Technical Memorandum #4:

Potential Network

This technical memorandum documents Colorado's existing regional and intercity bus network and develops a classification of the network based on service characteristics. It then provides an assessment of potential intercity, rural regional, emerging regional, and high capacity regional routes, evaluating future improvements and expansions based on transit need and expected performance.

OVERVIEW OF EXISTING SERVICES

The existing intercity and regional Colorado bus network was described in detail in Technical Memorandum #2. That document also described the distinction between intercity and regional services. In general, intercity services are lifeline services, with very limited frequencies (often one trip in each direction per day), with the capability of carrying luggage or package express, and with connections to other bus services for travel to more distant points. Because intercity travel is higher on Fridays and Sundays, these services often operate every day of the week (or if not every day, at least on the peak intercity travel days). The following providers operate what can be considered intercity services in Colorado: Black Hills Stage Lines, Blue River Shuttles, the Chaffee Shuttle, Burlington Trailways, El Paso-Los Angeles Limousine, Greyhound Lines, Los Paisanos, Prestige Bus Lines, and Road Runner Transit.

Regional services, by contrast, are more likely to have higher frequencies, usually at least one round-trip from the rural origin to the larger urban area each day, scheduled to permit users to make a day trip. Often these services are scheduled to allow for employment trips, sometimes with multiple schedules in the peak hours, inbound (to the employment or commercial center) in the morning, and outbound in the late afternoon/evening. They typically are not interlined, but have local fares, often including multi-ride tickets or passes among the fare options. Fare levels (in terms of fare per mile) may be lower than intercity fares. Regional services often cross jurisdictional or service area boundaries. Though they are different from traditional intercity services, they may also provide important connections to the intercity bus network. The following providers operate what can be considered regional services in the state: Denver Regional Transportation District (RTD), Eagle County (ECO) Transit, FLEX Regional Transit, Galloping Goose Transit, Gunnison Valley Rural Transportation

Authority (RTA), Road Runner Transit (SUCAP), Roaring Fork Transportation Authority (RFTA), Steamboat Springs Transit (SST), and Summit Stage.

Figure 4-1 depicts the existing intercity and regional network in Colorado. Regional casino shuttles are also distinguished. Though these services have a different market than the typical regional route, they provide significant employee transportation and other trips in the corridors in which they operate.

CLASSIFICATION OF EXISTING SERVICES

In order to assess potential network improvements and expansions, it was first necessary to classify existing corridors by service characteristics. Based on an examination of the route lengths and frequencies, the following classification was developed, within the framework of intercity versus regional services: intercity, rural regional, emerging regional and high capacity regional. Different levels of service are appropriate to each of the four tiers, and thus any potential service improvements should reflect the classification.

- **Intercity** corridors connect rural communities to other bus services for travel to more distant points. Routes on these corridors have very limited frequencies (often one trip in each direction per day), and operate every day of the week (or if not every day, at least on the peak intercity travel days). Typically, a major national intercity carrier would provide service on these corridors.

- **Rural regional** corridors connect rural communities to the nearest regional city and the intercity bus network. Routes on these corridor have limited frequencies (often one to three trips in each direction per day), and operate every day of the week. These routes would allow a passenger from a rural community to travel to the regional city for a medical appointment or other personal business and make a return trip home in the afternoon. In most instances, public transit operators or casino buses would provide service on rural regional corridors.

- **Emerging regional** corridors are located in urbanizing areas in the state with a growing transit demand. Routes on these corridors have moderate frequency (often several trips in each direction per day), and operate at least every weekday if not every day of the week. These routes would allow for passengers to complete a round trip in a day, and in some instances, may be used for commuting purposes, in addition to be a lifeline service. Public transit operators would provide service on emerging regional corridors.

- **High capacity** regional corridors serve many of the established and urbanized areas of the state with a high transit dependent population. Routes on these

corridors operate with a higher frequency, with at least eight round trips a day, throughout the week. Often these routes would be used for commuting purposes, but they would also provide the benefit of being a lifeline for transit dependent populations. Public transit operators would provide service on high capacity regional corridors.

Figure 4-2 shows this classification applied to the existing bus network.

POTENTIAL NETWORK IMPROVEMENT AND EXPANSION

The following section builds on the classification of the existing network by identifying and evaluating improved and expanded intercity, rural regional, emerging regional, and high capacity regional routes. Because of the differences in the available data, analysis tools, and service characteristics, potential improvements in the intercity network are developed and assessed separately from the regional routes.

