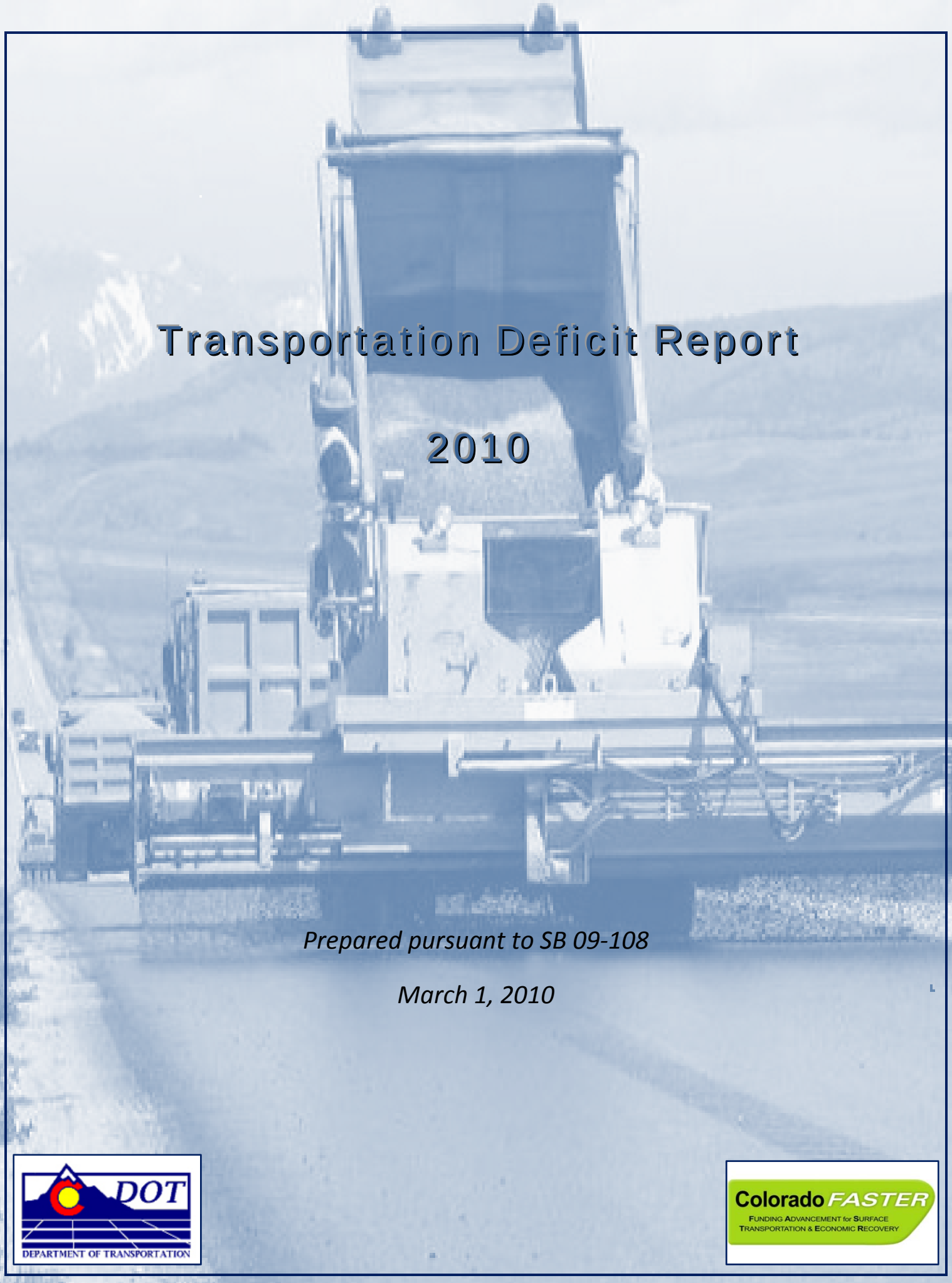


Transportation Deficit Report

2010

Prepared pursuant to SB 09-108

March 1, 2010

DEPARTMENT OF TRANSPORTATION

Colorado FASTER
FUNDING ADVANCEMENT for SURFACE TRANSPORTATION & ECONOMIC RECOVERY

Overview

Pursuant to §43-4-813, C.R.S. 2009, the Colorado Department of Transportation (CDOT) hereby delivers its annual Transportation Deficit Report for 2010. Under the guidelines set forth in the enabling legislation – the Funding Advancements for Surface Transportation and Economic Recovery Act (FASTER) – this report addresses the goals of:

- Repairing deficient highways and bridges; and
- Sustaining existing transportation system performance levels.

For each of the above goals, the report includes the following:

- Estimated costs (and resulting deficits) of achieving the goal within the next 10 years;
- Estimated costs (and deficits) of achieving the corridor vision within the next 10 years;
- Annual increase and rate of increase of this cost; and
- Factors contributing to the costs including rate/distribution of population growth, vehicle size and weight, land use policies, and work patterns.

Additionally, this report presents (1) some of the department's suggested methods for reducing the impact of the factors contributing to costs and (2) a discussion on mitigating these factors and/or achieving these goals. It incorporates FY 2011 programmatic budgets and projected performance as approved by the Transportation Commission last October prior to budget submittal to the Governor's office. Though forecasts for any one of the department's revenue sources may change at various times throughout the year and though costs change regularly, the system's performance is projected primarily in conjunction with annual budget development.

In developing the FY 2011 budget proposal, CDOT relied on revenue forecasts available at that time. With regard to FASTER receipts, CDOT projects to receive $165.6 million in additional revenue from the new fees and surcharges in FY 2011. Of this, $74.2 million will be from the road safety fee on vehicle registrations, $71.8 million will be from the bridge safety fee on vehicle registrations, and $14.6 million will be from the daily vehicle rental fee, overweight and oversize vehicle permit fee surcharges, and fees and fines on late vehicle registrations. Five million dollars will be from HUTF local government apportionments for transit purposes. With the exception of $5 million for transit, these figures can change with each quarterly forecast from the Office of State Planning and Budget and are now less than those used for FY 2011 budget development.

In reviewing this report, one should note that investments – or lack thereof – in a given year may not instantly result in a change in performance or deficit. Neglecting surface treatment of newer road segments, for example, may not noticeably deteriorate those segments this year. But this year's neglect will result in more rapid deterioration over time and more costly reconstruction years from now. Additionally, though statute requires only that CDOT project costs and not revenues, statute refers to this report as a "Deficit Report." This year's graphs therefore depict not only costs needed to sustain current levels and to achieve goals and corridor visions, but also project revenues by program and hence provide the projected deficit within each graph.

Update

Since publication of the 2009 Transportation Deficit Report, several events and revised projections have impacted both revenue and cost forecasts for the state's transportation system, with both positive and negative effects.

- The American Reinvestment and Recovery Act (ARRA) provided to CDOT a one-time influx of about $385 million of funds for highways, $19 million flexed through the Denver Regional Council of Governments to the Regional Transportation District, and another $12 million for rural transit agencies. CDOT met the March 1 2010 deadline for having 100% of these funds obligated.
- Projections for FASTER revenues have been revised downward. Legislative Council's December 18, 2009 *Economic and Revenue Forecast* reduced FASTER revenue projections by $13.6 million below its prior forecast.
- After rising rapidly through mid-2008, construction costs as measured by the Colorado Construction Cost Index dropped sharply – by approximately 25% – from the fourth quarter of calendar year 2008 (index 330.1) through the third quarter of 2009 (246.8).
- The department has prepared a list of ready-to-go projects in anticipation of passage of a job stimulus package such as that proposed within HIRE, the Hiring Incentives to Restore Employment Act.

Additionally, as this report is being released, departments of transportation across the country await the outcome of the February 28th expiration of the continuing resolution (i.e. temporary extension) of SAFETEA-LU, the federal transportation authorization bill that first expired in September 2009. Uncertainty over passage of a new authorization with obligations sufficient to fund it has dictated that CDOT make certain assumptions for future federal highway trust fund revenues. Those assumptions will accompany revised state transportation revenue forecasts that will be passed by the Transportation Commission in the coming months in preparation for a spring 2011 statewide transportation improvement program (STIP) adoption and statewide long range transportation plan amendment. CDOT has recently developed a comprehensive revenue forecasting model to assist with these projections.

Table of Contents

Repairing Highways

The department's Surface Treatment Program maintains approximately 23,000 lane miles of the state highway system. The Transportation Commission endeavors to preserve 60% of this system in good or fair condition, recognizing that resources cannot practically support a significantly higher performance. After peaking at 65% good/fair condition in 2005, the state's paved highway condition has regressed annually as declining program budgets and rising resurfacing costs have contributed to system-wide deterioration. The program concluded FY 2009 with a 50% good/fair condition.

Though asphalt costs have declined from recent peaks with the drop in petroleum prices, the program's outlook has not improved over the prior year. The current year (FY 2010) is projected to finish with a 46% good/fair condition.

The Transportation Commission has preliminarily allocated $101.0 million in FY 2011 to the Surface Treatment Program (plus $4.9 million transferred to the Maintenance program for surface work). The Transportation Commission has also allocated $4.9 million in Safety Surface Treatment funds, to garner efficiencies by performing necessary safety work in conjunction with surface treatment work. This funding level is forecasted to result in a 43% good/fair condition for FY 2011. While several ARRA projects included surface treatment elements, those funds did not compensate for a prolonged shortfall of pavement funding. These types of projects helped retard the decline of the system, but the funding streams were not adequate to make a measurable difference in a single year on the system's long-term condition. To make a measurable difference that can be identified and tied directly to one source of funding, the funding would need to be significant and consistent over many years.

