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Transit and Park and Ride Expansion Assessment

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Purpose and Scope

The purpose of this document is to consider the costs and benefits of implementing local transit systems and/or park and rides to address capacity issues at BRT stations. This report focuses mostly on transit options and costs for Carbondale, El Jebel and Basalt, as these Towns do not have full-fledged transit systems akin to Glenwood Springs, Aspen and Snowmass Village. However, this information is applicable to other parts of RFTA's service area, and the report can be modified to be more specific to other municipalities.

This is not intended to be a comprehensive or specific analysis or a recommendation. Costs and assumptions are conceptual.

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Local Transit System Costs

RFTA's Operations Department developed the following preferred option, which maintains the current Carbondale cicrculator system operating between downtown and the park and ride, and integrates the VeclociFeeder Route which was analyzed in the ***Midvalley Local Transit Service Feasibility Study***, conducted by LSC Associated in 2011.

The cost estimates herein assume the Velocifeeder operating on 30-minute headways.

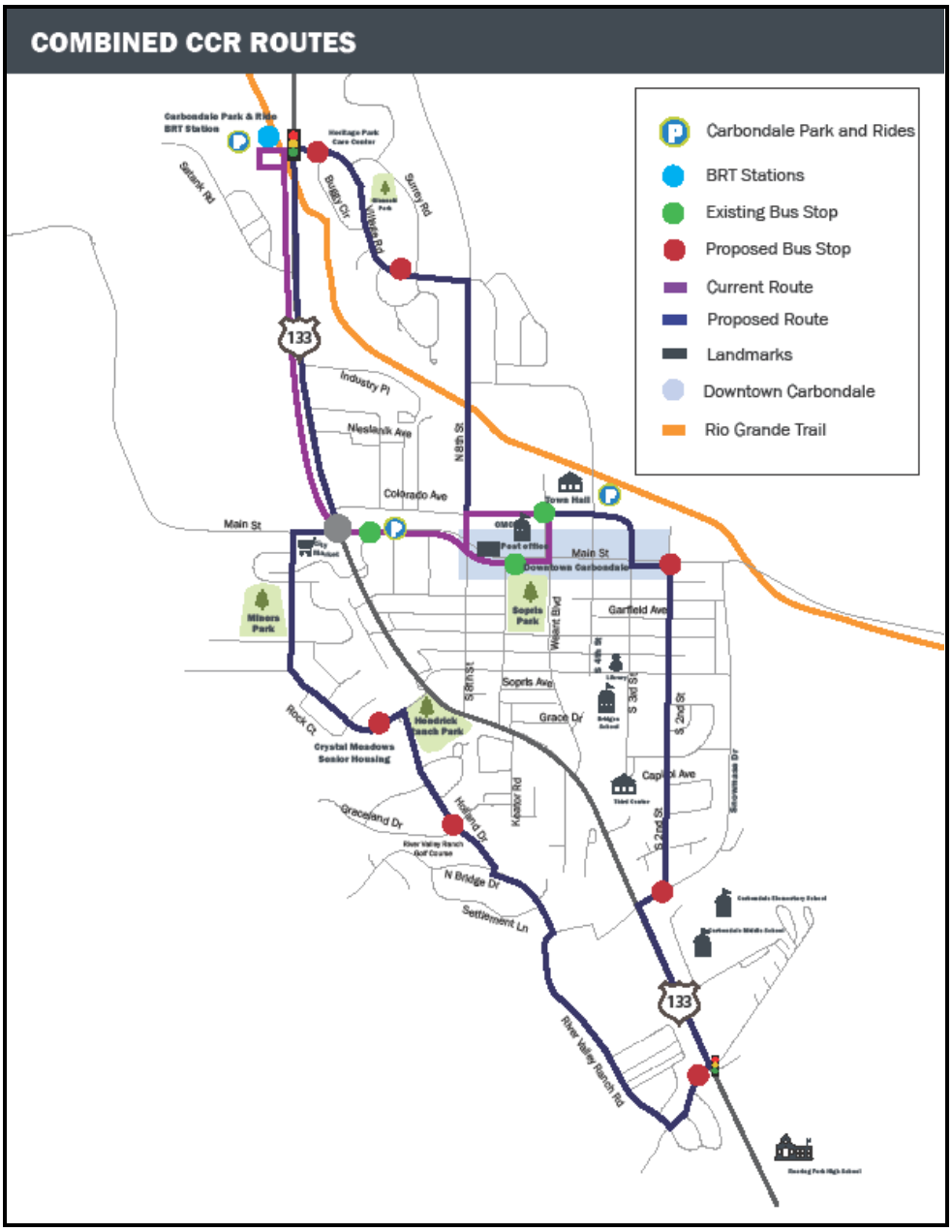

Figure 1: Carbondale Transit Option

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Miles and Hours Calculations and Cost Estimates

The following miles and hours evaluations are combined with RFTA's cost allocation model to develop cost estimates for the service.

Existing Carbondale Circulator (starting from Glenwood Maintenance Facility, 15-minute headways)

Table 1: Existing Carbondale Circulator Mileage and Hours Estimates*

