

**VOLUME III SECTION VI.**  
**RELATIONSHIP OF STATE FUND ALLOCATION PROCESSES TO MPOS**

The state fund allocation process determines how much total transportation funding will be available to assist MPOs in meeting regional transportation needs.<sup>1</sup> The bulk of transportation funding is controlled by the state, including categories of federal funds that the state DOT manages, as well as state transportation funds collected and distributed by the state. Thus, while MPOs are charged with developing the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP) in cooperation with the state and the regional transit agencies, MPOs are extremely dependent upon their states to provide an adequate flow of funding to meet their regional transportation needs.

The state fund allocation process has a direct and profound impact, therefore, on MPO transportation planning. Furthermore, each state in the U.S. conducts its transportation resource allocation differently. Some use explicit criteria, others use complex formulas, while still others use historical funding trends. The principal focus of this section of the report is on how the state of Colorado allocates its transportation resources, with particular attention to how the distribution affects transportation planning in the DRCOG region. Included in this discussion is a need and equity analysis of the State distribution, plus a consideration of compatibility issues between CDOT engineering regions and the DRCOG region. A brief discussion of state fund allocation processes in Texas, Arizona, and Washington (the states representing the Comparable MPOs in this Study) is also provided.

**State of Colorado Transportation Resource Allocation Process**

The Colorado Department of Transportation (CDOT) and the Colorado Transportation Commission (the "Commission") traditionally allocated funds to each of six CDOT Engineering Regions in the State, based loosely upon such measures as lane-miles, geographic area, and historical funding trends. In the mid to late 1980s, CDOT created a Resource Allocation and Project Prioritization (RAPP) program, and began basing its allocations in part on needs and performance standards, as well as upon identification of priorities by region and by project type. Throughout this period, CDOT continued its County Hearing Process, which served as a forum for hearing the requests of each county regarding project selection and prioritization.

By the early 1990s, the CDOT resource allocation process had become increasingly confusing and complex.<sup>2</sup> With the promulgation of ISTEA and requirements of fiscal constraint for the Statewide Transportation Improvement Program (STIP) and the Long Range Transportation Plan (LRTP), the Transportation Commission and CDOT realized the need for a new and simplified resource allocation process.

---

<sup>1</sup> As a result of ISTEA and TEA-21, MPOs have direct control over certain categories of federal funds (principally STP-Metro and CMAQ funds). These categories however, usually represent a relatively small proportion of total transportation funding for a metropolitan area.

<sup>2</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 18.

The creation of a new allocation process began in 1995 and ended in January 1998 with a resolution adopting 2020 revenue forecasts and a new resource allocation program. The new program set out to answer five questions<sup>3</sup>:

1. To which geographic areas should the revenues be allocated?
2. How should the Transportation Commission allocate the available revenues?
3. Should the Commission identify any statewide priorities and if so, what are they, what will they accomplish, and what level of funding should be allocated to each program?
4. How will “fair share” be determined?
5. How will this program be implemented?

#### 1. Distribution to Geographic Areas

The Colorado Department of Transportation uses many different geographic configurations for different purposes associated with statewide transportation planning. There are 11 Transportation Commission districts, 6 CDOT Engineering Regions, 9 Maintenance Sections, 15 Transportation Planning Regions (TPRs) (including 5 MPOs), and over 300 local cities, towns, and counties.<sup>4</sup> Historically, the Transportation Commission allocates revenues to each of the six engineering regions (See Figure 1). It was concluded, after consideration of six alternative scenarios, to continue allocating revenues to the engineering regions.

#### 2. Revenue Allocation

The Transportation Commission identified 28 strategic projects that it felt needed a higher funding priority because they were deemed critical to the State’s transportation system. Funding for these projects came to be known as the “7<sup>th</sup> Pot” because they collectively became an additional category, beyond the six existing engineering region categories. The Transportation Commission decided to allocate revenues off the top to the “7<sup>th</sup> Pot” program. As stated in the 1998 report, the remaining funds would then be allocated to the regions based on an appropriate “fair share” formula, and then Statewide Priority Programs (decided by the Transportation Commission based on need) and other regional priorities (decided by the regions based on planning process) would be addressed. Since 1998, this process has been changed so that Statewide Priority Programs (other Transportation Commission (TC) Priorities) would be funded directly after the 7<sup>th</sup> Pot, and then other regional priorities would follow.

---

<sup>3</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 18.

<sup>4</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 19.

### 3. Statewide Priority Programs

The Transportation Commission identified 10 programs which it felt were needed to address statewide concerns. These are:

1. Strategic Transportation Project Investment Program (“7<sup>th</sup> Pot”)
2. Surface Treatment Program
3. Bridge Program
4. Rest Area Program
5. Noise Barrier Program
6. Small Urban Area Program
7. Safety Program
8. Enhancement Program
9. Maintenance Program
10. CDOT Operation Program<sup>5</sup>

It was estimated that CDOT had \$12.83 billion available for years 2001 to 2020. Of that, \$3.04 billion would go to the “7<sup>th</sup> Pot”, \$7.50 billion for other statewide priority programs, and \$2.29 billion for other regional priorities.<sup>6</sup>

### 4. Factors Considered to Determine “Fair Share” and Allocation Formula

CDOT considered numerous objective factors on which to develop a formula for distributing funds for other regional priorities. These factors included the following<sup>7</sup>:

Population	Land Area	Vehicle Miles Traveled
No. of Accidents	Person Miles Traveled	Truck Miles Traveled
Freight Miles Traveled	Center Line Miles	Terrain Type
Urban vs Rural	Infrastructure Inventory	Weighted Hazard Index
No. of Transit Vehicles	Historical Funding Trends	Vehicle Registration
Fuel Usage	Miles of Facility Type	Lane Miles
Surface Condition	Bridge Index	Mobility Index

The Commission wanted to select measures that reflected the development and maintenance of a transportation system that serves the movement of people, goods, and information<sup>8</sup>.