The Transportation Commission's decision to maintain different components of the system at different performance levels is one result of insufficient funding. Commission goals and FY 2009 performance levels, as most recently resolved in October 2009, are depicted in Figure 1.

How CDOT Rates its Highways

CDOT evaluates the condition of highway pavement based on how many years of service life remain before reconstruction is the only economically viable option. A rating of good means there is a Remaining Service Life (RSL) of more than 11 years; a fair rating indicates RSL of 6 to 10 years and a poor evaluation represents RSL of less than 6 years. There are a number of poor-rated highways that have RSL 0, meaning the highway has no remaining service life. A poor highway segment is one that has a compromised base or sub-base. In this case, the only remaining economically viable option is major rehabilitation or complete reconstruction. Major rehabilitation and reconstruction costs 10 to 20 times more per lane mile, depending on variables, than pavement preservation treatment applied to a road still in good or fair condition. The value of a roadway treatment is measured by the ratio of relative cost to the relative years of service that the treatment adds to the roadway. The relative value of pavement preservation treatments is approximately three to four times greater than a major rehabilitation or reconstruction. CDOT obtains a better return on investment when it systematically maintains roadways. The primary measure of pavement quality is the percent of pavement statewide that is in good or fair condition.

Figure 1

2009 Statewide Pavement Condition by Category

State highway category	TC Goal % G/F	FY 2009 Condition % G/F
Network	60	50
Interstate	85	65
Nat'l hwy system non-interstate	70	64
Other	55	37

Cost of Sustaining the Current Condition over Next 10 Years

The cost to sustain the current condition of 50% Good/Fair over the next 10 years is approximately $5.5 billion, thus requiring an *average* annual budget of $550 million. The projected revenue over that time period is approximately $1.7 billion or an average of $170 million per year. The deficit, therefore, is $3.8 billion or $380 million annually. See Figure 2A.

Cost of Achieving the Goal over Next 10 Years

The cost to achieve the goal of 60% Good/Fair within 10 years is approximately $6.7 billion, thus requiring an average annual budget of approximately $670 million. Against projected revenue, this forecasts a 10-year deficit of approximately $5 billion or an average of $500 million annually. See Figure 2B.

Cost of Achieving the Corridor Vision over Next 10 Years

The cost to achieve the corridor vision of 75% Good/Fair within 10 years is approximately $10.0 billion, requiring an annual budget of approximately $1 billion. Against projected revenue, this forecasts a 10-year deficit of approximately $8.3 billion or an average of $830 million annually. See Figure 2C.

Annual Increase and Rate of Increase of this Cost

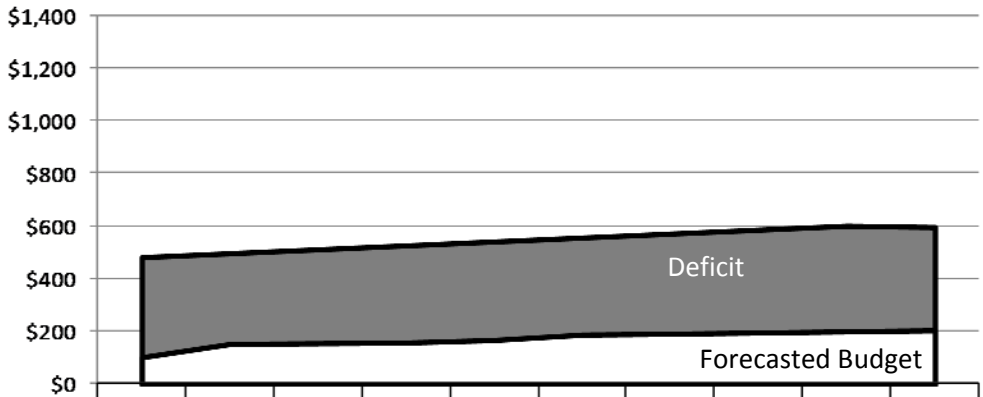
Costs to sustain the current condition and costs of achieving the goal of 60% within the next 10 years remain mostly unchanged from the 2009 Transportation Deficit Report. Raw material prices stabilized during the recession. The inventory of lane miles did not change significantly. The degradation of the system in one year's time did not alter the 10-year projected cost of holding the system at its new baseline. The cost of restoring the pavement to 60% in a decade also did not increase significantly, due in part to the asset management system's ability to find funding efficiencies in smaller increments.

The projected cost of achieving the corridor vision, however, increased significantly in later years due to the accumulated impact of allowing the Surface Treatment Program to drift further and further away from the lofty vision of 75%. This cumulative effect is the driver for a cost escalation greater than 5% above last year's report. To the extent FASTER-Safety projects contain a surface treatment component, they will incrementally contribute to the efforts to sustain the condition.

The Pavement Management Model used for projecting future conditions assumes an annual inflation rate of 3.5%. The cost projections for the 60% and 75% conditions tail off in later years as the system achieves a "steady state" that costs less to maintain because roads are repaired before they require reconstruction.

Figure 2A

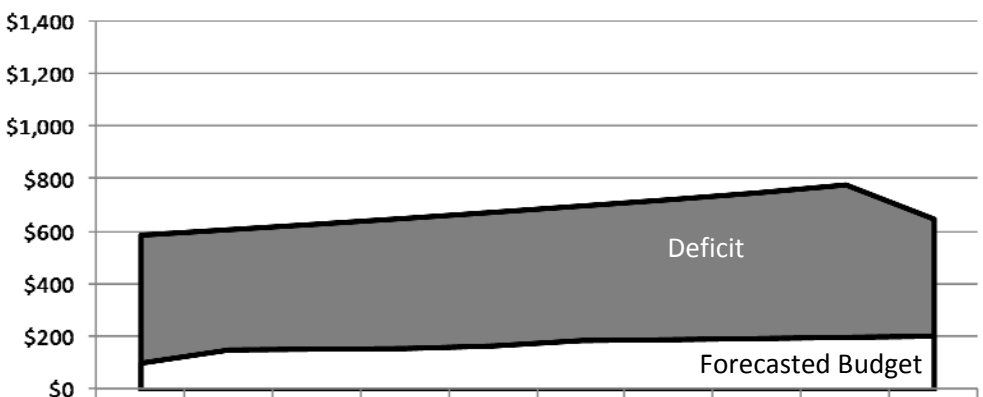
Cost of Sustaining the Current Pavement Condition (50%)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sustain 2009 Condition (50%)	$485	$500	$515	$530	$545	$560	$575	$590	$605	$600
Forecasted Budget	$102	$152	$155	$157	$167	$187	$191	$195	$200	$204
Deficit	$383	$348	$360	$373	$378	$373	$384	$395	$405	$396

Figure 2B

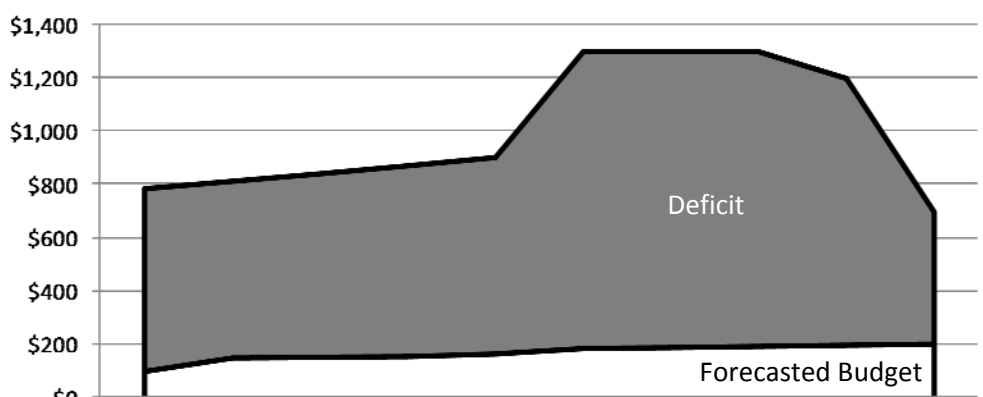
Cost of Achieving Pavement Condition Goal (60%)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Achieve Goal (60%)	$589	$610	$631	$653	$676	$700	$724	$750	$780	$650
Forecasted Budget	$102	$152	$155	$157	$167	$187	$191	$195	$200	$204
Deficit	$487	$458	$476	$496	$509	$513	$533	$555	$580	$446

Figure 2C

Cost of Achieving Pavement Condition Vision (75%)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Achieve Vision (75%)	$787	$815	$843	$873	$904	$1,300	$1,300	$1,300	$1,200	$700
Forecasted Budget	$102	$152	$155	$157	$167	$187	$191	$195	$200	$204
Deficit	$685	$663	$688	$716	$737	$1,113	$1,109	$1,105	$1,000	$496

Factors Contributing to the Costs

Pavement costs are driven largely by the costs and available supply of portland cement, asphalt binder, and aggregates. Asphalt binder prices fluctuate greatly, and are somewhat correlated to petroleum prices. Recent changes or upgrades at oil refineries have decreased the amount of oil which is economically viable to convert to asphalt binder. Other factors, such as competition, also impact resurfacing and reconstruction of the state's highway system. The economic downturn in FY 2009 was a benefit to the Surface Treatment Program. Most of the projects that were advertised came in at or below the projected budget, thus enabling delivery of additional projects or increased scope on awarded projects. Intense competition among suppliers and contractors for CDOT projects in 2010 led some contractors to "buy" projects just to keep equipment and staff from going idle or being laid off. A continued economic downturn may force some of the competition out of the market, and this may lead to higher costs in the future when the economy recovers as government agencies vie with one another and with private development for contractors to bid their work.

