



2035 Statewide Transportation Plan

Financial Assumptions, Revenue Needs, and Shortfalls

TECHNICAL REPORT

March 2008



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INTRODUCTION

This technical report outlines the financial assumptions that the Colorado Department of Transportation (CDOT) used to prepare the 2035 Statewide Transportation Plan. These assumptions have been used to:

1. estimate how much revenue is anticipated for transportation and from what sources;
2. define investment needs and detail how the anticipated funding will be spent; and
3. estimate the funding needed to maintain the system in current condition and build the vision system as described in the 2035 Statewide Transportation Plan.

In total, CDOT projects that roughly \$123 billion will be available for investment in the state's transportation system between 2008 and 2035. Of that, \$28 billion is forecast to come from CDOT revenues for state highways and approximately \$95 billion from other sources, including local streets and roads funding, transit funding and aviation grants.

Three investment scenarios are presented in the 2035 Statewide Plan to define transportation needs and what can be accomplished over the plan period. The first scenario – “forecast revenue” – outlines what transportation investments could be completed with \$123 billion. The second – “sustain current conditions” – estimates \$176 billion as the level of investment that would be necessary to keep the state's transportation system operating at current performance levels. The third scenario – “accomplish the vision” – estimates \$>\$249 billion as the level of spending that would be required to deliver the transportation system envisioned in the regional transportation plans prepared by the 15 transportation planning regions.

The \$123 billion in estimated revenue falls short of what would be needed for sustain and vision scenarios. An additional \$53 billion is needed to keep the transportation system operating at current performance levels. An additional \$126 billion would be needed to complete the ultimate transportation vision. The statewide plan demonstrates that without additional funding, the condition of Colorado's transportation system, in terms of system quality and mobility, will decline significantly. There are no anticipated declines in the safety of the system, as measured by the fatalities per 100 million miles traveled.

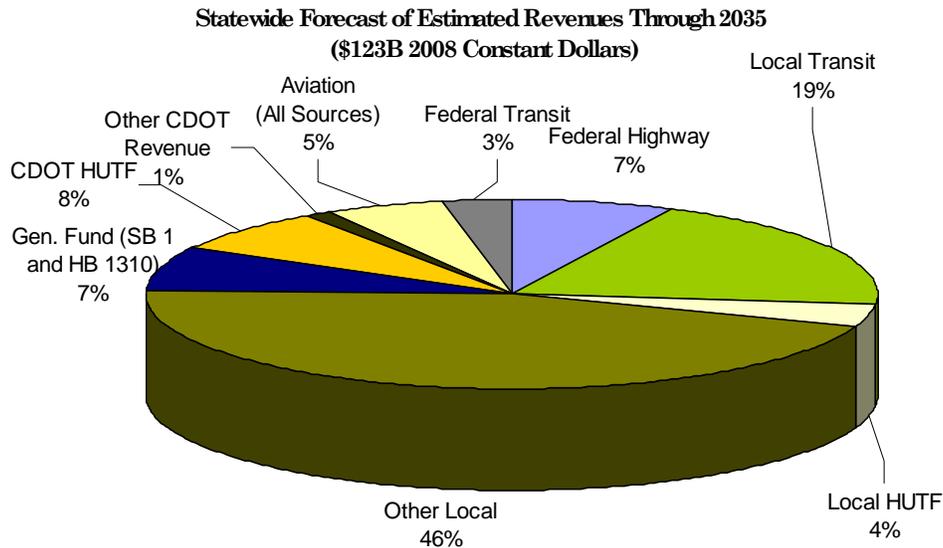
Figure 1 – Revenue Scenarios

SCENARIO	REVENUE	GAP from FORECAST
CDOT Forecast Revenue	\$28 Billion	
Other Forecast Revenue	\$95 Billion	
Total Forecast Revenue	\$123 Billion	
CDOT Cost to Sustain	\$64 Billion	\$36 Billion
Others Cost to Sustain	\$111 Billion	\$16 Billion
Total Cost to Sustain	\$176 Billion	\$53 Billion
CDOT Vision Cost	\$107 Billion	\$79 Billion
Others Vision Cost	>\$142 Billion	>\$47 Billion
Total Vision Cost	>\$249 Billion	>\$126 Billion

REVENUE ASSUMPTIONS

Funding for Colorado’s 2035 Statewide Transportation Plan is anticipated to come from a variety of sources. This includes funding from federal, state and local sources. A total of \$123 billion is forecast to be available for transportation purposes over the planning period.

Figure 2 – Estimated Revenues



The assumptions that led to the \$123 billion forecast for the 2035 Statewide Transportation Plan are discussed below. Section A addresses CDOT revenues anticipated to be available for State Highway System investments. Section B outlines revenue projections for local streets and roads. Section C addresses public transit revenues, and Section D, revenues anticipated for aviation.

CDOT Revenues

Of the \$123 billion anticipated to be available, \$29.7 billion (\$28 billion excluding aviation and transit) will be allocated by the Transportation Commission through CDOT. This section outlines the Transportation Commission and CDOT process for developing that revenue estimate.

Transportation Commission Funding Policy

For the 2035 Statewide Transportation Plan update, the Transportation Commission (TC) followed its official revenue policies that were passed by resolution for the 2030 Plan. CDOT received input from its planning partners and other stakeholders through a policy committee and a technical staff committee, which consisted of Metropolitan Planning Organization (MPO) board members, TC members, and Transportation Planning Region (TPR) representatives, as well as CDOT Executive Management Team (EMT) members and both MPO and CDOT staff. The technical and policy committees meet over a six month period to discuss methodologies to project revenues and allocate resources.

The revenue policies which carried over from the 2030 Plan (TC Resolution No. 1212, October 16, 2003) include the following for Commission and non-Commission directed revenues.

Commission-directed revenues:

- Historic revenue sources will be projected based on historic trends;
- Discretionary revenue sources will be projected based on historic trends. Matches for discretionary projects must come from regional, project specific or local allocations;
- Should a local government request and receive discretionary funding, that local entity must provide any required match for the federal discretionary funds;
- Long-range plan revenue projections will be updated during each long-range plan update;
- STIP revenue projections will be reviewed annually to determine whether actual revenues are varying more than 10 percent. If revenue projections vary by more than 10 percent, potential for modifying fiscal constraint will be considered;

Non Commission-directed revenues:

- The Commission's guidance is that the same revenue-projection approach be used as for Commission-directed revenues. In addition, the Commission recommends the regional planning process obtain input from the appropriate local jurisdiction(s) regarding non-Commission directed revenue projections.

2008-2035 Statewide Transportation Plan Revenues

Revenues for the CDOT-directed funds in the Plan are in constant FY2008 dollars. The following list the expected CDOT revenue by category in millions of dollars:

Figure 3 - Revenue by Category

Highway Users Tax Fund (HUTF)	\$9,267
Federal	\$8,863
SB-001	\$7,054
SB-001 (Transit)	\$672
HB-1310 Capital Construction Transfer	\$1,372
Gaming Funds	\$326
Local Match for FHWA Funding	\$440
FTA (CDOT Administered)	\$519
Aeronautics Funds	\$576
Safety Education	\$132
Miscellaneous	\$431
Total Revenues	\$29,653

This estimated \$29.7 billion makes up roughly 24 percent of the total \$123 billion expected to be available for transportation statewide over the planning period. The balance of the \$123 billion flows through entities other than CDOT and is described below. CDOT’s Resource Allocation Control Totals include required local match as part of the federal revenue forecasts (*TC Resolution No. 1289, July 15, 2004*).

Figure 4 – Other Revenues

Other Transportation Projected Revenues 2008 – 2035 (2008 constant Dollars)	
Local Roadways	\$61 billion
Transit/Rail	\$28 billion
Aviation	\$ 6.5 billion
Total Other Transportation Revenues	\$ 95 billion

Local Road and Bridge Revenues

Consistent with other portions of the 2035 Statewide Transportation Plan, the local needs financial plan is updated from 2005 constant dollars to 2008 constant dollars. Additionally, local spending on roads as documented in regional transportation plans prepared by metropolitan planning organizations (MPOs) is included.

Update of the 2030 Plan

As part of the 2030 Statewide Transportation Plan, CDOT conducted an assessment of local road and bridge needs over the planning period and the revenues anticipated to be available to fund those needs. This effort was called the Local Needs Assessment. For more information, see Attachment B for information about the *Colorado Local Needs Assessment, A Statewide Review of Local Roadway and Bridge System Needs and Anticipated Revenues* report. Local revenues spent on local roads, streets and bridges come from a variety of funding sources. They fall into four major categories:

- Local Funds
- State Funds
- Federal Funds
- Private Sources

Local governments rely heavily on funding that is subject to the annual discretion of locally elected officials to fund street and road needs, a fact that makes it very difficult to forecast future available revenues. An analysis of the annual revenues available for local road, street and bridge needs indicated, however, that the mandated state Highway Users Tax Fund (HUTF) share that is directed annually to local governments for local transportation improvements ranged from 22.5 percent to 28.2 percent of spending in any one year. The average over the 16-year period from 1987 to 2002 was 26.3 percent of the total revenue available to local governments. Since the percentage of local needs that is funded by the HUTF has been relatively stable over time, and long-range projections for HUTF revenues exist, the total annual revenues for local streets and roads can be calculated by assuming that HUTF will account for 26.3 percent of the total annual amount.

Figure 5 – Revenue Forecast

Revenue Forecast		
Comparison to Other HUTF Averages (1987 – 2002)		
Range	Total Local Revenue	HUTF % Total Local Revenue
High	\$21.959 B	22.5%
Average	\$18.836 B	26.3%
Low	\$17.558 B	28.2%

Based on the methodology used for the Statewide Transportation Plan, an estimated \$19 billion should be available from all sources for local roads, bridges and streets. This estimate was developed based on the average HUTF as a percent of total local revenue from 2008-2035 as

shown above. CDOT developed HUTF projections through 2035 to which the 26.3 percent factor was applied to compute Total Local Revenue. The revenues were then discounted back by the FHWA recommended four percent construction index rate to reflect 2008 dollars. In the current economic climate of escalating infrastructure and services needs, combined with generally insufficient resources, local governments may at any time alter the proportion of local revenues made available to road and bridge programs. This revenue forecast assumes the continuation of historical trends in revenue collections and expenditures.

The required local matches from the Surface Transportation Program (STP) that includes the STP-Metro, STP-Enhancement; and Congestion, Mitigation/Air Quality Program total approximately \$440 million over the 28 years of the Plan. While there may be some slight double counting between the required \$374 million local match and the \$19 billion in local streets and roadways revenues due to different methodologies, based on the relatively small amount of required local match, any double count is insignificant.