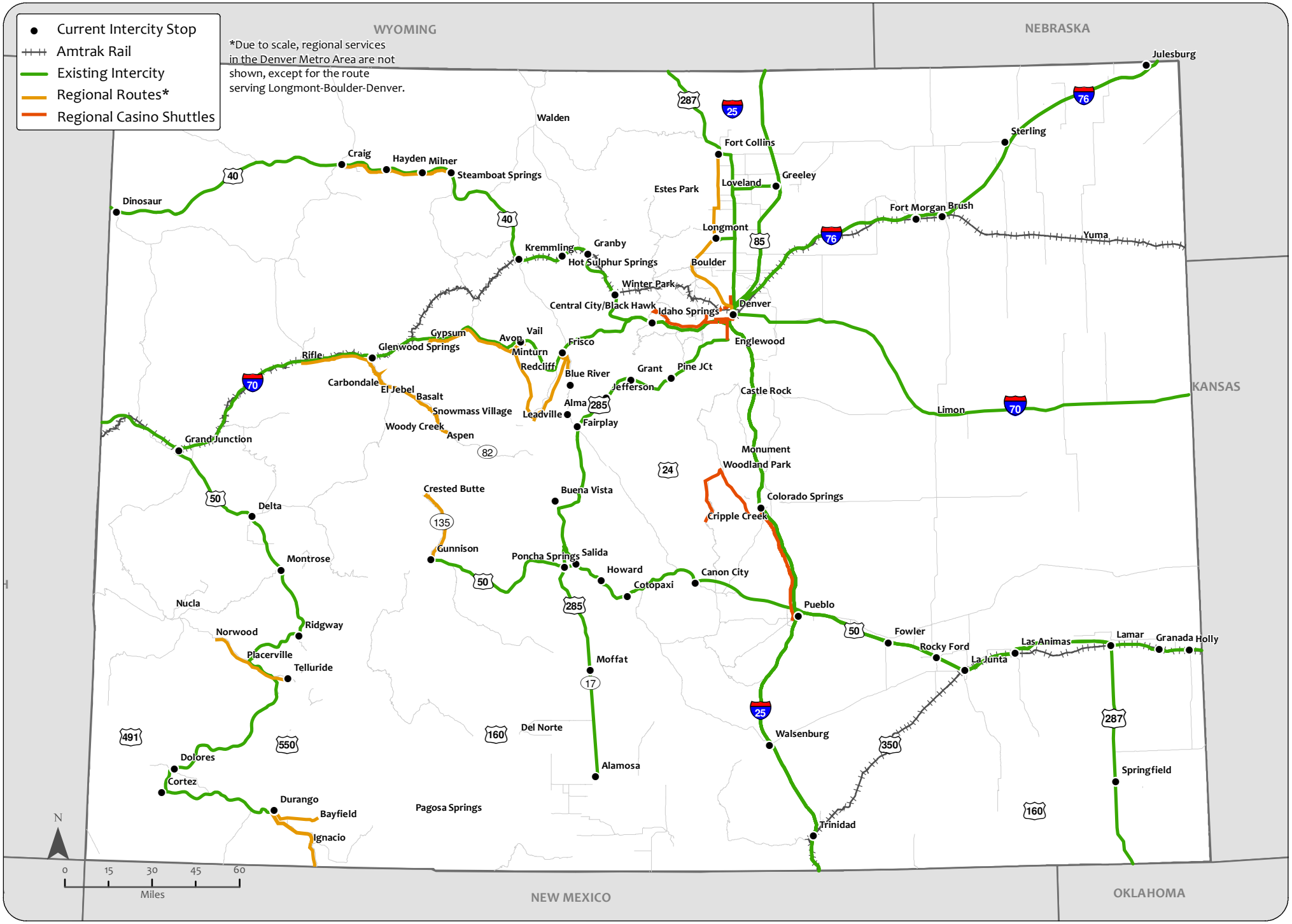
Intercity Route Assessment

To identify the need for additional intercity bus service corridors (in addition to the existing network), a multi-step process was applied. The first step in the intercity route assessment process involved a density ranking of potential transit-dependent persons. As described in detail in Technical Memorandum #3, each block group was ranked relative to the rest of the block groups in the state based on four needs categories (young adults, older adults, persons living below poverty, and autoless households). Those with moderate or high need were deemed possible candidates for additional or improved services.

The next step involved overlaying the existing intercity and regional bus network on the density ranking and creating 10-mile and 25-mile market area buffers around each existing intercity bus stop. Individuals who live within 10 miles of existing service have reasonably good and feasible access to the service. Those that live more than 10 miles away, and especially more than twenty-five miles away, have much more limited access. Therefore, places that are more than 10 miles away and are not currently served by local transit which could connect them to intercity bus services, would be good candidates for stops on new and improved routes.

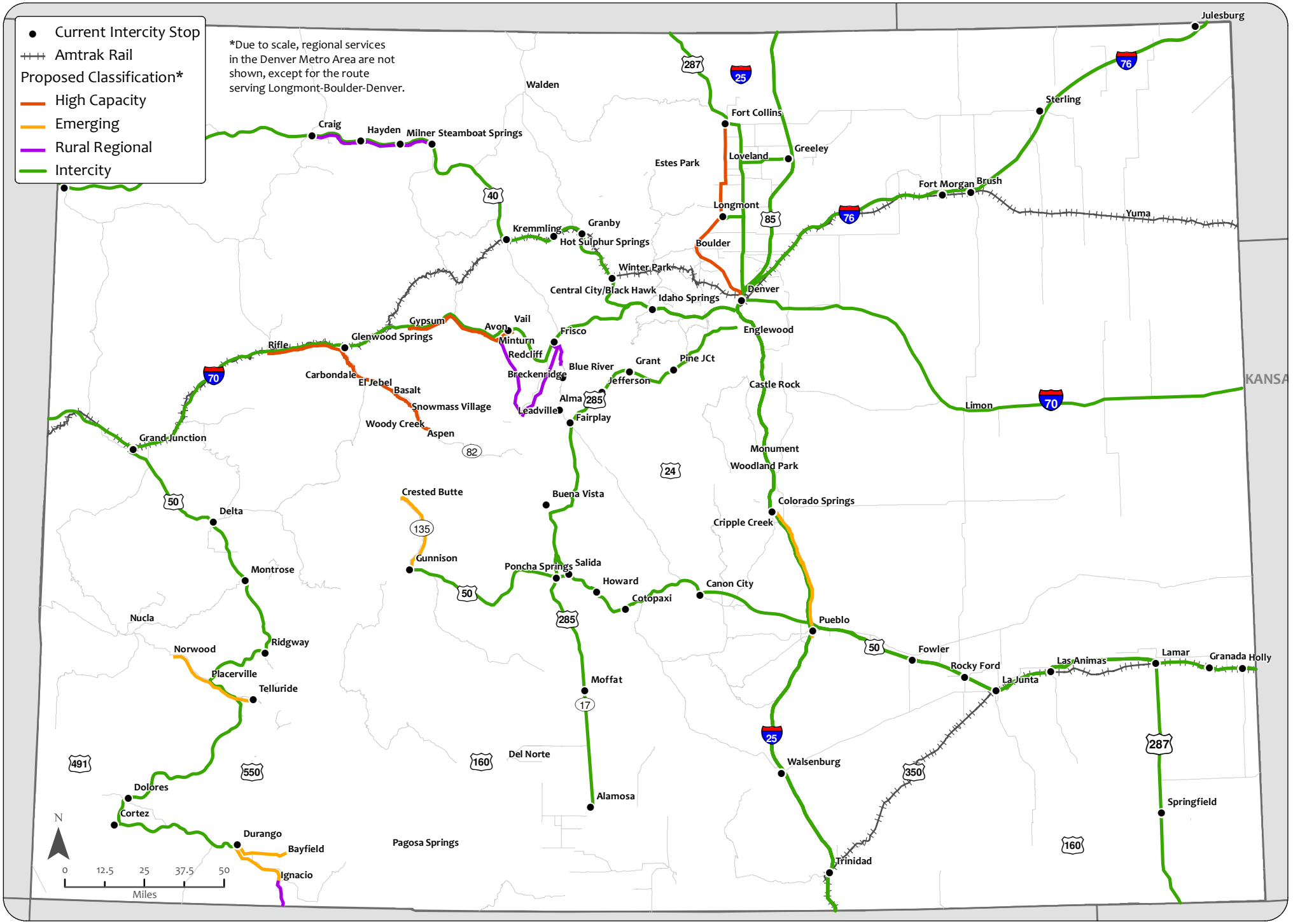
As ridership is generally proportionate to the overall population served, an additional analysis step involved eliminating (as potential intercity bus stops) those places (cities and towns) with a 2010 Census population of less than 2,500. This is one possible threshold for warranting fixed-route service in rural areas of the state, and is the same threshold applied in the 2008 study.

Figure 4-1: Existing Intercity and Regional Routes



Data sources: ESRI Census 2010 base map files, ACS 2007-2011, Census 2010, and provider bus schedules as of Jan. 2013.

Figure 4-2: Classification of Existing Intercity and Regional Routes



Data sources: ESRI Census 2010 base map files, ACS 2007-2011, Census 2010, and provider bus schedules as of Jan. 2013.

