

Elected Officials Transportation Committee (EOTC)

Thursday, October 20 2016 - 4pm

*Location-Snowmass City Hall-Council Chambers
Snowmass to Host and Chair Meeting*

- 4:00 - 4:10 REVIEW OF DECISIONS REACHED AT THE JULY 21, 2016 MEETING** page 1
John D. Krueger-City of Aspen
- 4:10 - 4:20 PUBLIC COMMENT – Regarding Any Item Not on the Agenda**
(Comments limited to three minutes per person)
- 4:20 - 4:30 CONFIRMATION OF 2017 MEETING DATES** page 4
John D. Krueger-City of Aspen
Decision Needed: Confirmation of 2017 Meeting Dates
- 4:30 – 5:30 2017 BUDGET & MULTI-YEAR PLAN** page 5
Tom Oken - Pitkin County
Decision Needed: Approval of the 2017 Budget and Multi-Year Plan
- NEW FUNDING REQUEST 2017** page 9
WE-cycle Funding Request-Mirte Mallory-WE-cycle
- POTENTIAL FUTURE PROJECTS** page 15
Brush Creek Park N Ride & Buttermilk Underpass Brian Pettet-Pitkin County
- 5:30 – 6:00 UPPER VALLEY MOBILITY STUDY** page 17
Joe Kracum and Phil Hoffman- Parsons
Decision Needed: None-Information Only
- 6:00 – 6:15 UPDATES** page 57
- Basalt Underpass Project-G.R. Fielding-Pitkin County
 - RFTA Update-David Johnson-RFTA
- 6:15 – 6:30 FUTURE AGENDA ITEMS**

ELECTED OFFICIALS TRANSPORTATION COMMITTEE (EOTC)

July 21, 2016

Aspen-Council Chambers
Pitkin County - Host & Chair

AGREEMENTS & DECISIONS REACHED

Elected Officials in Attendance:

Aspen - 4

Steve Skadron
Adam Frisch
Ann Mullins
Bert Myrin

Pitkin County - 4

Steve Child
Michael Owsley
George Newman
Patti Clapper

TOSV - 4

Markey Butler
Alyssa Shenk
Bill Madsen
Bob Sirkus

Absent:

Aspen:
Pitkin County:
Snowmass:

Art Daly
Rachel Richards
Tom Goode

Agreements & Decisions Reached:

I. REVIEW OF DECISIONS REACHED AT THE JULY 21, 2016 MEETING

John D. Krueger-City of Aspen

No comments were made.

II. PUBLIC COMMENT

Justin Erickson provided an update on the Tough Mudder event coming up in Snowmass. Tony Kronberg asked a question about the Entrance to Aspen Study. She also thanked CDOT for safety improvements in Snowmass Canyon and Smith Hill Road. Thanked the City of Aspen for implementing the Downtowner, the Entrance to Aspen Study and living lab.

III. CONFIRMATION OF THE OCTOBER 20, 2016 MEETING DATE

John D. Krueger-City of Aspen

Decision Reached: The October 20, 2016 meeting date was confirmed.

IV. 2016 BUDGET & MULTI-YEAR PLAN UPDATE

Tom Oken & Brian Pettet-Pitkin County

Decisions Reached: None-Information only.

Tom Oken provided an update and review of the 2016 budget and multi-year plan. The budget included 2105 actuals and year to date numbers for revenue/sources and expenditures/uses. The revenues came in higher than expected for 2015.

The budget also included two new funding requests. The Entrance to Aspen Study in the amount of \$414,000 and the Cell phone data collection project for \$80,000. The SKICO will contribute \$10,000 to the cell phone study making the net expenditure to the EOTC \$70,000.

V. BRUSH CRREK PARK N RIDE PROJECT UPDATE

Brian Pettet-Pitkin County

Decision Reached: None-Information Only.

Brian Pettet presented an update on the FLAP grant pending for the project in the amount of \$1.9 million. The EOTC will need to provide matching funds in order to complete the project. The grant award should be made later in the fall. The outlook is good that the grant will be awarded for the project.

VI. ENTRANCE TO ASPEN TRANSPORTATION OPTIONS STUDY

John D. Krueger-City of Aspen

Dan Blankenship-RFTA

Randy Ready-City of Aspen

Ralph Trapani-Parsons

Decision Reached: Approval of Funding request in the amount of \$500,000 for the smaller scope study for the Upper Valley Mobility Study.

John Krueger introduced the agenda item. Dan Blankenship provided a RFTA overview, long range forecast and the context of how the Entrance to Aspen study will supplement the Integrated Transportation System Plan (ITSP) being performed by RFTA. Randy Ready provided an overview of the Entrance to Aspen and an outline of improvements implemented or considered.

Ralph Trapani-Parsons-presented the Entrance to Aspen Transportation Option Study to the EOTC. The study was changed in name by the EOTC to the "Upper Valley Mobility Study" (UVMS). Ralph presented two options to the EOTC for consideration. A smaller scope of work study and a larger scope of work study. The EOTC approved the smaller scope of work study at a budget of \$414,000. The study purpose is to "conduct an analysis of a fixed guideway (light rail) transit connection vs the forecasted bus rapid transit system (BRT) in regards to ridership, capital expenditures and operations and maintenance costs from Brush Creek to Rubey Park, Aspen."

Ralph also presented a summary of the Air Sage Study and explained how it will work. The EOTC approved the funding request for the Air Sage Study in the amount of \$80,000 including a \$10,000 contribution from the Aspen Skiing Company. The net expenditure to the EOTC will be \$70,000. The study will include the Snowmass area.

Both requests will be funded from the Aspen Area Savings fund in the EOTC budget. Both of these supplemental funding requests were subsequently approved by each of the jurisdictions by resolution as required.

EOTC VOTE: Approved

Aspen	3-1 yes	(Bert Myrin = no)
Pitkin County	4-0 yes	
Snowmass	4-0 yes	

VII. UPDATES

Verbal updates were provided on the following topics at the meeting:

- Rubey Park Transit Facility Renovation - John D. Krueger-City of Aspen
- Glenwood Springs Project-Tom Newland
- Basalt Underpass Project – Brian Pettet-Pitkin County

MEMORANDUM

TO: The Elected Officials Transportation Committee (EOTC)
FR: John D. Krueger, City Of Aspen
Meeting Date: October 20, 2016
RE: 2017 EOTC Meeting Dates

Decision Needed: Confirmation of 2017 meeting dates

In 2016 the EOTC met two times.

- July 21, 2016
- October 20, 2016

Staff is proposing the following meeting dates for 2017. All meetings to begin at 4pm.

- February 16, 2017 Pitkin County-Host & Chair
- June 15, 2017 Snowmass-Host & Chair
- October 19, 2017 Aspen-Host & Chair

*In addition, some "Special Meetings" may be needed to address the Upper Valley Mobility Study.

- January 19, 2017 Special Meeting Status Report UVMS-Air Sage Data

AGENDA ITEM SUMMARY

TO: Elected Officials Transportation Committee (EOTC)
FROM: Tom Oken, Pitkin County Treasurer
MEETING DATE: October 20, 2016
SUBJECT: Proposed 2017 Budget & Multi-Year Plan

Attached for review and approval at your meeting is the Proposed 2017 Budget & Multi-Year Plan. Some of the line items for the Proposed 2017 Budget are discussed below. See the attached memos for an explanation of other line items and new requests.

Funding Sources

a) Pitkin County 1/2% sales tax - \$5,159,000

After increasing 7.9% in 2015 we are projecting a 3.0% increase for this year, 2.5% for 2017 and 2018, and then 3.25% annually for 2019-2021. These are the County's formal projections developed in conjunction with its Financial Advisory Board.

b) Pitkin County 1/2% use tax - \$1,225,000

Use tax collections on building materials and vehicles rebounded strongly in 2014 and 2015 with increases of 24% and 45%. We expect collections to cool off this year and next (-11.6% and -5.3%) and to increase by 3% annually thereafter.

c) Investment income - \$60,000

We are forecasting an investment earnings rate of 0.7% for 2016 and then a slow rise in rates from 1.1% in 2017 to 1.5% by 2021. Again, these are the County's formal projections developed in conjunction with its Financial Advisory Board. Invested fund balances vary from year to year and in conjunction with increasing interest rates produce a wide range of forecast investment income (from \$60,000 in 2017 to \$140,000 in 2021).

Funding Uses

1) Use tax collection costs - \$56,257

The proposed budget includes the county's administrative costs of collection and some contracted auditing.

2) Administrative cost allocation and meeting costs - \$24,394

The proposed budget is composed of \$12,768 administrative overhead (accounting and auditing), \$8,626 insurance, and \$3,000 purchased services (for video recording and broadcast of meetings and other meeting support services).

3) Cab ride in lieu of bus stop safety improvements - \$6,000; see attached memo.

4) X-Games transit subsidy - \$115,000

This budget is paid to RFTA to help fund transit services for the X-Games and was previously approved for several years.