Inclusion of Front Range MPO Local Road Spending

Since the presentation of the *Draft* Statewide Transportation plan in September, regional transportation plans have been received from MPOs. The plans from the Front Range MPOs include considerably greater forecasts for local revenues than were previously estimated. The Denver Regional Council of Governments (DRCOG) estimates that local spending is estimated to top \$50 billion, in the Denver area alone. According to DRCOG estimates, \$28 billion will be spent on new local streets, with an additional \$10.5 billion spent on the preservation and maintenance of local roads. The region will further spend \$12.5 billion to preserve, maintain, and expand the regional road network. The North Front Range and Pikes Peak Area MPOs anticipate local spending of \$330 million and \$2.1 billion, respectively.

Given this new data it is necessary remove from the original statewide estimate (\$19 billion) the portion that already accounted for revenues in the MPO areas. The original statewide estimate is based on 2004 study which used the Colorado Highway Users Trust Fund (HUTF) as a proxy for local road spending. In FY2007, the Front Range MPO cities and counties received 53 percent of all Colorado HUTF funds. Based on this number it is assumed that 53 percent of all local revenue for transportation is derived in the MPO areas.

The original statewide estimate of \$19 billion is reduced by 53 percent to \$8.9 billion. In combination with the funding identified in the Front Range MPO plans, it is estimated that there will be \$61 billion for local road and bridge projects. This accounts for nearly half of the total \$123 billion anticipated to be available for transportation over the plan period.

Transit Revenues

Of the total \$123 billion in transportation revenues projected over the 28 years of the Plan, \$28 billion, or 23 percent of the total is transit revenues. Of those transit revenues, close to 75 percent comes from local government sources such as dedicated taxes, general fund contributions and fare boxes. Another 22 percent on average comes from the federal government and 3 percent from the state through SB 97-001. CDOT developed federal transit revenue forecasts based on a six-year historical average of federal transit funds allocated to the Colorado Transportation Planning Regions.

Transit Plans were developed by the 10 rural Transportation Planning Regions and incorporated into the 2035 Regional Transportation Plans. Local Transit Plans, including Coordinated Human Services Plans, were developed by the 15 Transportation Planning Regions and incorporated into the 2035 Draft Regional Transportation Plans (RTPs). The transit component of the RTP's included projected federal revenues constrained by CDOT's historical forecast (see above) and locally projected transit revenues over the 28 years of the Plan. Transit Plans projected approximately \$3.6 billion in federal funding, \$23.8 billion in local funding, and \$683 million in SB-1 Transit funding, totaling approximately \$28 billion in transit funds between 2008 and 2035.

Federal Grants

Federal Transportation Administration (FTA) grant and discretionary programs financially assist many transit providers. All FTA funds contain eligibility criteria and matching requirements that differ from program to program.

FTA 5310 funds are for capital equipment purchases for serving the elderly and disabled. Funding amounts are determined using a formula, with CDOT being the state's designated recipient. CDOT, in turn, administers and awards the funds through a competitive grant program.

The FTA 5311 program provides operating, administrative and capital funds for public transportation in rural areas with populations of 50,000 or less. The funding amounts available to Colorado are determined using a formula, with CDOT being the designated recipient. CDOT, in turn, administers and awards the funds through a competitive grant program.

The FTA 5316 program provides operating, capital, and planning funds for transit services targeting job access and reverse commute travel. CDOT administers 5316 funds for the rural and small urbanized areas while the MPO's administer 5316 funds in large urbanized areas.

The FTA 5317 – New Freedom – funds are available for capital and operating expenses that support new public transportation services that go beyond the requirements of the Americans with Disabilities Act.

FTA 5309 funds provide capital funding assistance to any size community on a discretionary basis for the establishment of new rail projects, for the improvement and maintenance of existing designated rail and other fixed-guideway systems, and for the replacement and rehabilitation of bus systems.

The FTA 5307 program is formula based and provides funds for public transportation services in urbanized areas with populations of 50,000 or more.

Other FTA funding programs available to transit providers include the Job Access and Reverse Commute program and the FTA 5303 and 5304 programs. These programs are all utilized in the state but make up only a small portion of available revenue and are limited in terms of eligibility and use.

Local Funding

Local revenue accounts for approximately 75 percent or \$18.7 billion in projected transit revenues.

Transit taxing districts are the largest funding source for transit services in Colorado. State legislation allows for three types of taxing transit districts. The first and oldest is the Regional

Transportation District, which covers most of the Denver metro area. District sales tax revenues fund transit services in a seven-county area. With the passage of the FasTracks initiative in November, 2004, the Regional Transportation District local sales tax revenue will increase in the metro Denver area. This is a unique district under state law. The second is the County Mass Transit Tax district, which is able to levy a sales tax specifically for transit funding. Summit and Eagle Counties fund transit services in this manner. The third is the Rural Transportation Authority (RTA) district, which is able to levy a variety of transit taxes on cities, towns, counties and/or districts, whether in urban or rural areas. The Roaring Fork Transportation Authority is incorporated under the RTA law.

Other local funding sources include local government general funds, dedicated sales or other taxes, fares and user fees, service contracts, advertising revenue and private business. Contractual revenues provide agencies with a funding source for services they provide for entities such as medical facilities, human services agencies or ski resort operators.

The required local match for the CDOT-administered transit programs, which include FTA Section 5310 funds for Elderly and Disabled services, FTA Section 5311 funds for rural general public service, FTA Section 5316 for Job Access and Reverse Commute services, and FTA Section 5317 for transit service for the disabled, totals approximately \$250 million over 28 years. While there may be some slight double counting with the overall \$18.7 billion in local transit dollars, based on the comparatively small amount of the local transit match, any double counting is insignificant.

State Funding

During the 2002 Colorado legislative session, lawmakers approved a bill to set aside 10 percent of Senate Bill 97-001 transportation funding for strategic transit projects. This legislation provides significant funding for transit where the initial funding became available in FY 2006. The strategic project revenues including debt service over 28 years are approximately \$8.3 billion in constant 2008. In accordance with SB 97-001, 10 percent of the strategic project allocation after debt service, is approximately \$672 million or 2.7 percent of anticipated total transit revenues over the life of the 2035 Plan. This funding became available in FY 2006. A SB-1 Transit Task Force allocated \$65 million for transit projects for the 2006-2010 period.

The \$28 billion for transit revenues accounts for nearly 23 percent of the total \$123 billion anticipated to be available for transportation over the plan period.

Aviation Revenues

A majority of airports in Colorado are owned and operated by local governments. Funding to support these facilities comes primarily in the form of state and federal grants. The Federal Aviation Administration (FAA) provides four sources of funding; Primary and Non-Primary Entitlement, Discretionary, State Apportionment and Passenger Facility Charge (PFC).

Colorado airports also can apply for state discretionary funds. State discretionary grant funds are derived from the Colorado Aviation Fund which is financed through state sales and excise taxes on aviation fuel.

Federal Grants

The projected FAA funds combine Primary and Non-Primary entitlement, discretionary and State Apportionment funds for a total of \$6 billion over the 28-year period. Eighty-four percent of these revenues go directly to Denver International Airport.

- **Primary Entitlement Funds** are granted to commercial service airports that enplane more than 10,000 passengers annually. These airports receive an annual entitlement amount each year for capital development projects based on the total number of enplaned passengers for each airport. Non-Primary Entitlement funds are granted to eligible general aviation/small commercial service airports. Thirty-eight general-aviation airports in Colorado are eligible to receive \$150,000 each on an annual basis from this fund. These airports are allowed to accrue their annual entitlement funds for up to four years, resulting in more significant capital improvement projects.
- **Discretionary Funds** are available for projects with the highest priority within the state apportionment category throughout the FAA Northwest Mountain Region.
- **State Apportionment Funds** are funds reserved by the FAA for each state as part of the FAA Airport Improvement Program (AIP). The funds are utilized by general aviation and small commercial service airports for capital development projects. Colorado receives approximately \$7.0 million annually to fund capital development projects at 38 airports eligible to compete for this funding.
- **Passenger Facility Charges (PFC)** allow commercial service airports to charge up to \$4.50 for each enplaned passenger at their airport. The revenue collected from PFC's can then be used on FAA approved projects at the airport.

State Grants

State funding for the aviation system comes through the Colorado Discretionary Grant Program (CDAG). The CDAG funds are derived from the Colorado Aviation Fund which is financed through a portion of state sales and excise taxes on aviation fuel. Revenues collected from these taxes are distributed annually through the CDAG Program and are approved by the Colorado Aeronautics Board (CAB). State funding averages \$3 million annually and may be requested for any airport that is open for public use. The average historical projection for CDOT directed state funds over the 28 year period is about \$250 million.

Figure 6 – Historic Aviation Funding

Historical Funding Totals for Colorado Airports	
1999*	59,304,973
2000*	53,780,211
2001*	72,585,897
2002*	83,268,388
2003*	75,018,395
2004*	54,212,699
2005*	93,537,606
Total Annual Average	\$ 62,619,167
State Projection 2008-2035	\$ 645,000,000
FAA Projection 2008-2035	\$ 5,822,000,000
Total Projection 2008-2035	\$ 6,467,000,000
* Annual Average FAA and State Funds.	

Loans

In addition to the traditional local, federal and state grant programs, the CDOT has created the State Infrastructure Bank (SIB). The SIB is an innovative, low interest revolving loan fund established by state legislation in 1998 and by resolution by the Colorado Transportation Commission in 1999. To date, the aviation account has loaned just under \$13 million to Colorado airports and these loans have leveraged another \$95 million in federal funds.

Forecasted Revenues for Aviation

From 2008 to 2035, CDOT estimates that the state will receive approximately \$645 million in state funds for aviation and around \$5.8 billion in federal aviation funds (including DIA) totaling \$6.5 billion. While there may be some slight double counting of the \$645 million in state funds and the \$5.8 billion federal projection due to different methodologies, based on the relatively small amount of state revenues, any double count is insignificant. The \$6.5 billion accounts for about five percent of the \$123 billion total revenues forecasted to be available for all transportation in Colorado over the planning period.

SYSTEM NEEDS AND INVESTMENT ASSUMPTIONS

CDOT – Defining State Highway System Investment Needs & Available Revenues

Three levels of investment in the state’s transportation system were defined for the 2035 Plan, based on the existing or desired level of performance from the system. The estimated cost to accomplish the three scenarios for the state highway system over the planning period is presented below. Details on the three scenarios are presented in Chapter III of this report and are supplemented by the materials in the attached Appendix.