Population Growth and Distribution. A growing population translates to increased Average Daily Traffic (ADT) on state highways and increased wear and tear on pavement surfaces. The State Demographer projects 1.8% annual population growth and CDOT's new revenue model projects 2.7% annual growth of vehicle miles traveled (VMT) in Colorado over the 10-year period examined. According to U.S. Census Bureau estimates, Colorado's 2009 population growth of 1.8% was fourth highest in the nation. Population growth is expected to be most rapid on the Western Slope, in the Central Mountains, and in the Front Range outside of Denver. But surface treatment resource allocations are dependent heavily on measures of remaining surface life and highway categories depicted in Figure 1.

Vehicle Size and Weight. Vehicle size and weight dictate design quality of highway segments and are more significant determinants in surface quality deterioration than population growth and distribution. Pavement thickness, in fact, is the direct result of anticipated truck traffic volume. A stretch of highway, for example, that handles 80,000 cars and no trucks each day requires seven inches of pavement. A stretch with only 8,000 cars but 4,000 trucks each day requires eight inches of pavement. The impact of commercial vehicle traffic therefore is a significant factor in the calculation of costs to the Surface Treatment Program.

Land Use Policies and Work Patterns. Land use patterns have a strong impact on travel demand and on the need for transportation infrastructure, maintenance, repair, and improvements. Studies indicate that higher density development puts less strain on existing transportation facilities, affords greater accessibility to the transportation system, and minimizes environmental impacts. Roadways are designed and constructed for their anticipated traffic loads. Any changing pattern of ADT or of increased truck traffic due to commercial, manufacturing, or energy development can alter the projected impacts. To the extent land use policies evolve and result in redistribution and increases in traffic to roadways designed for less, this has an impact on unanticipated deterioration and redirection of maintenance resources. Sprawling development patterns act to increase VMT at rates faster than population growth. The result is an increase in demand on transportation infrastructure that exceeds the growth in resources available to provide and maintain that infrastructure.

Repairing Bridges

The department's bridge program maintains 3,429 major vehicular bridges on the state highway system. The Transportation Commission has a goal of maintaining 95% of the bridges, as represented by deck area on these structures, in good or fair condition. The program ended FY 2009 with 94.4% in good or fair condition, an improvement over 93.8% in FY 2008.

The projected trend, based on forecasted revenue through 2035 including the FASTER Bridge Enterprise Special Revenue Fund, is downward to 93.6% good or fair condition in 2020. Readers may remember the state of Colorado's bridge conditions by a more widely reported statistic. In 2008, Colorado had 125 "poor" bridges on its highway system. That number grew from 116 in 2007, and is expected to continue to grow despite work that will begin on the State Bridge Enterprise's first group of poor bridges in the months ahead.

The State Bridge Enterprise was created by FASTER to finance the repair and reconstruction of state owned vehicle bridges using revenues from an annual bridge safety surcharge on vehicle registrations. The entire bridge safety fee is expected to generate increased revenue over its three-year phase in. To qualify for Bridge Enterprise funding the bridges must be rated in "poor" condition and selected by the Bridge Enterprise Board. At the conclusion of FY 2009, 128 bridges were in poor condition.

Bridge Enterprise revenues are estimated at $45.5 million in FY 2010, $71.8 million in FY 2011, $96.1 million in FY 2012, and $98.1 million annually thereafter. (These numbers change frequently and are lower than those estimated during FY 2011 budget development.) For FY 2010 the department has selected, and the Bridge Enterprise Board has approved, the transfer of eighteen bridges in "poor" condition to the Bridge Enterprise for replacement. The replacements for these bridges are currently in the design phase or ready for construction.

How CDOT Rates its Bridges

CDOT reports major vehicular bridge condition by the percent of bridge deck area statewide that is in good or fair condition. The National Bridge Inventory standards established by the Federal Highway Administration are used to inventory and classify the condition of major vehicular bridges. The classification is based on a sufficiency rating of 0-100 and a status of not deficient, functionally obsolete, or structurally deficient.

Major vehicular bridges in poor condition have a sufficiency rating less than 50 and status of structurally deficient or functionally obsolete. Bridges in Poor condition do not meet all safety and geometry standards and require reactive maintenance to ensure their safe service. For the purpose of determining bridge-funding needs it is assumed that bridges in poor condition have exceeded their economically viable service life and require replacement or major rehabilitation.

Major vehicular bridges in fair condition have a sufficiency rating from 50 to 80 and a status of structurally deficient or functionally obsolete. Bridges in Fair condition marginally satisfy safety and geometry standards and either require preventative maintenance or rehabilitation.

(continued on next page)

Figure 3 – 2009 Actual Bridge Deck Condition by Category

	% Deck Area	Count	NHS*	Non-NHS	Interstate	Non-Interstate
Good or Fair	94.4%	3,301	1,965	1,336	1,097	2,204
Poor	5.6%	128	77	51	36	92
Total	100.0%	3,429	2,042	1,387	1,133	2,296

** --NHS is National Highway System category*

Cost of Sustaining the Current Condition over Next 10 Years

The cost to sustain the current condition of 94.4% Good/Fair over the next 10 years is approximately $1.6 billion, thus requiring an annual budget of approximately $161 million. Against projected revenue, this forecasts a 10-year deficit of approximately $312 million or on average $31 million annually. See Figure 4A.

Cost of Achieving the Goal over Next 10 Years

The cost to achieve the goal of 95% Good/Fair within 10 years is approximately $1.9 billion, thus requiring an annual budget of approximately $187 million. Against projected revenue, this forecasts a 10-year deficit of approximately $571 million or on average $57 million annually. See Figure 4B.

Cost of Achieving the Corridor Vision over Next 10 Years

The cost to achieve the vision of 100% Good/Fair within 10 years is approximately $4.1 billion, thus requiring an annual budget of approximately $406 million. Against projected revenue, this forecasts a 10-year deficit of approximately $2.8 billion or on average $276 million annually. See Figure 4C.

Annual Increase and Rate of Increase of this Cost

The projected 10-year costs to sustain the current condition and to achieve the 95% Good/Fair goal both fell since the 2009 Transportation Deficit Report, consistent with a declining construction cost index during this economic downturn and recovery.

It should be noted that FASTER revenues have not met initial projections. Continued shortfalls will impact the projected deficits for the bridge program as depicted in Figures 4A through 4C and projected conditions in Figure 5.

How CDOT Rates its Bridges

(continued from prior page)

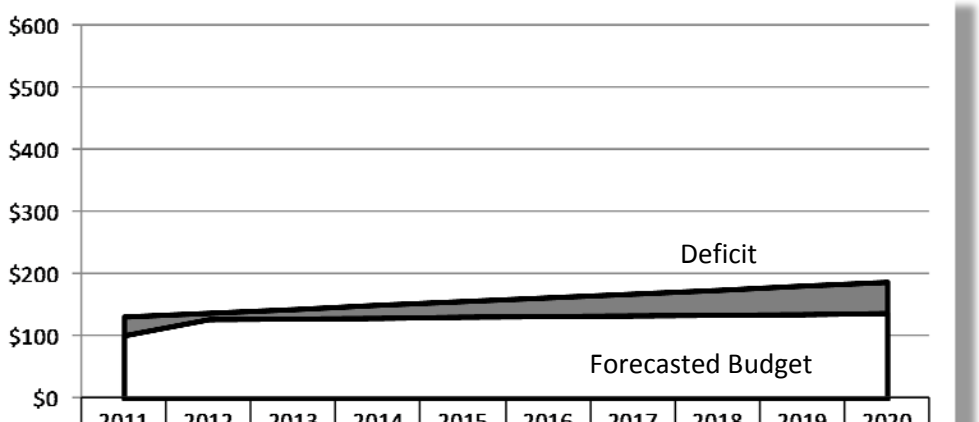
Major vehicular bridges in good condition are all remaining major bridges that do not meet the criteria for Poor or Fair. Bridges in good condition generally meet all safety and geometry standards and typically only require preventative maintenance.

A bridge is structurally deficient if it does not meet minimum standards for condition or capacity. A structurally deficient bridge often has one or more members in poor condition due to deterioration or other damage. Having only a small portion of a bridge in poor condition can result in the entire bridge being classified as structurally deficient.

A bridge is functionally obsolete if it does meet current minimum geometric requirements. Bridges classified as functionally obsolete often have inadequate roadway shoulders, insufficient number of lanes to handle current traffic volumes, overhead clearances less than minimums, or inadequate widths for roadways or streams passing underneath.

