

RFTA-ECO TRANSIT

Regional Connector Feasibility Study

Final Report

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TransitPlus, Inc.

In association with

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1. PROJECT OVERVIEW

PURPOSE

This project is designed to evaluate the viability of establishing a connecting route between Glenwood Springs and Gypsum. Roaring Fork Transit Authority (RFTA) and Eagle County Transit (ECO) jointly conducted the study and retained TransitPlus to carryout the project.

The proposed connector route would:

- Provide public transit regional connections between the population and activity centers located in Eagle and Garfield counties;
- Re-establish connections that once were provided by the private intercity bus industry; and
- Connect two public transit operators.

The above items are practical results of implementing services, but the longer-term benefits are likely the most important. Providing connecting bus service would begin to provide a mass transit option through Glenwood Canyon. As population and employment build in the corridor, the connecting service will provide a significant opportunity to reduce traffic congestion in the canyon.

Congestion in the Glenwood Canyon stretch of I-70 is already significant at peak travel times. The I-70 Corridor Preliminary Environmental Impact Study travel model projects trip volumes through the canyon will increase by more than 50% by 2025. Regional transit services build over time and can eventually feed or lead to rail services such as those envisioned in the I-70 corridor plan and Eagle County's 2030 Transit Vision for regional rail on the Union Pacific rail corridor from Vail to Gypsum.

Other benefits for Eagle County are providing access to a larger employment market to support the growth of the County and access to the Garfield County services, especially for residents on the western side of the County. For RFTA, benefits include transit access for residents to the Eagle County airport and connections to employees in western Eagle County.

REPORT ORGANIZATION

Chapter 2 describes existing services and activity centers, with an emphasis on those most pertinent to the evaluation of service in this corridor. This provides a context for the demand analysis and for understanding operational constraints and connections that will affect the service options.

The demand for the service is analyzed in chapter 3. While there is a general sense that service will be needed in this corridor at some point, when will there be adequate demand for a viable route?

Chapter 4 identifies the service options appropriate to the demand. This chapter focuses on routing and scheduling and other operational considerations important to a successful service. The evaluation of the service options will need to recognize the funding priorities of two different agencies.

Chapter 5 identifies implementation issues including those standard to implementing any service and the mechanics of integrating services between two different organizations, from both a passenger perspective and an operational perspective. From a passenger perspective the fare structure is important; from an operating perspective addressing how breakdowns or service disruptions will be addressed is important.

FINDINGS

The report finds that there is adequate demand for service to be initiated with approximately 18 hours of service daily. Ridership projections for the first two years reflect about 20 riders per hour.

This service is recommended for implementation in 2012 or 2013. One reason for this relatively long time-line is the financial capacity of the two transit agencies and their existing commitments for service. The economic downturn has a strong impact on agencies such as these that are dependent on sales tax for revenues. Meanwhile, it is important to maintain existing service commitments and programmed improvements such as the Bus Rapid Transit project in the Highway 82 corridor.

A second reason for considering implementation in 2012 is the grant funding cycle of CDOT accepts applications for funding every other year. And the cycle accepting applications in Spring of 2011 will be the first time the agencies can apply. Finally, the timing of bus rapid transit in the Highway 82 corridor provides a good transition for making service connections in Glenwood Springs and for any fare structure adjustments that might enable more seamless connections between the two systems.

Finally, there are operational and procurement activities that need to occur. Operational agreements will be needed between RFTA and ECO to specify how operating and financing issues will be addressed. Additional vehicles will be required, and even with a piggyback arrangement a two-year time horizon is often needed.

CONCLUSION

The study recommends implementing connecting bus service through Glenwood Canyon, with Eagle County as the operator. This will begin to build the working operational relationships necessary for effective connections between the two transit agencies. It will also provide a foundation for building transit ridership through Glenwood Canyon that will be able to grow to reduce a significant amount of vehicle congestion on this section of I-25. Eagle County is effectively a part of the same regional economy as Pitkin and Garfield counties so providing for regional transit connections will reflect this economic reality.

2. EXISTING CONDITIONS

STUDY AREA

The study area, illustrated in **Figure 2-1**, encompasses Eagle, Garfield, and Pitkin counties. The proposed service connects Eagle and Garfield counties but all three counties are part of an interconnected regional economy. The workforce, jobs, and services in all three counties are interconnected.

TRANSPORTATION NETWORK

ROADWAYS AND RAIL SERVICES

The counties are mountainous, with limited roadways connecting the communities. Interstate 70 is the only roadway through 17-miles of Glenwood Canyon, between Glenwood Springs and Dotsero.

Roadway widths are constrained by topography and overall traffic volumes are high. I-70 carries a combination of truck and passenger traffic, with a significant amount of use for relatively short or local trips because of the lack of alternative roads.

Eagle and Pitkin counties both import a number of workers to fill the available jobs, so commuter transportation is one type of peak demand. Another key peak travel demand is visitor trips. Visitor trips have different peaking patterns than the commuter trips. The Preliminary Environmental Impact Statement for the I-70 Corridor identified current traffic volumes and modeled future volumes. While travel volumes vary considerably by season and day of the week, the annual growth provides a snapshot of what can be expected. At the No Name exit, 10,600,000 annual person trips were identified for the 2000 base year and by 2020 this is expected to increase 51% to 16,000,000 annual person trips.

Rail lines parallel I-70. In Eagle County there is a junction at Dotsero where a line extends north to State Bridge and Grand County. This is the line used by Amtrak. The rail line in Eagle County turns south at Dowd Junction and parallels Highway 24. In Garfield and Pitkin counties, the rail corridor paralleling Highway 82 to Aspen was a “rails to trails” project and now provides the 44-mile multi-use Rio Grande Trail between Aspen and Glenwood Springs.

Amtrak serves Glenwood Springs via the California Zephyr route. The California Zephyr travels between Chicago and San Francisco with daily stops in Glenwood Springs daily at 1:10 p.m. to Chicago and 1:53 pm to San Francisco. The route arrives in Chicago at 9:10 am the following day and in San Francisco at 5:10 pm

the following day. Other key stops along this route include Denver; Salt Lake City, UT; Omaha, NE; and Des Moines, IA. Service to Denver arrives at 7:38 pm and costs about \$42 one-way. Service to Grand Junction arrives at 3:57 pm and costs \$18 one-way.

The Glenwood Springs Station is located at 413 7th street and is open Monday through Sunday from 9:00 am to 5:00 pm. Ticketing services are available from 9:30 am to 5:00 pm. Services available include: help with baggage during station hours, enclosed waiting area, restrooms during station hours and payphones

AIR SERVICE

Passenger air services are provided at Eagle County Airport and Aspen Airport. In the winter, American, Continental, Delta, Northwest, United, United Express, and US Airways provide non-stop jet service between Eagle County and thirteen major US cities. There are five daily trips to Denver, two to Dallas, and the following cities have one daily trip: Atlanta, Chicago, Houston, Los Angeles, Minneapolis, Newark and New York/Kennedy. Additional weekend service is provided to Cincinnati, Miami, and New York/La Guardia. Summer options include daily non-stop flights between Eagle County and Dallas/Ft. Worth on American Airlines, and Chicago and Denver on United.

Eagle County Airport offers three parking facilities with maximum stays from seven to thirty days. All parking is free of charge at this point, but it is anticipated that a parking charge may be in place before the proposed Connector service would be initiated. Eagle County Airport is an all-weather airport so often residents or visitors to Pitkin County choose to fly in and out because of the greater reliability of flights. The 2008/2009 Winter Schedule is illustrated in **Table 2-1**.

The Aspen-Pitkin County Airport is served by three airlines operating daily, year-round scheduled service. The airlines serving the airport are United Express (operated by Air Wisconsin), Northwest Airlink (operated by Mesa Airlines) and America West (operated by Mesa Airlines). Non-stop flights are available to/from Denver, Los Angeles, and Chicago. In the short-term parking lots the first hour of parking is free, then it is \$2.00 per hour for the first five hours, and then \$10 per day. In the long-term parking lot the first hour is free, then \$1.00 per hour for the first five hours, and then \$5.00 per day.

PRIVATE TRANSIT SERVICES

Greyhound operates service on I-70, on the schedule listed in **Table 2-2**. While in years past the service stopped in many towns along the route, over the last ten years these intermediate stops have been dropped and routes now stop only in Glenwood Springs and Vail. An additional daily trip in each direction operates from Denver to Grand Junction, bypassing all intermediate stops including Glenwood Springs.

Table 2-2: Intercity Bus Schedules and Fares

Greyhound intercity Bus Service Schedule									
Denver <> Glenwood Springs<>Grand Junction									
Westbound					Eastbound				
Leave Denver	Leave Vail	Arrive Glenwood	Leave Glenwood	Arrive Grand Jct	Leave Grand Jct.	Arrive Glenwood	Leave Glenwood	Leave Vail	Arrive Denver
7:50 am	9:45 am	11:05 am	11:10 am	12:40 pm	2:20 am	3:55 am	4:00 am	5:15 am	7:25 am
12:01 pm	2:10 pm	3:20 pm	3:30 pm	5:05 pm	12:40 pm	2:10 pm	2:15 pm	3:25 pm	5:35 pm
6:15 pm	8:35 pm	9:45 pm	9:55 pm	11:30 pm	5:25 pm	7:00 pm	7:10 pm	8:25 pm	10:40 pm
Fares: One-way and Round-trip									
	Vail - Glenwood		Glenwood – Grand Junction		Denver – Grand Junction				
Ticket	One-way	Roundtrip	One-way	Roundtrip	One-way		Round-trip		
Refundable	\$29.00	\$53.00	\$25.75	\$46.00	\$62.00		\$110.00		
Non-refund	\$24.00	\$46.00	\$20.75	\$40.00	\$54.00		\$98.00		

* Schedules effective 6/25/2009

Figure 2-1: Study Area



Table 2-1: Eagle County Airport Winter Schedule

2008/2009 Winter Schedule					
Arrivals					
Carrier	City	Departs	Arrives	Dates	Frequency
American	Dallas, TX	9:30 AM	11:00 AM	12/20-4/5	Sat/Sun
American	Dallas, TX	12:30 PM	1:50 PM	11/15-4/6	Daily
American	Dallas, TX	2:50 PM	4:10 PM	12/20-4/4	Sat
American	Dallas, TX	5:40 PM	7:00 PM	12/18-4/5	Daily
American	Chicago, IL	8:35 AM	10:25 AM	12/18-4/6	Daily
American	Chicago, IL	4:15 PM	6:05 PM	12/20-4/4	Sat in/Sun out
American	NY, NY/Kennedy	5:00 PM	7:45 PM	12/18-4/6	Daily
American	Los Angeles, CA	12:00 PM	3:15 PM	12/18-4/5	Daily
American	NY, La Guardia	10:40 AM	1:20 PM	12/20-4/4	Sat
American	Miami, FL	9:10 AM	11:50 AM	12/19-4/5	Fri-Sun
Continental	Houston, TX	11:30 AM	1:30 PM	12/12-4/4	Daily
Continental	Newark, NJ	8:35 AM	11:26 AM	12/18-4/4	Daily
Delta	Atlanta, GA	9:45 AM	11:31 AM	12/20-3/28	Daily
				12/27, 1/5, 2/14-	
Delta	Atlanta, GA	6:35 PM	8:16 PM	3/28	Sat in/Sun out
Delta	Cincinnati, OH	9:00 AM	10:09 AM	12/20-3/28	Sat
Northwest	Minneapolis, MN	11:20 AM	12:42 PM	12/17-4/5	Daily
United Express	Denver, CO	8:45 AM	9:44 AM	12/11-4/14	Daily
United	Denver, CO	11:20 AM	12:06 PM	12/18-4/5	Daily
United Express	Denver, CO	11:35 AM	12:28 PM	11/26-4/5	Daily
United Express	Denver, CO	2:45 PM	3:41 PM	11/26-4/5	Daily
United Express	Denver, CO	9:00 PM	9:56 PM	11/26-4/5	Daily
Departures					
Carrier	City	Departs	Arrives	Dates	Frequency
American	Dallas, TX	7:15 AM	10:40 PM	12/18-4/4	Daily
American	Dallas, TX	11:55 AM	3:05 PM	12/20-4/5	Sat/Sun
American	Dallas, TX	2:45 PM	5:55 PM	11/15-4/6	Daily
American	Dallas, TX	5:05 PM	8:15 PM	12/20-4/4	Sat
American	Chicago, IL	11:25 AM	3:10 PM	12/18-4/6	Daily
American	Chicago, IL	8:00 AM	11:50 AM	12/20-4/4	Sat in/Sun out
American	NY, NY/Kennedy	8:35 AM	2:55 PM	12/18-4/6	Daily
American	Los Angeles, CA	4:10 PM	5:25 PM	12/18-4/5	Daily
American	NY, La Guardia	2:20 PM	8:25 PM	12/20-4/4	Sat
American	Miami, FL	12:45 AM	6:50 PM	12/19-4/5	Fri-Sun
Continental	Houston, TX	2:30 PM	6:08 PM	12/12-4/4	Daily
Continental	Newark, NJ	12:15 PM	6:26 PM	12/18-4/4	Daily
Delta	Atlanta, GA	12:21 PM	5:28 PM	12/20-3/28	Daily
				12/27, 1/5, 2/14-	
Delta	Atlanta, GA	8:00 AM	1:00 PM	3/28	Sat in/Sun out
Delta	Cincinnati, OH	11:05 AM	4:03 PM	12/20-3/28	Sat
Northwest	Minneapolis, MN	1:45 PM	5:04 PM	12/17-4/5	Daily
United Express	Denver, CO	6:30 AM	7:31 AM	11/26-4/5	Daily
United Express	Denver, CO	10:05 AM	11:14 AM	12/11-4/14	Daily
United	Denver, CO	12:50 PM	1:44 PM	12/18-4/5	Daily
United Express	Denver, CO	12:50	1:50 PM	11/26-12/4	Sun-Fri
United Express	Denver, CO	4:01 PM	5:04 P	11/26-4/5	Daily

The non-refundable one-way fare is the most comparable to an adult cash fare on a public transit system for a person who walks in and purchases a ticket. Additional discounts are provided to seniors (about 4%), Veterans (10%), and for advance or online purchases.

Private shuttles are also provided by Grey Line, Colorado Mountain Express, and Vail Coach. Grey Line operates buses from DIA to Aspen Airport. This service is direct between DIA and Aspen Airport and is operated in partnership with Aspen Airport. The one-way fare is \$100 (\$200 round trip) and there are six daily trips in the winter.

Colorado Mountain Express (CME) and Vail Coach are primarily airport ground transportation services operating between major airports and resorts, serving specific lodging facilities at the resorts. Rates vary depending on distance traveled, and both will serve Eagle County Airport and Aspen. CME has a \$99 per passenger rate from DIA to Aspen, competitive with the Grey Line service.