Season	Number of Days	Miles/Day	Hours/Day	Total Miles	Total Hours
Winter	122	185.02	20.0	22,572	2,440
Spring (M-F)	45	178.20	19.25	8,019	866
Summer	87	182.67	19.75	15,892	1,718
Fall (M-F)	57	178.20	19.25	10,157	1,097
Fall Shoulder	16	178.20	19.25	2,851	308
Current Total (327 days)	**327**	--	--	**59,491**	**6,429**
Add Spring/Fall Sat/Sun	*38*	*178.2*	*19.25*	*6,771*	*731*
Total (daily)	***365***	--	--	***66,262***	***7,160***

*Starting from Glenwood Maintenance Facility, 15-minute Headways

Table 2: Proposed VelociFeeder Mileage and Hours Estimates*

Season	Number of Days	Miles/Day	Hours/Day	Total Miles	Total Hours
Winter	122	157.4	18.00	19,202	2,196
Spring (M-F)	45	157.4	18.00	7,083	810
Summer	87	157.4	18.00	13,694	1,566
Fall (M-F)	57	157.4	18.00	8,972	1,026
Fall Shoulder	16	157.4	18.00	2,519	288
Total (327 days)	**327**	--	--	**51,470**	**5,886**
Add Spring/Fall Sat/Sun	*38*	*157.4*	*17.92*	*5,981*	*684*
Total (daily)	***365***	--	--	***57,451***	***6,570***

*Starting Carbondale Facility, 30-min headways, 5:00 a.m. – 9:15 p.m.

Table 3: Cost Estimate – VelociFeeder

Option	Cost/ Mile	Cost/ Hour	Total Miles	Total Hours	Estimated Cost
327 Days	$7.12	$62.28	51,470	5,886	$418,057
365 Days	$6.97	$60.92	57,451	6,570	$457,702

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Basalt Options

Basalt Preferred Option – Mid-Valley Connector

RFTA's Operations Department developed the following preferred option, which balances the need for increased transit accessibility through the Town of Basalt with integration with RFTA's existing routes and schedules.

The recommendation, shown below, is called the ***Mid-Valley Connector***. This would require 2 buses each running on 60 minute headways. The route is shown on the following page.