Figure 4A

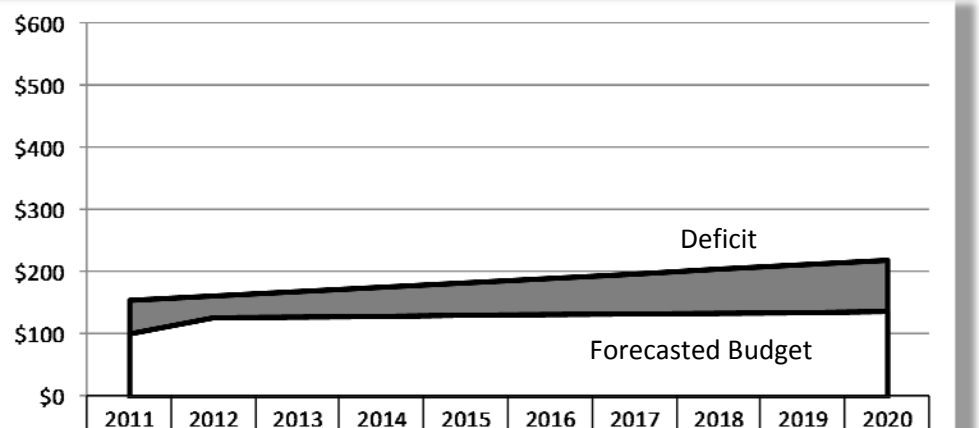
Cost of Sustaining the Current Bridge Condition (94.4%)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cost to Sustain 94.4% good/fair	$133	$139	$145	$152	$158	$164	$170	$176	$183	$189
Forecasted Budget	$102	$128	$129	$130	$132	$133	$134	$135	$136	$138
Deficit	$31	$11	$16	$22	$26	$31	$36	$41	$47	$51

Figure 4B

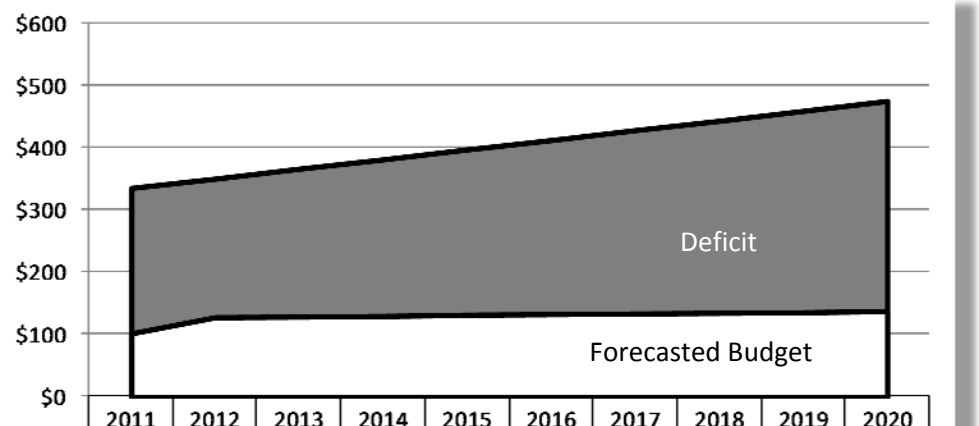
Cost of Achieving the Bridge Goal (95%)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cost to Achieve 95.0% good/fair	$155	$162	$169	$176	$183	$190	$197	$205	$212	$219
Forecasted Budget	$102	$128	$129	$130	$132	$133	$134	$135	$136	$138
Deficit	$53	$34	$40	$46	$51	$57	$63	$70	$76	$81

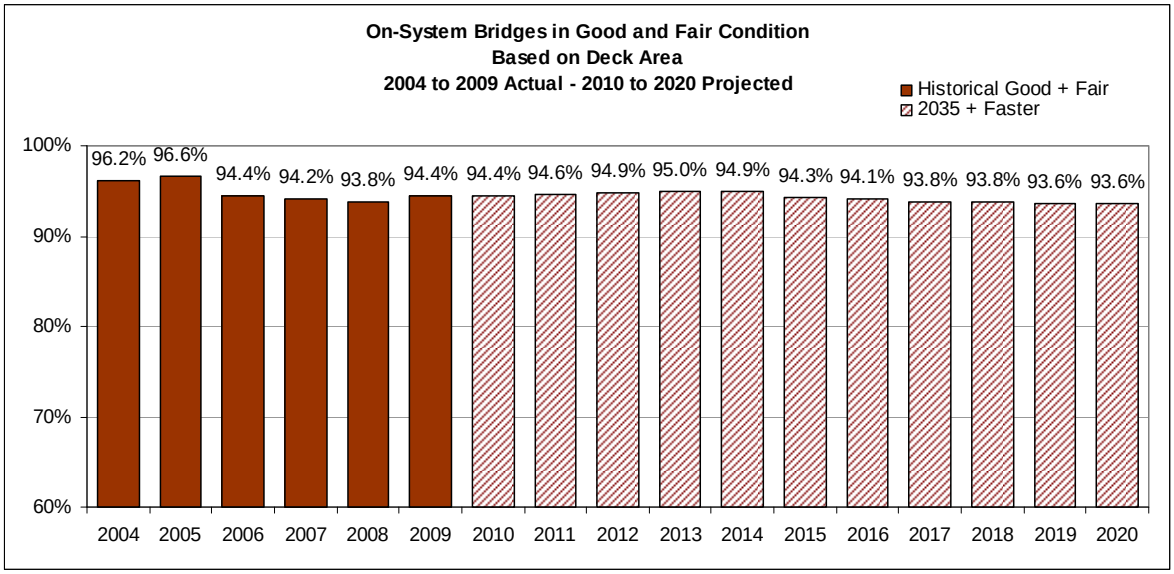
Figure 4C

Cost of Achieving the Bridge Vision (100%)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cost to Achieve 100.0% good/fair	$336	$351	$367	$382	$398	$413	$429	$444	$460	$476
Forecasted Budget	$102	$128	$129	$130	$132	$133	$134	$135	$136	$138
Deficit	$234	$223	$238	$252	$266	$280	$295	$309	$324	$338

Figure 5



Factors Contributing to the Costs

Exposure to the Elements. Exposure of bridges to the elements is the single most significant factor impacting bridge conditions. Bridges are designed to withstand the wear and tear of very high volumes of traffic operating under current and historical weight and size limits. Deterioration of bridges due to exposure affects their ability to carry high volumes of traffic over time and can result in weight restrictions.

Population Growth and Distribution. These factors have substantial effect on the Average Daily Traffic (ADT) that crosses over a bridge. ADT is one of the many factors used to determine sufficiency rating, particularly from a functional perspective. Growth in population and where that population chooses to travel can result in changes in ADT and advance or delay the onset of functional obsolescence.

Vehicle Size and Weight. Under current vehicle laws, changes to bridge ratings due to vehicle weight restrictions or vertical clearance would be minimal. Ratings do not take into account the number of permitted overweight or over-height vehicles on structures, and their overall impact on a bridge's condition is not readily quantifiable. Deterioration can cause weight limits that effect truck routes and detours. On average, 47,487 oversize or overweight permits were issued annually between FY 2004 and 2008. Non-permitted over-height vehicles have hit bridges and caused enough damage to drop bridge condition ratings until repairs are accomplished. In addition, non-permitted overweight vehicles can cause overstress damage to bridges if the load is in excess of the bridge's carrying capacity.

Land Use Policies and Work Patterns. Bridges are affected by land use policies and work patterns in similar fashion to pavement. Land use policies can have an effect on ADT, which is one of the many factors used to determine a bridge's sufficiency rating and is indirectly used to determine functional obsolescence. Commuting and commercial routes, which change with growth in population and development, affect ADT and truck traffic, which are two of many factors that affect a bridge's sufficiency rating. ADT is indirectly used to determine functional obsolescence.

Sustaining Performance Levels

The department's Pavement and Bridge programs collectively consume about 24% of CDOT's discretionary funding. Another 47% of discretionary funds are expended in the ongoing maintenance of the entire state transportation system, including removal of snow and ice and maintenance of tunnels. The "big three" asset categories – Pavement, Bridge, and Maintenance – hence comprise more than 70% of all funds over which the Transportation Commission must make investment decisions. Sustaining Maintenance performance levels therefore is analyzed much like Pavement and Bridge.

Safety and Mobility are other key areas of transportation performance. As "intangible" assets, the link between investments in Safety and Mobility and performance outcomes is less direct and more difficult to measure than investments in Pavement, Bridge, and Maintenance. Safety and Mobility do not lend themselves to measurement in terms of performance outcomes. Sustaining Safety and Mobility performance levels is discussed after Maintenance, without the quantitative graphed gap approach used for Pavement, Bridge, and Maintenance.

Maintenance

With a proposed FY 2011 budget of more than $241 million, CDOT's maintenance of the state highway system represents one of the department's largest annual investments. The maintenance program is designed to keep the system open and safe for the traveling public. Examples of highway maintenance activities include:

- snow and ice removal;
- avalanche control;
- patching and sealing of pavement cracks and joints;
- blading unpaved surfaces and shoulders;
- cleaning drainage structures and ditches;
- repairing slopes because of washout or erosion;
- controlling vegetation;
- sweeping the road surface and trash removal;
- maintaining roadway signs and lighting;
- guard rail repair;
- painting bridges;
- tunnel maintenance; and
- rest area and grounds maintenance.