Regarding movement of people, person miles traveled was determined to be the best factor, but because of data availability problems, vehicle miles traveled was chosen as a

<sup>5</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 21.

<sup>6</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 21.

<sup>7</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 29.

<sup>8</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 29.

surrogate. Regarding movement of goods, truck miles traveled was chosen as a surrogate. In considering maintenance of the existing system, unweighted lane miles was selected. Some consideration was given to weighting based on terrain and/or volume of use, but no weighting scheme was agreed upon<sup>9</sup>.

After considering numerous alternative configurations using these selected measures, the Transportation Commission decided on the following formula to allocate resources to the engineering regions for other regional priorities<sup>10</sup>:

Vehicle Miles of Travel (VMT)	45%
Lane Miles	40%
Truck Miles of Travel (TMT)	15%

Using this formula and estimating the regional distribution of “7<sup>th</sup> Pot” projects, CDOT identified the following allocations to each of the six engineering regions for the 2001-2020 period<sup>11</sup>:

Table 1  
CDOT Resource Allocations to Engineering Regions, 1998

<u>Region</u>	<u>Allocation \$</u>	<u>Allocation %</u>
Region 1	\$2.15 Billion	16.7%
Region 2	\$2.63 Billion	20.5%
Region 3	\$1.63 Billion	12.7%
Region 4	\$2.18 Billion	17.0%
Region 5	\$1.01 Billion	7.8%
Region 6	\$3.24 Billion	25.3%

Source: CDOT, Year 2020 Revenue Projections and Resource Allocation Program, 1998.

## 5. Program Implementation

The Commission decided to allow all projects identified in the 1997-2002 STIP to be completed as planned, but any additional revenues available during the FY1998 to FY2002 period would be applied pursuant to the new resource allocation program<sup>12</sup>.

Another major implementation issue involved the allocation to the Denver Regional Council of Governments (DRCOG). One of the major problems associated with this process is that the geographic configurations of the DRCOG Transportation Management

<sup>9</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 29.

<sup>10</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 31.

<sup>11</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 32.

<sup>12</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 33.

Area (TMA) and the CDOT Engineering Regions do not coincide. The DRCOG TMA region includes all of CDOT Region 6, as well as parts of Regions 1 and 4 (See Figures 1 and 2). Also, as a result of ISTEA and TEA-21, state DOTs are required to identify estimates of funds available to MPOs for the purpose of regional transportation planning for both the short-range Transportation Improvement Program (TIP) and the Long-Range Regional Transportation Plan (LRTP). In light of this requirement, and in order to facilitate comprehensive and coordinated planning, the Transportation Commission established a funding level of 39.4% of available CDOT revenues for CDOT projects within the DRCOG planning area.<sup>13</sup> Working with the appropriate Transportation Commissioners and the three regional CDOT directors, (from Regions 1, 4, and 6) CDOT would submit one prioritized list of projects, instead of three, to DRCOG for development of the regional TIP and the RTP.<sup>14</sup> It was also noted that this single list would follow the priorities established by the Transportation Commission and that “it must be followed by DRCOG or funds may be allocated to other areas of the state.”<sup>15</sup>

One additional implementation issue involved a minimum share for “Other Regional Priorities.” It was decided that no region would have less than 10% of its available revenues remaining for “Other Regional Priorities,” with funds taken on a pro-rated basis from the other regions to meet the criteria.<sup>16</sup>

Since the 1998 report, there have been changes made to the State’s resource allocation process.<sup>17</sup> There was an inaccuracy detected in the application of the allocation formula. In determining allocations to each of the six engineering regions, CDOT originally calculated each region’s share of “7<sup>th</sup> Pot” programs together with each region’s share based on the 45/40/15 allocation formula. This allocation (based in part on “7<sup>th</sup> Pot” shares) was then utilized for distribution to the regions *after* funding for the “7<sup>th</sup> Pot” projects had already been taken off the top. In other words, the “7<sup>th</sup> Pot” projects were being double-counted for allocation purposes.

CDOT revised the allocation process by taking the “7<sup>th</sup> Pot” and Statewide Programs off the top, and then applying the 45/40/15 formula (without the “7<sup>th</sup> Pot” shares) to determine funding for Other Regional Priorities. This distribution left one region (Region 5) with less than 10% of regional funds available for Other Regional Priorities. Based on the 1998 resolution, each region was guaranteed a minimum of 10% of regional funds for Other Regional Priorities, and if a region had less, funds would be taken from

---

<sup>13</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 33.

<sup>14</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 33.

<sup>15</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 33.

<sup>16</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 34.

<sup>17</sup> The following discussion is based on interviews conducted with Heather Dugan and Mark Tieman, Office of Management and Budget, Colorado Department of Transportation, October 1999, and material from a DRCOG report, “Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado,” January 13, 2000.

other regions on a pro-rated basis to make up the difference. So, in order to make up the difference for Region 5, each of the other regions had some of their funds reallocated.

This change, together with the recalculation of the allocation process, changed the percentage distributions to each of the regions, as follows:

Table 2: CDOT Resource Allocation, 1999  
Total Program Funding, FY 2001-2020

<u>Region</u>	<u>Allocation 1/22/98</u>	<u>Allocation 7/1/99</u>
Region 1	13.9%	15.3%
Region 2	23.4%	20.7%
Region 3	13.4%	13.3%
Region 4	16.1%	16.9%
Region 5	7.8%	8.9%
Region 6	25.4%	24.8%

Source: Colorado Department of Transportation, 1999.