Figure 7 – Projected Allocations by Investment Scenario

CDOT Projected Transportation Fund Allocations 2008 - 2035 (2008 constant dollars)		
Current Revenue Projections	Sustain Current Conditions	Accomplish the Vision
\$28 billion	\$64 billion	\$107 billion

Plan identifies forecast conditions, cost to sustain current conditions and cost to build the vision on the State Highway System.

CDOT Resource Allocation

For the 2035 Statewide Transportation Plan update, the Transportation Commission (TC) followed its official resource allocation policies that were passed by resolution for the 2030 Plan. CDOT received input from its planning partners and other stakeholders through a policy committee and a technical staff committee, which consisted of MPO board members, TC members, and TPR representatives, as well as CDOT EMT members and both MPO and CDOT staff. The technical and policy committees meet over a six month period discussing methodologies to use in allocating resources. Detailed documentation is available from the Office of Financial Management and Budget: <http://www.dot.state.co.us/Budget/Doc%203-13-07%20-%20Resource%20Allocation%202008-2035.pdf>

Figure 8 - 2008 - 2035 CDOT Transportation Plan Resource Allocation

(2008 constant dollars in millions)

Strategic Projects

Debt Service	\$1,502
Strategic Projects Highway	\$3,162
Strategic Projects - after 7th Pot	\$2,992
Strategic Projects Transit	\$672

Total Strategic Projects	\$8,329
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System Quality

Surface Treatment	\$3,936
Bridge Programs	\$1,389
SQ Maintenance Programs	\$2,806
ITS Maintenance	\$223
Transit (Replacement Capital)	\$63

Total System Quality	\$8,417
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Mobility

Congestion Relief	\$226
Maintenance (S&I - MLOS)	\$1,274
ITS Investments	\$0
Enhancement	\$271
Metro	\$928
CMAQ	\$671
Construction - Gaming	\$243
Aeronautics	\$646
Transit (New Service or Capital)	\$453

Total Mobility	\$4,711
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Safety

CDOT Safety Programs	\$806
Maintenance	\$1,928
Safety Education	\$146
Safe Routes to Schools	\$49

Total Safety	\$2,930
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Program Delivery	
Maintenance	\$439
Equipment Programs	\$451
Property	\$199
TC Contingency	\$854
Maintenance Incentive Program	\$70
Operations	\$2,345
Transit (Administration/Ops)	\$13
Metro Planning (FHWA & FTA)	\$170
Total Program Delivery	\$4,540
Regional Priority Program	\$726
Total Allocations	\$29,653
Total Allocations (excluding transit and aviation)	\$27,806

Local Road and Bridge Investment Needs

As part of the 2030 Statewide Transportation Plan update, CDOT conducted the Local Needs Assessment with the objective of developing credible estimates of the cost to improve the local roadway system to establish performance levels. This survey serves as the basis for the 2035 local streets, roads and bridge investment needs calculations. The needs and cost were defined in the 2030 based on a computer model that defined local roadway unit costs, maintenance schedules and minimum local roadway design standards. Details of the assumptions used in the Local Needs Assessment are provided in a separate technical report to the 2030 Statewide Transportation Plan.

In general the base methodology can be described by the following steps:

1. Inventory system
2. Assess condition
3. Define standards
4. Calculate current system backlog
5. Calculate future system preservation maintenance needs (to 2030)
6. Identify future system mobility needs (to 2030)
7. Project anticipated revenues (to 2030)
8. Compare aggregate needs to revenues and calculate unmet need (to 2030)

The methodology develops cost estimates for backlog, system preservation, maintenance and future mobility needs on the local road and bridge system. Working closely with local

jurisdictions, surface condition and performance and geometric design standards and goals were established for the variety of types of local roadways and bridges that make up Colorado’s local roadway system. These standards and goals were then compared to the existing condition of road and bridge systems to develop cost estimates to improve the systems. Similarly, long-term costs to preserve and sustain local roads and bridges at the agreed upon standards were also estimated. Finally, the Local Needs Assessment projects future mobility needs on Colorado’s local roads and bridges.

Consistent with other portions of the 2035 Statewide Transportation Plan, the local needs financial plan is updated from 2005 constant dollars to 2008 constant dollars. The need update methodologies do not change any of the assumptions made in the 2030 Statewide Transportation Plan’s assessment of local needs. The local needs are divided into construction costs and maintenance costs.

For the purposes of the 2035 Statewide Transportation Plan, all construction costs are increased by 33 percent. This inflation factor captures the increased costs of meeting the needs of the roadway system backlog, system preservation, future mobility, and bridges. The choice of 33 percent is consistent with the State Transportation Advisory Committee approved construction cost inflation factor applied to state highway construction projects. A detailed discussion on the calculation of the 33 percent is included in Attachment F of the 2035 Financial Technical Report. Further, the use of 33 percent factor is consistent with the “conservative” approach to cost estimation used in the creation of the 2030 estimates.

The local need study identified routine maintenance activities as snow and ice removal, street sweeping, mowing, culvert cleaning, sign replacement, etc. It is reasonable to believe that these activities would grow at rate comparable to the consumer price index. For the purposes of the 2035 Statewide Transportation Plan, routine maintenance costs are increased by 8 percent. The 8 percent factor is the compounded rate for the Denver-Boulder-Greeley CPI in 2005, 2006, and 2007.

Total local needs for each major section of the study – Backlog, System Preservation, Routine Maintenance, Bridge and Future Mobility Needs – are tabulated below, with a total projected cost of \$43 billion over the planning period.

It is worth noting that the design standards, unit costs and revenue assumptions used in the study were relatively conservative and would not result in every mile of local roadway facility being improved to the ultimate “vision”.

As discussed in revenue section of this report, the Front Range MPOs’ estimate that these area will spend in excess of \$50 billion of local funds on local roads. For the purpose of the 2035 Statewide Transportation Plan it is assumed that this level of spending will allow these regions to maintain the condition of local roads. To improve the condition would require additional spending. The cost shown in the plan for the third funding scenario – “implement the vision” – for local streets and roads is shown to exceed \$74 billion.

Figure 9 – Local Bridge and Roadway Projected Allocations

Local Bridge and Roadway Projected Transportation Fund Allocations 2008 - 2035 (2008 constant dollars)		
Current Revenue Projections	Sustain Current Conditions	Accomplish the Vision
\$ 61 billion	\$ 73 billion	Exceeds \$74 billion

Transit Needs

In 2006, CDOT implemented a new framework for transit planning and aligned the development process to correspond with the update of the Regional Transportation Plans. Under this new framework, Regional Planning Commissions (RPCs) and Metropolitan Planning Organizations (MPOs) develop Local Transit Plans and Coordinated Human Services Plans as part of their long-range transportation plans. This transit component is based on the Regional Transportation Plan Guidebook.

Regional Planning Commissions formed Transit Technical Advisory Committees (TACs) to provide input during plan development and to specifically oversee the development of the 2035 Local Transit Plans and Human Services Plans. The TAC representation included members from the RPCs/MPOs, transit providers, locally elected officials, CDOT and people interested in transit. Responsibilities of the TACs included: providing input to the RPC on transit and multi-modal issues; developing the transit vision of the TPR; providing input on the corridor visions; and identifying transit needs and projects.

Needs for transit can be assessed in two ways: 1) needs that identify an estimated annual number of transit trips based on demographic characteristics regardless of actual levels of service. Unmet trip need is assessed by determining the difference between the estimated demand (estimate of expected transit service use based on specific demographic needs and service level assumptions) and actual service provided; and 2) financial needs that can be determined by computing the difference between fiscally constrained transit plans and preferred or vision transit plans.

The 2035 Transit Technical Report includes an appendix documenting the methodology used for determining unmet transit need. “Unmet need is the difference between the total need and the amount of the transit service that is being provided within the region by all transit providers. The need is calculated using a methodology to estimate transit needs and the total ridership is subtracted from the total need to determine the unmet need.”

$$\text{Unmet Needs} = \text{Total Estimated Annual Need} - \text{Annual Trips Provided}$$

Review of the 2030 Transit Elements determined the percentage of needed transit trips being met within the state. There are currently 116 million annual passenger trips provided in Colorado, where just over 18 million trips occur in the 10 rural TPR’s. There are an estimated 258 million annual passenger trips needed assuming level of service and availability are not at issue. Using the *Transit Element Guideline* methodology, Colorado’s transit providers currently provide approximately 45 percent of the needed transit trips in Colorado.

With the \$28 billion identified as available during the Plan time period, which includes projected FasTracks revenues, 45 percent of the transit need can be met. The cost of sustaining current conditions was calculated based on the assumption that the total cost of service is proportional to the percent of the need served. A need of 436 million annual trips in 2035 is assumed based on updates to the 2030 Statewide Transportation Plan projections.

The fiscally constrained 2035 Transit Plans provide estimates of the projected funding for transit projects over the next 28 years. The transit components of the RTP’s show that transit providers in Colorado identified \$28 billion worth of fiscally constrained transit projects over the next 28 years. As part of the regional planning process, transit providers were asked to submit

operational and capital projects for the 2035 planning horizon to address long-range transit needs. These projects were included in the preferred or vision plan of the transit component of the RTP's and were based on unrestricted funding. Projects included the costs associated with sustaining existing systems and also enhancing current transit services. Transit providers in Colorado identified \$59 billion in preferred projects over the next 28 years.

Figure 10 – Statewide Transit Allocations

Statewide Transit Allocations 2008 – 2035 (2008 constant dollars)		
Current Revenue Projections	Sustain Current Conditions	Accomplish the Vision
\$28 billion 30% of need met	\$32 billion	\$59 billion

Aviation Needs

To assist the Colorado Aeronautical Board (CAB) and the Federal Aviation Administration (FAA) in making efficient funding decisions with limited financial resources, the Colorado Aviation System Plan (CASP) was developed and finalized in late 2000. The primary goal of the CASP is to examine the adequacy of Colorado's system of airports and to determine the ability of the system to meet current and future aviation needs.

Before the adequacy of the airport system could be measured, it was necessary to determine each airport's current performance levels and contributions to the overall system. Five criteria used to evaluate each airport's functional level included:

- Activity – the existing and forecasted level of aviation activity.
- Expandability – each airport's ability to accommodate future air- and land-side facilities.
- Economics – the economic benefit that each airport provides the community it serves.
- Coverage/Emergency – each airport's ability to serve a distinct geographic area and to support health services where no or limited hospital services are available.
- Investment – the level of investment that historically has taken place at each airport.