5) Brush Creek Intercept Lot operating costs - \$30,000

The City of Aspen's Parking Department manages the parking area of the Brush Creek Park-N-Ride Lot for the EOTC per the Intergovernmental Agreement. No staff cost for parking enforcement or management of the lot is included. See attached memo for details.

6) RFTA contribution (81.04% of 1/2% sales tax) - \$4,180,854

By intergovernmental agreement and voter approval, 81.04% of the half-cent sales tax (but not use tax) is committed to RFTA.

7) No-fare Aspen-Snowmass-Woody Creek bus service subsidy - \$615,726

Last year we agreed with RFTA to set this subsidy at 36.7% of the actual costs two years prior to the year being budgeted. Thus, the \$615,726 budget (and amount to be paid) for 2017 is 36.7% of the actual cost for 2015.

8) Grand Ave Bridge construction – transit mitigation funding - \$335,000

This payment to RFTA to provide increased service during construction was approved last year.

16) WE-cycle operational support and no-fare passes for residents and workers – \$175,000

See attached memo. This is a new request that will be considered separately from the above items which constitute the base budget for 2017.

17) Brush Creek Park N Ride improvements (FLAP grant) - \$2,000,000

and 18) Buttermilk pedestrian crossing design & preliminary engineering - \$800,000

These are potential future projects that are shown in 2018 for planning purposes and to assess their potential financial impact. These are not 2017 budget requests and no action is needed other than a discussion with staff. See separate memo on the Brush Creek lot improvements.

Financial Planning Policy and Distribution of Annual Surplus

The following policy statement emerged from the June 2014 EOTC retreat:

- The no-fare service will now be “above the line” in the budget and multi-year plan.
- The “lockboxes” will be replaced with “savings funds:”
 - The Aspen Transportation Savings Fund will replace the Entrance-To-Aspen lockbox and be targeted for mass transportation projects in the greater Aspen area.
 - The Snowmass Village Transportation Savings Fund will replace the SV Transit Center lockbox and be targeted for mass transportation projects in the greater Snowmass area.
- At any time, a member government may bring forward a capital project for consideration with a request for funding from either or both Savings Funds. The EOTC will determine whether to fund the project and from what source on an individual case basis.
- After funding the “above-the-line” items, 25% of the remaining annual revenue will add to the Snowmass Village Transportation Savings Fund until it is restored to \$6,278,787. The remaining revenue will add to the Aspen Transportation Savings Fund.

2017 EOTC BUDGET AND MULTI-YEAR PLAN

EOTC Transit Project Funding	Actual	<i>Estimate or</i> Budget	Proposed Budget	Plan	Plan	Plan	Plan
	2015	2016	2017	2018	2019	2020	2021
FUNDING SOURCES:							
a) Pitkin County 1/2% sales tax	4,929,637	5,033,000	5,159,000	5,288,000	5,460,000	5,637,000	5,820,000
b) Pitkin County 1/2% use tax	1,462,424	1,293,000	1,225,000	1,262,000	1,300,000	1,339,000	1,379,000
c) Investment income & misc.	56,747	79,000	60,000	83,000	75,000	101,000	140,000
Total Funding Sources	6,448,808	6,405,000	6,444,000	6,633,000	6,835,000	7,077,000	7,339,000
FUNDING USES:							
1) Use tax collection costs	63,538	70,432	56,257	57,945	59,683	61,474	63,318
2) Administrative cost allocation & meeting costs	21,383	21,311	24,394	25,126	25,880	26,656	27,456
3) Cab ride in-lieu of bus stop safety imprvs	3,561	9,000	6,000	6,000	6,000	6,000	6,000
4) X-Games transit subsidy	115,000	115,000	115,000	115,000	115,000	115,000	115,000
5) Brush Creek Intercept Lot operating costs	15,046	36,000	30,000	30,900	31,800	32,800	33,800
6) RFTA contribution (81.04% of 1/2% sales tax)	3,994,977	4,078,743	4,180,854	4,285,395	4,424,784	4,568,225	4,716,528
7) No-fare Aspen-Snowmass-Woody Creek bus service - year-round	621,658	621,658	615,726	640,400	666,000	692,600	720,300
8) Grand Ave Bridge construction - transit mitigation funding			335,000				
9) Buttermilk lot paving	233,007	46,993					
10) Valley parking study - RFP scoping	7,957						
11) Basalt pedestrian underpass		750,000					
<u>Projects funded from Savings for greater Aspen Area</u>							
12) Rubey Park final design, land use & permitting	142,292	16,078					
13) Rubey Park construction	4,168,777	731,223					
14) Entrance-to-Aspen transportation options study		414,004					
15) Cell phone transportation data collection		70,000					
New Budget Request							
16) WE-cycle operational support and no-fare passes for residents and workers			175,000				
<u>Possible future projects</u>							
17) Brush Creek Park N Ride improvements (FLAP grant)				2,000,000			
18) Buttermilk pedestrian crossing design & preliminary engineering				800,000			
Total Uses	9,387,196	6,980,442	5,538,231	7,960,766	5,329,147	5,502,755	5,682,401
EOTC ANNUAL SURPLUS/(DEFICIT)	(2,938,388)	(575,442)	905,769	(1,327,766)	1,505,853	1,574,245	1,656,599
EOTC CUMULATIVE SURPLUS FUND BALANCE	7,225,318	6,649,876	7,555,645	6,227,879	7,733,733	9,307,978	10,964,577

Revenue projections:							
a) sales tax	7.9%	2.1%	2.5%	2.5%	3.25%	3.25%	3.25%
b) use tax	44.9%	-11.6%	-5.3%	3.0%	3.0%	3.0%	3.0%
c) investment earnings rate	0.5%	0.7%	0.9%	1.1%	1.2%	1.3%	1.5%

2017 EOTC BUDGET AND MULTI-YEAR PLAN

	Actual 2015	Estimate or Budget 2016	Proposed Budget 2017	Plan 2018	Plan 2019	Plan 2020	Plan 2021
DISTRIBUTION OF ANNUAL SURPLUS							
(excludes projects funded from savings funds)	1,372,681	655,863	905,769	(1,327,766)	1,505,853	1,574,245	1,656,599
25% to Snowmass Village Savings until restored to \$6,278,787	343,170	163,966	226,442	(331,941)	376,463	246,883	-
remainder to Aspen Savings	1,029,511	491,897	679,327	(995,824)	1,129,390	1,327,363	1,656,599

Savings Fund for greater Snowmass Village Area							
plus reimbursement of advance to capital pool	343,170	163,966	226,442	(331,941)	376,463	246,883	-
Savings Fund for greater Snowmass Village Area (\$6,278,787 max)	5,596,974	5,760,940	5,987,382	5,655,441	6,031,904	6,278,787	6,278,787

Savings Fund for greater Aspen Area							
Annual surplus remaining after reimbursement of advances	-	381,642	679,327	(995,824)	1,129,390	1,327,363	1,656,599
plus reimbursement for \$250,000 pedestrian crossing funding	114,783	-					
plus reimbursement of advance to capital pool	914,728	110,255					
less Rubey Park funded from Aspen Savings	(4,311,069)	(747,301)					
less ETA and cell phone study funded from Aspen Savings		(484,004)					
Savings Fund for greater Aspen Area	1,628,344	888,936	1,568,263	572,439	1,701,829	3,029,191	4,685,790

Advances from Aspen and Snowmass Village Savings Funds							
remaining balance to reimburse Snowmass Savings for advance to capital pool	681,813	517,847	291,405	623,346	246,883	-	-
remaining balance to reimburse Aspen Savings for advance to capital pool	110,255	-	-	-	-	-	-



TO: Elected Official Transportation Committee (EOTC)
FROM: Mirte Mallory, WE-cycle, Co-Founder and Director
DATE OF MEETING: October 10, 2016
RE: 2017 Regional Bike Share Operating Investment

REQUEST OF EOTC:

WE-cycle, the Roaring Fork Valley’s bike share system, currently operates 190 bikes and 43 stations in Aspen, Basalt, Willits, and El Jebel and serves 1,250 Season Passholders. Year to date, WE-cyclers in Aspen have completed over 30,000 rides, a 54% increase over 2015, and riders in Basalt have completed over 5,000 rides in its inaugural season.

WE-cycle effectively serves as a complementary mass transit service by serving the first/last mile connection to the region’s fixed-route RFTA service. Bike share performs a distinct role in the region’s multi-modal transportation system by offering riders a convenient, user-driven, and on-demand mode of travel in which they can check out a bike at one station and return it to another station, 24/7.

