

COLORADO DEPARTMENT OF TRANSPORTATION FEDERAL-AID HIGHWAY PROGRAM STEWARDSHIP AGREEMENT

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Revised – 2000

Revised - 2006

July 19, 2007

DEVELOPED IN PARTNERSHIP WITH THE FEDERAL HIGHWAY ADMINISTRATION'S
COLORADO DIVISION AND THE COLORADO DEPARTMENT OF TRANSPORTATION

We support the concept of this Stewardship Agreement and hereby direct that the stewardship and oversight of the Federal-Aid Highway Program be carried out in the spirit of a true partnership, as described herein.


Russell George, CDOT
Executive Director


David Nicol, FHWA
Division Administrator



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SECTION 1. PURPOSE, BACKGROUND AND INTRODUCTION, TERMINOLOGY, AND SCOPE

1.1. PURPOSE

The purpose of this Stewardship Agreement is to formalize the roles and responsibilities of the Federal Highway Administration (FHWA), Colorado Division and the Colorado Department of Transportation (CDOT) in administering the Federal-Aid Highway Program (FAHP). This Stewardship Agreement outlines a consistent risk-based approach for the FHWA, Colorado Division and the CDOT to effectively and efficiently manage the public funds and to ensure the FAHP is delivered in accordance with applicable laws, regulations, policies, and consistent with good business practices.

This Agreement outlines the framework by which the FHWA and the CDOT will administer the FAHP to maintain Colorado's national highway network, improve operation, improve safety, and provide for national security while protecting and improving our environment. This Agreement addresses the comprehensive approach in administering the FAHP through stewardship and delegated roles and responsibilities to the CDOT.

Through this Stewardship Agreement, FHWA and CDOT management will pursue – within state and federal laws, regulations and policies – alternative methods for providing quality services and transportation products. The FHWA and CDOT partnership also ensures that federal funds will be expended cost-effectively and its implementation provides justification for continued disbursement of federal funds.

1.2. BACKGROUND AND INTRODUCTION

Federal funding is provided to assist states and federal agencies in providing transportation services through the various FAHPs. By law, the nature and the majority of these federal programs is in the form of federal assistance for state administered programs. The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991; the Transportation Equity Act for the 21st Century (TEA-21) of 1998; and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005 have all increased the role of State Transportation Agencies (STA) in project approvals. These changes did not alter the fact that the FHWA is the agency responsible for ensuring compliance with federal requirements in the delivery of the FAHP. These changes did affect how FHWA implements this responsibility. The flexibility afforded in ISTEA, TEA-21, and now SAFETEA-LU have allowed states to assume the U.S. Department of Transportation Secretary's responsibilities for **design, plans, specifications, estimates, contract awards, and inspection** of many Federal-aid projects.

§ 106 of Title 23, United States Code (USC), require the FHWA and the CDOT to enter into an agreement that documents the delegation of responsibilities. SAFETEA-LU further defined the requirements of stewardship and oversight responsibilities including increased efforts pertaining to major projects. SAFETEA-LU builds on the foundation of the two previous transportation laws that brought surface transportation into the 21st century, ISTEA and TEA-21. SAFETEA-LU promotes more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance while giving state and local transportation decision makers the ability to enhance transportation systems and implement innovative solutions to transportation challenges.

Initially, when Stewardship Agreements were first introduced and developed in response to ISTEA provisions, the documents that were produced principally addressed how the CDOT and FHWA division office would handle the delegated authorities for certain project actions. In 1994, the FHWA and CDOT jointly established our first Stewardship Agreement. It defined how we work together to provide project and program oversight. The Stewardship Agreement was updated in 2000 and again in 2006.

With the passage of SAFETEA-LU, the overall program has evolved requiring a more comprehensive Agreement that covers all aspects of the FAHP. This new Agreement provides a road map to successfully execute the Federal-aid program relating to programs/project delivery to include FAHP financial integrity. Our current Stewardship Agreement, dated June 4, 2007, complies with provisions of SAFETEA-LU and meets the intent of FHWA Stewardship/Oversight Agreement Guidance issued May 8, 2006. This guidance encourages all division offices to implement a comprehensive approach in developing their Stewardship and Oversight Agreement.

Under this Stewardship Agreement, FHWA and CDOT will share the responsibility for oversight of projects using Federal-aid funds. The Stewardship Agreement between FHWA and CDOT is intended to be a document that is under continual review. Each organization has the opportunity to make a change to the document when there is mutual agreement that the change(s) is necessary. This document will also be modified to reflect changes in authorization or regulations.

1.3. TERMINOLOGY

In order to ensure that the Stewardship Agreement is consistently interpreted, the following definitions have been established:

Stewardship: *The efficient and effective management of the public funds that have been entrusted to the Federal Highway Administration.*

Oversight: *The act of ensuring that the FAHP is delivered consistent with laws, regulations and policies.*

Stewardship reflects the FHWA's responsibility for the development and implementation of the FAHP. It involves all FHWA activities in delivering the Program, such as leadership, technology deployment, technical assistance, problem solving, program administration and oversight.

Oversight is the compliance or verification component of FHWA stewardship activities that in turn ensures high-quality transportation projects. Narrowly focused, oversight activities ensure that the implementation of these FAHPs is done in accordance with the applicable laws, regulations, and policies. More broadly focused oversight activities enable the CDOT and FHWA to ensure the effective delivery and operation of the transportation system envisioned in our base statutes. FHWA project level oversight means that FHWA will participate in the project development and construction process *at specific milestones* to assure compliance with federal regulations, policies, procedures, standards and those federal dollars are being spent appropriately.

CDOT project level oversight will include their taking over FHWA responsibilities for all reviews and approvals associated with the design and construction, including final inspection, of Federal-aid projects.

FHWA and/or CDOT will provide oversight and approval for Federal-aid projects on the following:

- Scoping (planning)
- Environmental documentation
- Design and variance
- PS&E (Plans, Specifications & Estimates)
- Obligation of funding
- Award of project
- Construction
- Project Acceptance

1.4. SCOPE

This Stewardship Agreement outlines the project approval and oversight activities for Federal-aid projects that CDOT has assumed from the flexibility Congress provided within ISTEA, TEA-21, and SAFETEA-LU. These Transportation Bills have transferred responsibility to the States for the **design, plans, specifications, estimates, contract awards and inspection** of many Federal-aid projects. The Stewardship Agreement also outlines the mechanisms that CDOT will use to establish roles, responsibilities, and processes to ensure that all project and program actions will be carried out according to the appropriate laws, regulations, and policies. These responsibilities also apply to projects administered by local agencies.

On the broader program level, FHWA will continue to provide stewardship and oversight of the FAHP through a rigorous risk management process and through general actions and concurrences in its day-to-day activities, including improvements to program procedures, training, technical assistance, and development and deployment of new technologies, as well as routine program/project approval. Each of these activities contributes to the intent that the FAHP operates with integrity and for the public's maximum benefit. This Stewardship Agreement acknowledges that the FHWA Colorado Division and CDOT are responsible for the effective and efficient use of Federal funds.

The FHWA and the CDOT administer the FAHP through continuous program and project evaluation, and utilize a number of management tools to monitor the health of the FAHP. Program level performance indicators/measures and other strategies such as the Risk Management Framework and the Program Delivery Improvement Tool (PDIT), CDOT/FHWA Quality Assurance Review program (QAR), and FHWA's Financial Integrity Review and Evaluation (FIRE) Program, are utilized to evaluate the health of Colorado's FAHP.

The CDOT and FHWA will jointly conduct annual quality assurance reviews of selected areas of the CDOT programs, as defined in CDOT/FHWA [Quality Assurance Review \(QAR\) Program](#) guidelines. The QAR will help provide assurance that CDOT and/or local agencies are following all appropriate activities to carry out their respective roles and responsibilities according to applicable laws, regulations, and policies. In addition to the QAR Program, CDOT conducts other activities to ensure the quality of its projects and program. These include an Audit Program, Performance Measures Program, Value Engineering Program, Independent review, and QARs. The following is a brief explanation of the purpose and scope of each of these components:

1.4.1. Audit Program

The Internal Auditor is to conduct and supervise: internal audits of CDOT, external audits of persons entering into contracts with the department, federally required audits, financial audits, and performance audits to determine the efficiency and effectiveness of CDOT operations. The internal

audits often focus on the adequacy and effectiveness of internal and management controls. Audits also evaluate compliance with federal and state regulations and compliance with contract terms. Each year, the Commission's Audit Review Committee approves an annual audit workplan. As a part of the process for developing the workplan, managers throughout CDOT are surveyed concerning audit risks and audit needs. Coordination with the **Quality Improvement Council (QIC)** is planned as a part of the development each fiscal year workplan. Every effort is made to coordinate activities and prevent duplication. Audit also plans on working with the Performance Measures Team to assist in verification of performance measure reporting, and to help evaluate the impact of the performance measures.

1.4.2. Performance Measurement Program

The Colorado Transportation Commission developed the Investment Strategy Framework to provide a better opportunity to use resources more effectively and efficiently. There are several key components of the framework that enable the alignment of CDOT's work activities to its organizational priorities as established by the Transportation Commission.

The purpose of the framework is to assist CDOT in establishing priorities, assure that these priorities are being implemented, resulting in better service for the traveling public and improved accountability to the general public. A strategic framework (i.e., strategic plan) must be flexible and practical and yet serve as a guide to implementing programs, evaluating how these programs are doing, and making adjustments when necessary. As such there is a review of goals, objectives and system performance as part of the long range planning process and the annual budget process.

A key to successful strategic planning is having performance measures that give accurate and timely information. The ultimate aim of implementing a measurement system is to improve the organizational performance of CDOT resulting in an improvement in system performance. CDOT intends to use performance measures to continually evaluate progress towards accomplishing its goals and objectives, by determining where improvements can be made in its process, and readjusting work activities accordingly.

The Commission has identified the following four (4) major business functions, called investment categories:

- **Safety** – Services, programs and projects that reduce fatalities, injuries and property damage for all users and providers of the system.
- **System Quality** – Activities, programs and projects that maintain the physical (integrity/condition) function and aesthetics of the existing transportation infrastructure.
- **Mobility** – Programs, services and projects that enhance the movement of people, goods and information.
- **Program Delivery** – Functions that enable the successful delivery of CDOT's programs, projects and services.

(Originally a fifth investment category was defined as Strategic Projects. Since all strategic projects impact system performance in the areas of safety, system quality, or mobility, Strategic Projects is now being identified as a key program area that spans all investment categories.)

Each investment category has specific performance objectives and associated measures that provide the foundation for discussion on how to best invest available funds. Performance measures provide tools to relate the expenditures and work results to the policies, priorities, and goals of the Department as determined by the Transportation Commission. Performance measures are utilized

on an annual basis as well as on a long range plan basis to relate expenditures and work results to the desired performance objectives (i.e., the desired end-result) for the State Highway system.

As part of the statewide transportation planning process the Transportation Commission sets long range policy direction, and allocates resources by program area to one of four Investment Categories: **Safety, System Quality, Mobility and Program Delivery**, as well as to the **Strategic Projects Program**.

In support of these Investment Categories, the CDOT Executive Management Team identified five Core Service business processes:

- **Roadway Management** – All physical elements of roadway, tunnel, and bridge maintenance activities from curb-line to curb-line (i.e., roadway edge).
- **Roadside Management** – All roadside (from curb-line [roadway edge] to edge of ROW) maintenance activities including rest areas and other off-road facilities.
- **System Operations** – All traveler information and traffic-related activities including tunnel operations and emergency/incident.
- **Snow and Ice Management** – All services and maintenance activities to keep the road open for the winter season including post-event operations and the reopening of closed roads.
- **Project Delivery** – All activities for the delivery of a transportation project from planning to construction management to final.

An Action Plan has been developed for each of the Core Services. The Action Plans identify strategies (i.e., what activities are needed to achieve the goals and objectives) and measures to assist CDOT regions, divisions and offices to align their activities to support CDOT's goals established by the Transportation Commission. The investment objectives are influenced by the allocation (appropriation) of funding by program and investment category, thus each Core Service area includes elements of each investment category.

The next level, currently under development, is comprised of Region, Division and Office Work Program Plans that encompass activities of each respective unit. All levels will have in place performance measure tools that link to and support the mission of the department. The desired outcome for the program is "improvement", whether this is in customer perception, productivity, timeliness, or quality, as well as to do the right things right. The Investment Analysis Unit within the Division of Transportation Development is coordinating the Program but the program is ultimately the responsibility of everyone in the CDOT. The Quality Assurance Program under the Stewardship Agreement is responsible for ensuring quality assurance in work processes.

1.4.3. Value Engineering Program

Value engineering (VE) is required on all Federal-aid highway projects on the National Highway System (NHS) with an estimated cost of \$25 million or more. The purpose of this regulation (23 CFR 627.1) is to "establish a program to improve project quality, reduce project costs, foster innovation, eliminate unnecessary and costly design elements, and ensure efficient investments by requiring the application of VE. The CDOT Project Development Branch is responsible for the program. A VE Committee will monitor the quality of the program from the initial selection of projects to auditing the recommendations.

1.4.4. Independent Reviews

FHWA may conduct independent reviews that could include program reviews/product evaluations and continuous process improvement initiatives. These reviews will be done in consultation with CDOT. The review topics will be different from the QAR, audit, and performance measurement reviews issues chosen on an annual basis as previously discussed. In addition to the FHWA oversight activities, stewardship activities will include technical assistance, technology deployment, performance measurement, and sharing best practices.

1.4.5. Quality Improvement Council

The Quality Improvement Council (QIC) has made every effort to ensure that each of the components of the CDOT Quality System does not overlap the QAR and FHWA reviews. The QIC's goal is to make each of these components a part of an overall integrated quality system.

Notwithstanding any provision of this Stewardship Agreement, FHWA retains overall responsibility for all aspects of Federal-aid programs and this Stewardship Agreement does not preclude FHWA's access to and review of any Federal-aid project at any time and does not replace the provisions of *Title 23, USC*.

SECTION 2. STEWARDSHIP AGREEMENT - DELEGATED RESPONSIBILITIES, CONFLICT RESOLUTION, & MISCELLANEOUS STIPULATIONS

Under Title 23, FHWA is ultimately accountable for all programs under the Federal-Aid Highway Program, however, the State may assume responsibility for project-level activities associated with 23 USC 106 on certain National Highway System (NHS) projects and all non-NHS projects.

The provisions of this Stewardship Agreement do not modify the FHWA's non-Title 23 program oversight and project approval responsibilities for activities such as required under the *Clean Air Act*; *the National Environmental Policy Act of 1969 (NEPA)* and other related environmental laws and statutes; the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*; and the *Civil Rights Act of 1964* and related statutes, unless expressly permitted by SAFETEA-LU Section 6004 and 6005.

2.1. DELEGATED PROGRAM AND PROJECT RESPONSIBILITIES

2.1.1. CDOT Responsibilities

CDOT's responsibilities for the following types of projects are as follows:

1. Projects on Non-NHS Federal-aid highways and projects on public roads which are not Federal-aid highways - The CDOT assumes the responsibilities of the FHWA for all reviews and approvals associated with the design, construction, award, and final inspection of Federal-aid projects off the NHS.
2. Projects on the NHS, but not on the Interstate System - The CDOT assumes the responsibilities of the FHWA for all reviews and approvals associated with the design and construction, award, and final inspection, of Federal-aid projects. Projects must comply with all Federal-aid requirements contained in Title 23.
3. Projects on the Interstate System - The CDOT assumes the responsibilities of the FHWA for 3R improvements (resurfacing, rehabilitation or restoration), but not 4R (New Construction or Major Reconstruction), projects with a value greater than \$1.0 million.

For the purpose of determining FHWA's or State's responsibility for project approval and oversight, "3R" (Resurfacing, Rehabilitation and Restoration) is defined broadly to allow maximum delegation of project approval and oversight to CDOT. 3R projects are projects, which extend the service life of highways, bridges, and related appurtenances; and/or restore safe, efficient travel on an existing facility. They are typically constructed within existing right-of-way, although minor acquisitions may be needed (See Table 2).

4. Local Transportation Facilities - When a local government becomes the implementing agency of a construction project in which CDOT participates in the funding by allocation of FAHP funds, CDOT will review and assure local action for compliance with all requirements of Federal and State laws in accordance with USC *Title 23*. The CDOT is not relieved of its responsibilities even though the project may be under the supervision of a public agency or organization. In accordance with 23 CFR 1.11, the CDOT will ensure that the agency is well qualified and suitably equipped to perform the work.

CDOT may invite FHWA Colorado Division to be involved in any CDOT-Oversight project.

2.1.2. Federal Responsibilities:

Under Title 23 and non-Title 23 (as noted under bullet 5), FHWA is ultimately accountable for the stewardship and oversight of all programs under the Federal-aid Highway Program.

1. Projects that have Federal-aid funds on the Interstate System providing new construction or reconstruction including, but not limited to:
 - Addition of capacity to existing corridor (rail or highway)
 - Roadway relocation
 - Bridges
 - Major widening
 - Reconstruction of bridges, interchanges and crossovers
 - All projects using emergency relief funds (unless project level oversight authority is specifically waived by FHWA and projects on major bridges).

The FHWA will continue to be responsible for the oversight of all Title 23 aspects of these projects and will review and approve project designs, approve Plans, Specifications and Estimates, concur in award, approve changes in contract (change orders, supplemental agreements, time extensions, claims, etc.).