Based on a rating and ranking process using these criteria, the system airports were divided into three functional levels: major, intermediate and minor. Performance measures have been developed within each airport functional level, with the highest standards set for the major airport category and the lowest set for the minor airport category. The CAB and the FAA use the airport functional roles and performance measures developed within each functional level as tools to help determine future funding decisions.

The fiscally constrained federal and state funding level for Colorado airports is \$6.5 billion. By combining the constrained \$6.5 billion and unfunded \$2.5 billion identified in regional transportation plans, the preferred or vision plan of an estimated \$9.0 billion will provide new runways and infrastructure to improve air service. To meet current levels of service, it is estimated that approximately 75 percent of the vision or \$6 billion will be needed.

Figure 11 – Statewide Funding for Airports

Statewide Funding for Colorado Airports 2008 – 2035 (2008 constant dollars)		
Current Revenue Projections	Sustain Current Conditions	Accomplish the Vision
\$6.5 billion*	\$6.5 billion	\$9 billion

*Includes \$650 million in state funds.

Summary of Statewide Transportation Plan Financial Assumptions

Figure 12 – 2035 Financial Assumptions

2035 Statewide Transportation Plan Financial Assumptions
(constant 2008 dollars)

	Forecast millions	Sustain millions	Vision billions
State Highway System			
System Quality	\$8,354	\$17,088	\$28.0
Mobility	\$3,612	\$29,931	\$55.9
Safety	\$2,930	\$4,580	\$17.7
Program Delivery	\$4,527	\$4,700	\$4.9
Strategic Projects	\$7,657	\$7,432	\$0.0
Regional Priority Program	\$726		
Total State Highway	\$27,806	\$63,732	\$106.6
Local Roadway			
Front Range MPOs	\$52,848	\$52,848	\$52.8
Remainder of the State	\$7,842	\$20,514	\$20.5
Total Local Roadway	\$60,690	\$73,362	>\$74
Aviation			
Denver International Airport	\$5,440	\$5,440	\$6.4
All Other Colorado Airports	\$1,027	\$1,027	\$2.4
Total Aviation	\$6,467	\$6,467	\$8.8
Transit/Rail			
Total Transit/Rail	\$27,846	\$32,370	\$58.7
Statewide Transportation System			
State Highway System	\$27,806	\$63,732	\$106.6
Local Roadways	\$60,690	\$73,362	>\$74
Aviation	\$6,467	\$6,467	\$8.8
Transit/Rail	\$27,846	\$32,370	\$58.7
Total Statewide System	\$122,809	\$175,931	\$249.0

ASSUMPTIONS FOR THE THREE INVESTMENT SCENARIOS

The Statewide Transportation Plan includes three revenue allocation scenarios. Each revenue scenario is presented with transportation system performance estimates. The three scenarios build on the revenue estimates and investment needs discussed in the first two sections of this report. As a basis for developing the three funding scenarios CDOT relied on:

its performance management modeling systems for pavement, bridge, safety and maintenance level of service;

- the *Colorado Local Needs Assessment Study* completed in 2004.
- The *Local Transit and Human Service Coordination Plans* of the Regional Transportation Plans; and
- Corridor Visions developed in the regional planning process and incorporated in the Regional Transportation Plans.

CDOT's Management Systems

CDOT has developed performance management systems for evaluating and estimating highway, bridge, pavement, safety and maintenance level of service conditions. The management systems assess current data and forecast the condition of the state highway system based on a number of critical variables (such as age, level of maintenance, traffic levels, etc.) The management systems are used to inform the allocation of resources, as well as forecast the state of the transportation system under different funding scenarios.

Local Needs Assessment

Funding necessary to accomplish the three plan scenarios is based on the *Local Needs Assessment Study* and the Front Range MPO local road estimates as previously described. The 2035 update of the study found that approximately \$61 billion would be available for local streets, roads and bridge projects over the plan period, and that the needs are conservatively estimated to exceed \$74 billion.

TRANSIT Component of the Regional Transportation Plans

Each Regional Transportation Plan includes in the transit component an estimate of constrained revenue, a cost to sustain the current level of transit service, and a preferred/vision cost of completing the preferred transit projects. CDOT provided historical averages for federal dollars included in constrained transit plans based on historical average revenues allocated to each Transportation Planning Region (TPR). The local funds in the constrained transit plans were determined based on projected levels of federal, state, and local dollars available for transit. The preferred projects reflect total transit need without funding restraints. With projections of available transit funding, 45 percent of the transit Vision Cost will be met by 2035.

Aviation

Aviation projected available funding levels of \$6 billion is based on five years of historical funding from FAA and state airport funding. The combined available funds and unfunded need accounts for the preferred or vision Plan of about \$98 billion. To meet the current level of aviation service, it is estimated approximately \$6.5 billion is needed.

FUNDING SCENARIO ONE – ASSUME FORECAST REVENUE ONLY

The current funding scenario includes a total of \$123 billion in projected revenues for the statewide system from 2008 through 2035 in 2008 constant dollars. Of this total, \$30 billion is CDOT-directed funding (\$28 billion for state highways, \$650 million for aviation and \$1.2 billion for transit). The remaining \$95 billion is made up of other transportation revenues such as local roadway, transit/rail and aviation funding. These anticipated revenues are sometimes referred to as the fiscally constrained element of the Plan.

The anticipated funding levels paint a bleak picture of state highway and local roadway performance. The picture is less ominous for aviation and transit, but remains far from the performance levels that would fully support dynamism of Colorado's economy. For instance, it is projected that by 2035, 25 percent of pavement on the State Highway System will be in good/fair condition, 60 percent of the bridges will be rated good/fair, the maintenance level of service will be failing, average daily delay on congested corridors will climb to 70 minutes from 22 minutes in 2006. Despite these declines in performance it is estimated that the primary safety measure, fatalities per 100 million miles driven, will fall to 1.26 from 1.10.

Figure 13 – Forecast Scenario

2008-2035 Forecast Scenario (2008 constant dollars in millions)

State Highway System Quality (SQ)

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Surface Treatment	\$3,936	\$141	See Attachment A - 2035 Resource Allocation
Bridge Programs	\$1,389	\$50	See Attachment A - 2035 Resource Allocation
SQ Maintenance Programs	\$2,806	\$100	See Attachment A - 2035 Resource Allocation
SQ Strategic Projects	<i>See Strategic Project Section</i>		
ITS Maintenance	\$223	\$8	See Attachment A - 2035 Resource Allocation
Total State Highway SQ	\$8,354	\$298	

State Highway Mobility

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Highway Mobility	\$2,338	\$84	See Attachment A - 2035 Resource Allocation. This category includes: Congestion Relief, Enhancement, CMAQ, METRO, Construction Gaming
Maintenance (S&I - MLOS)	\$1,274	\$45	See Attachment A - 2035 Resource Allocation
Total State Highway Mobility	\$3,612	\$129	

State Highway Safety

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Maintenance	\$1,928	\$69	See Attachment A - 2035 Resource Allocation. These funds are transferred to regions for safety related maintenance (e.g. signs or guardrail)
Highway Safety	\$1,002	\$36	See Attachment A - 2035 Resource Allocation This category includes the CDOT Safety Program, Safe Routes to Schools, Safety Education
Total State Highway Safety	\$2,930	\$105	

Program Delivery (PD)

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Maintenance	\$439	\$16	See Attachment A - 2035 Resource Allocation
Program Delivery	\$4,088	\$146	See Attachment A - 2035 Resource Allocation. This category includes Equipment Programs, Property, TC Contingency, Maintenance Incentive Program, Operations, Metro Planning (FHWA/FTA)
Total State Highway PD	\$4,527	\$162	

Strategic Projects

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Debt Service	\$1,502	\$54	See Attachment A - 2035 Resource Allocation
Strategic Highway Projects	\$3,162	\$113	See Attachment A - 2035 Resource Allocation
Strategic Projects after the 7th Pot	\$2,992	\$107	See Attachment A - 2035 Resource Allocation
Total State Highway SP	\$7,657	\$273	

Total State Highway ForecastRevenues

	2008-2035 Investment Total	Annual Investment
System Quality	\$8,354	\$298
Mobility	\$3,612	\$129
Safety	\$2,930	\$105
Program Delivery	\$4,527	\$162
Strategic Projects	\$7,657	\$273
Regional Priority Program	\$726	\$26
Total State Highway Forecast	\$27,806	\$993

Total Local Roadway ForecastRevenue

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Revenue	\$60,690	\$2,168	See Attachment B - 2035 Update of Local Needs Financial Plan
Total Local Roadway Anticipated	\$60,690	\$2,168	

Total Aviation ForecastRevenue

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Denver International Airport	\$5,440	\$194	See Attachment C - Aviation, Forecast, Sustain and Vision Funding 2008-2035 (CDO1 Aeronautics Division). Revenues include passenger facility charges at commercial service airports.
All Other Colorado Airports	\$1,027	\$37	
Total Aviation Anticipated	\$6,467	\$231	

Total Transit/Rail ForecastRevenue

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Transit	\$27,846	\$995	See Attachment D - Transit/Rail Forecast, Sustain and Vision Revenues
Total Transit/Rail Anticipated	\$27,846	\$995	

Total Statewide ForecastRevenue

	2008-2035 Investment Total	Annual Investment
State Highway System	\$27,806	\$993
Local Roadways	\$60,690	\$2,168
Aviation	\$6,467	\$231
Transit/Rail	\$27,846	\$995
Total State Transportation Anticipated	\$122,809	

FUNDING SCENARIO TWO – SUSTAIN CURRENT CONDITIONS

The funding needed to sustain current performance levels is projected to total \$176 billion for the statewide system from 2008 to 2035 in 2008 constant dollars. This scenario demands a \$63.7 billion investment in the state highway system. This scenario recommends a \$28.7 billion investment in congestion relief. An investment of approximately half as much is anticipated to slow the growth of congestion by half. Slowing the growth of congestion by half would result in an average of 46 minutes of delay per person in congested corridors by 2035. Under this funding scenario, current performance levels can be sustained with an expected 60 percent pavement in good/fair condition, 95 percent of the bridges rated good/fair, and maintenance level of service at grade B. The fatality rate is anticipated to drop to 1.10 fatalities per 100 million vehicle miles traveled.

The funding gap between meeting the current performance objectives and the current available funding level is a total of \$53 billion. Of that total, \$36 billion is a CDOT shortfall and there is a \$17 billion shortfall for other transportation such as local roads, transit/rail and aviation.