WE-cycle respectfully submits a financial request of \$175,000 to the EOTC for operational support for 2017. The funds will be used for two purposes. First, they will support a portion of day to day operations so WE-cycle can provide reliable and safe service. Secondly, they will fund a No-Fare Season Pass Experiment in which those who live or work in the City of Aspen, Pitkin County, or Snowmass Village receive “no-fare” WE-cycle Season Passes such that they can use bike share at their discretion thereby lowering the barriers for participation.¹

ALIGNMENT WITH EOTC OBJECTIVES:

No-Fare Transit Paradigm

The EOTC and the jurisdictions of Aspen and Snowmass Village, have set a successful precedent in which they have increased transit ridership, and reduced traffic congestion, by offering services at “no-fare” to riders. Routes include the EOTC funded Aspen-Snowmass RFTA route, the in-town City of Aspen RFTA routes and the Downtowner, and Snowmass Village’s Village Shuttle. Aligning WE-cycle as a “no-fare” service with these other short-haul transit routes will allow riders to seamlessly transition from one mode of travel to another without the added friction of needing to purchase a pass. Consistency in fare structures reduces the intimidation factor of using mass transit by minimizing the complexities and nuances of one mode vs another. Expanding the support of the “no-fare” policy/paradigm to bike share will not only grow WE-cycle ridership but encourage bus ridership by functioning as a feeder, a first/last mile connection, to the bus.

Of note: WE-cycle does NOT support applying the No-Fare Experiment to visitors, ie Day Passholders. WE-cycle has been deliberate in communicating that it is a transit service, not recreational bike rental. WE-cycle is a regional transit service and thus fare uniformity is critical

¹ WE-cycle will work with jurisdictions and employers to communicate the availability of these “no-fare” passes to their constituents.



system-wide. To this end, WE-cycle has made a similar “no-fare” Season Pass funding request to Eagle County and the Town of Basalt which would allow any resident or employee throughout the WE-cycle service area, from Aspen to El Jebel, to access to bike share for short, point-to-point travel at no initial charge.

Reducing congestion

One of the primary tenants of the EOTC’s mission is to “work collectively to reduce and/or manage the number of vehicles on the road system.” Supporting greater use of bike share as a first/last mile and in and around town mode will further this goal by giving riders the independence to conduct their short trips without a car. Achieving this end requires inter-jurisdictional collaboration such that a traveler chooses to use transit from their point of origin rather than a single occupancy vehicle. 46% of WE-cyclers are doing just this, replacing car trips with bike share trips. As an example, a Snowmass Village resident with a WE-cycle Pass chooses to ride the Aspen-Snowmass bus into Aspen and use WE-cycle to get to his final destinations and to conduct his errands.

The net result? A single occupancy vehicle has been eliminated from the rush hour into and out of Aspen, a car trips replaced, the resident has a set of wheels to get around Aspen on his own schedule, and there is greater utilization of the Aspen-Snowmass RFTA route. Reducing congestion on the road system does not entail a singular response, or mode, but one of providing options. Fortunately, the communities of the upper Roaring Fork Valley have for decades invested wisely in fixed-route transit providing for the robust transit system that transports millions of riders per year. Now is the opportunity to invest in the modes at either end of this existing infrastructure. Bike share has proven successful over the past four years and with the EOTC’s investment it can continue to flourish and serve a greater number of constituents thereby reducing congestion.

Bike share as mass transit

People’s lives are complex and hence their travel needs are complex. Today’s cutting-edge mass transportation systems embrace this complexity by providing responsiveness and elasticity in their transit offerings. As the EOTC works to articulate its long-range strategy of “insur[ing] a convenient and efficient transportation system,” maintaining, and expanding, the use of bike share is a valuable component of this framework. Bike share allows riders to determine their own routes and own time schedules and take one-way and spontaneous trips thus giving riders the freedom, flexibility, and convenience they value in their complex lives.

Bikes will never transport the sheer numbers served by long-haul transit. However, bike share effectively delivers riders to and from these services thereby serving a distinct role in the mass transit system as a whole. According to 2016 WE-cycle surveys, 69% of Season Passholders use WE-cycle in conjunction with RFTA, 80% of whom ride WE-cycle to or from the bus. Affirming these usage patterns, it correlates that WE-cycle’s busiest stations are RFTA BRT stops and that Season Passholders use WE-cycle stations at BRT stops 62% more than WE-cycle stations at non-BRT stops.

Bike share’s impact cannot be measured purely in the distance of one particular ride. Its value must be assessed in consort with the transportation system as a whole. For example, a Pitkin



County resident of upper Woody Creek chooses to only drive as far as the Brush Creek Intercept Lot because the combination of transit services available from that point are both convenient and efficient for her needs. She rides RFTA into Aspen and then WE-cycles the short distance to work. Together, these modes create more than a route but a user-responsive, mass transportation system.

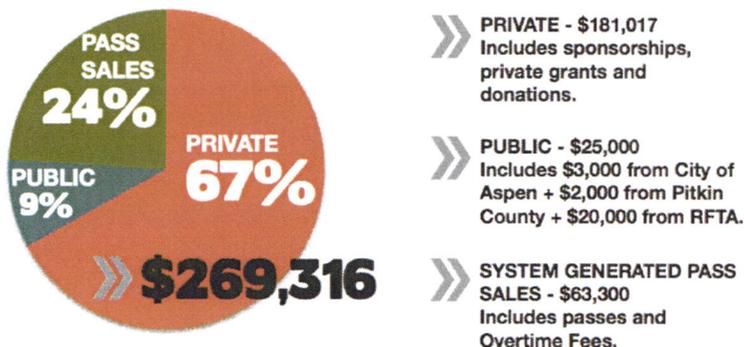
WE-cycle, A PUBLIC | PRIVATE PARTNERSHIP:

WE-cycle opened in Aspen in 2013 as North America’s first and only bike share system located in a mountain resort town. WE-cycle came to fruition thanks to the financial contributions and visionary support of many of Aspen’s leading private and public organizations.

WE-cycle’s start-up and initial capital infrastructure were funded by its Founding Partners, a federal Congestion Mitigation and Air Quality grant through the City of Aspen and Pitkin County, private donors, grantors and foundations.

Aspen Founding Partners include The Aspen Institute, Aspen Meadows Resort, Aspen Skiing Company, Aspen Valley Hospital, City of Aspen, Genshaft Cramer LLP, Nick DeWolf Foundation, TheMyersRobertsCollective, Pitkin County, and the Roaring Fork Transportation Authority. Founding Partners in Basalt include The Town of Basalt, Pitkin County, the Roaring Fork Transportation Authority, the Valley Settlement Project, and Willits Town Center. Eagle County also provided start-up infrastructure funding for the Basalt System.

Currently, WE-cycle’s operations are funded through sponsorships, pass sales and Overtime Fees (for rides lasting longer than 30-minutes), grants and private donations. Aspen I Snowmass Sotheby’s has been WE-cycle Title Sponsor since inception. adidas Outdoor became WE-cycle’s Aspen Bike Sponsor in 2015 and remains active to date. Valley View is Basalt’s Bike Sponsor. WE-cycle is by nature a connector and collaborator and has 75 community sponsors and partners. WE-cycle operates a lean organization seeking partnerships and in-kind support whenever possible. WE-cycle’s 2015 operating revenue distribution is as follows:



2016 revenue figures will be available upon completion of the season in November. Of note, public investment in WE-cycle grew in 2016 with RFTA and the City of Aspen each contributing \$25,000 to the Aspen system and Pitkin County contributing \$7,500 to the Basalt System.



WE-cycle is committed to both financial and environmental sustainability but recognizes that in order to provide a safe, reliable, and effective public transportation service it is challenging to operate without predictable and ongoing financial support from the public sector. As illustrated, the private sector has invested significantly in WE-cycle's operations for its first 4 years. As WE-cycle anticipates its 5th season and plans for long-term optimization and measured growth, it must plan for a more balanced public and private annual investment. WE-cycle is committed to retaining its private partners but doing so proportionally with public support.

WE-cycle is anticipating a \$300,000 2017 operating budget for the Aspen System. The \$175,000 request of the EOTC amounts to 58% of this annual budget. The remainder of the operating revenue will come from sponsors, grants, day pass sales and Overtime Fees.

The EOTC's investment will not only expand the choices of its mass transportation system by adding bike share to the offerings but provide for "no-fare" WE-cycle Season Passes for anyone who lives or works in the City of Aspen, Pitkin County, and Snowmass Village. As aforementioned, WE-cycle has established itself as a valuable link in the upper Roaring Fork Valley's transportation system. Hence WE-cycle is requesting funding from the EOTC, the governing body of the upper Valley's transit offerings. WE-cycle is not a town specific system but serves riders from throughout the EOTC jurisdictions and beyond and is thus seeking multi-jurisdictional funding rather than funds from individual entities as it has in previous years.

URGENCY OF REQUEST:

At the October 20th meeting WE-cycle will present additional details illustrating WE-cycle's role as a component of the regional mass transit system and background on its bike share services and ridership patterns. WE-cycle recognizes that this will be its first appearance in-front of the EOTC. The EOTC's favorable support at this meeting will allow WE-cycle to move forward with planning for the 2017 season. Implementing the No-Fare Season Pass Experiment requires diligent and thoughtful execution and communication which will must take place in early 2017.