2. 3R Projects on the Interstate System and Non-Interstate Projects - FHWA oversight responsibilities will be limited to ensuring compliance with non-Title 23 requirements and certain Title 23 requirements. FHWA will monitor project compliance through program reviews, process improvement studies, etc.
3. Other Project Involvement - The FHWA Colorado Division in consultation with the CDOT may elect to become actively involved with any Federal-aid transportation project, including those for which the CDOT has assumed FHWA's responsibilities, when unique circumstances arise or when program or process reviews are being conducted.
4. Technical Assistance - The FHWA Colorado Division is prepared to provide technical assistance to the CDOT or local agencies on any aspect of an eligible Title 23 project including intermodal transportation projects. Technical assistance activities will be decided on a case-by-case basis in consultation with the CDOT, other partners and the FHWA Colorado Division. The FHWA Colorado Division will continue to focus their time and effort on improving processes and procedures, in cooperation with the CDOT.
5. Non-Title 23 Responsibility – The FHWA will continue to assume responsibility for Federal actions required under laws outside of Title 23, as noted in Section 3 in the respective sections: such as:
 - Activities for compliance with Section 102 (2)(c) of the National Environmental Policy Act (NEPA) of 1969 (42 USC 4321 et.seq.) and 23 CFR 771.
 - Activities for compliance with Section 4 (f) of the Department of Transportation Act of 1966, P.L. 89-665, 49 USC 303.
 - Civil Rights Act of 1964, 42 USC 2000 (d) et. seq. and 23 CFR 200 (Title VI), and 23 CFR 230 (EEO).
 - Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970, 42 USC 4601, et. seq. 23 CFR Parts 710-740 and 49 CFR Part 24.
6. Independent FHWA review program – Each year the FHWA Colorado Division, may conduct independent process reviews that could include; program reviews, product evaluations, and continuous process improvement initiatives. These reviews may be done in consultation with CDOT.

2.2. LOCAL PUBLIC AGENCY PROGRAM AND PROJECTS

Local Public Agency (LPA) administered Federal-aid projects are those which are, at a minimum, managed through design or construction or both, by an LPA other than a State Transportation Agency (STA). In many cases, the LPA may also manage environmental studies and documentation, appraisal and acquisition of right-of-way, the bid and award process, and the billing process.

Title 23, U.S.C. does not recognize local entities as direct recipients of Federal-aid funds. Accordingly, local agencies can not take the place of CDOT in the context of the FAHP. CDOT is responsible for all requirements of the Federal-aid program whether these requirements stem from Title 23 or non-Title 23 statutes. The program and project authority that FHWA has delegated to CDOT does not authorize CDOT to pass these responsibilities to the local agencies.

The language of Section §1904 of SAFETEA-LU is clear in its assignment of responsibility for locally administered projects to the States. Section §1904 states, that the States shall be responsible for determining that sub-recipients of Federal funds have adequate project delivery systems for projects approved under this section; and sufficient accounting controls to properly manage such Federal funds. CDOT needs to commit sufficient staff and other resources to project and program administration to ensure that all applicable state and Federal requirements are met, and the work is accomplished efficiently. The same Section also states, that FHWA shall periodically review the monitoring of sub-recipients by the States.

2.3. CONFLICT RESOLUTION PROCESS

If disagreements emerge which cannot be resolved, the impasse shall be escalated as shown below. If other agencies are involved, personnel from equivalent organizational levels will be included in the conflict resolution process.

Table 1 - Conflict Resolution Process

CDOT	FHWA
Project Coordinator	Operations Engineer
Regional Transportation Director	Program Delivery Engineer
Chief Engineer	Assistant Division Administrator
Executive Director	Division Administrator

When the parties at the lowest organizational level of the agencies have agreed to escalate, a meeting date will be established within 14-days. At that time, the agencies from both levels will meet to discuss the issues and come up with a resolution. If an agreement cannot be reached, then the issue will be escalated to the next level and a meeting date established within 30-days. At that time, the agencies from all three levels will meet to discuss the issues and come to a resolution. If an agreement cannot be reached, the issue will be escalated to the highest level and a meeting date established within 30-days. At that time, all agencies will come to resolution.

Mediation and facilitation may be used at any level to help expedite resolution. Documentation of all disagreements and resolutions shall be furnished to all involved agencies and included in the project file.

2.4. OVERSIGHT AUTHORITY AND MISCELLANEOUS STIPULATIONS

2.4.1. FHWA full oversight authority

FHWA retains authority for the following actions on full oversight projects:

- Plan, Specifications & Estimates Approval;
- Approval of Design Exceptions;
- Contract Concurrence in Award;
- Contract Change Order Approval (See threshold on page 16);
- Approval of Contract Claims Settlement;
- Final Inspection;
- Project Acceptance.

2.4.2. Exceptions

The following actions require the approval of the FHWA regardless of project funding and/or delegation of project oversight to CDOT:

- Addition of access points on the Interstate System;
- Use of Interstate airspace for non-highway-related purposes;
- Disposal of Interstate Right of Way;
- Design exceptions affecting Interstate highways (13 controlling criteria);
- Changes in Interstate Land Use or Operations;
- All Federal responsibilities for planning and programming oversight specified in 23 USC 134 and 135;
- Federal air quality conformity determinations required by the Clean Air Act;
- Obligation of funds;
- Waivers to Buy America requirements (FHWA Washington Headquarters (HQ) approval required as noted in Mr. Horne's July 3, 2003 memorandum);
- SEP-14/SEP-15 methods (FHWA HQ approval required for experimental contracting/project delivery methods);
- Civil Rights program approvals;
- Environmental approvals except those specifically delegated under Sections 6004 and 6005 of SAFETEA-LU;
- Hardship acquisition and protective buying;
- Modifications to project agreements;
- Final vouchers.

2.4.3. Advance Construction

Use of Advance Construction procedures to ensure future federal reimbursement of funds for a project is considered use of federal-aid funds.

2.4.4. Bonding

If a project is financed with bond proceeds, and debt service is anticipated to be paid using federal funds, it shall be considered a Federal-aid project.

2.4.5. Special Experimental Projects (SEP-14/SEP-15) Approval

FHWA Headquarters' SEP-14/SEP-15 approval is necessary for any non-traditional construction contracting technique that deviates from the competitive bidding provisions in 23 USC 112. Any contract which utilizes a method of award other than the lowest responsive bid (or force account as defined in [23 CFR 635B](#)) should be evaluated under SEP-14.

2.4.6. Oversight Responsibility Matrix

The matrix on the next page identifies when FHWA is required to be involved in project activities according to the funding source. Additional FHWA required actions are listed in Section 3.

Table 2 - FHWA Project Activities Involvement Matrix

Phase of Work			FHWA Involvement in Project Activities							
Preliminary Engineering (Design)	ROW & Utilities	Construction	Scoping	Environmental Clearance	Access Control & ROW Disposal (2)	Plan Development (Design) (3)	Structural Review (4)	ROW Plan Approval	PS&E Approval (5)	Construction Changes, Claims, etc
CDOT Project level Stewardship and Oversight 3R projects on the Interstate system and all projects off the Interstate system.										
Source of Funding										
Federal or State	Federal or State	Federal or State	No	Yes (1)	Yes	No (6)	No	No	No	No
State	State	State	No	No (1)	Yes	No (6)	No	No	No	No
FHWA project level Stewardship and Oversight New construction or reconstruction projects on the Interstate system with a value of \$1.0 million or greater.										
Source of Funding										
Federal	Federal or State	State	Yes	Yes	Yes	Yes	Yes	No	No	No
Federal	Federal or State	Federal	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes (7)
State	Federal or State	Federal	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes (7)
State	Federal	Federal	Yes	Yes	Yes	No	No	No	No	Yes (7)

- (1) If no Federal-aid funds are in the project, FHWA does not require a NEPA analysis except as explained in note (2). CDOT may elect to produce a Federal environmental document for any project, to afford an easier opportunity to convert one or more phases to Federal funding at a later time.
- (2) Federal approval for changes in right-of-way and access control is required on the Interstate regardless of the type of funding. For the following actions, a NEPA document also needs to be completed:
 - Changes in Interstate Access Control
 - Lease of Interstate Right-of-Way
 - Disposal of Interstate Right-of-Way
- (3) Design, Approval of Design, Variances and PS&E development.
- (4) Review of major structural designs for bridges with surface area exceeding 125,000 square feet or those with unusual hydraulic, geotechnical or structural features (see FHWA Order 5520.1).
- (5) Includes approval to proceed to advertisement and Concurrence in Award of Contract.
- (6) FHWA participates when invited by CDOT, where federal project oversight is in use for Design or Construction.
- (6) For CMOs:
 - < \$100,000 and not major design changes: none to FHWA
 - > \$100,000 & < \$250,000 and not a major design change: copy to FHWA
 - > \$250,000 or a major design change: needs prior FHWA approval.
 - Federal approval is required on all CMOs for project extensions regardless of oversight.

SECTION 3. CDOT & FHWA ROLES AND RESPONSIBILITIES BY FUNCTIONAL PROGRAM AREAS

The following subsections of Section 3 describe the functional/program stewardship and oversight areas that are subject to this Stewardship Agreement. This section provides information on how CDOT and FHWA are organized to accomplish each of the functional/program areas. In addition, each subsection will address required reviews, specific working relationships, and efforts relating to management systems. In addition a “FHWA Required Actions List” has been included in the FHWA Organization subheading of each subsection. This will help to delineate the actions that are required through the 23 Code of Federal Regulations (CFR) and Federal Aid Policy Guide (FAPG).

Under this Stewardship Agreement, the CDOT Staff Branches are responsible for facilitating the preparation of statewide policy and procedural directives, providing technical assistance, conducting continuous technical training, and providing quality assurance (QA) in all program areas. In some instances the Staff Branches may be responsible for project production. The CDOT Region offices are responsible for preparing project scoping and scheduling documents, environment and right-of-way clearance documents, local entity agreements, and overall management of the individual projects.

The FHWA Colorado Division is responsible for the stewardship and oversight of the Federal-aid Highway Program in Colorado. The FHWA Operations Engineers are responsible for the oversight activities and the Program Managers are responsible for the stewardship activities. In many instances, the Operations Engineers may be responsible for both stewardship and oversight. The Program Managers are responsible for relating policy, providing technical assistance, working with other federal agencies and guiding their programs on a statewide basis. Both the Operations Engineers and Program Managers are responsible for ensuring quality assurance (QA) of the entire Federal-aid Highway Program in Colorado. The FHWA Team Leaders are responsible for ensuring the Operations Engineers and Program Managers receive the appropriate leadership so that they may conduct an efficient and effective QA program.

3.1. Environment

3.1.1. Introduction:

The Environmental Program is based on policy guidance from both CDOT and FHWA.

FHWA’s Environmental Streamlining and Stewardship Vital Few Goal:

Environmental Streamlining drives us to improve project delivery without compromising environmental protection. Environmental Stewardship helps demonstrate that we are mindful of the natural and human environment while addressing mobility and safety needs of the public. FHWA promotes actions that show we are responsible stewards of the environment. We take advantage of opportunities to enhance environmental protection and encourage partnerships that promote eco-system conservation or encourage broader mitigation strategies that seek corridor or watershed based approaches. Environmental Streamlining solutions must go hand in hand with principles of stewardship.

The Vital Few Environmental Streamlining and Stewardship goal (Environment VFG) sets expectations, measures, and methods for advancing an improved and efficient environmental review process and for demonstrating environmental stewardship. The success of this goal is focused on improving processes that influence outcomes. FHWA oversees how the environmental processes are carried out; the project sponsors and other practitioners determine the final product, i.e., the project.

CDOT’s Environmental Policy Guidance: “CDOT will promote a transportation system that is environmentally responsible and encourage preservation of the natural and enhancement of the created environment for current and future generations. We will incorporate social, economic, and environmental concerns into the planning, design, construction, maintenance and operations of the state’s existing and future transportation system. With the active participation of the general public, federal, state and local agencies, we will objectively consider all reasonable alternatives to avoid or minimize adverse impacts.” In addition, 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 system and services possible.

The Transportation Commission supports proactive techniques to mitigate impacts of the transportation system on the environment by developing creative strategies that:

- Comprehensively address anticipated environmental impacts of the state
- transportation system;
- Consider project enhancements in affected communities in a cost effective manner
- consistent with the mission of the Department; and
- Expedite project development.

The FHWA/CDOT environmental program is focused on avoiding, minimizing and mitigating the potential adverse impacts of the transportation system on the people and the environment of Colorado in accordance with NEPA and other applicable environmental legislation, regulations and policy direction. This is accomplished by ensuring:

- Early identification of environmental issues;
- Appropriate impact analyses are performed in a timely manner;

- Adequate documentation is submitted and reviewed as scheduled ; and
- Required authorizations are received from the governing entities for all projects and maintenance activities in accordance with the laws, environmental policies, letters of agreement and rules governing the environment

Timely compliance with the environmental requirements is critical for advancing projects. The Regions, with the assistance from the Project Development Branch, and Division of Transportation Development (DTD) are charged with the responsibility of project development, construction and maintenance of the Colorado transportation system in a manner that will preserve the social and natural environment.

3.1.2. Method of Operation:

For the environmental function, the FHWA maintains ultimate responsibility and approval authority for all activities requiring federal actions. Interagency coordination and stewardship are maintained through routine contacts in person, by telephone, by electronic mail, and in writing, during the course of transacting normal business operations. Contact normally occurs between the FHWA Environmental Program Manager (Env PM) and, CDOT's Environmental Programs Branch Manager. On specific project activities, stewardship and oversight coordination occurs between the CDOT's six decentralized Region Planning and Environmental Managers (RPEMs) and FHWA Operations Engineers (OEs). The CDOT Environmental Programs Branch Manager, FHWA Env PM, and Environmental Specialist assist in coordinating interagency approvals for various environmental resources impacted by projects.

Environmental considerations affect virtually all aspects of transportation. Coordination and interaction with other disciplines is necessary to administer the environmental program. Sometimes project specific decisions affect statewide policy. In such cases the RPEMs should consult with the Environmental Programs Branch Manager and FHWA Environmental staff. Similarly, if the CDOT Environmental Programs Branch Manager or the FHWA Environmental staff observe potential policy implications of project level decisions, such concerns should be discussed with the CDOT RPEM and the FHWA OE. The FHWA Environmental staff will work with other federal agencies and Environmental Programs Branch Manager on program and project matters to ensure statewide consistency in intergovernmental working relationships.

In the environmental functional area, there are several diverse factors that influence the quality of the products and services delivered. First, the timely delivery of specific environmental activities is critical to advancing transportation projects toward successful completion. For CDOT staff specialists, project compliance activities should be completed on or ahead of the established schedule date. For Region personnel, all NEPA documents should be completed in time for review and approval by FHWA prior to the scheduled project advertisement date. For major NEPA documents (EAs and EISs), EPB review will be completed prior to forwarding documents on to FHWA for approval. Second, CDOT's public involvement procedures should conscientiously solicit the views of all affected publics and should be implemented in accordance with Executive Order 12898 on Environmental Justice. The effectiveness of this program can be measured by the number and general tone of both positive and negative comments received on the environmental documents. Third, FHWA and CDOT should constantly strive to improve the existing working relationships with the many resource protection agencies involved in the environmental functional area (the US Fish and Wildlife Service, the Corps of

Engineers, the Environmental Protection Agency, the State Historic Preservation Office, the Colorado Division of Wildlife, the Colorado Department of Public Health and Environment, etc.).

3.1.3. CDOT Organization:

CDOT's environmental function is divided between six Region environmental offices and the central office staff, consisting of the Environmental Programs Branch. The CDOT environmental program consists of numerous interrelated responsibilities requiring close coordination between all parts of CDOT.

The Environmental Programs Branch generally has the lead in providing technical expertise to the Regions, other CDOT Branches, DTD, assisting regions with project development by providing specialty clearances, reviewing of NEPA documents, resolution of special environmental issues and development and implementation of memoranda of understanding and agreement with resource and regulatory agencies.

The Branch also develops environmental streamlining initiatives, environmental policy guidance, programmatic agreements, and environmental data for use in the planning and project development process, and assists Regions in early corridor environmental analyses.

Regions are responsible for all project development, construction and maintenance related environmental activities, with assistance from central staff as necessary.

3.1.4. FHWA Organization:

Oversight of the environmental function in the Colorado Division Office is the responsibility of the Env PM, Environmental Specialist and the OEs assigned to each of CDOT's six Region offices. FHWA's primary responsibility is to review, interpret and provide guidance and training on environmental policy, procedures and regulations by maintaining active liaison with the CDOT program and project personnel, and with other federal, state and local agencies. Assistance is provided to CDOT when addressing technically complex or controversial issues on general or project specific applications related to environmental policy and interagency coordination. It is also FHWA's responsibility to ensure environmental requirements are properly satisfied on individual projects. FHWA reviews and approves all environmental documents (project categorization requests, NEPA documents, wetland findings, Section 106 compliance, and Section 4(f) Evaluations, etc.).