Figure 14 – Sustain Scenario

2008-2035 Sustain Scenario (2008 constant dollars in millions)

State Highway System Quality (SQ)

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Surface Treatment	\$8,644	\$309	See Attachment E - 2035 OFMB Sustain Performance Calculation
Bridge Programs	\$5,161	\$184	See Attachment E - 2035 OFMB Sustain Performance Calculation
SQ Maintenance Programs	\$2,870	\$102	See Attachment E - 2035 OFMB Sustain Performance Calculation
ITS Maintenance	\$413	\$15	See Attachment E - 2035 OFMB Sustain Performance Calculation
Total State Highway SQ	\$17,088	\$610	

State Highway Mobility

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Highway Mobility	\$28,710	\$1,025	See Attachment E - 2035 OFMB Sustain Performance Calculation
Maintenance (S&I - MLOS)	\$1,221	\$44	See Attachment E - 2035 OFMB Sustain Performance Calculation
Total State Highway Mobility	\$29,931	\$1,069	

State Highway Safety

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Highway Safety	\$4,580	\$164	See Attachment E - 2035 OFMB Sustain Performance Calculation
Total State Highway Safety	\$4,580	\$164	

Program Delivery (PD)

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Maintenance	\$405	\$14	See Attachment E - 2035 OFMB Sustain Performance Calculation
Program Delivery	\$4,295	\$153	See Attachment E - 2035 OFMB Sustain Performance Calculation
Total State Highway PD	\$4,700	\$168	

Strategic Projects

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Strategic Projects	\$7,432	\$265	See Attachment E - 2035 OFMB Sustain Performance Calculation
Total Strategic Projects	\$7,432	\$265	

Total State Highway Sustain Need

	2008-2035 Investment Total	Annual Investment
System Quality	\$17,088	\$610
Mobility	\$29,931	\$1,069
Safety	\$4,580	\$164
Program Delivery	\$4,700	\$168
Strategic Projects	\$7,432	\$265
Total State Highway Sustain	\$63,732	

Total Local Roadway Sustain Need

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Front Range MPO Areas	\$52,848	\$1,887	See Attachment B - Update of Local Needs Financial Plan. Forecast funding in the Ft. Collins, Denver, Colorado Springs and Pueblo metro areas is anticipated to sustain local systems.
Remainder of Colorado	\$20,514	\$733	See Attachment B - Update of Local Needs Financial Plan.
Total Local Roadway Sustain	\$73,362	\$2,620	

Total Aviation Sustain Need

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Denver International Airport	\$5,440	\$194	See Attachment C - Aviation Forecast Revenues and Sustain and Vision Needs.
All Other Colorado Airports	\$1,027	\$37	Revenues include passenger facility charges at commercial service airports.
Total Aviation Sustain Need	\$6,467	\$231	

Total Transit/Rail Sustain Need

	2008-2035 Investment Total	Annual Investment	Source and Explanation
Transit	\$32,370	\$1,156	See Attachment D - Transit/Rail Forecast Revenues and Sustain and Vision Needs
Total Transit/Rail Sustain Need	\$32,370	\$1,156	

Total Statewide Sustain Need

	2008-2035 Investment Total	Annual Investment
State Highway System	\$63,732	\$2,276
Local Roadways	\$73,362	\$2,620
Aviation	\$6,467	\$231
Transit/Rail	\$32,370	\$1,156
Total State Transportation Sustain	\$175,931	\$6,283.24

FUNDING SCENARIO THREE – IMPLEMENT THE VISION

The funding needed to accomplish the corridor visions and improve the performance transportation system by 2035 is projected to total more than \$249 billion for the statewide system in 2008 constant dollars. Of that total, \$107 billion is demanded by the State High System. Under this funding scenario, the improvements to the transportation system include 75 percent of the pavement condition on the State Highway System rated as good/fair, 100 percent of the bridges rated as good/fair, maintenance level of service rated as “B,” corridor vision mobility projects completed, and fatality rate lowered to 1.00 fatalities per 100 million vehicle miles traveled with the passage of a primary seat belt law.

The funding gap between meeting the vision performance and the current available funding level exceeds \$126 billion. Of that total, \$79 billion is a CDOT shortfall and there is a more than \$47 billion shortfall for other transportation such as local roads, transit/rail and aviation.

Figure 15 – Vision Scenario

2008-2035 Vision Scenario (2008 constant dollars in billions)

State Highway System Quality (SQ)			
	2008-2035 Investment Total	Annual Investment	Source and Explanation
Surface Treatment	\$11	\$0.4	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs
Bridge Programs	\$10	\$0.3	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs
Strategic Projects	\$1	<\$0.1	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs. System Quality share of identified strategic projects.
SQ Maintenance Programs	\$6	\$0.2	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs 42 percent of MLOS portion, consistent with 2035 RA MLOS allocation for this category of MLOS
ITS Maintenance	\$0.5	<\$0.1	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs 3 percent of MLOS portion, consistent with 2035 RA MLOS allocation for this category of MLOS
Total State Highway SQ	\$28	\$1	

State Highway Mobility			
	2008-2035 Investment Total	Annual Investment	Source and Explanation
Highway Mobility (not SP)	\$44	\$1.6	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs
ITS	\$3	\$0.1	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs
Strategic Projects	\$6	\$0.2	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs. Mobility share of identified strategic projects.
Maintenance (S&I - MLOS)	\$3	\$0.1	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs 19 percent of MLOS portion, consistent with 2035 RA MLOS allocation for this category of MLOS
Total State Highway Mobility	\$56	\$2	

State Highway Safety			
	2008-2035 Investment Total	Annual Investment	Source and Explanation
Strategic Projects	\$1	<\$0.1	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs. Safety share of identified strategic projects.
Highway Safety	\$17	\$0.6	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs
Total State Highway Safety	\$18	\$1	

Program Delivery (PD)			
	2008-2035 Investment Total	Annual Investment	Source and Explanation
Maintenance	\$1	<\$0.1	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs 7 percent of MLOS portion, consistent with 2035 RA MLOS allocation for this category of MLOS
Strategic Projects	\$0.2		See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs. Program Delivery share of identified strategic projects.
Program Delivery	\$4	\$0.1	See Attachment G - Highway Performance Vision Estimate and Highway Vision Costs
Total State Highway PD	\$5	<\$1	

Total State Highway Vision Need			
	2008-2035 Investment Total	Annual Investment	
System Quality	\$28	\$1.0	
Mobility	\$56	\$2.0	
Safety	\$18	\$0.6	
Program Delivery	\$5	<\$1	
Total State Highway Vision	\$107	\$4	

Total Local Roadway Vision Need			
	2008-2035 Investment Total	Annual Investment	Source and Explanation
Front Range MPO Areas	\$53	\$1.9	See Attachment B - Update of Local Needs Financial Plan. Forecast funding in the Ft. Collins, Denver, Colorado Springs and Pueblo metro areas is anticipated to sustain local systems.
Remainder of Colorado	\$21	\$0.7	See Attachment B - Update of Local Needs Financial Plan.
Total Local Roadway Vision	>\$74	>\$3	

Total Aviation Vision Need			
	2008-2035 Investment Total	Annual Investment	Source and Explanation
Denver International Airport	\$6	\$0.2	See Attachment C - Aviation, Forecast, Sustain and Vision Funding 2008-2035
All Other Colorado Airports	\$2	\$0.1	
Total Aviation Vision Need	\$9	<\$1	

Total Transit/Rail Vision Need			
	2008-2035 Investment Total	Annual Investment	Source and Explanation
Transit	\$59	\$2.1	See Attachment F Transit/Rail Vision Cost Estimate
Total Transit/Rail Vision Need	\$59	\$2	

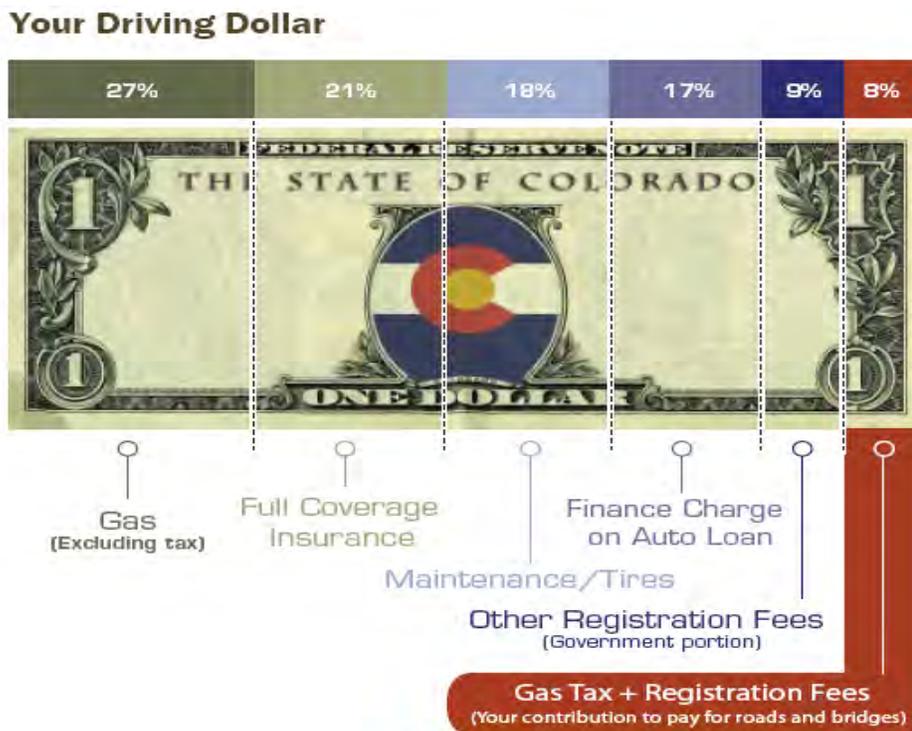
Total Statewide Vision Need			
	2008-2035 Investment Total	Annual Investment	
State Highway System	\$107	\$3.8	
Local Roadways	\$74	\$2.6	
Aviation	\$9	<\$1	
Transit/Rail	\$59	\$2.1	
Total State Transportation Vision	\$249	9	

CALCULATION OF GAPS AND CONTRIBUTION PER VEHICLE

In order to personalize the large dollar figures discussed in the 2035 Statewide Transportation Plan calculations of the State Highway System performance gaps are made on a per vehicle basis. The numerator for these calculations is the State Highway System forecast, sustain and vision figures. The denominator for these calculations is 5,647,092 vehicles. The vehicle figure is the estimated average number of vehicles that will be registered each year in Colorado between 2008 and 2035, excluding trailers. The estimate is based on the historic one to two percent growth rate of vehicle registrations.