The recalculation also changed the allocation to DRCOG. The 1998 resource allocation report stated that the Transportation Commission had established a funding level of 39.4% of available CDOT revenues (not including STP-Metro, CMAQ, and Enhancements) within the 6-county DRCOG TMA (Boulder, Denver, Douglas, Jefferson, and the western halves of Adams and Arapahoe Counties) for long-term planning purposes. The new calculations show the 8-county DRCOG region’s (including the eastern halves of Adams and Arapahoe Counties, plus Clear Creek and Gilpin Counties) long range plan allocations for FY 1999-2020 at 34.8% for all state and federal programs: “7<sup>th</sup> Pot”, Statewide Priority Programs, and Other Regional Programs, *including* STP-Metro, CMAQ, and Enhancements.<sup>18</sup> If STP-Metro, CMAQ, and Enhancements are added to the 1998 allocation, along with funds allocated for areas within the DRCOG region not in the TMA, the 1998 long-range revenue percentage for the 8-county DRCOG region was actually 45.9%.<sup>19</sup> The recent changes represent a major decline in the state allocation to DRCOG, and have significant equity implications.

**Distribution of Funds from States to MPO Regions**

One of the principal purposes of this study is to address whether transportation resource needs are being met within the Denver region. There is no single factor that appropriately measures transportation needs for the purpose of resource allocation or equity analysis. Measures such as population, revenues generated, motor fuel taxes, person miles traveled, climatic conditions, per capita income, employment, and others,

<sup>18</sup> Colorado Department of Transportation, 1999 and DRCOG, “Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado,” January 13, 2000, p. 2.

<sup>19</sup> DRCOG, “Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado,” January 13, 2000, p. 2.

could be used. A 1995 GAO study found that using direct measures of need, such as miles of poor pavement or number of deficient bridges, could foster a perverse incentive that would encourage the deterioration of infrastructure.<sup>20</sup> The GAO also found that the disadvantages of basing a formula on actual needs could be remedied through the use of proxies for need, such as those reflecting the extent (e.g., lane miles) or usage (e.g., vehicle miles traveled) of a highway system, or more highway-neutral measures such as population.<sup>21</sup> The GAO concurred with the Executive Director of the Surface Transportation Policy Project in supporting the use of population levels for the purpose of distributing highway funds.<sup>22</sup> A 1986 GAO report<sup>23</sup> and a 1986 study sponsored by the FHWA<sup>24</sup> both indicated that proxies, such as lane miles and vehicle miles traveled, are closely aligned with highway needs. The American Association of State Highway and Transportation Officials (AASHTO) Policy Review Committee observed that data on vehicle miles traveled have been statistically designed for a high level of measurable accuracy and are relevant as an indicator of both capital and system preservation needs.<sup>25</sup> Using lane miles as a factor for apportioning highway funds was also endorsed by the AASHTO Policy Review Committee in 1991.<sup>26</sup> Nevertheless, factors reflecting a system's extent and use in isolation do not provide a complete picture on needs, and additional variables should be considered in resource allocation decisions or distributional needs analysis.<sup>27</sup>

Recognizing the difficulties of identifying appropriate measures for transportation needs, this study assessed whether transportation needs are being met by comparing the distribution of transportation funding with need-based proxies, specifically population, vehicle miles traveled (VMT), and lane miles. It is recognized that these proxy measures have advantages as well as disadvantages, so that conclusions based on this analysis should be tempered.<sup>28</sup>

<sup>20</sup> General Accounting Office. 1995. Highway Funding: Alternatives for Distributing Federal Funds. GAO/RCED-96-6, p. 6.

<sup>21</sup> General Accounting Office. 1995. Highway Funding: Alternatives for Distributing Federal Funds. GAO/RCED-96-6, p. 32.

<sup>22</sup> General Accounting Office. 1995. Highway Funding: Alternatives for Distributing Federal Funds. GAO/RCED-96-6, p. 35.

<sup>23</sup> General Accounting Office. 1986. Highway Funding: Federal Distribution Formulas should be changed (GAO/RCED-86-114, March 31, 1986).

<sup>24</sup> Jack Faucett Associates. 1986. Development and Evaluation of Alternative Factors and Formulas, December 1986. Cited in General Accounting Office. 1995. Highway Funding: Alternatives for Distributing Federal Funds. GAO/RCED-96-6, pp. 22-23.

<sup>25</sup> General Accounting Office. 1995. Highway Funding: Alternatives for Distributing Federal Funds. GAO/RCED-96-6, p. 34.

<sup>26</sup> General Accounting Office. 1995. Highway Funding: Alternatives for Distributing Federal Funds. GAO/RCED-96-6, p. 33.

<sup>27</sup> General Accounting Office. 1995. Highway Funding: Alternatives for Distributing Federal Funds. GAO/RCED-96-6, p. 36. Disadvantages associated with measures of the system's usage or extent could be at least partially counteracted by building incentives into an allocation formula or by creating appropriate performance standards (p. 34).

<sup>28</sup> Disadvantages of using vehicle miles traveled as a proxy measure of need include: 1) VMT is based on vehicles, not people. Person miles traveled is probably a better measure to use, although these data are more difficult to obtain. 2) Total VMT does not take into account different vehicle classifications, nor does it adequately account for transit. VMT may thus be biased in favor of those geographic areas with comparatively less transit utilization. 3) VMT may be at odds with air quality and energy conservation

## Distribution of CDOT Funds to DRCOG

The current 20 year Long Range Plan Allocations for FY1999-2020 from the Colorado Department of Transportation to the DRCOG region amounts to \$5.93 billion out of a total allocation of \$17.06 billion, equating to 34.8% of the state total to be allocated during this period.<sup>29</sup> The 1998 population of the State of Colorado was 4,016,306, while the 1998 population of the 8-county DRCOG region was 2,235,596, equating to 55.7% of the state's population.<sup>30</sup> The DRCOG 8-county region accounted for 51.3% of total daily vehicle miles traveled (excluding local streets) in Colorado, 47.7% of state highway daily vehicle miles traveled, and only 17.5% of state highway lane miles (see Table 3 below). Other potential regional allocation factors, including 2020 population estimates, truck daily VMT, total centerline-miles, total number of accidents, total retail sales, auto/related sales, wages paid by workplace, motor vehicle registrations, and the cost of needs identified in the Colorado 20-year Transportation Plan are identified in the DRCOG report on equitable distribution.<sup>31</sup> DRCOG also estimated that 51% (using % VMT as a proxy) of the state and federal Highway User Trust Fund dollars contributed to CDOT originate in the DRCOG region.<sup>32</sup> Based on these factors, it appears that the DRCOG region is now receiving less funding than what might be expected under more equitable scenarios.