How CDOT Rates Maintenance

The CDOT Maintenance Program is designed to keep the state highway system open and safe for the traveling public. This involves all activities from the centerline of the highway to the right-of-way fences. Maintenance activities are separated into nine Maintenance Program Areas: Roadway surface, roadside facilities, roadside appearance, traffic services, structure maintenance, snow and ice control, equipment and buildings, tunnel activities, and planning and training . Each of these areas is subdivided into such tasks as patching, cleaning drainage structures, controlling vegetation, sign maintenance, bridge deck repair, snow fence repair, rest area building maintenance and tunnel operations.

CDOT measures the performance of maintenance service with a school report card style grading system called Maintenance Levels of Service (MLOS) that estimates the achievable grade with available budget. Higher grades could be achieved with higher funding levels. MLOS is a performance-based budget process consisting of a survey of existing conditions, most recent costs and a recommendation of funding to reach the goal set by the Transportation Commission.

The overall statewide Maintenance Levels of Service grade for FY 2009 is a B- and for FY 2010 is a C+. The overall statewide maintenance objective and actual grades over a seven year period range from a C to a B, and the projected decrease to a C level for FY 2011 is the result of total CDOT budgeted dollars not keeping up with the rising costs of fuel and materials, inflation, and increasing needs for bridge maintenance activities. When additional dollars have recently been allocated to Maintenance, they were done so to strive for a B level of service for Snow & Ice removal, which is financially the largest of nine maintenance program areas (see Figure 7 below), and to achieve an overall C level of service for FY 2011.

Cost of Sustaining the Current Condition over Next 10 Years

The cost to sustain the current condition of C+ level of service over the next 10 years is approximately $3.1 billion, thus requiring an annual budget of approximately $307 million. Against projected revenue, this forecasts a 10-year deficit of approximately $500 million or on average $50 million annually. See Figure 6A.

Cost of Repairing to Goal over Next 10 Years

The cost to achieve the goal – to improve gradually from C+ to B level of service – within 10 years is approximately $3.9 billion, thus requiring an annual budget of approximately $388 million. Against projected revenue, this forecasts a 10-year deficit of approximately $1.3 billion or on average $131 million annually. See Figure 6B.

Cost of Achieving and Sustaining Corridor Vision for Next 10 Years

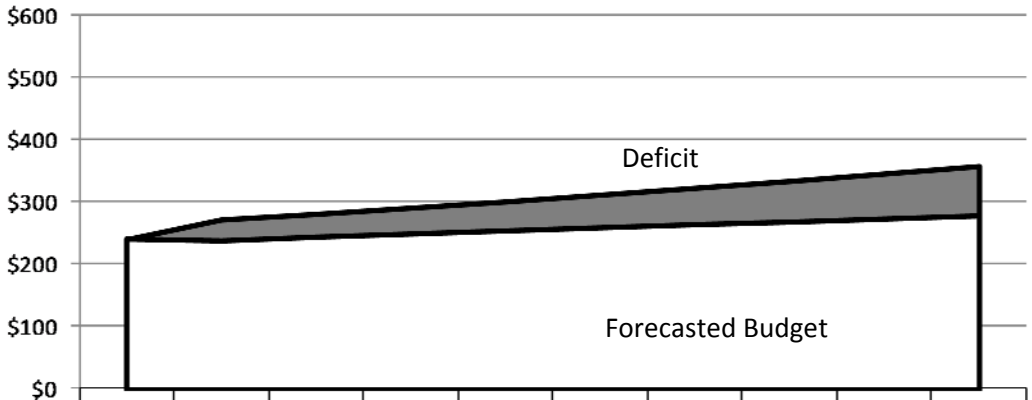
The cost to achieve the vision – to improve to B level of service now and sustain that level over the next 10 years – is approximately $4.6 billion, thus requiring an annual budget of approximately $460 million. Against projected revenue, this forecasts a 10-year deficit of approximately $2.0 billion or on average $203 million annually. See Figure 6C.

Annual Increase and Rate of Increase of this Cost

The cost to sustain the current level of service remains essentially unchanged from the 2009 Transportation Deficit Report, as material and labor units costs have not changed significantly. The costs to achieve the goal and vision have both increased from last year, reflecting reduced new construction and re-construction on the state highway system. Reduced funding for new construction or reconstruction of existing infrastructure increases the workload on maintenance to keep up older roadways. Colorado's infrastructure is all designed with a certain lifespan: 30 year pavements, 50 year structures, etc. This infrastructure is intended to be replaced after it has served its useful life. With reduced funding for re-construction and re-surfacing, CDOT maintenance is tasked with the increasing burden of maintaining aging infrastructure. Infrastructure which has reached or exceeded its design life requires more resources to maintain in operational condition.

Figure 6A

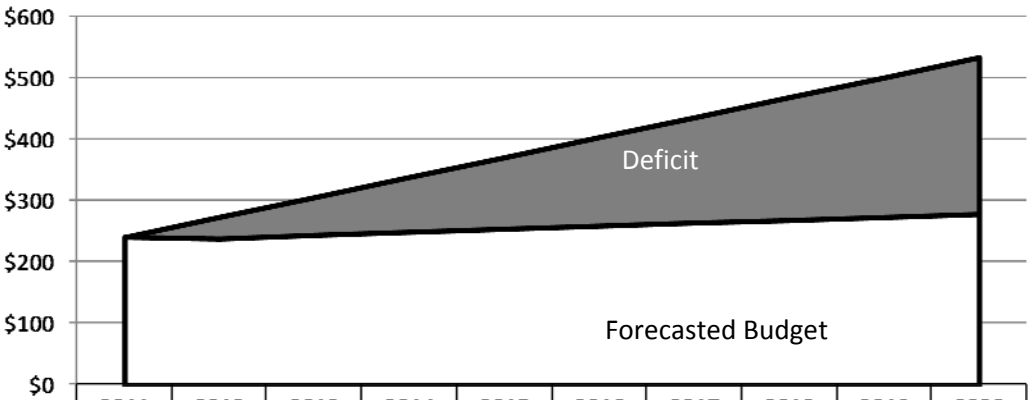
Cost of Sustaining the Current MLOS Condition (C+)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cost to Sustain C+	$241	$273	$282	$292	$302	$313	$324	$335	$347	$359
Forecasted Budget	$241	$238	$244	$249	$254	$259	$264	$268	$273	$278
Deficit	$0	$35	$38	$43	$48	$54	$60	$67	$74	$81

Figure 6B

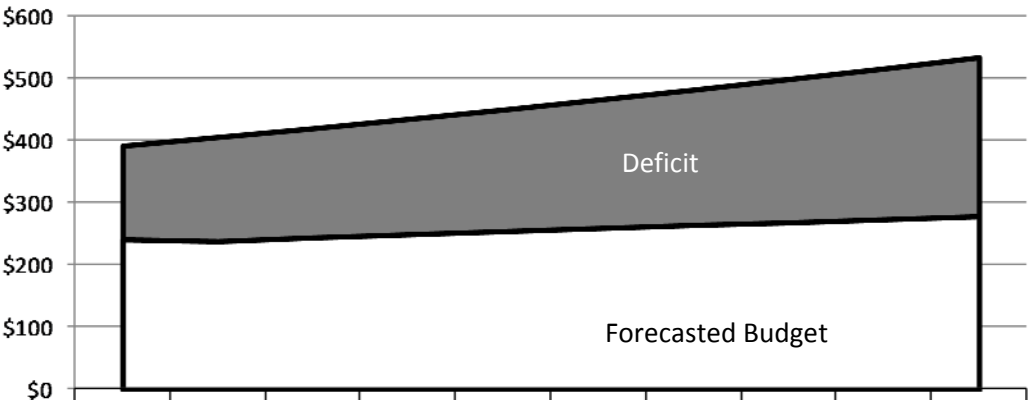
Cost of Repairing to MLOS Goal (B)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cost to Achieve Goal	$241	$274	$306	$339	$371	$404	$436	$469	$501	$534
Forecasted Budget	$241	$238	$244	$249	$254	$259	$264	$268	$273	$278
Deficit	$0	$36	$62	$90	$117	$145	$172	$201	$228	$256