ABOUT BIKE SHARE:

Bike sharing involves a number of bicycles made available for shared use as a means of increasing mobility options and reducing traffic congestion and air pollution. Bikes are to be used for short station to station trips, typically under 30 minutes at a time. Overtime Fees are incurred for keeping the bike for longer periods of time to discourage using the bikes for extended personal or recreational use. Bike share programs are often considered a part of the "first/last mile" solution for transit, meaning that a bicycle can provide transit users with the link between their station/stop and their final destination. Bike sharing has grown rapidly in recent years with systems operating in over 105 cities in the US and 500 cities worldwide. These systems have proved popular, safe, successful and convenient for both residents and visitors. Bike share systems have also proven effective in introducing bicycling to new groups of riders.

ATTACHMENTS:

- 2015 WE-cycle Report
- 2016 WE-cycle System Map

In **168** days, on **100** bikes, at **16** stations...

21,000

rides (100% growth over 2013)

2,600

unique riders (17% growth)

526

season
passholders (22% growth)

121

average rides/day

62%

rides by season passholders

Two New Stations

8th Street • Red Brick

Privately Funded

8th St to Meadows

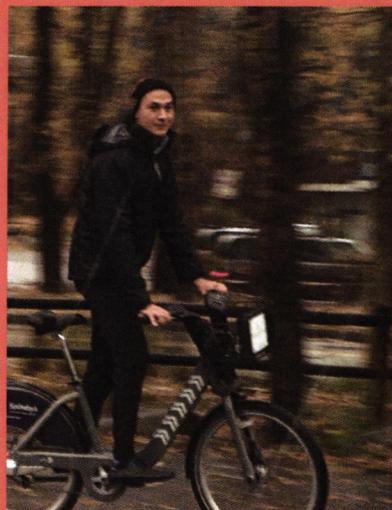
most popular new route



Transit App

Frictionless checkout and
seamless intergration with RFTA

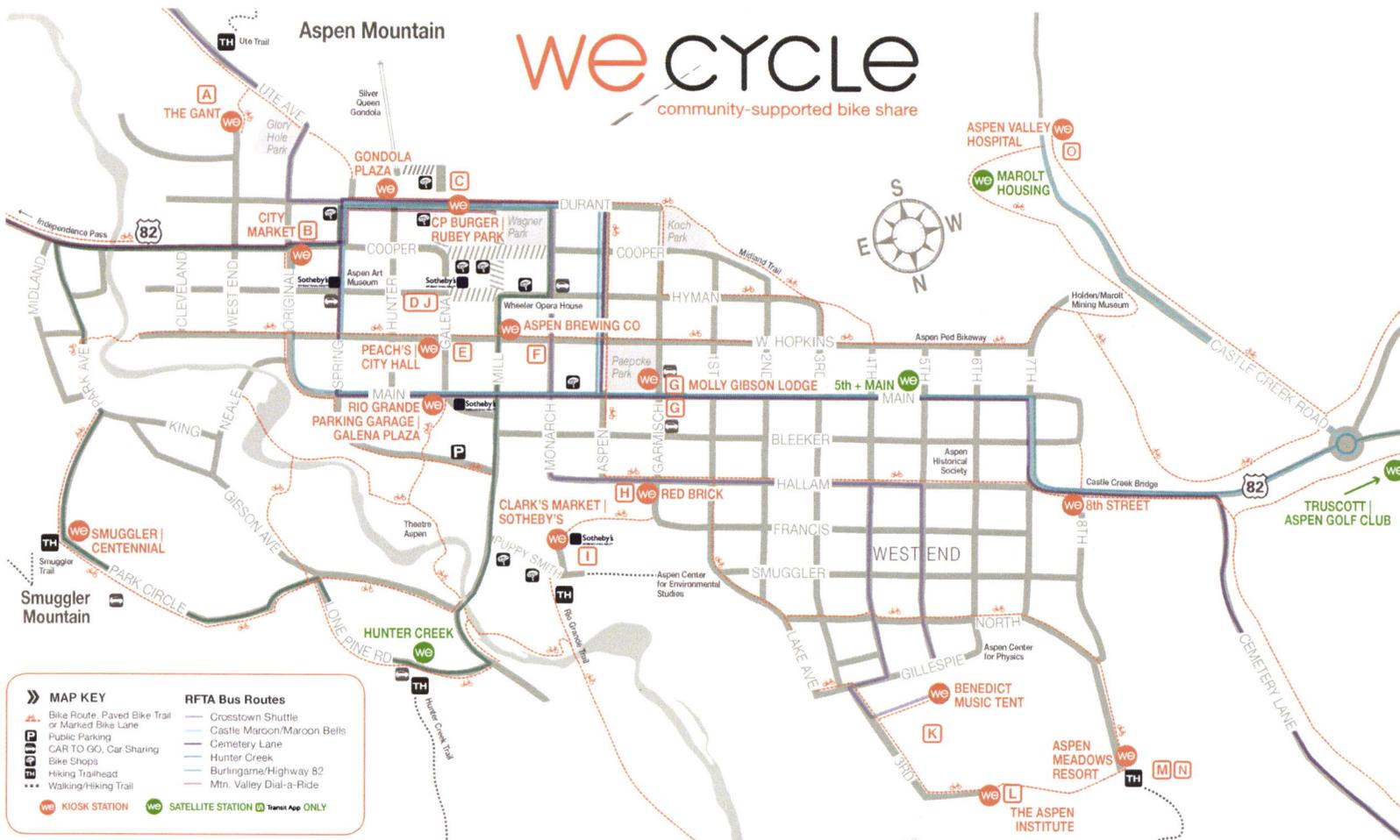
CHANGING THE CULTURE



Meet Antonio. He lives in Parachute and works in Aspen. He rides WE-cycle to get around while in town. WE-cycle's debut of Transit App introduced him to the convenience of riding RFTA, which he now takes from Parachute daily, removing his car and emissions from Aspen and the Roaring Fork Valley.

we CYCLE

community-supported bike share



MAP KEY

- Bike Route, Paved Bike Trail or Marked Bike Lane
- Public Parking
- CAR TO GO, Car Sharing
- Bike Shops
- Hiking Trailhead
- Walking/Hiking Trail

RFTA Bus Routes

- Crosstown Shuttle
- Castle Maroon/Maroon Bells
- Cemetery Lane
- Hunter Creek
- Burlingame/Highway 82
- Mtn. Valley Dial-a-Ride

we KIOSK STATION **we SATELLITE STATION** **Transit App ONLY**

TITLE SPONSOR

Aspen Snowmass | Sotheby's INTERNATIONAL REALTY

BIKE SPONSOR

adidas OUTDOOR

STATION SPONSORS

THE GANT | PEACH'S CORNER CAFE | BURGER | ASPEN BREWING CO. | THE CITY OF ASPEN

HOTEL ASPEN MollyGibsonLodge | two leaves

ASPEN MEADOWS RESORT HOME OF THE ASPEN INSTITUTE THE POICE RESTIMATION COLLECTION | ASPEN MUSIC FESTIVAL AND SCHOOL | THE ASPEN INSTITUTE

Environment Foundation | ASPEN VALLEY HOSPITAL

CLYDE PLATO'S CLARK'S MARKET

ASPEN SNOWMASS SOTHEBY'S

- A THE GANT
- B CITY MARKET
- C CP BURGER
- D UTE MOUNTAINEER, adidas Outdoor retailer
- E PEACH'S CORNER CAFE
- F ASPEN BREWING CO.
- G HOTEL ASPEN | MOLLY GIBSON LODGE
- H RED BRICK
- I CLARK'S MARKET
- J ASPEN ALPINE GUIDES
- K BENEDICT MUSIC TENT
- L THE ASPEN INSTITUTE
- M ASPEN MEADOWS RESORT
- N PLATO'S RESTAURANT
- O ASPEN VALLEY HOSPITAL

SIGN UP

- Download **Transit App**
- Tap on any station
- Select **Purchase Pass**

TO RIDE

- Enter **Ride Code** to left of bike.
- Lift seat and pull to remove bike.
- Ride to any station. Keep each ride under 30 minutes to avoid Overtime Fees.
- To ride again... Tap any station, enter new **Ride Code**, and enjoy!

Overtime Fees

Duration / Checkout	Extra Cost / Checkout
0–30 min	\$0, included
30 min–1 hr	\$4
1 hr–1.5 hrs	\$12
1.5 hrs–2 hrs	\$20

Each additional 30 minutes: +\$8

HANDY TIPS

- To check out a bike, LIFT seat and pull.
- To return bike, place bike in dock and push pedal forward. Confirm green light.
- Ride often! Take as many rides of up to 30 minutes while your pass is valid.

we-cycle.org
970.205.9222
@ridewecycle

AGENDA ITEM SUMMARY

EOTC MEETING DATE: October 20, 2016

AGENDA ITEM TITLE: Brush Creek Park and Ride Project Funding Request

STAFF RESPONSIBLE: Brian Pettet, Pitkin County Public Works Director

ISSUE STATEMENT:

The \$1,900,000 Federal Lands Access Program (FLAP) Grant to improve the Brush Creek Park and Ride was successful and the EOTC will need to provide matching funds in order to complete the \$3,894,220 project.

