



CHAPTER 3: CDOT’S NEPA-SPECIFIC PLANNING AND PROJECT DEVELOPMENT ELEMENTS

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3.0 CDOT'S NEPA-SPECIFIC PLANNING AND PROJECT DEVELOPMENT ELEMENTS

The development of transportation projects is a multi-phased, multi-year process that involves significant commitment of technical and financial resources. This chapter discusses the National Environmental Policy Act (NEPA) elements of the Colorado Department of Transportation's (CDOT) overall transportation planning and project development process.

3.1 Why CDOT Follows NEPA

CDOT has committed to following the intent and requirements of NEPA for all transportation projects, regardless of whether or not the projects have a federal nexus (Section 2.2.3). Although non-federal projects will not require federal agency approval, the NEPA process is an excellent framework for ensuring environmental factors are considered consistent with CDOT's environmental ethic. Thus, the guiding principles of NEPA have been incorporated into the CDOT transportation planning and project development process, as well as maintenance and operations of the state transportation system. Additionally, CDOT is committed to following NEPA and this NEPA Manual is the main guidance document for NEPA compliance at CDOT as stated in CDOT Policy Directive 1904.0 *National Environmental Policy Act Compliance* (CDOT, 2012).

A key principle in NEPA is the use of an interdisciplinary approach. The application of this approach will lead to good transportation decisions and ensure responsible decision-making that takes into account social and environmental considerations. There are several actions that can be taken before the NEPA process officially begins to further promote CDOT's environmental ethic and help streamline projects. These actions are discussed below.

3.1.1 Developing the Project Team

A project is initiated with the assignment of a project manager. Each Region's Program Engineer assigns a project to a Resident Engineer, who in turn assigns a project manager. The project manager guides the project through the remainder of the process.

The project manager is required to involve the Region Planning and Environmental Manager (RPEM) in the development of Form 1048A *Project Scoping/Clearance Record*, which is used in conjunction with the *Project Development Manual* (CDOT, 2006), to scope the project and track documentation or activity sign off dates.



"CDOT will support and enhance efforts to protect the environment and quality of life for all of Colorado's citizens in the pursuit of providing the best transportation systems and services possible."

CDOT's Environmental Ethics Statement



CDOT's *Environmental Stewardship Guide* (CDOT, 2005a) was developed to document CDOT's environmental ethic information. This document can be obtained at: <http://www.coloradodot.info/programs/environmental/resources/guidance-standards>



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The RPEM will involve environmental specialists, who represent physical, biological, cultural, and socio-economic resources to:

- ▶ Identify environmental considerations during the early stages of project definition
- ▶ Identify environmental issues that could impact schedule or budget
- ▶ Guide the formal NEPA process, particularly if CDOT retains consultants for NEPA support

The NEPA process is initiated immediately after the initial NEPA class of action designation (**Section 2.4**) and environmental study requirements are determined. The results of Form 1048A Sections 1 and 2 are discussed with the RPEM when an environmental study is needed. All information must be kept in the project file, which becomes part of the administrative record (further discussed in **Section 6.14**). Early coordination with the RPEM and environmental specialists will reduce the potential for time delays, increased costs, and changes to project design. If the project manager and RPEM decide to contract a consultant to complete the study they can use the CDOT *Generic Scope of Work* (CDOT, 2011a) to assign time and tasks to various team members. Section 6 of the *Generic Scope of Work* specifically refers to environmental tasks.

CDOT's environmental program as described in the *Environmental Stewardship Guide* is an iterative and collaborative process between CDOT's regions and Environmental Programs Branch (EPB), in cooperation with the Federal Highway Administration (FHWA).

The core of the NEPA interdisciplinary project team will consist of an assigned project manager from the region, a RPEM or their designee, an EPB NEPA specialist, the consultant (as needed), the Operations Engineer from FHWA's Colorado Division assigned to the project, and local agency representatives (as needed). Other staff members, who may contribute to the project team over the course of the project, will include staff from CDOT Right-of-Way, Access, Engineering, Maintenance, Safety, and Traffic, and others as necessary. **Chapter 8** identifies staff and team members involved in document review.

Outside of the CDOT/FHWA project team, external agencies will also participate in the process. When different agencies have independent decision-making authority, the goal is to produce one NEPA document that will meet the regulatory requirements of all agencies.



For more information on CDOT's *Generic Scope of Work* (CDOT, 2011) please refer to: <http://www.coloradodot.info/business/consultants/submittting-a-bid/GENERIC%20SCOPE%20OF%20WORK%205-5-06.doc/view>



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3.1.2 Agency Project Roles

The US Department of Transportation (USDOT) agency conducting the NEPA analysis, such as FHWA or the Federal Transit Administration (FTA), serves as the lead federal agency for NEPA compliance on transportation projects. FHWA may act as a joint lead agency with either another federal agency (40 CFR § 1501.5 [b]) or a state or local agency under the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) Amendments (SAFETEA-LU, 23 USC § 1001 – 11167). More detailed information about SAFETEA-LU can be found in **Section 2.5**.

The joint lead agency is typically the project sponsor that is a state or local government, such as CDOT, receiving federal funds. When other transportation authorities or governmental entities are serving in the role of a joint lead agency, FHWA will generally request CDOT to assist these governmental entities by acting as a program administrator for NEPA compliance. When CDOT performs NEPA, the standard used for document development and processing will be this CDOT NEPA Manual as stated in Policy Directive 1904.0 *National Environmental Policy Act Compliance* (CDOT, 2012). The project sponsors are the local agencies applying to connect to a local roadway, state highway, or interstate or those that receive federal funds for a project.

A federal, state, Tribal, or local agency having special expertise with respect to an environmental issue or jurisdiction by law may be a cooperating agency in the NEPA process. A cooperating agency has the responsibility to assist the lead agency through participation in the NEPA process at the earliest possible time. The cooperating agency also participates in the scoping process and in development of information and preparation of environmental analyses (including portions of an Environmental Impact Statement [EIS] where the cooperating agency has special expertise). Cooperating agencies also make available support staff at the lead agency's request to enhance the lead agency's interdisciplinary capabilities.