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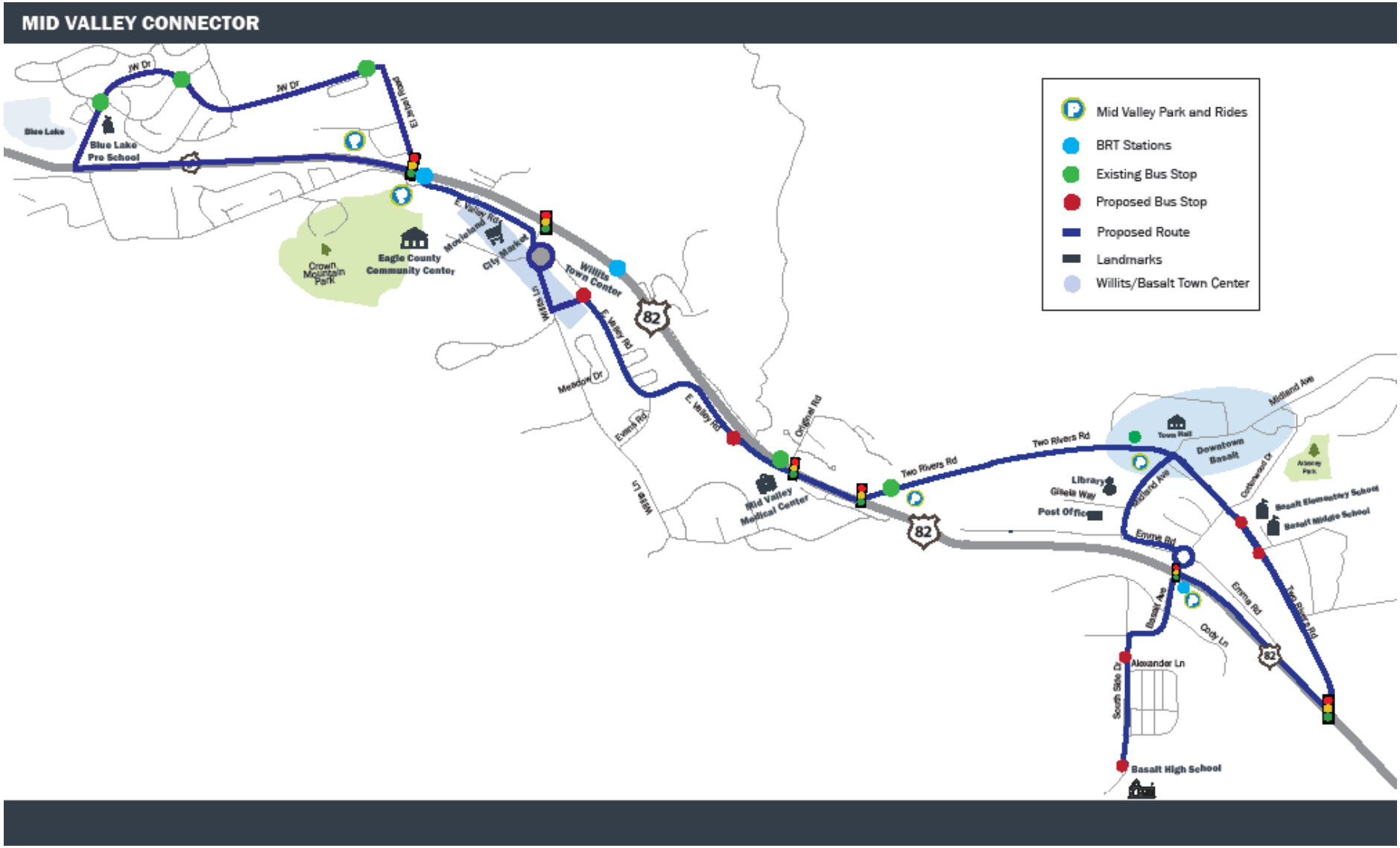

Figure 2: Mid-Valley Connector Alternative

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Miles and Hours Calculations

The following miles and hours evaluations are combined with RFTA's cost allocation model to develop cost estimates for the service.

Table 4: Mileage and Hours Estimate - Modified Linked Basalt Route

Season	Number of Days	Miles/Day	Hours/Day	Total Miles	Total Hours
Winter	122	649.0	39.17	79,178	4,779
Spring (M-F)	45	649.0	39.17	29,205	1,763
Summer	87	649.0	39.17	56,463	3,408
Fall (M-F)	57	649.0	39.17	36,993	2,233
Fall Shoulder	16	649.0	39.17	10,384	627
Total (327 Days)	**327**	**--**	**--**	**212,223**	**12,810**
Add Spring/Fall Wknd	*38*	*649.0*	39.17	*24,662*	*1,488*
Total (365 Days)	***365***	**--**	**--**	***236,885***	***14,298***

*Starting from AMF, 2 buses, 30-minute headways together, 5:00 a.m. – 9:00 p.m.