Table 3 - FHWA Required Action List (Environmental)

#	Activity	Authority	Action	Frequency	Delegated To
R = Review, A = Approve, F = Forward					
E	<u>Environment</u>				
1.	Class of document determination	23 CFR 771.115 Thru - 119	R & A	As submitted by RPEM	OE, Env.staff and PDTL
2.	Filing of Notice of Intent	23 CFR 771.123	R & A	As submitted by CDOT RPEM	OE and Env staff
3.	Environmental Assessment	23 CFR 771.119	R & A	As submitted by CDOT EP	PDTL
4.	Finding of No Significant Impact (FONSI)	23 CFR 771.121	R & A	As submitted by CDOT EP	PDTL
5.	Draft Environmental Impact Statement (EIS)	23 CFR 771.123	R & A	As submitted by CDOT EP	DA
6.	Final EIS	23 CFR 771.125	R & A	As submitted by CDOT EP	DA
7.	Record of Decision (ROD)	23 CFR 771.127	R & A	30 days after publishing final EIS As submitted by CDOT EP	DA
8.	EIS written re-evaluations	23 CFR 771.129	R & A	If no action is taken within 3 years after final EIS As submitted by CDOT EP	PDTL
9.	Section 4(f) programmatic	23 CFR 771.135	R & A	As submitted by CDOT EP	Env PM
10.	Section 4(f) individual	23 CFR 771.135	R, A, F to USDOJ	As submitted by CDOT EP	PDTL
11.	Section 106 actions	23 CFR 771.133	R, A, F to ACHP	As submitted by CDOT EP	Env staff
12.	Section 7 consultation	23 CFR 771.133	R, A, F to USFWS	As submitted by CDOT EP	Env Staff
13.	Wetland Findings	23 CFR 777	R & A	As submitted by CDOT EP	Env PM
14.	Annual reporting of wetland impacts and mitigations	23 CFR 777	R, F to HQ	Annually by CDOT EP	Env PM
15.	Annual reporting of T & E Expenditures	ESA	R, F to HQ	Annually by CDOT EP	Env PM
16.	Annual reporting on noise walls	23 CFR 772	R, F to HQ	Annually by CDOT EP	Env PM

RPEM - CDOT Regional Planning and Environmental Program Managers,
EP - CDOT Environmental Programs,
DA - FHWA Division Administrator,
Env PM - FHWA Environmental Program Manager,
OE - FHWA Operation Engineers,
PDTL - FHWA Program Delivery Team Leader.

3.1.5. Quality:

FHWA and CDOT review all environmental documents, attend public hearings and other project development meetings on a random basis, and monitor news articles to assess the quality of work being planned and developed by the CDOT. In addition to internal coordination, CDOT and FHWA will work with other state and federal reviewing agencies, Indian Tribes, local and regional governments and the general public to ensure that their views on the environmental function are considered in developing areas for quality improvement.

Under the Stewardship Agreement, CDOT and FHWA personnel work together as partners to continually review, evaluate, and improve the environmental program. The main emphasis areas of the Agreement are strengthening the environmental function by sharing information and correcting identified weaknesses. The CDOT Environmental Program Branch Manager, and the FHWA Env PM will host quarterly meetings with Region environmental personnel to share information, improve the quality and consistency of the various CDOT regional offices, and instill an environmental ethic throughout the agency.

Annually, CDOT and FHWA sponsor a three-day Environmental Training Workshop for all regional environmental personnel. The purpose of the workshop is to provide training on new requirements and refine expertise on various resource issues. In addition, NHI courses and special training will provide training to the Regions on specific environmental programs. Agencies with special expertise are invited to participate in training for the CDOT/FHWA environmental program.

Information that documents the environment program will be kept current as information sources permit. CDOT's Policies and Procedures Manual will be continually improved on a resource-by-resource basis as necessary and appropriate. The MOU/MOA Manual will be updated reviewed and regularly updated. FHWA's Environmental Notebook will be continually updated as FHWA HQ produces new materials. Municipal Stormwater Discharge Permit information will be available on CDOT's website.

Proposed review areas will be included as recommendations to the CDOT/FHWA Quality Improvement Council and become a part of the overall CDOT/FHWA Stewardship program.

3.1.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the Environmental program:

1. Environmental Protection Agency (EPA) EIS Ratings;
Indicator: The rating that EPA provides on draft EIS documents.
Reporting Instrument: A list of all DEIS documents completed in the reporting period identifying the EPA rating along with a project description.
Reporting Frequency: Annually by Fiscal Year
2. Completion Time for Environmental Documents;

Indicator: The time to complete an EA from 45 days after the date of the Initial Coordination Letter through the FONSI date and the time to complete an EIS from Notice of Intent (NOI) to the Record of Decision (ROD).

Reporting Instrument: A list of all EAs and EISs completed in the reporting period identifying the length of time along with a project description.

Reporting Frequency: Annually by Fiscal Year

3. Percent On Time for Categorical Exclusion Approvals; and

Indicator: The time to complete CE determination and approval.

Reporting Frequency: Annually by Fiscal Year

4. Wetland Impact and replacement ratios.

Indicator: A minimum of 1:1 wetland replacement

Reporting Frequency: Annual by Fiscal Year

*Note that FHWA Colorado Division will track review times for all documents requiring approval in order to determine appropriate response time frames.

3.2. Right-Of-Way

3.2.1. Introduction:

The acquisition of private property for public use is governed by a host of state and federal rules and regulations. The Right-of-Way (ROW) program has overall responsibility for the acquisition, management, and disposal of real property on Federal-aid projects. This responsibility includes assuring that acquisition and disposals are made in compliance with the legal requirements of the state and federal laws and regulations.

The ROW program is part of the CDOT Project Development Branch. The project development process can be divided into five process categories or work activities:

- Surveying,
- Appraisals/Review,
- Acquisition,
- Relocation,
- Property Management.

Note:

1. This function is a part of the Maintenance & Operations Branch at the Central Office; however some of the regions have a property management section that reports to the Region ROW Manager. not project development
2. The Access Coordinator and the Roadside Advertisement Coordinator are part of Safety & Traffic Engineering at the Central Office.

3.2.2. Method of Operations:

The FHWA Colorado Division's relationship with CDOT's ROW program has historically been a very close working relationship that strives to identify best practices and training opportunities, and maintain good communications. As such there are responsibilities on the part of each organization to foster good public relations while striving to adhere to the ultimate goal of building highways.

The operation from the agencies perspectives includes the maximum delegation of authority to CDOT. This offers the greatest possible innovation and flexibility to administer the ROW program. In this regard, the CDOT ROW operations manual is an important tool.

Coordination and oversight are maintained through an annual statewide ROW workshop involving all CDOT ROW program personnel and the FHWA's ROW Program Manager, quarterly ROW managers' meetings, and routine contacts in person, in writing and by phone, during the course of business. Contacts are normally between the CDOT ROW Program Manager (Central Office) and FHWA ROW Program Manager.

3.2.3. CDOT Organization:

The ROW program is headquartered in Denver and has offices in each of the six regions. It has a professional staff of real estate specialists, surveyors, appraisers, administrators, and others who deliver ROW projects.

The CDOT Central Office is responsible for facilitating the provisions of statewide policies and guidelines, conducting quality assurance, providing training and development, and technical assistance to the Regions in support of their responsibility for program delivery.

The ROW program is comprised of the following functions:

- Survey,
- Appraisal/Review,
- Acquisition,
- Relocation,
- Local Public Agency Oversight,
- Consultant Management,
- Property Management,
- Records Management.

3.2.4. FHWA Organization:

Oversight of the ROW program in the FHWA Colorado Division Office is the responsibility of the ROW Program Manager and the FHWA Operations Engineers assigned to each of the six CDOT regional offices. Their primary responsibility, in addition to those listed in the matrix on page 19, is to review, interpret and provide guidance and training for FHWA ROW policies, procedures and regulations.

Table 4 - FHWA Required Action List (Right-Of-Way)

#	Activity	Authority	Action	Frequency	Delegated To
R = Review, A = Approve, C = Compliance					
R/W	<u>Right-Of-Way</u>				
1.	State ROW Manual changes	23 CFR 710.201	R & A	Jan. 1, 2001 & every 5 years thereafter	RWPM
2.	Requests for waivers	49 CFR 24.204(b)	R & A	As submitted by State	RWPM
3.	Local Public Agency Oversight	23 CFR 710.201(h)	Periodically R for C (State takes action)	As needed	RWPM
4.	FHWA Annual Acquisition and Relocation Statistics Previous form FHWA 1434, 1424	FHWA Order 6540.1	Prepare & submit to HQ	Annually by Nov. 15	RWPM
5.	Use of ROW Air Space authorization request (on Interstate system)	23 CFR 710.405	R & A	Project by project	RWPM
6.	Use of ROW Air Space authorization request (off Interstate system)	23 CFR 710.405	Periodically R for C (State takes action)	As needed	RWPM
7.	Access Break / ROW Disposal authorization request (if on Interstate system or fair market value not charged)	23 CFR 710.401 & 409	R & A	Project by project	RWPM
8.	Access Break / ROW Disposal authorization request (if not on Interstate system and fair market value charged)	23 CFR 710.409	Periodically R for C (State takes action)	As needed	RWPM
9.	Functional Replacement	23 CFR 710.509	R & A	Project by project	RWPM
10.	Outdoor Advertising policies and procedures revisions	23 CFR 750.304	R & A	As needed or submitted by State	RWPM
11.	Outdoor Advertising sign removal projects	23 CFR 750.307	R & A	Project by project	RWPM
12.	Lead Agency Uniform Act monitoring activities	49 CFR 24.603	R for C	As needed	RWPM
13.	Develop ROW oversight agreement	23 CFR 710.201(i)	R & A	By Jan. 1, 2001 and updated as needed	RWPM
14.	ROW Conditional Clearance Certification	23 CFR 635.309	R & A	Project by Project	PDBM
15.	ROW Plan Authorization	23 CFR 710.201 (i)	R for C & A	Project by Project	SPPM

RWPM - FHWA ROW Program Manager,
PDBM - CDOT Project Development Branch Manager
SPPM - CDOT Survey/Plans Program Manager

3.2.5. Quality:

Quality Control (QC) is performed in four functional areas within the CDOT ROW process documented in the FHWA approved CDOT ROW Manual. First, a ROW plan review is held at the beginning of the appraisal process to determine the adequacy of the ROW plans and reduce the potential for possible plan revisions during the process. Second, all appraisals are reviewed by CDOT staff to provide assurance that all state and federal laws are complied with in the appraisal function. Third, all relocation determinations are approved by CDOT Central Office ROW staff prior to making an offer to the displaced person. Finally, a check list is used with each settlement package to make sure that all matters affecting title have been taken care of prior to closing. Additionally, to encourage process consistency and ensure that the end product or service provided meets established quality standards and criteria, a compliance review orientated quality control spot check process will be initiated with the CDOT Regions.

Quality assurance reviews of critical areas will be made on a rotational basis based on the risk assessment made by the CDOT ROW Program Manager and the FHWA Division ROW Manager.

3.2.6. Performance/Compliance Indicators:

The following performance indicators in combination with periodic reviews will be used to assess the health of the ROW program:

1. Conditional Clearances;
Indicator: Percentage of Federal-aid projects with conditional ROW certifications.
Reporting Instrument: The number of Federal-aid construction projects that had conditional clearances versus the total number of Federal-aid construction projects.
Reporting Frequency: Annually.
2. Condemnations;
Indicator: Percentage of parcels acquired using condemnation.
Reporting Instrument: Uniform Act relocation Assistance and real Property Acquisition Statistical report as required by 49 CFR 24, Appendix B.
Reporting Frequency: Annually.
3. Appeals;
Indicator: The number of appeals file each year.
Reporting Instrument: A list of all appeals.
Reporting Frequency: Annually.

3.3. SAFETY AND TRAFFIC ENGINEERING

3.3.1. Introduction:

The Safety and Traffic Engineering Branch is responsible for developing and maintaining safety programs for CDOT that are focused on reducing the incidence and severity of motor vehicle crashes on the transportation system and the associated human and economic loss. The Colorado Strategic Plan for Improving Roadway Safety is the roadmap for developing the annual Integrated Safety Plan which covers three emphasis areas that include: a) Safety Education, b) Safety Enforcement, and c) Traffic Engineering. The Branch focuses on working within the Regions to maintain cost-effective programs that resolve safety problems. The Branch is responsible for comprehensive statewide planning of safety programs and ensuring quality in program delivery. It works through the Regions, other agencies and stakeholder groups to assist in the design, delivery and funding of safety programs that encourage improvements in driver behavior and the transportation system. This is accomplished by assessing the nature and magnitude of safety problems in a Region, county or town and providing adequate information to support the development of an investment strategy to resolve the problems. Finally, a cost-benefit analysis is employed to ensure that the most beneficial and cost-effective safety projects are selected for implementation by the Regions.

The Branch acts as the State's repository for state highway traffic accident information and works with the Colorado Departments of: Revenue, Public Health and Environment, Human Services, Public Safety and Judicial Branch to improve the accuracy and completeness of the database and ensure that safety designs are within CDOT guidelines. Public information and outreach activities are coordinated along with training and education services.

3.3.2. Method of Operation:

The Stewardship Agreement describes activities of the FHWA Division Office and CDOT in implementing the required safety program activities. These activities are required under the Highway Safety Improvement Program (HSIP) (23 USC 148), which encompasses the Strategic Highway Safety Plan, the Hazard Elimination Program (HES), the High Risk Rural Roads Program (HRRRP) and the Rail/Highway Crossing Program (23 USC 130), and the Safe Routes to School Program (SRTS) (Section 1404 SAFETEA-LU). Activities consist of components of planning, implementation, evaluation and reporting of safety programs and projects. The CDOT Safety and Traffic Engineering Branch is responsible for implementing and managing these programs, with the exception of the SRTS Program which is administered by the Division of Transportation Development (DTD). This involves safety program support for problem identification, design, construction, maintenance, and technical assistance for CDOT, FHWA, Federal Motor Carrier Safety Administration, National Highway Traffic Safety Administration, Federal Transit Administration, Federal Railroad Administration, and local governments.

3.3.3. CDOT Organization:

The CDOT Safety and Traffic Engineering Branch is split between Central Staff Offices, under the jurisdiction of the Safety and Traffic Engineering Branch Manager, and the six Regional Traffic Sections. The Region Traffic Sections are responsible for the development of safety project schedules and budgets, implementing the signing and striping activities, and work zone traffic control plan preparation. Central

Staff is primarily responsible for the design and standards for safety hardware devices used in construction projects, directing the safety assessment functions, assisting the Regions with the selection of safety projects, facilitating the Regions in the development of policies and procedures, providing and/or coordinating technical training and assistance, and overseeing the safety quality assurance effort. In addition, the Central Staff will administer the non-infrastructure safety programs in cooperation with the Regions and will prepare and administer the Colorado Integrated Safety Plan. The Safety and Traffic Engineering Branch Manager is responsible for developing an integrated safety plan which incorporates all safety program funding. This plan will identify the overall state safety objectives and the programs and resource allocations to be implemented annually to reach these objectives.

3.3.4. FHWA Organization:

The Colorado Division Safety and Traffic Operations Engineer works in conjunction with the CDOT Safety and Traffic Engineering Branch staff in the areas of safety and traffic operations. This involves promoting and providing guidance on new national initiatives for increasing safety, decreasing the potential for accidents on all highways, minimizing the number of serious injuries and reducing fatalities. The new Highway Safety Improvement Program established by SAFETEA-LU is a core program. The new core program provides funding to CDOT for the Hazard Elimination Program, Rail-Highway Grade Crossing Program, High Risk Rural Roads Program, and the Safe Routes to School Program. The FHWA has responsibility for approving the processes developed and set forth in CDOT's Highway Safety Improvement Plan. Additional FHWA responsibilities, which are delegated to CDOT, include offering assistance to local governments in performing traffic engineering studies, and providing training and technical assistance to CDOT employees, Bureau of Indian Affairs (BIA) personnel and local agency personnel.

3.3.5. NHTSA Organization:

The highway safety programs outlined in 23 CFR Part 1205 are eligible for federal funding under the State and Community Highway Safety Grant Program (23 U.S.C. 402). The Section 402 Safety Program is administered by NHTSA on the national level and by the Governor's Highway Safety Representative, (currently the CDOT Director of Staff Services) at the state level. Programs developed under these guidelines are eligible for federal funding issued by NHTSA and FHWA. NHTSA is responsible for the FHWA's portion of Section 402 that involves program oversight, eligibility, and administrative activities. The FHWA's role is to provide technical assistance and support when appropriate. The CDOT Safety and Traffic Engineering Branch is responsible for the day-to-day administration of this program. NHTSA is primarily responsible for approval of the statewide Integrated Safety Plan (ISP) for the Roadway Safety Program area of Section 402 and management and program reviews.

Table 5 - FHWA Required Action List (Safety, Traffic Operations, & ITS)

#	Activity	Authority	Action	Frequency	Responsible Manager
R = Review, A = Approve, C = Compliance					
S	<u>Safety</u>				
1.	Strategic Highway Safety Plan	SAFETEA-LU	R, C & A	Every 3 rd year	SPE
2.	Highway Safety Improvement Program, including HES Program, Safety Programs, High Risk Rural Roads Program, and 5% Reporting	23 CFR 924.15 SAFETEA-LU 23 USC 148	R, C & A process	Annually by Aug. 31	SPE
3.	Rail Highway Grade Crossing Program	23 USC 130	R C & A	Annually by Aug. 31	SPE
4.	Safe Routes to School Program	SAFETEA-LU 1404	R C & A	Annually by Aug. 31	SPE
5.	Work Zone Safety Process review of effectiveness	23 CFR 630.1010	R & A	Annually by Sept. 30	CDOT / SPE
6.	MUTCD Adoption and Colorado Supplement	23 CFR 655.603	R & A	Two years after MUTCD update is released	SPE
7.	Project crash data	23 CFR 630.1010	R	Continuous	CDOT / SPE & OE
8.	Seat belt law	23 CFR 1215.6	R	Annually (each fiscal year)	SPE
9.	Drug offender DL revocation or suspension certification by Governor	23 USC 159, 23 CFR 192.5	R & C	Annually by Jan 1	SPE
10.	Repeat Offender law	23 USC 164, 1406	C, A (if anything changes)	Annually by Oct. 30	SPE
11.	Zero tolerance law & enforcement certification	23 CFR 1210.5	R	Update as amended	SPE
M	<u>ITS/Traffic Operations</u>				
1.	Congestion management system	23 CFR 500.109	R for C	As needed/revised by MPO/State	ITSPM/ TOE
2.	Traffic surveillance and control	23 CFR 655.411	R for C	As needed w/PS&E submission (full oversight projects)	OE
3.	Work Zone Safety Assessment	---	R & A	Annually by June 1	SPE
4.	Incident Management Assessment	---	R & A	Annually by June 1	ITSPM

SPE - FHWA Safety Program Engineer;
NHTSA –NHTSA Safety Engr;
OE - FHWA Operation Engineers,
CDOT – CDOT Safety and Traffic
ITSPM - FHWA ITS/ program Manager
TOE - Traffic Operations Engineer

3.3.6. Quality:

Quality is ensured by CDOT through evaluation of safety cost effectiveness and/or valued derived from the safety programs and projects as measured by before-and-after accident conditions. The continuous quality improvements process of the Safety and Traffic Engineering Branch is used to prioritize limited funds to determine which initiatives have the greatest impact on highway safety in the areas of human factors (behavior) and engineering. The quality is enhanced through collaboration with others to include FHWA who provides technical assistance for the HSIP and individual projects. Quality is monitored through ongoing operations and the Regional and project oversight that consists of work zone traffic control reviews, scoping reviews, and Quality Assurance Reviews.