PUBLIC TRANSIT SERVICES

ECO Transit serves Eagle County in the I-70 corridor and also operates service to Leadville via Minturn on Highway 24. The southwest corner of Eagle County containing Basalt and El Jebel is located on the Highway 82 corridor and is a part of the Roaring Fork Transportation Authority (RFTA). RFTA operates service in Pitkin and Garfield counties. Both ECO Transit and RFTA have a strong focus on regional and commuter service in many of the towns along their regional routes. RFTA also operates significant local services in Aspen and Glenwood Springs.

The following sections describe those services that operate in Gypsum and Dotsero in Eagle County and in Glenwood Springs in Garfield County.

ECO Transit Services

Eagle County routes are illustrated in **Figure 2-2**. The Leadville and Beaver Creek routes are considered premium; all other routes are considered regular routes for fare purposes. This section focuses on the service connecting to Dotsero and Gypsum.

The Dotsero routes operate between Dotsero, Gypsum, Eagle, Edwards, Avon and Vail. They connect to additional services operated by the towns of Vail and Avon as well as to other ECO routes serving Minturn and Leadville.

In Dotsero, the terminus of the route, stops are made at Two Rivers Village and Dotsero Mobile Home Park. In Gypsum, five stops are made, but not all stops

are served on every trip. The Gypsum stops are the Gypsum plant, Gypsum Town Hall and Recreation Center, Mountain Glen Apartments, and ECO operations facility. The schedule in **Table 2-3** reflects times at Eagle Valley High school in Gypsum to reflect the general schedule. This table reflects the Winter season schedule; somewhat lower service levels are operated in the summer season.

This service operates with uneven headways, with schedules geared towards peak commute demand. Dotsero has four eastbound morning trips and two afternoon trips. There are seven westbound trips to Dotsero, each which will serve the area on request; none of the stops are scheduled.

Figure 2-2: Route Map



Table 2-3: ECO Winter Schedule 2008/2009

Eastbound		Westbound	
Dotsero	Gypsum	Gypsum	Dotsero
X	4:56		
X	5:26		
X	5:54		
X	6:21	7:40	On request
6:27	6:46	9:02	X
X	6:56	10:06	X
X	7:09	11:02	On request
7:16	7:35	12:23	X
8:14	8:33	2:17	On request
9:29	9:48	3:32	X
X	11:44	4:22	On request
X	12:59	5:25	X
1:33	1:52	5:38	On request
3:11	3:30	6:16	X
X	3:50	6:33	On request
X	5:00	7:29	X
X	6:16	9:51	X
	7:53	10:09	X
	10:33	12:48	X
		Late night on request	On request

RFTA Services

RFTA operates extensive service between Glenwood Springs and Aspen with both local and express trips. Various trips start at either the Glenwood park-and-ride or Roaring Fork Marketplace. Service operates 23 hours daily, with half-hourly headways between 4 AM and 8 PM and hourly headways between 8 PM and 2 AM. Buses depart Glenwood park-and-ride traveling up valley at :05 and :35 minutes after the hour. Buses from Aspen arrive at Glenwood at :08 and :38 minutes after the hour. The bus rapid transit service planned for around 2012 will depart from the Roaring Fork Marketplace area. This will include increased service frequencies in the Highway 82 corridor.

Ride Glenwood is a free local service in Glenwood Springs. A main route and a south route connect Glenwood Springs neighborhoods and commercial centers. The route makes connections with RFTA services operating in the Highway 82 corridor to Aspen and to Rifle. Ride Glenwood routes operate from approximately 6 AM to 9 PM.

The Grand Hogback service between Glenwood Springs and Rifle serves both the Roaring Fork Marketplace and the Glenwood park-and-ride. Service operates begins at 5:15 a.m. and the last trip departs Rifle at 8:15 p.m. as shown in **Table 2-4**. Generally service operates hourly, but one morning trip is moved up by 25 minutes so it better serves commute trips and there are three 2-hour gaps in service during the day.

Table 2-4: Schedule for Rifle Service

To Glenwood Springs		To Rifle		
Rifle	Glenwood P & R	RFMP	Glenwood P & R	Rifle
5:15 am	6:05 am	5:50 am	6:02 am	6:39 am
6:15	7:05	7:05	7:17	7:54
6:50	7:30	8:05	8:17	8:54
8:15	9:05	10:05	10:17	10:54
9:15	9:55	11:05	11:17	11:54 pm
11:15	11:55	1:05	1:17 pm	1:54
12:15 pm	12:55 pm	3:05	3:17	3:54
2:15	3:05	4:05	4:17	4:54
4:05	4:45	5:15	5:27	6:04
5:05	5:45	6:15	6:27	7:04
6:15	6:55	7:15	7:27	8:04
7:15	7:55			
8:15	8:55			

STUDY AREA CHARACTERISTICS

Eagle and Pitkin counties have tourism at the core of their economic activity, with national forests covering the majority of their land area. Garfield County provides residences and a wide range of services in support of the larger region but also has an active mining economy centering on the area between Parachute and Rifle.

Within the more mountainous sections of the counties, the communities are relatively compact as the valleys are narrow and buildable land a scarce resource. Traveling west the valleys open up somewhat, the roadway network expands to more of a grid, and residential lots are larger. Residential development has been expanding down the valleys, as the cost of housing near the resort communities has risen in value.

Key activity centers in Eagle County include the ski areas and related lodging and restaurant facilities, national park access, shopping at the big box stores

(Home Depot in Avon, Costco in Gypsum), Eagle County Airport, and other County services in Gypsum. A hospital is located in Vail.

Key activity centers in Glenwood springs (Garfield County) include Colorado Mountain College, Valley View Hospital and surrounding medical offices, a wide range of shopping from discount department stores to specialty shops, and a variety of services including the Social Security Administration office for the region. All employees working on visas must travel to this office to get their work permits and visas validated. Glenwood Springs is well known for the Hot Springs, historic hotels and downtown, and has a variety of recreational activities available. It boasts a local ski area and is located at one end of the scenic trail through Glenwood Canyon. Glenwood Springs has long been an employment center, but in recent years the mining and extraction industries in western Garfield County have provided another significant employment center.

Pitkin County has a strong resort economy with a combination of skiing in the winter and a full calendar of festivals in the summer. The national park hosts four ski mountains and is an important recreational area in the summer. Aspen is a cultural center with an active night life and restaurant scene. The Valley has a number of specialty businesses as it is a desirable place to live and work. Aspen Airport is another activity center with commercial air service operating year-round.

3. DEMAND ESTIMATION

APPROACH

The demand analysis focuses on determining if there is adequate demand to support regular transit service in this corridor. If the demand does not exist at present, when will it likely be adequate to support a viable route?

The demand analysis also helps to identify the hours, days and frequencies of service that might be warranted to meet the needs of the market and will serve as a basis for service planning.

The demand estimation uses quantitative and qualitative techniques. Data available for quantitative assessments includes employment information (current, projections, and 2000 Census mode of travel numbers), population levels and forecasts, and ridership projections. Limited information is available for specific market groups such as airport travelers. Qualitative information was gathered from surveys and anecdotal information about market groups.

This section begins with population and employment forecasts and then addresses specific market groups. Following this is a presentation of the survey results and then a summary of demand estimations.

INFORMATION SOURCES FOR FORECASTS

Several key planning documents can be used to estimate demand for connecting service between RFTA service in Glenwood Springs and ECO service in Gypsum or points east. Two key documents are the:

- Travel Model for the I-70 Corridor PEIS as documented in Appendix C
- Local and Regional Travel Patterns Study, 2004 (prepared by Healthy Mountain Communities and Charlier and Associates)

In addition, the Colorado Department of Local Affairs (DOLA) website contains estimates and projections of population and jobs and the Census (2010 and American Community Survey) contains information on where people live and work and how they travel. Much of the more current information is at the county-level but can provide information on trip flows between Garfield and Eagle County.

The *I-70 Corridor PEIS Travel Model* uses a planning horizon of 2025, with base data from the 2000 Census and projections from the Colorado Department of Local Affairs (DOLA) State Demographer. This model has an extensive

methodology to address the special nature of mountain resort communities, bases analysis on a set of transportation analysis zones, and was developed with extensive involvement from the jurisdictions and planning organizations in the study area. The strength of this analysis is that it addresses all trip types with breakouts for traditional (home-based work) and not so traditional (recreation) trips. A weakness is that much of the readily available data is only tabulated on a County basis. The 2012 planning horizon for the service planning study represents a mid-point in this data.

The *Local and Regional Travel Patterns Study* focuses on the home and work connection and work trips. This report was completed in 2004 and uses data from 2000 and 2004; it also has a planning horizon of 2025. The foundation is a survey distributed by employers of their employees that identifies information about housing and the work trip. This only addresses the work trip but it provides detailed information on employment by type and the destinations between which employees are traveling. The analysis uses a system of five zones. Information is detailed on where Garfield County residents travel. A weakness is that only Eagle and Gypsum are considered in the Eagle County portion of the primary analysis. However, since some base data was available only on the county level, for some portions of the study all of Eagle County was included.

POPULATION AND EMPLOYMENT ESTIMATES

There are similarities and differences in the data from the reports and various sources. The base data for 2000 from Census counts or DOLA employment data is the same; projections tied to DOLA work for the early years are also very similar. In 2000 Eagle County and Garfield counties had about the same level of population – 43,000 residents in Eagle County and just under 44,000 in Garfield. However, because these two projects were completed in different years, the outlying data is somewhat different. The PEIS estimates a 2025 population of 76,000 for Eagle County and the Travel Patterns study estimates 74,000. In Garfield County the estimates are a bit different: the PEIS estimates approximately 81,000 while the Travel Pattern study estimates 87,000, reflecting more current DOLA population estimates. Current DOLA estimates are even higher, with a 2025 projection of 81,240 for Eagle County and 115,000 for Garfield County.

The rates of population growth in these studies are approximately 3.3% annually. While this is a very high rate, the actual growth between 2000 and 2007 met this target in Eagle County and exceeded this rate in Garfield County. While the population growth in Garfield County is presently estimated to be substantially

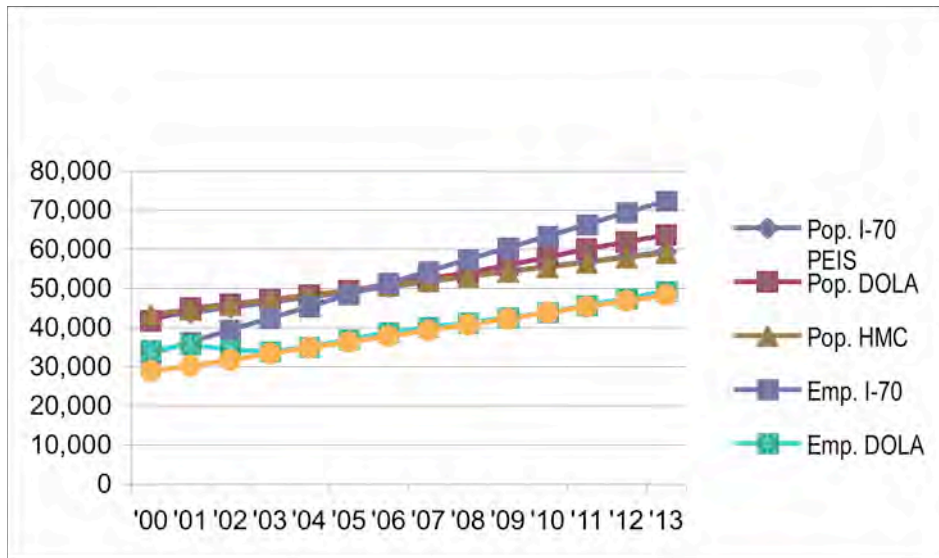
higher than these two studies reflect, the rate of growth in the mining industry has a degree of uncertainty to it.

The resort economies appear to be tracking fairly close to population estimates. They were slightly ahead but it appears the recession may pull them back in line.

The 2025 projections for population in Garfield County are difficult to estimate. The growth in population related to the mining industry is more uncertain. The strong growth in the mining industry in Garfield County was not foreseen in 2000 population estimates, but is an important driver of the current population levels. Many external factors affect how the economic trends will play out in the mining sector. However, looking at a planning horizon of 2012/2013 – just three years from now – does not require a crystal ball that is able to see quite so far.

Figure 3-1 illustrates the employment and population trends from 2000 to 2013 for Eagle County with information drawn from three sources – the two reports cited above and current DOLA estimates. The DOLA population estimates are rigorous with estimations through 2007 and projections for 2008 – 2013. The estimates from the other two sources reflect a straight-line estimation based on the target year of 2025. The DOLA employment sources reflect rigorous estimations based on workforce data through 2006, with projections for 2010 and 2015. The intermediate years were filled in by a straight-line estimation.

Figure 3-1: Eagle County Projections



In Eagle County, the 2013 population estimates converge around 60,000 residents. Employment projections are more dispersed, with DOLA and the Healthy Mountain Communities (HMC) *Local and Regional Travel Study* converging at just under 49,000 jobs with the I-70 PEIS model reflecting almost 50% more. It is recommended the figure of 49,000 jobs be used along with the calculations in the HMC Travel Study for estimating employment trips.

Figure 3-2: Garfield County Projections

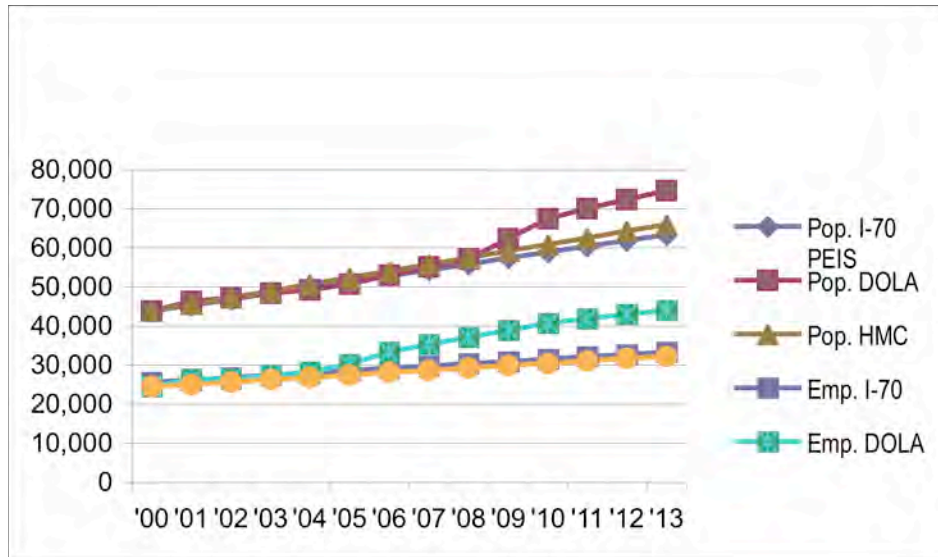


Figure 3-2 illustrates the same information for Garfield County. Here, the I-70 PEIS and HMC Travel Study data converge for both population and employment while current DOLA estimates are higher, reflecting the mining activity that has occurred in the last five years. While the difference is substantial, there is also uncertainty about how the recession will affect the pace of drilling and development. Using the HMC *Travel Study* methodology for employment trips would result in a conservative estimate of ridership.

