MOVING COLORADO
VISION FOR THE FUTURE

2035 Statewide Transportation Plan

Transit

TECHNICAL REPORT

March 2008

DEPARTMENT OF TRANSPORTATION

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Introduction

The Colorado Department of Transportation (CDOT) supports transit's role in its mission of providing the best multimodal transportation system for Colorado that most effectively moves people, goods, and information. Transit services provide a vital alternative to the single-occupancy vehicle, enable the elderly and disabled to stay active and independent, provide access for rural residents, serve visitors, help reduce congestion, improve air quality, and connect people to jobs and services throughout the state. Transit is important for both local and regional services as a means of providing not only an alternative means of transportation, but in some cases, the only solution to the personal automobile.

Colorado's transit operators currently provide approximately 116 million annual passenger-trips. Services vary from general public services that operate on a fixed route to call-and-ride services that predominately serve elderly and disabled populations. There is no universally accepted way to categorize transit service, but services in Colorado can be generally grouped into four categories:

- *General Public Transportation:* Service that is available to any person who can ride a fixed-route system or who makes a reservation with an agency that provides demand-responsive service. There are approximately 50 general public transportation providers in the state.

- *Specialized Transit:* Service that is available to any elderly and/or disabled person but usually not to the general public. This category includes operators such as senior centers, but excludes those who limit services to a very specific and limited clientele. There are about 40 such operators providing this type of service around the state and all primarily operate demand-responsive service.

- *Human Services Transportation:* Transportation service that is provided by an organization and is incidental to its regular operations to provide access to the primary services offered. This service is typically offered to a specific or limited clientele, such as residents of a housing facility, clients of an agency, or patients of a particular clinic. The number of agencies providing this service probably exceeds 200.

- *Commercial and Intercity Bus Service:* Service provided by commercial operators that includes taxi, charter, and shuttle services. Intercity bus service is available within the state and includes operators such as Greyhound Lines, Burlington Trailways, and Arrow Stage Lines. There are more than 125 commercial service providers in Colorado and approximately 10 intercity bus providers in the state.

Transit Planning

Transit planning has a history in Colorado dating back to the 1970s. Starting at that time, CDOT required that transit agencies seeking Federal Transit Administration (FTA) assistance through CDOT be included in a locally adopted Transit Development Plan (TDP). TDPs were locally based and did not relate to other transportation modes or other transportation plans. Starting in 2002, CDOT implemented a new multimodal framework including transit planning and aligned the transit planning process to correspond with the update of the Regional Transportation Plans.

Regional Planning Commissions (RPCs) and Metropolitan Planning Organizations (MPOs) prepared Transit Elements as part of the 2030 Transportation Plan process for their respective regions. Regional Planning Commissions formed Transit Technical Advisory Committees (TACs) to provide input during plan development and to specifically oversee the development of the 2030 Transit Element. TAC representation included members from the RPCs/MPOs, transit providers, locally elected officials, CDOT, and transit enthusiasts. Responsibilities of the TACs included: providing input to the RPC on transit and multimodal issues, developing the transit vision of the TPR, providing input on the corridor visions, and identifying transit needs.

For development of the 2035 Transportation Plan, transit was fully integrated into the Regional Transportation Plans. The TACs participated by providing input to the RPC on updated transit needs, visions, and strategies. New to the 2035 planning process was the development of local public transit and human services transportation plans which meet new Federal Transit Administration requirements for coordination of all types of transportation services. Each local planning area identified gaps in transit service and strategies to meet those gaps and to avoid duplication of services. CDOT is project manager for the Colorado Coordinating Council for Access and Mobility, a statewide, multi-agency effort to improve coordination and reduce redundancies in human services transportation.

Additionally, there are several regional and statewide transit studies being conducted through CDOT. These include:

- Colorado Rail Relocation Implementation Study: The central focus of this study is to identify an alignment and construction costs of developing a freight rail bypass on the eastern plains—primarily to address a more efficient movement of coal traffic along the Front Range. However, there would also be an ancillary transit benefit in freeing up rail capacity on the Front Range that could be used for passenger rail service.

- High Speed Rail Feasibility Study: Study being conducted by the Rocky Mountain Rail Authority (RMRA), an organization formed by intergovernmental agreements among various local governments, to examine the feasibility of establishing high-speed passenger rail service along the I-25 and I-70 West corridors.

- Land Use and Zoning Study: A study being conducted by the Northwest Colorado COG and the I-70 Coalition, it will identify land use planning and zoning issues that are essential for accommodating a potential fixed guideway transit system from DIA westward along the I-70 corridor.

- Rail Governance Study: A CDOT analysis of governmental structure options for a future statewide or regional passenger rail system.

- Statewide Intercity Bus: A CDOT study of statewide, regional, and interregional bus service needs and the connectivity potential of those services. Further information regarding this study is summarized in this report.

- Statewide Passenger Rail Technical Report: Passenger rail service and other potential fixed guideway services are considered to be "transit," along with buses, light rail, and publicly accessed gondolas. While this *Transit Technical Report* addresses some passenger rail issues, please see the *Passenger Rail Technical Report* for greater detail regarding passenger rail activities in Colorado.

Passenger rail service refers to all rail modes, such as light rail, commuter rail, regional rail, and long-distance or interstate rail service. Currently there is some passenger rail service in operation in Colorado with additional routes in the planning and development stages. There are two existing long distance/interstate Amtrak routes serving nine Colorado stations and two Regional Transportation District (RTD) light rail corridors serving southwest and southeast Denver. RTD has also received voter approval to build out a program (called FasTracks) of eight light rail and commuter rail corridors and a Bus–Rapid Transit (BRT) corridor in the Denver metro area. These FasTracks corridors are currently in various stages of planning and development—all to be open for service by 2016. There are also nine tourist rail operations in the state. Given their private ownership and focus on tourist travel, CDOT does not normally include these railroads in its regular planning efforts to any significant extent.

There are currently no regional, intercity, or commuter passenger rail services operating in Colorado. However, aside from RTD's plans for Denver metro commuter rail, there is significant interest in developing intercity rail service along the Front Range and from Denver to Grand Junction along the I-70 corridor. In response to this growing interest, CDOT is currently conducting several studies which look at options that could be used for governing multi-jurisdiction passenger rail services, feasibility of passenger rail along the I-25 and I-70 corridors, and the *Rail Relocation Implementation Study* to identify an alignment and costs of constructing a freight bypass to the east of Front Range urban areas. The combination of these studies will identify capacity and service needs and estimate a cost for implementing passenger rail service.

There are significant hurdles to developing intercity passenger rail services in the state. Currently there is no dedicated source of funding for intercity rail development at the federal or state level. Given the capital-intensive nature of starting rail services, funding will need to be identified for the planning, construction, and operation of rail service. Another important step in the development of intercity passenger rail service is the need to adequately meet the capacity needs for both passenger and freight rail service when a rail corridor is shared by both operations. The above studies will identify the capacity requirements for mixed traffic. Fundamental to increasing rail capacity in Colorado for both freight and passenger service is the need to preserve rail corridors and right-of-way.