Participating agencies, as defined by SAFETEA-LU, are those with an interest in the project. The standard for participating agency status is more encompassing than the standard for cooperating agency status described above. Therefore, cooperating agencies are, by definition, participating agencies, but not all participating agencies are cooperating agencies. The lead agencies should consider the distinctions in deciding whether to invite an agency to serve as a cooperating/participating agency or only as a participating agency.

The roles and responsibilities of cooperating and participating agencies are similar, but cooperating agencies have a higher degree of authority,



CDOT's *Local Agency Manual* (CDOT, 2006) was developed to assist local agency personnel involved in the design, construction, and management of state and federally funded projects.



Integrating NEPA with Project Development

- Start NEPA early
- Conduct a site visit with a multi-disciplinary team including engineering and environmental
- Involve resource specialists from the regions and headquarters to represent physical, biological, cultural, and socioeconomic resources
- Maintain continuity of staff from project inception to completion whenever possible
- Collaborate and communicate across disciplines frequently and consistently





responsibility, and involvement in the environmental review process. A distinguishing feature of a cooperating agency is that the Council on Environmental Quality (CEQ) regulations (CEQ, 40 Code of Federal Regulations [CFR] § 1500 – 1508) permit a cooperating agency to "assume on request of the lead agency responsibility for developing information and preparing environmental analyses including portions of the environmental impact statement concerning which the cooperating agency has special expertise." An additional distinction is that, pursuant to 40 CFR § 1506.3, "a cooperating agency may adopt without recirculation of the environmental impact statement of a lead agency when, after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied." This provision is particularly important to permitting agencies, such as the US Army Corps of Engineers (USACE), who, as cooperating agencies, routinely adopt USDOT environmental documents.

3.1.3 Agency Coordination Plan

If conducting an EIS, Section 6002 of SAFETEA-LU requires that a project team completes an Agency Coordination Plan prior to the start of a project. The Agency Coordination Plan will define the roles and responsibilities of the various agencies, outline major project milestones, and define how input from stakeholders will be solicited. While this plan is required for EISs it is encouraged for Environmental Assessments (EA) as well. A template for an Agency Coordination Plan is included as **Appendix E**.

CEQ regulations include criteria for designating a lead agency if a conflict exists (CEQ, 40 CFR § 1501.5), as well as the roles and responsibilities of cooperating agencies (CEQ, 40 CFR § 1501.6). External agency involvement may also be dictated by existing intergovernmental agreements (IGAs) between CDOT and/or FHWA and the agency, such as:

- ▶ Memorandum of Understanding (MOU) among CDOT, FHWA, Bureau of Land Management (BLM), and the US Forest Service (USFS) Related to Activities Affecting the State Transportation System and Public Lands in the State of Colorado
- ▶ MOU among CDOT, FHWA Central Federal Lands Division, and USFS Region 2 for the Planning, Programming, Project Development, Construction and Maintenance of Forest Highways in the State of Colorado
- ▶ NEPA / Clean Water Act (CWA) Section 404 Merger Process
- ▶ MOU between FHWA, US Environmental Protection Agency (EPA), and CDOT that formalizes the cooperative working relationship between these agencies



Existing intergovernmental agreements can be found at:

<http://www.coloradodot.info/programs/environmental/resources/intergovernmental-agreements>



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3.1.4 Project Life-Cycle

In 1991, Colorado's General Assembly enacted legislation directing that transportation planning is to occur as a cooperative process:

"...the General Assembly recognizes the Department of Transportation as the proper body, in cooperation with regional planning commissions and local government officials, for developing and maintaining the state transportation planning process and the state transportation plan." §43-1-1101 Colorado Revised Statutes

With policy direction provided at the statewide level through the Colorado Transportation Commission, regional planning commissions prepare regional transportation plans (RTP) identifying and prioritizing their long range transportation needs for all modes. These regional transportation plans and priorities are integrated and consolidated into the long range multimodal statewide transportation plan (SWP), which serves as the blueprint for how transportation resources are invested and projects are selected for implementation.

Decisions made during planning can be reflected in project-specific NEPA documentation without revisiting those decisions depending on the process that was followed and the magnitude and sensitivity of the related issues. CDOT project managers must also work closely with their RPEM and planning staff to understand the required components of the project that have already gone through the planning process and may not need to be revisited. For more information on integrating planning with NEPA, see **Section 3.2**.

CDOT's *Project Development Manual* (CDOT, 2013) identifies and describes the activities related to project development from conception to award of the build contract, and establishes a uniform application of processes and procedures for use across CDOT. The *Project Development Manual* is organized into eight sections, each covering an important aspect of Form 1048A *Project Scoping/Clearance Record*. The following sections of Form 1048A are important to the initiation of NEPA:

- ▶ Section 1 states that the need for a preliminary field survey be assessed.
- ▶ Section 2 must be reviewed in coordination with the RPEM to determine the presence or absence of environmental considerations and the documentation of that information. This information will be used during the initiation of the NEPA process and will help the project team assess the need for supplemental field studies.



To find out more about the current 2035 Statewide and Regional Transportation Plans and other transportation planning related topics, see CDOT's Statewide/Regional Planning website at:

<http://www.coloradodot.info/programs/statewide-planning>



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Section 2 also addresses route location approval and environmental compliance. As noted in **Section 3.2.4** and in compliance with the FHWA and the FTA jointly issued regulations, *Environmental Impact and Related Procedures* (FHWA and FTA, 23 CFR 771 § 771.101 – 771.131), all proposed projects must be assigned an environmental class of action designation, which helps determine the appropriate level of environmental studies and public involvement activities required for approval by CDOT staff. The RPEM is responsible for scoping the project and, in consultation with the project team and FHWA, determining the initial class of action and the environmental studies, approvals and permits required.