Given the uncertainty of the economy, conservative population and employment estimates are recommended rather than the DOLA figures. Although growth will occur, we can't project the pace of the development and would be better served to take a more conservative approach.

MARKET SEGMENTS

EMPLOYMENT

The HMC *Local and Regional Travel Patterns* report includes a forecast of travel patterns in 2025 for five sub-areas, including Garfield County and Eagle County along I-70, as illustrated in **Figure 3-3**. This forecast uses the population and employment numbers identified as preferred in the previous section and the methodology includes the Basalt/El Jebel corner not with the rest of Eagle County but rather in the travel shed the commuters are most likely to use.

Table 3-1 presents the estimated number of employees traveling between the five zones in the *Local Travel Patterns* report. Eagle and Garfield counties using the data in the *Travel Patterns* report for 2000 and 2025 and a straightline projection to determine employees projected for the mid-point in 2012. Note that these numbers reflect workers – so the number of daily one-way trips made by all modes of travel would be double this number.

Table 3-1: Projected Employees between Counties in 2012-13

Zone To → Zone From ↓	1	2	3	4	5
1		6,001	2,273	2,873	530
2	200		859	1,816	133
3	171	1,675		8,531	254
4	24	194	717		35
5	67	149	41	94	

A total of 952 employees are projected to travel to Eagle County, those in the green shaded column. Of these, 133 come from the Glenwood Springs area but the majority travel from west of Glenwood Springs.

A total of 351 employees are projected to travel from Eagle County, those in the blue shaded row. About one-third (149) travel to Glenwood Springs and 135 continue down the Highway 82 corridor.

To calculate the number of potential transit employment trips, the average daily trips are calculated as follows:

- 1,303 employees make 2 daily trips five days a week = 13,030 1-way trips/week
- 13,030 1-way trips/week / seven days = 1,861 average trips per day

Figure 3-3: Employment Trips to Eagle County

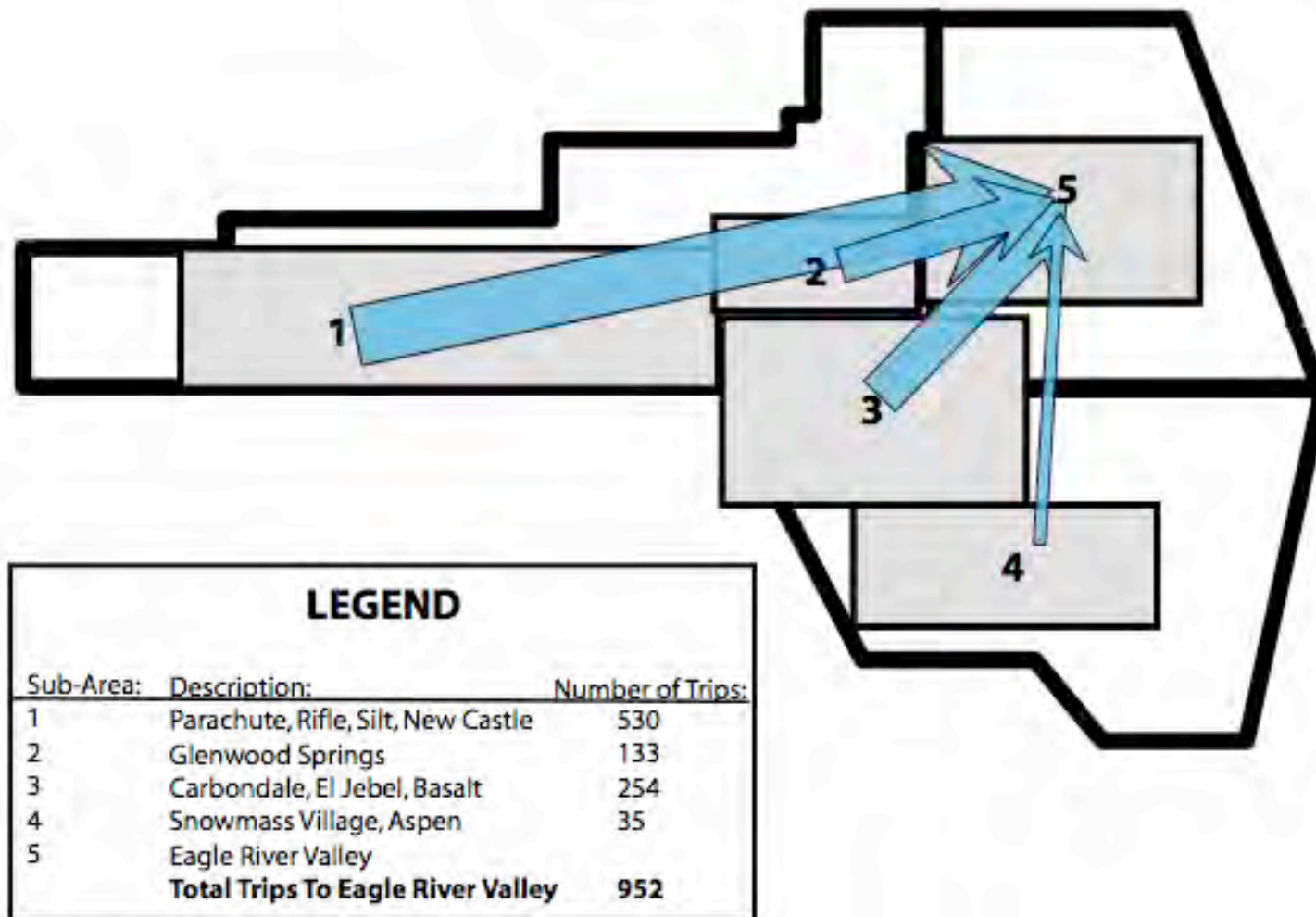
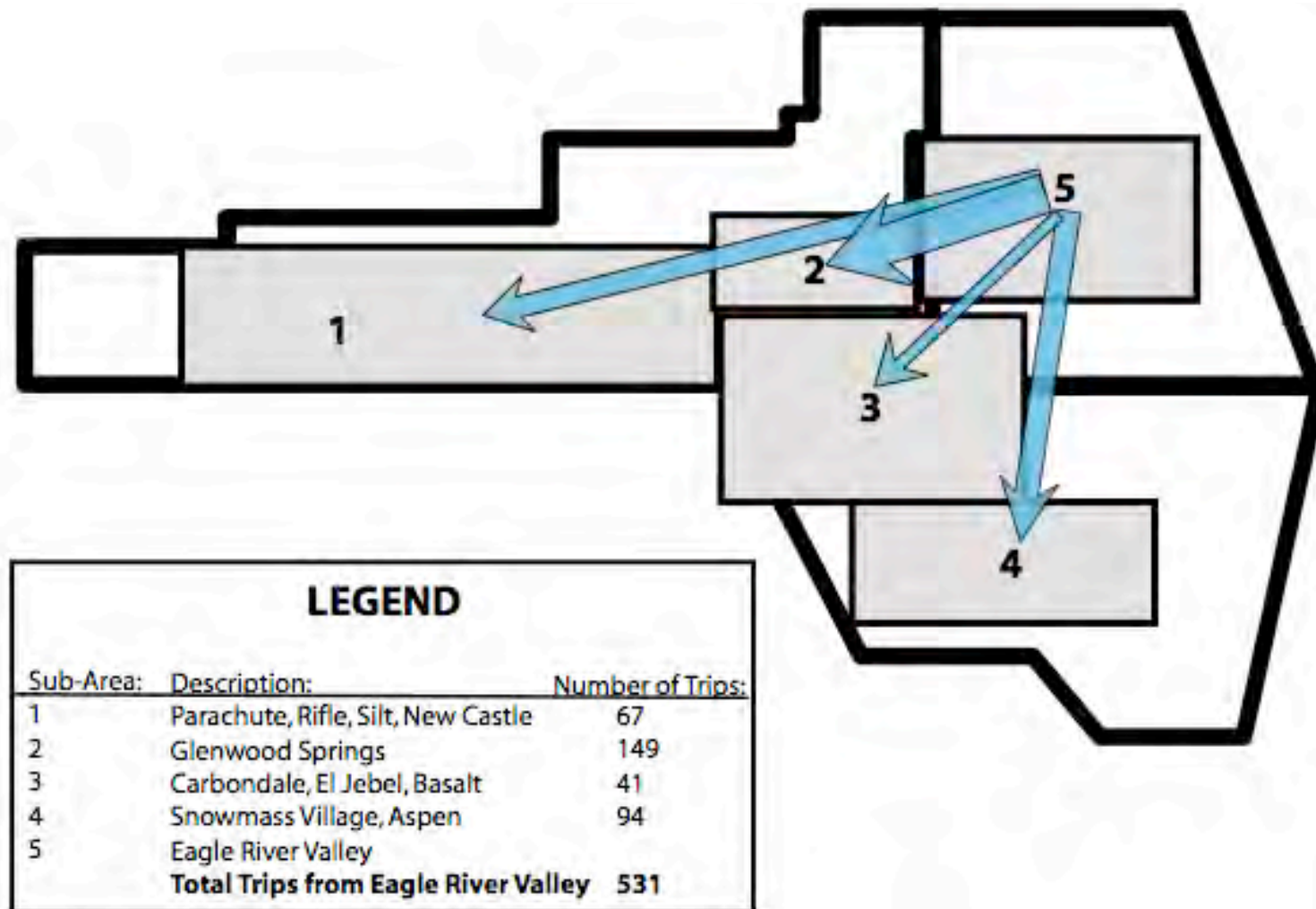


Figure 3-3: Employment Trips from Eagle County



The report on *Local and Regional Travel Patterns* estimated a range of 5%, 10% and 15% mode share for transit in the region. Applying these percentages to the average daily trips we find the following range of employee ridership:

5%	=	93	average 1-way trips/day
10%	=	186	average 1-way trips/day
15%	=	279	average 1-way trips/day

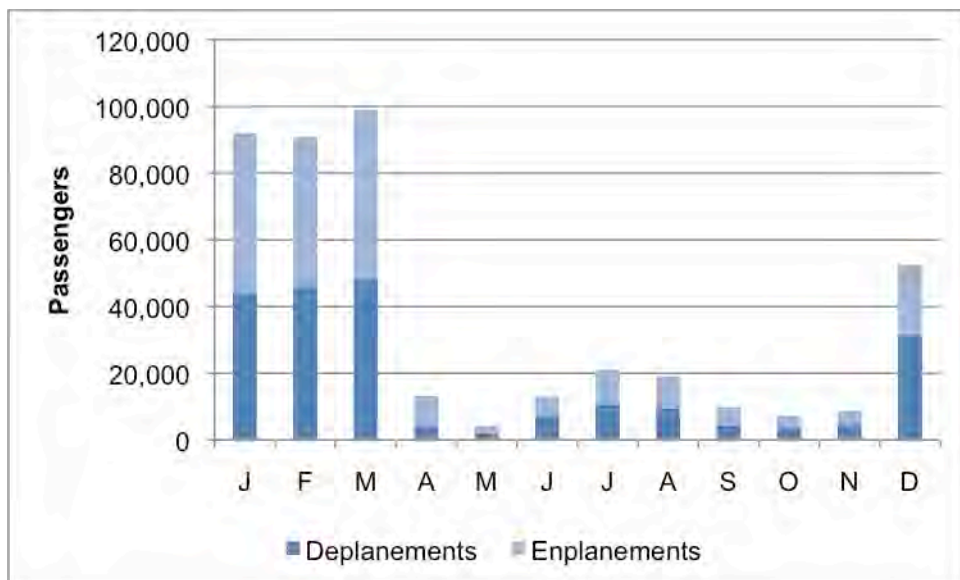
Based on experience on other regional services and the availability of improved service connections via the BRT on Highway 82, it is estimated that the employment mode share in this corridor would be between 10% and 15%. The cost of gas, the bus schedule, and connecting times would have a strong influence on which end of the range is achieved.

AIR TRAVEL

Eagle County Airport serves Eagle, Garfield, and Pitkin County as it provide all weather landings and reliable flight schedules. It also has free parking which may influence Pitkin County residents who will be traveling for relatively long times.

Demand for travel to and from the airport covers employees and people flying in and out of the airport, two markets with different characteristics. In the peak season there are as many as 400 employees (most do not work 5-day schedules) and 430,000 passenger trips. The latter is illustrated in **Figure 3-4**.

Figure 3-4: Eagle County Airport Passengers



There were approximately 215,000 passengers using Eagle County Airport in 2008, and the total of enplanements and deplanements reflect the one-way trips these passengers make to and from the airport. There is significant monthly variation in passengers, with over 45,000 passengers in Winter months and 10,000 passengers in Summer months. There are even fewer passengers in the shoulder seasons, although these periods are when many local residents travel on vacations after the Winter season.

It is useful to estimate the share of airport passengers who might use transit to travel to and from the airport. If there was a 2% mode share for transit, this would result in 60 daily one-way trips in the Winter months and 7 daily one-way trips in the summer. While 2% might be reasonable in the Winter when many visitors come to the area and travel to their resort via rental car or shuttle bus, it is likely low for the summer months. A mode share of 5% would not be unlikely in the summer, resulting in an average of 17 daily one-way trips.

Airport employees typically use transit quite heavily, in part because parking is often expensive or results in an additional bus trip and in part because they may not want to leave a vehicle in a lot for several days. Parking cost is not a factor at Eagle County Airport, so employee travel would likely have a mode share more typical of other jobs. Airport employment travel is included in the estimates in the section on employment and will not be duplicated here.

OTHER MARKETS

Personal Business, Services, and Shopping

Conducting business in Glenwood Springs and shopping at Costco in Gypsum are important components of demand. The study area functions as a single region in many respects. Just as the main airport is in Eagle County, Garfield County hosts many services that Eagle County residents wish to access. These range from the primary medical services for the region (the hospital and related medical services in Glenwood Springs are closer for many Eagle County residents than the hospital in Vail); to services such as the Social Security Administration. All foreign-born employees on work visas from Eagle County need to travel to the Social Security Administration office for validation of visas. Colorado Mountain College is another regional trip attractor in Glenwood Springs. Also, connections to intercity services would be a part of the market as passengers from other cities would be able to schedule through service.

Shopping is another reason for travel. The Costco in Gypsum attracts many trips and Glenwood Springs has a variety of stores not available in western Eagle County.

Recreation / Nightlife in Glenwood Springs

Glenwood Springs is popular among visitors and residents for the Hot Springs pool, nightlife, and restaurants. A route operating between Glenwood Springs and Gypsum with a stop in Dotsero would provide ready access to the multi-use trail through Glenwood Canyon, allowing people to cycle or roller-blade one direction and take the bus for the return trip.