The processes of this program are documented in the 23 Code of Federal Regulations, CDOT procedural directives and policies, operational guidelines, etc. This information is shared with those that need to understand how the process operates. In addition, meetings are an integral and critical method of process and operational communications.

3.3.7. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the Safety Program:

1. Reduce the fatality rate.
Indicator: The fatality rate per 100 million VMT.
Reporting Instrument: Colorado Highway Safety Program Annual Report
Reporting Frequency: Annually
2. Reduce the alcohol related fatal crashes.
Indicator: The alcohol related fatal crashes by percentage of overall fatal crashes
Reporting Instrument: Colorado Highway Safety Program Annual Report
Reporting Frequency: Annually
3. Reduce the injury crash rate.
Indicator: The injury crash rate per million VMT
Reporting Instrument: Colorado Highway Safety Program Annual Report
Reporting Frequency: Annually
4. Increase statewide overall seat belt use.
Indicator: Percentage of overall population using seat belts.
Reporting Instrument: Seat Belt Survey Report
Reporting Frequency: Annually

Table 6 – Safety & Operations Actions and Outcomes

WORK ACTIVITY	CDOT ACTION	FHWA ACTION	OUTCOME
Strategic Highway Safety Plan	Prepare and submit to FHWA	Review, comment and approve	Strategic Highway Safety Plan
Colorado Integrated Safety Plan	Prepare and submit to FHWA	Review and comment	Colorado Integrated Safety Plan
Highway Safety Improvement Program Guidance	Prepare and submit (Update as needed)	Review, comment and approve	Highway Safety Improvement Program Guidance
Hazard Elimination and High Risk Rural Roads Programs	Prepare & submit selected projects (every 3rd year)	Review, comment and approve	Project Selection
Railroad-Highway Grade Crossing Program	Prepare & submit selected projects (Every 3rd year)	Review, comment and approve	Project Selection
Work Zone Safety Process Reviews	Prepare and submit to FHWA (annually)	Review and comment	Work Zone Safety Report
Adopt MUTCD and issue Colorado Supplement	Prepare & submit to FHWA (NLT 2 years after MUTCD update is released)	Review and comment	Colorado Supplement to the MUTCD

3.4. DESIGN AND CONSTRUCTION

3.4.1. Introduction:

The Colorado Department of Transportation (CDOT) Area Engineers Program is responsible for assisting the six CDOT Regions to maintain uniform administration and management practices in construction, design, and contract administration. In addition, the Area Engineers are responsible for providing technical assistance to the Regions and various local agencies.

3.4.2. Method of Operation:

The CDOT Area Engineers, of the Project Development Branch, and the Federal Highway Administration (FHWA) provide oversight, technical assistance, support, training, and quality assurance to the Region personnel to ensure uniformity of construction, design, and contract administration.

3.4.3. CDOT Organization:

Area Engineers:

Area Engineers are each assigned a portion of the State. The Area Engineer assignment is rotated so that each Resident Engineer has a different Area Engineer as assigned by CDOT branch managers. The Area Engineers are supported by Assistant Area Engineers.

CDOT Regions:

A Region Program Engineer is responsible for the overall design and construction program in part of each Region. The residencies in each Region report directly to a Region Program Engineer. Each residency is staffed by a Resident Engineer, Project Engineers, and other project personnel who are responsible for the day-to-day operations of the design and construction program.

3.4.4. FHWA Organization:

The Program Delivery Teams in the FHWA Colorado Division are responsible for design and construction oversight including: design, contract administration, contract changes, dispute resolution and claims, materials and pavements, specifications and quality assurance oversight. The teams consist of a Program Delivery Engineer Team Leader who has leadership responsibility for the team, Operations Engineers, and other Program Managers. The Operations Engineers on one of the Program Delivery Teams are the liaisons for Regions 1, 3, 4, and 6N; and the Operations Engineers on the other Program Delivery Team are the liaisons for Regions 2, 5, 6C and 6S.

Table 7 - FHWA Required Action List (Design & Construction)

#	Activity	Authority	Action	Frequency	Delegated To	
R = Review, A = Approve, C = Compliance						
DCM	<u>Design and Construction</u>					
FHWA assumes responsibility for the following on full-oversight projects and CDOT assumes responsibility on all other projects.						
					CDOT	FHWA
1.	Consultant Services	23 CFR 172.5	R & A	As needed	RE	OE
2.	Projects Near Airports	23 CFR 620.103	R	As requested	RE	OE
3.	Highway Facility Relinquishment	23 CFR 620.203	R & A	As needed	DA	DA
4.	Design Exception Request	23 CFR 625.3	R & A	As needed	RE	OE (PDTLs mainline Interstate)
5.	Plans, Specifications, & Estimates (PS&E)	23 CFR 630B, 23 CFR 633.102 23 USC 106	R & A	Project by project	RE	OE
6.	Competitive Bidding Exceptions (Force Account)	23 CFR 635.104, 23 USC 112, 23 CFR 635B	R & A	As requested	RE	OE
7.	Competitive Bidding Exceptions not defined by 23CFR635B	SEP 14 SEP 15	R & A	As requested	DA	DA
8.	Use of Public Owned Equipment	23 CFR 635.106	R & A	As needed	RE	OE
9.	Changed Conditions Changes and Extra Work Over \$250,000 Under \$250,000	23 CFR 635.109 23 CFR 635.120	R & A R & A	As needed As needed	RE RE	OE RE
10.	Concurrence in Award	23 CFR 635.114, 23 USC 112(d)	R & A	Project by project	RE	OE
11.	Liquidated Damage Rates	23 CFR 635.127	R & A	Every 2 years	PDTL	PDTL
12.	Claims Over \$250,000 Under \$250,000	23 CFR 635.124	R & A	As needed	RE RE	OE RE
13.	Statement of Materials and Labor (NHS projects of \$1 million or more) (form FHWA-47)	23 CFR 635.126	Periodically R for C (State prepares and submits to HQ)	Project by project	RE	RE
14.	Public Agency Furnished Material	23 CFR 635.407	R	As needed	RE	OE
15.	Warranties	23 CFR 635.413	R & A	As needed	RE	OE
16.	Utility Agreement	23 CFR 645.113	R & A	Project by project	RE	RE

#	Activity	Authority	Action	Frequency	Delegated To	
17.	Railroad Agreement	23 CFR 646.216	R & A	Project by project	RE	RE
18.	Construction Inspection	FAPG G 6042.8	R for C	As needed	RE	RE
19.	Project Agreements	23 CFR 630 Subpart C	A	As needed	RE	RE
20.	Convict Produced Material	23 CFR 635.417	R & A	As needed	RE	OE
21.	Patented/Proprietary Products (Project Level)	23 CFR 635.411	R & A	As needed	RE	OE
22.	Patented/Proprietary Products (Statewide)	23 CFR 635.411	R & A	As needed	OE	OE
23.	Authorization to Advertise - Construction (418)	23 CFR 635.309	R & A	Project by project	OE	OE
24.	Project Authorizations (418) Preconstruction	23 CFR 630.106	R & A	Project by project	OE	OE
25.	Advanced Construction (all projects)	23 CFR 630.705	R & A	As needed	OE	OE
26.	Payroll	23 CFR 635.118	R	As needed	RE	RE
27.	Termination of Contract	23 CFR 635.125	R & A	As needed	Chief Engineer	OE
28.	Buy America waiver (all projects)	23 CFR 635.410	R & A	As needed	DA	DA
Non-Project Specific Activities						
#	Activity	Authority	Action	Frequency	Delegated To	
29.	Contracting Procedures Consultant Selection	23 CFR 172.5	R & A	As updated	PDTL	PDTL
30.	Design Standards/ Standard Specifications	23 CFR 625	R & A	When changes occur	PDTL	PDTL
31.	Value Engineering (NHS and \$25 million or more)	23 CFR 627 and P.L. 104-59 Sec 303	R for C (State conducts study)	Project by project	RE	OE
32.	Year-end Value Engineering Rpt	FAPG G 6011.9	R & send to HQ	Annually by Nov. 30	PDTL	PDTL
33.	Local Public Agency Oversight Policies & procedures	FAPG 23 CFR 635.105	R & A	As updated	PDTL	PDTL
34.	Bid Opening/Tabulations	23 CFR 635.113	Periodically R for C (State takes)	Per letting	RE	RE
35.	Emergency Repair/Projects	23 CFR 635.204	R & A	As requested	SE	SE
35.	Utility Agreement Alternate Procedure	23 CFR 645.119	R & Accept	One time	PDTL	PDTL
36.	Utility Accommodation Policy	23 CFR 645.215	R & A	When changes occur	PDTL	PDTL
37.	Railroad Agreement Alternate Procedure	23 CFR 646.220	R & A	One time	PDTL	PDTL
38.	Defense Access Roads	23 CFR 660 Part E	R	As needed	OE	OE

OE - FHWA Operations Engineers,
RE - CDOT Resident Engineer;
DA - FHWA Division Administrator,
ADA - FHWA Assistant Division Administrator,
PDTL – FHWA Program Delivery Team Leaders,
SE – FHWA Structural Engineer

3.4.5. Quality:

CDOT and FHWA plan program-wide implementation of Quality Control (QC) and Quality Assurance (QA) activities.

The Area Engineers, FHWA Operation Engineers, and the Regions will cooperate to ensure that effective QC/QA procedures are established and carried out for design and construction activities.

Following are some of the cooperative QC/QA activities:

- Post Construction Reviews: Post Construction reviews will be conducted in 1/2 of the Regions each year. FHWA Operations Engineers will be invited to attend reviews on oversight projects.
- Inter-Region Reviews: Inter-Region reviews will be conducted in 1/2 of the Regions each year. The respective FHWA Operations Engineer will be invited to attend the reviews.
- Annual Residency Visits: The CDOT Area Engineers and FHWA Operations Engineers will meet annually with the Resident Engineers and their personnel. These Residency visits are intended to provide a valuable exchange of information and ideas between CDOT Project Development staff, FHWA and Region personnel. In addition, the reviews will help to improve the QC/QA function.
- Area Engineers/FHWA Program Delivery Team Leader Meetings: The Area Engineers and the FHWA Program Delivery Team Leaders will meet on a quarterly basis to discuss issues of mutual concern in the design and construction program.
- Resident Engineer Meetings: The Area Engineers and Operations Engineers attend and participate in these meetings when invited.
- Committees: The Area Engineers and FHWA will participate on the following committees:
 - Joint Colorado Contractor's Association/CDOT Specification Committee
 - Joint American Concrete Paving Association/CDOT Coop Committee
 - Joint Colorado Asphalt Paving Association/CDOT Coop Committee
 - Project Delivery Advisory Committee
 - Materials Advisory Committee
- Traffic Control Reviews: The Area Engineers and Operations Engineers will conduct annual traffic control reviews to monitor traffic control on construction projects to ensure conformance with established policies, procedures, and guidelines. The Area Engineers, with the support of the FHWA Safety Program Manager, will comply with Section 23 CFR 630.1010 (e) (1) which states that "the results of this review are to be forwarded to the FHWA Division Administrator for his review and approval of the highway agency's annual traffic safety effort.

- Quality Assurance Review Process: The Area Engineers and Operations Engineers will help to nominate and participate in Quality Assurance Reviews regarding topics of mutual interest. Annually, the CDOT/FHWA Quality Improvement Council selects and the CDOT/FHWA Quality Assurance Management Team approves a list of quality assurance reviews that will be conducted. Quality Assurance Review teams will review selected processes and submit reports that include recommendations for improving the quality of the project development processes.

CDOT documents its design and construction procedures through the Project Development, Construction, and Design manuals. These manuals are kept on the CDOT web page and are updated every five years. The Area Engineers prepare interim design and construction bulletins as necessary. In addition to being distributed manually, the bulletins are also on the CDOT web page. All employees have access to the manuals and the bulletins.

3.4.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the Design and Construction Programs:

1. Percent of projects with final construction costs > 10% of Engineers Estimate?

Indicator: % of projects with final construction costs > 10% of Engineers Estimate.

Reporting Instrument: CDOT Work Plan

Reporting Frequency: Annually

2. Percent of projects with final construction costs > 20% of Engineers Estimate?

Indicator: % of projects with final construction costs > 20% of Engineers Estimate.

Reporting Instrument: CDOT Work Plan

Reporting Frequency: Annually

3. Percent of projects with low bid within +/- 10% of Engineer's Estimate?

Indicator: % Percent of projects with low bid within +/- 10% of Engineer's Estimate.

Reporting Instrument: CDOT Work Plan

Reporting Frequency: Annually

4. Number of claims processed each year?

Indicator: Number of claims submitted.

Reporting Instrument: CDOT Work Plan

Reporting Frequency: Annually

5. Number of projects completed on-time?

Indicator: Number of projects completed on-time based on approved construction schedule.

Reporting Instrument: CDOT Work Plan

Reporting Frequency: Annually

3.5. Pavements and Materials

3.5.1. Introduction:

The Materials and Geotechnical Branch is responsible for ensuring quality in the products used for construction and maintenance of the transportation system. The Branch is responsible for the specifications, test procedures, and associated testing of materials to ensure compliance with CDOT standards and specifications and FHWA Regulations. The Programs in this Branch include Soils and Rockfall, Geotechnical Engineering, Concrete and Physical Properties, Asphalt Pavements, Pavement Management, and Pavement Design.

3.5.2. Method of Operation:

CDOT and FHWA will work together as partners to continually review the materials, pavement, and geotechnical programs, verify procedures, and provide solutions to identified problem areas. This working relationship requires teamwork across functional boundaries in FHWA and CDOT. The utilization of outside resources, such as industry groups and organizations, will be considered in this joint effort.

3.5.3. CDOT Organization:

1. Soils and Rockfall Program

The mission of the Soils and Rockfall Program is to perform prescriptive laboratory tests on soils according to established guidelines and procedures for CDOT, maintaining an AASHTO Materials Reference Laboratory (AMRL) accredited soils laboratory. The Soils and Rockfall Program consists of the Soils Laboratory and the Rockfall Engineering Unit.

The following are also performed:

- Provide support, review and project management for the development of design plans and specifications concerning soil and rockfall projects.
- Provide geologic hazards expertise by assessing safety, recommending mitigation alternatives and inspecting mitigation construction.
- Provide emergency geological service for CDOT projects.
- Update and administer the Rockfall Management Plan

2. Geotechnical Engineering Program

The mission of the Geotechnical Engineering Program is to provide geotechnical recommendations for the design, construction and maintenance of CDOT projects involving roadway cut and fill, bridge, retaining wall, and other transportation structure foundations

3. Concrete & Physical Properties Program

The mission of the Concrete and Physical Properties Program is to provide timely and accurate test results for concrete, aggregate, steel, and other construction and maintenance materials. This program provides

statewide Portland cement concrete coordination through engineering and technical expertise that will assist the Regions in the development of the Department's transportation system to meet the structural condition goals for bridges and the surface condition goals for pavement established by the Transportation Commission. This Program consists of the concrete and steel testing unit, the aggregate testing unit, the pavement deflection and smoothness testing unit, the radiation safety unit, chemical unit, and engineering support.

The primary products include review of concrete mix designs, production and quality assurance testing, and concrete design specifications for aggregates and concrete. Quality assurance of many materials listed as COC or pre-inspection is included.

4. Asphalt Program

The mission of the Asphalt Pavement Program is to provide timely and accurate asphalt mix and binder testing, ensure high quality of CDOT asphalt mix and binder testing statewide, and provide engineering and technical expertise in the development, selection, application, construction, testing and maintenance of asphalt mix and binder materials that will assist the Regions in the development of the Department's transportation system to meet the surface condition goals established by the Transportation Commission. The Asphalt Pavement Program consists of the Bituminous and European Laboratory, the Flexible Pavement Laboratory, and the Asphalt Engineering Unit.

Products of this program include production and assurance testing of asphalt mix and binder and the development of mix design specifications and testing procedures. They also include QA testing of binders, development of binder specifications, including performance-graded binders, and mix verification of European mix designs. In addition, specifications for Hot Bituminous Pavement (HBP) are reviewed and developed.

5. Pavement Management Program

The Pavement Management Program functions to implement the most cost effective surface treatment and pavement maintenance program possible. The primary function is to create planning tools to be utilized in development of the Department's transportation system such that it meets the surface condition goals established by the Transportation Commission.

The primary products and function of the Pavement Management Program include:

- Network level pavement management condition and funding recommendations
- Project level pavement management procedures
- Completion of the annual pavement surface condition survey and analysis of the results at both the network and region levels.
- Quality assurance of condition data collection.
- Provide project recommendations and report on percentage of projects constructed by Regions.
- Provide training relevant to pavement management and preventive maintenance.
- Provide technical expertise regarding improvements to procedures and policies relevant to pavement management.