Colorado Department of Transportation Division of Transit and Rail

The final step involved an analysis of the existing regional transit connections from places not currently served by the intercity bus network that have over 2,500 people and are ranked as medium- or high-need. Regional transit connections to the nearest existing intercity bus stops from these places were identified. In most instances, these places did not have any regional transit providers, and thus no transit connection to the intercity bus stop. In instances where places were served by regional transit, the connections from these places to the nearest stops were analyzed for feasibility. If the regional transit connection required over two transfers and over two hours of travel time, or required a significant wait time at the bus stop, it was determined that the place did not have a reasonable connection to the existing intercity bus network. For places without a reasonable connection, or no connection at all, it was determined that the place was a suitable candidate for intercity bus service.

Table 4-1 summarizes whether each of the candidate locations has some high or medium transit-dependent density ranking block groups, is over 10 miles (or 25 miles) from an existing stop, has a population of 2,500 or more, and does not have a reasonable transit connection to an existing stop. As shown in Figure 4-3 and 4-4, the following 14 places meet these criteria. It also should be noted that the additional services implemented since the 2008 plan have resulted in the provision of intercity bus access to most places meeting these criteria, and that there are relatively few places that are not on the existing network

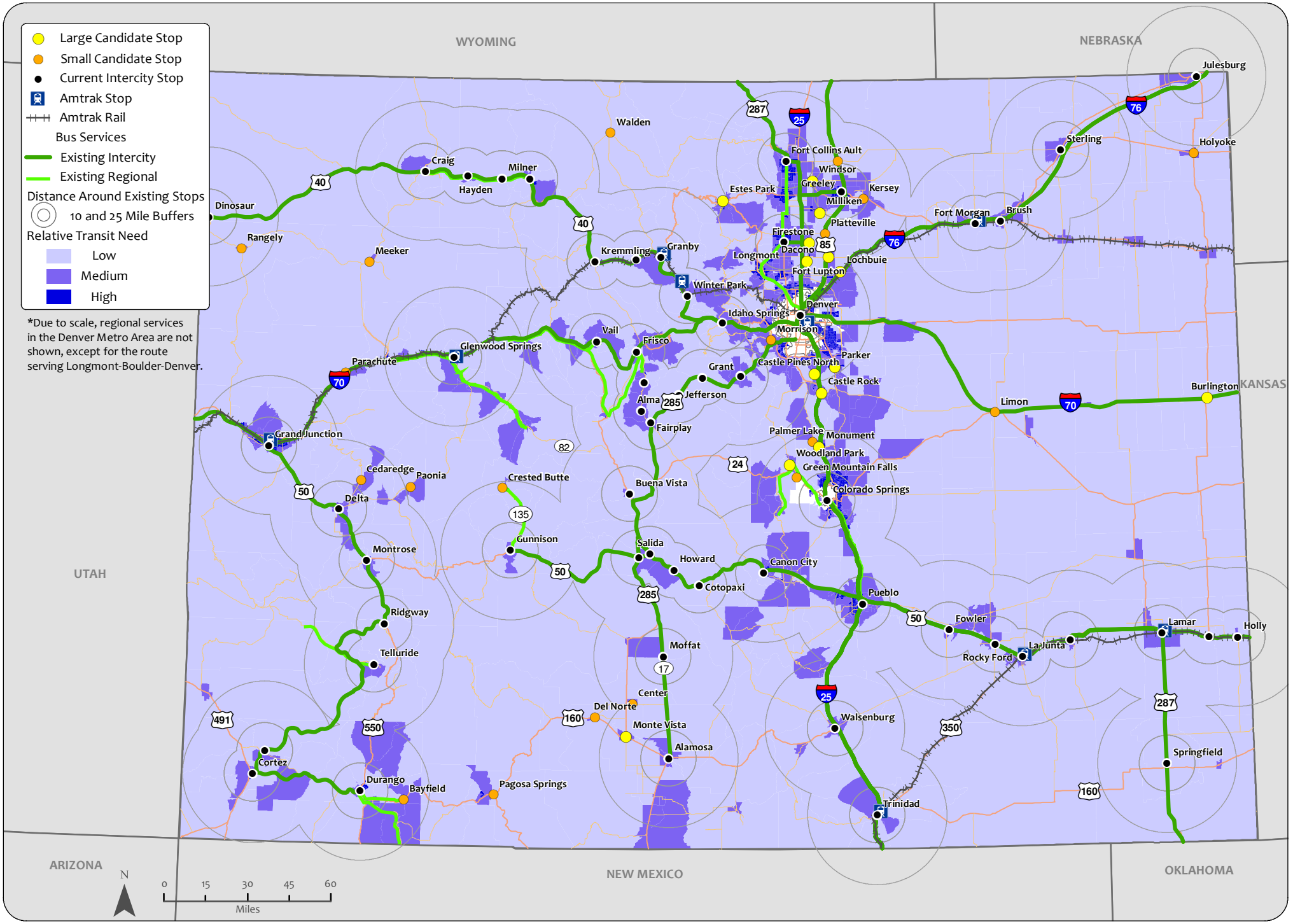
- Burlington
- Castle Pines North
- Castle Rock
- Dacono
- Estes Park
- Firestone
- Fort Lupton
- Lochbuie
- Milliken
- Monte Vista
- Monument
- Parker
- Windsor
- Woodland Park[1]

[1] Woodland Park is currently served by the Cripple Creek Casino Shuttle Bus. However, the current schedule for the shuttle bus does not indicate that an individual could use the shuttle bus service to connect to an intercity bus service in Colorado Springs. Nor does the schedule indicate that it is possible for an individual to make a reasonable connection to intercity bus service.