STAKEHOLDER SURVEY RESULTS

Key stakeholders from Eagle and Garfield Counties were invited to participate in a survey to discuss the viability of providing connecting transit services between RFTA operations in Glenwood Springs and ECO Transit operations in Dotsero and Gypsum. The questionnaire presented in **Figure 3-5** was designed to provide the consulting team with an understanding of current travel patterns, demand for the service, and the relative importance the community places on providing this connector service. Representatives from the following organizations participated in the survey:

- Glenwood Workforce Center
- Vail Valley Partnership
- Valley View Hospital
- Colorado Mountain College
- Mountain Valley Developmental Services
- Eagle County Airport
- Glenwood Chamber
- Economic Council of Eagle County
- Eagle County Workforce Center

Overall the responses were strongly supportive of transit and a connector service between the communities if the funding becomes available. Many stakeholders indicated that their clients and/or employees travel between Glenwood Springs and Dotsero and Gypsum to get to work and medical appointments. Further, the workforce centers for both counties suggested individuals seeking jobs are limited because of the lack of transit service available in that corridor. Unemployment has increased with the decline of the economy, but transit services would provide job-seekers with a variety of additional job opportunities.

The Chambers of Commerce both indicated that the service would be particularly useful for individuals traveling to and from the Eagle County Airport, sky resorts, shopping, and medical purposes. The results of this survey indicated that the community values inter-community connections and coordination between the systems. Responses to the questions are listed in **Table 3-2**, spread over the next six pages.

Figure 3-5: Stakeholder Questionnaire

The Roaring Fork Transportation Authority and ECO Transit have teamed to administer a study assessing the viability of providing connecting bus service between RFTA operations in Glenwood Springs and ECO Transit operations in Dotsero and Gypsum. This questionnaire will provide the consulting team with an understanding of current travel patterns of various markets, demand for the service, and the relative importance the community places on providing this connector service.

- What is your organization's perspective on transit?
- What programs are administered by your organization?
- How many people do you work with?
 - How do they get to your facility? (car, bus, walk, bike, carpool)
 - Where do they travel from?
- Do the people you work with utilize public transportation to access your organization or other organizations associated with your organization?
- Do you think the people you work with would utilize a transit connection between Eagle County and Glenwood Springs?
- If transportation services were provided between Eagle County and Glenwood Springs, what kinds of trips would the people you work with use the service for.
- What fares can people afford for this service? Would your organization be able/willing to purchase fares for your clients/employees?
- Additional Comments:

Table 3-2: Stakeholder Responses

	Glenwood Workforce Center	Vail Valley Partnership	Valley Veiw Hospital
What programs are administered by your organization		Chamber and tourism bureau in the Vail Valley – economic development, networking, business to business, tourism.	
How many people do you work with?	Statewide system and can't give an accurate number. Lots of people are registered and are searching for jobs all over the state. Employers in all industries. Some employers are willing to help with transportation costs, but some are not. Oil and gas typically need someone with a drivers license, but others may help (manufacturer may help).	700-800 business members	54 inpatients; 761 employees
How do they get to your facility?	Lots of people come in on RFTA and the Gypsum Eagle area, Rifle.	Global perspective – more and more people are using transit of some sort. Some business are purchasing bus passes.	
Where do they travel from?		People travel from all over and as the economic conditions worsen they may move even further away from their places of employment.	
What is your organization's perspective on transit?	The unemployment rates are so high right now that transit services are more important than ever. People will work any type of job in any location. There is a barrier for people who are willing to work, but can't get to Eagle county. Lots of people don't have a vehicle or can't drive. There is a need for connecting services.	Global perspective it is hugely important. More and more of the workforce are living further away. Economic drivers are the resort and construction industry are key employers.	Supports RFTA and helps with bus passes. – Purchases bus passes for their employees.

	Glenwood Workforce Center	Vail Valley Partnership	Valley Veiw Hospital
Do the people you work with utilize public transportation to access your organization or other organizations associated with your organization?	Yes - quite frequently people use RFTA		
Do you think the people you work with would utilize a transit connection between Eagle County and Glenwood Springs?	Yes, but don't know exact numbers	<i>Don't know. Guess - as the population moves further west they probably would</i>	
If transportation services were provided between Eagle County and Glenwood Springs, what kinds of trips would the people you work with use the service for.	Work	<i>Mostly employment</i>	
Fares, what fares can people afford for this service? Would your organization be able/willing to purchase fares for your clients/employees?	Would keep the fare relatively low due to the economy. Could be in line with the current fares, but should look at a lower fare.		\$3-\$4 one-way would be reasonable
Additional comments...			Employees from Eagle County: Eagle - 28; Vail - 5; Gypsum - 19; Avon - 3; (Basalt - 12 but not on I-70 corridor) Many patients come from Western Eagle County.

	College	DD	Airport
What programs are administered by your organization		People with developmental disabilities – residential facilities in Eagle and Garfield County.	Air travel
How many people do you work with?	Most people live in Glenwood Springs – 15% are traditional age most are non-traditional. Are one block away from the stop so it would be convenient, but doesn't think there are many people using the bus now.	120 Adults and 250 children – 115 daily 120 daily children in the four county region. Staff of 135 – number of people commute between Eagle County and Garfield Counties.	There are approximately 400 employees of the airport in the peak season and 450,000 visitors annually
How do they get to your facility?	Many people within Glenwood Springs drive to the facility, but some may walk and carpool	Depends on the community – facilities in a lot of different communities.	Most employees drive or carpool. There is a decent bus ridership, but most are probably visitors.
Where do they travel from?	Living in Eagle County – Institutional research department – guess = small percentage		Most visitors travel from Avon/Vail and employees come from all over.
What is your organization's perspective on transit?		If there was a connecting service it would be strongly supported by both clients and employees. Connection between Eagle County and GS is a vital to the coordination of the system. Need the connection.	They are very supportive of transit and make ground transportation a priority in their operations.

	College	DD	Airport
Do the people you work with utilize public transportation to access your organization or other organizations associated with your organization?	Not many		Yes
Do you think the people you work with would utilize a transit connection between Eagle County and Glenwood Springs?	Some would		Yes – Especially employees
If transportation services were provided between Eagle County and Glenwood Springs, what kinds of trips would the people you work with use the service for.	Classes	Have a residential program they operate and often people would use the service for this as well - medical transit trips may be a high percentage – Also Commuter trips – Glenwood is more of a medical center – people in Western Eagle county would use the service for this.	Travel and employment
Fares, what fares can people afford for this service? Would your organization be able/willing to purchase fares for your clients/employees?		High gas price encouraged people to use transit, but don't know about cost. Developmental organizations would provide the fare for them. Fares aren't that important. Pay for bus passes for the employees who want to use public transit. Scheduling is more of a barrier.	Current ECO fare is \$3 so somewhere in line with that. The airport would not provide a subsidy for transit expenses, but the operator of the concessions (i.e. restaurants, gift shops, etc.) might. Call him at 970.319.3867
Additional comments...		Next step is to connect to summit stage regionally - Chair of the RFTA Board and Mayor of Glenwood	A service like this would be a great help to the employment needs.

	Glenwood Chamber	Economic Council Eagle Co.	Eagle County Workforce
What programs are administered by your organization?	They are a Chamber of Commerce in Glenwood Springs that works with the business community to endorse ballot issues and raise awareness of community values and goals.		We assist individuals in locating jobs.
How many people do you work with?	There are 700 business members in their organization. The industry type ranges from restaurants to industrial manufacturing.	Two people at the economic council. Go to the website to see the reports. Economiccouncil.biz information on workforce and housing in Eagle county. Not seeing a lot of people want to commute from Garfield. More from Leadville.	There are approximately 200 people actively seeking employment through the workforce center right now.
How do they get to your facility?	Mostly by car.	Uses eco transit ridership numbers - there are a lot of trades people on the western end of the county cant do ridesharing because need their trucks. The people that need ridesharing live closer to their destination.	
Where do they travel from?	People travel from all over, but residents would be particularly interested in traveling to the airport.		Most live in Edwards and Avon and a few live in Eagle.
What is your organization's perspective on transit?	They are very supportive of transportation alternatives and have been politically active in promoting transportation initiatives in the community.	All for it. Focus on housing and jobs which pertains to transit issues. Intercounty and cross county mobility are key issues. Many people who live in Dotsero are traveling to Glenwood Springs and visa versa. They don't have any information on that, but can talk to Cathy (research) to get some input. More people are traveling into eagle county to Garfield. Who is going the other way? There is no deep survey work done to determine the travel patterns.	There is a big need for transit in the community especially for those that can't afford to drive.

	Glenwood Chamber	Economic Council Eagle Co.	Eagle County Workforce
Do the people you work with utilize public transportation to access your organization or other organizations associated with your organization?	Many people use public transportation, not necessarily to travel to the chamber, but to access some of the chamber member's sites.	Doesn't know. Talk to Jeff Schroll town manager of Gypsum and Willy Powell Eagle.	They use the bus to get to/from work.
Do you think the people you work with would utilize a transit connection between Eagle County and Glenwood Springs?	Absolutely!		
If transportation services were provided between Eagle County and Glenwood Springs, what kinds of trips would the people you work with use the service for.	They would use it for travel to the airport, ski resorts, shopping, medical, and employment purposes.		Most people they see would use it for work, but there would also be a need for medical, shopping, etc.
Fares, what fares can people afford for this service? Would your organization be able/willing to purchase fares for your clients/employees?	Many businesses in the community already subsidize transit passes through RFTA. They would probably do the same for this connecting service. Fares and passes should be in line with RFTA's current fare structure.		Fares can't be any higher than \$10. Some employers might help with the costs.
Additional comments...	We will support all transit initiatives including this one.	You're doing the Lords work here. It is a good conversation to have. National and local economics may push the dream back some, but eventually it will be necessary to get this service. Same economic concerns as in the Front Range, but now it is the time to talk about it.	

OVERALL DEMAND ESTIMATION

The previous sections examined the markets for the service, with ridership ranges provided for employment and airport travel, the two markets for which data exists. The employment market is the largest single market and one way of estimating total ridership demand is to consider the percentage employment trips are of the potential overall market for service.

Transit systems doing passenger surveys identify “trip purpose” in their surveys. The Census travel data provides another way to identify the individuals using transit to go to work and this can be compared to transit ridership in a corridor. There is a wide variation in the percentage of riders that use a route for employment versus other trip purposes. Routes scheduled to meet commuter demand are primarily workers, although students and others may constitute 10%-15% of ridership on some routes.

The more people who use transit as a primary mode of travel, the more likely it is that employment ridership will be closer to 30% of the total ridership, mirroring overall trip-making patterns. Within the RTD system, the service in the Boulder area carries only about 25% - 30% employment trips. At the other end of the spectrum, several of the commuter routes and the airport buses carry 85%-90% employees.

While employment trips are a vital part of the ECO and RFTA systems, both systems have strong recreational markets and carry many residents who rely on transit for most of their travel needs. While the percentage of employment of overall ridership varies by route, ECO Transit’s ridership surveys show that employment trips made up 42% of total system ridership in 2007 and 44% in 2006. Because of the markets served by the proposed route, it is anticipated that employment trips would be a larger share than ECO’s overall system – in the range of 60% to 70% of total ridership.

Figures 3-6 and 3-7 illustrate the anticipated ridership levels under two scenarios. The medium level of transit use by employees reflects a 10% mode share for transit work trips in the corridor. This is at the low end of local experience, but may be realistic for the first two years of service. The high level of transit use by employees reflects a 15% mode share for corridor transit work trips. Depending on scheduling, transfer connections, and gas prices this higher level is reasonable but the ridership base would likely need to grow to this level. In each chart, the number of daily employee trips is constant. The charts illustrate the differences in total ridership based on the percentage of trips that are for employment. The higher the employment trips are as a percent of the total, the fewer other trips are carried and the lower the total ridership

Figure 3-6: Medium Level of Transit

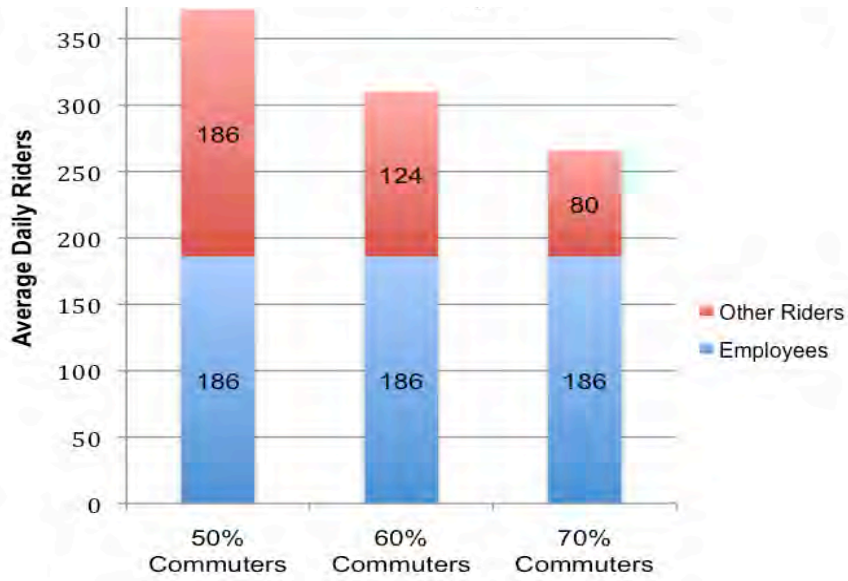
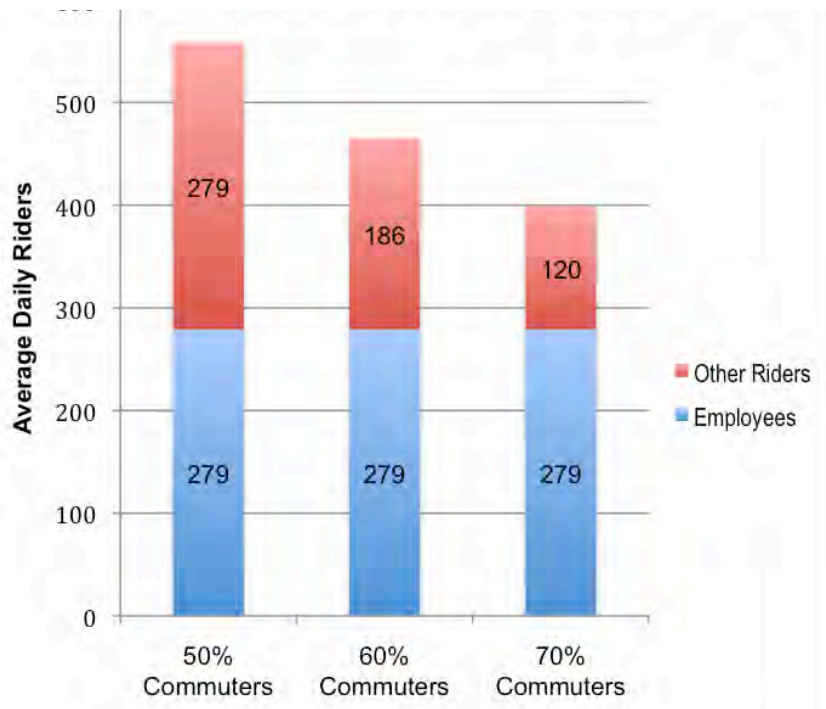


Figure 3-7: High Level of Transit



Considering this data, what is a realistic daily ridership estimate? What level of “other riders” seems reasonable based on what is known about the various markets? The market for Eagle County airport is a large one and the service would likely serve this market well, connecting with all but the earliest and latest flights. Just a 2% mode share would result in 60 daily trips in the winter season but only 7 daily trips in the summer.