3.2 Planning and Environmental Linkages (PEL)

PEL is a study process that is typically used to identify transportation issues, along with environmental concerns, in a large corridor or a specific location. It is generally conducted before any project construction funding is identified, and before specific problems and solutions are known. Before a PEL study is conducted, a scoping process needs to occur to determine whether or not to even do a PEL study. It needs to be determined why the study is being conducted and what question or questions are trying to be addressed.

PEL studies can be used to make planning decisions such as if tolling or other financial measures are necessary, assist in modal choices, create a basic description of the environmental setting, decide on methodologies for analysis, and help identify programmatic level mitigation for potential impacts that are most effectively addressed at a regional or state level.

A PEL study can also be used for planning analyses such as travel demands, regional development and growth, local land use analysis, population and employment analysis, documenting natural and built environmental conditions, and identifying resources of concern and potential cumulative effects. These planning decisions and planning analyses are used to identify future projects, develop the purpose and need for a project, determine logical termini, and/or develop and refine a range of alternatives.

The PEL process can also discover political needs and desires when a corridor crosses multiple jurisdictions, or it can simply be used as a tool to give a context of an area without intensive studies being performed. In addition to identifying corridor issues and potential projects, PEL studies can be used as a project prioritization tool. For example, a PEL study for a corridor could result in the identification of multiple potential projects (i.e., capacity improvements for a shorter length of the corridor, and intersection improvements). Those can then be prioritized for implementation.



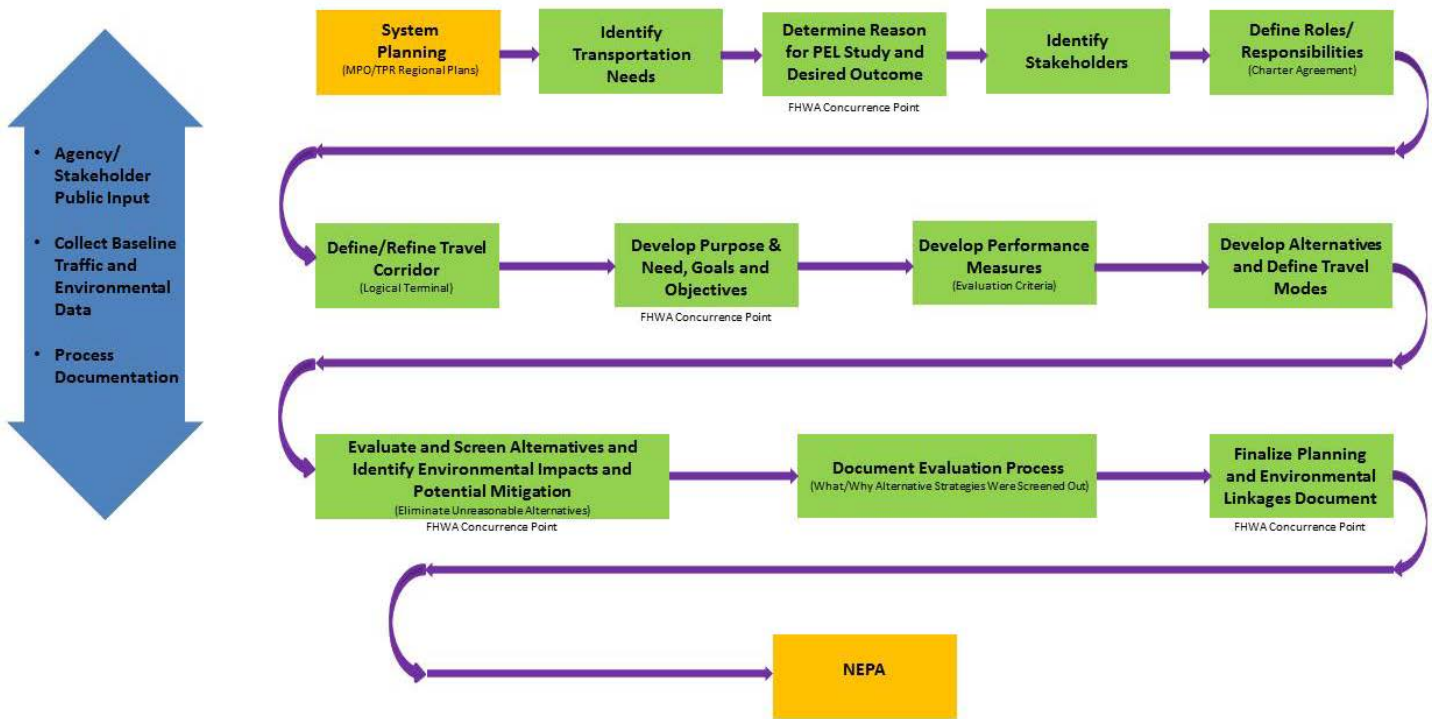
PEL is a study process that is typically used to identify transportation issues and environmental concerns. It can be applied to make planning decisions and for planning analysis. These decisions and analyses, for example, can be used to identify and prioritize future projects, develop the purpose and need for a project, determine project size or length, and/or develop and refine a range of alternatives. PEL studies should be able to link planning to environmental issues and result in useful information that can be carried forward into the National Environmental Policy Act (NEPA) process. The adoption and use of a PEL study in the NEPA process is subject to a determination by the Federal Highway Administration (FHWA).



PEL studies need to be able to link planning to environmental issues and result in useful information that can be carried forward into the NEPA process. These studies have to address some aspects of NEPA in order to be valid for incorporation into a future NEPA analysis; although, the PEL study should cost less and take less time than a NEPA process. The PEL study should include a comprehensive list of specific project goals, a detailed corridor description that identifies issues and constraints, and stakeholder involvement including public and agency outreach. This should occur before any alternatives are developed. At the conclusion of the PEL study for a highway project, a letter will be provided that acknowledges the completion of the study and that it was undertaken in a manner consistent with the FHWA PEL guidance. If the FTA is leading the PEL study, they should be consulted about their PEL acceptance process.

Figure 3-1 is a flowchart displaying the PEL process and showing the four FHWA concurrence points that are required during the study.