To aid in the understanding of how individuals support the State Highway System, the percent of auto expenditures that support the State Highway System is reported. The estimated \$177 per year is the average cost per vehicle paid by owner to support the State Highway System. This money is collected from a variety of sources including registration fees, the gas tax, Senate Bill 1 and other sources. Specific Ownership Tax (SOT) is the tax paid by the owner of a vehicle to the county at the purchase a car and every year after that at the time of registration renewal. Roughly 76 percent of the SOT goes to local government general fund to be used for any purpose, and roughly 24 percent of it goes to the state for transportation support. So of the money a vehicle owner pays for the gas tax, license plate, and car sales tax, only 25 cents of every dollar (on average) goes to the state transportation system. AAA estimates that medium sedan car owners pay \$5,636 on average per year to own and operate a medium size sedan. The average cost for license, registration and taxes is \$544.

Figure 16 – Your Driving Dollar



RESOURCES

(See Appendix)

Attachment A - Resource Allocation: FY2008-2035 Allocations (December 14, 2006).

Attachment B - 2035 Update of the Local Needs Financial Plan and Executive Summary from Colorado Local Needs Assessment, A Statewide Review of Local Roadway and Bridge System Needs and Anticipated Revenues (August 2004).

Attachment C - Aviation Forecast Revenues and Sustain and Vision Needs

Attachment D - Transit and Rail Forecast Revenues and Sustain and Vision Needs

Attachment E - OFMB Sustain Performance Estimate

Attachment F - 2035 Highway and Transit Cost Adjustments

Attachment G - Highway Performance Vision Estimate and Highway Vision Costs

Attachment A – 2035 Resource Allocation

Fiscal Year 2008 - 2035 Colorado Department of Transportation 2035 Plan Control Totals								
December 14, 2006								
(Deflated Amounts, Dollars in Thousands)								
	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Statewide	Total 08-35
Strategic Projects								
Debt Service	0	0	0	0	0	0	1,501,700	1,501,700
Strategic Projects Highway	1,254,700	668,100	598,800	330,500	79,700	230,700	0	3,162,500
Strategic Projects - after 7th Pot	254,400	688,300	224,400	538,600	134,700	1,152,100	0	2,992,500
Strategic Projects Transit	0	0	1,800	6,100	100	7,800	656,200	672,000
Total Strategic Projects	1,509,100	1,356,400	825,000	875,200	214,500	1,390,600	2,157,900	8,328,600
System Quality								
Surface Treatment	511,600	649,400	708,400	877,600	307,000	881,600	0	3,935,500
Bridge On System	107,700	252,000	120,500	104,300	89,200	387,700	84,200	1,145,700
Bridge Off System	0	0	0	0	0	0	243,800	243,800
Rest Area	0	0	0	0	0	0	0	0
Maintenance (MLOS)	543,400	352,900	515,400	408,900	467,700	512,600	0	2,800,800
ITS Maintenance	0	0	0	0	0	0	223,000	223,000
Tunnels	3,200	0	1,900	0	0	0	0	5,100
Transit (Replacement Capital)	0	0	0	0	0	0	63,400	63,400
Total System Quality	1,165,900	1,254,300	1,346,200	1,390,800	864,000	1,781,800	614,300	8,417,300
Mobility								
Congestion Relief	15,800	20,300	4,500	27,100	4,500	153,500	0	225,800
Maintenance (S&I - MLOS)	328,600	155,400	309,500	137,600	200,000	142,700	0	1,273,800
ITS Investments	0	0	0	0	0	0	0	0
Enhancement	39,800	44,600	38,100	41,400	24,100	82,500	0	270,500
Metro	0	162,800	0	72,200	0	693,400	0	928,500
CMAQ	0	101,400	8,100	54,300	8,100	498,900	0	670,700
Construction - Gaming	194,100	48,500	0	0	0	0	0	242,700
Aeronautics	0	0	0	0	0	0	645,500	645,500
Transit (New Service or Capital)	0	0	0	0	0	0	453,100	453,100
Total Mobility	578,400	533,100	360,300	332,600	236,700	1,571,100	1,098,600	4,710,600
Safety								
Rockfall Mitigation	0	0	0	0	0	0	84,200	84,200
Hot Spots	10,400	10,400	10,400	10,400	10,400	10,400	0	62,500
Traffic Signals	7,100	7,100	7,100	7,100	7,100	7,100	0	42,500
Safety Surface Treatment	18,600	23,600	25,800	31,900	11,200	32,100	0	143,200
Maintenance (Traffic Ops - MLOS)	364,800	235,700	344,300	273,200	312,400	340,500	0	1,870,900
Safety Education	0	0	0	0	0	0	146,300	146,300
Railroad Crossings	0	0	0	0	0	0	62,100	62,100
Hazard Elimination	35,000	67,100	38,300	63,800	19,400	188,200	0	411,900
Safe Routes to Schools	0	0	0	0	0	0	48,900	48,900
Rockfall Mitigation - Gaming	0	0	0	0	0	0	9,100	9,100
Maintenance - Gaming	0	0	0	0	0	0	48,400	48,400
Total Safety	435,900	344,000	425,800	386,400	360,500	578,300	399,000	2,929,900
Program Delivery								
Maintenance	85,600	55,300	80,800	64,100	73,300	79,900	0	439,200
Road Equipment	54,000	46,200	73,100	41,900	75,300	64,600	0	355,100
Cap. Op. Equipment	0	0	0	0	0	0	96,000	96,000
Property	33,500	26,200	33,900	27,900	28,900	19,700	28,500	198,600
TC Contingency	0	0	0	0	0	0	853,500	853,500
Maintenance Incentive Program	0	0	0	0	0	0	70,000	70,000
Operations	0	0	0	0	0	0	2,344,700	2,344,700
Transit (Administration/Ops)	0	0	0	0	0	0	13,100	13,100
Metro Planning (FHWA & FTA)	0	32,300	6,300	15,600	0	115,800	0	170,100
Total Program Delivery	173,100	160,100	194,200	149,500	177,600	280,100	3,405,800	4,540,300
Regional Priority Program	97,800	109,800	93,900	101,800	59,200	203,000	0	665,600
Earmarks FY2008 and FY2009	400	12,000	6,600	5,800	0	35,800	0	60,600
Total Allocations	3,960,700	3,769,600	3,251,900	3,242,200	1,912,300	5,840,600	7,675,600	29,653,000
Revenue								29,653,000
All allocations are subject to change based on performance measures and economic conditions.								

Attachment B - 2035 Update of the Local Needs Financial Plan**Introduction**

This note describes the methodologies used for updating the cost and revenue estimates in the 2030 Local Needs Financial Plan. Consistent with other portions of the 2035 Statewide Transportation Plan, the 2030 Local Needs Financial Plan is updated from 2005 constant dollars to 2008 constant dollars. The 2035 update also includes forecasts for local revenues from the metropolitan planning organizations that serve the Ft. Collins, Denver, Colorado Springs and Pueblo metro areas (Front Range MPOs). In 2030 Local Needs Financial Plan did not include independent estimates from the any MPOs.

The methodologies do not change any of the assumptions made in the 2030 Local Needs Financial Plan. The local needs in the plan are comprised of three sets of dollar estimates: construction costs, maintenance costs and revenues. Figure 1 shows the 2030 (2005 dollar) estimates for each area.

Figure 1. 2030 Plan Local Needs and Revenues

Construction Costs	25,655
Roadway System Backlog	805
System Preservation	17,995
Future Mobility Needs	4,655
Bridge Needs	2,200
Routine Maintenance	5,931
Total Need	31,586
Estimated Revenue	18,836
2005 Dollars (000,000)	

Construction Costs

For the purposes of the 2035 Statewide Transportation Plan, **all construction costs are increased by 33 percent**. This inflation factor captures the increased costs of meeting the needs of the roadway system backlog, system preservation, future mobility, and bridges. The choice of 33 percent is consistent with the State Transportation Advisory Committee approved construction cost inflation factor applied to state highway construction projects. A detailed discussion on the calculation of the 33 percent will be included in the 2035 Financial Technical Report.

Maintenance Costs

The local need study identified routine maintenance activities as snow and ice removal, street sweeping, mowing, culvert cleaning, sign replacement, etc. It is reasonable to believe that these activities would grow at rate comparable to the consumer price index. For the purposes of the 2035 Statewide Transportation Plan, **routine maintenance costs are increased by 8 percent**. The 8 percent factor is the compounded rate for the Denver-Boulder-Greeley CPI in 2005, 2006, and 2007.

Estimated Revenues

The local need study estimates local revenues by the percent contribution that HUTF funds made to total local revenues. A study of Colorado's local governments found that between 1987 and 2002 the average portion of total local transportation revenues from HUTF was 26.3 percent. Given the absence of any structural changes between 2005 and 2008 the update accepts the 26.3 percent for use. For the 2008 to 2035 period local governments are estimated to receive 8.3 billion dollars in HUTF. Consistent with the 2030 methodology, the revenue projection divides the annual HUTF revenues by 26.3 percent and deflates that figure by the anticipated CDOT construction index rate, four percent. This revenue forecast assumes the continuation of historical trends in revenue collections.

Inclusion of MPO Local Road Spending

In contrast to the 2030 Local Needs Financial Plan, the 2035 Plan defers to the Front Range MPOs for estimates of local road spending. The regional transportation plans from the Front Range MPOs include considerably greater forecasts for local revenues than estimated by the existing model. This can be attributed to contributions from developers and locally initiated taxes. The Denver Regional Council of Governments (DRCOG) estimates that local spending is estimated to top \$50B, in the Denver area alone. According to DRCOG estimates, \$28B will be spent on new local streets, with an additional \$10.5B spent on the preservation and maintenance of local streets, the region will further spend \$12.5B to preserve, maintain, and expand the regional road network. The North Front Range and Pikes Peak Area MPOs anticipate local spending of \$330M and \$2.1B, respectively.

Given this data it is necessary to remove from the original statewide estimate (\$19B) the portion that already accounted for revenues in the MPO areas. The original statewide estimate is based on a 2004 study which used the Colorado Highway Users Trust Fund (HUTF) as a proxy for local road spending. In FY2007, the Front Range MPO cities and counties received 53 percent of all Colorado HUTF funds. Based on this number it is assumed that 53 percent of all local revenue for transportation is derived in the MPO areas. The original statewide estimate of revenue available is reduced by 53 percent to \$8.9B. The original statewide estimate of needs is reduced by 53 percent to \$20.5B.