While work trips have become fairly steady year-round in the region, this service would reflect seasonal variations, as the number of trips to the Eagle County Airport illustrate. Because many locals travel to and from the airport in the off-season, this number might not dip as much as total travel numbers, but there would still be a seasonal impact.

It is estimated that overall ridership would be in the range of 275 – 300 passengers per day initially, with commuters reflecting 60% to 70% share of the total. Over two years of operation, it is anticipated that ridership would climb to around 350 passengers per day as people become familiar with the service and the employment base in the region grows.

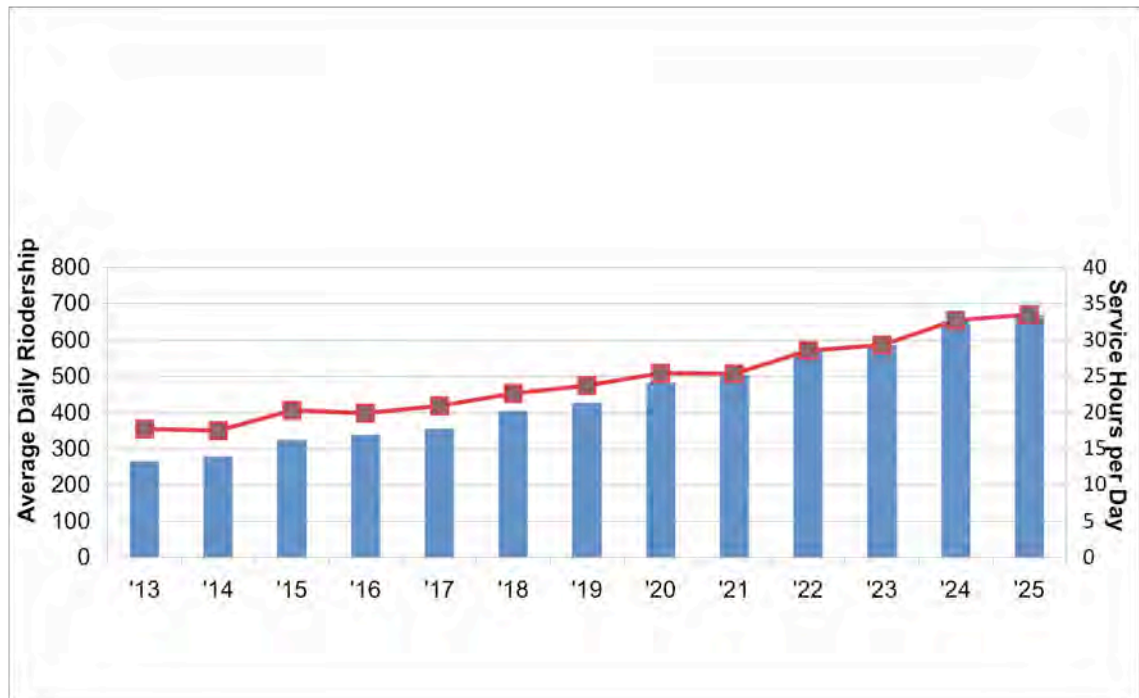
The employment figures used in this analysis are based on 2012-13 estimates. The conservative numbers were used, those developed prior to the energy boom. Although some consideration will need to be given to the impact of the recession, the combination of a 2012 forecast (when the employment levels are anticipated to be rising again) and the fact that these numbers did not reflect peak employment means that they will likely hold up fairly well over time, especially if one leans towards a 10% mode share for transit employment trips.

Establishing this service requires a long-term perspective so it is useful to consider how ridership might develop over time as the region grows. The employment estimates provide a way to estimate growth over time. **Figure 3-8** estimates the growth in average daily ridership over time, based on the following assumptions:

- The number of work trips taken via transit increases gradually from 10% to 15%.
- Initially 70% of total trips are work trips but this percentage declines over time to 60%.

This chart also illustrates how many service hours would be justified, starting at an average of 15 passengers per hour and increasing to 20 passengers per hour over time.

Figure 3-8: Ridership and Service Growth



The numbers in this chart are conservative as they show ridership increasing steadily over time and not climbing to 350 per day until the fourth year of operation. With the initiation of BRT, the consultant team believes this growth may happen more quickly.

Estimating an initial average of 15 passengers per service hour would justify almost 18 service hours per day. This is adequate to begin a viable service. The 15 riders per hour level may be higher than necessary as a starting point – this is meant to provide a general order of magnitude to guide service planning activities.

CONCLUSION

Both the quantitative analysis and the qualitative survey responses reflect support for this connecting service. The demand exists today to begin service if funding were available to do so.

As the region continues to build a transit network and more individuals rely on transit as a major mode of travel, this connection will become increasingly important. It is an important building block for developing the transit mode both in the region and in the I-70 corridor.

4. SERVICE ALTERNATIVES

This section describes the overall level of service as well as options for the terminus in Glenwood Springs and Gypsum. Along with options for terminating the service at either end, options for interlining with existing services are also identified. Finally, fares are discussed and options identified.

LEVEL OF SERVICE

The distance between Glenwood Springs and Gypsum is approximately 28 miles, with 24 miles on the interstate and the remainder in Glenwood Springs, Dotsero, and Gypsum. The routing option selected will determine the final mileage and total travel time, but for the purpose of identifying the general level of service the one-way travel time is about 45-minutes and round-trip travel time is 1.5 hours.

Aiming for 17 – 18 hours of service daily, this suggests that starting service with 11 round-trips would be appropriate. This is similar in level of service to the Rifle (Grand Hogback) service, with 11 eastbound departures to Rifle and 13 westbound departures to Glenwood Springs.

If service is scheduled around the primary markets, these are:

- Employees traveling to Eagle County (136-204 average per day)
- Employees traveling from Eagle County (50-75 average per day)
- Airport travelers (60 Winter; 7-17 Summer)

Most of the airport trips fall in the mid-day so standard scheduling for employees would cover all but the earliest and latest flights.

Providing 11 round trips daily enables the system to offer peak hour services with limited mid-day trips and one early evening trip. While a single evening trip will result in missing some of the social / recreational market, this is the recommended trade-off. It may be reasonable to have a late night trip on Friday and Saturday nights, but it would be difficult to justify one year-round until ridership grows.

Because the primary travel market is employees traveling to Eagle County, consideration should be given to interlining this service with existing routes so that a one-seat trip is an option within Eagle County. This would also result in some cost savings as existing service to Dotsero could be replaced with the new connector service. It would be desirable to continue the service to Avon, a major employment site. However, if it were continued to a location where a direct transfer is available to other services this would be acceptable as well.

ROUTING OPTIONS

The basic route for the connecting service would operate between Gypsum (serving Costco and Eagle County Airport) and Glenwood Springs.

- In Gypsum, the route would follow the pathway used by the existing ECO Transit services.
- In Dotsero, the route would operate as through service and not terminate in the residential neighborhoods. Residents would need to walk to bus stops located on the frontage roads. Existing stops would need to be relocated or new stops added. This routing is illustrated in **Figure 4-1** on the next page.

In Glenwood Springs, several options are available for routing. The consultant team considered routing for several options in Glenwood:

- Turning at 6th Street near the Hot Springs Pool
- Making a loop in downtown Glenwood
- Operating to the West Glenwood Mall to connect with the Rifle service
- Operating to Roaring Fork Marketplace.

The slides on the next few pages illustrate these basic routing options, in **Figures 4-2** through **4-5**. **Figure 4-6** provides a comparison of the routing options in Glenwood Springs.

Each alternative has a different travel time, different connections with other routes, and different options for interlining services. The travel time and connections for each will result in markets from different areas having different travel times, so some thought needs to go into deciding the markets for which the most direct connections and shortest travel times will be provided. While the largest employee market for Eagle County is from west of Glenwood Springs, on the Hogback route, this route presently serves the employment market in Pitkin County and the Pitkin County market will continue to be a major one. As a result, it appears the best option would be to have direct connections for riders to and from the Hogback route but assume a transfer will be required.

Table 4-1 lists the number of seats that would result from each option. A trip requiring one transfer results in a 2-seat ride and a trip requiring two transfers results in a 3-seat ride.

Figure 4-1: Dotsero Route Alignment

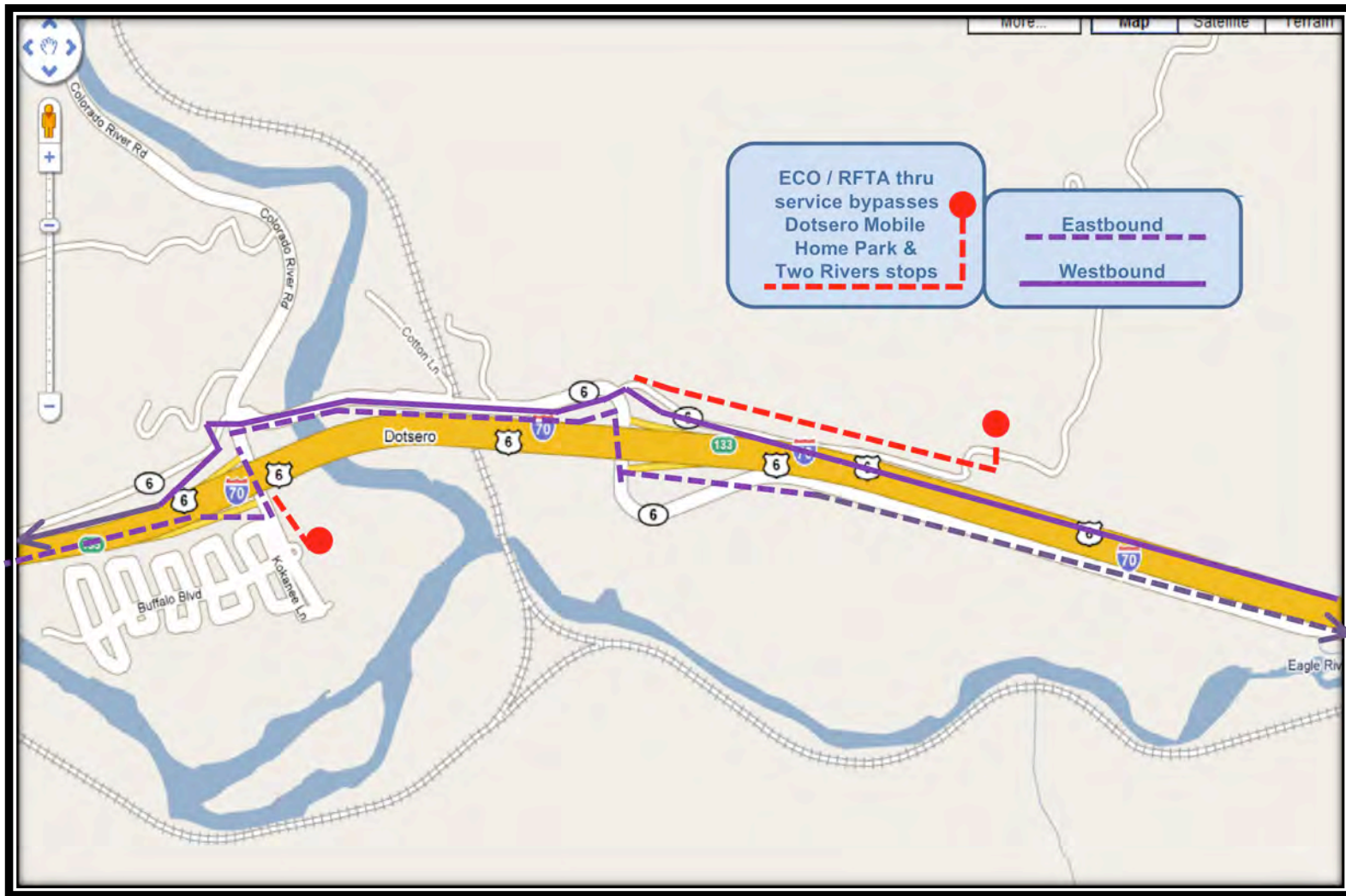


Figure 4-2: Option 1, 6th Street Business District

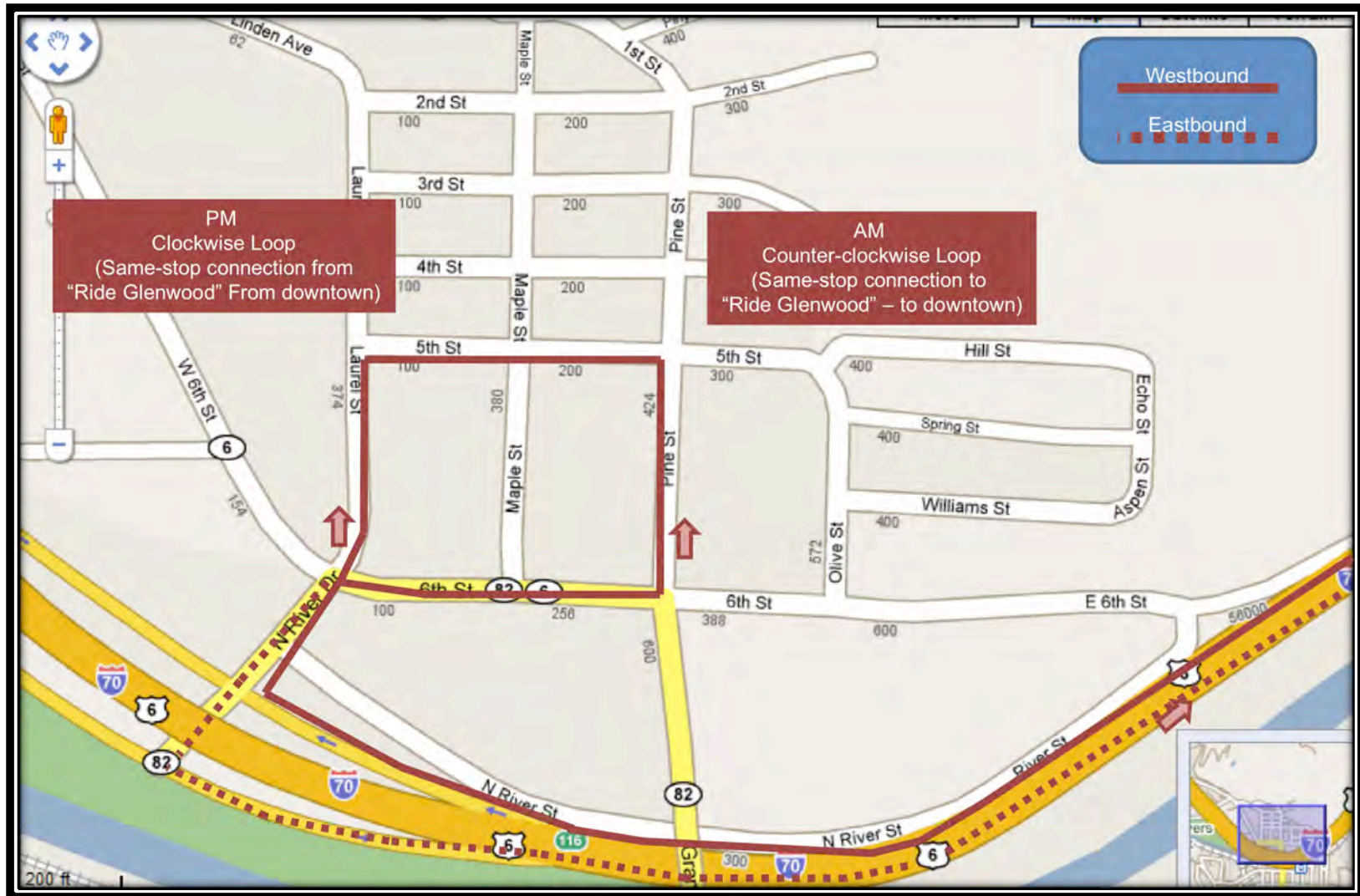


Figure 4-3: Option 2, Grand Ave. (Hwy 82 & 9th St.)