BACKGROUND:

The Colorado Department of Transportation (CDOT) purchased 27.2 acres at the intersection of Brush Creek Road and State Highway 82 during the expansion of State Highway 82 for the purposes of parking. RFTA and the Elected Officials Transportation Committee improved the areas to accommodate transit use, commuter use and special event parking. The City of Aspen and RFTA lease the property from CDOT. Additionally, RFTA, Pitkin County, Town of Snowmass Village and City of Aspen have an intergovernmental agreement on how the parking area is to be managed through the City of Aspen Parking Department.

There are 200 paved parking spots near the transit station, approximately 200 recycled asphalt spaces and approximately 900 to 1400 unimproved grass-field parking spaces extending north and west. The paved spaces are highly used by workday commuters and skiers in the wintertime. The unimproved areas are used for special event staging and attendee parking with X-games and Snowmass Fall Concert Series usually filling up the lot. Other special events like; Aspen Food and Wine, Pro-challenge Bike Race and TOSV's Tough Mudder have also used the parking areas. There are many requests to use this parking area for purposes beyond special events and transit use.

The FLAP grant application includes the following parking area improvements:

- Pave and provide security lighting for an additional parking 200 spaces
- Develop bathroom facilities, including service utilities required
- Construct a car pool kiosk to replace the current kiosk at the Airport (the new kiosk would have visitor information available)
- Provide additional landscaping

The total cost of this project is estimated to cost \$3,894,220. FLAP funding will cover \$1,900,000 of the project and EOTC will need to cover the remainder (\$1,994,220). Staff will be meeting with FLAP administrators to discuss program specifics in November 2016. Project schedule and delivery method will be determined at that time. FLAP funding for this project is not available until October 2018 and Staff will be asking for an expedited project schedule given the level of local funding in support of this project.

BUDGETARY IMPACT:

\$1,994,220 will need to be budgeted in year 2018.

RECOMMENDED EOTC ACTION:

Approve \$1,994,220 of EOTC funds to be appropriated in 2018.

Upper Valley Mobility Study Task Order 03

Scope of Work

Background

As a supplement to the ITSP, RFTA has asked Parsons to analyze a fixed guideway (light rail) transit connection versus the forecasted bus rapid transit system currently in place in regards to ridership, capital expenditures, and operations and maintenance costs from Brush Creek to Rubey Park, Aspen. Existing data and reports will be utilized. No new alignment studies will be conducted for the fixed guideway (light rail) transit system or bus rapid transit alignments within the study area. All alignments will be as per the preferred alternative from the Record of Decision of the Entrance to Aspen (ETA) document, 1996. Existing data will be updated based on Reports noted in Task 2

Included in the transit evaluation are the following components:

- Transit systems (fixed guideway and BRT) scope and phasing
- Scan for emerging transit technologies
- Triggers for implementation (bus ridership, numbers of buses in town, cost effectiveness)
- Capital and operating costs
- Funding opportunities and constraints
- Implementation plan

As part of the analysis, Parsons will examine transit system impacts to traffic on SH82, including at the intersections of SH82 and Brush Creek Road, at the Maroon Creek roundabout, and local city street intersections in Aspen.

This scope of work does not include analyzing any other mode of transportation besides light rail transit and bus rapid transit as described in the Preferred Alternative. It does not include identification and screening of any other alternatives. Please see the New Transportation Alternatives and Full Screening Study Scope of Work ("Large Scope) for the tasks involved with identifying and screening other alternatives. The EOTC may also direct that other specific mode alternatives be included for screening or for screening and comparison. If that is the case, the schedule and cost of this work program will be adjusted accordingly.

Schedule

It is anticipated that Notice to Proceed will be August 1, 2016. This task order will be executed in parallel with Stage II and III of the RFTA ITSP to allow for efficient use of staff and management of data sets.

The project duration is for a 10 month contract period, anticipated to end on June 1, 2017.

Task 1. Project Initiation and On-Going Management –Labor \$136,029

This task order will be contracted through the RFTA master contract with Parsons. Parsons will be managed by Pitkin County staff. Our point-of-contact with Pitkin County will be Brian Pettet, Director of Public Works. EOTC staff from member jurisdictions will form a Technical Advisory Committee (TAC) to provide direction and oversight for this task order. RFTA will provide a member to the TAC.

The purpose of this task is to initiate the work of the ETA task, and then manage the budget, schedule and resources throughout the duration of the work.

Parsons will have an initial kick-off meeting with the TAC to discuss the scope of work and associated schedule. During this initial kick-off meeting, we will discuss inputs and procedures. A detailed schedule will be developed for and reviewed at the initial kick-off meeting.

Meetings

Anticipated meetings will be conducted as follows:

- TAC Meetings- Monthly (assume 10)
- EOTC Meetings-Bi-monthly (assume 5 meetings)
- Meeting with individual EOTC jurisdictions- 2 meetings each, total of 6 meetings
- Public Open Houses in Aspen (2)

This task will incorporate all hours necessary to complete the on-going management of the task order, including administration tasks and preparing for and conducting meetings.

Deliverables for Task 1 are as follows:

- A. Meeting materials
- B. Project Meeting Minutes; PDF version
- C. Monthly invoices and progress reports

Task 2. Compile Background Data- Labor \$31,441

The purpose of this task is to gather and synthesize data from previous reports. These reports include:

- CIS
- SH82 ROD
- ETA ROD

- ETA Re-Evaluation
- ETA Supplemental O&M Analysis, 1999
- Various Parsons and City of Aspen studies conducted in area

Data to be collected includes alternative alignments, forecasts, cost and financial information. Data synthesis will include a discussion about the influence of the Record of Decision (ROD) on studied alternatives (Risks and Opportunities as related to the Preferred Alternative)

Deliverables for Task 2 are as follows:

D. Summary and synthesis of data compiled, PDF

Task 3. Develop Fixed Guideway Transit Alternatives-Labor \$96,888

The purpose of this task is to develop a fixed guideway alternative using light rail transit or similar system to compare against the bus rapid transit system to be developed under Task 4, in terms of ridership, capital expenditures, and operations and maintenance costs from Brush Creek to Rubey Park, Aspen.

Subtask 3A: Fixed guideway scope and phasing

- alignments and structure delineation – will be as developed in ROD and updated
- station locations - (1) as developed in ROD, (2) new stations
- system types - (1) advanced LRT with no overhead lines/battery powered, (2) LRV/streetcar
- worldwide scan (literature search) for any emerging fixed guideway technologies.
- examine fixed guideway impacts to traffic on SH82, including at the intersections of SH82 and Brush Creek Road, at the Maroon Creek roundabout, and local city street intersections in Aspen

Subtask 3B: Ridership forecasts for fixed guideway

- forecasted growth
- transfer penalties at both Brush Creek and Rubey Park
- airport expansion interface

Subtask 3C: Triggers for implementation

- bus ridership
- numbers of buses in town
- cost effectiveness

Subtask 3D: Update capital and operating costs

- capital expenditures - update cost estimate and conduct risk based cost analysis
- operating costs - develop operating and maintenance costs

- new maintenance facility

Subtask 3E: Evaluate funding opportunities and constraints

- project delivery including P3 options
- federal
- state
- local
- farebox

Subtask 3F: Address sustainability

- energy usage/savings
- air quality benefits
- traffic reduction/LOS improvements
- safety improvements (fewer car crashes)

Subtask 3G: Implementation plan

- report to summarize results of Task 3

Deliverables for Task 3 are as follows:

E. Implementation Plan report summarizing the fixed guideway transit system, PDF

Task 4. Develop Bus Rapid Transit Alternatives-Labor \$89,189

The purpose of this task is to develop a bus rapid transit alternative using to compare against the fixed guideway transit system to be developed under Task 3, in terms of ridership, capital expenditures, and operations and maintenance costs from Brush Creek to Rubey Park, Aspen. The bus rapid transit alternative will be based on the existing system, but modified to accommodate future growth and technologies.