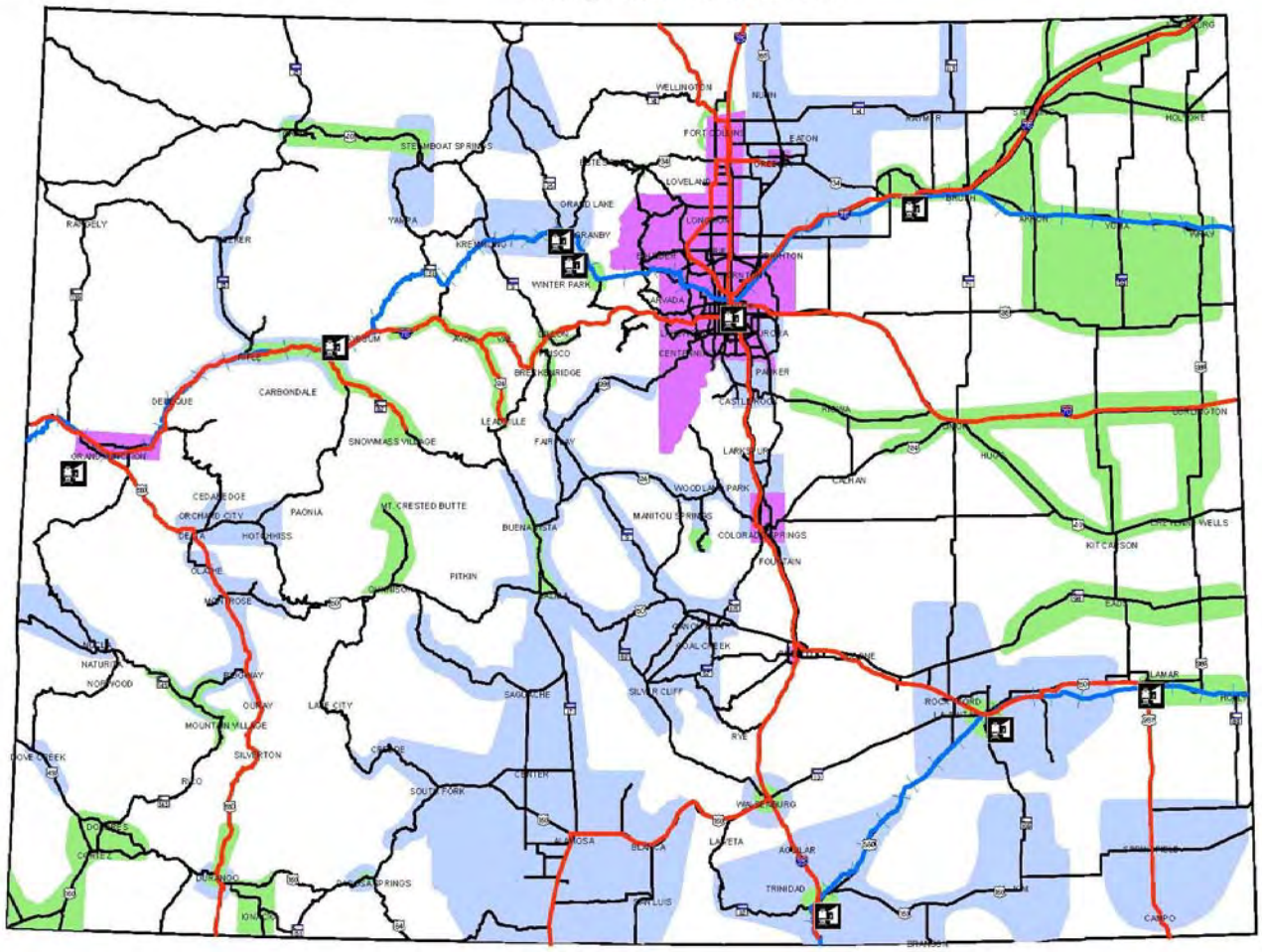
Additionally, there is an increasing challenge to plan and provide services which meet the needs of the aging population. Between 2008 and 2035 there is anticipated to be a growth of nearly 130 percent of those elderly, age 60 years and older. This aging population represents a significant portion of the transit-dependent population across the state and it will be necessary to plan for these demographic shifts in both urban and rural areas.

State of The System

Colorado's geography and diversity factor into the types of transit services offered throughout the state. For example, Colorado's urbanized areas offer fixed-route services to help move citizens through the cities, relieve congestion, improve air quality, and provide an alternative to using single-occupancy vehicles. Resort communities often are located in geographically-confined areas, making it difficult to accommodate large volumes of vehicular traffic; therefore, they offer residents and guests the opportunity to leave their cars behind by providing convenient fixed-route services. Resort transit services offer connections to recreational amenities, shopping, and restaurants. Rural areas in Colorado offer combinations of fixed-route and demand-responsive services, providing residents with the flexibility of having service when it is needed to access medical facilities, shopping centers, recreation, and social services. Figure 1 shows the areas served by transit services throughout the state.

The general public bus transit services offered in the urbanized areas of the state operate on a fixed-route/fixed-schedule basis providing people with accessible and affordable transportation to work, services, recreation, and more. Fixed-route services are useful in urban areas where higher population densities can support this type of service. In some suburban areas hybrid services such as route-deviation and call-and-ride service are being implemented to provide the flexibility needed in lower-density developments. There also are many specialized transit agencies within Colorado's urban centers that provide a much needed service to elderly and disabled citizens who are unable to ride the general public fixed-route systems. These specialized services are invaluable because they provide their customers with access to medical appointments and social service programs. The general public providers in rural areas provide additional specialized transit services.

Figure 1
Existing Colorado Transit Services



July 10, 2007

Another transit option available to Denver metro citizens and visitors is the Regional Transportation District's (RTD) light rail system. RTD opened the first five-mile light rail line in Colorado in 1994. The success and demand for this type of transit service prompted RTD to expand its light rail service in 2000 with the opening of the Southwest line, which extends from downtown Denver to Mineral Avenue in Littleton. The southwest extension proved to be another success for RTD with much higher than anticipated ridership. The Southeast corridor was constructed as part of the T-REX project and opened in 2006. Additionally, in November 2004, Colorado voters in the eight-county RTD district approved the passage of a sales tax increase of four cents on every $10 in purchases. This will allow RTD to build 119 miles of new light rail and commuter rail, 18 miles of bus rapid transit service, 21,000 new parking spaces at rail and bus stations, and expand bus service throughout the metro area. The plan also calls for the redevelopment of Denver Union Station into a significant multimodal transportation facility.

The Pikes Peak Area passed a ballot measure to form the Pikes Peak Rural Transportation Authority in 2004. The RTA is comprised of El Paso County, the City of Colorado Springs, the City of Manitou Springs, and the Town of Green Mountain Falls. The RTA is required to provide 10 percent of its revenue to transit projects for the member communities. The RTA has allowed Mountain Metropolitan Transit to expand hours and bus service area.

The City of Colorado Springs is operating bus service between Fountain and Denver. The service is called the Front Range Express (FREX). The service opened on October 11, 2004 and has stops in Fountain, Colorado Springs, Monument, Castle Rock, and Denver. FREX was recently awarded 19 new buses to operate this service through Senate Bill 1. FREX currently provides approximately 155,000 annual one-way passenger-trips.

Rural transit services in Colorado are provided by many transit agencies that offer demand-responsive service which allows customers to call and schedule rides to jobs, medical services, stores, and other services. This type of bus service is useful in lower-density areas where there is not enough demand to warrant a fixed-route service. Although many of these agencies' services are available to anyone who calls and schedules a ride, the majority of trips are taken by elderly and disabled residents who live in areas where they need to travel long distances to medical services or are unable to drive at all and need transportation for shopping, medical, and social functions.

Despite having relatively low permanent populations, Colorado's resort communities offer a high level of transit service to residents and visitors. Most of the large resort communities provide fixed-route bus service to move residents and visitors in and around the community. Because many of the resort communities are located in geographically

compact areas, even relatively moderate amounts of vehicle traffic can cause congestion. Some resort communities purposefully make parking expensive and limit the number of available spaces in an attempt to get visitors to use the public transportation system. Additionally, due to snow and ice accumulations in winter, winter resort communities routinely use sand on the streets and highways for safety purposes, which often results in these areas being designated non-attainment for ambient air quality standards. Resort community transit services assist with lowering the levels of PM-10 (particulate matter of <10 microns in diameter), thereby improving the air quality. Particulate matter is the term given to tiny particles of solid or semi-solid material suspended in the atmosphere and is inhalable. In resort areas, PM-10 is created from re-entrained road dust (sanding), carbon black (from automobile and diesel engines), and soot (from fireplaces and woodstoves). Reducing automobile traffic through the use of transit reduces the carbon black from automobiles and improves air quality. Furthermore, because property values are very high in most resort areas, the availability of affordable housing for employees is scarce or nonexistent; therefore, many workers must live in other communities which are often located miles from the resort area where they are employed. Employee commuter traffic can place a heavy burden on the highway system and resort parking as many employees who live outside these resort communities must commute to work, creating parking shortages. Long-distance bus routes have been established to address these problems; however, there is a prevalent need for increased regional and commuter service, not only for the resort areas, but for non-resort areas as well.

Although there are many commercial bus operators within the state, intercity and regional services are lacking in Colorado. Greyhound Lines and TMN&O, as well as a few smaller companies, provide intercity services along major travel corridors. However, for many parts of the state these services are not available and people are often without a means of getting from smaller towns to the larger cities via bus service. In particular, east/west intercity bus service is unavailable in southwest and northwest Colorado. Even regional bus travel can be difficult unless a traveler is willing to pay a large fee or their travel is not date and time restrictive.

Revenue

There are different funding sources for public transportation and specialized operators. The differences usually relate to the type and location of the operators. The best way to view the funding is to divide these operators into three different groupings, then to offer some general findings about their financing patterns:

Urbanized fixed-route operators: This category includes the major fixed-route systems in Colorado Springs, Denver, Fort Collins, Grand Junction, Greeley, and Pueblo. In general, about 70 percent of their operating revenues are derived from local government (general fund contributions and dedicated taxes); 12 percent from fares; and 20 percent from federal grants. A much higher proportion of their capital equipment expenses are funded through federal grants.