---

objectives that emphasize the reduction of VMT. 4) High VMT occurs on roadways with very good levels of service, and does not measure level of congestion. Hours of delay may be a better measure of need to indicate extent of congestion.

Disadvantages of using lane miles as a proxy measure of need include: 1) Lane miles could encourage expansion of the system rather than maintenance of existing system. 2) Lane miles do not take into account utilization of the roadway, nor do they adequately account for transit. Lane miles may be biased in favor of more sparsely populated areas with more dependence on automobiles.

Disadvantages of using population as a proxy measure of need include: 1) Population only represents one end of a trip, while employment or other activities (retail, recreation, etc.), are reflective of the other end of a trip. 2) Population may be biased in favor of urban areas over rural areas, and it downplays system connectivity needs. Goods produced in sparsely populated areas ultimately must be transported to more-populated areas.

<sup>29</sup> DRCOG, "Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado," January 13, 2000, p. 2.

<sup>30</sup> DRCOG, "Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado," January 13, 2000, p. 7 and State of Colorado Demographer's Office, 1999.

<sup>31</sup> DRCOG, "Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado," January 13, 2000, p. 7.

<sup>32</sup> DRCOG, "Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado," January 13, 2000, p. 8.

Table 3

CDOT Percentage Allocation of State and Federal Funding to 8-County DRCOG Region in Comparison to DRCOG Regional Percentages of Population, Total Daily Vehicle Miles Traveled (VMT), and State Highway Lane Miles in Colorado

<u>MPO Region</u>	<u>1998 Revenue Allocation %</u>	<u>1999 Revenue Allocation %</u>	<u>% Pop</u>	<u>% VMT</u>	<u>% Lane Miles</u>
Denver	45.9% <sup>a</sup>	34.8% <sup>b</sup>	55.7%	51.3%	17.5%

<sup>a</sup> The Colorado Transportation Commission established a funding level in 1998 of 39.4% of available CDOT revenues (excluding STP-Metro, CMAQ, and Enhancement funds) for CDOT projects within the 6-county DRCOG TMA (Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 33). The 1998 allocation to the 8-county DRCOG region, including STP-Metro, CMAQ, and Enhancements, would have been 45.9% (DRCOG, “Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado,” January 13, 2000, p. 1).

<sup>b</sup>Colorado Department of Transportation Long Range Plan Allocations to 8-County DRCOG region for FY 1999-2020 for all state and federal programs, including STP-Metro, CMAQ, and STP-Enhancement

Sources:

- 1) Colorado Department of Transportation, Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998; Resource Allocation Updates, October 1999; and CDOT data, 1999.
- 2) Denver Regional Council of Governments, “Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado,” January 13, 2000.

### **CDOT Engineering Regions and Colorado Transportation Commission Districts**

As previously stated, the Colorado Department of Transportation has a multitude of geographic regions for various purposes. There are 6 Engineering Regions, 11 Commission Districts, and 15 Transportation Planning Regions (See Figures 1, 3, and 4). The 6 Engineering Regions are the geographic areas to which funds are distributed, according to the State’s resource allocation process. The Regions also maintain and operate the State highway system, including the State’s portion of the National Highway System. The boundaries of the Engineering Regions were based in part on physical or topographic factors that are important for maintenance and operations purposes. For instance, several mountain passes are kept within the same region for ease of snow removal and emergency maintenance. The basis for the boundaries of Region 6, however, appears to be different than the other regions, as they seem to conform to a previous delimitation of the Denver urbanized area. Today, however the Denver urbanized area, as identified by the DRCOG TMA, is significantly larger than the boundaries of Region 6.

The 11 Commission Districts are based on county boundaries, and have been specified directly by statute.<sup>33</sup> There are four commission districts which comprise the Denver metropolitan area: 1) Denver City and County, 2) Jefferson County, 3) Arapahoe and Douglas Counties, and 4) Adams and Boulder Counties. These four districts conform to the Denver TMA, with the exception of the eastern halves of Adams and Arapahoe Counties. The remaining 7 districts are spread throughout the state, representing mostly rural areas together with urbanized areas in El Paso, Grand, Larimer, Pueblo, and Weld Counties.

The 15 Transportation Planning Regions (TPRs) include 5 MPOs and are largely based on county boundaries, with the exception of the North Front Range and Pikes Peak Area MPOs. The Greater Denver Area TPR conforms to the 8-county DRCOG region, including the eastern halves of Adams and Arapahoe Counties, as well as Gilpin and Clear Creek Counties, which are not a part of the Denver TMA. The TPRs are the focal points in CDOT's Project Priority Programming Process (PPPP), formerly known as the County Hearing Process, whereby regional TIPs are developed for incorporation into the STIP.