Figure 4-4: Option 3, West Glenwood Mall

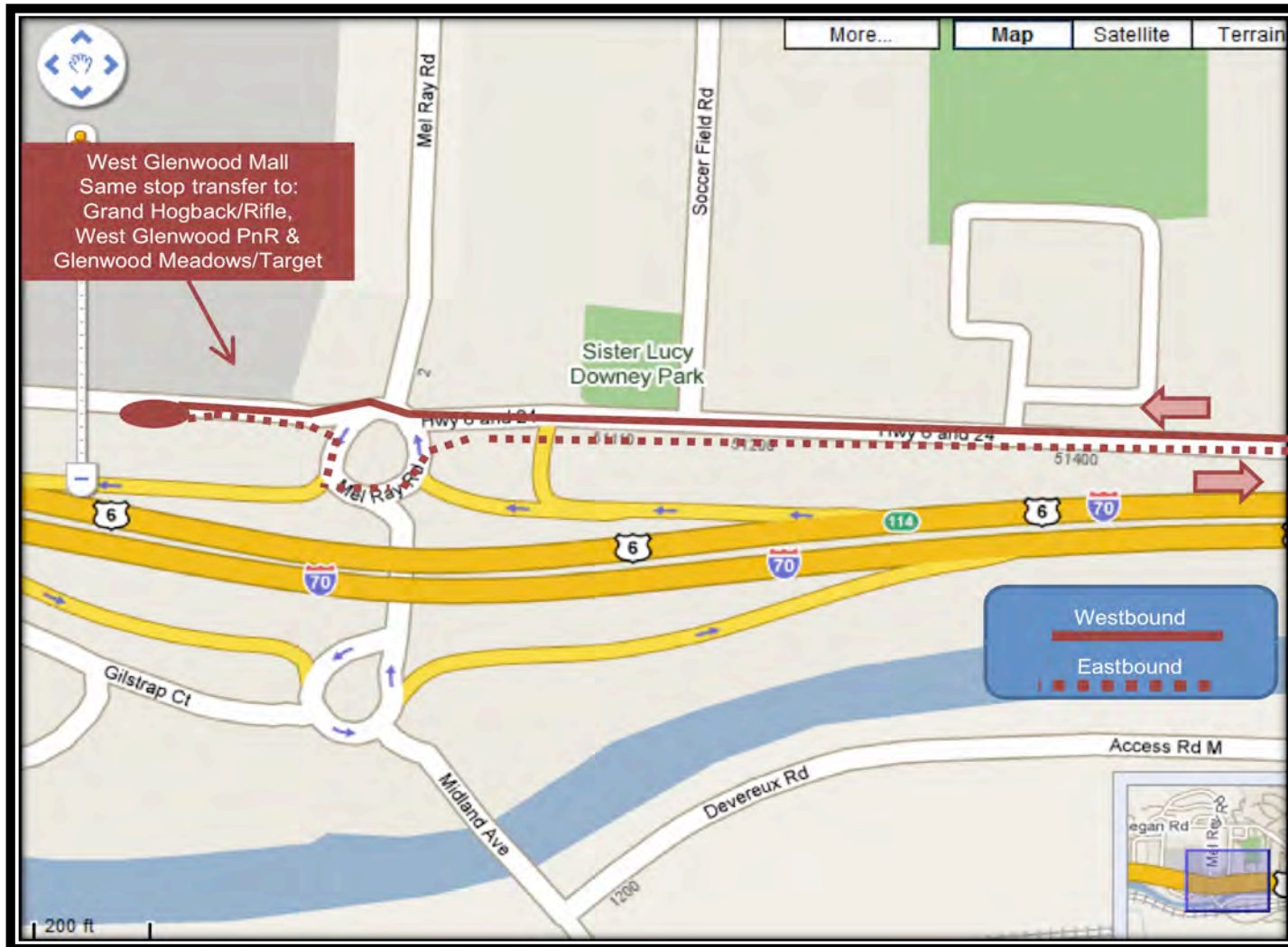


Figure 4-5: Option 4, Roaring Fork Market Place



Figure 4-6: Central Glenwood Route Alignment Options

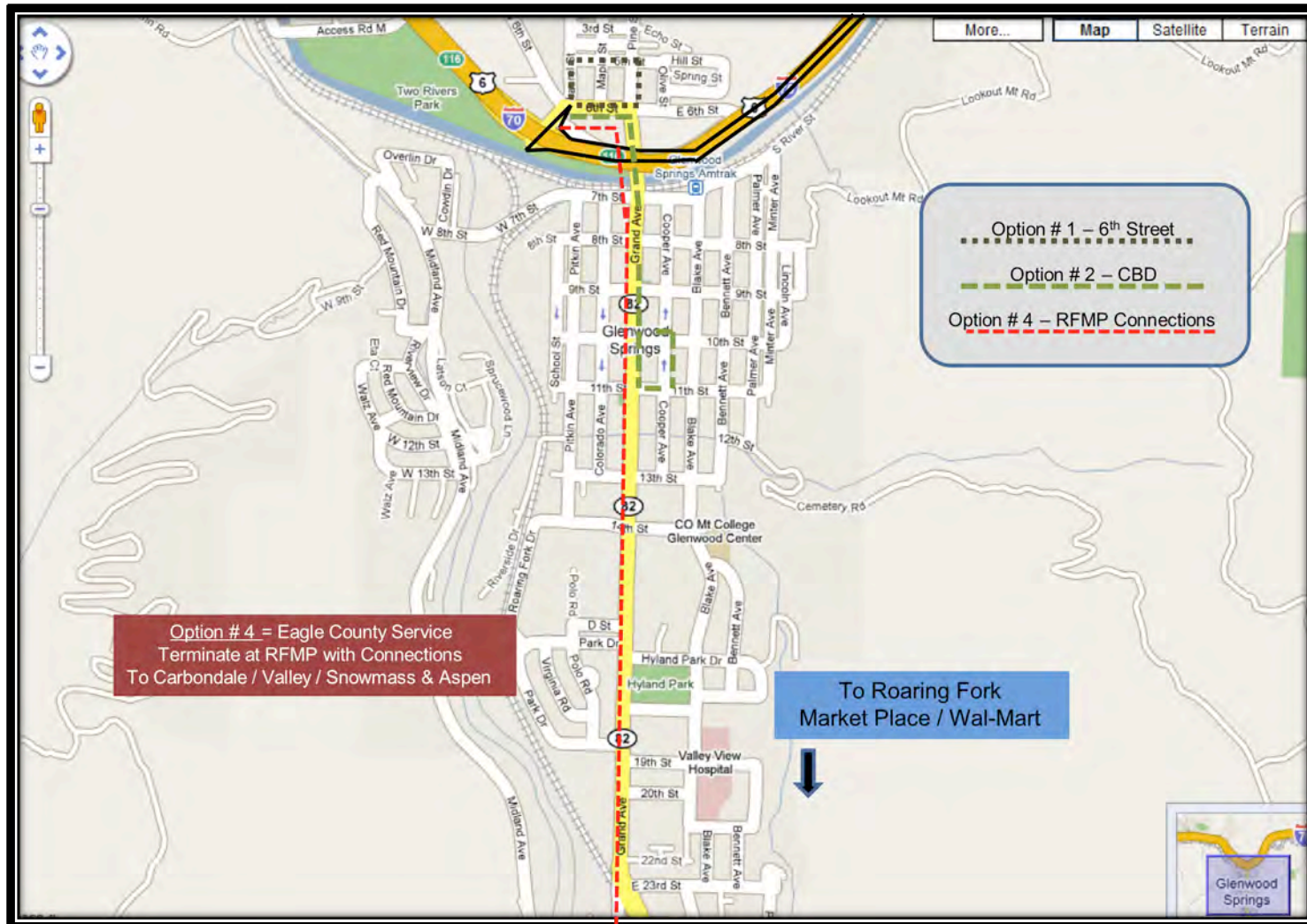


Table 4-1: Evaluation of Potential Routing Options

Potential Glenwood Springs Route & Destination Options				
Options for Glenwood Terminal: →	Option # 1 6 th Street / Hot Springs	Option # 2 Glenwood CBD	Option # 3 W. Glenwood Mall Via 6 th Street Dist.	Option # 4 Roaring Fork Marketplace
Passenger's Glenwood Destination is : ↓				
6 th Street Hot Springs	1-seat ride	1-seat ride	1-seat ride	1-seat ride
Glenwood CBD	2-seat ride	1-seat ride	2-seat ride	1-seat ride
W Glenwood Mall	2-seat ride	2-seat ride	1-seat ride	2-seat ride
Grand Ave. Loc Stops	2-seat ride	2-seat ride	2-seat ride	1-seat ride
Grand Ave. Exp Stops	2-seat ride	2-seat ride	2-seat ride	1-seat ride
RFMP / Wal-Mart	2-seat ride	2-seat ride	2-seat ride	1-seat ride
Meadows/Target	3-seat ride	3-seat ride	2-seat ride	2-seat ride
New Castle / Silt / Rifle	3-seat ride	2-seat ride	2-seat ride	2-seat ride
Carbondale	3-seat ride	2-seat ride	3-seat ride	2-seat ride
Valley	3-seat ride	2-seat ride	3-seat ride	2-seat ride
Aspen	3-seat ride	2-seat ride	3-seat ride	2-seat ride
Snowmass	3-seat ride	2-seat ride	3-seat ride	2-seat ride
KEY:				
Green = 1-Seat Ride (Direct Service To and From this location)				
Blue = 2-Seat Ride (One transfer required To and From this location)				
Tan = 3-Seat Ride (Two transfers required To and From this location)				

Table 4-2 identifies the transfer times resulting from the current schedules when considering current RFTA Grand Hogback and ECO Gypsum schedules (also see Tables 2-3 and 2-4). Both have developed independently. As part of the implementation plan discussion is needed on how to synchronize key schedules. We have selected these two routes because:

- With the implementation of BRT in the Highway 82 corridor service will be operating frequently enough that transfer times should not be an issue.
- Projections show considerable employment base for Eagle County coming from west of Glenwood Springs so effective transfer times would be important to be able to capture this market.

At present the routes generally do not provide reasonable transfer times. What latitude does each system see for the schedules for these particular services? Both have uneven headways designed to meet passenger demands and reflect running times. While incorporating one more market into how the schedules are set could negatively impact other markets, with the frequency of service in peak periods it may be possible to provide through connections from Glenwood to Eagle or Avon that benefit all. In some cases the times are only a few minutes off; in other cases more significant changes – such as adding an earlier trip – might be needed.

Table 4-2: Scheduled Connections and Transfer Times

Eastbound				Westbound			
RFTA Arrival from Rifle	Allowing for 45 min travel time	ECO Gypsum departure	Minutes to best connection	ECO Arrival in Gypsum	Allowing 45 min travel time	RFTA Departure to Rifle	Minutes to best connection
	6:01 AM	6:46 AM				8:05 AM	
6:05 AM	6:11 AM	6:56 AM	6	7:40 AM	8:25 AM		100
	6:24 AM	7:09 AM		9:02 AM	9:47 AM	10:05 AM	12
7:05 AM	6:50 AM	7:35 AM	43	10:06 AM	10:51 AM	11:05 AM	14
7:30 AM	7:48 AM	8:33 AM	18	11:02 AM	11:47 AM		
9:05 AM	9:03 AM	9:48 AM	43	12:23 PM	1:08 PM	1:05 PM	57
9:55 AM	10:59 AM	11:44 AM	64	2:17 PM	2:02 PM		
11:55 AM	12:14 PM	12:59 PM	19	3:32 PM	4:17 PM		
12:55 PM	1:07 AM	1:52 PM	12	4:22 PM	5:07 PM	4:05 PM	62
	2:45 PM	3:30 PM		5:25 PM	6:10 PM	5:15 PM	55
3:05 PM	3:05 PM	3:50 PM	0	5:38 PM	6:23 PM	6:15 PM	8
	4:15 PM	5:00 PM		6:16 PM	7:01 PM		
4:45 PM	5:31 PM	6:16 PM	46	6:33 PM	7:18 PM		
5:45 PM				7:29:PM	8:14 PM	7:15 PM	59
6:55 PM	7:08 PM	7:53 PM	13	9:51 PM	10:36 PM		
7:55 PM				10:09 PM	11:54 PM		
8:55 PM	9:48 PM	10:33 PM	53	12:48 AM			

FARES

There are two fare issues: the amount and the transferability between systems. ECO and RFTA have fairly similar fare levels but different structures. It may be useful to look for ways to better integrate the fare systems. It is not necessary that the systems be the same, but rather that there be a way for passengers who travel on both systems to pay an equitable fare for their trips.

This section begins with a discussion of the fare systems in place today and then identifies options to consider that would integrate the two systems for riders traveling on both RFTA and ECO. **Table 4-3** compares the basic characteristics of the two systems and **Figure 4-7** illustrates the fare zones. **Tables 4.4** and **4.5** identify the estimated cost per mile for various trips, showing that the average fares for the two systems.