Subtask 4A: Busway scope and phasing

- alignments and structure delineation
 - examine existing alignment (bus in mixed transit from Maroon Creek roundabout to Rubey Park)
 - examine alignments for the bus rapid transit system as per the preferred alternative from the Record of Decision of the Entrance to Aspen document, 1996
 - examine guided bus-ways
- station locations - (1) existing stations, (2) new stations

- system type - (1) electric, (2) driverless
- worldwide scan (literature search) for any emerging Bus technologies.
- examine bus rapid transit impacts to traffic on SH82, including at the intersections of SH82 and Brush Creek Road, at the Maroon Creek roundabout, and local city street intersections in Aspen

Subtask 4B: Ridership forecasts for fixed guideway

- forecasted growth
- transfer penalties at both Brush Creek and Rubey Park
- airport expansion interface

Subtask 4C: Triggers for implementation

- bus ridership
- numbers of buses in town
- cost effectiveness

Subtask 4D: Update capital and operating costs

- capital expenditures - update cost estimate and conduct risk-based cost analysis
- operating costs - develop operating and maintenance costs
 - expanded maintenance facility

Subtask 4E: Evaluate funding opportunities and constraints

- project delivery including P3 options
- federal
- state
- local
- farebox

Subtask 4F: Address sustainability

- energy usage/savings
- air quality benefits
- traffic reduction/LOS improvements
- safety improvements (fewer car crashes)

Subtask 4G: Implementation plan

- report to summarize results of Task 4

Deliverables for Task 4 are as follows:

F. Implementation report summarizing the bus rapid transit system, PDF

Task 5. Compare Transit Alternatives-Labor \$17,324

The purpose of this task is to compare the fixed guideway transit system alternative developed under Task 3 to the bus rapid transit system alternative developed under Task 4. If any emerging technologies are deemed appropriate by the TAC, they will be included in the comparison. Parsons will make a side-by-side comparison, and provide quantitative and qualitative discussions for each evaluation criteria. Criteria will include a discussion of how alternatives relate to the current EIS and ROD, and how they relate to and impact RFTA.

Deliverables for Task 5 are as follows:

- F. Alternative comparison table, PDF

Task 6. Close Out of ETA Task Order Labor-\$20,533

The purpose of this task is to close out the work of the ETA Task Order. Parsons will populate the project deliverables checklist to ensure all deliverables were submitted to RFTA. Parsons will also provide final invoicing for the task order.

Deliverables for Task 6 are as follows:

- G. Final Invoice for task order; PDF version
- H. Populated Project Deliverables Checklist; PDF version

Total Parsons Labor.....	\$391,403
OTHER Direct Costs-	
DHM (meeting prep).....	\$10,400
Travel , postage, repro..	\$11,680
Mark up on subs.....	\$520
Subtotal	\$414,003
AirSage cell data.....	\$80,000
TOTAL EOTC REQUEST.....	\$494,004

TO 03 - ETA Schedule

v2 - 9/23/16

	month:	1	2	3	4	5	6	7	8	9	10	11
Task #	Task Name	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1A	Project Kick Off Meeting											
1B	10 TAC Meetings											
1C	5 EOTC Meetings											
1D	6 Individual Meetings											
1E	2 Public Workshop (Aspen)											
2	Compile Background Data											
3A	Fixed Guideway Scope											
1	Fixed Guideway Scope - Initial Design											
2	Fixed Guideway Scope - Technology Scan											
3B	Fixed Guideway Ridership											
3C	Fixed Guideway Triggers											
3D	Fixed Guideway Costs											
3E	Fixed Guideway Funding											
1	Fixed Guideway Funding - Refined Design											
3F	Fixed Guideway Sustainability											
3G	Fixed Guideway Implementation Plan											
4A	Bus Scope											
1	Bus Scope - Initial Design											
2	Bus Scope - Technology Scan											
4B	Bus Ridership											
4C	Bus Triggers											
4D	Bus Costs											
4E	Bus Funding											
1	Bus Funding - Refined Design											
4F	Bus Sustainability											
4G	Bus Implementation Plan											
5	Compare Alternatives											
5	Documentation											

Upper Valley Mobility Study Technology Presentation

October, 2016



PARSONS

RFTA
ROARING FORK TRANSPORTATION AUTHORITY

Agenda

- Bus Rapid Transit (BRT) Options
 - Vehicles / Manufacturers
 - Propulsion Options
 - Diesel
 - CNG
 - Hybrid
 - Electric
 - Autonomous vehicles
- Light Rail Transit (LRT) / Modern Streetcar Options
 - Vehicles / Manufacturers
 - Propulsion Options
 - Diesel-Electric LRT
 - Overhead Catenary System (OCS)
 - Wireless: On-Board storage
 - Wireless: On-Board generation
 - Wireless: Ground level



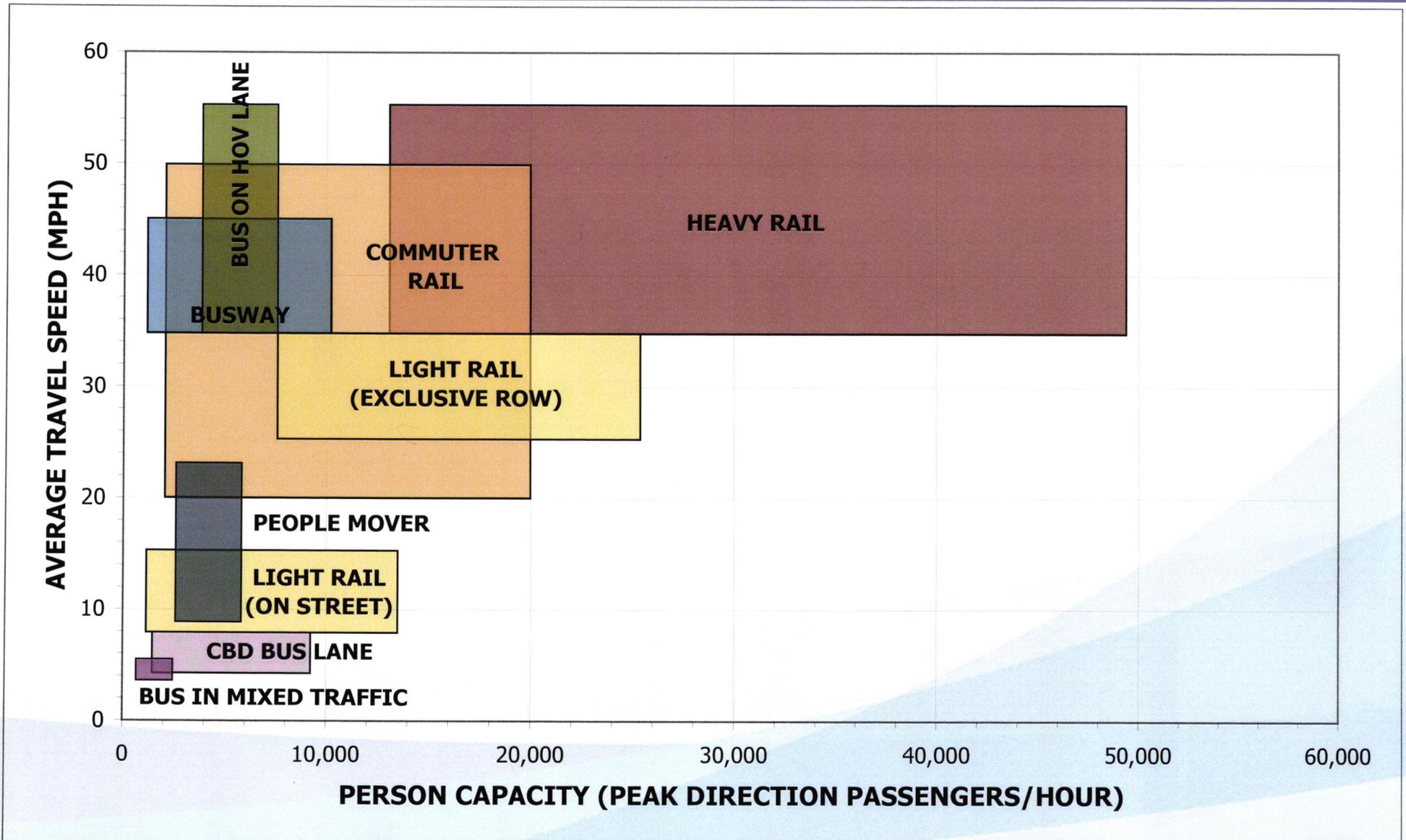
Project Purpose & Need

- Improve mobility between Brush Creek and Rubey Park.
- Reduce number of buses and congestion in Aspen.
- Enhance transit service to make it faster, more reliable and attractive for users.
- Support City of Aspen and Pitkin County transportation plans and policies.

EOTC Input

- Consider multi-modal approach:
 - Prioritize reducing vehicular transportation, improving bicycle and pedestrian facilities and use
 - Need bike/ped connection between Brush Creek and ABC
- Tipping point for number of buses in Aspen
- Better integrate BRT with local bus systems
- Better use of Brush Creek Intercept Lot
- Explore rail into Aspen; Brush Creek will be pivot point for bus/train connection
- How will autonomous vehicles play a part?