Conclusion

In combination with the funding identified in the Front Range MPO plans it is estimated that there will be \$61 billion for local streets, roads and bridge projects. This accounts for nearly half of the total \$123 billion anticipated to be available for transportation over the plan period. In combination with the needs identified in the Front Range MPO plans, including a \$1 billion vision for bicycle and pedestrian improvements in the DRCOG area, it is estimated that there will be a greater than \$74 billion need for local streets, roads and bridge projects.

The 2035 Statewide Transportation Plan estimates that local roadway needs have grown to \$74 billion for the period between 2008 and 2035. Revenues available over the same period are estimated to be \$61 billion. Over the last three years the gap between local roadway needs and revenues has grown by \$1 billion to \$13 billion. Figure 2 shows a breakdown of needs along with available revenue.

Figure 2. 2035 Plan Local Needs and Revenues

Construction Costs	\$36,748
Roadway System Backlog	\$1,153
System Preservation	\$25,776
Future Mobility Needs	\$6,668
Bridge Needs	\$3,151
Routine Maintenance	\$6,899
Total Need	\$74,000
Front Range MPOs (billions)	\$52
DRCOG Bike/Ped Vision	\$1
Remainder of State (billions)	\$21
Estimated Revenue	\$61,000
Front Range MPOs (billions)	\$52
Remainder of State (billions)	\$9

2008 Dollars (000,000)

Attachment C – Aviation Forecast Revenues and Sustain and Vision Needs

Region	Metropolitan Planning Areas					Rural Transportation Planning Regions								
	DRCOG	Grand Valley	North Front Range	Pueblo	Pikes Peak	Central Front Range	Eastern	Gunnison Valley	Intermountain	Northwest	South Central	Southeast	San Luis Valley	Southwest
Anticipated	\$ 5,440	\$ 48	\$ 50	\$ 22	\$ 225	\$ 12	\$ 72	\$ 140	\$ 159	\$ 109	\$ 24	\$ 24	\$ 43	\$ 82
Sustain	\$ 5,440	\$ 48	\$ 50	\$ 22	\$ 225	\$ 12	\$ 72	\$ 140	\$ 159	\$ 109	\$ 24	\$ 24	\$ 43	\$ 82
Vision Need	\$ 6,400	\$ 96	\$ 71	\$ 173	\$ 400	\$ 61	\$ 159	\$ 304	\$ 341	\$ 231	\$ 76	\$ 109	\$ 84	\$ 179

(2008 dollars in millions)

Attachment D – Transit/Rail Forecast Revenues and Sustain and Vision Needs

(2008 constant dollars in millions)

Metropolitan Planning Areas (MPOs)					
Region	DRCOG	Grand Valley	North Front Range	Pueblo	Pikes Peak
Forecast	\$ 23,246	\$ 97	\$ 6	\$ 126	\$ 1,100
Sustain	\$ 27,200				
Vision	\$ 35,331	\$ 176	\$ 657	\$ 125	\$ 2,800

Rural Transportation Planning Regions (TPRs)										
Region	Central Front Range	Eastern	Gunnison Valley	Intermountain	Northwest	South Central	Southeast	San Luis Valley	Southwest	Upper Front Range
Forecast	\$ 21	\$ 74	\$ 232	\$ 1,873	\$ 172	\$ 14	\$ 25	\$ 29	\$ 95	\$ 54
Sustain	\$ 6,170									
Vision	\$ 35	\$ 90	\$ 373	\$ 17,869	\$ 301	\$ 13	\$ 31	\$ 59	\$ 108	\$ 89

Totals				
	MPOs	TPRs	Strategic Project	Total
Forecast	\$24,574	\$2,589	\$683	\$27,847
Sustain	\$27,200	\$6,170	NA	\$33,370
Vision	\$39,089	\$18,967	\$683	\$58,740

Attachment E – Sustain Performance Estimate

FY08 CDOT Investment Categories					
(With Capital Investments)					
Investment Category/ Programs	Budgeted	Budgeted \$/year	Backlog \$/year	Total Years 1-10/year	Sustain Total Years 11+ /year
7th Pot		\$223.9	\$284.8	\$508.7	\$130.3
		<i>\$130,364,625 in Year 11 only, then \$0 thereafter</i>			
System Quality					
Surface Treatment		\$153.0	\$143.5	\$296.5	\$315.5
Bridge On System		\$39.0	\$180.8	\$219.8	\$151.4
Bridge Off System		\$8.5	TBD	\$8.5	\$8.5
Rest Area (Sunset after FY04)		\$0.0	\$0.0	\$0.0	\$0.0
Maintenance		\$93.3	\$17.8	\$111.1	\$97.7
ITS Maintenance		\$8.6	\$7.7	\$16.3	\$13.9
Tunnel Inspection		\$0.2	??	\$0.2	\$0.2
Subtotal Alloc Determined by TC		\$302.6	\$349.8	\$652.4	\$587.2
System Quality Earmarks		\$2.1	N/A	\$2.1	\$0.0
Transit (Capital)		\$2.0	N/A	\$2.0	\$2.0
Subtotal Required Allocations		\$4.1	N/A	\$4.1	\$2.0
Total System Quality		\$306.7	N/A	\$656.5	\$589.2
Mobility					
Congestion Relief		\$8.7	\$793	\$801.7	\$801.7
Maintenance (S&I)		\$43.5	\$4.4	\$47.9	\$41.2
ITS Investments		\$0.0	\$16.4	\$16.4	\$14.5
Subtotal Alloc Determined by TC		\$52.2	\$813.8	\$866.0	\$857.4
Enhancement		\$10.4	N/A	\$10.4	\$10.4
Metro		\$41.4	N/A	\$41.4	\$41.4
CMAQ		\$33.2	N/A	\$33.2	\$33.2
Construction - Gaming		\$13.1	N/A	\$13.1	\$13.1
Aeronautics		\$23.0	N/A	\$23.0	\$23.0
Transit (Service)		\$14.2	N/A	\$14.2	\$14.2
Mobility Earmarks		\$21.8	N/A	\$21.8	\$0.0
Subtotal Required Allocations		\$157.1	N/A	\$157.1	\$135.3
Total Mobility		\$209.3		\$1,023.1	\$992.7
Safety					
Safety Education		\$0.4		\$10.0	\$12.3
Railroad Crossings				\$19.7	\$8.2
Rock fall Mitigation				\$48.5	\$3.3
Hazard Elimination				\$21.7	\$21.5
Hot Spots				\$22.9	\$6.1
Traffic Signals				\$4.6	\$6.1
Safety Enhancement			\$10.2	\$15.7	\$10.2
Maintenance (Traffic Oper		\$63.6	\$5.4	\$69.0	\$60.8
Subtotal Alloc Determined by TC		\$101.2	\$110.9	\$212.1	\$128.5
Safety		\$0.0	N/A	\$0.0	\$0.0
Safe Routes to Schools		\$1.4	N/A	\$1.4	\$1.4
Rock fall Mitigation - Gaming		\$0.0	N/A	\$0.0	\$0.0
Maintenance - Gaming		\$1.1	N/A	\$1.1	\$1.1
Safety Earmarks		\$7.6	N/A	\$7.6	\$0.0
Subtotal Required Allocations		\$10.1	N/A	\$10.1	\$2.5
Total Safety		\$111.3	\$110.9	\$222.2	\$131.0
Program Delivery					
Maintenance		\$20.7	\$0.0	\$20.7	\$11.0
Road Equipment		\$13.8	not calculated	\$13.8	\$13.8
Cap. Op. Equipment		\$4.0	not calculated	\$4.0	\$4.0
Property		\$7.6	not calculated	\$7.6	\$7.6
Maintenance Incentive Program		\$10.0	\$0.0	\$10.0	\$10.0
Subtotal Alloc Determined by TC		\$56.1	\$0.0	\$56.1	\$46.4
Operations		\$66.5	N/A	\$66.5	\$66.5
TC Contingency		\$43.8	N/A	\$43.8	\$43.8
Transit (Administration)		\$0.4	N/A	\$0.4	\$0.4
Metro Planning, FTA (5303)		\$1.6	N/A	\$1.6	\$1.6
Metro Planning, FHWA		\$5.7	N/A	\$5.7	\$5.7
Subtotal Required Allocations		\$118.0	N/A	\$118.0	\$118.0
Total Program Delivery		\$174.1	\$0.0	\$174.1	\$164.4
Regional Priority Program		\$28.2	\$0.0	\$28.2	\$28.2
Total Alloc Determined by TC		\$736.0	\$1,559.3	\$2,295.3	\$1,749.8
Total Required Allocations		\$289.3	N/A	\$289.3	\$257.8

How to calculate the cost to sustain performance:

$$X = a(10) + b(18)$$

X = Total 2035 Plan cost to sustain performance

a = any "Total Years 1-10/year" figure

b = any "Sustain Total Years 11+/year" figure

Performance Levels to Sustain 2006 System Performance

System Quality: Activities, programs, and projects that maintain the function and aesthetics of the existing transportation infrastructure.

Targets:

- Pavement
 - 60% of the pavement condition would be in good or fair condition. The 20 year projection at the current funding level predicts pavement condition of less than 40% good or fair condition.
- Bridges
 - To eliminate the backlog of poor structures over a period of 20 years. Colorado's bridge infrastructure is relatively young and in good condition. The average age will change rapidly in the future. Over the next 25 years, the number of bridges over 75 years old will grow from 1% towards 11%.
- Maintenance
 - The overall Maintenance Level of Service (MLOS) is a level of service B. However, given traffic and lack of investment in infrastructure, the current MLOS can't be sustained with current funding levels. The targets for maintenance for FY 07 under the System Quality Investment Category are:
 - Road Surface B+
 - Roadside Facilities B
 - Roadside Appearance B
 - Structures C-
 - Tunnels B
- Intelligent Transportation Systems (ITS)
 - Currently, only the maintenance part of the ITS program is funded. There is no funding currently available for installing new ITS devices. The targets for the ITS program are listed below:
 - Devices operational 90% of the intended time
 - Provide statewide traveler information on the Interstate Highway system
 - Implement Incident Management plan for infrastructure and operational strategies
 - Manage the congested corridors including the Interstate by ITS

Mobility: Services, projects, and programs that provide for the movement of people, goods, and information.