Table 4-3: Comparison of Fare System Characteristics

	RFTA	ECO
Fare System	Zone Fares: <ul style="list-style-type: none"> • 4 zones Glenwood Springs to Hwy 82 & Brush Ck./Aspen • 3 zones Glenwood Springs to Rifle 	Regular Routes = \$3 cash fare Premium Routes = \$5 cash fare
Fare Categories	Adult Youth (ages 6-18) Reduced Senior (age 65+) Free Infant (ages 5 and under) Free	Adult Youth (under 18) Free Senior (age 60+) / Disabled <ul style="list-style-type: none"> • Eagle Co. residents = Free annual pass • Non-residents = \$20 pass/month
Tickets and Passes	Punch Passes <ul style="list-style-type: none"> • \$14.75 for \$20 in rides • \$29.50 for \$40 in rides Monthly Passes – Calendar month <ul style="list-style-type: none"> • Grand Hogback Monthly Pass \$89 Adult / \$58 Youth • Roaring Fork Valley Monthly Pass \$148 Adult / \$81 Youth Seasonal photo passes also sold; Chamber of Commerce discounts also available	10-Ride Passes <ul style="list-style-type: none"> • Regular routes: 10 rides for \$25 • Premium routes: 10 rides for \$45 1-day unlimited rides: \$6 / \$10 3-day unlimited rides: \$15 / \$25 7-day unlimited rides: \$35 / \$60 Monthly Passes – 30-day <ul style="list-style-type: none"> • Adult: \$60 regular / \$135 premium • Senior: \$20 regular or premium

Figure 4-7: Fare Zones

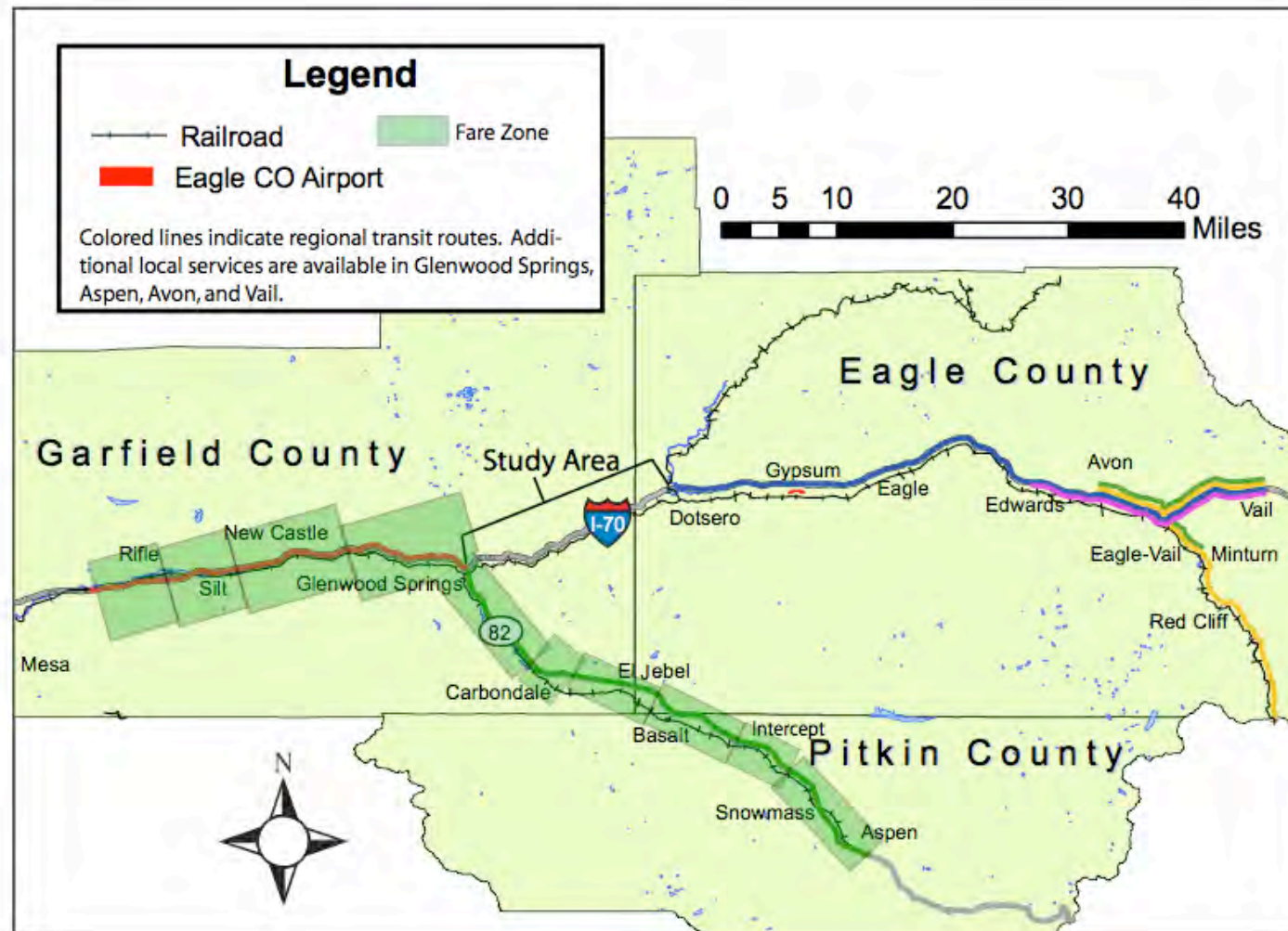


Table 4-4: RFTA Fare Zones and Cost per Mile

	Rifle	Silt	New Castle	Glenwood	Carbondale	EI Jebel	Basalt	Brush Crk/82	Snowmass	Aspen
Rifle	\$1.00	\$2.00	\$3.00	\$4.00	\$5.00	\$6.00	\$7.00	\$9.00	\$9.00	\$9.00
Silt	\$2.00	\$1.00	\$2.00	\$3.00	\$4.00	\$5.00	\$6.00	\$8.00	\$8.00	\$8.00
New Castle	\$3.00	\$2.00	\$1.00	\$2.00	\$3.00	\$4.00	\$5.00	\$7.00	\$7.00	\$7.00
Glenwood	\$4.00	\$3.00	\$2.00	\$1.00	\$2.00	\$3.00	\$4.00	\$6.00	\$6.00	\$6.00
Carbondale	\$5.00	\$4.00	\$5.00	\$2.00	\$1.00	\$2.00	\$3.00	\$5.00	\$5.00	\$5.00
EI Jebel	\$6.00	\$5.00	\$4.00	\$3.00	\$2.00	\$1.00	\$2.00	\$4.00	\$4.00	\$4.00
Basalt	\$7.00	\$6.00	\$5.00	\$4.00	\$3.00	\$2.00	\$1.00	\$3.00	\$3.00	\$3.00
Brush Crk/82	\$9.00	\$8.00	\$7.00	\$6.00	\$5.00	\$4.00	\$3.00	FREE	FREE	FREE
Snowmass	\$9.00	\$8.00	\$7.00	\$6.00	\$5.00	\$4.00	\$3.00	FREE	FREE	FREE
Aspen	\$9.00	\$8.00	\$7.00	\$6.00	\$5.00	\$4.00	\$3.00	FREE	FREE	FREE
Between adjacent fare zones fare is \$2; Youth (6-16) is \$1.00 less; Minimum fare is \$1.00; Seniors (65+) and infants (5 and under) are free.										
	Rifle	Silt	New Castle	Glenwood	Carbondale	EI Jebel	Basalt	Brush Crk/82	Snowmass	Aspen
Rifle		10	15	28	40	47	48	54	64	78
Cost per Mile		\$0.20	\$0.20	\$0.14	\$0.13	\$0.13	\$0.15	\$0.17	\$0.14	\$0.12
Silt			9	21	34	40	41	47	57	62
Cost per Mile			\$0.22	\$0.14	\$0.12	\$0.13	\$0.15	\$0.17	\$0.14	\$0.13
New Castle				13	26	32	33	39	49	53
Cost per Mile				\$0.15	\$0.12	\$0.13	\$0.15	\$0.18	\$0.14	\$0.13
Glenwood					13	19	20	26	36	41
Cost per Mile					\$0.15	\$0.16	\$0.20	\$0.23	\$0.17	\$0.15
Carbondale						9	10	16	26	31
Cost per Mile						\$0.22	\$0.30	\$0.31	\$0.19	\$0.16
EI Jebel							2	8	18	22
Cost per Mile							\$1.00	\$0.50	\$0.22	\$0.18
Basalt								6	10	21
Cost per Mile								\$0.50	\$0.30	\$0.14

Table 4-5: ECO Transit Fare per Mile

ECO Destinations	Mileage	Cost/Mile
Vail - Dotsero	43	\$0.07
Highway 6	16	\$0.19
Minturn – Vail	8	\$0.38
Minturn - Avon	9	\$0.33
Leadville - Avon	50	\$0.10
Leadville - Vail	38	\$0.13
Avon/BC - Vail	12	\$0.42

Tables 4-4 and 4-5 are based on the adult cash fare. The overall fare structures in each system appear to have an average fare of around \$0.20 per mile for typical trips. However, both systems have some oddities when one looks at the typical cost per mile for individual trips. Because ECO is not a zone or distance-based system, a rider can travel between Vail and Dotsero for a \$3.00 cash fare – or \$0.07 per mile. Routes with premium fares have around a \$0.40 cost per mile, although an individual traveling all the way from Leadville to either Avon or Vail pays much less: \$0.10 to \$0.13 per mile.

It is interesting to note that the cost per mile for Greyhound service between Vail and Glenwood Springs is \$0.30 per mile, between Glenwood Springs and Grand Junction is \$0.23 per mile, and between Grand Junction and Denver is \$0.18 per mile (all non-refundable fares).

In the RFTA system, the zone structure generally results in more even costs per mile, except that there is a boundary at both El Jebel and Basalt, so in these communities short trips are quite costly.

One decision that will need to be made is the overall cost per mile that will be charged for the connecting route. The route is estimated at 28 miles from Glenwood Springs to Gypsum. Looking at similar distances in the RFTA system, a one-way cash fare of \$3, \$4, or \$5 could be considered. The resulting cost per mile would range from \$0.11 to \$0.18 per mile.

A second item that needs to be discussed is how equitable fares can be charged for riders that need to access both systems to make the trip. Most of the route options involve transfers and it would be unrealistic to limit riders to using the Ride Glenwood service in order to access their final destination. Both systems might honor the other's passes in Glenwood Springs. For passengers traveling beyond Glenwood, special passes might be sold or a sticker might be available for monthly passes with the cost based on the additional distance traveled.

Finally, agreement will need to be reached on how fare revenue is shared based on who collects the revenue and who operates the service. This discussion will necessarily follow the decisions on fare rates and how fares are charged to riders using both systems.

RECOMMENDED ALTERNATIVE

Based on RFTA and ECO review of the alternatives and related issues, the recommended alternative is:

- Provide “Canyon Connector” bus service between the RFTA service at Roaring Fork Market Place and ECO service in Gypsum.
 - Operate approximately 18 hours per day.
 - ECO Transit operates the service with vehicles operating through service to existing locations in Eagle County so passengers can continue on traveling eastbound.
 - Provide timed transfers to service to and from communities west of Glenwood Springs via the Grand Hogback service so that the workforce living in these communities can readily get to Eagle County.
- Establish a simple cash fare of \$4 or \$5 for a one-way trip, and provide a tag or sticker that could be purchased by riders with a monthly pass that would allow them to easily travel from one system to another.

Finally, it is recommended that the Canyon Connector service be implemented in approximately 2012 – 2013 in conjunction with or shortly after the RFTA BRT is implemented and when population and employment levels are approximately those used in the demand projections for 2012-2013.

5. FINANCING AND IMPLEMENTATION

This chapter describes the operational details and steps necessary to implement the recommended Connector service.

SCHEDULE

A draft schedule has been developed for the proposed services. While it is based on existing schedules, it is understood that those schedules are likely to change between now and the time the Canyon Connector service is implemented.

The draft schedules extend from existing ECO routes, providing through transportation to and from other Eagle County locations. A total of nine one-way trips are provided in each direction – less than the 11 originally aimed for – as some service hours were needed to extend some trips beyond Dotsero to provide for effective connections. The schedules are geared towards the demand estimates in Figure 3.6 (page 33) using the “Medium Level of Transit” estimate with 60% of riders being employees. The resulting demand is 310 daily boardings or an average of 155 individual riders.

These schedules result in nine eastbound and nine westbound trips with 18 hours and 9 minutes of bus operation time. There are 17 hours and 8 minutes of service time with 8 hours and 24 minutes westbound revenue service plus 1 hour and 1 minute of recovery, and 8 hours and 44 minutes of eastbound revenue service and 60 minutes of recovery.

The nine westbound daily trips scheduled are designed to cover a variety of day-shift work trip opportunities in Glenwood Springs and a connection to Roaring Fork Valley destinations and western Garfield County destinations. Nine eastbound trips are likewise scheduled to cover day-shift work times for commuters from Glenwood Springs, and connections from Up Valley and western Garfield County.

The westbound and eastbound scheduled span of service covers the times of all Eagle County Airport departing flights, and all but the 6:35 PM (Atlanta via Delta) and 9:00 PM (Denver via United) flights.

Recovery on Dotsero or Eagle trips has been extended to Roaring Fork Market Place (RFMP) westbound, or originating at RFMP eastbound have proportionate recovery time added to account for the added running times between Eagle / Dotsero and RFMP. In addition to recovery time added to each trip in proportion to the trip’s contribution to the Vail / Eagle to Glenwood Springs or the reverse

Table 5-1: Proposed Connector Schedule, Westbound

Vail / Eagle / Dotsero / Glenwood Springs/ Roaring Fork Market Place First -year Draft Schedule							
Vail	Eagle Chambers Park n Ride	Dotsero / Hwy 6 (4 min dwell)		Glenwood Springs 6 th Street	Glenwood Springs 9 th Street	Roaring Fork Market Place	
		Existing Thru trips	New Trips				Blocking **
		522	557	622	624	632	
		622	657	722	724	732	
635		722	757	822	824	832	DNM
	844 #						
	949 #						
934	1044		1119	1144	1146	1154	DNM
	1206		1241	106	108	116	DNM
1251	159		234	259	301	309	DNM
	314 #						
259	404		439	504	506	514	
	507 #						
423	524		559	624	626	634	Garage Pull in
	558 #						
521	619		654	719	721	729	Garage Pull in
	711 #						
	935 #						
	951 #						
	1234 #						
Green: Existing Dotsero-terminating trips extended from Dotsero to Glenwood / RFMP							
Tan: Existing Eagle trip extended to Dotsero & Glenwood / RFMP							
Blue: New trips required to provide for Glenwood Springs work shifts from 630 to 800 AM							
* - All times & bus stops based on ECO and RFTA Winter 2008 / 2009 Schedules							
## -Trips marked "DNM" do not match with eastbound trips returning to Eagle and / or Vail and will require schedule adjustments to minimize bus requirements. Other trips may require smaller adjustments to allow for adequate recovery.							