Spectrum of Speeds/Capacities



Transport Extremes



UVMS Corridor Route

- Brush Creek to Rubey Park Transit Center
- 6.1-Mile Route
- Transit Technologies:
 - Light Rail / Modern Streetcar
 - Bus Rapid Transit
- Side-Running Transit
- 7-9 Station Locations
- Key Activity Centers:
 - Aspen Airport/ABC
 - Buttermilk
 - Truscott
 - Maroon/Castle Creek
 - 7th & Main



Options for Aspen



BRT



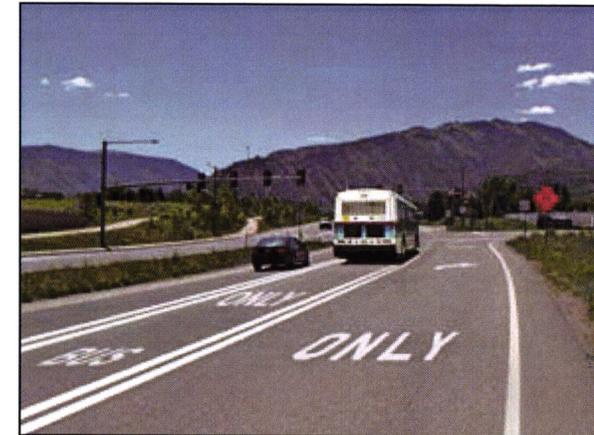
Light Rail Transit



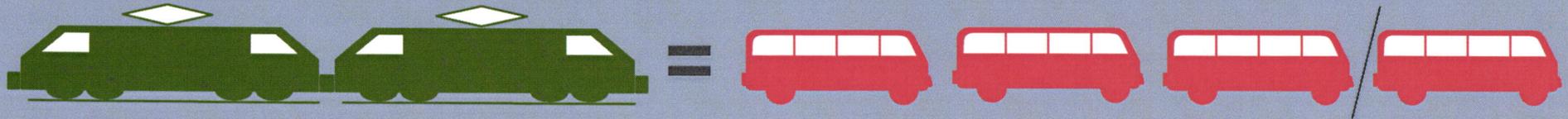
Modern Streetcar

Technology Comparison

- **BRT** operates similar to Light Rail, but has:
 - longer travel times due to wheelchair boarding process
 - lower passenger capacity and ridership
 - less expensive construction and operating costs
 - more flexibility for route changes and detours
 - 40-60' vehicles carrying 60-80 passengers
- **Light Rail / Modern Streetcar** operates similar to BRT, but has:
 - shorter travel times due to ease of wheelchair access
 - higher passenger capacity and ridership
 - more expensive construction and operating costs
 - lower O&M cost per passenger
 - 66-90' vehicles carrying 100-160 passengers



LRT/BRT Comparison



Capacity Comparisons

LRT train = 100-160 pass./car X 2 cars = 200-320 pass. with one operator

BRT vehicle = 60-80 passengers with one operator

One LRT train takes 3-4 BRT vehicles off the street

It would take 3-4 BRT vehicles with 4 operators to equal the capacity of one 2-car train

Labor = 65-70% of total O&M costs

BRT Options

Bus Rapid Transit (BRT)

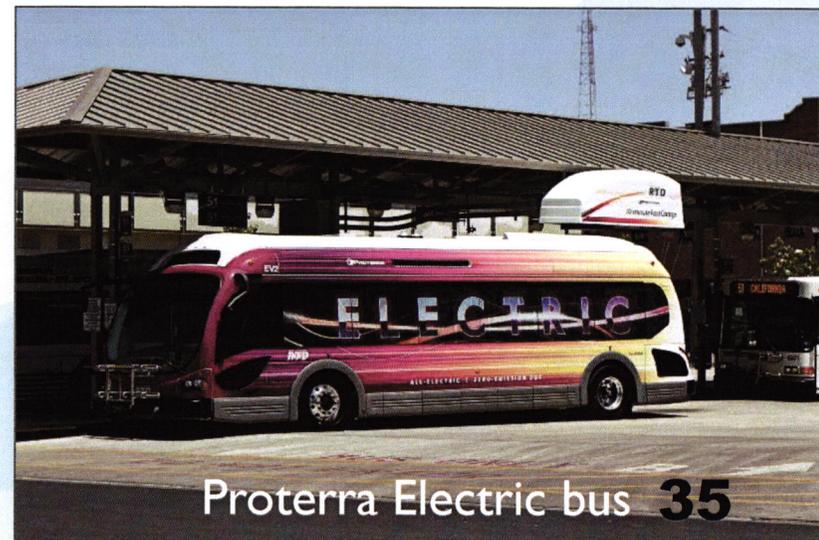
- Vehicles / Manufacturers
- Propulsion Options
- Autonomous vehicles



BRT Options

BRT Vehicles / Manufacturers

- Gillig – USA
- M.A.N. – Germany
- New Flyer – USA
 - Motor Coach Industries – USA
 - NABI – USA
- Novabus – USA
- Orion Bus – Canada
- Proterra – USA
- Rich Electric – USA
- Volvo Bus – Sweden
- Wright Bus – Great Britain



BRT Options

Propulsion Options

- Diesel
- CNG
- Diesel-electric Hybrid
- Electric

Autonomous vehicles



ABB TOSA
Energy
Transfer
System

PARSONS



Lowered charging plate on an
Arriva Wright Streetlite EV bus



Small autonomous bus
application in The Netherlands

Rail Options

Light Rail Transit (LRT) / Modern Streetcar

- Vehicles / Manufacturers
- Propulsion Options



Rail Options

Vehicle Manufacturers

- Alstom - France
- Bombardier - Canada
- Brookville Equip. Corp. (S) - USA
- CAF - Spain
- Inekon (S) - Czech Republic
- Kawasaki - Japan
- KinkiSharyo - Japan
- Siemens - Germany
- Skoda (S) - Czech Republic
- Stadler - Switzerland

Vehicle Sizes: 66' - 90' long,
7.8' - 8.7' wide

Turning radius: 59' - 82'

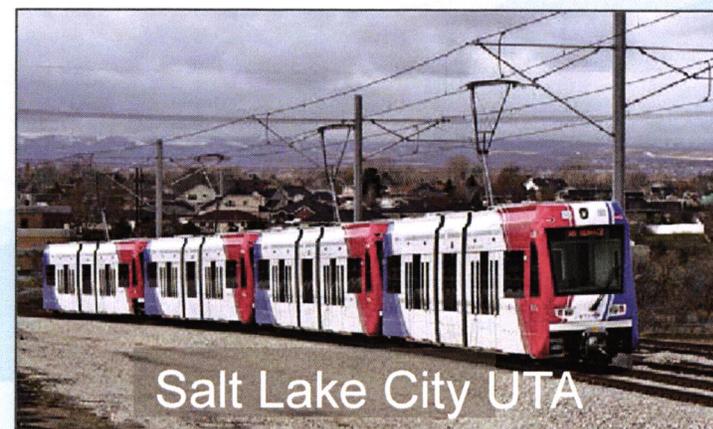
No. Passengers: 90 - 160

Vehicle Configuration: 70% or
100% low floor

Speed: 26 - 66 mph



Portland Streetcar



Salt Lake City UTA

Modern Streetcars / Trams

- Mixed traffic operation
- Single vehicles or coupled cars
- Simple stops
- On-board fare payment
- Local service primarily
- Shorter trips with high seat turnover
- Power is provided by overhead wire or batteries
- Line of sight operation
- Transit signal priority



LRT in Semi-exclusive ROW

- Improved speed and reliability
- 1-3 car trains
- Delayed at traffic signals and other at-grade crossings
- More elaborate stations/stops
- On-board or off-board fare collection
- Power is provided by overhead wire or batteries
- Line of sight operation
- Signals used for tunnels and single-track segments
- Transit signal priority



Rail Options

Light Rail Transit (LRT) / Modern Streetcar

- Propulsion Options
 - Diesel-Electric LRT
 - Overhead Contact System (OCS)
 - Wireless - On-Board storage
 - Batteries / Super Capacitors
 - Wireless - On-Board generation
 - Diesel generator or Fuel cell
 - Flywheel
- Wireless - Ground level
 - Embedded Third Rail
 - Electronic
 - Inductive



Denver LRT



Dallas Streetcar

Wireless: Diesel-Electric LRT

- New Jersey Transit uses 20 Stadler GTW diesel-electric light rail vehicles on the 34-mile River Line service between Trenton and Camden.
- Capital Metro in Austin, Texas uses six Stadler GTW 2/6 diesel light rail vehicles on the 32-mile Red line from Leander to Downtown Austin.