Public operators in resort areas: This category includes systems serving the Roaring Fork Valley, Eagle and Summit Counties, Crested Butte, Winter Park, Telluride, Vail,

Glenwood Springs, and Steamboat Springs. All of them operate fixed-route service. For these operators, nearly 80 percent of operating revenue comes from local funding, about 15 percent from federal grants, and about 5 percent from fares. (The amount drawn from fares is low because many do not charge fares; this is the result of competition with resorts in other states and the concern that large volumes of skiers at peak times would be delayed by people fumbling around for change or bus passes.)

Rural and specialized operators: This category of operators—most of which operate demand-responsive service aimed at elderly people, people with disabilities, and those with low incomes—derives a higher percentage of its operating revenue (about 43 percent) from federal grants, while about 48 percent comes from local government, and about 9 percent from fares and donations.

By far the chief revenue source for most transit agencies in Colorado is local tax dollars, accounting for approximately 70 percent of agencies' operating budgets. 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 RTD, which covers most of the Denver metro area. District sales tax revenues fund transit services in a seven-county 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), which is able to levy a variety of transportation 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. The Pikes Peak Region has formed an RTA which provides funding for both highway and transit projects including operation of the regional transit system. The Gunnison Valley RTA, scheduled to sunset in 2010, provides transit funding for service between Gunnison and Crested Butte. Other local funding sources include local government general funds, fares and user fees, service contracts, advertising revenue, and private business contributions. Transit systems that do not have a dedicated revenue source usually face the challenge of obtaining general fund dollars from local governments, competing with essential services such as fire, law enforcement, and public works. Table 1 provides a summary of current revenue across the state. Figure 1 provides an illustration of the Statewide Transit Funding sources. As shown in Table 1, the sources of revenue are categorized into Federal Transit Administration funding, local revenue sources, and fare contributions. Revenues for the urban areas were obtained from the National Transit Database and reflect 2006 revenue sources. Rural transit revenues for 2006 were obtained as part of the 2035 RTP process through information provided directly from providers.

Table 1
2006 Regional Funding Summary

Urban Areas*	Fares	FTA	Local/Other
RTD	$67,822,659	$99,793,461	$390,241,357
Pikes Peak RTA	$3,064,383	$11,645,789	$12,076,357
Pueblo	$480,454	$1,707,818	$1,604,800
Grand Valley	$223,425	$936,436	$1,634,304
NFR	$1,368,069	$7,954,392	$5,931,073
TOTAL	**$72,958,990**	**$122,037,896**	**$411,487,891**

Rural Transportation Planning Regions**	Fares	FTA	Local/Other
Central Front Range	$9,875	$8,200	$522,696
Eastern	$113,400	$478,600	$923,830
Gunnison Valley	$30,500	$855,000	$2,616,120
Intermountain	$4,328,316	$6,736,774	$38,534,432
Northwest	$216,000	$661,977	$3,562,471
San Luis Valley	$16,650	$101,052	$612,787
South Central	$17,500	$168,380	$44,072
Southeast	$38,723	$185,794	$323,035
Southwest	$157,994	$663,558	$1,518,957
Upper Front Range	$12,145	$92,382	$141,400
TOTALS	**$4,941,103**	**$9,951,717**	**$48,799,800**
TOTAL - resort areas	**$403,154**	**$1,915,966**	**$2,211,997**

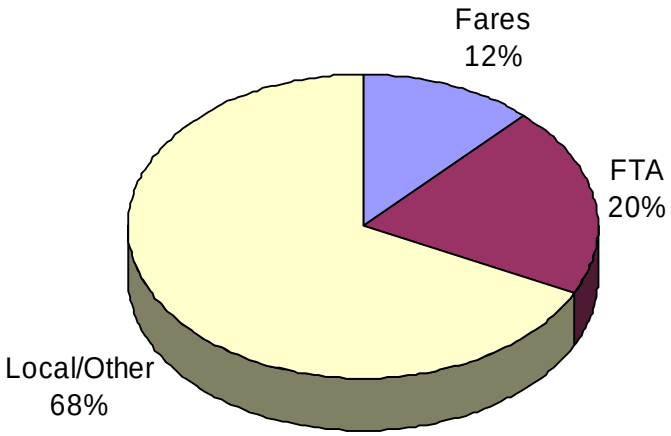
Resort Areas	Fares	FTA	Local/Other
Summit Stage		$419,450	$6,507,000
ECO	$1,214,673	$394,922	$5,211,172
Vail		$300,000	$3,261,964
Breckenridge		$1,710,895	$1,603,223
Snowmass		$143,730	$2,646,866
RFTA	$3,107,276	$3,645,463	$18,710,750
Glenwood Springs		$122,314	$593,457
Telluride (MVMD)		$407,000	$3,641,000
Crested Butte		$230,000	$908,500
Steamboat Springs	$216,000	$661,977	$2,114,871
Winter Park			$1,389,000
TOTALS	**$4,537,949**	**$8,035,751**	**$46,587,803**
STATEWIDE TOTAL	**$77,900,093**	**$131,989,613**	**$460,287,691**

Notes:

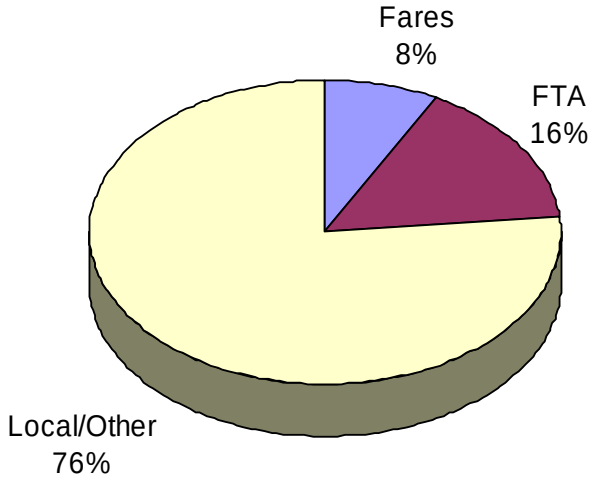
**Source for urban area funding sources was the 2006 National Transit Database.*

***Source for rural area funding sources was from provider surveys completed as part of the 2035 RTP process.*

Figure 1
2006 Urban Area Funding Sources



2006 Rural Area Funding Sources



Federal grants from the Federal Transit Administration (FTA) provide financial assistance to many transit providers. All FTA funds contain eligibility criteria and matching requirements that differ from program to program. Federal Transit Administration Section 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 buses and bus facilities. The FTA 5307 program is formula-based and provides funds for public transportation services in urbanized areas with populations of 50,000 or more. FTA 5310 funds are for capital equipment purchases for serving the elderly and disabled in urbanized or rural areas. 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 Job Access and Reverse Commute (JARC) program provides funding to provide access to employment opportunities. The funding amount is determined by formula with large urban areas as direct recipients and CDOT as the designated recipient for small urban (between 50,000 and 200,000 persons) and rural areas. The FTA 5317 New Freedom program provides funding for services above and beyond the requirements of the Americans with Disabilities Act. Funds are available to Colorado based on formulas with large urban areas being direct recipients and CDOT serving as the designated recipient for small urban and rural areas. Table 2 provides a summary of current FTA programs and statewide amounts for 2008.