Figure 3-1 PEL Process Flowchart





The adoption and use of a PEL study in the NEPA process is subject to a determination by FHWA, with the concurrence of other stakeholder agencies, that several specific conditions have been met. These conditions are listed in Section 1310, Integration of Planning and Environmental Review, part (d) of the current surface transportation legislation (MAP-21). One condition that specifically needs to be considered when determining whether or not to do a PEL is that a PEL study expires after five years. If NEPA does not begin within five years from the conclusion of the PEL study, the information from the study cannot be taken directly into NEPA.

For more detailed information about PEL, please see CDOT's PEL website and PEL Handbook.

3.3 Context Sensitive Solutions (CSS)

Context Sensitive Solutions (CSS) represents an evolution in the philosophical approach to transportation development. It recognizes the need to develop transportation solutions that supplement and support the social, economic, and environmental context of the facility. CSS seeks a balance between four primary elements:

- ▶ Mobility
- ▶ Safety
- ▶ Preservation and Enhancement of the Natural Environment
- ▶ Community Values

Balancing these elements is accomplished through the use of four key components:

- ▶ Project Purpose and Need
- ▶ Effective Involvement of a Full Range of Stakeholders
- ▶ Survey and Analysis of Environmental Features
- ▶ Use of Multi-Disciplinary Teams

Through the use of these components and balancing the four elements, CSS seeks to proactively identify and address issues early in the project development process thereby reducing redundancy and lost time during project development, design, and construction. The early use of the four key components balance the four primary elements of CSS and lead to transportation solutions that are more effective and sustainable with fewer corrections and changes needed later.

While aesthetic treatments and visual enhancements are often features in designing a facility that is responsive to stakeholder needs, CSS should not be construed as simply a beautification requirement. CSS represents



CDOT has established CSS guidance specifically for the I-70 Mountain Corridor available at:

<http://www.coloradodot.info/projects/contextsensitivesolutions>



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comprehensive solutions to transportation issues in such a way as to minimize negative impacts to all stakeholders and to design projects that best fit the physical setting, work with and enhance the community and environment of which they are a part.

A specific section on CSS should not appear in any NEPA document. It should be reflected in the way the NEPA process is implemented. Ideally, CSS will influence how project decisions are made and how the other sections are written.

Because each project has a unique context, a one-size-fits-all process for CSS is not appropriate. How CSS principles and tools can be effective for each project must be developed individually, through the level of stakeholder involvement appropriate for each project.

3.4 CDOT and the 1601 Process

The CDOT Policy Directive 1601.0 and Procedural Directive 1601.1 *Interchange Approval Process* describe a CDOT process to review requests for interchanges and major improvements to existing interchanges on the state and federal-aid highway system that could affect highway travel (CDOT, 2001; CDOT, 2005a; CDOT, 2005b). CDOT Policy Directive 1601.0 and Procedural Directive 1601.1 were established by the Colorado Transportation Commission to provide fair and consistent procedures regarding the review and evaluation of requests for new interchanges and major improvements to existing interchanges on the state highway system.

The 1601 process requires, among other things, that the interchange:

- ▶ Be consistent with an approved fiscally-constrained RTP and SWP, and included in a Transportation Improvement Program (TIP) and/or Statewide Transportation Improvement Program (STIP)
- ▶ Be the subject of approved IGAs which address the funding of the application development and review process, timeline and analytical expectations, and an IGA covering construction, operations, maintenance, and replacement of the interchange
- ▶ Have sufficient environmental, operational, and other studies performed consistent with FHWA interchange approval and NEPA requirements

The scope of study and level of detail and effort is dependent on the improvement type and the complexity of the interchange proposal. The 1601 interchange approval process identifies three types of interchange requests: Type 1, Type 2, and Type 2a.

Type 1 requests consist of two categories: (1) Proposals for new interchanges on the state highway system with a functional classification of



CDOT's 1601 process is always required when there is a request for an interchange or major improvements to an existing interchange. Of these 1601s, some also may require FHWA's Interchange Approval Request (IAR) process if they affect interstate travel. They are different processes but can be done at the same time.





interstate or freeway; and (2) Any type of proposal on the state highway system not initiated by CDOT that anticipates CDOT cost-sharing participation. Type 1 requests must be approved by the Transportation Commission.

Type 2 requests consist of proposals for a new interchange not on the interstate or freeway system and all modifications or reconfigurations to existing interchanges. Type 2 requests must be approved by the Chief Engineer and may be elevated by the Chief Engineer to the Transportation Commission for consideration.

Type 2a requests consist of minor interchange improvements that will have little or no impact to the state highway system or surrounding local transportation system, consistent with the definitions and guidance provided in the *FHWA Colorado Division Guidance on Minor Interchange Modification Requests* (FHWA, 2005). Type 2a approvals are delegated by the Chief Engineer to the CDOT Region Transportation Director.

The steps in the 1601 interchange approval process include:

- ▶ Step 1: 1601 Pre-Application Meeting(s)
- ▶ Step 2: Initial IGA Approval
- ▶ Step 3: System Level Study Preparation
- ▶ Step 4: System Level Study Approval
- ▶ Step 5: Metropolitan Planning Organization (MPO)/Transportation Planning Region (TPR) Board Approval
- ▶ Step 6: Design and NEPA Approval Process
- ▶ Step 7: Final IGA

A System Level Study is required for both Type 1 and Type 2 proposals and should provide enough information to support the FHWA IAR or Minor Interstate Modification Request. Type 2a proposals do not require a System Level Study but should have sufficient data to substantiate the determination of “no potential for significant impact” in accordance with the *FHWA Colorado Division Guidance on Minor Interchange Modification Requests* (FHWA, 2005).

The purpose of a System Level Study is to identify the short and long-term environmental, community, safety, and operations impacts of a proposed interchange or interchange modification to the degree necessary for the CDOT Chief Engineer, Transportation Commission, and FHWA to make an informed decision on whether the proposed interchange or interchange modification is in the public interest.



The 1601 interchange approval pre-application meeting will identify the improvement type (Type 1, 2, or 2a), as well as the appropriate scope of the study and level of detail and effort.