Figure 6C

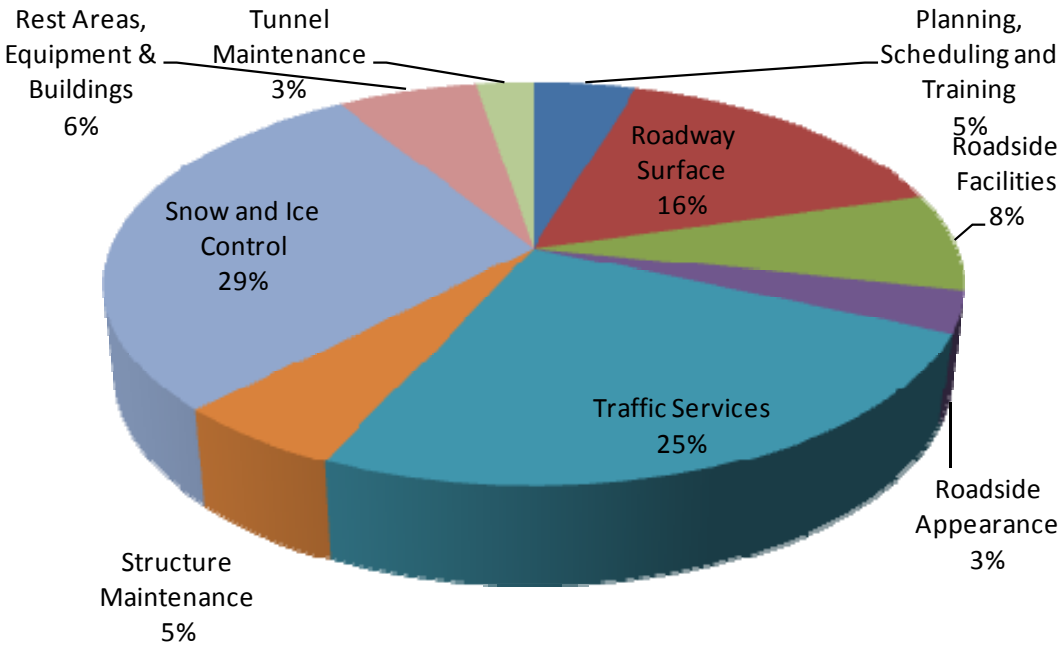
Cost of Achieving and Sustaining MLOS Goal (B)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cost to Achieve Vision	$392	$406	$420	$435	$450	$466	$482	$499	$516	$534
Forecasted Budget	$241	$238	$244	$249	$254	$259	$264	$268	$273	$278
Deficit	$151	$168	$176	$186	$196	$207	$218	$231	$243	$256

Figure 7

FY 2011 Preliminary Maintenance Budget by Program Area

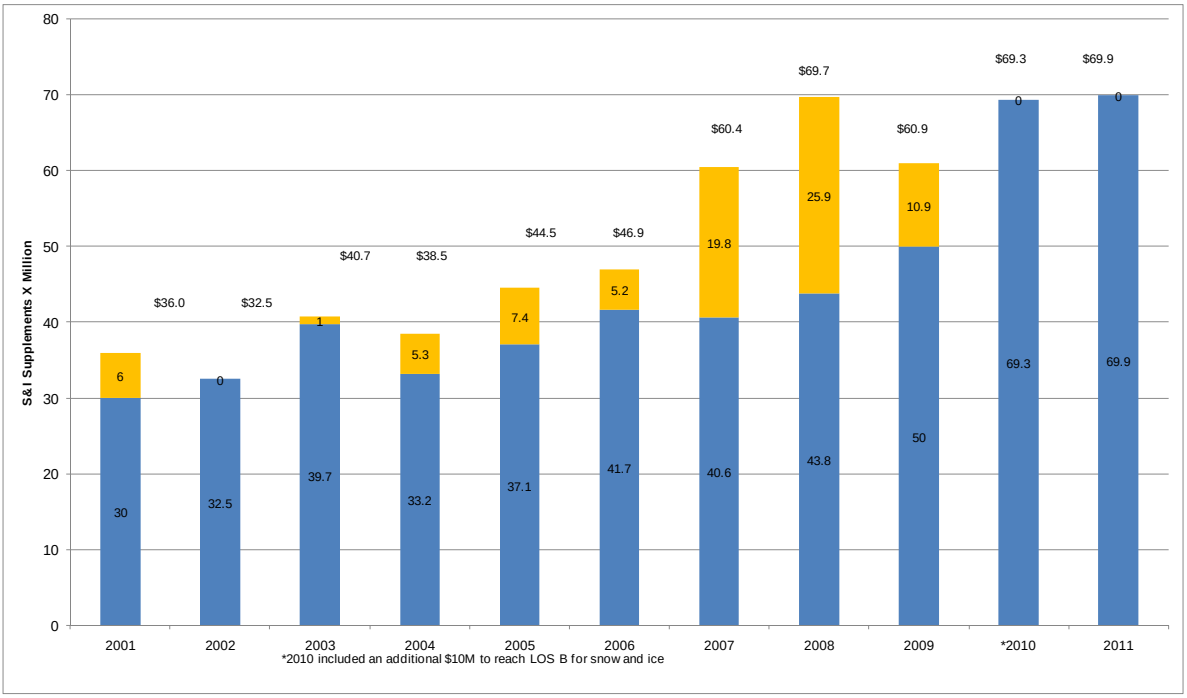


Factors Contributing to the Costs

Maintenance Level of Service is trending downward 1/3 letter grade (e.g. B to B- or C+ to C) per year at current funding levels (previous years' funding + inflation). By FY 2017 the Level of Service is projected to fall to F if funding scenarios remains the same. Many factors impact maintenance costs. Fuel prices and labor are significant components of nearly all maintenance activities. Weather conditions heavily impact snow and ice removal. These factors and more have driven cost trends upward for most programs areas. As depicted by annual snow and ice removal budget in Figure 8 below, snow and ice control is a significant percentage of the total maintenance budget (29% for FY 2010). There is no lasting positive effect on the infrastructure from snow and ice control measures. However, there is a cumulative effect caused by scraping the plow blades across the pavement, and in many cases damaging the pavement markings due to snow removal efforts. Deicing chemicals, such as magnesium chloride, may over time also accelerate the deterioration of infrastructure. Conversely, funds that provide for new construction or re-construction of transportation infrastructure have a positive impact on the maintenance program as in some cases new infrastructure requires less maintenance than does aging infrastructure.

Figure 8

Annual Snow and Ice History - Starting Budgets (Blue) and Contingency Usage (Yellow)



Population Growth and Distribution. Population growth and growth in VMT are significant factors in the cost of statewide maintenance efforts. Particularly over the past decade, development of the tourism and energy industries has increased VMT in mountainous and rural areas, where the system can be more costly to maintain due to topography or due to the fact that infrastructure was not designed to carry the level of truck volume experienced in recent years. Population distribution also plays a key role, as limited resources may in certain circumstances focus on high volume segments in high population areas to alleviate significant mobility concerns.

Vehicle Size and Weight. One maintenance program area most impacted by vehicle size and weight is roadway surface maintenance, consisting of projects smaller than that typically undertaken by the Surface Treatment Program. Pavements are designed and constructed to accommodate an expected total of Equivalent Single Axle Load (ESAL) of 18,000 pounds each over a specific period. The design assumes regular maintenance and typical environmental conditions. As the number, size, and weight of vehicles increases, so does the deterioration rate of pavement. The rate of deterioration is accelerated by reductions in regular maintenance, and increases in severity of climatic conditions experienced.

Land Use Policies and Work Patterns. The impact of land use policies on transportation infrastructure maintenance is the same as that outlined in the surface section of this report. To the extent that land use policies evolve and result in redistribution and increases in traffic to roadways designed for less, this has an impact on unanticipated deterioration and redirection of maintenance resources. Roadways are designed and constructed for their anticipated traffic loads. Growth in undeveloped areas as well as any changing pattern of ADT alter the projected impacts.

Safety

Providing a safe and secure transportation system to the traveling public is among CDOT's highest priorities. The mission of CDOT's Office of Transportation Safety and Engineering is to reduce the incidence and severity of motor vehicle crashes and the associated human and economic loss. Safety improvements in the state's highway system can include engineering changes such as widened shoulders, improved interchanges, or added guardrails. They can also include behavioral modifications through increased high visibility law enforcement activity, providing impaired driving enforcement training for law enforcement agencies, sponsoring and supplementing training for motorcycle riders, outreach to young drivers and their guardians, programs such as Safe Routes to School, or seatbelt and occupant protection as well as other safety campaigns. Despite improvement, traffic crashes remain a leading cause of death and injury in Colorado. Fatalities on Colorado roads peaked in 2002 at 743. By 2008, this figure fell to 548. This 26.2% decrease was the 8th greatest reduction in fatalities among the 50 states over that time period. This success is attributable to the engineering of safer highways, education of the users of Colorado roadways, and enforcement of the state's driving laws.

Transportation Commission goals for safety include:

- Maintaining a fatality rate of 1.0 per 100 million VMT or lower by continuing to reduce fatal crashes through 2019;
- Increasing the statewide overall seat belt use rate to 90% by 2019;
- Reducing the percentage of alcohol-related fatal crashes to 38.5% of all fatal crashes by 2019.

For 2008, statewide fatalities occurred at a rate of 1.14 per 100 million vehicle miles traveled, against a goal of 1.0. Seat belt use rate increased to 81.1% compared to an annual objective of 82.5% and a long-range goal of 90%. Alcohol-related fatal crashes fell to 40.0% of all fatal crashes.

Senate Bill 09-108 (FASTER) established a road safety surcharge imposed on motor vehicle registration that is projected to generate more than $150 million annually to the Highway Users Tax Fund (HUTF), distributed to municipalities, counties, and the state. For FY 2011, CDOT has budgeted $78.8 million of FASTER-Safety funds that will be invested in projects with significant safety elements. The department will optimize use of FASTER-Safety dollars and continue behavior campaigns that will work toward achieving its fatality benchmark. For example, Colorado suffered 108 child vehicle fatalities from 2004 through 2008. CDOT's participation in a federal program known as "Nag Me to Click It" (see www.nagmetoclickit.com) works to reduce fatality rates among child passengers.

