

COLORADO DEPARTMENT OF TRANSPORTATION		<input type="checkbox"/> POLICY DIRECTIVE <input checked="" type="checkbox"/> PROCEDURAL DIRECTIVE
Subject Project Scoping and the Design Scoping Review (DSR)		Number 512.1
Effective 01/07/10	Supersedes 3/17/93	Originating office Project Development Branch

PURPOSE

To establish the procedures for conducting project design scoping prior to, and continuing into, preliminary design. These procedures guide the Project Manager to develop a scope of work consistent with the planning effort.

AUTHORITY

CRS 43-1-106(8) and CRS 43-1-105, Policy Directive 512.0, *Development of CDOT Construction Projects from Inception to Advertisement*, and Executive Director

APPLICABILITY

This procedural directive applies to all Regions and Staff Branches of the Colorado Department of Transportation.

DEFINITIONS

- A. Scoping (design): An interactive multi-disciplinary process that defines the design characteristics of a project (scope) and establishes an early estimate of cost and project schedule.

This process will determine the actions required to achieve the project objectives on time and within budget. The design scoping process should identify the appropriate design standards, funding source, procedures and required resources necessary to complete a project.

- B. Design Scoping Review (DSR): The DSR creates an early, on-site review of a project prior to preliminary design. This enables development of a scope of work that will be consistent with the planning and design characteristics.

The process establishes the objectives of a project, the identification of design standards, funding source, and the required resources necessary to complete a project. All projects, regardless of size, shall use the scoping process.

- C. Project Scoping/Clearance Record: CDOT Form 1048. A review list used to document the design scoping process, to monitor status toward PS&E approval, and to sign-off on final clearances prior to advertisement of a project.

This record is used to focus on the "reason for the project" while formulating the "proposed improvement." The "reason for the project" should remain consistent with the original concept, while the "proposed improvement" will evolve as additional information is developed and other alternatives are considered. As a review list, this form provides for a re-evaluation at key phases during the preliminary project development.

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PROCEDURE

I. Process

Refer to the *CDOT Project Development Manual* for the processes supporting this Procedural Directive. Also see the CDOT document, *Controlling Our Critical Path: A CDOT Guide to Better Project Management Practices*, found under the heading, Misc. Design Documents at: <http://www.dot.state.co.us/DesignSupport/> .

II. Planning

Transportation planning is a continuing, cooperative and comprehensive process resulting in the development of a long-range (20+ years) multimodal Statewide Transportation Plan that sets forth the vision for transportation in the State and a Statewide Transportation Improvement Program (STIP) that identifies short-term project needs and priorities. The transportation planning process develops a transportation system for the safe and integrated movement of people, goods, and information. Colorado’s transportation planning process is developed at the region and state levels.

The long-range Statewide Transportation Plan outlines a comprehensive, multimodal transportation vision, considers land use, multimodal management plans, safety enhancements, multimodal choice, urban and rural transit, environmental stewardship, and freight transport, and reduction of greenhouse gas emissions, over a 20 year planning horizon. It provides a statewide perspective that reflects the policies of the Transportation Commission and integrates the needs, revenues and costs identified in all 15 Regional Transportation Plans (RTPs). It contains a financially constrained component based on Transportation Commission resource allocation, the cost to sustain the system at current performance levels, and a vision of how the system could perform by reducing congestion, improving safety, and maintaining the existing transportation system.

The Statewide Transportation Plan is prepared by CDOT’s Division of Transportation Development and incorporates the 15 RTPs. The Statewide Transportation Plan is corridor-based with approximately 350 corridors statewide. Both the Statewide and Regional Plans are comprised of corridor visions that include strategies aimed at meeting each corridor’s unique transportation needs over a 20+ year planning horizon. Projects identified in the six years of the STIP are to be consistent with the corridor visions, goals and strategies identified in the regional and statewide transportation plans.

A. Corridor Planning Studies

Corridor planning studies provide an opportunity to look in greater detail at a discrete transportation corridor within the statewide transportation network. The corridors that are studied are identified within the statewide and regional long range transportation plans. These corridors are subjected to a comprehensive analysis to determine options for solving their mobility problems and addressing constraints. Corridor planning focuses on transportation solutions to be carried into a detailed environmental study and is consistent with federal regulations on linkages between the transportation planning and project development/NEPA

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processes (23 CFR 450.212 and Appendix A to Part 450). The corridor planning study provides the basic parameters for project development and design, sets the stage for detailed environmental review under NEPA, and may include implementation strategies.