Table 5-2: Proposed Connector Schedule, Eastbound

Roaring Fork Market Place / Glenwood /Springs / Dotsero / Eagle-Costco / Vail							
Roaring Fork Market Place	Glenwood Springs 9 th Street +8	Glenwood Springs 6 th Street +2	Dotsero / Hwy 6 (4 min. dwell) +31	Eagle-Chambers PnR +31	Via Run # 11 Bus Stops (Lv Dotsero 6:27 AM)	Vail Transp. Center	
				508 #			
				538 #			
456	504	506	537	608			659
546	554	556	627	658			749
				719 #			
				721 #			
635	643	645	716	747			838
753	801	803	834	906			957
				1010 #			
1054	1102	1104	1135	1206			1257
				121 #			
102	110	112	143	214			305
				344 #			
300	308	310	341	412			503
410	418	420	451	522			613
526	534	536	607	638			729
				815 #			
				1055 #			
Green: Originate existing Dotsero trips in Glenwood Springs / RFMP							
Tan: Originate existing Eagle trips in Glenwood Springs / RFMP							
* All times & bus stops based on ECO and RFTA Winter 2008 / 2009 Schedules							
# -These westbound & eastbound through-trips are available at Eagle / Chambers Park n Ride, but are not used in the schedule.							

running times, there is an “expansion joint” four-minute recovery in each direction at Dotsero. This time is to allow for moderate delays on westbound I-70 between Vail and Dotsero and eastbound in Glenwood Canyon in order to maximize on-time performance.

EXPENSES

FIXED ROUTE OPERATING COSTS

Estimated operating costs are based on the following figures:

- 18 hours per day, rounded down from 18 hours 9 minutes. This includes recovery time of almost an hour each way so it reflects more than the service hour figure. It does not cover driver report time. By the time service is started there might be some adjustments in present schedules resulting in changes to this number.
- \$96 per hour. The cost figure is rounded up from \$95.33, ECO's 2008 operating cost per service hour. This number represents the average costs rather than the marginal costs of adding the additional hours. It is recommended the marginal costs be used in the final budget, but there is no way of knowing at this point what the total level of service will be and therefore the marginal costs of adding these additional hours.
- 365 days per year, as service will be needed seven days per week.

This results in an annual operating cost of just over \$650,000 for fixed route service in the first year of operations.

PARATRANSIT OPERATING COSTS

For full day service (as opposed to commuter express services) costs for ADA paratransit services must be calculated into the cost and operating plan. While it is possible that initial service will be peak hour only, identifying paratransit costs provides a realistic assessment of what will be needed in the corridor over time.

A mix of directly operated and contracted paratransit trips is recommended. The decision on how the trips would be provided would be on a case-by-case basis, depending on paratransit trip origin and destination, and availability of a vehicle for the specific trips. It is anticipated that the Traveler, operated by Garfield County, would be contracted with for most trips. The Traveler presently provides paratransit service for RFTA, although they operate only Monday through Friday.

ECO Transit has a very low level of paratransit trips, but Glenwood Springs has a moderate amount with 500 to 600 one-way trips per month. This equates to an average of 12 to 14 individuals making a round trip each day.

Without historical experience it is difficult to know how many paratransit trips would be needed for the Canyon Connector corridor. The draft budget in the next section starts with \$22,000 and builds to \$37,000 over five years. The \$37,000 figure is anticipated to provide approximately a single one-way trip daily, or 3.5 round trips a week.

CAPITAL COSTS FOR FIXED ROUTE SERVICE

Capital costs are for two vehicles for fixed route services. No capital costs are included for paratransit service as these costs are included in the purchase of service.

The fixed route capital costs are based on round trip travel times of:

- One-hour 30-minutes round-trip to Dotsero.
- One-hour and 48 minutes to Gypsum.

Because trips are extended from existing routes, the number of vehicles required will vary, but an average requirement of two vehicles is reasonable for this service.

If standard clean diesel coaches were used, the cost would be approximately \$400,000 per vehicle or \$800,000 total. If hybrid buses are used the cost increases to \$600,000 per vehicle or \$1.2 million. Annualized over a twelve-year standard life the capital costs would range between \$33,000 and \$50,000 annually. Hybrid buses are recommended because of the significant reduction in fuel costs.

RIDERSHIP AND OPERATING REVENUES

FARE REVENUES

It is estimated that overall ridership would be in the range of 275 – 300 passengers per day initially, growing over the first two years of operation. It is anticipated that ridership would climb to around 350 passengers per day as people become familiar with the service and the employment base in the region grows.

Fares are the primary operating revenue. They are based on a cash fare of \$4 and a monthly pass of \$80. It is estimated that the 60% of employees would purchase monthly passes and the remaining 40% would pay cash. Fare calculations are illustrated in Table 5-3. They are estimated to begin at \$253,000 annually and grow to \$276,000.

Table 5-3: Fare Revenue Estimations

Item	Cash	Monthly Pass
For 275 Daily Riders	110	165
Fare Calculation	110 trips x \$4 x 30 days = \$13,200 per month	165 trips daily x 30 days = 4,950 pass rides. If each person with a pass makes 50 trips, 99 passes would be sold monthly. At \$90 per pass, \$7,290 would be generated monthly.
Annual Total	\$253,000	
For 300 Daily Riders	120	180
Fare Calculation	110 trips x \$4 x 30 days = \$14,400 per month	180 trips daily x 30 days = 5,400 pass rides. If each person with a pass makes 50 trips, 108 passes would be sold monthly. At \$90 per pass, \$8,640 would be generated monthly.
Annual Total	\$276,000	

The other potential operating revenue is from the sale of intercity bus tickets for long-distance services. The American Bus Association is now offering public transit operators providing feeder services a commission on sales of through tickets to the Greyhound network. While there is an agent in Glenwood Springs who would continue to make most sales for Glenwood Springs residents, it is recommended that both ECO Transit and RFTA participate in the program to provide through service for passengers boarding at locations other than Glenwood Springs. This way the connection from Glenwood Springs through the Roaring Fork Valley and into Eagle County will be listed on the Greyhound ticket sales page.

This is another case where there is no history so estimates are difficult. When service was operated in this corridor, it is estimated that passengers boarded between Glenwood Springs and Vail on average 4 times daily, and with connections on the BRT to the Roaring Fork Valley it is anticipated the number would increase. It is anticipated that the number would be vary a good deal by season and with peak times when employees are traveling into and out of the region or tourists are visiting. It is likely the intercity bus connections would grow over time, but an initial estimate of \$5,000 per year is used in the budget.

OTHER FUNDING SOURCES

Federal and State funds can be pursued for the capital and operating costs of this service. For State funding sources, this project is in a primary corridor and is a strategic project in the development of mass transit options in the I-70 corridor.

The capital costs are the most readily fundable, with several Federal and State sources allocated to capital. It is recommended that all Federal and State sources be pursued for the two vehicles at the match rate of 80% Federal and 20% Local funding.

Operating costs are more difficult to fund, as the State of Colorado does not at present have funding for transit operating expenses. A portion of this service may be eligible for the Section 5311 (f) intercity bus funding program. Again, it is difficult to estimate the proportion of the service that the State may be willing to fund from the intercity bus program, and it is expected to depend on the competition for these funds at the point when the application is submitted. This service will provide intercity connectivity both within the region and to the larger intercity network. Connections to the larger network may be a relatively small portion of overall ridership so an estimate of 5% is used as a starting point in the budget.

While all services are eligible for rural transportation funds (Section 5311), so are the existing services operated by these two agencies and the funding received is not close to the amount for which these agencies are eligible. As a result, no additional Section 5311 funds are identified as likely for this service.

DRAFT BUDGET

A draft budget has been prepared for this service to illustrate the order of magnitude of expenses for initiating the Canyon Connector service. This budget is based on the following assumptions:

- 18 hours of service daily, 365 days per year
- Operating costs are based on ECO Transit's 2008 costs at \$120 per hour, and the budget shows constant dollars. This cost is the average cost per hour rather than the marginal cost of providing the additional service.
- Paratransit costs are included, and are show growing over the five-year period of the plan.

- Capital costs are annualized rather than shown as a lump sum purchase. A figure of \$50,000 annually per vehicle is based on a \$600,000 hybrid bus with a 12-year useful life.
- Fares are estimated based on a \$4 cash fare and \$90 monthly pass, with 40% of riders paying with cash and 60% with monthly passes.
- ECO and RFTA will join the American Bus Association’s network of interlined providers. Initially these revenues are a small portion of the budget but are anticipated to grow over time.

There are many decisions needed to firm up a budget, and it is most logical to make these when it is closer to time to implement the service. This includes the level of service to be operated initially, whether marginal or average costs are used, the fare structure, and the type of vehicles to be purchased.

Table 5-4: Draft 5-Year Budget

CHARACTERISTIC	Year 1	Year 2	Year 3	Year 4	Year 5
Riders/year	100,000	108,000	113,000	120,000	128,000
Revenue Hours	6,570	6,570	6,570	6,570	6,570
EXPENSES					
Fixed route operating expense at \$96/hour	\$630,700	\$630,700	\$630,700	\$630,700	\$630,700
Paratransit expense	\$22,300	\$25,300	\$32,300	\$34,300	\$37,300
Subtotal Operating	\$653,000	\$656,000	\$663,000	\$665,000	\$668,000
Capital Expense – annualized	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
OPERATING REVENUES					
Fares (\$4 cash one-way)	\$253,000	\$257,600	\$262,200	\$266,800	\$276,000
ICB Ticket Sales	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Section 5311(f) federal funds	\$19,800	\$19,700	\$19,800	\$19,700	\$19,400
Local Funds (RFTA & ECO)	\$375,200	\$373,700	\$376,000	\$373,500	\$367,600
CAPITAL REVENUES					
FTA Funds	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000
Local Funds (RFTA & ECO)	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000

On an annual basis the service is expected to cost between \$650,000 and \$675,000 for operations (fixed route and paratransit) and to generate between \$260,000 and \$280,000 in operating revenues. This results in a net operating

cost of just under \$400,000, although this could be reduced if some federal intercity bus funds are received to support the service.

The local share of capital costs of (\$20,000 annually) for two buses should be added into the total expected expenses, although it is likely this would occur as a single pay-out of \$240,000 instead of 12 years at \$20,000 per year. The capital costs are based on the annualized costs of hybrid vehicles (annualized at \$50,000 per vehicle) and assumes that federal funds could be used to cover 80% of the cost of the vehicles.

OTHER IMPLEMENTATION ISSUES

A variety of implementation issues will need to be addressed by both agencies, and an intergovernmental agreement (IGA) developed that spells out how the two organizations will work together. This discussion is based on the recommendation that ECO Transit operate the service using vehicles in the ECO fleet. It is recommended that the Canyon Connector service be integrated with the regular ECO schedule, providing passengers with through service beyond Gypsum to Edwards, Avon, and Vail. It is recommended that the Canyon Connector and Grand Hogback service be scheduled with timed transfers and this is viewed as critical for building a viable route. However, the Grand Hogback route should be operated by RFTA as a separate service with a transfer connection at Roaring Fork Market Place.

COST SHARING

An important discussion point is how the costs and revenues will be shared between ECO and RFTA. It is suggested that a general agreement be reached regarding:

- What costs will be charged for the service (marginal or average).
- How the benefits would be measured for the residents and employers within the service area of each organization to guide the cost sharing over time.
- How fare revenues will be allocated to the service.

For the first year, an estimation would need to be made of the proportion paid by each agency. An annual survey of riders and actual experience with fare revenues would be used to develop the split used in the following year.

The cost sharing would also apply to capital equipment. If grants are applied for to purchase the buses for this service it is suggested that the local share be divided equally between the two organizations. A grant application might be

submitted 2-3 years before service begins and before details are worked out on the overall cost sharing arrangement.

SERVICE RELIABILITY

Operational procedures to maintain service reliability should be addressed in the IGA. There are a variety of circumstances that could arise that would affect reliability:

- Accident related problems could interrupt the schedule. In this case, would the agencies want RFTA to be able to cut in a vehicle in order to maintain the scheduled departures from Glenwood Springs? If there are weather related problems, it is unlikely that additional buses would be available to cut in as in these situations every bus available will be deployed by both systems to meet their operating requirements.
- A breakdown close to Glenwood Springs. Would the agencies want RFTA to assist in getting the vehicle back in service or in providing a back-up vehicle to maintain schedule reliability?
- A minor mechanical problem (e.g. a light bulb burns out) and is noticed in or near Glenwood Springs. Would the agencies want the driver to return to Gypsum or get assistance from RFTA in Glenwood Springs?
- A driver becomes ill and is unable to complete the shift. Again, if this occurs near Glenwood, what latitude would the agencies want to handle the situation?

While most of these situations will need to be addressed on a case-by-case basis, what needs to be in place if the agencies want to have the latitude of having a mechanic or a driver from RFTA assist with moving a disabled vehicle, making minor repairs, or operating an ECO bus in service? The insurance policies of each organization will need to be considered in making this decision.

COMMUNICATIONS

Maintaining radio communications through Glenwood Canyon can be difficult because of the twisting and turning canyon walls. Both ECO Transit's radio system and cell phone coverage should be checked in the canyon to determine if one or both systems will be needed for adequate coverage. It is recommended that all communications go through the ECO dispatcher. It is not anticipated that direct communication to RFTA will be necessary.

FACILITIES

The facility at Roaring Fork Market Place that will serve as the end-of the-line for RFTA's BRT should be designed with adequate room for the Canyon Connector buses, arriving at the same time as the Grand Hogback buses. Layover time is scheduled at this facility so space needs to be available for the layover.

Similarly, the transit center planned for Gypsum should include room for the Canyon Connector.

RFTA and ECO staff identified the potential for Garfield or Pitkin County residents to use the route terminus parking lot to leave their car and travel to Eagle County Airport. It is anticipated that Eagle County Airport will begin charging for parking before this connecting service would begin. This might require posting "No Overnight Parking" signs or assuring there is adequate parking.

PARATRANSIT SERVICE

If paratransit services are contracted out to The Traveler, an agreement for services will be needed that identifies what services the Traveler will provide, how trips will be scheduled, and the cost of the trip for ECO Transit and for the rider.

CONCLUSION

The implementation plan presented in this chapter is based on the assumptions identified and the current schedules operated by ECO Transit. It presents a viable plan, and identifies the IGA and agreement for paratransit that would need to be developed.

The service is not anticipated to begin until 2012, so this allows time to submit grants for and procure vehicles, work through operational issues, and develop both facilities and schedules in both systems with an eye towards implementation of the Canyon Connector.