The MPO TMA boundaries are determined by agreement between the MPO and the Governor, but must encompass at least the existing urbanized area and the contiguous area expected to become urbanized within a 20-year forecast period. For geographic areas designated as nonattainment or maintenance for air quality, the MPO boundaries shall include at least the boundaries of the nonattainment or maintenance areas. The DRCOG TMA region is coterminous with the nonattainment areas for PM10 and ozone, while the nonattainment area for carbon monoxide is wholly contained within the TMA region. The DRCOG TMA is compatible with the future extent of the Denver urbanized area as identified by the urban growth boundaries contained in the DRCOG Metro Vision 2020 Plan.

#### *CDOT Engineering Regions and the DRCOG TMA Region*

The geographic boundary issue that continues to be problematic concerns the compatibility between the CDOT regions, especially the engineering regions, and the region delimited by the DRCOG TMA (See Figures 1 and 2). The DRCOG TMA is composed of all of CDOT Region 6 and parts of Regions 1 and 4. Since statewide allocations are made to the regions, the Directors of Regions 1, 4, and 6 must agree on the projects to be submitted to DRCOG for development of the regional TIP. Observations have been made that this process is inefficient, wasteful of resources, and results in project selections that may not be meeting either state or regional priority needs.

In order to address this regional boundary issue, the major arguments for and against the current CDOT Engineering Region configuration will be considered along with two alternative scenarios: 1) one CDOT engineering region coterminous with the DRCOG TMA, and 2) two CDOT engineering regions involved with the DRCOG TMA, wherein Boulder County would join Region 1, thus relieving Region 4 of its DRCOG obligations.

---

<sup>33</sup> C.R.S. § 43-1-106.

Also, the extreme eastern parts of Region 1 might go to Region 4 as part of a regional trade-off under Scenario 2.

### Existing Scenario

Arguments in favor:

- 1) There is an existing familiarity with the current CDOT boundaries for allocation, maintenance, and operations
- 2) It forces cooperation among 3 engineering regions, thus a more representative process
- 3) It protects those parts of Regions 1 and 4 in the DRCOG region by ensuring that at least some projects must go to those parts of Regions 1 and 4
- 4) It benefits those parts of Regions 1 and 4 not in the DRCOG region because the regional allocations are larger due to those parts of Regions 1 and 4 within the DRCOG region

Arguments against:

- 1) The current Region 6 boundaries are obsolete; they do not conform to any logical delimitation
- 2) Allocations are made to the Regions, but specific DRCOG allocations must also be made regularly to satisfy requirements of ISTEA and TEA-21
- 3) It is a cumbersome process, with 3 regions having to agree on priority projects for the DRCOG region; it may not be resulting in the highest State or regional priority projects being selected
- 4) There is no specific commitment from Regions 1 and 4 to allocate projects to the DRCOG region

### Alternative Scenario 1: 1 CDOT Engineering Region Coterminous with DRCOG TMA

Arguments for:

- 1) Boundaries of the CDOT engineering region would have a comprehensible rationale, conforming to a) the Denver TMA, b) the future extent of the Denver urbanized area based on growth boundaries identified in Metro Vision 2020, and c) the air quality nonattainment areas for PM10 and ozone
- 2) It would create a more streamlined allocation process in conformity with requirements of ISTEA and TEA-21
- 3) Project selection would be easier and may result in better selection of state and regional priority projects
- 4) It should be easier to coordinate planning efforts through one CDOT region

Arguments against:

- 1) It would create a “mega-region” much larger than the other regions, resulting in staffing issues and relocation problems
- 2) There might be a perception that a “mega-region” would have too much clout, influence, and authority, which may create hostility from the other regions
- 3) Resource allocation may become more difficult and contentious as this scenario would represent a major departure from historical funding shares
- 4) It would make Regions 1 and 4 much smaller in terms of resource allocation and staffing

Alternative Scenario 2: 2 CDOT Engineering Regions Involved with DRCOG TMA

Arguments for:

- 1) It would reduce the number of regions that must coordinate with DRCOG from 3 to 2
- 2) It would take Region 4 out of the DRCOG area, thus reducing regional conflict involving the North Front Range MPO
- 3) It would avoid creating a “mega-region”, maintaining a balance among the engineering regions

Arguments against:

- 1) This is a halfway measure that still follows the currently illogical boundaries of Region 6
- 2) The allocation and planning process would still be cumbersome because all of one region and parts of another would still have to be involved with DRCOG
- 3) The proper prioritization of projects would still be problematic because Region 1 would still be in the same dilemma

This consideration of issues involving alternative Engineering Region configurations suggests that CDOT should undertake a comprehensive assessment of its Engineering Regions as well as its Planning Region boundaries. Changes that emphasize regional transportation planning under ISTEA and TEA-21 could be facilitated by different Engineering and/or Planning Region boundaries. In considering a realignment of Engineering and Planning Regions, contracting for the performance of highway maintenance (perhaps to counties, as in Wisconsin) might provide the requisite flexibility.

*Commission Districts*

There are 11 Commission Districts in Colorado, with 4 of the districts representing the Denver Metropolitan Area. The districts are determined by the Colorado State Legislature, and Commissioners are appointed by the Governor. The State Transportation Commission is a powerful decision-making body with authority to approve project and funding allocations, among numerous other powers and duties.

In light of need and equity concerns regarding the State's allocation of transportation funds, it may be appropriate for the State to reconsider its Commission District Boundaries. The timing may be propitious in that the upcoming 2000 Census will result in new population figures to be used in political district reapportionments. An explicit rationale, based on population and/or other measures, would be useful in helping to identify the number, size, and geographic configuration of commission districts.

### **Other State Resource Allocation Processes**

#### *Texas*

The Texas Transportation Commission allocates resources to the 25 Texas Department of Transportation (TxDOT) Districts based on formulas that vary, depending upon which of the 18 categorical funding programs are being disbursed. Most formulas rely on some form of bank-balance distribution, i.e. based on lane-miles, condition of pavement, etc. Funds for the mobility category, for example, are based on comparing cost effectiveness measures, such as costs of congestion and right-of-way acquisition with the benefits of congestion relief to the traveling public.