B. Route Location

The route location phase of project development examines in detail the individual projects budgeted in the planning phase. The route location process complies with the National Environmental Policy Act (NEPA) and examines project alternatives and the associated social, economic and environmental impacts.

The process also ensures public input into the decision making process. For major projects, this phase results in decision documents (Environmental Impact Statement and Record of Decision or Environmental Assessment and Finding of No Significant Impact). These documents outline the route location decision and environmental mitigation commitments to be carried forward to the design phase. For minor projects, environmental clearances are identified and completed concurrently with the design scoping process outline below.

III. Design Scoping

All projects, regardless of size, shall use the scoping process. Projects must begin the scoping process before initiating any survey or preliminary design.

A. Phase I: Statewide Transportation Improvement Program (STIP)

The project is created in the STIP, as described in Section 1.03 of the *Project Development Manual*.

B. Phase II: Design Scoping Review

The DSR meeting shall be scheduled by the assigned design Project Manager as soon as possible after design funds are budgeted. The DSR invitation letter shall include the CDOT Form 1048 completed through Phase I, the first three items on the following list, and as many of the remaining items on the list as possible:

1. Location map of the project with proposed project limits identified.
2. Plan and profile of existing facility, if available.
3. Traffic data.
4. Accident history and hazard rating.
5. Existing roadway condition and pavement rating.
6. Design speed and existing signed speed.

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7. Related inter-modal information.
8. Environmental considerations.

C. The following shall be invited to the DSR, or receive notice of the DSR, as appropriate:

From CDOT Region:

- Program Engineer
- Resident Engineer
- Traffic and Safety Engineer
- Utilities Engineer
- Planning/Environmental Manager
- Maintenance Superintendent
- Materials Engineer
- ROW Supervisor
- Survey Coordinator
- Hydraulics Engineer
- Civil Rights Manager

Others:

- CDOT Staff representatives: (Bridge, Hydraulics, Safety and Traffic, Transportation Development, ROW, Environmental, Geotechnical, etc.)
- Other State agencies
- Local government agencies (city, county, etc.)
- FHWA representatives (and other Federal agencies)
- Specific organizations: (emergency, schools, special districts, enhancement sponsors, etc.)
- Railroads, Transit Operators, Airports

D. The Project Manager will conduct the Design Scoping Review. An agenda will be prepared to ensure all critical issues are addressed. All CDOT policies and directives currently in force will be considered when preparing the agenda. The items to be reviewed include, but are not limited to, the following:

1. Design Requirements - Typical sections, horizontal and vertical alignment, detour, drainage, approach to project, cut-off points, aesthetic features, pedestrian/bicycle features, landscaping, lighting, major structures, railroad, safety, traffic control, access control, source of materials, roadway and roadside clearances, erosion control, and pavement and resurfacing options.
2. Construction requirements.
3. Environmental issues, including air quality.
4. Maintenance concerns.
5. Right-of-Way requirements.
6. Survey requirements.

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- 7. Multi-modal issues and accommodations.
 - 8. Travel demand and trip reduction.
 - 9. Traffic and safety issues.
 - 10. Utility requirements.
 - 11. Contract requirements.
 - 12. Geotechnical considerations.
 - 13. Coordination of all disciplines.
- E. The Resident Engineer will produce the minutes of the DSR meeting, research unresolved concerns and issues, prepare cost estimates, and prepare proposed project schedules.
- F. Phase III: Field Inspection Review (FIR)

Scope confirmation is accomplished at the FIR. The FIR is the culmination of the design scoping process, just prior to the end of the preliminary design phase. See 8.10 of the *Project Development Manual* for an explanation of the FIR.

IMPLEMENTATION

This procedural Directive shall be effective upon approval by the Executive Director and the Chief Engineer.

REVIEW DATE

This Procedural Directive shall be reviewed January 2015.



01/07/10

Executive Director

Date