6. Pavement Design Program

The mission of the Pavement Design Program is to give technical expertise in the development of pavement designs and statistical materials acceptance specifications, offer technical expertise to all appropriate personnel, and provide support to the statewide Materials program while being responsive to customer needs in a timely and professional manner.

The primary products of the Pavement Design Program include:

- Development of pavement design procedures
- QC&QA specification development
- Engineering software support
- QARs of pavement construction projects
- Pavement warranties
- Network level pavement management condition and funding scenarios
- Project level pavement management procedures
- Completion of the annual pavement surface condition survey and analysis of the results at both the system and project levels

7. Documentation Unit

The Documentation Unit is part of the Pavement Management and Design Program. It oversees and maintains AMRL and CCRL Certification Records for the Materials Branch. Also, this unit ensures compliance with AASHTO Designation R- 18 and updates and maintains the AASHTO Accreditation Program Quality System Manual. This Unit maintains the records of Certification for the Annual Region Laboratory Inspection of testing equipment and reviews the Assurance Sampling and Testing Program to assure compliance with Title 23, CFR, Part 637, Subpart B. It also provides materials documentation training and quality assurance review of materials documentation and final materials certification. This Unit is also responsible for publication and currency the CDOT Field Materials Manual, Pavement Design Manual, and the Laboratory Manual of Test Procedures.

3.5.4. FHWA Organization:

The FHWA Colorado Division has assigned two engineers the primary responsibilities associated with the stewardship and oversight of the Pavements and Materials program and Structural/Materials program. The Pavement/Operations Engineer is the lead contact for the following programs: Pavement Management and Design, and Asphalt Program. The Structural /Materials Engineer represent the Division with the following programs: Soil and Rockfall Programs, Geotechnical Engineering Program, Concrete and Physical Properties, and the Documentation unit. The FHWA Field Operations Engineers are responsible for working with these individuals on a project-by-project basis within the respective areas discussed above.

The Division will provide technical assistance to CDOT in the development of material and pavement specifications and providing quality assurance reviews of the programs.

Table 8 - FHWA Required Action list - Pavements and Materials

#	Activity	Authority	Action	Frequency	Delegated To
R = Review, A = Approve, C = Compliance					
PM	<u>Pavement & Materials</u>				
1.	Materials Acceptance	FAPG 23 CFR 637B	R & A	As updated	Pvmt. Engr
2.	Pavement Design Policy	23 CFR 626.3	R	As needed	Pvmt. Engr

Pvmt. Engr - FHWA Pavement Engineer

3.5.5. Quality:

The CDOT and FHWA individuals that are responsible for the materials and geotechnical engineering conduct a variety of activities to ensure quality control and assurance of these programs.

1. Training

Training programs have been developed for QC / QA software, pavement design and life cycle cost analysis, materials for managers, concrete paving inspection, and testing and documentation for the inexperienced. Additional training needs for maintenance and asphalt paving inspection have been identified and are under development.

2. Manuals

The primary manuals within the Branch include the Field Materials Manual, the Pavement Design Manual and the Laboratory Manual of Test Procedures, and the Pavement Management Manual. These manuals are updated annually and there is a regularly scheduled meeting each year to review the contents and update the materials within each manual. There are two other manuals, the Radiation Safety Manual and the Rockfall Manual, which are updated from time to time as needs exist, or approximately every three to five years.

3. Specification Development

In order to influence quality, the Materials Advisory Committee meets six times per year. The FHWA, CDOT HQ staff subject matter experts, and each Region Materials Engineer meet to discuss and resolve issues relating to specifications. As part of this effort, the Independent Assurance Testers and the Flexible Pavement Operators meet once or twice per year to identify and resolve issues that impact this program.

The CDOT and the FHWA meet four times per year with the Colorado Asphalt Pavement Association and the Colorado / Wyoming Chapter of the American Concrete Pavement Association. Specifications are updated and improved through partnering based on lessons learned from all of the parties.

4. Formal Quality Assurance Reviews

Quality Assurance reviews as part of the Stewardship Agreement with the FHWA are periodically conducted with HQ staff, the Regions, the FHWA, and industry representatives for concrete pavement, structural concrete, hot bituminous pavement, and geotechnical engineering.

There are also quality reviews conducted as part of the Chief Engineer's Objectives that include 15 post-construction reviews and six inter-Regional reviews.

5. Materials Acceptance

Material production of HBP in the Regions is measured by quality levels (QC / QA programs) and through the assurance-testing program.

6. Laboratory Accreditation

The Materials and Geotechnical Branch is an AASHTO accredited laboratory for tests relating to bitumen, asphalt mix, soils, concrete and physical properties.

7. Region Oversight

Every two years the CDOT Materials and Geotechnical Branch conducts quality reviews of each Region Materials Unit regarding their Independent Assurance Programs and the materials final certifications.

Every year the Branch conducts a quality review of each Region Materials Unit laboratory to ensure that equipment is calibrated and checked. Further, proficiency samples are tested annually by HQ and Region laboratories on soils, concrete and asphalt. The average test results and rating of each lab is reported.

8. Technician Certification

All technicians performing acceptance testing are required to be certified. Certification programs, approved by the FHWA, exist for asphalt, concrete, and soils. The administration of each certification program is the responsibility of CDOT partnering with CRMCA for concrete, CAGE for soils, and CAPA for asphalt. There are quality checks within each of the certification programs to ensure they are effective.

9. Pavement Management System

The Pavement Management Technical Committee meets six times a year to identify and resolve issues with the Pavement Management System. The condition reports and maps are provided each September to the Transportation Commission, and a list of recommended projects for overlays or reconstruction is provided by December. Differences in condition or project selection, as recommended by the Pavement Management System from that observed by the Region, are categorized and work is undertaken to resolve these differences. An annual report with all of the improvement made to the system is written and distributed.

3.5.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the Pavement and Materials Program:

1. Increase the percentage of resurfacing projects that were recommended as part of the Pavement Management Systems annual review.

Indicator: Percent of resurfacing projects that match recommendations of the Pavement Management System for each fiscal year.

Reporting Instrument: Pavement Management Systems work plan

Reporting Frequency: Annually by Fiscal Year

2. Increase the percentage of Roadside allocated funds expended for Rockfall.

Indicator: Percent of Roadside allocated funds expended for Rockfall.

Reporting Instrument: Pavement Management Systems work plan

Reporting Frequency: Annually by Fiscal Year

3. Increase the percentage of lane miles involved in preventive maintenance within each region.

Indicator: Percent of lane miles involved in preventive maintenance by region.

Reporting Instrument: Pavement Management Systems work plan

Reporting Frequency: Annually by Fiscal Year

FHWA's Performance Indicators

4. Percent of NHS pavements within Colorado with an IRI<95.

Indicator: Percent of NHS pavements within Colorado have a good ride quality as defined by an IRI< 95.

Reporting Instrument: Pavement Management System

Reporting Frequency: Annually by State Fiscal Year

3.6. Structures

3.6.1. Introduction:

The Structures program is responsible for working with the Regions to ensure structures are properly designed, constructed, and maintained throughout the State. Structures include: bridges, culverts that span over 20 feet, overhead sign structures, luminaries and traffic signal poles, retaining walls, and sound walls. The staff of the Structures program develops and publishes structural designs, policies and standards including construction specifications, and evaluates new products and materials for bridge construction. The Structures program provides vital services: bridge management and inspection, fabrication inspection, construction assistance, and bridge rating and bridge overloads.

3.6.2. Method of Operation:

FHWA will have full oversight on projects over \$1 million on the Interstate. CDOT will provide the FHWA Structural Engineer the following on full oversight projects: structure selection reports, Field Inspection Review (FIR) plans and Final Office Review (FOR) plans. CDOT project managers shall provide final PS&E plans for all of the above referenced bridges to the FHWA for review and information. Similarly, all discretionary bridge project plans will be treated in the same manner as Interstate Bridges. All Federal-aid bridge projects with change orders over \$250,000 to the original contract need to be submitted to FHWA for approval.

The FHWA will provide comments on any bridge at their discretion. The Bridge Design and Management Branch (Staff Bridge Branch) will provide written responses to any written FHWA comments. In the latter instance, the CDOT project manager will be copied, or, if requested by the project manager, responses to the FHWA will be sent through the project manager. Foundation and hydraulic reports will be made available to the FHWA. The FHWA will monitor these reports through participation on all CDOT QA and QC teams reviewing these activities. The QA process will monitor construction inspections on projects.

The National Bridge Inventory (NBI) program will be monitored on a continuing basis with an annual review of all phases of the program (inspections, bridge posting, consultant overview, etc.) and by random reviews as determined appropriate by the FHWA.

The FHWA Structural Engineer and CDOT Staff Bridge Engineer will meet on a regular basis to discuss input into all assigned programs. The FHWA Structural Engineer will participate in regularly scheduled staff meetings of the Branch at his discretion.

3.6.3. CDOT Organization:

The Staff Bridge Branch is responsible for the CDOT's policies on structure design and construction, bridge management and structural inspections. The Branch is responsible for load rating bridges, checking permits associated with 200,000 lb. and greater vehicles, providing structural design and consultant review services to the Regions, as well as engineering services when emergencies occur and bridge repairs are warranted.

The Staff Bridge Branch also provides assistance and expertise for the Regions' construction and maintenance related problems and provides panel members to participate with CDOT's Research group. Staff Bridge provides fabrication inspection of steel and precast members.

The Bridge Management Unit (BMU) maintains the NBI and PONTIS inventories. Information associated with the NBI and HBP activities are provided by the BMU to CDOT and FHWA. In addition, this unit is responsible for CDOT's bridge inspection teams, off system bridge inspection, bridge maintenance programming and tracking, and sign and traffic signal inspections in conjunction with the NBIS. Existing highway structures are inspected and evaluated for their integrity and rated for their load carrying capacity.

The Staff Bridge Engineer represents the State nationally and is active with the AASHTO Subcommittee with Bridges, an organization that maintains the national design standards and policy for bridges. Also, the Staff Bridge Engineer is an influential participant of other national organizations and initiatives; for example, the National Steel Bridge Alliance, Precast Concrete Institute and the High Performance Concrete initiative.

3.6.4. FHWA Organization:

The FHWA Structural Engineer provides the oversight of all CDOT bridge programs and activities. These activities include the NBI, HBP, the bridge management system, the preparation of project plans and specifications, the development of design and construction standards, as well as hydraulic, materials and geotechnical activities.

The FHWA Structural Engineer provides leadership, overall quality assurance, and technical assistance to CDOT and the FHWA Division.

Table 9 FHWA Required Action List - Structures

#	<u>Activity</u>	<u>Authority</u>	<u>Action</u>	<u>Frequency</u>	<u>Delegated to</u>
R = Review, A = Approve, C = Compliance					
<u>Bridge</u>					
1.	NBIS Review Statewide report	23 CFR 650 Subpart C	R for C	Annually (date determined by Division)	SE
2.	HBP Unit Cost submittal & NBI tape submittal	23 CFR 650 Subpart D	R & A	Annually by April 1	SE
3.	HBP eligibility determinations	23 CFR 650 Subpart D	R & A	Project by project	SE
4.	TS & L and PS&E reviews (non-exempt projects)	23 CFR 630, 23 USC 106, and W.O. 11/13/98 memo	R & A	Project by project	SE
5.	Innovative Bridge Research and Construction Program eligibility determination	23 USC 503(b)	R & A and submit to HQ	Annually (date varies)	SE
6.	Construction inspections	FAPG G 6042.8	R for C	As needed	SE

SE - FHWA Structural Engineer

3.6.5. Quality:

Staff Bridge provides and maintains several documents that are available to the public through the CDOT web page. The following manuals are available: “PONTIS Bridge Inspection Coding Guide,” “Colorado Coding Guide,” “CDOT Bridge Design Manual,” and “CDOT Bridge Detail Manual,” and “CDOT Bridge Rating Manual.”

The NBI and PONTIS data for all bridges is routinely reviewed for accuracy by CDOT’s BMU quality control inspector. Annually, FHWA and members of CDOT’s BMU will review at least twenty bridges, including local bridges, for accuracy of NBI and PONTIS data. FHWA will review inspection procedures and compliance of the NBIS and will report deficiencies to the Staff Bridge Engineer. In addition, the FHWA Structural Engineer will write an annual report.

CDOT’s BMU provides quality for the NBI tape submittal to FHWA HQ by running the NBI editor program annually and by reporting errors that are corrected by the BMU. The problems with the NBI editor that are identified by the BMU are reported to FHWA.

The annual bridge construction costs are submitted by the BMU to the FHWA Structural Engineer for review. FHWA will check costs for at least four bridges. Also with this submittal, FHWA will review unusual bids or award bids that are 15% over the Engineer’s cost estimate. Unusual bids or line items with significant cost increases will be reported to the Staff Bridge Engineer by FHWA.

CDOT and FHWA will select and participate in structural related QARs as prioritized by the QIC.

3.6.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the structures program:

1. Percent of bridges in good condition (based on deck area). Target 86%
Indicator: Percent of bridges in good condition?
Reporting Instrument: Staff Bridge Work Plan
Reporting Frequency: Annually by July 31st of each year
2. Percent of bridge construction projects using bridge program funds selected as recommended by the Bridge Management System (based on dollars). Target 100%
Indicator: Percent of bridge construction projects using bridge program funds selected as recommended by the Bridge Management System?
Reporting Instrument: Staff Bridge Work Plan
Reporting Frequency: Annually by July 31st of each year

3. Percent of critical bridge maintenance activities recommended by the Bridge Management System that have been completed. Target 100%
Indicator: Percent of critical bridge maintenance activities recommended by the Bridge Management System that have been completed.?
 Reporting Instrument: Staff Bridge Work Plan
 Reporting Frequency: Annually by July 31st of each year.

4. Percent of functionally obsolete structures (based on deck area). Current level 17.2%
Indicator: Percent of functionally obsolete structures (based on deck area)?
 Reporting Instrument: Staff Bridge Work Plan
 Reporting Frequency: Annually by July 31st of each year.

5. Percent of structurally deficient structures (based on deck area). Current level 5.9%
Indicator: Percent of structurally deficient structures (based on deck area)?
 Reporting Instrument: Staff Bridge Work Plan
 Reporting Frequency: Annually by July 31st of each year.

6. Percent of bridge expansion joint in condition state 1. Target > 69%
Indicator: Percent of bridge expansion joint in condition state 1?
 Reporting Instrument: Staff Bridge Work Plan
 Reporting Frequency: Annually by July 31st of each year.

7. Reduce the percent deck area for structurally deficient bridges on the National Highway System. Current level is 6.2 %
Indicator: Reduce the percent deck area for structurally deficient bridges on the NHS?
 Reporting Instrument: Staff Bridge Work Plan
 Reporting Frequency: Annually by July 31st of each year.

3.7. Maintenance & Operations

3.7.1. Introduction:

The CDOT has within the Central Office a Staff Maintenance and Operations Branch. In support of the Transportation Commission's stated Investment Categories of Program Delivery, Mobility, System Quality and Safety, the M&O Branch has two primary functions: 1) Providing policy and guidance for the state maintenance program, and 2) maintaining operational oversight for the administration of the maintenance program for the ten maintenance sections. The Branch Management will provide a liaison contact who will assist and oversee successful completion of the Methods of Operations.

3.7.2. Method of Operation:

The Staff Maintenance & Operations Branch and FHWA will assure that available resources are utilized effectively to assure compliance with federal requirements as defined in [23 CFR 635E](#).

3.7.3. CDOT Organization:

The Staff Maintenance and Operations Branch is comprised of a series of program areas that provide a broad variety of services and support to CDOT. The Staff Maintenance and Operations Branch program areas include:

- Occupational Safety and Health Office;
The office exists to develop and promote uniform safety policy and direction for the department and administer the boot program and CDL drug and alcohol testing program.
- Maintenance Training Academy;
The MTA exists to provide a standardized training curriculum to ensure minimum levels of core competency for new hires, existing maintenance workers and supervisors.
- Equipment Services;
The Equipment Services program exists to administer the acquisition, maintenance and replacement of equipment across the regions and increase the department's ability to purchase and maintain equipment at the lowest possible cost.
- Oversize/Overweight Permits;
The work unit exists to administer a statewide transport permit program for extra-legal vehicles and loads in order to protect the traveling public and the state's infrastructure.
- Maintenance Support and Levels of Service;
The MLOS/MMS program analyzes and prepares the statewide Maintenance budget recommendations based on analysis of the MLOS for the M&O Branch Mgr, EMT and Commission.

- **Property Management;**
This unit exists to provide a complete statewide Property Management System for all CDOT owned properties. This includes leasing, selling, trading, demolition of improvements, new construction, renovation, and hazardous/solid waste testing and cleanup. Provides professional services for management of all properties including clearing properties for highway construction.

- **Avalanche/Weed Control;**
These programs exist to support the Regions in avalanche management, explosives management, and to provide statewide expertise in noxious weed management. Serves as liaison between CDOT and the Colorado Avalanche Information Center and the US Army on contract related issues. Provide statewide explosive storage records depository by conducting audits and maintaining official files. Liaison between CDOT and the Colorado Dept of Agriculture State Noxious Weed Coordinator.

- **Maintenance Engineering;**
This support activity is responsible for Maintenance Specifications, Maintenance Contracting (Maintenance-Jobs), and liquid deicer materials testing.

3.7.4. FHWA Organization:

The FHWA Maintenance Program Manager is responsible for the Maintenance Program. The Program Manager will coordinate with the CDOT liaison to assure that all pertinent federal requirements are met. FHWA Operations Engineers will perform random field surveys of their CDOT Regions, visit with maintenance superintendents, and make note of issues and concerns that pertain to their respective operations areas.