A System Level Study includes:

- ▶ Draft Purpose and Need Statement
- ▶ Existing and Forecasted Conditions
- ▶ Alternatives
- ▶ Planning-level Evaluation of Alternatives
- ▶ Environmental Considerations
- ▶ Funding and Phasing

The Interstate Access Request approval is a two-step process that was developed to help the state manage risk and provide flexibility. The process is intended to identify fatal flaws and to help ensure the investment in environmental documentation is not wasted. The first step is a finding of operational and engineering acceptability. The second step is the final approval. The FHWA approval constitutes a federal action and requires that NEPA procedures are followed. Compliance with the NEPA procedures need not precede the determination of engineering acceptability. However, final approval of access cannot precede the completion of NEPA. Once NEPA has been completed, approval of access is granted as long as no changes resulted to the accepted concept.

3.5 Funding and Fiscal Constraint in NEPA

The cost, size and complexity of transportation projects combined with limited available funding often results in transportation projects being funded and implemented over a lengthy period of time rather than all at once. This section describes the funding and timing of project implementation in relation to the NEPA process. This discussion includes:

- ▶ Fiscal constraint requirements for initiating and completing NEPA
- ▶ Phasing and timing of construction in relation to NEPA
- ▶ Interim construction requirements
- ▶ Timing of mitigation

FUNDING DEFINITIONS

In describing the requirements of fiscal constraint with respect to NEPA, the following FHWA definitions (FHWA, 2011) apply:

- ▶ **Fiscal constraint** means that the metropolitan RTP, TIP and the STIP have sufficient financial information to demonstrate that a project in the RTP, TIP and STIP can be implemented using committed, available, or reasonably available revenue resources.



- ▶ **Available funds** are funds derived from existing sources dedicated to or historically used for transportation purposes. For example, apportioned/authorized Federal-aid dollars or toll revenues for the next 2 to 4 years. [23 CFR § 450.104]
- ▶ **Committed funds** are funds that have been dedicated or obligated for transportation purposes. For example, funds obligated for a Federal-aid project or toll revenues for the next 2 years. [23 CFR § 450.104]
- ▶ **Reasonably available funds** - Determining whether a future funding source is reasonably available requires a judgment decision. Two important considerations in determining whether an assumption is "reasonable" are (a) evidence of review and support of the new revenue assumption by State and local officials and (b) documentation of the rationale and procedural steps to be taken with milestone dates for securing the funds.

3.5.1 Fiscal Constraint Requirements

FHWA and CDOT have specific requirements, based on statutes and regulations, for the demonstration of fiscal constraint for a project prior to final NEPA approval (Categorical Exclusion [CatEx], Finding of No Significant Impact [FONSI], or Record of Decision [ROD]). Fiscal constraint for a project is demonstrated by satisfying the requirements of specific transportation planning and air quality conformity regulations, as described in this section.

The Metropolitan Planning Regulations (23 CFR 450.322) and the Clean Air Act (CAA) Transportation Conformity Rule (40 CFR 93.104) work together to require that a project located in an MPO (the geographic area in which the metropolitan planning process is carried out) and/or in a CAA nonattainment or maintenance area, be contained in a conforming, fiscally-constrained long range RTP. The CAA requires air quality conformity to be demonstrated for major transportation projects in non-attainment and/or maintenance areas. The following fiscally-constrained transportation plans must identify all projects that are expected to receive federal funds or that will require FHWA or FTA approval:

- ▶ **RTP** – identifies projects anticipated to be constructed over the next twenty years (the RTP typically contains both an unconstrained vision plan and fiscally-constrained plan).
- ▶ **TIP** – identifies capital and non-capital surface transportation projects, as well as regionally significant projects within the metropolitan planning area to be constructed in the next six years.



State regulations (2 CCR 601-22) require fiscal constraint of the SWP (this is not a federal requirement, fiscal constraint is only required for MPO plans).



Conformity is required by Clean Air Act Section 176(c). This section requires that Federal agencies do not adopt, accept, approve or fund activities that are not consistent with State air quality goals.





- ▶ **STIP** – identifies capital and non-capital transportation projects (or phases of projects) proposed for funding under Titles 23 and 49 of the USC, as well as all regionally significant transportation projects regardless of funding source and/or requiring action by FHWA and FTA over a six year period.

TRANSPORTATION PLANNING PROCESS CONTEXT

In 1991, Colorado's General Assembly enacted legislation providing the basis for the transportation planning process in Colorado. The law requires the development of a comprehensive fiscally constrained, long range twenty year SWP that incorporate the priorities and needs of Colorado's 15 TPRs. CDOT carries out a continued, cooperative, and comprehensive statewide multimodal transportation planning process with its 15 TPRs. Of the 15 TPRs, ten are considered non-urban TPRs and the five located in urban areas are considered MPOs. Each TPR is comprised of the municipalities and counties within its established boundaries.

The planning process includes the development of long range multimodal RTPs by each TPR, which are integrated into the SWP. The RTPs and SWP include fiscally-constrained and fiscally-unconstrained vision components and identify the needs, corridor visions and strategies, and/or projects anticipated to be constructed over the next twenty or more years. The SWP combines the individual corridor visions of the TPRs into a statewide vision that links transportation goals and strategies to investment decisions.

The SWP includes an environmental section that lists conservation and management plans for resource agencies in each TPR and MPO RTPs. The SWP is supported by environmental technical reports, transit technical reports, etc. Each of the 15 TPRs include corridor visions that integrate community values, land use decisions, and environmental concerns with transportation needs. The RTPs include an environmental overview that addresses expected environmental, social and economic impacts of the recommendations contained in the transportation plan. Colorado Revised Statute 43-1-1103 states that the RTPs shall include expected environmental, social, and economic impacts of the recommendations contained in the transportation plan. Approximately 350 corridor visions have been updated by the TPRs to identify current trends and conditions. Corridor visions increase the efficiency and accountability of the transportation system by aligning vision strategies and project priorities.