Table 2

2008 Federal Transit Administration Funding Programs (Federal Register, 2007)

Program Discretionary or Formula	Eligibility	Administered by CDOT	2008 Funding Amounts
FTA 5307 - Urbanized Areas (formula)	Urban areas between 50,000 and 200,000 persons	NO	$55,968,158
FTA 5309 - Bus and Bus Facilities (discretionary)	Public bodies and agencies (transit authorities and other state and local public bodies and agencies thereof) including states, municipalities, other political subdivisions of states; public agencies and instrumentalities of one or more states; and certain public corporations, boards, and commissions established under state law.	NO	$15,000,000
FTA 5309 - New Starts (discretionary)	Public bodies and agencies (transit authorities and other state and local public bodies and agencies thereof) including states, municipalities, other political subdivisions of states; public agencies and instrumentalities of one or more states; and certain public corporations, boards, and commissions established under state law.	NO	$118,639,249
FTA 5309 - Small Starts (discretionary)	Public bodies and agencies (transit authorities and other state and local public bodies and agencies thereof) including states, municipalities, other political subdivisions of states; public agencies and instrumentalities of one or more states; and certain public corporations, boards, and commissions established under state law.	NO	$24,381,000
FTA 5309 - Fixed-Guideway Modernization (formula)	Eligible recipients for capital investment funds are public bodies and agencies (transit authorities and other state and local public bodies and agencies thereof) including states, municipalities, other political subdivisions of states; public agencies and instrumentalities of one or more states; and certain public corporations, boards, and commissions established under state law. Funds are allocated on a discretionary basis.	NO	$4,934,569
FTA 5303/5304 – Planning Studies (formula)	Metropolitan planning organizations (MPO) and state departments of transportation.	YES	$1,607,965
FTA 5310 - Elderly and Disabled (formula)	States apply for funds on behalf of local private nonprofit agencies and certain public bodies.	YES	$1,602,927
FTA 5311 - Rural and Small Areas (formula)	State and local governments, non-profit organizations (including Indian tribes and groups), and public transit operators, for areas less than 50,000 persons	YES	$7,881,906
FTA 5311(b) - Rural Transit Assistance Program (formula)	States and local governments, and local transit operators. Funds are to be used for training, technical assistance, research and related support activities.	YES	$114,951
FTA 5316 - Job Access and Reverse Commute (formula)	Local governmental authorities and agencies and non-profit entities.	YES Rural and Small UZA	$1,907,627
FTA 5317 - New Freedoms Program (formula)	Funds allocated through a formula based upon population of persons with disabilities. • Allocations to designated recipients in areas over 200,000 (60%), to States for areas under 200,000 (20%) and non-urbanized areas (20%); States may transfer funds to urbanized or non-urbanized area programs as long as funds are used for New Freedom Program purposes. • States and designated recipients must select grantees competitively.	YES Rural and Small UZA	$1,199,178

CDOT policy states that Regional Priority Program (RPP) funding, which is allocated from the Transportation Commission to the six CDOT Engineering Regions for high-priority regional projects, is "flexible." This means that these funds can be used to fund alternative mode projects. Such projects would have to receive a high enough priority in the regional planning process to receive funding. Table 3 shows the Transportation Planning Regions which have allocated a portion of RPP funds for transit projects. RPP funds can only be used for transit capital. Operating expenses are not eligible for RPP funds. The process for allocating these funds is the Project Priority Programming Process.

Table 3
Rural RPP Allocations to Transit by Region

Transportation Planning Region	CDOT Engineering Region	% RPP	Estimated 2035 Amount
Grand Valley	Region 3	0.85%	$199,000
Gunnison Valley	Region 3	1%	$237,000
Intermountain	Region 3	10%	$2,350,000
San Luis Valley	Region 5	1%	$251,000
Upper Front Range	Region 4	1%	$440,000

During the 2002 Colorado legislative session, a bill was approved to dedicate at least 10 percent of Senate Bill 97-001 transportation funding for strategic transit projects. For the first time, strategic transit projects have been funded using dedicated state funding for transit. This transit funding becomes available only when state revenues exceed certain levels, and this did not occur until 2006. The Transportation Commission convened a task force to determine strategic transit needs, determine the goals of a Strategic Transit Program, conduct a competitive application process and recommend to the Commission a list of projects. The task force developed as its goal for the program, "to increase transit ridership through improving regional transit connections between communities and access to critical destinations, such as medical services."

The task force issued a call for projects, accepting only requests for capital or planning projects. Fifty applications requesting over $134 million were received and evaluated. The applications were evaluated based on factors including consistency with the program goal; ridership; cost-effectiveness; economic value; sustainability; consistency with regional plans; ability to increase mobility on congested portions of the state highway system; and ability to leverage other funding.

The Transportation Commission awarded $65 million to nineteen strategic transit projects over the period of 2006 to 2010 based on revenue projections at that time. There were another three projects identified by the Commission, totaling $9.7 million that were determined to be strategic, but for which there was not sufficient funding. New revenue projections are exceeding the original projection of $65 million, indicating the potential for exceeding $115.3 million for the five-year period. It is anticipated that CDOT, based on those projections, could fund all twenty-two strategic projects and then be able to fund additional projects determined from a new call for projects. Beyond 2010, it is difficult to

predict how much, if any, funding will be available, as revenues will be dictated by the relative strength or weakness of the State's overall economy and legislative actions regarding Senate Bill 97-001. The funded projects from 2006 through 2010 are shown in Table 4.

Table 4
2006-2010 Senate Bill 1 Projects

Applicant	Project Title/Type	Awarded Amount
City of Denver	Design and ROW acquisition necessary to accommodate commuter rail	$16,880,000
US 36 Mayors/RTD	US36/Table Mesa Phase I BRT Improvements	$3,500,000
North Front Range MPO	Vehicles for regional transit service between Greeley and Loveland	$300,000
City of Steamboat Springs	Northwest Colorado regional transit bus transfer & bus storage facility on Highway 40 in Craig	$400,000
Colo. Springs/PPACG	16 Buses - Front Range Express (FREX)	$6,320,000
Northwest Colo. Council of Governments	NWCOG - I-70 mtn corridor planning for regional transit	$500,000
Rocky Mountain Rail Authority	High Speed Rail Corridor Feasibility Study	$1,246,000
Town of Avon	Avon intermodal center	$2,130,488
North Front Range MPO	Vans for vanpool service between NFR and Denver Metro	$225,000
Grand Valley Transit/Mesa County	Grand Valley transfer/operations facility	$3,200,000
City of Durango	Durango intermodal center	$5,100,000
Gunnison Valley RTA	Vehicles for transit serving Gunnison Valley/Crested Butte	$858,512
City of Fort Collins	Mason Corridor BRT Initial Phases	$4,560,000
City of Fort Collins	Fort Collins South Station intermodal/transit facility	$4,000,000
City of Longmont	Design of FasTracks commuter rail extension into Longmont	$4,000,000
RTD	RTD Access-A-Ride vehicles	$4,466,000
Neighbor to Neighbor	Chaffee Shuttle facility to serve upper Arkansas Valley	$150,000
Special Transit	Special Transit operations and maintenance facility to serve North Metro area	$5,250,000
Supplemental to FTA Funding	Supplemental for rolling stock	$2,000,000
City of Denver	Colfax Transit Improvements - Aurora-Denver on Rte. 15	$3,180,000
Eagle County Regional Transportation Auth. (ECO)	Leadville maintenance & storage facility	$585,000
Roaring Fork Transportation Auth. (RFTA)	BRT buses to serve Roaring Fork Valley	$5,986,400

In March 2007, Governor Ritter appointed the Transportation Finance and Implementation Panel to evaluate the state's transportation needs and identify long-term programs

and sustainable funding sources. The 32 members of the Panel represented a broad spectrum of experts, policymakers, representatives from private industry, community leaders and citizens. The Panel's final report to the governor recommends a robust transit package that would allocate state dollars to supplement existing rural and urban local/ regional transit and develop a state Strategic Mobility Program. This recommendation does not identify how these funds would be allocated. Table 5 provides the Transportation Finance and Implementation Panel's Preferred Funding Plan.

Table 5
Statewide Transportation Finance and Implementation Plan
Preferred Funding Package Amounts

	Annual Amount (in millions)
Local Transit	
Rural	$36
Urban	$36
Strategic Mobility Program	
Strategic Transit Projects	$169
*Multimodal Mobility Projects**	$337

Note: Funds are not dedicated to transit only.*

Rural and Urban Local/Regional Transit

The panel noted in its recommendation to fund local transit: "As with highways, investments in transit have lagged behind need. Insufficient funding makes it difficult to keep buses in good condition and equip them with new technology, and that makes transit less reliable, less attractive and less efficient. This results in lower ridership, lower revenues and higher operating costs. A state allocation that supplements local dollars or leverages federal dollars would help local agencies offer new or expanded transit services." The Panel's preferred plan recommends $36 million annually for rural local transit and an additional $36 million annually for urban local transit.

State Strategic Mobility Program

The Panel's recommendation for a state strategic mobility program would divide any funding as follows:

- 10 percent - "7th Pot" strategic projects (corridors and highways);
- 30 percent - state strategic transit projects;
- 60 percent - multimodal mobility projects.

The 10 percent for strategic projects would accelerate the completion of four traditional highway improvement projects and five major investment study corridor projects approved by the voters.

The 30 percent for strategic transit would engage the state in inter-regional transit projects. The Panel strongly supports the implementation of inter-regional rail, now being

studied, if additional dollars are available. For example, rail transit could begin to connect regions of the state along high-demand corridors such as I-70 or I-25.

The 60 percent for multimodal mobility projects would support the panel contention that there should be a funding source that can be invested in any mode of transportation to meet future demands. The development of future projects is guided by corridor visions written into the state transportation plan. These visions include strategies for safety, maintenance, better mobility and congestion relief. CDOT is developing 37 corridor projects at an estimated total construction cost of $14 billion to $23 billion (in 2008 dollars). In addition to highway improvements, transportation alternatives under consideration in some corridors include transit and toll roads. The cost of transit ranges from $7 billion to $12 billion, or about half the total cost. Many of these corridors also include 7th Pot projects. Due to budgetary constraints, current funding for mobility corridors is low—only $8 million of CDOT's $1 billion annual budget is allocated for mobility investments.