3.7.5. Quality:

The Maintenance and Operations Branch utilizes the Maintenance Level of Service (MLOS) process that includes the annual review of 764 survey segments. In addition, the 764 segments are inspected real time during snow storms for levels of snow removal. This entire process develops and drives the CDOT maintenance budgets.

The Branch and FHWA will participate in a number of the 764 survey segments. In addition, they will conduct Quality Assurance Reviews of selected issues. Also, the FHWA Field Operations Engineers will review their CDOT Regions with respect to the following critical elements. The critical elements that should be reviewed are listed under 23 CFR 635.505. These include: roadway surfaces, shoulders, roadside (e.g. vegetation management, erosion control, and liter pick-up), drainage, bridges and tunnels, snow and ice control, traffic control devices, safety appurtenances (e.g. guardrails, impact attenuators, breakaway supports, barriers, etc.), safety rest areas, access control, and traffic safety in maintenance and utility work zones.

The Maintenance and Operations process is documented in the 1997 Manual of Maintenance Procedure and the Management of Maintenance Systems.

3.7.6. Performance/Compliance Indicators:

The following performance/compliance indicators will be used to assess the health of the Maintenance & Operations programs:

1. Ensure 100% of M&O employees have the minimum required work safety training.

Indicator: Percent of employees receiving new hire, existing employee, or supervisor training at the Maintenance Training Academy.

Reporting Instrument: Successful completion of training record from Maintenance Training Academy.

Reporting Frequency: Annually by September 1st.

2. Maintain the transportation system at the adopted annual MLOS grade.

Indicator: Utilize “Adopt A Highway”(AAH) program.

Reporting Instrument: Number of miles maintained annually by AAH program and other related programs.

Reporting Frequency: Annually by September 1st.

3. Maintain the snow and ice maintenance level of service grade at the adopted annual grade by ensuring 60% of material (salt/sand, mag chloride) is on hand by September 15th each year.

Indicator: Percent of material on hand Sept 15th annually.

Reporting Instrument: MLOS reporting

Reporting Frequency: Annually by September 1st.

4. Maintain or improve a diverse and qualified workforce that supports CDOT values.

Indicator: Develop and track maintenance work trainings for roadway activities.

Reporting Instrument: Maintenance Training Academy records management system.

Reporting Frequency: Annually by September 1st.

5. Maintain the equipment fleet per CDOT and manufacturer specifications.

Indicator: Manage and track equipment fleet from procurement to replacement of each vehicle including the life cycle maintenance work to protect and preserve the investment in the fleet.

Reporting Instrument:

Reporting Frequency: Annually by September 1st.

6. By 2007 develop a CDOT Homeland Security Plan.

Indicator: Finish and test CDOT Continuity of Operations Plan (COOP) prepare staff for catastrophic event which could close a work facility or region, including identifying and prioritizing vulnerable locations for terrorism activities. Seek Homeland Security grants for improvements of CDOT communications equipment and technology and response centers.

Reporting Instrument: COOP document and staff training.

Reporting Frequency: Annually by September 1st.

3.8. Intelligent Transportation System (ITS) Program

3.8.1. Introduction:

SAFETEA-LU established two major program areas regarding ITS. One is the Development of a National ITS Program Plan and the other is the development of a Real-Time System Management Plan. Regarding the National ITS Program Plan the legislation requires the following:

- that goals, objectives and timelines be developed in specified program/functional areas,
- specifies how funds used for operational tests are to be carried out,
- identifies how ongoing ITS research shall be conducted, Advisory Committee structure, representation and reporting,
- requires research regarding ITS vehicles and infrastructure systems,
- establishes priority areas and performance metrics,
- requires that applicable National Architecture and Standards be used,
- establishes a road weather research and development program,
- and establishes four centers of transportation excellence to support this program

Regarding the Real-Time Management Plan the legislation requires: the development of a real-time system management information program to provide traffic and travel conditions on major highways, and data exchange formats.

The overall purpose of the ITS program is to explore new technologies, applications and concepts that may enhance the intelligent transportation system through strategic alliances with other states, agencies and the private sector. In addition, this program is responsible for enhancing the environment for commercial and non-commercial vehicle operations using the State's transportation system. This is accomplished while meeting the goals of the ITS program, which are to improve safety, reduce traffic delays, increase the ITS system reliability, and enhance information covering mobility options.

The CDOT ITS program is organized into two major areas:

1. ITS Planning and Projects
2. Colorado Transportation Management Center (CTMC)

The overall purpose of ITS as a transportation application is to:

- Enhance and improve mobility by maximizing productivity and efficiency of the system through reduced travel time delay and variability and increased reliability.
- Improve safety by detecting, verifying, responding and clearing of incidents faster and by implementing incident management plans in order to more efficiently manage traffic during incidents.
- Enhance intermodal connectivity and inter-jurisdictional coordination by promoting and supporting integration of state and local ITS systems.

The ITS Planning and Projects area primarily focuses on strategic planning activities, development and delivery of strategic projects, and development of public-public and public-private partnerships, ensuring that ITS is incorporated into CDOT's business practices, standards and specifications, statewide policies, project delivery processes and the statewide transportation planning process. In the planning area, ITS performance measures are developed, monitored and evaluated in order to measure the efficiency and effectiveness regarding how specific ITS applications support the goals within CDOT's Investment Strategy categories. The Planning area proposes ITS research projects and reviews, evaluates and provides recommendations concerning other related ITS research proposals.

The CTMC program area is responsible for the dissemination of statewide traveler information. This function includes the management, operation and maintenance of numerous devices, networks and computers systems that comprise the ITS system in the state. The CTMC area is responsible for development of procedures, processes and protocols concerning dissemination of traveler information, which is done via the COTRIP website, HARs, IVR phone, faxes, DMSs, cell phones and coordination with other TMCs. The CTMC area assist in the development of all incident management plans for the purpose of managing traffic in a coordinated manner among pertinent jurisdictions during an incident. The CTMC area also performs operational functions remotely for local TMCs when their facilities are not staffed.

3.8.2. Method of Operation:

The ITS staffs of the CDOT and FHWA work closely together to develop a quality product through teamwork, coordination and implementation for advancing the ITS program. This working relationship allows us to meet the needs of our customers, provide technical assistance, and the guidance in applying federal laws and regulations, technology development and deployment, and oversight. These programs include the use of ITS in transportation, methods and procedures used by traffic engineers to manage the design of roads, operations, and procurement traffic control systems.

The ITS program coordination and oversight are maintained through weekly/monthly ITS technical managers meetings, an ITS steering committee, DRCOG Transportation Advisory Committee involving CDOT ITS staff and FHWA's ITS Program manager.

All ITS projects, except for some infrastructure-based ITS capital improvements, are full oversight. The ITS projects that CDOT may have oversight over are infrastructure-based ITS capital improvements that meet the following criteria:

- Estimated cost of the project is less than \$1 million;
- Uses existing FHWA approved Standards/Specifications; and
- New software will not need to be developed for the project.

3.8.3. FHWA Organization:

The FHWA ITS Program Manager leads the Division's efforts to mainstream ITS technology by continuing to increase the level of understanding of planners, engineers, officials and citizens within Colorado by providing awareness seminars, participation in ITS steering committees, and conducting or hosting technical training. In the Division, it is the responsibility of the ITS Program manager and the Operations

Engineers assigned to each of the six regional CDOT offices to provide close project management and coordination. The Operations Engineer will routinely review the ITS aspects of “full” oversight projects during the design and construction phases for conformance with approved standards, specifications, and procedures. Questions or concerns are brought to the ITS program manager’s attention. The Operations Engineers will rely on the ITS engineer for technical expertise or interpretation of ITS policy requirements.

The ITS Program manager will have the lead on all ITS funded projects. This responsibility will include project initiation, environmental clearances, design reviews, and periodic construction inspections. For oversight of ITS projects, it is important to distinguish and define what is an ITS type project. An ITS project is one which consists of advance technologies to control, manage, or otherwise provide guidance the transportation public. Examples include advanced traffic management systems, computerized traffic signal systems, advanced traveler information systems, etc.

Table 10 FHWA Required Actions List - ITS

#	Activity	Authority	Action	Frequency	Delegated To
R = Review, A = Approve, C = Compliance					
ITS	Intelligent Transportation Systems				
1.	Traffic Engineering and Analysis	23 CFR 940.11	R & A	Traffic surveillance and control system projects	OE
2.	Conformity with National ITS Architecture	23 CFR 940.5	R & A	ITS projects using Highway Trust	ITSPM
3.	ITS Deployment Program-Congressional Earmarks		R & A	As needed	OE
4.	ITS Regional Architecture	23 CFR 940.9	R & A	Project by project	ITSPM
5.	Project Administration - ITS	23 CFR 940.13	R & A	Project by project	OE
6.	ITS standards	23 CFR 940.11	R & A	Project by project	ITSPM

OE – FHWA Operation Engineer;

ITS P M – FHWA ITS Program Manager

3.8.4. Quality:

A substantial amount of ITS deployment and integration is being facilitated by federal participation through Congressional ITS discretionary earmarks. Partnership Agreements between CDOT and FHWA require adherence with federal processes, procedures, standards, specifications and reporting requirements. In addition, a task order (TO) process that identifies work plan, scheduling, budget, and required ITS architecture and standards, as it relates to each individual project in the earmark, has been established whereby FHWA reviews and approves to ensure compliance. FHWA participates in a technical managers meeting that tracks the project’s progress on a monthlybiweekly basis. This guarantees that the project is implemented in a manner that conforms to all requirements, thereby ensuring quality. FHWA participates in ITS Planning and Projects’ monthly team meetings. This ensures that FHWA is aware of, and appropriately involved in, all planning level related ITS activities. FHWA is also a member of the ITS Steering Committee, which develops policies and procedures in order to maintain the integrity and quality of the ITS program. The ITS Branch actively participates on the Quality Implementation Committee and

has recommended and conducted quality assurance reviews in ITS program and functional areas. FHWA also participates in four to five Traffic Engineer meetings per year that are attended withby the CDOT Region Traffic Engineers who are also responsible for ITS.

A description of the ITS Program can be found in the 5/22/076/15/2000 ITS Work Plan Performance Measures document.

3.8.5. Performance/Compliance Indicators:

The ITS Branch is directly responsible to report on the following six performance measures. These performance indicators will be used to assess the health of the ITS Program:

1. Percent of congested corridors ($v/c > 0.85$ on interstates and freeways) implemented with incident management plans.

Indicator: Percent of congested corridors ($v/c > 0.85$ on interstates and freeways) implemented with incident management plans.

Reporting Instrument: ITS Work Plan Performance Measures

Reporting Frequency: Annually by July of each year

2. Average response time between CDOT's notification of an incident to on-scene arrival of the courtesy patrol.

Indicator: Average response time between CDOT's notification of an incident to on-scene arrival of the courtesy patrol.

Reporting Instrument: ITS Work Plan Performance Measures

Reporting Frequency: Annually by July of each year

3. Percent of ITS devices meeting the targeted level of service.

Indicator: Percent of ITS devices meeting the targeted level of service.

Reporting Instrument: ITS Work Plan Performance Measures

Reporting Frequency: Annually by July of each year

4. Percent of identified congested corridors ($v/c > 0.85$ on interstates and freeways) with ramp metering implemented.

Indicator: Percent of identified congested corridors ($v/c > 0.85$ on interstates and freeways) with ramp metering implemented.

Reporting Instrument: ITS Work Plan Performance Measures

Reporting Frequency: Annually by July of each year

5. Percent of identified congested corridors (centerline miles at the > 0.85 level) where ITS solutions implemented.

Indicator: Percent of congested corridors ($v/c > 0.85$ on interstates and freeways) implemented with incident management plans.

Reporting Instrument: ITS Work Plan Performance Measures

Reporting Frequency: Annually by July of each year

3.9. Financial Management

3.9.1. Introduction:

Financial Management encompasses the entire Federal-aid program from the authorization to proceed with preliminary engineering through construction and debt retirement. Oversight is performed in the areas of accounting processes, both at the headquarters and regional business offices. Monitoring obligation limitation and discussions on federal aid financing tools available is provided in an advisory role. Review and input to the audits performed by and for the CDOT to ensure proper usage of Federal-aid funds.

3.9.2. Method of Operation:

FHWA and CDOT personnel maintain a cooperative working relationship in the administration and oversight of financial management. Communication and interaction between FHWA and CDOT occur routinely for the exchange of information, coordination of activities, and the resolution of issues in the financial management areas of Accounting, Budget, Audit, Obligation Control, Systems Integrity and Control and Process Reviews.

3.9.3. CDOT Organization:

The following organizations have a direct impact upon the financial operations and subsequent reviews of financial data processed through established automated systems.

The Division of Accounting and Finance is responsible for the development and coordination of the Statewide Transportation Improvement Program, the Department's Budget, the federal obligation process, and overall financial management of the Department's resources. They also provide for the payment of vendors and employees, billings of accounts receivable, transaction reviews and edits to assure accuracy and eligibility of expenditures, project expenditure reviews and subsequent closure, federal aid billing, and financial reporting.

The Division of Audit performs contract compliance audits of vendors, contractors and consultants doing business with CDOT. The Division also conducts performance audits of CDOT operations to assure that CDOT operations are effective, efficient and in compliance with rules and regulations. Audit is also evaluating the possible utilization of the FHWA Financial Integrity Review and Evaluation (FIRE) program risk assessment for performing an internal audit of the highest risk areas in a future work plan.

The State Auditors Office (SAO) performs annual financial audits to render an opinion on the financial condition of CDOT and compliance with FHWA and state requirements. Such audits are performed to comply with the requirements of the single audit. Audit emphasis areas are identified cooperatively with FHWA, CDOT and the SAO.

3.9.4. FHWA Organization:

FHWA provides the Federal-aid funds for highways and monitors usage of the funds with staff from the Division and National levels. FHWA staff also participates in Quality Assurance Reviews (QAR) and Quality Financial Management Initiatives (QFMI) of a Regional or National origin as appropriate. The FHWA Financial Integrity, Review and Evaluation, (FIRE) plan requires certain reviews be conducted. The review may be conducted solely by FHWA or in conjunction with CDOT. The primary FHWA financial support comes from the Division's Finance and Administration Team, which includes a Financial Manager, a Financial Specialist and a Financial Assistant.

Table 11 FHWA Required Actions List - Financial Management

#	<u>Activity</u>	<u>Authority</u>	<u>Action</u>	<u>Frequency</u>	<u>Delegated To</u>
R = Review, A = Approve, C = Compliance S = Submit					
FM	<u>Financial Management</u>				
1.	Project Agreements	23 CFR 630 Subpart C	Approve	As needed	FM, FS, FA
2.	Fed-aid billing reimbursement of eligible expenditures	23 CFR 140 and 635.122	R & A	As requested by CDOT	FM, FS, FA
3.	Transfer of funds as requested by State	23 USC 104 (c) and 119 (f)	R & A	As requested	FM
4.	Federal Managers Financial Integrity Act Assurance Statement	Congressional Act 1982	R & A	Annually by Oct. 1	FM
5.	Quality Financial Management Initiative (QFMI) and Quality Assurance Reviews (QAR)	Memo HFS-40, 12/01/97	Encourage	Continuous	FM
6.	State Infrastructure Bank Report	SIB Guidance 9/97 & Coop Agmt	R & S to HQ	Annually by Dec. 31	FM
7.	Annual Update of the Mega Project Financial Report	FHWA Financial Plan Guidance May 2000	R & S to HQ	Annually by Sept 30	FM
8.	FIRE – Management Decision Letter on SW Annual Audit findings if any	FIRE Order 4560.1a	R, C & S	Annually by June 1	FM
9.	FIRE – Grant Process Review	FIRE Order 4560.1a	R, C & S	Annually by June 1	FM, FS, FA
10.	FIRE – Inactive Projects Review	FIRE Order 4560.1a	R, C & S	Annually by June 1	FM, FS, FA

FM - Financial Manager,
FS - Financial Specialist, and a
FA - Financial Assistant.

3.9.5. Quality:

Successful financial management incorporates a series of processes adding value to the operation relative to available resources, time, and management philosophy. General emphasis areas include: improvements and enhancements to financial management systems and processes; assurances of compliance; improved control of funds; and adequate project management systems and reports. Quality control and assurance efforts embrace the philosophy of the National Quality Financial Management Initiatives.

The primary quality controls of the financial system are the edits and security that control the quality of outputs. Quality control efforts also consist of periodic process reviews conducted by selected staff from CDOT and/or single audit review. The reviews result in either an affirmation of the process or an

identification of potential areas for improvement. They also provide an opportunity for identifying training needs.

CDOT and FHWA are committed to working together to provide improvements and enhancements to Financial Management Systems and Processes to:

- Ensure the integrity of the financial management system and to maximize the use of federal and state funds.
- Revise and streamline the financial management system so that each process adds value to the operation and incorporates the best practice.
- Assist in the identification and prioritization of improvement efforts through the results of the quality control process reviews, internal audits, and regular single audit reviews conducted by the State Auditor's Office. CDOT management and FHWA both have input regarding audit emphasis areas.

The process is documented in the Office of Financial Management and Budget Policy and Procedure Manual, dated 3/14/2005. This will be updated to reflect changes in the organization and processes due to the implementation of SAP.

3.9.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the Financial Program

1. Determine the number of Design and/or Right of Way (ROW) projects that were paid for with federal funds and have not proceeded to the construction phase within the time limits in CFR 620.112(c)1 and 2.

- Indicator:**
- (1) To determine if there are any projects.
 - (2) If there are projects that have exceeded the time limit, but a reasonable justification is made by CDOT and FHWA approves, the reason will be documented with a projected construction date. Otherwise FHWA will be entitled to a credit for the federal funds expended on the project.
 - (3) Begin to move ahead by measuring projects at eight years for design and fifteen for ROW to ensure projects are constructed.