The North Central Texas Council of Governments (NCTCOG) TMA is wholly contained within two of the State districts: the Dallas District and the Fort Worth District. During FY 1997-2000, the Dallas District received an average of 15.93% of State and federal funds allocated by TxDOT, while the Ft. Worth District received 8.48%.<sup>34</sup> The total allocation to these two districts of 24.41% compares favorably to the 22.12% percent of state population that resides in the NCTCOG region (4.3 million in NCTCOG<sup>35</sup>/19.439 million in Texas), as well as regional percentages of VMT and lane miles (see Table 4).

---

<sup>34</sup> Texas Department of Transportation. Interview with Charlie Tucker, Director of Transportation Planning and Development, Dallas District. October 13, 1999.

<sup>35</sup> Data taken from MPO Profiles, 1999 and Statistical Abstract of the United States, 1998.

Table 4  
 TxDOT Percentage Allocation of State and Federal Funding to Dallas and Fort Worth Districts in  
 Comparison to Percentages of Population, Vehicle Miles Traveled (VMT), and Lane Miles in the  
 State

<u>MPO Region</u>	<u>% Revenue</u>			
	<u>Received</u>	<u>% Pop</u>	<u>% VMT</u>	<u>% Lane Miles</u>
Dallas	24.4% <sup>a</sup>	22.12%	24.98%	12.84%

<sup>a</sup>Average distribution of state and federal highway dollars to the Dallas and Fort Worth districts in FY 1997-2000.

Sources:

- 1) Texas Department of Transportation, correspondence with Charlie Tucker, Director of Transportation Planning and Development, Dallas District, October 13 and November 22, 1999 and TxDOT data, 1999.
- 2) North Central Texas Council of Governments data, 1999.

*Arizona*

The state of Arizona implemented a new resource allocation process in April 1999 as part of the Casa Grande Resolves. Much of the impetus for developing a new process came from federal requirements that states identify funding estimates to MPOs for planning purposes. A statewide meeting was convened, involving directors and representatives from the Arizona Department of Transportation (ADOT), Maricopa Association of Governments (MAG), Pima Association of Governments (PAG), other COGs in the state, and transit agencies. Data were reviewed and decisions were made regarding an equitable distribution of funds. It was decided that MAG and PAG, representing the Phoenix and Tucson metropolitan areas, should receive approximately 50% of State discretionary funds as a target. This allocation would not include STP—Metro and CMAQ funds which go directly to the MPOs. The predominantly rural remainder of the State would receive the other 50% of the funds. It was further decided that MAG should receive 37% of the funds, while PAG should receive 13%. These distributions were based on historical funding shares, and reasonableness criteria related to data considered.<sup>36</sup> The funding allocations in Arizona are made to the MPOs, as well as the 10 State Districts. The MAG region is predominantly contained within the ADOT Phoenix District, thus that district takes the lead on ADOT projects in MAG. But parts of 4 other state districts (Yuma, Prescott, Globe, and Tucson) overlap somewhat into the MAG region, requiring some level of coordination between the districts.

Prior to this statewide meeting, MAG conducted a donor/donee analysis of the state distribution. Since the beginning of ISTEA, MAG found that 48% of all state and federal transportation revenues were generated by Maricopa County. ADOT concurred with this figure. Taking STP-MAG and CMAQ funds off the top, MAG would have needed 38% of the state and federal funds allocated as part of the State Discretionary Program to reach

<sup>36</sup> Arizona Department of Transportation. Interview with Chuck Eaton, Arizona Department of Transportation. October 18, 1999.

the 48% “fair share” figure. During the ISTEA period, MAG averaged only 10.5% of State Discretionary Funds, compared to the 38% needed to reach “fair share” based on the donor/donee analysis. As a result of the new State Allocation Process agreed upon in April 1999, MAG will receive 24.1% of State Discretionary Funds for the FY 2000-2004 period, and 28.1% for the FY 2001-2005 period.<sup>37</sup> (See Table 5, below.)

The 1997 population of Arizona was 4,555,000, the 1997 population for Maricopa County was 2,696,198, and for Pima County it was 800,000. Maricopa County accounts for 59.19% of the population of Arizona, and Pima County represents 17.56% of the State’s population. Even when adding STP—Metro and CMAQ funds, the MAG share of State funding still does not come near its share of State population. But it is recognized that Arizona is a geographically large state with substantial rural transportation system coverage needs. The 48% figure documented by MAG is probably a more realistic benchmark against which funding distributions should be measured. On that basis, MAG appears to be approaching a more appropriate fair share.

Table 5

ADOT Percentage Allocation of State and Federal Funding to MAG Region in Comparison to Regional Percentages of Population, Vehicle Miles Traveled (VMT), and Lane Miles in the State

<u>MPO Region</u>	<u>Target Funding %</u>	<u>% Revenue Allocated</u>	<u>% Revenue Generated</u>	<u>% Pop</u>	<u>% VMT</u>	<u>% Lane Miles</u>
Phoenix	37% <sup>a</sup>	28.1% <sup>b</sup>	48% <sup>c</sup>	59.19%	50.97%	31.42%

<sup>a</sup>Based on April 1999 Casa Grande Resolves resource allocation agreement. Figure refers to percentage of state discretionary program for state and federal funds, not including STP-MAG and CMAQ funds.

<sup>b</sup>Average resource allocation to MAG region for FY 2001-2005. Figure refers to percentage of state discretionary program for state and federal funds, not including STP-MAG and CMAQ funds.

<sup>c</sup>Based on donor/donee analysis conducted by the Maricopa Association of Governments. Arizona Department of Transportation has concurred with this figure.