Goals, Objectives, and Strategies

In the 2030 Regional Transportation Plans, corridor visions were developed for each of the significant corridors. These corridor visions were updated through the 2035 Transportation Forums and regional planning process. The corridor visions:

- Integrate community values with multimodal transportation needs.
- Provide a corridor approach for a transportation system framework.
- Strengthen partnerships to cooperatively develop a multimodal system.
- Provide administrative and financial flexibility in the regional and statewide plans.
- Link investment decisions to transportation needs.
- Promote consistency and connectivity through a systemwide approach.
- Create a transportation vision for Colorado.

Some of the common transit goals as part of the corridor visions include:

- Provide or expand bus, transit, and/or advanced guideway systems.
- Support existing transit service.
- Support commuter travel by enhancing transit, Transportation Demand Management programs, and bicycle/pedestrian options.
- Increase multimodal opportunities.

Common strategies that support transit as reflected in the corridor visions include:

- Provide and expand transit bus and rail services.
- Add bus pullouts.
- Construct and maintain park-and-ride facilities.
- Initiate/expand transit service, coverage, and frequencies, and provide improved transit amenities.

Needs

Needs for transit can be assessed in two ways: 1) trip needs derived from an estimated annual number of transit trips based on demographic characteristics regardless of actual levels of service, or 2) financial needs that can be determined by computing the difference between fiscally constrained transit plans and preferred transit plans.

The transit trips needed for the rural areas are determined by a combination of several methodologies. The transit demand estimation methodology for non-resort, rural areas combines the TCRP Rural Demand Methodology and the Mobility Gap approach. The Transit Cooperative Research Program (TCRP) Report 3 describes a methodology for estimating demand for rural transit systems. This methodology is based on mode choice characteristics with coefficients calculated using national rural county data. This approach has been used in many rural areas and can be adjusted to reflect local conditions. The Mobility Gap approach was previously developed for the *Colorado Transit Needs and Benefits Study* and is based on comparing trip rates for households with and without access to vehicles. Demand for transit service in winter resort areas is based on lodging and airport enplanement activity for the airport serving the winter resort. The transit trips needed for the rural areas are determined by the methodology described in Appendix A. The transit demand estimates in MPO areas were determined by each individual MPO and are detailed in the MPO regional plans or estimated using population projections to 2035.

Figure 3 and Table 6 show the needs for transportation services and the projected trips that will be provided through 2035 for the state. Based on the available funding, there will be significant unmet needs throughout the state. Figure 3 highlights that there are currently (2006) 116 million annual transit trips provided statewide in Colorado. In 2035, assuming constrained revenue; the trips provided grow to 134 million annual transit trips. Currently (2006), there are 258 million annual transit trips needed statewide, growing to 436 million annual transit trips needed in 2035. In comparison, in the 2030 Statewide Transportation Plan, there were an estimated 334 million annual trips needed by 2030. These figures demonstrate that with existing constrained revenues, 45 percent of the transit trip need is being met in 2006, while only 31 percent of transit trip need is met in 2035.

Figure 3
Quantitative Transit Needs

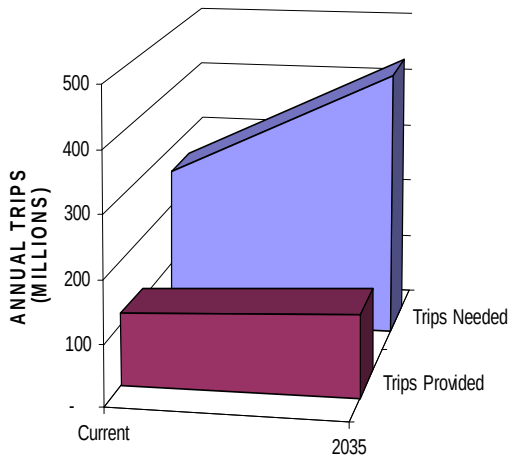


Table 6 **Statewide Transit Trips** (in millions)						
	2006 Trips	**% of Total**	**2006 % of Need Met**	**2035 Trips**	**% of Total**	**2035 % of Need Met**
Trips Provided						
Rural	18	15.5%	34.5%	21	15.5%	26.8%
Urban	98	84.5%	47.6%	113	84.5%	31.5%
Statewide Total	**116**	**100%**	**45%**	**134**	**100%**	**31%**
Trip Needed						
Rural	52	20.2%		77	17.8%	
Urban	206	79.8%		359	82.2%	
Statewide Total	**258**	**100%**		**436**	**100%**	

As part of the process to develop the 2035 Regional Transportation Plans, the rural areas went through a process to identify gaps in available transit service within three separate categories. These gaps may be rural geographic gaps where no service is provided as shown in Figure 4. Other gaps may include specific rural market segments as shown in Figure 5. These gaps may be areas where service is available for those with disabilities or the elderly, but no service is provided for the general public or those with low incomes. The third type of gap is shown in Figure 6. These gaps reflect areas with service, but the service does not fully meet the needs of the community (such as service which is only provided on weekdays or during limited hours). Strategies to address all three types of gaps are identified in the Regional Transportation Plans. Common themes throughout the process included the following, which parallel urban themes:

- Need for job access
- Need for increased funding
- Need for intercity and regional services
- Need to overcome coordination barriers
- Need for increased services
- Need for facilities