Reporting Instrument: FMIS (Fiscal Management Information System) and CDOT systems for projects authorized as part of the annual project.

Reporting Frequency: Annually by the end of August

Reporting Entity: FHWA and CDOT

2. Determine the percentage of projects authorized for construction this year that are carried out by local agencies or sub-grantees.

Indicator: To determine if there is a trend of the local agencies using a larger share of federal funds or if the local agencies are constructing an increased number of projects.

Reporting Instrument: SAP

Reporting Frequency: Annually by Sept 15

Reporting Entity: CDOT

3. Track the federal-aid dollars being reimbursed to CDOT by month

Indicator: To determine the health of SAP implementation.

Reporting Instrument: RASP (Rapid Approval and State Payment System)

Reporting Frequency: Monthly

Reporting Entity: FHWA

3.10. Planning

3.10.1. Introduction:

The Planning program includes both statewide and urban planning activities as described in this Section, as well as administration of FTA grants, which are not addressed in this agreement.

3.10.2. Method of Operation:

The CDOT and FHWA Stewardship Agreement objectives will be met through:

- The Quality Assurance Review (QAR) process
- Joint CDOT/FHWA reviews of the various Highway Performance Monitoring System (HPMS) data, traffic data, and various required statistical reports. The FHWA Headquarters office also runs the HPMS data through a program that reviews the data for errors. In addition, the FHWA conducts field reviews of the HPMS data.
- Joint CDOT/FHWA (may also include FTA and EPA) planning team reviews of MPO annual self-certifications. The team will contact each MPO to schedule reviews/discussions of work program emphasis areas.
- Semiannual meetings will be held between CDOT Planning Staff and FHWA to review CDOT's progress in meeting work objectives contained in the SP&R work program. Accomplishment reports will also be reviewed.
- Technical Assistance visits to MPOs and TPRs.

The overall determination as to the effectiveness of the stewardship program will be through a performance evaluation related to the timely production of the various documents, implementation of the plans, quality and timeliness of other products produced as a result of the work program. Timely review and approval of the administrative paperwork is necessary to authorize the program and to ensure the state's accountability as to the use of state and federal moneys.

3.10.3. CDOT Organization:

CDOT's planning program is authorized by State law and resides within the Division of Transportation Development (DTD), which was established by CDOT legislation. The activities of the Division are organized into four branches: information management, planning, environmental programs, and research. Products from the branches are produced by or directed throughout the Division of Transportation Development, with limited support from other Divisions and Regions in the Department.

CDOT administers and coordinates its regional and statewide planning through five MPOS, ten additional planning regions, two Indian Tribes and various federal land agencies. These planning entities develop long-range transportation plans, which are the basis for Colorado's Long Range Transportation Plan. The five MPOs develop transportation improvement programs and the rural planning regions participate in CDOT's Project Priority Programming Process to prioritize projects for the Statewide Transportation Improvement Program (STIP). The Statewide Long Range Transportation Plan and the STIP are approved by the CDOT Transportation Commission and the STIP is forwarded to FHWA/FTA for approval. The approved STIP is used as the framework for the annual budget approved by the Transportation

Commission. The activities to be accomplished by each Branch make up the framework of the annual Statewide Planning and Research (SP&R) work program. The program lists the objectives, budget, activities and products that will be accomplished by the Division.

At the MPO regional level, the FHWA and FTA funds are allocated on the basis of a formula agreed upon by CDOT and the five MPO's and the approval of a Unified Planning Work Program (UPWP) for each MPO. The accomplishment of each objective contained in the state and local programs requires numerous tasks to be performed on a daily, weekly, or monthly basis as identified in the UPWP. Responsibility for the daily task performance is with the state/local agency with the FHWA/FTA providing the necessary technical and program assistance.

The Transportation Planning Branch manages regional conformity/air quality issues. The Environmental Programs Branch in the Division of Transportation Development manages the project level conformity. All air quality/conformity activities are coordinated between the Environmental Programs Branch, the Division's Planning Branch, the CDOT Regions and other outside agencies.

3.10.4. FHWA Organization:

Within the Colorado Division, there is a Statewide Transportation Planner and an Urban Transportation Planner who are responsible for providing CDOT with technical assistance and oversight for all transportation planning and air quality activities. The planners are also responsible for route classification, highway statistics, and intermodal activities. Transportation planning responsibilities are broadly split between urban and statewide planning, although considerable overlap exists. The planners will be a part of the effort in the development of work activities produced by CDOT and the MPOs. In addition, the planners will provide guidance, suggestions, and written comments on draft documents, review and provide comments on final products and provide technical assistance to State and local agencies.

Table 12 - FHWA Required Actions List - Planning

#	Activity	Authority	Action	Frequency	Delegated To
R = Review, A = Approve, C = Compliance					
SP Statewide Planning					
1.	20 yr Statewide transportation plan	23 CFR 450.214	R for C	As updated	STP
2.	3 yr State Transportation Improvement Program (STIP) & amendments	23 CFR 450.216, 220	R & A w/ FTA	As requested by State (at least biennially)	STP
3.	SPR and PL funded work programs	23 CFR 420	R & A	Annually by May 15	STP
4.	SPL/PL program performance/expenditure reports	23 CFR 420.117(b)(1) & (c)	R for C and send to HQ	Annually by Sept. 30	STP
5.	State PL funds formula	23 CFR 420.109(a)	R & A	As needed or as revised by State	STP
6.	State certification of their planning process	23 CFR 450.220(a)	R for C	In conjunction with STIP approval (at least biennially)	STP
7.	Public involvement for State planning process	23 CFR 450.212	R for C	As needed or as revised by State	STP
8.	Functional classification of highways/streets	23 CFR 105(b)	R & A	As needed or as revised by State	STP
9.	Urban area boundaries	23 CFR 470.105(a)	R & A	As needed or as revised by State	STP
10.	Interstate additions & revisions	23 CFR 470.111, 115(a)	R & Recommend action to HQ	As requested by State	STP
11.	NHS revisions	23 CFR 470.113, 115(a)	R & Recommend action to HQ	As requested by State	STP
12.	Public Lands discretionary funds application	HQ memo soliciting applications	R & Recommend action to HQ	Periodic (usually annually, date varies)	STP
MP Metropolitan Planning					
1.	Unified Planning Work Program for Transportation Management Areas (TMA)	23 CFR 450.314(a)	R & A	Annually by May 15	MTP
2.	Transportation plan for non-attainment metropolitan areas	23 CFR 450.322	R & A	Every 3 yrs	MTP
3.	Transportation plan for attainment metropolitan areas	23 CFR 450.322	R for C	Every 5 yrs	MTP
4.	Transportation Improvement Program (TIP) and corollary STIP amendments for non-attainment areas	23 CFR 450.324 - 330(b)	R & A	As requested by State - at least biennially	MTP
5.	TIP and corollary STIP amendments for attainment areas	23 CFR 450.324 - 330(a)	R & A	As requested by State - at least biennially	MTP
6.	FHWA/FTA TMA planning certification	23 CFR 450.334	Conduct w/FTA	Every 3 yrs	MTP
7.	Metro planning area boundary changes	23 CFR 450.308	R for C	As needed/revised by MPO/State	MTP
8.	MPO/State certification of MPO planning process	23 CFR 450.334	R for C	In conjunction with TIP approval (at least biennially)	MTP
9.	Motor Fuel Tax (MFT) Evasion Project funds request	HQ memo soliciting applications	R & A	Periodic (usually annually)	MTP

STP – FHWA Statewide Transportation Planner
MTP – FHWA Metropolitan Transportation Planner
SE – FHWA Structural Engineer

Table 13 - Highway Information & Air Quality

#	Activity	Authority	Action	Frequency	Delegated To
R = Review, A = Approve, C = Compliance					
HI	Highway Information				
1.	Interstate system traffic volume review	10/24/95 HQ Memo	Conduct	Annually by Sept. 1	STP
2.	HPMS data submission	FHWA HPMS Field Manual	R for C (State sends direct to HQ w/copy to Div.)	Annually by June 15	STP
3.	HPMS data review	FHWA HPMS Field Manual	Conduct	Annually by Sept. 1	STP
4.	Highway statistics reports (various)	FHWA Guide to Reporting Highway Statistics	R for C (State sends direct to HQ w/copy to Div.)	Annually or biennially per FHWA guide	STP
5.	Highway taxes and fees report	HQ memo of request	R for C and send to HQ	Periodic (usually biennially)	STP
6.	Monthly fuel report (PR 511M)	Chapter 2 of FHWA Guide to Reporting Highway Statistics	R for C (State sends direct to HQ w/copy to Div.)	Monthly	STP
7.	Public road mileage certification	23 CFR 460.3 & FAPG NS 23 CFR 460	R for C and send to HQ	Annually by June 1	STP
8.	Traffic Monitoring System	23 CFR 500.203	R for C	As needed or revised by State	STP
9.	Heavy Vehicle Use Tax Payment Certification	23 CFR 669.7	R for C and send to HQ	Annually by July 1	STP
10.	Heavy Vehicle Use Tax Payment Review	23 CFR 669.21 & FAPG NS 23 CFR 669	Conduct	Every 3 years	STP
8.	Vehicle Size & Weight enforcement certification	23 CFR 657.13	R for C	Annually by Jan 1	SE
9.	Vehicle Size & Weight enforcement plan	23 CFR 657.11	R & A w/evaluation report	Annually by July 1, w/approval by Oct 1	SE
AQ	Air Quality				
1.	Transportation plan conformity determination for non-attainment areas	23 CFR 450.322(d)	R & A	Every 3 years	MTP
2.	TIP conformity determination for non-attainment	23 CFR 450.330(b)	R & A	Every 2 years	MTP
3.	CMAQ funds report	04/28/99 HQ CMAQ guidance memo	R for C and send to HQ	Annually by Feb 1	MTP
4.	CMAQ funds eligibility determination	04/28/99 HQ CMAQ guidance memo	R & A	As requested by State	MTP
5.	MPO/state air quality agency agreements	23 CFR 450.310(h)	R for C	As needed or revised by MPO/State	MTP

STP – FHWA Statewide Transportation Planner
MTP – FHWA Metropolitan Transportation Planner
SE – FHWA Structural Engineer

3.10.5. Quality:

Factors expected to improve and influence quality are:

- Level of public input into the planning process;
- Public acceptance of Long-range Transportation Plans (LRTP) and TIPS;
- Fiscally constrained plans, including accurate projections of revenues and expenditures;
- Air quality improvements through reduction of mobile source emissions; and
- Reduction of congestion through use of TCMs and TDMS.

Quality will be measured by the following:

- Acceptance of LRTP and TIPS by the public (realizing that it is impossible to get 100% public acceptance);
- Accuracy of HPMS, financial data and other transportation data collected and submitted - measured by number of resubmittals necessary;
- Timely submission of information;
- Limited number of revisions to the LRTPs and TIPS; and
- Demonstration of conformity to the applicable emissions budgets identified in the State Implementation Plan.

A joint CDOT/FHWA Quality Assurance Review (QAR) team will be established for review of planning, air quality and data collection activities in areas jointly selected. Reviews will be conducted of FHWA, CDOT and MPO activities as decided by the team. The QAR team will conduct the review and develop a report that will contain their recommendations, as well as positive and negative findings. The findings will be forwarded to Quality Improvement Council (QIC).

Documents for this process include: CDOT Metropolitan Planning Organization Guidance Manual (7/2001) and CDOT's Guidelines for Transportation Plan Amendments in the Regional and Statewide Transportation Planning Process (7/2001).

3.10.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the CDOT's Planning Program:

1. Amount of federal-aid funds obligated versus total available per fiscal year?
 - a. Note: Considering the STIP that was finalized in the 1st quarter of the federal fiscal year, what % of projects that were promised to go to construction in the new calendar year, actually went to construction that year?

Indicator: Percent of STIP projects advanced in the same year promised?

Reporting Instrument: DTD Planning Work Plan

Reporting Frequency: Annually by September 30th of each year

3.11. Research

3.11.1. Introduction:

The Research program includes activities related to transportation technology.

3.11.2. Method of Operation:

The role of FHWA is to conduct research of national focus and to transfer those technologies to state and local transportation agencies. The role of CDOT Research is to conduct research specific to state transportation needs and problems and to transfer technologies developed elsewhere into practice in Colorado. One important role is the evaluation of experimental features on construction projects where new products and methods used elsewhere have not yet been adopted as standards in Colorado.

3.11.3. CDOT Organization:

The Research, Development, and Technology Transfer program (RD&T) at CDOT is the responsibility of the Research Branch of the Division of Transportation Development. The Structures and Technology Applications Team will handle the Federal-aid operations of research and technology transfer activities.

The primary products are:

1. **Applied research:** The study of phenomena relating to a specific known need in connection with the functional characteristics of a system to answer a question or solve a problem.
2. **Development:** The translation of basic or applied research results into prototype materials, devices, techniques, or procedures for the practical solution of a specific problem in transportation.
3. **Technology Transfer:** Dissemination, demonstration, training, and other activities that lead to the eventual deployment of a new technique or product by the users.

3.11.4. FHWA Organization:

The FHWA Research Program Manager is the primary liaison for research related activities with the CDOT. The Manager will review final highway engineering related research reports produced by or for the CDOT to ensure Federal-aid funds are appropriately used. In addition, the Manager will serve on the CDOT Research Implementation Committee that is responsible for guiding and directing the research and development program. The Manager provides engineering expertise, leadership, and oversight of the Local Technical Assistance Program. Also, the Manager serves as the principal advisor to the CDOT on federal requirements for a variety of significant national studies on transportation needs.

Table 14 - FHWA Required Actions List - Research

#	Activity	Authority	Action	Frequency	Delegated To
R = Review, A = Approve, C = Compliance					
R	Research				
1.	SPR work program	23 CFR 420.111	R & A	Annually by June 30	R&T2 Engr.
2.	Experimental Project work plans	FHWA LTAP Field Manual	R & A	Project by project	R&T2 Engr.
3.	LTAP centers work plan and budget	FHWA LTAP Field Manual	R & A	Annually by March 31	R&T2 Engr.
4.	RD&T work program	23 CFR 420.209	R & A	Annually by June 30	R&T2 Engr.

R&T2 Engr. – FHWA Research Program Manager

3.11.5. Quality:

The purpose of RD&T at CDOT is to save Colorado money, time, and lives, and to improve the quality of life and environment through the development and deployment of new or innovative methods, products, or materials in the planning, design, construction, and operation of transportation. The ultimate measure of quality will be in how effectively this is accomplished. To meet this purpose, research must be timely, relevant and valid when applied to priority real-world problems. It must also be cost-effective, and accurately documented and disseminated. The technology must be appropriately transferred to the practitioner so as to be effectively utilized.

Quality is controlled in RD&T through oversight and review by experts and stakeholders. Oversight teams and the Research Council are used to focus the research program into priority areas with urgent problems to be solved. Research study panels composed of subject matter experts and practitioners looking forward to utilizing the research results are used in conjunction with each research study. A peer review of CDOT's research management process will be conducted every three years by researchers from other state DOTs after being trained in techniques for performing a peer review.

The FHWA and CDOT will also conduct QARs of the CDOT research process when necessary.

This process is documented in “Colorado Department of Transportation Research, Development, and Technology Transfer Procedures Manual” (June 28, 1995).

3.11.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the Research Program:

1. Percent of recommendations (i.e., spec changes, methodology changes, etc.) implemented or adopted within two years of final research report?
Indicator: Percent of recommendations implemented.
Reporting Instrument: Research Work Plan
Reporting Frequency: Annually by September 30th of each year

3.12. Civil Rights

3.12.1. Introduction:

The Civil Rights program is responsible for all activities relating to civil rights in CDOT and at the national level.

3.12.2. Method of Operation:

The Civil Rights programs are non-exempt under SAFETEA-LU; therefore, FHWA oversight continues. The Civil Rights Stewardship Agreement is a Quality Control and Quality Assurance (QA & QC) approach, which relies on joint FHWA/CDOT team reviews of program activities to accomplish oversight of the program. The plan shifts federal oversight from a project-by-project basis to a program level basis. Staff from CDOT's Center for Equal Opportunity work in partnership with each Regional Civil Rights Manager and with the FHWA Civil Rights Specialist to review, evaluate, and improve the CDOT's Civil Rights Programs.

Civil rights guarantees and programs are an integral part of all aspects of CDOT's on-going activities. The partnership between CDOT and FHWA continues to be an important part of ensuring compliance with the letter and spirit of laws and regulations.

3.12.3. CDOT Organization

Reporting directly to the Division Director for the Human Resources and Administration, the Center for Equal Opportunity provides direct services as well as program oversight. Program activities include:

- Title VI, Title VII, and ADA Program Implementation & Assessment
- Internal Civil Rights Programs
 - EEO compliance, training, and investigation
 - ADA compliance, training, and investigation
 - Sexual Harassment prevention and investigation
 - Diversity
 - Mediation
- External Civil Rights Programs
 - Disadvantaged Business Enterprise Program
 - DBE Supportive Services
 - Emerging Small Business Program (Race Neutral)
 - On-the-Job Training (OJT) Program
 - OJT Supportive Services
 - EEO/Contract Compliance (Direct responsibility in HQ Staff Services)
 - Indian Preference (Direct responsibility in Region 5 Civil Rights Office)

The primary products of CDOT’s Center for Equal Opportunity and Regional Civil Rights Offices are:

- Assurance that CDOT and its contractors are in compliance with all Civil Rights laws, regulations and directives
- Instruction, advice, technical assistance, and statistical/program monitoring in support of CDOT’s Civil Rights Programs
- Investigate complaints of discrimination under Title VII and ADA; Implement all external programs in the Regions. Provide Training in all areas of Title VII and ADA. Contract and labor compliance programs. Conduct contract compliance reviews, and regulate compliance with DBE program in CDOT Regions.

