Resource?

It is the responsibility of the United States Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE), Water Quality Control Division (WQCD) to regulate water quality, issue permits, and enforce permit requirements. Occasionally, local agencies have their own requirements that also need to be followed.

The stormwater discharge associated with construction activities permit (aka the Stormwater Construction Permit [SCP]) and the Construction General Permit (CGP) require that a stormwater plan be prepared and implemented. This pertains to all projects that disturb one or more acres of land or is part of a larger common plan of development.

The Colorado Department of Transportation (CDOT) requires a Stormwater Management Plan (SWMP) for all projects, even those that disturb less than one acre, to aid in water resource protection and environmental stewardship. Local agencies may also have stormwater requirements for the project, regardless of the acreage disturbed.

3.19.04 What does the environmental resource specialist need to do?

1. Provide the SWMP template to the project designer.
2. Design the SWMP and site map with expected phasing (if consultant is not used, coordinate with the Engineer on who will do the drafting).
3. Review the Stormwater Management Plan (SWMP) and site map for accuracy, then relay the needed changes to the Engineer (in each development phase).

4. Ensure that a Stormwater Management Plan (SWMP) certified individual provides final approval of the SWMP and a water quality clearance to the environmental project manager for the 128 Form Categorical Exclusion Determination. The certified SWMP individual must be a Colorado Department of Transportation (CDOT) Environmental Unit employee.

3.19.05 What does the Resident/Project Engineer need to do?

1. Ensure the resource specialist is part of the project design team and is invited to all Scoping, Field Inspection Review (FIR) and Final Office Review (FOR) meetings.
2. Select a SWMP certified individual to design the SWMP. The SWMP Certification class is provided by CDOT.
3. Receive the SWMP template from the CDOT Water Quality (WQ) or Landscape Architecture website or from the resource specialist.
4. Ensure the SWMP designer enters project specific data, such as the project description, into the SWMP template.
5. Add the SWMP to the plan set.
6. Make revisions requested by the SWMP reviewer throughout project development.

3.19.06 What is the general clearance schedule for this resource?

1. Design SWMP and site map: approximately 10 hours (under one acre), 40–80 hours (over one acre). The actual time will vary depending on the number of plan sheets (i.e., project complexity) in the project design and how many revisions are necessary.
2. Review SWMP and site map—then type and send notes (in each stage of development-scoping, FIR, FOR, Final): approximately 4 hours each stage (under one acre), 10–20 hours each stage (over one acre).

Total time it takes to complete the clearance for this resource (including meetings and final approvals) = approximately 30 hours (under one acre), 150 hours (over one acre).

3.19.07 What are the red flags for this resource?

1. Changes to the scope of work or the addition of project components throughout design can cause delays and re-work of the project SWMP.
2. Allocation of adequate time for the resource specialist to review the SWMP at design milestones.
3. Specifically for projects over one acre, the SWMP should be included in project design plans as early as possible (preferably at FIR) to allow for adequate time to meet the various Stormwater Construction Permit (SCP) permit requirements.

3.20 Wetlands

3.20.01 What are wetlands?

Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted to thrive under anaerobic soil conditions. Wetlands generally include swamps, marshes, fens, and riparian areas. Projects that have potential to impact wetlands require a Wetland Delineation to identify their location within the landscape in order to avoid and minimize impacts to these sites during construction. Unavoidable impacts to wetlands require documentation in a wetland finding that considers alternatives, quantifies impacts, and identifies mitigation measures to compensate for wetland losses.

Unavoidable impacts to certain wetlands will also require a permit verification from the United States Army Corps of Engineers (USACE). Two categories of permits exist. A Section 404 nationwide permit is generally the simplest permit under the Section 404 program**.** USACE lists a total of 54 nationwide permits authorizing various activities nationwide. In order to obtain a nationwide permit, the activity must meet the requirements of one of these 54 permits. The second category of Section 404 Permit is the individual permit. Individual permits are used for more significant impacts to wetlands and involve a public interest review and a public notice process. This is a more complex and detailed process than obtaining a Section 404 nationwide permit.