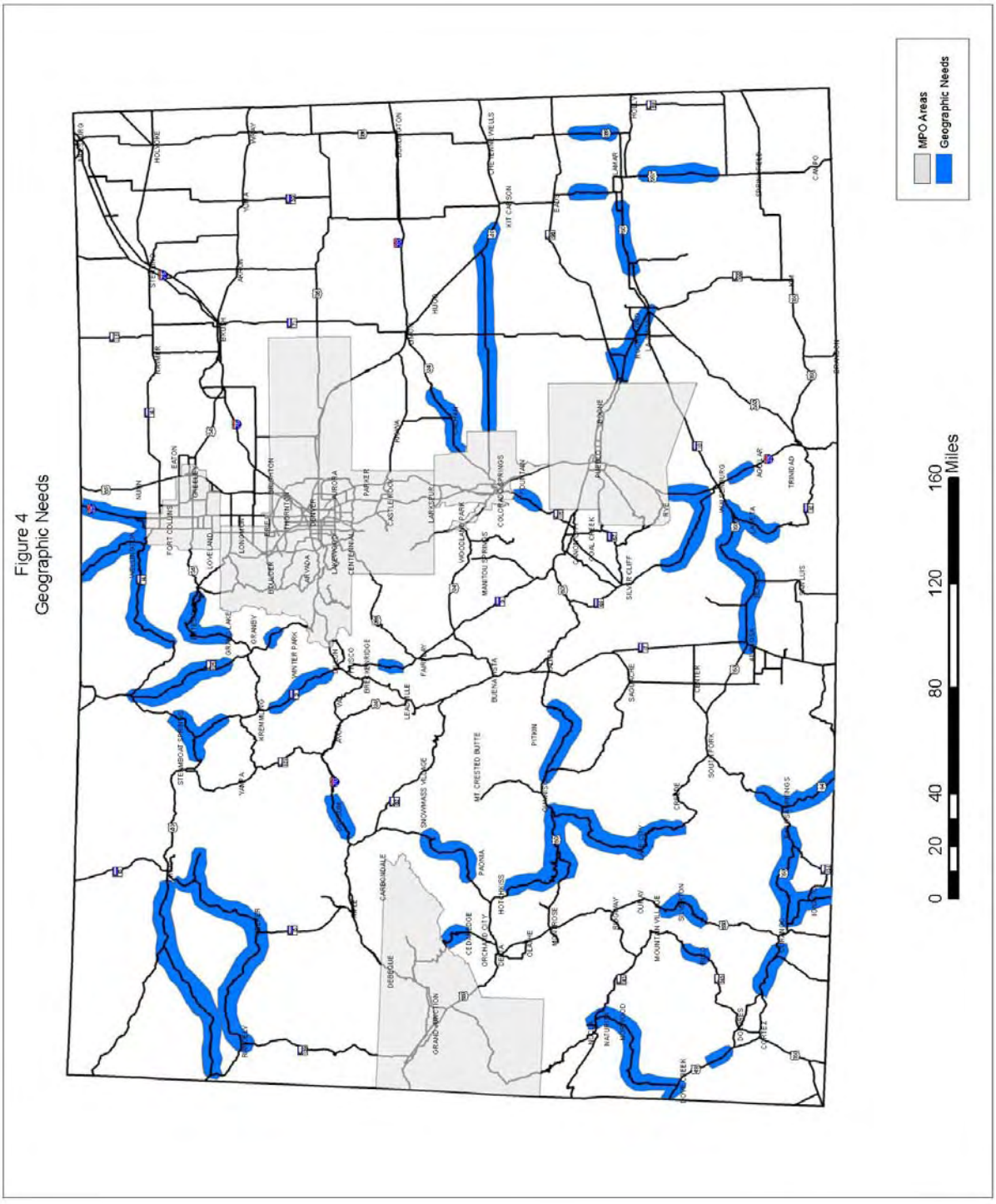


Figure 4
Geographic Needs

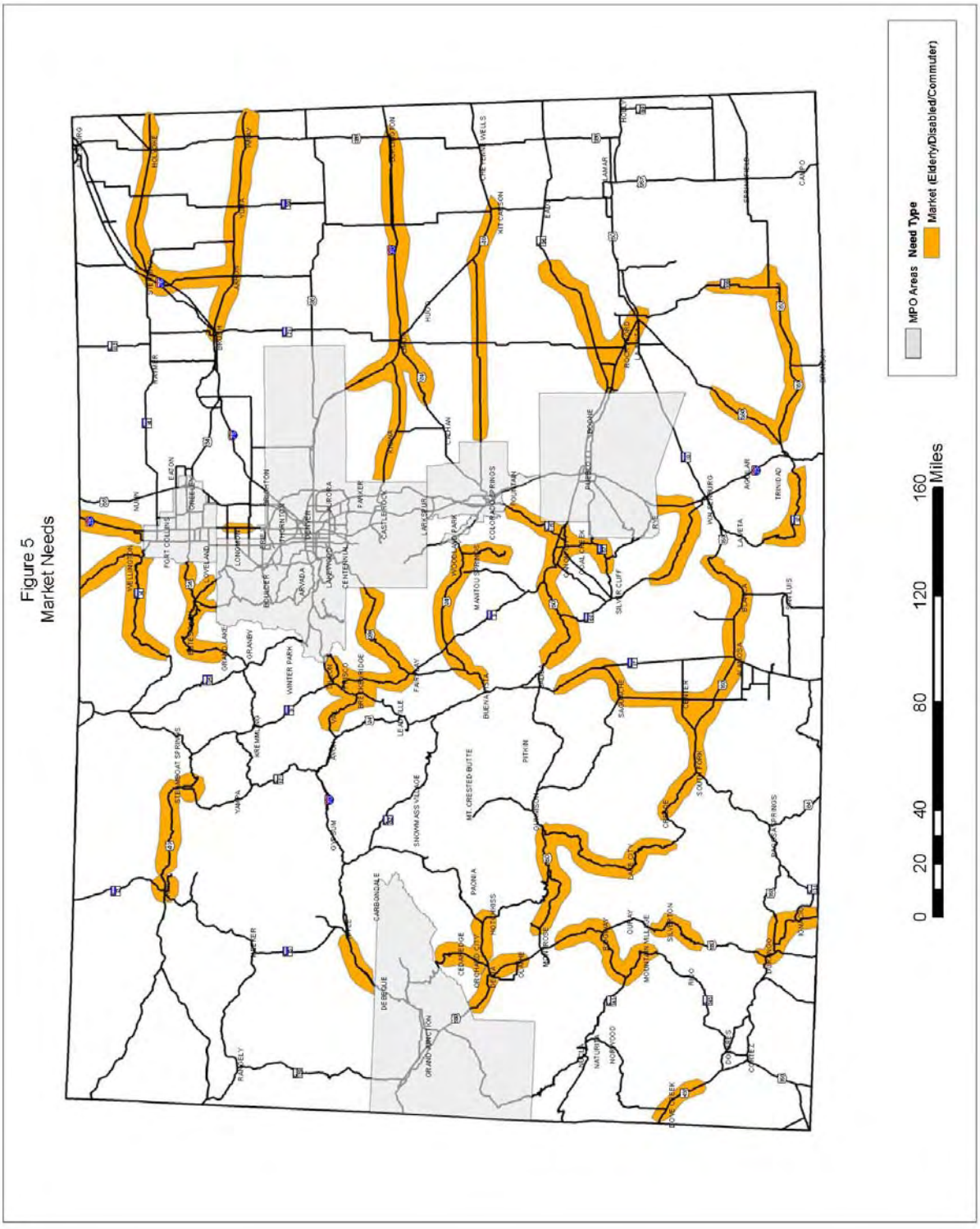


Figure 5
Market Needs

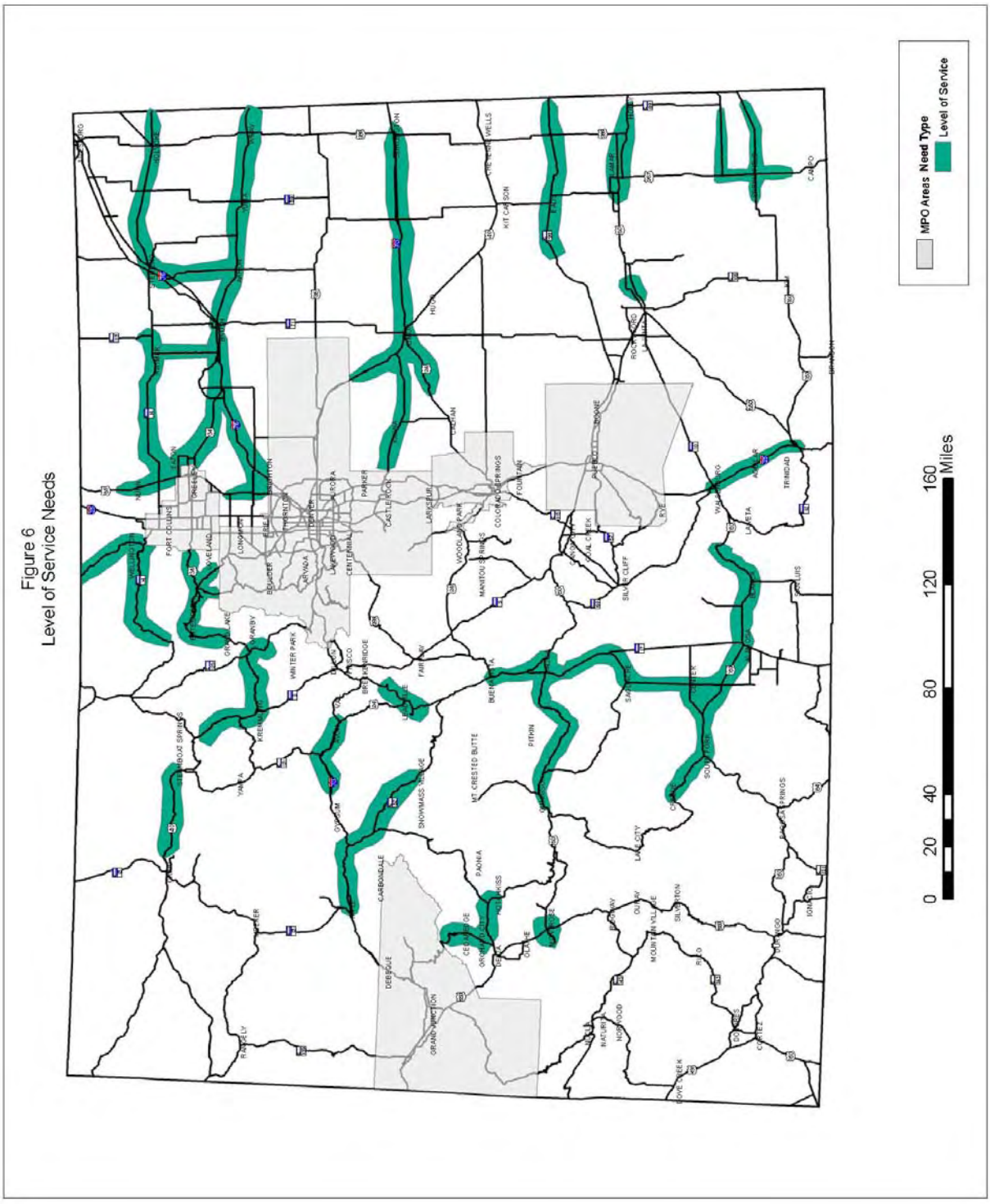


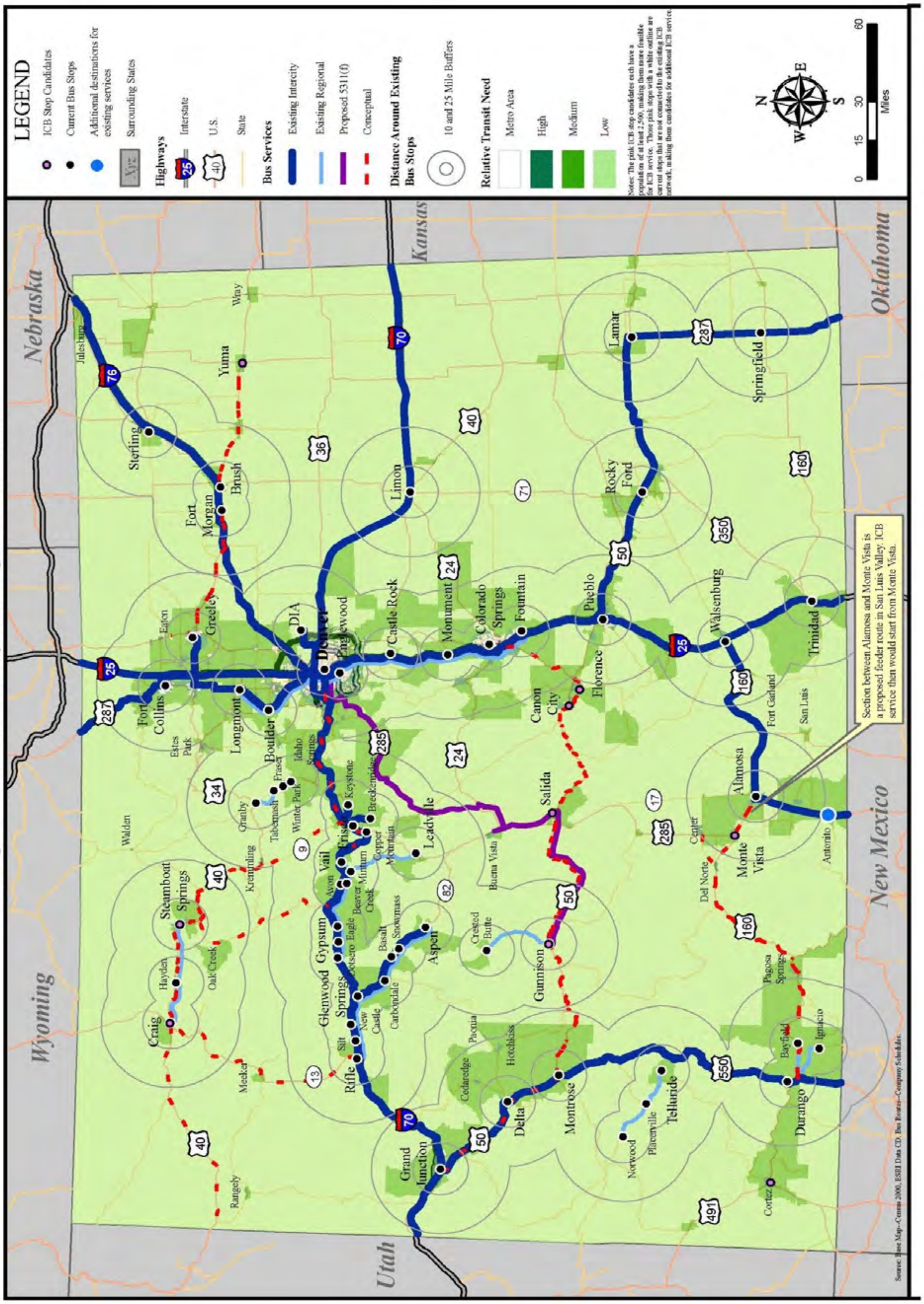
Figure 6
Level of Service Needs

Additionally, CDOT conducted the Colorado Statewide Intercity and Regional Bus Network Study in 2007 to identify a preferred network of regional and intercity bus service. This study examined both intercity, such as from Denver to Salt Lake City, and regional, such as from Gunnison to Denver International Airport, transit service needs and how each network overlaps the other. While both networks are important to establishing statewide bus connections, there was significant interest in establishing regional and commuter bus services rather than the long-haul, state-to-state intercity bus services. In addition to an analysis of routes, schedules, Census data, and potential key destinations, the study team performed an extensive outreach effort to identify regional and local concerns. With input from Technical Advisory Committee (TAC) members, surveys, interviews with intercity bus carriers, and interviews with various groups and agencies, needs were assessed to determine a preferred network of intercity and regional bus services. The outcomes of this study are included in the 2035 Plan at the Vision level rather than the fiscally constrained level as funding is not yet identified.

Figure 7 presents the potential routes and stops from that study. The proposed annual cost (in 2008 dollars) for the regional statewide network is approximately $35 million, of which $21 million is presently funded and $14 million in additional operating funds would be needed to implement all the identified regional bus services.

Similar to the regional bus network, potential routes and services designed to provide meaningful connections from rural areas to the national intercity bus network were developed and assigned a cost. Beyond the existing intercity services being provided in the state, mostly operated by commercial carriers, the additional intercity services would have an annual operating cost of $1.7 million.

Figure 7
Existing and Potential Intercity and Regional Bus Routes



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 Plan of the Regional Transportation Plans and were based on unrestricted funding. Projects included the costs associated with maintaining existing systems and also enhancing current transit services. All of the projects identified are eligible for transit funding.

Transit providers in Colorado identified approximately $57 billion worth of transit project needs over the next 28 years. Current revenue streams will not be sufficient to fund all of the identified transit projects through 2035. Transit providers were requested to prioritize their projects so that projects deemed the highest priority could be funded within the specified planning horizon using current funding streams as required. This methodology is a requirement of the Regional Planning Process. It is a technique used to create fiscally constrained transportation plans so projects with priority status are implemented first. By comparison, in the 2030 Plan, providers indicated a need of $45 billion worth of transit project needs.