CDOT also develops a STIP that identifies the short-term project needs and priorities of the State of Colorado. In addition, under federal law, all of the MPOs are required to develop a short-term capital improvement program TIP consistent with the long range RTPs for each MPO. Similar to the STIP, the TIPs for each MPO are updated every four years and include a six-year planning horizon. TIPs approved by the MPOs and Governor are included in



FHWA's memoranda on fiscal constraint are available at:

Transportation Planning Requirements and Their Relationship to NEPA Process Completion – January 28, 2008
<http://www.fhwa.dot.gov/planning/tprandnepamemo.htm>

Supplement to January 28, 2008 Transportation Planning Requirements and Their Relationship to NEPA Process Completion – February 9, 2011
<http://www.fhwa.dot.gov/planning/supplementmemo.htm>



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the STIP without modification. STIP projects must be consistent with the corridor visions identified in the SWP. All federally funded and regionally significant projects are identified in the RTP and SWP and corresponding TIP, if applicable.

FISCAL CONSTRAINT REQUIREMENTS FOR NEPA

FHWA has provided guidance regarding the relationship of transportation planning to NEPA approval, with particular emphasis on fiscal constraint, in two memorandums. As described in the memoranda, to demonstrate fiscal constraint, certain requirements of the transportation planning process must be completed prior to initiating and/or finishing the NEPA process. Constraint requirements must be indicated in the NEPA document in a project phasing and implementation section, or elsewhere as appropriate.

In addition to the fiscal constraint requirements, it is incumbent on FHWA and CDOT to consider the broader context of fiscal stewardship when making NEPA decisions, including the decisions on whether to initiate the NEPA process. Fiscal stewardship is a critical role and responsibility for FHWA and CDOT and is engrained throughout the transportation decision-making process: from fiscal constraint requirements in the transportation planning process, to reasonable cost estimates of alternatives in project development and the NEPA process, to financial plans and major project requirements during design and construction. **Table 3-1** details the federal planning and NEPA requirements that must be met whether or not the environmental process is funded with federal-aid.

Table 3-1 Planning Requirements for NEPA*

	NEPA process can start:	Required actions before the Final NEPA Decision can be approved:
NEPA process funded with federal funds	<ul style="list-style-type: none"> Corridor/feasibility (Planning and Environment Linkages - PEL) studies: the study does not need to be in the fiscally constrained RTP or SWP and can start at any time, but the study must be in the Unified Planning Work Program (UPWP) or State Planning and Research (SPR) work program when funded with Metropolitan Planning (PL)/SPR funds. More guidance on the PEL process is provided in Chapter 3, Section 3.2. Tier I EIS can start prior to being in the fiscally constrained RTP or SWP if the scope is for corridor planning or feasibility study and will not include decisions directly resulting in project implementation activities of any kind (e.g., Right-of-Way purchase). More guidance on Tier 1 EISs is provided in Chapter 4, Section 4.20.1. 	
	<ul style="list-style-type: none"> NEPA study must be in the RTP or consistent with the SWP NEPA phase of the project must be in TIP or STIP 	<ul style="list-style-type: none"> One subsequent phase of project is in the STIP/TIP





	NEPA process can start:	Required actions before the Final NEPA Decision can be approved:
NEPA process not funded with federal funds	<ul style="list-style-type: none"> ▪ After the planning level purpose and need has been identified ▪ Project does not need to be in the fiscally constrained RTP ▪ Project does not need to be in the fiscally constrained STIP/TIP 	<ul style="list-style-type: none"> ▪ Project is in the fiscally constrained RTP ▪ NEPA phase of the project is amended into the TIP or STIP ▪ One subsequent phase of Project is in the STIP/TIP ▪ Project must meet all NEPA requirements

* In accordance with the *CDOT Environmental Stewardship Guide* (CDOT, 2005a), CDOT follows a NEPA-like process for all projects regardless of funding. This table deals specifically with those projects that require the NEPA process in accordance with 23 CFR 771.

Table 3-2 describes the fiscal constraint actions that must be in place before a final environmental decision is made.

Table 3-2 Fiscal Constraint Requirement before Approving the NEPA Decision

Before a Final Environmental Decision (CatEx, FONSI, ROD) is approved in:	Fiscal Constraint must be demonstrated by:
Metropolitan Areas (MPO)	<ul style="list-style-type: none"> ▪ Entire Project is in the RTP ▪ At least one subsequent phase of the project to be cleared in NEPA must be in the TIP (more if within TIP timeframe) or STIP ▪ Full funding is reasonably available for the completion of the entire project ▪ Project level conformity determination for all projects subject to transportation conformity
Non-Metropolitan Areas (Outside MPO)	<ul style="list-style-type: none"> ▪ Project is consistent with the SWP ▪ At least one future phase of the project is in the STIP (more if within STIP timeframe) ▪ Full funding is reasonably available for the completion of the entire project

3.5.2 Phasing/Timing of Construction

Transportation projects are often implemented in phases. This may be done for a number of reasons, the most obvious of which is the ability to physically construct the project. Another reason is funding limitations that may preclude the ability to construct the entire project at one time. Phased implementation is typically detailed during final design. However, the requirements of fiscal constraint must be satisfied for NEPA approval, as described above.



In cases where a project is implemented in more than one phase, each phase should have independent utility and logical termini to the extent that the phase provides a functional transportation system even in the absence of other phases (i.e. the phase to be implemented has the ability to operate on its own). Each phase must also meet the project purpose and need. In addition, any mitigation measures needed in response to project impacts must be implemented with the phase in which the impacts occur, rather than deferred to a later phase.

When project construction is anticipated to occur in one, two, or more phases separated by a period of time (rather than normal construction phasing), this situation should be described in the NEPA document and in the accompanying public involvement process. The discussion should include:

- ▶ Project funding status
- ▶ Project phasing
- ▶ Implementation schedule

Often funding limitations may make it difficult to predict the timing of future phases, and in these cases measures must be taken to ensure the independent utility of each phase. Additionally, it must be demonstrated that air quality conformity will not be jeopardized.