- Maintenance
 - The overall Maintenance Level of Service (MLOS) is a level of service B. However, given traffic and lack of investment in infrastructure, the current MLOS can't be sustained with current funding levels. The target for maintenance for FY 07 under the Mobility Investment Category is:
 - Snow and Ice B

Safety: Services, projects, and programs that reduce fatalities, injuries, and property damage for all users of the system.

- The targets for the safety program are:
 - Reduce the total number of crashes per 100 million vehicles miles traveled (VMT) from a high of 307.1 in 2002 to 289.7 by the year 2010.
 - Reduce fatalities per 100 million VMT from a rate of 1.62 in 1995 to 1.00 in year 2010.
 - Increase the statewide overall seat belt use rate from 55.5% in 1995 to 85% by the year 2010.
 - Reduce the percentage of alcohol related fatal crashes from 44.6% in 1995 to 29.0% by the year 2010.
 - Reduce the injury crash rate from 87.3 per 100 million VMT in 1995 to 65.3 by the year 2010.
 - Reduce the number of motorcycle crashes per 1,000 motorcycle registrations from a high of 19.0 in 2002 to 15.0 by the year 2010.
 - Reduce the rate of involvement in alcohol related fatal crashes of underage drinking drivers from a high of 16.8% in 2004 to 12.9% in the year 2010.
- Maintenance
 - The overall Maintenance Level of Service (MLOS) is a level of service B. However, given traffic and lack of investment in infrastructure, the current MLOS can't be sustained with current funding levels. The targets for maintenance for FY 07 under the Safety Investment Category are:
 - Traffic Striping B
 - Traffic Signing B

Program Delivery: Support functions that enable the delivery of CDOT's programs and services.

With the exception of Maintenance, performance measures for Program Delivery are not established at the Investment Category Level, but rather at the Core Service level. The programs are grouped into three functional areas: Strategic Support, General Support, and Program Support.

- Strategic Support: Includes functions that set, advocate, and communicate strategic direction and policy for the Department.
- General Support: Includes functions that are required by any business to support day to day operations.
- Program Support: Includes functions that are unique to CDOT that would not normally be found in most government agencies.
- Property/ Equipment: Includes functions associated with maintenance, operation, replacement, and upgrades of the Department's buildings, vehicles, and non-computer equipment.
- Maintenance
 - The overall Maintenance Level of Service (MLOS) is a level of service B. However, given traffic and lack of investment in infrastructure, the current MLOS can't be sustained with current funding levels. The target for maintenance for FY 07 under the Program Delivery Investment Category is:
 - Planning and Scheduling B

Attachment F - 2035 Highway and Transit Cost Adjustments

Overview

The 2035 Statewide Transportation Plan is an update to the 2030 Statewide Transportation Plan. As an update, the plan is not formulated from the scratch. Instead, the plan modifies the 2030 edition to reflect the planning, policy, and financial developments of the past two years. To prepare the 2035 Plan, the 2005 dollar corridor/project costs from the 2030 Plan must be adjusted to 2008 dollars. This adjustment coordinates with the adopted 2035 Resource Allocation. This note explains the adjustments that were undertaken for highway and transit costs.

Highway Costs

For the preparation of the 2305 Plan CDOT Engineering Regions had the option to prepare revised corridor estimates based on the progress of environmental studies, preliminary engineering and other efforts. Region Six took full advantage of this option and developed revised estimates for each of its corridors. Other regions have taken this option on corridors where new information had become available since the development of the 2030 plan. Revised costs were typically calculated in 2006 or 2007 dollars, so the estimates still needed to be adjusted to 2008 dollars. Below are the conversion factors used to inflate 2005, 2006 or 2007 dollars to 2008 dollars:

- **2005 dollars (2030 Plan): multiply by 1.33 (33 percent increase in costs)**
- **2006 dollars: multiply by 1.05 (5 percent increase in costs)**
- **2007 dollars: multiple by 1.03 (3 percent increase in costs)**

How the Factors are Calculated - Overview

- A 50/50 weighted average of the Colorado Construction Cost Index (C3I) and the Denver-Boulder-Greeley Consumer Price Index (CPI).
 - 2005 – C3I and CPI Actual Rates
 - 2006 – C3I Actual Rate and CPI 1990 to 2005 Average
 - 2007 – C3I 1996 – 2006 Average (excluding 2005) and CPI 1990 to 2005 Average

How the Factors are Calculated - Detail

Overview of Construction Project Costs

- Diverse costs are affected by multiple markets (e.g. oil, steel, labor) and experience a variety of inflation rates.
- Project expenses fall into two categories
 - Construction costs (assumed to grow at Colorado Construction Cost Index (C3I)):

- Earthwork, asphalt pavement, concrete pavement, structural concrete, reinforcing steel, structural steel and pavement marking.¹
- General project costs (assumed to grow at Denver-Boulder-Greeley CPI):
 - CDOT Engineering overhead, traffic control, environmental mitigation and competitive construction materials such as electrical wiring.

C3I and CPI Inflation Rates

Actual data for 2005 and 2006 inflation

- '05 C3I = 51.9% '06 C3I = 0.1%
- '05 CPI = 2.1%

Estimates of 2006 and 2007 inflation.

- '07 C3I ('96-'06, excluding 2005 average annual growth) = 3.1 %
- '06 and '07 CPI ('90-'05 average annual growth) = 3.0 %

Weighted Average

- **50.1% / 49.9% weighted average of the compounded C3I and CPI.**
 - 50% / 50% is calculated from a 10 percent sample of 2005 low-bid projects that reflect the statewide resource allocation.

2035 Cost Inflation Factor Calculation

(Compounded C3I * .5) + (Compounded CPI * .5) = Inflation Factor

2005 - 2008 Compound Inflation

C3I	CPI	Weighted Average
57%	8%	33%

C3I '05 and '06 Actual + '96-'06 C3I Avg, ex '05
 CPI '05 and + '90-'05 CPI Avg

2006 - 2008 Compound Inflation

C3I	CPI	Weighted Average
3.6%	6.0%	5%

C3I '06 Actual + '96-'06 ex'05 C3I Avg
 CPI '06 Estimate + '90-'05 CPI Avg

2007 - 2008 Inflation

C3I	CPI	Weighted Average
3.5%	3.0%	3.2%

96-'06 ex'05 C3I Average
 90-'05 CPI Average

¹ Pavement marking is not included in C3I, but assumed to grow at the C3I because of its petroleum dependence. A separate analysis of pavement marking costs and inflation could be undertaken.

Transit Costs

Transit Cost Inflation Methodology -Overview

The approach used to inflate transit provider costs to 2008 dollars was developed by LSC Transportation Consultants. LSC is sub-contracted, by the 2035 Plan project consultant URS, to produce the transit portion of the regional transportation plans. The inflation rates are based on different rates for operating costs, vehicle costs, and facility costs. Each of these costs experienced different inflation factors in recent years.

Transit Inflation Rates Used in the 2035 Plan

TPR	Operations	Capital	Facilities
Central Front Range	5%	Sm./Med. Vehicles = 7% Lrg. Vehicles = 9%	33%
Eastern	8%		
Gunnison	7%		
Intermountain	5%		
Northwest	15%		
San Luis Valley	6%		
South Central	7%		
Southeast	9%		
Southwest	7%		
Upper Front Range	10%		

Operating Costs

Operating costs provided by transit agencies were in either 2005 or 2006 dollars, depending on whether an estimated 2006 operating budget was provided. Historical operating costs from all transit agencies which reported updated information were obtained for the last six years. This information was aggregated by TPR to determine an average annual cost increase for the last six years in each TPR. The annual cost increases were compared among the TPRs to determine if a single statewide rate should be used or if the cost increases should be estimated by TPR. As the annual cost increases ranged from 5 to 15 percent it was decided that separate rates for each TPR would be more appropriate. This reflects the higher wage increases in areas where transit agencies compete with other industries, such as oil and gas exploration, for employees. This annual cost inflation factor was then used to inflate all transit providers operating in a specific TPR to 2008 dollars.

Capital Costs

Capital cost inflation for vehicles was obtained from CDOT's Transit Unit based on recent trends in vehicle procurement. As vehicles are typically purchased for rural systems on a statewide basis, inflation factors were identified for the state rather than for individual TPRs. Two inflation factors were used for capital vehicle costs; the average cost increase of procuring a small transit vehicle and the average cost increase of a large transit vehicle. Small transit vehicles have historically been inflated by

CDOT for procurement estimates at 7.0 percent, while larger vehicles have been inflated by 9.0 percent annually. These inflation factors were used across the state to inflate current vehicle costs to estimated 2008 costs.

Transit Facility Costs

Transit facility costs inflation used the same calculation used for inflating highway construction projects. Facility construction costs are anticipated to increase at the same rate as other construction costs. Many of the future transit facility costs were estimated at the planning level only in the 2030 Transit Elements. Many of these projects assume what the cost will be to develop a transit facility with no actual facility planning. These “placeholders” for facility projects were inflated without specific information related to design of the facility. Costs have been typically based on construction costs of similar facilities in other locations and reflect an appropriate order of magnitude for the cost of the facility, but may vary based on actual facility design.

Attachment G – Highway Vision Performance Calculation

Data from CDOT's performance management systems, the 2035 planning process and the 2035 regional transportation plans are used to calculate the cost for vision level performance of the state highway system. The vision includes aspects of performance that are not captured by CDOT's performance management systems; examples include adding shoulders and passing lanes.

Surface Treatment, Bridge and all Maintenance Programs

For these programs data from the respective performance management systems is used to calculate vision levels of performance. Similar to the sustain level of performance, a backlog was calculated and annualized for these three areas. The chart below shows the program areas, expected vision levels of performance, backlogs, and total annual costs.

Program	2035 RA Budgeted \$/year	Backlog \$/year	Vision Total \$/year	Objective
Maintenance Programs	\$238	\$134	\$372	Grade B through 2013 declining to B- in 2014 and 2015 \$ Rough Estimate Beyond 2015
Surface Treatment	\$141	\$242	\$382	Good/Fair = Min 62/38and Max 76/24
Bridge	\$50	\$253	\$302	Eliminate Backlog in 10 Years

Strategic Projects

Strategic project funding is reported based on investment category allocation in the Long Range Plan Module of SAP.

Highway Mobility

Highway mobility dollars are reported based on the allocation of highway vision costs to the mobility investment category in the Long Range Plan Module of SAP.

Highway Safety

Highway safety dollars are reported based on the allocation of highway vision costs to the safety investment category in the Long Range Plan Module of SAP.

Program Delivery

Highway program delivery dollars are reported based on the allocation of highway vision costs to the program delivery investment category in the Long Range Plan Module of SAP.