The fiscally constrained plans provided realistic estimates of the projected funding for transit over the next 28 years that will be used to fund higher priority projects. The Regional Transportation Plans indicate that transit providers in Colorado identified approximately $27 billion worth of fiscally constrained transit projects over the next 28 years. To sustain services required looking at actual service provider inflation rates. These rates were used to calculate what it would take from a statewide approach to sustain services based upon an average operating inflation rate of six percent annually.

The total unmet financial need for transit services in Colorado—determined by comparing the difference between all of the identified transit projects contained in the preferred plans of the Regional Transportation Plans to all of the transit projects identified in the fiscally constrained plans—amounts to approximately $27 billion. Table 7 provides a summary of identified needs compared to fiscally constrained funding amounts. Table 7 demonstrates that with $27 billion in constrained revenue over the 2008-2035 period, 48 percent of the $57 billion Vision cost is met, while the $33 billion projected to sustain the existing level of transit service meets 58 percent of the Vision cost. In comparison to the 2030 Plan, providers identified approximately $23 billion worth of fiscally constrained transit projects.

Table 7
2008-2035 Statewide Needs and Fiscally Constrained Comparison (in millions)

Area	Anticipated Constrained Revenue in 2008 ($'s)	Sustain Cost Estimate (Inflated 6% annually)	Vision Cost in 2008 ($'s)	Funding Gap (Vision - Constrained)
Rural	$2,589	$6,168	$18,865	**$16,277**
Urban	$24,833	$27,000	$38,545	**$13,712**
TOTAL	**$27,422**	**$33,168**	**$57,410**	**$29,989**

Conclusion

Colorado's transit network consists of a wide variety of services. Both general public transit services and specialized transportation for the elderly and disabled are important components of the state's transportation network.

Colorado's urbanized areas are planning for a future that includes increased levels of transit services, expansion of light rail lines, and development of intermodal facilities, intercity bus services, and Front Range commuter rail. Regions that include resort communities are focusing on maintaining and providing visitors with enhanced transit services and transportation options for employees who often commute long distances. Both rural and urbanized transit systems are planning for the projected increased demand in services for the elderly and disabled.

Although the state has responsibility for multimodal transportation planning, most of the authority over funding of transit services either lies with local governments or the private sector. CDOT works cooperatively with these entities, but one of the biggest challenges over the next decade and beyond will be securing additional transit funding to address the growing need for transit. CDOT is contributing significant funding to transit through SB-1, but it is difficult to predict the amount that will be available each year as this is dependent upon the economy and legislative actions.

Colorado residents and visitors will see many positive changes to the state's transportation system over the next few decades. The 2035 Statewide Transportation Plan will help accomplish these positive changes by guiding the state's decision makers as they refine transportation policies. The importance and value placed on transit as an efficient and effective mode of transportation will increase and contribute to the positive direction of the state's transportation system. Table 8 provides a statewide summary of funding and needs for both urban and rural areas.