Table 5: Cost Estimate - Modified Linked Basalt Route

Option	Cost/ Mile	Cost/ Hour	Total Miles	Total Hours	Estimated Cost
327 Days	$4.24	$70.27	212,223	12,810	$1,112,386
365 Days	$4.16	$68.97	236,885	14,298	$1,223,022

Capital Cost Impacts

In addition to operating costs, a number of other capital costs must be considered.

Bus Stops

Average conceptual cost per stop is estimated at $50,000. Minimum requirements and optional amentities are likely to include:

- Shelter
- Bench
- Boarding/Waiting Area
- Grabage container
- Lighting
- Bicycle
- Concrete pad for shelter and for bus staging
- Bus pullout and tapers (concrete, curb and gutter)

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Table 6: Capital Cost Estimates - New/Improved Bus Stops

Route	New/ Improved Stops	Cost	Buses	Cost	Total
VelociFeeder	8	$400,000	1 + 1 spare	$200,000	$600,000
Modified Linked Basalt	12	$600,000	3 + 1 spare	$400,000	$1,000,000

Parking and Accessibility Analysis

The purpose of this section is to discuss parking options and opportunities. The table below outlines conceptual costs and benefits of various parking options:

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Table 7: General Parking Strategies - Costs and Benefits

Parking Option	Cost/ Space (Capital)	Cost/Space (O&M)	Advantages	Disadvantages
Shared Parking	$0 - $1000/year	Low - ($0 -$300) Will require snowplowing, sweeping, landscape maintenance, striping, crack filling	--potentially least expensive --highly flexible and efficient to implement	--renting or leasing may be considered a lost opportunity --land is impermanent --may or may not be located close to existing BRT station --could result in conflicts between existing patrons and bus passengers
Surface Parking Improvements (new, leased)	$2,000-$10,000 (assumes some improvements will be required)	Low - ($0 -$300)	--moderate cost --relatively expedient process --ability to improve existing conditions	--renting or leasing may be considered a lost opportunity --land is impermanent --may or may not be located close to existing BRT station
Surface Parking (new, fee simple ownership)	$25,000-$35,000 (based on last 3 years of property acquisition and construction)	Low - ($0 -$300)	--less expensive than structured parking --relatively permanent, compared to improving existing surface parking	--expensive --requires extensive design, entitlement, permitting, and construction process --inefficient and unattractive use of land --increasingly difficult to find land, especially close to existing BRT
Structured – above grade, existing	$25,000-$35,000	Med/High - ($300-500?) Will require building maintenance, cleaning, and parking operations if it is paid parking	--may be cost equivalent to new surface parking --more efficient use of land than surface parking --opportunities for creative development and partnerships at BRT stations	--expensive capital and O&M costs --still requires extensive design, entitlement, permitting, and construction process --development opportunities and creative partnerships are new territory and of unknown cost/benefit

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Structured—above grade, new	$35,000-$55,000	Med/High - ($300-$500?)	--more efficient use of land than surface parking --opportunities for creative development and partnerships at BRT stations	--expensive capital and O&M costs --requires extensive design, entitlement, permitting, and construction process --increasingly difficult to find land, especially close to existing BRT stations --development opportunities and creative partnerships are new territory and of unknown cost/benefit
Structured – below grade, existing PNR	$55,000 - $85,000	High - ($750+?) Will require building maintenance, cleaning, lighting electric, HVAC and parking management (if paid parking)	--most efficient use of land --least visually obtrusive --opportunities for creative development and partnerships at BRT stations	--expensive capital and O&M costs --requires extensive design, entitlement, permitting, and construction process --development opportunities and creative partnerships are new territory and of unknown cost/benefit
Structured – below grade, new	$70,000-$100,000+	High - ($750+?)	--most efficient use of land --least visually obtrusive --opportunities for creative development and partnerships at BRT stations	-expensive capital and O&M costs --requires extensive design, entitlement, permitting, and construction process --development opportunities and creative partnerships are new territory and of unknown cost/benefit --increasingly difficult to find land, especially close to existing BRT stations

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Summary of Options and Costs

The table below compares capital and operating costs of the parking and transit options discussed herein.