In establishing project phasing, FHWA, CDOT and local agencies may establish criteria to be used as guidelines in establishing logical project phases including:

- ▶ ***Independent utility/logical termini*** – each phase should have independent utility and logical termini to the extent that the phase provides a functional transportation system even in the absence of other phases
- ▶ ***Elements of purpose and need*** – each phase should contribute to meeting the purpose and need for the entire project
- ▶ ***Environmental impacts*** – individual phases should avoid the introduction of additional environmental impacts that cannot be mitigated
- ▶ ***Mitigation paired with impacts*** – each phase should include appropriate mitigation measures to match the environmental impacts of that phase



- ▶ **Fiscal constraint** – any phase selected must meet the requirements of fiscal constraint
- ▶ **Air quality conformity** – any phase selected must meet the requirements of air quality conformity

Using criteria such as these, a series of logical phases can be established. In addition to these criteria, logical sequencing of phases in terms of constructability and operation should be considered and a general priority of needs applied, with system reliability and safety often as the top priority.

3.5.3 Interim Conditions

When a project is constructed in phases, interim conditions will exist between project construction phases. In some cases, such as when phasing is done only for constructability and/or to maintain traffic on an existing facility, the interim conditions may be short term, lasting only until the next construction phase can begin. In other situations, such as limited funding, interim conditions may last for years.

In some cases where funding is limited, it may be desirable to phase the project to provide interim improvements and benefits earlier rather than waiting for funding for full construction. However, the decision to phase a project in this way should weigh the benefits with additional costs (for example, extra cost for throwaway construction that must be replaced in a future phase) and any additional impacts of phased construction for example. In general, throwaway costs should be minimized.

When interim conditions are expected to last a number of years, this should be described in the NEPA document. The effect on the transportation facility and any other impacts (such as access or environmental impacts) should be discussed. From a traffic operations standpoint, it is very important that the interim construction does not introduce safety problems. Additionally, any interim construction should provide transportation system benefits, and should not cause any portions of the transportation system to operate unacceptably or worse than it would without the interim construction. When interim conditions are expected to remain for a number of years, traffic and/or safety analyses may be needed to establish that the interim improvements will operate at an acceptable level of service in the future.

3.5.4 Timing of Mitigation

During the NEPA process, avoidance, minimization, and mitigation measures are developed to address project impacts. The timing of mitigation implementation is discussed in this section. General information on mitigation measures, monitoring commitments, and tracking is provided in **Chapter 9**. These considerations may need special attention when a project is to be constructed in more than one phase. When establishing a project



phasing approach, impact avoidance and minimization may need to be re-examined to ensure that these can still be achieved with the anticipated phasing. Additionally, if any new impacts will be introduced by the phasing or interim conditions, such impacts may require additional mitigation measures.

Mitigation measures should generally be implemented in the same construction phase as the impacts will occur, or earlier. In some cases, it may be appropriate to include specific mitigation in an earlier phase or to bundle mitigation for impacts in multiple phases into one phase.

Mitigation should generally not be delayed to later phases. However, there may be some situations where this is appropriate when the impacts in the interim will not be severe and cost and/or disruption of implementing the mitigation would be substantially greater in the earlier phase. Any delay of mitigation to a later phase will be carefully considered by CDOT and FHWA, and should be described in the NEPA document, as appropriate.

CDOT and FHWA will ensure the mitigation commitments outlined in the NEPA document are implemented as part of the project design, construction, and post-construction monitoring. Identified commitments must be incorporated, as appropriate, into the construction plans and specifications for the project. CDOT and FHWA will ensure that the commitments are implemented through review of the project construction plans and specifications, as well as periodic inspections during construction. Inspections during construction could involve both a review of project construction documentation and observation of construction activities. The CDOT environmental commitment tracking process and tracking sheet will be used to track and document mitigation for each phase.

For projects with mitigation implemented over a period of time, CDOT and FHWA may monitor mitigation effectiveness and success through a combination of field reviews, pre-construction and post-construction inspections and post-construction monitoring, as appropriate. For projects with extensive mitigation, CDOT may elect to prepare annual reports reporting effectiveness of the mitigation measures, by agreement with some resource agencies. If mitigation is determined not successful or mitigation commitments are not met, CDOT will rectify as needed.

3.6 Innovative Project Delivery and NEPA

Over the past several years, and more recently with the passage of Moving Ahead for Progress in the 21st Century Act (MAP-21), Congress has declared that it is in the nation's best interest to promote the use of innovative technologies and practices that accelerate the delivery of transportation projects. This section discusses common innovative project delivery activities and how they integrate with the NEPA process.



CDOT's Mitigation Tracking Spreadsheet can be located at: http://www.coloradodot.info/programs/environmental/resources/forms/CDOT%20Mitigation%20Tracking%20Spreadsheet_June%202012.xlsx/view



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3.6.1 NEPA Requirements and Permissible Project Activities

NEPA review and approval is required for transportation projects being advanced using any project delivery method. For all delivery methods, the NEPA process must be completed and a final NEPA decision must be reached before the project can proceed to final design and construction. FHWA Order 6640.1, as implemented by CDOT's design bulletin revised December 22, 2011 regarding permissible activities during the NEPA process, defines an expanded definition of Preliminary Design and is discussed below (CDOT, 2011b).

For purposes of this section the definition of preliminary and final design are as follows (CDOT, 2011b):

- ▶ **Preliminary design** – includes but not limited to preliminary engineering and other activities and analyses, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design.

Additional preliminary design activities include: design and engineering activities to be undertaken for the purposes of defining project alternatives; completing the NEPA alternatives analysis and review process; complying with other related environmental laws and regulations; environmental justice analyses; supporting agency coordination, public involvement, and permit applications; development of environmental mitigation plans; development of typical sections, grading plans, geometric alignment, noise wall justifications, bridge type/size/location studies, temporary structure requirements, staged bridge construction requirements, structural design (sub and super structure), retaining wall design, noise wall design, design exceptions, guardrail length/layout, existing property lines, title and deed research, soil borings, cross sections with flow line elevations, ditch designs, intersection design/configuration, pavement design, storm/sanitary sewer design (plan/profile), culvert design, identification of removal items, quantity estimates, pavement details/elevation tables, and preliminary traffic control plans to be maintained during construction.