Table 4-1: Candidate Stops for Intercity Bus Service

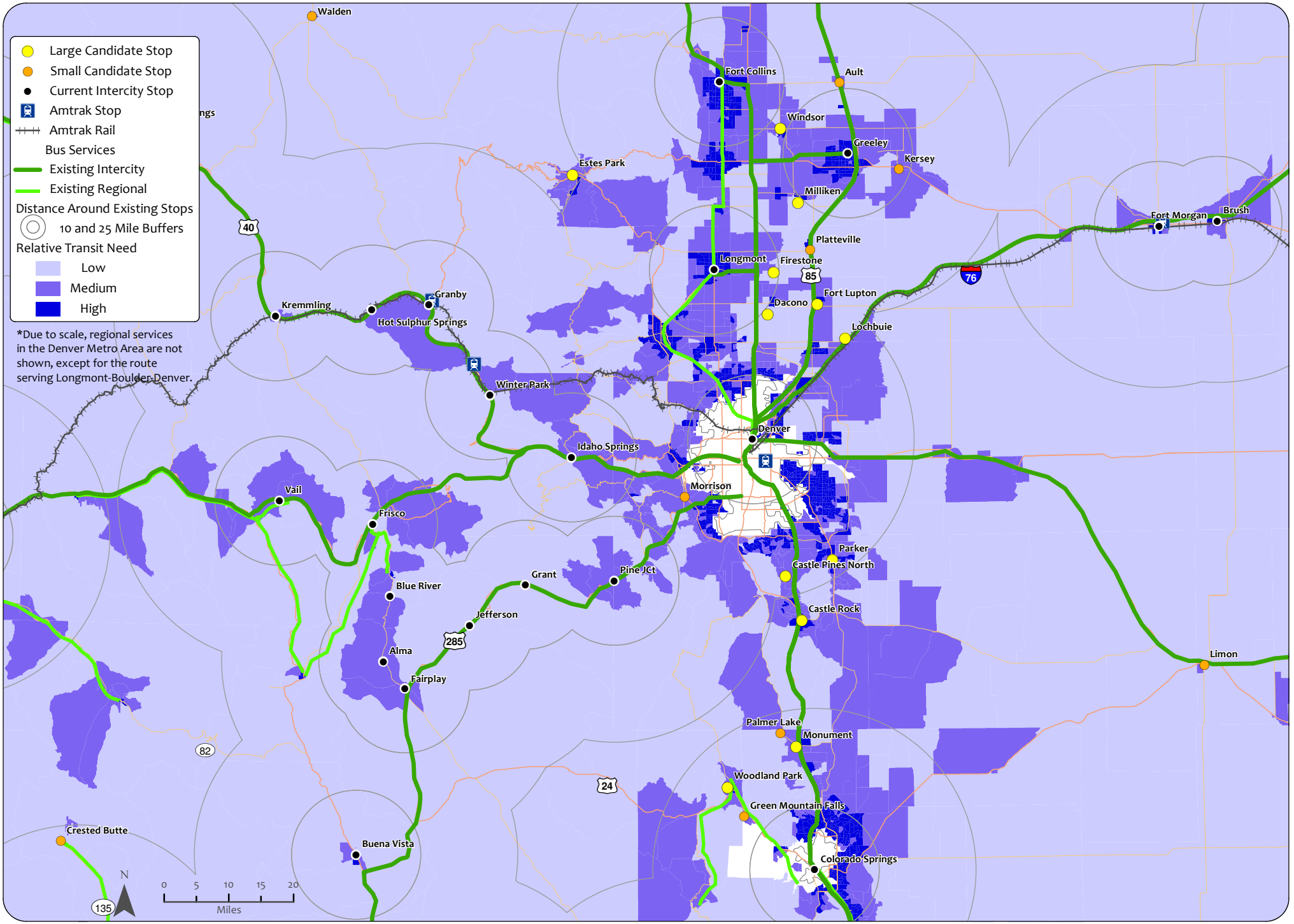
City/Town	Distance from Existing Intercity Bus Stop (miles)	Census 2010 Population	Regional Transit Provider
Burlington	> 25	4,254	--
Castle Pines North	within 10-25 mi buffer	10,360	RTD
Castle Rock	> 25	48,231	--
Dacono	within 10-25 mi buffer	4,152	--
Estes Park	> 25	5,858	--
Firestone	within 10-25 mi buffer	10,147	--
Fort Lupton	within 10-25 mi buffer	7,377	--
Lochbuie	within 10-25 mi buffer	4,726	RTD
Milliken	within 10-25 mi buffer	5,610	--
Monte Vista	within 10-25 mi buffer	4,444	--
Monument	within 10-25 mi buffer	5,530	--
Parker	within 10-25 mi buffer	45,297	RTD
Windsor	within 10-25 mi buffer	18,644	--
Woodland Park	within 10-25 mi buffer	7,200	Ramblin Express

Figure 4-3: Intercity Bus Stop Candidates Overlaid on Existing Bus Network and Ranked Density



Data sources: ESRI Census 2010 base map files, ACS 2007-2011, Census 2010, and provider bus schedules as of Jan. 2013.

Figure 4-4: Intercity Bus Stop Candidates Overlaid on Existing Bus Network and Ranked Density: Front Range



Data sources: ESRI Census 2010 base map files, ACS 2007-2011, Census 2010, and provider bus schedules as of Jan. 2013.

Places that do not meet the 2,500 population threshold may still be candidates for additional or improved service, especially if they lie along potential routes. This includes the following places:

- Ault
- Bayfield
- Cedaredge
- Center
- Crested Butte[2]
- Del Norte
- Green Mountain Falls
- Holyoke
- Kersey
- Limon
- Meeker
- Morrison
- Pagosa Springs
- Palmer Lake
- Paonia
- Parachute
- Platteville
- Rangely
- Walden

Because this process resulted in the identification of stops rather than routes, a subsequent step involved the development of hypothetical routes that could serve these towns. These potential routes were developed jointly by the study team with input from CDOT. In a number of cases, route segments that currently lack service were analyzed on their own, and then as part of longer routes to larger population centers, which could be operated as either extensions of current services or as additional frequencies on those segments that also have existing service. This was done in order to test the possibility that a connection to a larger city would attract more demand and be more feasible despite the higher costs of the additional bus-miles.

Then, in order to do a preliminary assessment of feasibility, the TCRP 147 Rural Intercity Demand Toolkit was used to estimate ridership for the potential routes.[3] The Toolkit includes two models that generate estimates of annual ridership, based on user inputs. The first, a regression model, is a statistical equation based on the length of the route and the average population of the stops served (excluding the largest population stop, which is assumed to be the destination). The trip rate model is a different approach using National Household Travel Survey data. It accounts for regional variation in long-distance trip rates made by rural residents using public transportation.

[2] Gunnison Valley Rural Transportation Authority (GVRTA) provides a regional connection from Crested Butte to Gunnison. However, the current schedule for the GVRTA bus does not allow for an individual to make the 6:15am departure for Denver on the Black Hills Stage Lines intercity bus.

[3] TCRP Report 147: Toolkit for Estimating Demand for Rural Intercity Bus Services. Transportation Research Board. Washington, D.C. 2011. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_147.pdf.

Inputs into the two models include stop population (either Urbanized Area or Urban Cluster population) and route length. The population data was based on the 2000 Census (part of the Toolkit CD), and the one-way route lengths were obtained using Google Maps. Other required information also affects the Toolkit results, including whether the route would serve a commercial airport, whether it would serve a correctional facility, and whether it would be operated by a national intercity bus operator. Non-intercity bus operators are not interlined with the national intercity bus network—they have separate fares, no interline agreements, and are not included in the internet and telephone information systems of national carriers.

The Toolkit can be adjusted to evaluate particular situations that may affect potential ridership. Both models already eliminate the population of the destination city as it is assumed that very few residents there would take advantage of a new opportunity for travel to a rural area that was previously unserved . In some cases it is also useful to remove other cities that already have substantial intercity bus service, where the potential impact of a small incremental expansion of service would be limited. For example, this analysis dropped Salt Lake from the Durango-Salt Lake route, leaving Provo as the destination. The ridership estimate thus reflects the remaining towns along the route and is much closer to likely demand. Rather than dropping a location altogether, the user can also adjust overstated demand directly in the trip rate model. For example, the Alamosa-Walsenburg-Pueblo-Colorado Springs route was manually adjusted to allocate the estimated demand at these stops between the potential route and other existing services, as a percentage of the daily departures from each stop.