Sources:

- 1) Arizona Department of Transportation, RAAC Recommended Resource Allocation for ADOT’s FY 2001-2005 Transportation Program, October 13, 1999 and ADOT data, 1999.
- 2) Maricopa Association of Governments data, 1999.

*Washington*

The process by which the State of Washington allocates funds for transportation projects has changed during the ISTEA and TEA-21 periods. Under ISTEA, resource allocation occurred through a more informal process in which the relevant parties would reach agreement on appropriate procedures and distributions of funds. Under TEA-21, allocations are based on variations of federal formulas. Also, the State Legislature has become more involved in the resource allocation process.

<sup>37</sup> Maricopa Association of Governments. Interview with James Bourey, Executive Director, October 18, 1999.

From 1985 to 1997, the Central Puget Sound region received \$9.4 billion (55.1% of State total) in transportation revenues from the State of Washington, in comparison to \$10.2 billion (59.2% of State total) in transportation revenues generated by the region. The percentage of revenues received within the State compares favorably with percentages of State population, vehicle miles traveled, and lane miles represented by the Central Puget Sound Region (see Table 6).

The Washington State Department of Transportation (WsDOT) has established an Office of Urban Mobility as a direct liaison with the Puget Sound Regional Council (PSRC), thus overcoming problems associated with PSRC overlapping into two WsDOT districts. Headquartered in Seattle, the WsDOT Office of Urban Mobility has been involved in numerous regional planning activities, including responsibility for several major investment studies and the intermodal freight and passenger-oriented Fast Corridor project.

Table 6  
WsDOT Percentage Allocation of State and Federal Funding to PSRC Region in Comparison to Regional Percentages of Population, Vehicle Miles Traveled (VMT), and Lane Miles in the State

<u>MPO Region</u>	<u>% Revenue Received</u>	<u>% Revenue Generated</u>	<u>% Pop</u>	<u>% VMT</u>	<u>% Lane Miles</u>
Seattle	55.1% <sup>a</sup>	59.2% <sup>b</sup>	55.40%	52.02%	21.55%

<sup>a</sup>Revenues received by the four-county Puget Sound region as a percentage of state total, 1985-1997.

<sup>b</sup>Revenues generated by the four-county Puget Sound region as a percentage of state total, 1985-1997.

Sources:

- 1) Washington State Department of Transportation data, 1999.
- 2) Puget Sound Regional Council data, 1999.

**Comparative State Resource Allocation Analysis**

The preceding analyses have examined total and percentage of funding received from state DOTs by the Denver, Dallas, Phoenix, and Seattle MPO regions, in comparison to percentages of funds generated, population, vehicle miles traveled, and lane miles attributed to each MPO region within each state (See Table 7, below for summary).

Table 7  
State DOT Percentage Allocations of State and Federal Funding to MPO Regions and Revenue Received by MPO Regions in Comparison to Percentages of Revenue Generated, Population, Vehicle Miles Traveled (VMT), and Lane Miles

<u>MPO Region</u>	<u>Target Funding %</u>	<u>% Revenue Received</u>	<u>% Revenue Generated</u>	<u>% Pop</u>	<u>% VMT</u>	<u>% Lane Miles</u>
Denver	NA	34.8% <sup>a</sup>	51.3% <sup>b</sup>	55.66%	51.37%	17.45%
Dallas	NA	24.4% <sup>c</sup>	NA	22.12%	24.98%	12.84%
Phoenix	37% <sup>d</sup>	28.1% <sup>e</sup>	48% <sup>f</sup>	59.19%	50.97%	31.42%
Seattle	NA	55.1% <sup>g</sup>	59.2% <sup>h</sup>	55.40%	52.02%	21.55%

<sup>a</sup>Colorado Department of Transportation Long Range Plan Allocations to 8-county DRCOG region for FY 1999-2020 for all state and federal programs, including STP-Metro, CMAQ, and STP-Enhancement. The Colorado Transportation Commission established a funding level in 1998 of 39.4% of available CDOT revenues (excluding STP-Metro, CMAQ, and Enhancement funds) for CDOT projects within the 6-county DRCOG TMA (Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 33). The 1998 allocation to the 8-county DRCOG region, including STP-Metro, CMAQ, and Enhancements, would have been 45.9% (DRCOG, "Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado," January 13, 2000, p. 1).

<sup>b</sup> DRCOG used % VMT as an estimate for revenue generated (DRCOG, "Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado," January 13, 2000, p. 8.).

<sup>c</sup>Average distribution of state and federal highway dollars to the Dallas and Fort Worth districts in FY 1997-2000.

<sup>d</sup>Based on April 1999 Casa Grande Resolves resource allocation agreement. Figure refers to percentage of state discretionary program for state and federal funds, not including STP-MAG and CMAQ funds.

<sup>e</sup>Average resource allocation to MAG region for FY 2001-2005. Figure refers to percentage of state discretionary program for state and federal funds, not including STP-MAG and CMAQ funds.

<sup>f</sup>Based on donor/donee analysis conducted by the Maricopa Association of Governments. Arizona Department of Transportation has concurred with this figure.

<sup>g</sup>Revenues received by the four-county Puget Sound region as a percentage of state total, 1985-1997.

<sup>h</sup>Revenues generated by the four-county Puget Sound region as a percentage of state total, 1985-1997.

Sources: 1) Colorado Department of Transportation, Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998; Resource Allocation Updates, October 1999; and CDOT data, 1999.

2) Denver Regional Council of Governments, "Regional Highway Transportation Funding: Equitable Distribution of Highway Funding in Colorado," January 13, 2000.

3) Texas Department of Transportation, correspondence with Charlie Tucker, Director of Transportation Planning and Development, Dallas District, October 13 and November 22, 1999 and TxDOT data, 1999.

4) North Central Texas Council of Governments data, 1999.