3.20.02 Why do we evaluate this resource?

The Clean Water Act was passed by the United States (US) Congress in 1977 to protect the physical, biological, and chemical quality of waters of the US, including certain wetlands. Wetlands provide a variety of beneficial functions and services, including improving water quality, reducing flood intensity, providing habitat for fish and wildlife, and fostering recreational and educational activities. Under federal regulations**,** activities that involve a discharge of dredged or fill material into certain wetlands are regulated under Section 404 of the Clean Water Act.

3.20.03 Who regulates this resource?

USACE and the United States Environmental Protection Agency (EPA) regulate impacts to certain wetlands.

3.20.04 What does the environmental resource specialist need to do?

1. Conduct field wetland delineations and Global Positioning System (GPS) wetland boundaries or flag wetland boundaries for Survey Unit.
2. Prepare a wetland delineation report for United States Army Corps of Engineers (USACE) submittal that identifies wetland types, boundaries, and areas.
3. Provide wetland polygons for designer to include in project plan sheets.
4. Develop and incorporate measures into project plans to address avoidance and protection of existing wetlands.
5. Develop a mitigation plan (i.e., wetland bank, onsite, offsite, in lieu fee) to compensate for wetland losses.
6. Prepare a programmatic or non-programmatic wetland finding once impacts and mitigation opportunities are known.
7. Secure Federal Highway Administration (FHWA) or Environmental Programs Branch (EPB) approval of the wetland finding.
8. Prepare appropriate permit application materials for the USACE permit.

3.20.05 What does the Resident/Project Engineer need to do?

Design

1. Incorporate wetland delineation boundaries into plans.
2. Quantify wetland impacts based on consideration of measures to avoid and minimize impacts.
3. Incorporate resource specialist notes/specs, and
4. Prepare design of mitigation plan for wetland impacts, if appropriate.
5. Provide plan sheets showing wetlands and project footprint to include in the permit application letter.
6. If mitigation will be onsite, provide plan sheets of the mitigation site.

Construction

1. Contact resource specialist to address wetlands during preconstruction conference and flag wetlands in the field.
2. Manage project construction to assure all aspects of wetland notes, specifications, and plan sheets are followed by the Contractor.

3.20.06 What is the general clearance schedule for this resource?

Wetland delineations can only be performed during the active growing season (approximately April through September).

Wetland finding preparation and approval (following the revisions to the Final Office Review (FOR) Plans to include impacts and mitigation measures): Approximately three weeks.

Development of wetland mitigation opportunities (following the Field Inspection Review [FIR], depending on level of impact, availability of mitigation opportunities, and Designer assistance): one to three months.

For Individual Permits

- Preparation of application package and submittal to United States Army Corps of Engineers (USACE): three months
- USACE application review, public notice process, and issuance of permit: six months to one year

Total = nine months to one year three months.

For Nationwide Permits

- Preparation of nationwide permit application letter and USACE Form and submittal to USACE: one month
- USACE application review and issuance of permit verification: 45 days

Total = 2.5 months.

3.20.07 What are the red flags for this resource?

1. Projects that are scoped in the winter and advertised in the spring do not allow for determination of wetland boundaries and restrict preparation of a wetland delineation.
2. Wetland findings cannot be prepared until project plans have been developed to the level where impacts are finalized and appropriate mitigation measures developed.
3. Write up projects (i.e., resurfacing, culvert repairs) generally do not include detailed surveys that show wetland boundaries that may be subject to impact. These types of projects must address protection and avoidance of impacts through notes, specifications, and requirements for the resource specialist to flag wetland boundaries and require Contractor protection of wetland areas.
4. If a project requires authorization under an individual permit, a project schedule can be affected. After USACE receives an application for an individual permit, the process may take six months to a year.