Because of differences between the regression and trip rate model results in many of the corridors, the two demand estimates were averaged to provide a single demand number. This was done to be on the conservative side with regard to potential ridership. It is also important to note that the Toolkit makes a significant distinction between services that are/are not interlined with the national network. As described above, national intercity services are fully interlined in terms of ticketing, resulting in a higher ridership base. Several potential routes tested with the Toolkit had demand estimates of zero due to a non-intercity designation. In these cases the model, which was calibrated on intercity route data, estimated demand that was less than the error term of the equation. The Toolkit is also limited in that the models do not provide for testing the impact of multiple frequencies. Because of these factors, the Toolkit models are not applicable to estimating demand for regional routes designed for two or more round trips per day. A separate table with routes classified as regional is included later in this document.

Table 4-2 presents estimated ridership for routes classified as intercity in nature. Four of the twelve routes have multiple iterations, reflecting a range of estimates depending on either the presence of a correctional facility or the intercity/non-intercity

operator designation. The routes range in length from about 50 miles to almost 400. Estimated ridership ranges from only 800 annually on the Colorado Springs-Frisco via Woodland Park route to almost 8,000 annually on the Grand Junction-Farmington (New Mexico) route.

Table 4-2: Predicted Ridership for Potential Colorado Intercity Routes

Route Description	One-Way Miles	Serves Correc. Facility	Likely Operator	Regression Model Ridership	Trip Rate Model Ridership	Estimated Average Ridership
Alamosa-Walsenburg-Pueblo-Colorado Springs	168		Non-Intercity	7,300	1,300	4,300
	168		Intercity	13,100	1,300	7,200
Canon City-Colorado Springs	46		Non-Intercity	2,900	4,600	3,750
Colorado Springs-Woodland Park-Divide-Fairplay-Breckenridge-Frisco	116		Non-Intercity	200	1,400	800
Denver-Greeley-Loveland-Estes Park	106		Non-Intercity	7,900	2,500	5,200
Durango-Monticello-Moab-Green River-Price-Provo-Salt Lake	394		Intercity	6,300	-	3,150
Monticello-Moab-Green River-Price-Provo-Salt Lake	290		Intercity	5,600	-	2,800
Grand Junction-Delta-Montrose-Cortez-Durango-Farmington	294		Non-Intercity	2,500	400	1,450
	294		Intercity	8,300	400	4,350
	294	Y	Intercity	8,300	6,800	7,550
Grand Junction-Rifle-Glenwood Springs-Gypsum-Vail-Frisco-Idaho Springs-Denver	250		Intercity	9,100	3,400	6,250
Gunnison-Montrose-Delta-Grand Junction	130	Y	Non-Intercity	300	6,300	3,300
	130		Intercity	6,100	-	3,050
	130	Y	Intercity	6,100	6,300	6,200
Limon-Castle Rock	68	Y	Non-Intercity	-	3,800	1,900
Limon-Castle Rock-Denver	96		Non-Intercity	800	1,200	1,000
	96	Y	Non-Intercity	800	7,500	4,150
Limon-Colorado Springs	73	Y	Non-Intercity	-	4,700	2,350

Table 4-3 presents estimated operating costs and revenues for the potential routes. For routes assumed to use national intercity operators, a cost of $3.65 per revenue bus mile was used. For the non-intercity operators, $2.30 per mile was used. These figures were multiplied by the number of round-trip miles for the proposed service. Intercity services generally operate 365 days per year, so that level of service was used for all cost estimates. For revenue estimates, this analysis assumed that average passenger-trip length is 80 percent of route length (as some passengers will not ride the entire length of the route). Revenue per passenger mile was assumed to be $0.20, based on estimates from current services.

The projected farebox recovery levels of the potential routes range from 8 percent for Colorado Springs-Frisco to 50 percent for Denver-Estes Park. Net deficit per passenger ranges from $293 on a non-intercity operated Grand Junction-Farmington route to a low of $13 on the Canon City-Colorado Springs route. It should be noted again that these are estimates based on a chain of assumptions. However, the average farebox recovery is comparable to that of the 2013 current and proposed S.5311 services (Table 4-4). In addition, when checking the models against current routes, applying these assumptions to the Toolkit demand estimates accurately estimated a revenue per bus mile of $.60 for the Chaffee Shuttle Salida-Pueblo route.

As noted above, demand could not be estimated for several of the proposed routes with the intercity bus demand tool. These routes can be considered as potential rural regional services, scheduled to allow a morning-inbound, evening-outbound service (possible because of the shorter route length). These routes might allow access to intercity bus services, but would not be scheduled to optimize connections. Table 4-5 presents a list of these routes, along with estimated demand based on a trip rate of .25 boardings per mile, and weekday only service. This table shows an assumed farebox recovery rate of 10 percent based on rural services generally. These routes could be considered in addition to the regional routes described in the next section.

Several points identified in this process are actually already on the existing network, but are not currently stopping points for the intercity services that pass through them. These are listed below in Table 4-6, along with estimates of the potential intercity trips that might be generated if a satisfactory intercity bus stop could be provided, with service at a reasonable time of day. The incremental cost of adding a stop is very low, and these should be considered for implementation.

This process developed potential intercity service options based upon an assumed goal of providing a minimum level of access to the national intercity bus network to as many Colorado residents as feasible. The objective might be further specified as providing access to the national intercity bus network, to all places with a population of 2,500 and above, and ranked as having a high- or medium- need for

transit based on demographic data. Finally, the feasibility of meeting this goal and objective might be measured by examining estimated performance measures for the proposed services. One such measure could be farebox recovery, and if we set a standard of 20 percent as a minimum (noting that all of the current CDOT-funded intercity services meet this threshold), there are several potential routes that merit consideration:

- Limon-Colorado Springs
- Canon City-Colorado Springs
- Grand Junction-Denver
- Alamosa-Walsenburg-Pueblo-Colorado Springs
- Denver-Greeley-Loveland-Estes Park

Figure 4-5 presents a map of the existing intercity network with these additional potential routes added to the network. Note that the farebox recovery rates may vary for a given route depending on the assumptions about the type of operator and the stops. One might consider that if multiple estimates produce similar ridership estimates there is less risk in achieving the predicted ridership/farebox recovery, but if there is wide variation there is likely a higher level of risk that these estimates will not be achieved.