Table 8
Statewide Transit Summary (in millions)

Area	2006 Passenger Ridership	2006 Annual Expenditures	2035 Constrained Costs	2035 Vision Cost	2035 Funding Gap	2035 One-Way Passenger Needs
Urban	98	$607	$24,833	$38,545	$13,712	359
Rural	18	$64	$2,589	$18,865	$16,277	77
Total	**116**	**$670**	**$27,422**	**$57,410**	**$29,989**	**436**

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MEMORANDUM

DATE: Draft Submitted August, 2007
Final Submitted February, 2008

TO: John Valerio, CDOT Transit Unit

FROM: LSC Transportation Consultants

SUBJECT: Transit Needs Assessment

We have completed a review of rural transit demand and needs assessment methodologies. Based on our review, we are proposing to use the same methodologies which we used in previous Transit Elements and the Transit Needs and Benefits Study. This Memorandum describes our proposed approach which includes the TCRP Rural Transit Demand Methodology and the Mobility Gap. Other methodologies are described based on our review of the literature.

TCRP Rural Transit Demand Methodology

The Transit Cooperative Research Program Report (TCRP) 3 describes a methodology for estimating demand for rural transit systems. The methodology is based on mode choice characteristics with coefficients calculated using national rural county data. This approach has been used in many rural areas and can be adjusted to reflect local conditions. We have used this methodology successfully in many rural locations. A major disadvantage to using this methodology in Colorado is that the approach does not estimate demand for transit service in urban areas. A second disadvantage is that this methodology requires an estimate of the level of service for areas that are currently unserved.

Mobility Gap

We developed the Mobility Gap approach for the Colorado Transit Needs and Benefits Study. This approach is an assessment of the potential need for service rather than demand for a particular service. It is based on the trip rates for households with and without vehicles. The difference in the number of trips between households with and without vehicles is the Mobility Gap. The estimate of need for transit services is based on this unmet need for additional transportation. This approach overestimates demand for transit services as it projects an upper limit of trips which could be made if transit service was as convenient as a private automobile. The Mobility Gap is useful as an estimate of the overall transit needs, but must be adjusted to

reflect the likely level of demand which could be served.

As part of the Transit Needs and Benefits Study, we also looked at the demand for transit service in winter resort areas. We found that the best indicators were lodging and airport activity for the airport serving the winter resort.

Review of Transit Demand Estimation Models by BRW, Inc., June 1999 (Appendix of Region 10 Transit Development Program, 2000-2006)

Zero Vehicle Population Method

Total Annual Transit Trips = zero vehicle population x 0.5 transit trips per person per day x 250 working days

Advantages: Census data are readily available

Disadvantages: As the decade progress, census data will become out of date and will not account for recent changes in population.

Survey Research Trip Rates Method (Mesa County, CO 1992)

General Population Trips = Pop under 65, w/o mobility limitations
x 6.5% of that population use transit
x 0.02 round-trips per day per person
x 365 days per year

= Pop under 65, w/o mobility limits x 0.949 trips per year per person

Elderly Population Trips = Pop 65+ w/o mobility limits
x 20% of that population use transit
x 0.04 round-trips per day per person
x 2 one-way trips per round-trip
x 365 days per year

= Pop 65+ w/o mobility limits x 5.84 one-way trips per year per person

Disabled Population Trips = Mobility-limited population all ages
x 100% of that population use transit
x 0.03 round-trips per day per person
x 2 one-way trips per round-trip
x 365 days per year

= Mobility-limited population all ages x 21.9 one-way trips per year per person

Advantages: Census data are readily available; Use "Go outside the home disability." This census factor is relatively stable over time.

Disadvantages: As the decade progresses, census data will become out of date and will not account for recent changes in population. Model designed to predict local service in small to large urban areas.

Regression Model for Zonal Demand

Daily Demand for All Trip Purposes = 0.0493 daily person-trips
+ 0.0658 non-white person-trips x non-white population
+ 0.578 elderly person-trips x 65+ population
+ 0.115 person-trips/household x zero-vehicle households
+ 0.434 person-trips/household x low-income households

Advantages: Census data are readily available. This model was developed for traffic analysis zones, but is acceptable for rural and resort areas at the county level.

Disadvantages: Race is not considered an acceptable predictor of transit usage. Model assumes white persons under 65 living above the poverty level do not ride transit. Model does not indicate whether daily trips were developed on the basis of a 365-day calendar year or 260 weekdays per year. The model has overlapping categories allowing for double counting.

R & R Method

General Population Trips = Pop under age 60, w/o mobility limitations x 1 trip per person per year

Elderly/Disabled Trips = Pop 60+ and pop under 60 w/ mobility limitations x 4 trips per person per year.

Advantages: Census data are readily available; Use "Go outside the home disability." This census factor is relatively stable over time.

Disadvantages: As the decade progresses, census data will become out of date and will not account for recent changes in population.

Modal Split Method

Total annual one-way person-trips = Total population x 3.5 one-way trips per person per day x 365 days per year x 1% transit mode trips/all trips split

Advantages: A simple and minimally data-intensive way to forecast transit demand.

Disadvantages: Does not distinguish between different types of trips.

Employee Transit Use Method

Total annual one-way passenger-trips for work = Total Employees x 2.2% employees use transit per day x 2 one-way trips per day x 250 work days/year (260 weekdays – 10 holidays)

Advantages: A simple and minimally data-intensive way to forecast transit demand.

Disadvantages: Does not differentiate between commuter and other employee demand.

Land Use Trip Generation Method

Transit Demand by Route = (length of route segment I) (trip generation for land uses adjacent to segment I or within ¼ mile of route)

Advantages: Tailored to a specific area so potentially more accurate.

Disadvantages: Requires developing trip generation rates which can be a lengthy and data-intensive process. Only applies to fixed-route services.

Casavant, Painter, Washington State Transportation Center, Washing State University, University of Washington, Demand Forecasting for Rural Transit, June 1999, Washington

This research paper first studied the feasibility of the TCRP rural transit demand method for use in the State of Washington, then developed three transit demand models based on the characteristics of usage for several regional transportation systems currently in place in the State of Washington. The study concluded that the TCRP method should not be applied to Washington for the following reasons:

- Social service program categories used in the TCRP workbook do not always correspond to programs in Washington.

- There is a lack of county level data available to estimate annual vehicle-miles by population subgroup in Washington.

Therefore the researchers developed the following models using a peer-analysis approach.

Transit Demand-All (TTD-ALL):

Predicted Rides per Year = 7.3*ELD+15*POP+100(ML16-64+MLOVER64)/ %POPABOVEPOV

ELD = Population aged 65 and over
POP = total population for county or counties
ML16-64 and MLOVER64 = population aged 16 and over that is mobility limited
%POPABOVEPOV = percent of population living above the poverty level in that county

The coefficients in this equation are the average values for ridership by population subgroup obtained from four Washington regional transit systems.

Advantages: Data are readily available from the US Census and participating transit agencies.

Disadvantages: To test this model, actual ridership data were compared to predicted ridership data results for four transit systems in Washington. Ridership demand was significantly overestimated for systems that charged a fare, but only off by one percent for the system which charges no fare.

Total Transit Demand for Fare Systems (TTD-FARE) Model

Predicted Rides Per Year = (6.4*ELD=12.5*POP+120(ML16-64+MLOVER64)/ %POPAVOVEPOV*1.7

In an effort to adjust for the overestimation problem for fare systems mentioned above, the group developed a separate model for systems which charge a fare. Average ridership values were obtained from three peer systems in Washington that charge a fare and the percent above poverty denominator was increased by 70 percent to account for the impact of a fare.

Advantages: Data are readily available from the US Census and participating transit agencies.

Disadvantages: Although ridership projections using this model were closer to actual data, percent error ranged from one to 14 percent.

Disaggregated Transit Demand (DTD) Model

Total Transit Demand = DTD-1 + DTD-2 + DTD-3 + DTD-4

DTD-1 = Youth Ridership = (# of persons enrolled in K-12)(360 one-way trips)(%transit for school)

DTD-2 = Adult Ridership = (Pop 18-64)(572 or 5.5 round-trips per week)(%commute)

DTD-3 = Senior Ridership = (Pop 65+)(104 or 2 round-trips per week)(%elderly commute)

DTD-4 = Mobility-Limited Ridership = (Mobility-limited persons aged 16-64)(626 or 6 round-trip rides per week)(% ml commute)

Advantages: Model is easy to understand and reflects a variety of characteristics in the county.

Disadvantages: Mode split percentages are required before the model can be used.