5) Arizona Department of Transportation, RAAC Recommended Resource Allocation for ADOT's FY 2001-2005 Transportation Program, October 13, 1999 and ADOT data, 1999.

6) Maricopa Association of Governments data, 1999.

- 7) Washington State Department of Transportation data, 1999.
- 8) Puget Sound Regional Council data, 1999.

It is clear that there are some striking differences among the funding shares that the four metropolitan regions are receiving from their states. The Dallas-Ft. Worth and Seattle regions are receiving percentages of state and federal funds allocated by their state departments of transportation which compare favorably with their regional shares of state population, VMT, lane miles, or funds generated. In contrast, Denver and Phoenix are receiving percentages of state and federal funds allocated by their state DOTs that are considerably less than percentages based upon population, VMT, and funds generated. The Denver region's funding received percentage is larger than its comparable percentage of lane miles, but Phoenix's is less.

Noting the inherent challenges in defining transportation needs cited earlier, it is difficult to assess whether the distribution of funds allocated by the states to the metropolitan regions is adequately addressing state or regional needs. There are many additional considerations and concerns that states must address, over and above those relating to population, VMT, or lane miles. For example, people living in metropolitan areas rely on roads and facilities throughout the entire state, while residents in other parts of the state benefit from infrastructure built in the metropolitan areas. State resource allocation cannot therefore, be based solely on population; metropolitan areas need to subsidize rural areas to some degree for the purpose of system connectivity and coverage.

Geography is also an important factor in trying to understand state needs and equity. Denver, Phoenix, and Seattle are by far the largest metropolitan areas within their states, each accounting for over half its respective state's population. But Colorado, Arizona, and Washington have relatively large rural regions with low populations for which transportation infrastructure must be provided. Furthermore, some of these rural areas contain difficult mountainous terrain that requires more resources for construction and maintenance. Colorado, in particular, has difficulties in maintaining and operating its mountain roads in both summer and winter conditions. Because of these geographical circumstances, it is difficult to identify an appropriate "fair share" for metropolitan regions in large Western states.

Nevertheless, results from this section of the Study suggest that there may be a correlation between the share of funding received from the state DOT and the level of satisfaction in meeting regional transportation needs expressed by the survey respondents. Dallas and Seattle were the highest rated MPOs, and they are also receiving the highest percentages of state and federal funding in relation to population, VMT, or lane miles. Conversely, Denver and Phoenix were rated lower, and are receiving much lower percentages of state and federal funding in relation to population and VMT. It is inappropriate, however, to base a conclusion on only four cases; further analyses across additional cases would be necessary to appropriately test this hypothesis. Furthermore, it is unclear whether percentage of funding is a primary causal factor in MPO satisfaction ratings, or whether other factors that result in higher MPO ratings also result in greater funding percentages. It is probable that both are occurring, whereby more funding translates into a perception of a better MPO process, and the perception of a better MPO

process translates into more funding. As results from other sections of this Study reveal, there are other factors, in addition to funding amounts, that are important in assessing how well MPOs are performing their transportation planning functions.

## SUMMARY AND CONCLUSIONS

The state fund allocation process is the most important factor in determining the amount of transportation funding that will be available to assist MPOs in meeting regional transportation needs. The majority of the funding identified in the regional TIP is controlled by the state, including categories of federal funds that the state DOT manages as well as state transportation funds that are distributed by the state. Thus, while MPOs are charged with developing the Regional Transportation Plan (RTP) and the TIP in cooperation with the state and the regional transit agencies, they are extremely reliant upon adequate flows of funding from their states to meet their regional transportation needs.

Each state in the U.S. conducts its transportation resource allocation differently. Some use explicit criteria, others use complex formulas, while still others use historical funding trends. Colorado allocates revenues first to statewide priority programs and then to each of six engineering regions for other regional priorities. One of the statewide programs focuses on 28 strategic projects that were identified by the Colorado Transportation Commission as critical to the State's transportation system. Funding for these projects came to be known as the "7<sup>th</sup> Pot" because it represented an additional category beyond the six engineering region categories. The regional allocation is based on a formula of 45% vehicle miles traveled, 40% lane miles, and 15% truck miles traveled. It was estimated that the Colorado Department of Transportation had \$12.83 billion available for years 2001 to 2020. Of that amount, \$3.04 billion would go to the "7<sup>th</sup> Pot", \$7.50 billion for other statewide priority programs (surface treatment, bridges, safety, maintenance, etc.), and \$2.29 billion for other regional priorities.<sup>38</sup>

One of the major problems associated with Colorado's resource allocation to the Denver region is that the geographic configurations of the DRCOG Transportation Management Area (TMA) and the CDOT Engineering Regions do not coincide. The DRCOG TMA region includes all of CDOT Region 6, as well as parts of Regions 1 and 4 (See Figures 1 and 2). Since statewide allocations are made to the regions, the directors of Regions 1, 4, and 6 must agree on the projects to be submitted to DRCOG for development of the regional TIP. Observations have been made that this process is inefficient, wasteful of resources, and results in project selections that may not be meeting either state or regional priority needs.

There are eleven Commission Districts in Colorado, with four of the Districts representing the Denver Metropolitan Area. The districts are determined by the Colorado State Legislature, and Commissioners are appointed by the Governor. The State

---

<sup>38</sup> Colorado Department of Transportation. Year 2020 Revenue Projections and Resource Allocation Program, January 22, 1998, p. 21.

4/29/2000

Transportation Commission is a powerful decision-making body with authority to approve project and funding allocations, among numerous other powers and duties. In light of concerns regarding the State allocation of transportation funds, it may be appropriate for the State to reconsider its Commission District Boundaries. The timing may be propitious in that the upcoming 2000 census will result in new population figures to be used in political district reapportionments. An explicit rationale, based on population and/or other measures, would be useful in helping to identify the number, size, and geographic configuration of commission districts.