Table 4-3: Revenue and Costs for Potential Colorado Intercity Routes

Route Description	One-Way Miles	Est. Ridership	Estimated Revenue	Est. Annual Operating Cost	Est. Farebox Recovery	Net Operating Deficit	Net Deficit/ Passenger
Alamosa-Walsenburg-Pueblo-Colorado Springs	168	4,300	$ 115,584	$ 282,072	41%	$ 166,488	$ 39
	168	7,200	$ 193,536	$ 447,636	43%	$ 254,100	$ 35
Canon City-Colorado Springs	46	3,750	$ 27,600	$ 77,234	36%	$ 49,634	$ 13
Colorado Springs-Woodland Park-Divide-Fairplay-Breckenridge-Frisco	116	800	$ 14,848	$ 194,764	8%	$ 179,916	$ 225
Denver-Greeley-Loveland-Estes Park	106	5,200	$ 88,192	$ 177,974	50%	$ 89,782	$ 17
Durango-Monticello-Moab-Green River-Price-Provo-Salt Lake	394	3,150	$ 198,576	$ 1,049,813	19%	$ 851,237	$ 270
Monticello-Moab-Green River-Price-Provo-Salt Lake	290	2,800	$ 129,920	$ 772,705	17%	$ 642,785	$ 230
Grand Junction-Delta-Montrose-Cortez-Durango-Farmington	294	1,450	$ 68,208	$ 493,626	14%	$ 425,418	$ 293
	294	4,350	$ 204,624	$ 783,363	26%	$ 578,739	$ 133
	294	7,550	$ 355,152	$ 783,363	45%	$ 428,211	$ 57
Grand Junction-Rifle-Glenwood Springs-Gypsum-Vail-Frisco-Idaho Springs-Denver	250	6,250	$ 250,000	$ 666,125	38%	$ 416,125	$ 67
Gunnison-Montrose-Delta-Grand Junction	130	3,300	$ 68,640	$ 218,270	31%	$ 149,630	$ 45
	130	3,050	$ 63,440	$ 346,385	18%	$ 282,945	$ 93
	130	6,200	$ 128,960	$ 346,385	37%	$ 217,425	$ 35
Limon-Castle Rock	68	1,900	$ 20,672	$ 114,172	18%	$ 93,500	$ 49
Limon-Castle Rock-Denver	96	1,000	$ 15,360	$ 161,184	10%	$ 145,824	$ 146
	96	4,150	$ 63,744	$ 161,184	40%	$ 97,440	$ 23
Limon-Colorado Springs	73	2,350	$ 27,448	$ 122,567	22%	$ 95,119	$ 40

Table 4-4: 2013 S.5311(f) Projects

Route Description	Carrier	One Way CO Miles	CO Annual Bus Miles	Operating Cost/ Bus Mile	CO Annual Operating Cost	Revenue/ Bus Mile	Total CO Revenue	Total Operating Deficit	Fare box Rec.	Net Operating Deficit*
Denver-Omaha	BHSL	186	135,780	$ 3.95	$536,331	$2.00	$271,560	$264,771	51%	$184,771
Alamosa/ Gunnison-Denver	BHSL	304	216,080	$ 3.35	$723,868	$0.90	$194,472	$529,396	27%	$154,396
Denver-Salt Lake City	Grey-hound	300	219,000	$ 4.69	$1,027,110	$1.39	$304,410	$722,700	30%	$342,700
Salida-Pueblo	Chaffee Shuttle	99	51,480	$ 2.44	$125,611	$0.60	$30,888	$94,723	25%	$9,723
Pueblo-Wichita	Prestige	155	113,150	$ 2.16	$244,404	$0.99	$112,019	$132,386	46%	$32,386
Fairplay-Breckenridge	Park County	28	20,440	$ 1.76	$35,974	$0.72	$14,717	$21,258	41%	$58
Durango-Grand Junction	SUCAP	237	116,130	$ 2.87	$333,293	$1.36	$235,394	$175,356	47%	($102,101)

*Equal to operating costs minus revenue and anticipated grants (not shown).

Table 4-5: Predicted Ridership for Potential Colorado Regional Routes

Route Description	Likely Operator	One-Way Miles	Days per Year	Annual Miles	Estimated Annual Ridership
Alamosa-Walsenburg	Rural Regional	72	254	18,288	4,572
Alamosa-Walsenburg-Pueblo	Rural Regional	123	254	31,242	7,811
Alamosa-Del Norte	Rural Regional	31	254	7,874	1,969
Alamosa-Del Norte-Pagosa Springs-Durango	Rural Regional	151	254	38,354	9,589
Fort Collins-Walden	Rural Regional	99	254	25,146	6,287
Fort Morgan-Greeley-Loveland-Estes Park	Rural Regional	105	254	26,670	6,668
Gunnison-Montrose	Rural Regional	65	254	16,510	4,128
Kremmling-Frisco	Rural Regional	43	254	10,922	2,731

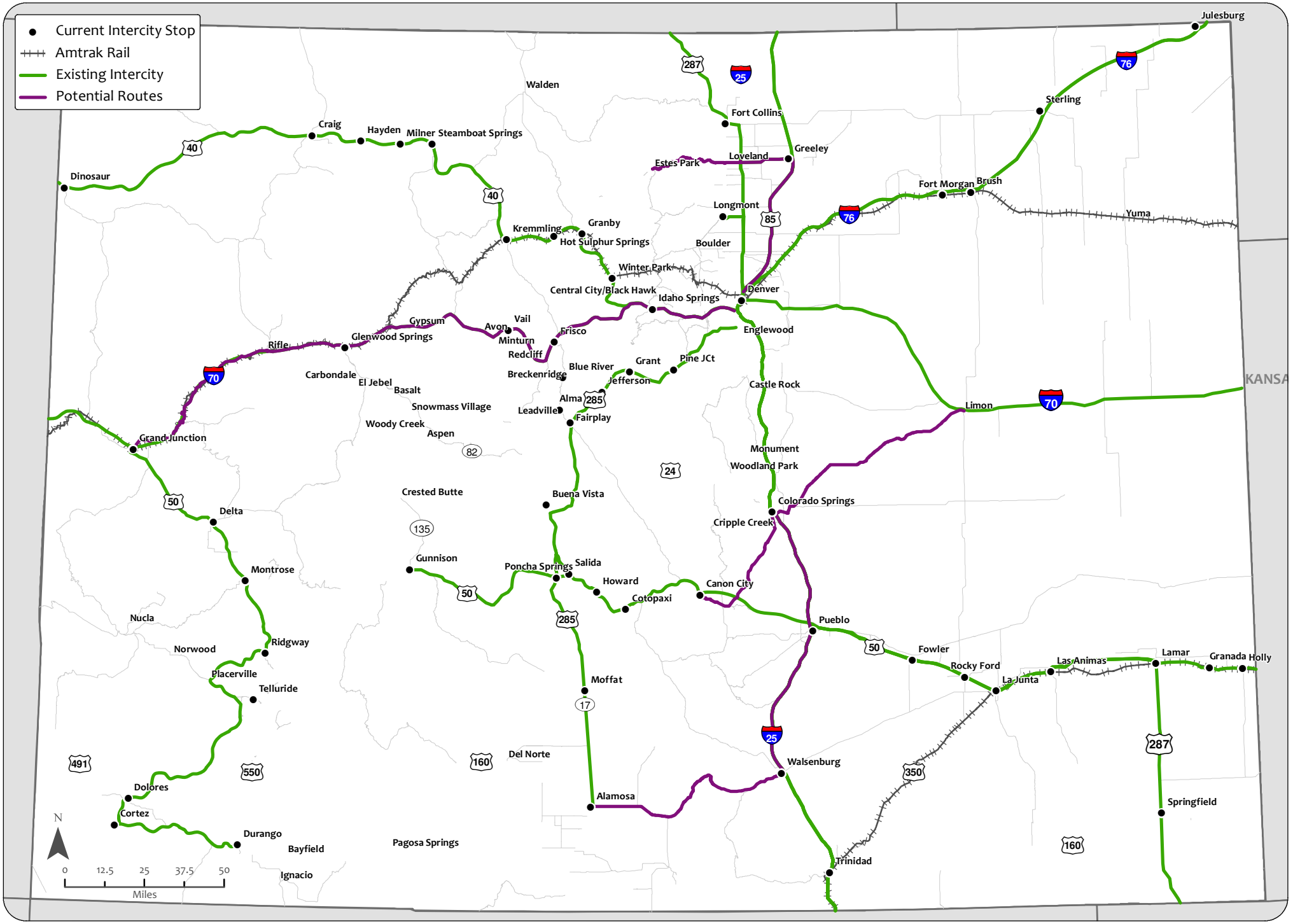
Table 4-6: Demand Estimates for Candidate Stops On Existing Intercity Routes