3.12.4. FHWA Organization:

The FHWA Colorado Division Office has the lead role in partnering with CDOT on all Civil Rights Program matters. The Civil Rights Specialist is the principle contact under this stewardship agreement. Division Office staff will coordinate all Civil Rights matters within their respective CDOT Regions or sections with the Civil Rights Specialist. The Civil Rights Specialist will immediately advise CDOT’s Center for Equal Opportunity to coordinate a plan of action on all Civil Rights issues not directly routed through the CDOT EO office.

The primary products of the FHWA Division Office include technical assistance, regulatory guidance and coordination of training from the Division Office, the Western Resource Center and the FHWA Headquarters.

Table 15 - FHWA Required Actions List - Civil Rights

#	Activity	Authority	Action	Frequency	Delegated To
R = Review, A = Approve, C = Compliance					
CR	<u>Civil Rights</u>				
1.	Title VI Plan accomplishments and next year's goals	23 CFR 200.9	R & A	Annually by Dec. 1	CRS
2.	Title VI Plan update	23 CFR 200.9	R & A	As needed or requested by State	CRS
3.	State internal EEO affirmative action plan (Title VII) accomplishments and goals	23 CFR 230.311	R & A	Annually by Dec. 1	CRS
4.	State internal EEO (Title VII) plan update	23 CFR 230.311	R & A	Annually by Dec. 1	CRS
5.	EEO Contract Compliance review reports (form FHWA 86)	23 CFR 230.409, 230.413	R & A	As submitted by State	CRS
6.	State Employment Practices Report (EEO-4)	23 CFR 230.313 (III) (B)	R for C and send to HQ	Annually by Aug. 1	CRS
7.	Uniform Report of DBE Awards or Commitments and Payments	49 CFR 26 Subpart C	R for C and send to HQ	Bi-annually by June 1 and Dec. 1	CRS
8.	Disadvantaged Business Enterprise (DBE) Program revisions	49 CFR 26.21(b)	R & A	As needed or as requested by State	CRS
9.	State's DBE program goals	49 CFR 26.41	R & A	Annually by Aug 1	CRS
10.	Supportive services funds requests	23 CFR 230.113	R & A	As requested by State	CRS
11.	Annual Contractor Employment Report (Construction Summary of Employment Data (form PR-1392))	23 CFR 230.121(a)	R for C and send to HQ	Annually by Sept 25	CRS

#	Activity	Authority	Action	Frequency	Delegated To
12.	Report on supportive services (On-the-Job Training (OJT) & DBE)	23 CFR 230.121(e)	R for C and send to HQ	Annually by Dec. 1	CRS
13.	OJT goals & accomplishments	23 CFR 230.111(b)	R for C	Annually by Jan 30	CRS
14.	Report on supportive services (OJT & DBE)	23 CFR 230.111, 113	R for C	Quarterly	CRS
15.	Historically Black College & University (HBCU) Report	Pres. Exec. Order 12876, dated Nov. 1, 1993	Prepare report & submit to HQ	Annually by Nov 15	CRS
16.	Americans with Disabilities Act Review complaint	Voluntary agreement with Justice Dept.	Conduct evaluation & correct or recommend action to HQ	As requested by HQ	CRS
17.	ADA Review CDOT's ADA Transition Plan	23 CFR 35.150	Conduct evaluation & correct or recommend action	Annually by Aug 1	CRS

CRS – FHWA Civil Rights Specialist

3.12.5. Quality - Initial measures of quality in the Civil Rights programs include:

- Achievement toward parity by underutilized groups (as defined in CDOT statistical reports) in both employment and contracting;
- Achievement toward overall, annual DBE goal;
- Numbers of DBEs receiving technical assistance, becoming prime contractors, and graduating from the program;
- Achievement toward overall, annual OJT goal;
- Numbers of trainees retained in positions after project completion;
- Numbers of discrimination complaints received and resolved;
- Numbers of contract compliance reviews completed; and
- Findings from Customer surveys (Internal & External)

The Center for Equal Opportunity is responsible for overall quality control in CDOT's Civil Rights Programs. Departmental Program Measures have been established and are monitored by this office. The Business Programs Office is responsible for reviewing DBE project goal commitments and, in cooperation with the Region, conducts Good Faith Efforts analyses and determinations prior to award. In addition, the office is responsible for implementing and monitoring CDOT's OJT Program. The Internal EEO Office Staff is responsible for EEO Complaint investigation for Headquarters Staff and works in cooperation with the Regional Civil Rights Offices to assist in regional complaints, as well as full responsibility for Title VI Implementation & Assurance. Finally, the Internal EEO Office is responsible for overall management and oversight of compliance with the ADA.

Regional Civil Rights Managers are responsible for quality control in Civil Rights programs at the project and regional level. Regional Civil Rights Managers set project specific DBE and OJT goals, conduct regional contract compliance reviews, ensure regional compliance with Civil Rights laws and regulations, investigate discrimination complaints in the region, and cooperate with the Center for Equal Opportunity to develop appropriate outreach activities.

The Staff Services Branch is responsible for quality control in EEO Contract Compliance.

Quality control is documented by various detail and summary reports made to the FHWA and Transportation Commission.

A Quality Assurance program is cooperatively conducted by FHWA and the Center for Equal Opportunity, with assistance from Staff Services and the Regions. Annually, in coordination with the Quality Improvement Council (QIC) and FHWA, the staff identifies program emphasis areas to review. The QAR team submits reports and makes recommendations for improving the program to the QIC. The frequency of these reviews is negotiated and agreed on by FHWA, the Center for Equal Opportunity, and the QIC.

The CDOT Civil Rights program is documented as follows:

- DBE processes – DBE Program Plan;
- OJT processes – OJT Colorado Program Plan;
- ADA processes – ADA Transition Plan
- Internal Civil Rights processes – CDOT’s Complaint Investigation Manual, Title VI Program Plan and various CDOT Policy and Procedural Directives; and
- Title VI processes – CDOT’s Title VI Program Plan.

The CDOT webpage provides information about the Civil Rights processes. The Civil Rights manuals and program plans are also available the external and internal customers.

Program Plans are updated as necessary when changes are made. For example, when changes were made to our retainage policy, appropriate changes were made to that section of our DBE Program Plan.

3.12.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the Civil Rights program:

Table 16 - Performance Measures

1. Meet or exceed the Department's annual Disadvantaged Business Enterprise (DBE) goals.	
Identify annual and project specific Federal DBE goals.	
Provide technical assistance and outreach to small and disadvantaged businesses to increase their competitiveness.	
Develop and improve CDOT contracting processes to assist small businesses and ensure compliance.	
	Targets
Percent of small and disadvantaged businesses that received technical assistance that were awarded CDOT projects	10%
Percent of subcontractors trained that were awarded CDOT projects	10%
Percent of DBE goal attained by type of project (i.e., maintenance, constructions, etc.).	100%
Establishment of a Business Opportunities & Workforce Development (BOWD) Center	October 2007

Table 17 - Performance Measures

2. Maintain a diverse and qualified workforce that supports CDOT values	
	Targets
Publish workforce utilization reports and present findings to Executive Management for review.	October 2007
Attend Job Fairs to promote employment at CDOT in Engineering and Maintenance.	3 per category per year
Review representation of women and other under –represented classes to determine need to recruiting.	October 2007
Develop proactive recruiting, promotion and retention strategies.	October 2007
Develop Career Counseling and Mentoring Program to encourage promotion and retention of women and other under-represented classes working at CDOT	October 2007
Identify and mitigate CDOT hiring and employment practices and barriers in order to prevent discrimination.	October 2007

Table 18 - Performance Measures

3. Promote and provide equal access to Transportation Improvements, Maintenance and Systems for all Colorado citizens.	
	Targets
Accept formal discrimination complaints and complete investigations	60 days after receipt
Conduct ADA accommodation request investigations	70+ days *
Complete an annual Title VI Review of CDOT programs for compliance with Title VI Implementation Plan	October 2007
Complete an annual ADA Transition Plan Review and report progress to CDOT Management & FHWA	October 2007
Conduct workshops to educate CDOT staff and Local Agencies on responsibilities under Title VI and ADA	3 per category per year
Identify and mitigate CDOT access practices and barriers in order to prevent discrimination.	October 2007

* Numerous factors can affect this target. Examples 1) An employee might be using short term disability benefits, which could cause the date to be moved farther into the future. 2) Workers’ Comp considerations may require that the process continue beyond the target. 3) Several other factors could affect meeting the target date.

3.13. Contracts and Market Analysis

3.13.1. Introduction:

The Contracts and Market Analysis Branch is responsible for preparing contracts for construction projects, professional consulting services, and intergovernmental agreements, engineering cost estimates for projects prior to bidding, bid collusion detection, materially unbalanced bid detection, labor and contract compliance, and SiteManager support. The Programs in this Branch include Agreements, Consultant Audit, Engineering Estimates and Market Analysis, and Programs and Project Analysis.

3.13.2. Method of Operation:

The agreements unit contracts for construction and professional services in accordance with applicable Federal rules and regulations. The Consultant Audit unit conducts audits prior to contracting for professional services to assure that the contract rates are fair and reasonable. The Engineering Estimates unit prepares project engineering cost estimates as required by federal regulations and monitors bidding activity for materially unbalanced bids and collusion. The Programs and Project Analysis unit monitors labor and subcontracting regulations to assure compliance statewide.

3.13.3. CDOT Organization:

1. Agreements

The Agreements program provides two different types of services – construction contracting and agreements. The construction contracting unit conducts the contracting process for construction projects including contractor prequalification, advertisement for bids, opening of paper and electronic bids, award and execution of the contract, and issuance of the notice to proceed once signed by the Chief Engineer. The agreements unit conducts the contracting process for professional services (engineers, architects, surveyors and industrial hygienists), including consultant prequalification, issuance of the RFP, facilitation of the selection process, contract negotiations, and execution of the contract. The agreements unit also processes intergovernmental agreements.

2. Consultant Audit

The Consultant Audit program reviews salary and overhead rates of consultants for reasonableness prior to issuance of a professional services contract. They also assist in the review of contractor prequalification submittals.

3. Engineering Estimates and Market Analysis (EEMA)

The EEMA program prepares engineering cost estimates of construction projects prior to bidding, performs materially unbalanced bid analysis and bid collusion analysis on submitted bids, and prepares cost estimates for added work on active construction projects.

4. Programs and Project Analysis

The Programs and Project Analysis program is responsible for user support for the SiteManager software used for construction project management, including training, technical assistance, and reporting. The program is also responsible for monitoring labor and subcontract compliance on construction projects, and for data compilation and EEO reporting for construction projects and for bid collusion detection analysis. Training is available, as needed, for contractors, construction personnel, consultants and local agencies in the areas of labor compliance and EEO.

3.13.4. FHWA Organization:

The Program Delivery Teams in the FHWA Colorado Division are responsible for contract administration, contract changes, dispute resolution and claims. The teams consist of a Program Delivery Engineer Team Leader who has leadership responsibility for the team, Operations Engineers, and other Program Managers. The Operations Engineers on one of the Program Delivery Teams are the liaisons for Regions 1, 3, 4, and 6N; and the Operations Engineers on the other Program Delivery Team are the liaisons for Regions 2, 5, 6C and 6S.

Table 19 - FHWA Required Action list - Contracts and Marketing

#	Activity	Authority	Action	Frequency	Delegated To	
R = Review, A = Approve, C = Compliance						
CM	<u>Contracts and Market Analysis</u>					
FHWA assumes responsibility for the following on full-oversight projects and CDOT assumes responsibility on all other projects.						
					CDOT	FHWA
1.	Competitive Bidding Exceptions	23 CFR 635.104, 23 USC 112	R & A	As requested	DA	DA
2.	Concurrence in Award	23 CFR 635.114, 23 USC 112(d)	R & A	Project by project	RE	OE
3.	Authorization to Advertise (all projects)	23 CFR 635.309	R & A	Project by project	OE	OE
4.	Addenda or Revisions under advertisement	23CFR 635.112(c)	R & A	Project by project	RE	OE
5.	Rejections of low bidder	23CFR 635.114(f)+(g)	R & A	Project by project	RE	OE
6.	Rejections of all bidders	23CFR 635.114(h)	R & A	Project by project	RE	OE
Non-Project Specific Activities						
7.	Contracting Procedures Consultant Selection	23 CFR 172.5	R & A	As updated	PDTL	PDTL
8.	Bid Opening/Tabulations	23 CFR 635.113	Periodically R for C (State takes action)	Per letting	RE	RE

OE - FHWA Operations Engineers,
RE - CDOT Resident Engineer,
DA - FHWA Division Administrator,
PDTL – FHWA Program Delivery Team Leaders

3.13.5. Quality:

The following elements are included:

- Audit of consultant overhead rates to assure rates are current and reasonable.
- Program quality reviews of construction contracts to assure compliance with FHWA 1273 and applicable specification.
- Review contract documents to assure proper form
- Training to the Regions
- Monitoring and reporting of Form 280, Employee Interview Form
- Compliance review overview
- Site Manager utilization reviews

3.13.6. Performance/Compliance Indicators:

The following performance indicators will be used to assess the health of the Contracts and Marketing program:

1. Percent of projects awarded within three weeks of bid opening (CDOT oversight and FHWA oversight).
Indicator: Percent of projects awarded within three weeks of bid opening?
Reporting Instrument: Contracts and Marketing Work Plan
Reporting Frequency: Annually by September 30th of each year
2. Percent of project contracts completed within 17 weeks.
Indicator: Percent of project contracts completed within 17 weeks?
Reporting Instrument: Contracts and Marketing Work Plan
Reporting Frequency: Annually by September 30th of each year
3. Percent consultant selections completed within 17 weeks.
Indicator: Percent consultant selections completed within 17 weeks?
Reporting Instrument: Contracts and Marketing Work Plan
Reporting Frequency: Annually by September 30th of each year
4. Percent consultant audits completed within 14 days for new consultant selections and within 8 days for revisions.
Indicator: Percent consultant audits completed within 14 days for new consultant selections and within 8 days for revisions?
Reporting Instrument: Contracts and Marketing Work Plan
Reporting Frequency: Annually by September 30th of each year
5. Percent engineering estimates within +/- 10% of low bid on projects over \$250,000
Indicator: Percent engineering estimates within +/- 10% of low bid on projects over \$250,000?
Reporting Instrument: Contracts and Marketing Work Plan
Reporting Frequency: Annually by September 30th of each year.

End Section 3

GLOSSARY

3R Projects - Resurfacing, Rehabilitation and Restoration

Control Document – Applicable standards, policies, and standard specifications that are acceptable to FHWA for application in the geometric and structural design of highways.

Core Functions – Activities that make up the main elements of the Division’s Federal-aid oversight responsibilities based on regulations and national policies. Core functions in the Division Office are Planning, Environment, Right-of-Way, Design, Construction, Finance, Operations, System Preservation, Safety, and Civil Rights.

Delegated Projects – Projects that do not require FHWA to review and approve actions pertaining to design, plans, specifications, estimates, right-of-way certification statements, contract awards, inspections, and final acceptance of Federal-aid projects on a project by project basis.

Emergency Relief Projects – The Emergency Relief (ER) program assists State and local governments with the expense of repairing serious damage to Federal-aid highways and roads on Federal Lands resulting from natural disasters or catastrophic failures. In addition to the permanent authorization of \$100 million annually, SAFETEA-LU authorizes such sums as may be necessary to be made available by appropriation from the General Fund to supplement the permanent authorization in years when Emergency Relief allocations exceed \$100 million. [1112]

Full Oversight Projects – Projects that require FHWA to review and approve actions pertaining to design, plans, specifications, estimates, right-of-way certification statements, contract awards, inspections, and final acceptance of Federal-aid projects on a project by project basis.

Major Projects – Projects with an estimated total cost greater than \$500 million, or projects approaching \$500 million with a high level of interest by the public, Congress, or the Administration.

Major Bridges - Major bridges are defined in the policy of FHWA Order 5520.1 "Preliminary Plan Review and Approval" and should have preliminary plan approval by FHWA. Examples of special features meeting major bridge project criteria are:

- Bridges with approximately (125,000 sq. ft.) deck area
- Bridge span of 152.4 in (500 ft) or greater
- Bridges utilizing high-strength steel or concrete or special materials
- Unusual bridge types, e.g., arches and trusses
- Tunnels and unusually high cuts or high fills
- Major hydraulic structures

Oversight – The act of ensuring that the Federal highway program is delivered consistent with laws, regulations and policies.

Performance/Compliance Indicators – These indicators track performance trends, health of the Federal-aid Highway Program, and compliance with Federal requirements.

Risk Management – The systematic identification, assessment, planning, and management of threats and opportunities faced by FHWA projects and programs.

Stewardship – The efficient and effective management of the public funds that have been entrusted to the FHWA.

ISTEA, TEA-21, and SAFETEA-LU - The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 was a six-year federal transportation funding law that took effect in 1991. ISTEA provided \$155 billion for highways, highway safety and transit for fiscal years 1992 through 1997. The Transportation Equity Act for the 21st Century (TEA-21) is a six-year extension of ISTEA providing a 40-percent increase in transportation funding for fiscal years 1998 through 2003. The Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users guaranteed \$244.1 billion for highways, highway safety, and public transportation. SAFETEA-LU represents the largest surface transportation investment in our Nation's history. These acts have given states increased flexibility in establishing the degree to which FHWA will be involved in the development of Federal-Aid Highway Program (FAHP).