Cost of Achieving the Goal over Next 10 Years

Achieving a goal of 1.0 fatality per 100 million VMT or of 90% seat belt use rate will most easily occur through continued investments by the department in conjunction with changes in motoring behavior or law. For example, youth under the age of 21 accounted for nearly 18% of Colorado's 548 fatalities in 2008. December 1 2009 implementation of Colorado law forbidding drivers under 18 from using cell phones while driving could help reduce youth driver fatalities as much as could department investments in ad campaigns. Likewise, texting bans should have a positive safety impact. Similarly, primary seat belt laws enacted in most states would help increase seat belt use rates if enacted in Colorado. Motorcycle fatalities alone accounted for nearly 18% of Colorado's 548 fatalities in 2008, with two thirds of motorcycle fatalities involving operators without helmets. But mandating helmet usage for

motorcyclists and implementing a primary seat belt law both require considerations beyond only fatality reductions.

Links between dollar investments and progress toward long-range goals may be less direct for safety than they are for tangible infrastructure such as highways and bridges, but no less effective. The 2009 "100 Days of Heat" DUI enforcement campaign – for which CDOT allocated $618,438 of federal funds for local law enforcement agencies, Colorado State Patrol, and public outreach and education – helped result in a nearly 50% drop in alcohol-related fatalities in 2009 over 2008 for that same time period. Preliminary data indicates that 30 people were killed in alcohol-related crashes between May 22nd and the end of August 2009, compared to 58 people during the same time period during 2008. For 2008, CDOT reduced alcohol-related fatal crashes to 40%, edging closer to its goal of 38.5%. Data to determine whether the department attains this goal for calendar year 2009 will soon be finalized.

Anecdotally, a Weld County intersection (US 34 East and Country Road 49 just east of Kersey) that witnessed three fatalities during 2009 recently received new traffic lights at a cost of approximately $500,000. But one cannot conclude that each comparable investment will result in a reduction of three annual fatalities. Thus, investment decisions are made annually that contribute to helping the department reach certain safety goals but also meet other local and statewide safety concerns.

Mobility

Minimizing congestion and maintaining the free flow of people and goods are essential to the quality of life in Colorado and the state's economic future. One of the department's primary measures of mobility is average daily minutes of delay per traveler in congested state highway segments. Four hundred ninety-five centerline miles representing 1,823 lane-miles of the state highway system have been identified as congested. Travel time delay is the difference between the travel time on highways at the free–flow speed and the time it takes to travel that same route in heavy traffic.

The calendar year 2008 objective was to hold average daily delays to 18 minutes or less. Actual delays averaged 18 minutes per traveler, a decrease from the average of 22 minutes in 2005, the base year. Several factors have been identified that contributed to this near term improvement in average delay times. The additional lanes that were added to I-25 during the TREX and COSMIX projects helped reduce the minutes of delay in those corridors. The department's complimentary Mile High Courtesy Patrol towing program assists a growing number of motorists each year who experience a flat tire or stalled vehicle on heavily travelled routes in the Denver area, thereby decreasing the resulting backups and delays. The economic recession which began in December 2007 has lowered employment levels and the number of vehicles on the road during peak commute hours. Finally, when the price of gasoline reached $4 per gallon in the summer of 2008 many people changed their driving habits by consolidating trips, switching to transit, joining carpools and vanpools, and walking or bicycling to work or for errands.

Even in view of this short term stabilization in minutes of delay, it is estimated that overall annual congestion costs are $825 million for the congested corridors. If the recent changes in driving habits become permanent, the future growth in congestion may slow. However, accounting for these changes,

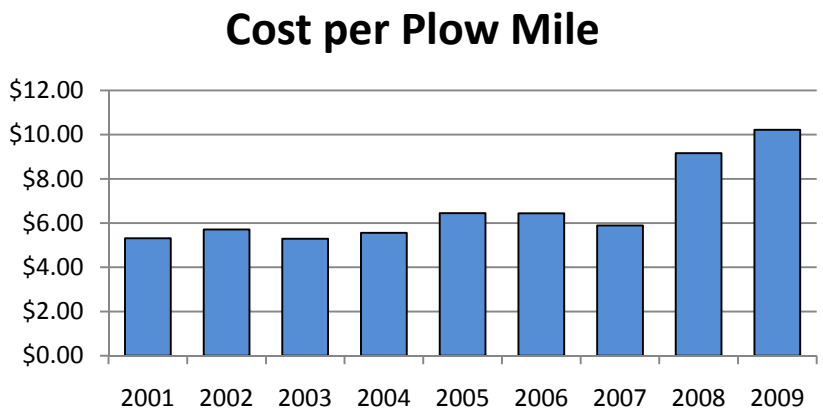
over the next 20 years travel time delay is still expected to increase substantially and the number of roadway segments that experience pervasive severe congestion is expected to more than double.

The maintenance of mobility and management of congestion will require solutions that go beyond the provision of additional lane miles. The resources do not exist to continually expand the highway system to meet growing demand. Even if resources were available for such expansion, the addition of lane miles is not the best or only solution to congestion. CDOT's mobility efforts include investments made in accessibility to the transportation system, transportation options, environmental mitigation, connectivity, and overall infrastructure management. The Transportation Commission has allocated $184.6 million in FY 2011 to mobility programs. Roughly 38% of this funding, however, goes to snow and ice control which has no effect on long-term mobility. CDOT's transit and intermodal programs and congestion mitigation-air quality program provide long-term mobility improvements and receive portions of CDOT's mobility funding. Other programs or fund sources in the mobility investment category include transportation enhancement, metro, and aviation.

Snow and Ice Control

Keeping roads clear of snow and ice comprises the largest portion of the mobility budget and is expected to cost the department $69.9 million in FY 2011. (This figure is included in the costs projections discussed under Maintenance above.) Due to cost inflation for fuel and deicing materials, the dollars required to keep roads clear during winter storms has increased substantially over the last eight years. In 2001 the average cost per plow mile was $5.31. Cost inflation drove the cost per plow mile to $10.22 for FY 2009. While the department would like to deliver an "A" level of service for snow and ice control that is not practical with current revenues. The snow and ice control level of service achieved during FY 2009 was "C+."

Figure 9



Methods for Reducing Costs

Leveraging the transportation system to get the most benefit out of the existing infrastructure will become increasingly important as resources available to expand the system continue to be limited. There are many strategies that CDOT and other agencies are using to reduce costs, curb growth of VMT, and increase the mobility and safety of the system we have without making costly investments in added lane capacity.

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is a critical element in the development of a sustainable and effective transportation strategy. TDM encompasses a wide range of programs and services that make the most efficient use of existing transportation facilities by managing the actual demand placed on those facilities. Using strategies that promote alternative modes, increase vehicle occupancy, reduce travel distance, and ease peak-hour congestion, TDM programs can extend the useful life of transportation facilities, enhance community mobility, and improve air quality. Examples of TDM approaches include programs to provide facilities for, and encourage the use of, alternative modes such as transit, van pooling, bicycling, and walking.

Congestion Mitigation and Air Quality. The Congestion Mitigation and Air Quality Improvement Program (CMAQ) supports projects that reduce carbon monoxide, ozone, and particulate matter generated from transportation related sources in several areas around the state. This is accomplished, in large part, by reducing congestion and thereby limiting the time that cars sit idling on roadways. In FY 2011 $23.1 million is budgeted for CMAQ projects. The types of projects eligible for CMAQ funding include:

- Traffic flow improvements (e.g., freeway management, high-occupancy vehicle lanes);
- Shared ride programs (e.g., regional ridesharing, vanpool programs, park-and-ride lots);
- Travel demand management (e.g., regional marketing, employer trip reduction programs);
- Bicycle/pedestrian facilities and programs;
- Transit (e.g., new bus services, new rail services/equipment, alternative fuel buses); and
- Other projects (e.g., diesel engine retrofits, freight/intermodal projects, dust mitigation projects, and other qualifying projects, including experimental pilot projects which are allowed under the law as demonstrations to determine their benefits and costs).

Transit. The provision of transit facilities is a key component of a multimodal transportation strategy that moves people and goods by more than one mode of transportation with the goal of relieving congestion, shortening travel times, improving safety, and giving travelers more options. Transit reduces congestion in the transportation network by taking vehicles off the road, especially during peak hours. In 2007, the Regional Transportation District (RTD) in metro Denver reported 90 million boardings on its bus and light rail system. Many of these trips replaced travel in single occupant vehicles. Although transit trips are increasing, current transit systems in Colorado only partially meet existing needs. In 2006, transit needs were estimated at 258 million trips annually statewide, growing to 436 million trips in 2035. Only 45% of the transit trip needs were met in 2006, while only 31% of transit trip needs will be met in 2035, based on existing revenue and demand projections. The gap between transit need and availability is greatest in rural areas. In accordance with Senate Bill 09-94, CDOT is

currently in the process of building a Division of Transit and Rail. This new division will be charged with developing a statewide transit and passenger rail plan to be integrated with the statewide transportation plan as well as administering future dedicated state funds for transit and Federal Transit Administration grants.

Bicycle and Pedestrian Facilities. Bicycle and pedestrian facilities provide an alternative for users making shorter trips or connecting to another mode. Facilities include sidewalks, dedicated bicycle and pedestrian paths, bicycle lanes, or shoulders of sufficient width to safely accommodate cyclists. In addition to the actual provision of facilities, CDOT, in cooperation with partners, works to promote and encourage bicycle and pedestrian activity through programs such as Bike to Work Month, the Share the Road campaign, and the Safe Routes to School campaign. In the fall of 2009, the Colorado Transportation Commission adopted a groundbreaking bicycle and pedestrian policy that states, "The needs of bicyclists and pedestrians shall be included in the planning, design, and operation of transportation facilities, as a matter of routine." Because of the increased interest and use in bicycle transportation by Coloradans, full consideration for their safety and mobility on the roadway system needs to be an integral part of CDOT's project development process. Bicycle and pedestrian facilities, like transit, are part of a multimodal mobility strategy that contributes to the reduction of demand on roadways, easing congestion, and reducing the need for more costly roadway infrastructure investments.