Town	Number of Households	Intercity Mode Share	Days per Year	Daily Long-Distance Trip Rate (ATS)	Estimated Annual Trips	Frequency
Ault[2]	577	0.0185	365	0.03	117	2
Burlington[1]	1480	0.0185	365	0.03	300	2
Dacono[2]	1459	0.0185	365	0.03	296	2
Fort Lupton[1]	3099	0.0185	365	0.03	628	4
Limon[2]	828	0.0185	365	0.03	168	2
Lochbuie[1]	1531	0.0185	365	0.03	310	2
Platteville[2]	863	0.0185	365	0.03	175	4

[1]Number of Households for Urban Cluster (Census 2010)

[2]Number of Households for City/Town (Census 2010)

Figure 4-5: Existing and Potential Intercity Routes



Data sources: ESRI Census 2010 base map files, ACS 2007-2011, Census 2010, and provider bus schedules as of Jan. 2013.

Regional Route Assessment

For the regional routes, a different process was used to classify existing and potential services, and then to develop and assess potential service improvements. As described above, the regional routes include services that vary widely in terms of route length, frequency, and productivity. Table 4-7 presents statistics for the existing regional routes identified in this process, illustrating this variation. Because of this variation, the classification rubric described above was developed.

Table 4-8 presents the relationship between the three types of regional routes (rural, emerging, and high capacity) and the characteristics of the services that are appropriate in each corridor.

This study focuses on services that are primarily fixed route and fixed schedule, so there has not been an investigation into those corridors where the most appropriate services are ones operate in a full demand response mode or deviate on either end of the route (such as dropping passengers off at varied medical facilities in the urban center). It is recognized that a significant amount of travel demand in the regional corridors could be (and are) effectively served with such services. A number of providers operate on this basis at present. Examples include Outback Express services from East Central COG, County Express from NECALG, and Via's service from Estes Park to Loveland.

Table 4-7: Regional Route Performance

Corridor		Level of Service	Peak Hr Only/ All Day	Span of Service	Peak Vehicles	One- Way Trips			Annual Ridership	Annual Vehicle Mi.	Annual Vehicle Hr.	Annual Op. Expense	Cost per Passenger	Operating Expense per Mile	Passengers per Mile
						Sum.	Win.	Shoul.							
South Front Range															
1-25 South	Pueblo- Colorado Spgs	None	---	---	---			---	---	---	---	---	---	---	---
I-25 South	Colorado Springs-Denver	None	---	---	---			---	---	---	---	---	---	---	---
North Front Range															
I-25 North	Ft Collins-Denver	None	---	---	---			---	---	---	---	---	---	---	---
US 85	Greeley-Denver	None	---	---	---			---	---	---	---	---	---	---	---
US287	Ft Collins-Longmont		All Day		2	35	35	35	184,649	204,727	9,197	$933,347	$5.05	$4.56	0.90
US 34	Loveland-Greeley	None	---	---	---			---	---	---	---	---			
US 34	Loveland-Estes Park	None	---	---	---			---	---	---	---	---			
I-70 Corridor															
I-70	Rifle-Glenwood Spgs (1)		Peak	5:15am - 8:55pm	4	16	16								
I-70	Gypsum-Vail, I-70 only		All Day	5am-1am	8				196,678	544,068	15,612	$1,680,787	$8.55	$3.09	0.36
Routes Feeding I-70 Cooridor															
HWY 82	Aspen-Glenwood Spgs		All Day	4:05am - 3:45am	28	72	72		1,518,371	2,204,000	97,100	$10,472,000	$6.90	$4.75	0.69
CO 24	Leadville-Vail		Peak	5:30am- 6:30pm	2	4	4		27,145	77,575	4,122	$443,758	$16.35	$5.72	0.35
CO91	Leadville-Frisco		Peak	6:00am - 8:25pm	1	2	2	---	6,709	23,732	716	$78,370	$11.68	$3.30	0.28
Steamboat Springs															
US 40	Craig-Steamboat Spgs (2)		Peak	5:30am - 7:30pm	2	4	4	---	24,251	77,408	3,235	$267,551	$11.03	$3.46	0.31
HWY 131	Yampa-Steamboat Spgs (3)	---	Peak	---	1	2	2	2	pending	11,040	480	$17,596			
Montrose, Telluride, and Gunnison Areas															
CO 145	Telluride-Norwood		Peak	7am - 6:30pm	2	4	4	4	17,514	43,680	2,629	$127,719	$7.29	$2.92	0.40
CO 145	Telluride-Placerville		Peak	6:45am - 7:35pm	1	10	10	10	8,773	44,200	2,166	$103,923	$11.85	$2.35	0.20
CO 135	Gunnison-Crested Butte (4)		Peak	Varies	1	6	16	6	66,868	117,610	3,675	$494,527	$7.40	$4.20	0.57
Durango															
CO 172	Ignacio-Durango			6am-7pm	1	8	8	8	10,158	65,632	2,502				
US 160	Bayfield-Durango			6:30am - 6:23pm	1	8	8	8	4,980	32,070	995	$206,162	$13.62	$2.11	0.90
CO 172 / NM 511	Ignacio-Aztec, NM		Peak	5:40am - 7:20pm	1	6	6	6	3,065	54,495	1,537	$118,882	$38.79	$2.18	0.06
								TOTAL	2,069,161	3,284,470	134,289	$14,011,275	$6.76	$4.27	0.63

Notes:

(1) RFTA service; summer and winter - 9 Eastbound trips, 7 westbound trips, 7 days/week, Weekends eliminate 2 trips in each dir

(2) SST service; winter 2 round trip buses/day 7 days a week, summer 2 round trip buses/day weekday, 1 round trip bus/day we

(3) SST service; 1 round trip van/day , 1st full year service 2011, must pre-pay deginning of the month.