- ▶ **Final design** – means any design activities following preliminary design and expressly includes the preparation of final construction plans and detailed specifications for the performance of construction work.



3.6.2 Project Delivery Methods

There are currently three project delivery methods that CDOT utilizes: design-bid-build, design-build, and construction manager/general contractor (CM/GC). These three project delivery methods are described in this section. Additional delivery methods may emerge as innovations continue.

DESIGN-BID-BUILD

This is the traditional project delivery method where design and construction are sequential steps in the project development process. With the design-bid-build method, CDOT may award a design contract to an engineering firm using a qualifications-based procurement process. Then, when the preliminary and final design phase is complete, and project certification approval indicating all environmental commitments are included in the final design is prepared and signed by the RPEM or their designee, a construction contract will be awarded to a contractor with the lowest responsive bid through a competitive process. Under this type of delivery, the NEPA decision is made after preliminary design is complete, prior to starting final design, and before the construction contract is awarded.

DESIGN-BUILD

Design-Build is a project delivery method where both the final design and construction phases of the project are combined into one contract and awarded to a single entity. With this delivery method, preliminary design is typically completed in conjunction with the NEPA process, and before the design-build contractor is selected. Pursuant to 23 CFR § 636.109(b)(6), the design-build contractor cannot be involved in the NEPA process or documentation. Specifically, subpart 636.109(b)(6) states: “the design-builder must not prepare the NEPA document or have any decision-making responsibility with respect to the NEPA process.” CDOT (or an independent consultant under CDOT’s direction) must prepare the NEPA document.

CDOT may award a design contract for preliminary design to an engineering firm using a qualifications-based procurement process, and that firm is then precluded from pursuing the design-build contract. With the design-build method, CDOT may award the design-build contract on a low-bid basis or best value basis through the evaluation of certain factors that are identified in a request for proposals. For design-build projects, the design-build contract may be awarded either after or prior to the NEPA decision. If the design-build contract is awarded before the NEPA decision, the design-build contract is divided into two notice-to-proceed phases. The notice to proceed Phase 1 scope is limited to preliminary design-related activities. The notice to proceed Phase 2 scope includes final design and construction. The contract should state that the range of alternatives will be considered, and that the issuance of notice to proceed Phase 2 is conditional upon the selection of an alternative in the NEPA decision during notice to proceed



Colorado Revised Statute 43-1-1401 authorizes CDOT to use the Design-Build method.



Other types of project delivery methods that CDOT can utilize include: Private Public Partnerships (PPP), and design, build, operate, maintain, and finance.



Phase 1 and that all environmental commitments in NEPA and associated permits will be adhered to. This by-passes the project certification approval by the RPEM and adds risk regarding proper application of impact assessment and mitigation. This process is typically heavy in post-contract award oversight by CDOT environmental staff.

CONSTRUCTION MANAGER / GENERAL CONTRACTOR (CM/GC)

CM/GC is a project delivery method where a two phase contract is awarded to a construction manager/general contractor for preconstruction services and construction services. The CM/GC contractor works in conjunction with the design engineer, who is selected using a qualifications-based procurement process. For the CM/GC method CDOT may award the CM/GC contract based on competitive selection based on qualifications, experience, best value, or any other combination of factors. Under the preconstruction phase of the CM/GC contract preliminary design may occur so long as the design does not limit the reasonable range of alternatives. The CM/GC construction services phase of the project may not be awarded until completion of the environmental review process. However, regulations allow the contracting agency to proceed with design activities at any level of detail for a project before completion of the NEPA review process at the expense of the contracting agency. CM/GC is generally the preferred method for environmental compliance since the construction contractor is finalizing the environmental requirements of the contract during final design BEFORE beginning construction. Therefore, not only is the environmental project certification able to be completed by the RPEM or their designee prior to construction, but the contractor is more familiar with what is expected of them regarding environmental issues and commitments.

3.6.3 Approval to Proceed with Activities Beyond the Normal Scope of Preliminary Design

CDOT may request concurrence from FHWA to allow CDOT to go beyond the normal scope of preliminary design activities, as defined above. Subject to FHWA approval, activities may be permitted to advance as part of preliminary design when they meet one or more of the following:

1. The activities are necessary to identify impacts and mitigation in the NEPA process
2. The activities are beneficial to enhance the project schedule and do not affect the NEPA decision
3. The activities provide vital information for other projects or agencies and do not affect the NEPA decision
4. Other reasons as deemed appropriate



CDOT's Design Bulletin 2011 Number 1 *Permissible Activities During the NEPA Process* provides additional guidance on innovative delivery methods and is available at:

http://www.coloradodot.info/business/designsupport/bulletins_manuals/design-bulletins/current/db-nepa-activities.doc/view



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Prior to activities proceeding the CDOT RPEM and Program Engineer must write a letter to the FHWA Division Administrator and concurrence must be obtained.

3.6.4 Design-Build and CM/GC Contracting Restrictions During the NEPA Process

As described above, there are specific regulations and rules regarding the award of contracts to consulting and construction firms for project activities at various points in the NEPA process. These include conflict of interest and two stage contracting requirements. There are both federal and state requirements. The following should be reviewed when anticipating contracting using these methods:

- ▶ 23 USC sec 112. Letting of Contracts
- ▶ 23 CFR sec 636. Design-Build Contracting
- ▶ 2 CCR 601-15. Rules to Establish Requirements for Procurement by the Colorado Department of Transportation for Design-Build Contracts for Transportation Projects

3.6.5 Other Measures to Accelerate Project Delivery

MAP-21 has identified other permissible actions, such as advanced acquisition of real property interests and accelerated decision-making, to accelerate project delivery. Procedures for applying these actions are being developed, and the CDOT RPEM should be consulted regarding the status and applicability of MAP-21 accelerated project delivery provisions for specific projects. An outline of MAP-21 is provided **Chapter 2, Section 2.6**.



3.7 References

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