Ridesharing. Ridesharing programs, the most common being vanpooling or carpooling, help to reduce the number of single-occupancy vehicles on the state's roadways, and can serve as an effective method to reduce congestion without investing in additional infrastructure. Vanpools typically involve groups of five to 15 individuals who share a ride to work in a van that is provided for and dedicated to their commute. Costs are shared among all members of the group and are generally based on the commute distance. Vanpool providers in Colorado cover 250 linear miles along the Front Range with approximately 175 vans. Current providers include the Denver Regional Council of Governments' (DRCOG) RideArrangers, North Front Range Metropolitan Planning Organization's (NFRMPO) SmartTrips/VanGo, and the Pikes Peak Area Council of Governments' (PPACG) MetroRides. DRCOG reports that the RideArrangers programs alone reduced 90.6 million VMT in the combined years 2007 and 2008.

Managed Lanes/Congestion Pricing. Managed lanes, sometimes referred to as Express Lanes or High Occupancy Toll (HOT) lanes, offer choice to the traveler. Generally, a HOT lane facility is part of or parallel to a congested travel corridor and offers an alternative to travelers from the clogged general purpose lanes. As a user-pay facility, HOT lanes generate revenue to help offset operations and maintenance costs. In Colorado, HOT lanes provide less congested lanes to transit buses, carpools, and toll-paying solo drivers in single occupant vehicles (SOV). Congestion pricing involves the use of a pricing structure that varies by time so that the highest toll is collected during peak hours and the lowest during uncongested periods. This helps to manage the traffic volume. Advances in congestion pricing include the use of real-time speed and volume data to change pricing dynamically to respond to minute to minute variations in daily traffic. During peak hours, the I-25 Express Lanes provide users with a typical travel time savings of 10 minutes.

Intelligent Transportation Systems (ITS)

CDOT's Intelligent Transportation Systems (ITS) are an important element of the department's transportation demand management efforts. It maximizes the operational efficiency and management of the existing roadway infrastructure through the use of technology and special programs. Some practices involve methods of traffic control that help maintain flow, such as ramp metering and quick response to crashes and vehicle breakdowns. Other practices put real-time traffic information into the hands of motorists, empowering them to decide when and where to travel to avoid congestion and make better use of their time.

The ITS program has a total annual budget of $9.8 million, which is used to administer, manage, operate, and maintain (including capital replacement) the Colorado Transportation Management Center (CTMC) and statewide ITS communications, network systems, and equipment. ITS infrastructure includes such devices as fiber optic cable along highways, closed circuit television (CCTV) cameras, variable message signs (VMS), ramp meters, high-occupancy vehicle/high-occupancy toll lane (HOV/HOT) systems, road and weather information service, travel time indicators, and highway advisory radio.

Ramp Metering. Courtesy Patrol. CDOT currently has 70 ramp metering sites statewide including sites on I-25, I-70, and C-470. When used at appropriate locations, ramp meters can result in significant gains in average traffic speed and reductions in travel time. The Mile High Courtesy Patrol is composed of 16 recovery vehicles patrolling key areas of I-25, I-70, I-225, and 6th Avenue during morning and afternoon rush hours. The primary purpose of the patrol is immediate management of incidents during rush hour.

Travel Time Applications. Multiple devices are used along the I-70 corridor to acquire data that CDOT can process into real-time traffic speeds and calculated travel times, which are then disseminated to drivers along the highway, to potential drivers and to others via the internet at www.cotrip.org and on various displays at mountain resorts. Travelers can use the information to modify their travel routes or times.

Travel Time Application – Real-time travel times are posted on Variable Message Signs on the roadway and the traveler information website (www.cotrip.org) using data that is collected by ITS devices. There are about 300 VMS statewide, which are also used to post traffic, incident, regulatory and other relevant messages.

Typical Travel Message on Variable Message Sign

I-70 West Corridor ITS. I-70 West is of vital importance to commercial motor vehicle transportation, both nationally and locally, and provides access to many of Colorado's ski resorts and other mountain recreational activities. CDOT's I-70 West ITS program includes trucker chain-up stations, variable speed limits, and heavy tow trucks. CDOT recently constructed 13 additional chain-up stations that can accommodate 137 trucks, bringing the total to 21 stations. The department has also installed 11 variable speed limit signs (VSLs). VSLs allow CDOT to post reduced speed limits in accordance with highway conditions in order to mitigate excessive speed and to smooth out disparate speeds among vehicles, which helps to reduce accidents.

Other Methods including Partnerships

A variety of factors, ranging from land use to work patterns, generate significant impact on the transportation system but fall outside of the traditional role of a DOT. While CDOT does not take a direct role in these areas, CDOT can effectuate notable benefits to the system through partnerships and cooperation with the private sector, with non-profits, and with other government agencies that do play a direct role in these areas. Many of the transportation demand management strategies described above are possible only through cooperation between CDOT and external partners.

Transportation Management Associations (TMAs) provide an example of a successful transportation partnership. A TMA is a non-profit, member-controlled organization that provides transportation services in a particular area, such as a commercial district, mall, medical center, industrial park or corridor. One such TMA established in 1998, 36 Commuting Solutions promotes alternative travel options for employees, employers and residents in order to shift solo drivers to transit, carpool, vanpool, bicycles, and telecommuting.

Land Use Policy. Land use patterns have a significant impact on travel demand and on the need for transportation infrastructure maintenance, repair, and improvements. Studies indicate that higher density development puts less strain on existing transportation facilities, affords greater accessibility to the transportation system and minimizes environmental impacts. Greater coordination between transportation and land use planning can result in more efficient, cost-effective, and environmentally friendly development patterns and transportation investments. CDOT's Division of Transportation Development is in the early stages of a study examining the connectivity between transportation and land use, and the possibilities for partnerships that might better address the transportation impacts of land use decisions. Several of the state's MPOs are also engaged in scenario planning efforts to examine the relationship between development and transportation investment decisions.

Telecommuting, Flex Time, and Commuting Programs. The adoption of telecommuting or flextime policies by businesses and workers can assist in the reduction of cost by reducing the number of commuters on roadways during peak hours, thereby reducing demands on the transportation system. Flextime can reduce demand on the transportation system in two ways: by reducing the number of trips by compressing work weeks or by reducing peak hour congestion by allowing for different starting and ending work times. In Colorado, several Metropolitan Planning Organizations (MPOs) and Transportation Management Organizations (TMOs) provide assistance to employers in developing and implementing telecommute programs. According to the Bureau of Labor Statistics, just over 11% of Americans telecommuted at least one day per month in 2008, an increase from 8% in 2006. CDOT engages in a number of other programs with its partners and stakeholders to promote alternative commuting practices. The department has partnered with a group of local organizations and the U.S. Environmental Protection Agency to launch the Colorado's Best Workplaces for Commuters program. As a coalition partner, CDOT will help challenge employers throughout the state to offer commuter benefits.

Conclusion

As the department works with its local planning partners toward an April 2011 completion of an update to the 2035 long-range transportation plan, the picture of future funding for transportation remains as murky as one year ago. The economic slide that began in 2008 has had both negative and positive impacts on the state of Colorado's transportation system. Decreased disposable household income and rising gas prices have reduced vehicular travel and slightly alleviated some congestion in certain areas of the state. But this has also reduced fuel tax revenues. Less development and economic activity helped stabilize raw material prices that previously had been accelerating at alarming rates. Contractor bidding is much more competitive. But projected available funding for new projects has also dwindled, other than one-time influxes of capital from Washington or new state funding sources in Colorado legislation.

CDOT has responded quickly to the funding provided by ARRA, and fully obligated federal highway funds by the March 2010 deadline. States stand poised to receive additional transportation funding should it be made available through the proposed Hiring Incentives to Restore Employment (HIRE) or other stimulus act. The Colorado legislative creation of the Bridge Enterprise through FASTER legislation has begun to bring additional funding for bridges and has improved the outlook for Colorado's bridge program. Though the flow of this bridge funding has not been as large or as sudden as ARRA's injection of resources, it will help to slow the deterioration of the condition of Colorado's bridges. Senate Bill 09-228 is projected to begin providing much-needed additional transportation funding for five years once the Colorado economy recovers and returns to previous growth rates.

But these positive additions will not enable the department to return to budget levels enjoyed during years of significant Senate Bill 97-001 and House Bill 02-1310 transfers. Nor will they allow CDOT to reverse a trend of deteriorating transportation infrastructure, a trend that is being experienced nationwide. States will continue to look for innovative ways to optimize the efficiency of their transportation networks and minimize the impact of continued deterioration.

In summary, sustaining the condition of the most significant components of the state's transportation infrastructure for the next decade will require an additional:

- $3.8 billion for highways (pavement);
- $312 million for bridge;
- and $500 million for maintenance.

For questions concerning this report, please contact Scott Richrath, CDOT Performance and Policy Analysis Manager, at scott.richrath@dot.state.co.us.