(4) Includes $67,200 in administrative costs. Winter weekends, 18 one-way trips.

Table 4-8

SERVICE TYPES

Corridor Type	Potential Services: Informal	Medical Trips	Rural Regional	Regional Express	Level of Service Goal	Delivered via: Demand Response	Fixed Route & Schedule	Deviated Fixed Route
Rural Regional	●	●			**F**	■		
			●		**D**		■	■
			●		**C**		■	■
Emerging Corridors			●	●	**C**		■	
			●	●	**B**		■	
High Ridership			●	●	**B**		■	
			●	●	**A**		■	

To assess each of the three types of regional service, different standards are required. Table 4-9 presents an assessment tool that assigns different Levels of Service for each classification, based on the daily frequency of service.

Table 4-9

LEVELS OF SERVICE		*One-way Trips*	*Round Trips /Descriptor*
Rural			
	F	0	No service provided
	D	2	1 round trip daily or less (2 to 3 days per week)
	C	2 - 4	1-2 round trips, allowing 4-6 hrs in regional center
Emerging Services			
	C	4 - 14	2 - 7
	B	16 - 28	8 - 14
High Ridership			
	B	16 - 28	8 - 14
	A	30 or more	15 or more

Table 4-10 combines the Level of Service classification with data on existing services and estimates for proposed regional services (or expansion on existing routes) in a menu of proposed regional services.

Ridership estimates are based on the productivity experience on analogous routes in Colorado, and costs are based on a combination of actual data and estimates derived from comparable services in the case of existing services lacking actual data or proposed new services. As can be seen, these proposed corridors involve substantial additional investment, either through increased frequencies or additional coverage.

The first level of review is to review the corridors that are included and the level of service proposed for each. Note that some corridors that do not appear here do have intercity services and are covered in that section.

Description of Rural and Urban Publicly Funded Regional Services

		Existing		Proposed		Existing Annual			Additional Annual			Total Annual		
	Corridor	LOS	Daily Trips[1]	LOS	Added Trips[2]	Miles	Riders	Op Costs[3]	Miles	Riders	Op Costs[3]	Miles	Riders	Op Costs[3]
South Front Range														
I-25 South	Pueblo-Colorado Spgs	F	-	B	16				157,000	82,900	$628	157,000	82,900	$628
I-25 South	Colorado Spgs-Denver	F	-	A	32				539,000	170,000	$2,156	539,000	170,000	$2,156
North Front Range														
I-25 North	Fort Collins-Denver	F	-	A	32				597,000	165,800	$2,388	597,000	165,800	$2,388
US 85	Greeley-Denver	F	-	C	14				210,000	72,500	$840	210,000	72,500	$840
US 287	Fort Collins-Longmont	A	35	A		205,000	185,000	900				205,000	185,000	$900
US 34	Loveland-Greeley	F	-	A	16				91,000	82,900	$364	91,000	82,900	$364
US 392	Fort Collins-Windsor-Greeley	F		A	16				133,000	82,900	$532	133,000	82,900	$532
Hwys 60/56	Evans-Johnstown-Berthoud	F		C	8				56,000	41,400	$224	56,000	41,400	$224
I-70 Corridor														
I-70	Rifle-Glenwood Spgs	B	16	B	None	163,520		$777				163,520	0	$777
I-70	Glenwood Spgs-Gypsum	F	-	C	8				79,000	39,500	$316	79,000	39,500	$316
I-70	Gypsum - Eagle	C	12/9	C	None	544,000	197,000	$1,681				544,000	197,000	$1,681
I-70	Eagle-Vail	A+	183/102	A	None									
I-70	Vail-Frisco	F	-	C	8				82,000	41,400	$328	82,000	41,400	$328
I-70	Frisco - Denver	F	-	A	24				631,000	124,300	$2,524	631,000	124,300	$2,524
I-70 / 119	Winter Park-ID Spgs-Denver	F	-	C	8				157,000	41,400	$628	157,000	41,400	$628
Routes Feeding I-70 Corridor														
Hwy 82	Aspen-Glenwood Spgs	A+	83/72	A+	None	2,204,000	1,518,000	$10,472				2,204,000	1,518,000	$10,472
CO 24	Leadville-Vail	D	4	C	4	77,600	27,000	$444	42,000	12,600	$168	119,600	39,600	$612
CO 91	Leadville-Frisco	F	2	C	6	23,700	7,000	78	47,000	14,100	$188	70,700	21,100	$266
Steamboat Springs														
US 40	Craig - Steamboat Spgs	D	4	C	6	77,000	24,000	$268,000	38,500	11,550	$154	115,500	35,550	$268,154
Hwy 131	Yampa - Steamboat Spgs	F	2	D	2	11,000		18,000				11,000	0	$18,000

Corridor		Existing		Proposed		Existing Annual			Additional Annual			Total Annual		
		LOS	Daily Trips	LOS	Added Trips	Miles	Riders	Op Costs[3]	Miles	Riders	Op Costs[3]	Miles	Riders	Op Costs[3]
Montrose, Telluride, and Gunnison Areas														
62 / 550	Montrose - Placerville	F	-	C	8	146,000			105,000	21,000	$420	251,000	21,000	$420
CO 145	Nucla - Norwood	F	-	C	6	53,000			38,000	7,600	$152	91,000	7,600	$152
CO 145	Norwood-Placerville-Telluride	C	4	C	2	43,700	18,000	$128	9,000	3,700	$36	52,700	21,700	$164
CO 145	Placerville - Telluride	C	10	B	6	44,200	9,000	$104	25,000	5,100	$100	69,200	14,100	$204
CO 135	Gunnison - Crested Butte	B/C	16-W; 6-S	B/C	4-W; 2-S	118,000	67,000	$495	23,000	13,100	$92	141,000	80,100	$587
Southwest and South Central Colorado														
US 160	Cortez - Durango	F	-	C	8				99,000	14,850	$396	99,000	14,850	$396
US 550	Aztec-Ignacio	C	6	C	None	54,000	3,000	$119				54,000	3,000	$119
CO 172	Ignacio - Durango	C	8	B	8	66,000	10,000	$206	52,000	7,800	$208	118,000	17,800	$414
US 160	Bayfield - Durango	C	8	B	8	32,000	5,000		44,000	6,600	$176	76,000	11,600	$176
US 160	Pagosa Spgs - Bayfield	F	-	C	8				88,000	13,200	$352	88,000	13,200	$352
TOTAL						**3,862,720**	**2,070,000**	**301,404**	**3,342,500**	**1,076,200**	**13,370**	**7,205,220**	**3,146,200**	**314,774**