Option	Capital Cost	Operating Cost (Annual)	20-year Average
Carbondale Transit System	$600,000	$450,000	$480,000
Basalt Transit System	$1,000,000	$1,200,000	$1,250,000
Leased Parking, Improve Existing Parking, or Shared Parking 70-spaces	$35,000 ($5,000/space)	$14,000 ($200/space)	$15,750
Surface Parking (new) 70-spaces	$1,800,000 ($30,000/space)	$14,000 ($200/space)	$104,000
Structured Parking (Existing)	$1,800,000 ($30,000/space	$28,000 ($400/ space)	$118,000
Structured Parking (new) 70-spaces	$3,150,000 ($45,000/space)	$28,000 ($400/space)	$185,500
Underground Parking, Existing PNR 70-spaces	$4,900,000 ($70,000/space)	$52,500 ($750/space)	$297,500
Underground Parking, New 70-spaces	$6,000,000 ($85,000/space)	$52,500 ($750/space)	$352,500

Implementation Process Requirements

In addition to cost, communities should consider the challenges of the land use process. If local transit systems are implemented, the authorizing jurisdictions will own and operate the local bus system, fleet and bus stops. The towns can operate the systems on their own (similar to what Town of Snowmass Village does), or they can contract with RFTA or another provider to operate the service and/or maintain the fleet and facilities.

The majority of stops will be new, and each stop will require some degree of planning process, design and construction. It is best that the Towns plan, design, and construct the stops under their local processes and to their specifications, while paying particular attention to ADA and other State and Federal requirements. These requirements must be addressed if the Towns intend to apply for Federal or State grants or to contract with transit operators that are subject to such regulations.

Similarly, Towns should also be aware of the extensive entitlements processes that may be involved with expanding surface parking or constructing structured parking. Surface parking is less expensive to

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construct and maintain than parking structures, but it can be considered unattractive, and it competes with other land uses, especially in regions such as the Roaring Fork valley where land is scarce.

In appreciation of the region's desire to promote compact mixed-use development and reduce sprawl, structured parking may be more attractive, especially in conjunction with mixed-use development; however, Towns need to consider how this development complements and/or competes with existing development and how it conforms with long-range goals. These issues can complicate the entitlements process.

Funding

Most of these options will require public investment. The most common forms of public investment are sales and/or use tax and property tax. The following tables outline the estimated amount of tax generated by the Towns of Carbondale and Basalt:

Sales Tax Generation

Table 8: Sales Tax Generation Estimates

Town	Budget Year	Sales/Use Tax Generated -Pitkin	Tax Rate	Tax Generated per 1/10%
Basalt	2014	$5,657,519	3.00%	$188,584
Carbondale	2014	$3,379,222	3.50%	$96,549

Property Tax Generation

Table 9: Property Tax Generation Estimates -Basalt

Budget Year 2015	General Operating Expense Levy	Valuation	Revenues	Revenues/Mill
Pitkin County	5.8020 Mills	$46,373,670	269,079	$46,377
Eagle County	5.8020 Mills	$89,910,840	$521,699	$89,917
			Average	**$68,147**

Table 10: Property Tax Generation Estimates - Carbondale

Budget Year 2014	Street Scape Fund	Revenues	Revenues/Mill
Garfield County	1.5 Mills	153,500	$102,333

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Summary and Conclusions

The following table outlines 20-year average costs and the ability of each source to generate the income needed.

Table 11: Funding Analysis of Parking and Transit Options

Option	20-year Average Cost	Sales Tax Needed-Carbondale	Sales Tax Needed - Basalt	Property Tax Needed - Carbondale	Property Tax Needed-Basalt
Carbondale Transit System	$480,000	.5%	--	4.7	--
Basalt Transit System	$1,250,000	--	.66%	--	18.3
Leased Parking, Improve Existing Parking, or Shared Parking 70-spaces	$15,750	.016%	.008%	.15	.23
Surface Parking (new) 70-spaces	$104,000	.11%	.06%	1.0	1.52
Structured Parking (Existing)	$118,000	.12%	.06%	1.15	1.73
Structured Parking (new) 70-spaces	$185,500	.19%	.1%	1.81	2.7
Underground Parking, Existing PNR 70-spaces	$297,500	.3%	.16%	2.91	4.37
Underground Parking, New 70-spaces	$352,500	.36%	.19%	3.44	5.17