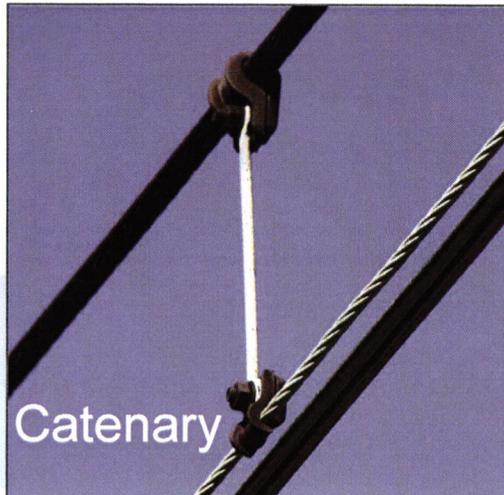
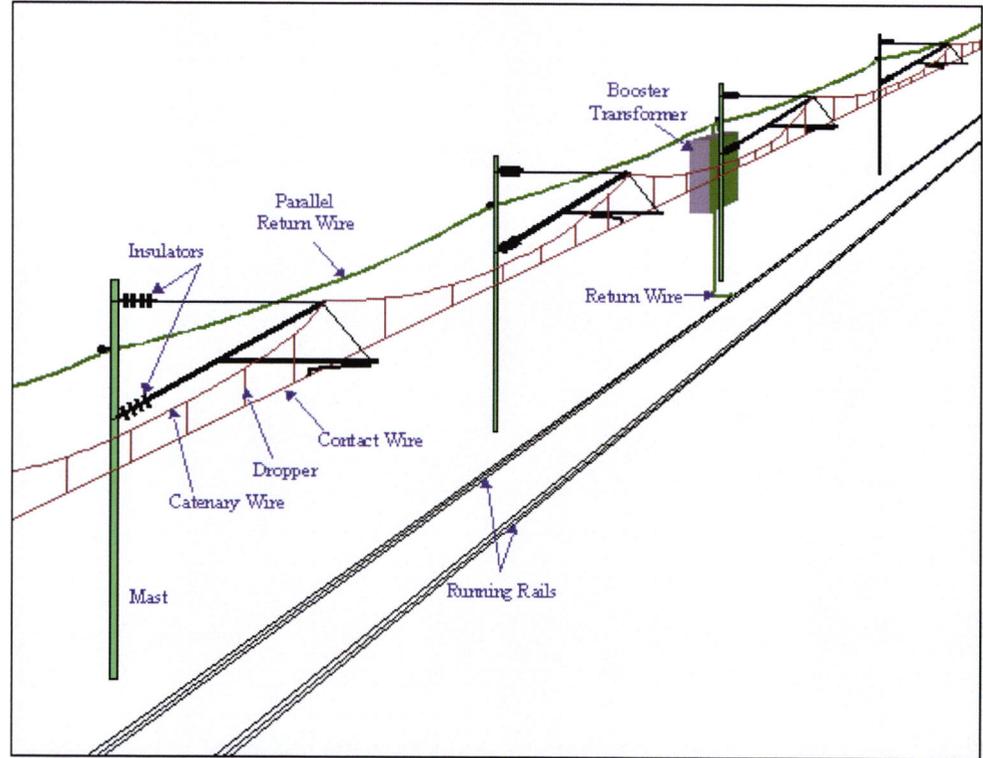


New Jersey Diesel-electric LRT

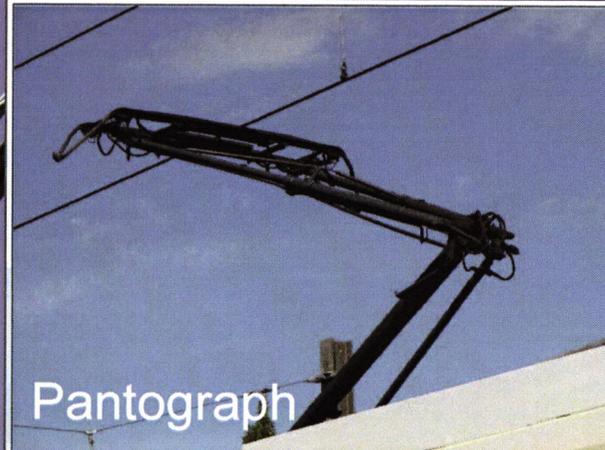


Austin Diesel-electric LRT

Overhead Contact System (OCS)



Catenary



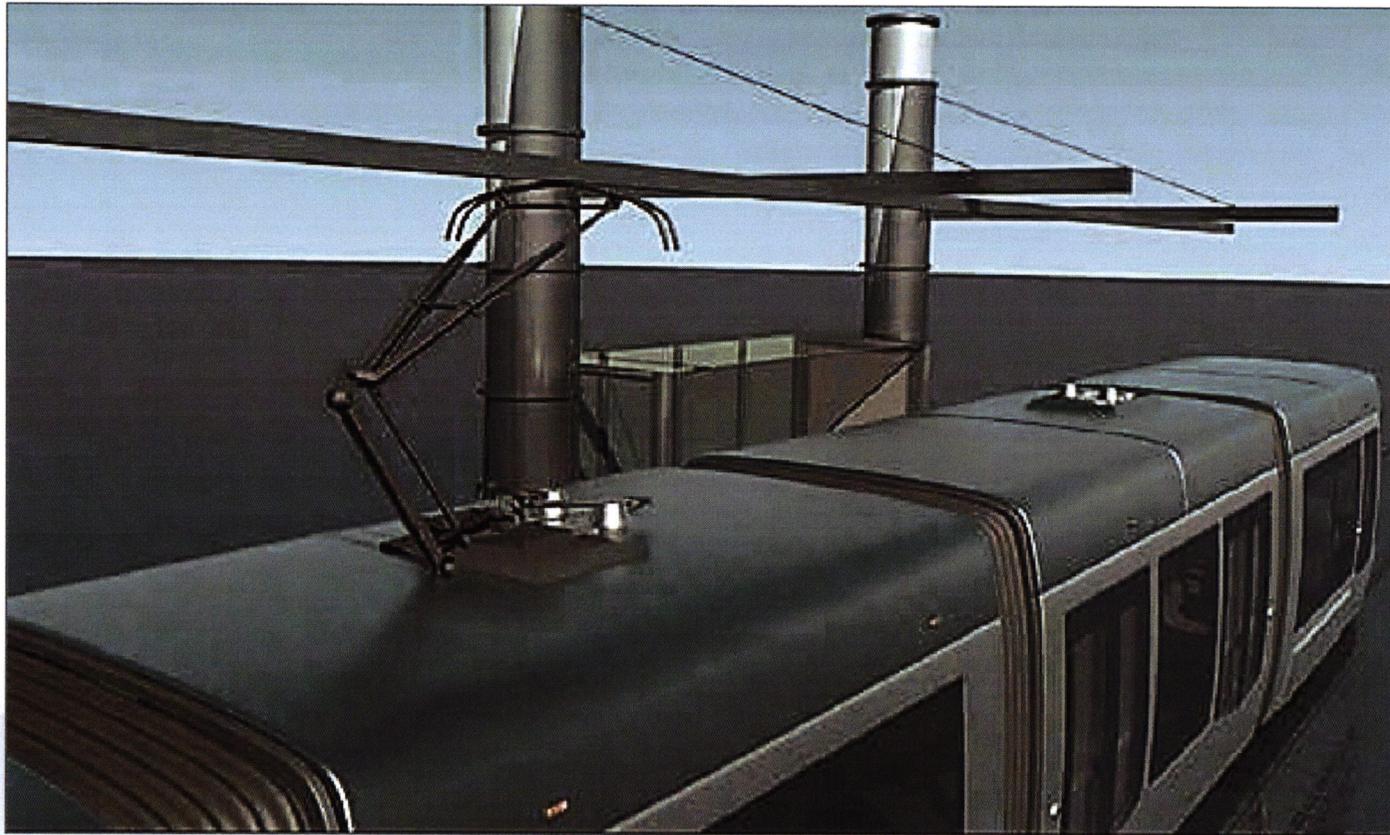
Pantograph



43

Wireless: On-board Storage

LRVs connect with OCS when stopped at stations to recharge the on-board energy storage system (OESS) comprised of batteries and super-capacitors.



Wireless: On-board Storage

KinkiSharyo – U.S.AmeriTRAM 100% low floor demonstrator LRV, powered by its proprietary eBrid electro-hybrid Li-ion batteries.

Charges the batteries and powers the auxiliary equipment when running on the OCS and also allows braking energy to be stored in the batteries.

Able to operate for 5 miles on battery power alone and is fully compliant with ADA, Buy America, and NFPA 130.



Wireless: On-board Storage

Alstom - In Nice, France, the Alstom Citadis trams utilize battery power.

Roof-mounted SAFT Ni-MH batteries allow the trams to run for 2/3-mile at 19 mph without OCS.



Alstom Citadis Tram in Nice, France

Wireless: On-board Storage

Brookville Equipment Corporation - 70% low floor LRVs for DART

Can operate OCS-free over a 1-mile section of track with a maximum speed of 43 mph.



Dallas Streetcar

Wireless: On-board Storage

Stadler - In 2011, a Munich Tramway S-class Stadler Variotram set a record for a battery-powered tram by running 9.9 miles on its batteries, without OCS.



Munich Streetcar

Wireless: On-board Storage

Kawasaki - In 2007, Kawasaki introduced its prototype 49' long, three-section low floor SWIMO X LRV.

On battery power alone, the vehicle can travel 6.2 miles at a top speed of 25 mph on a single five-minute charge.



Wireless: On-board Storage

CAF ACR System - rapid-charge, on-board energy storage system using supercapacitors, called ACR (Rapid Charge Accumulator).

Vehicles can operate OCS-free for about 1-mile with a 20-second charge at stations.



CAF FreeDrive Unit



CAF LRV Operating OCS-Free in Seville, Spain

Wireless: On-board Generation

LRVs can use an onboard diesel-generator set or a fuel cell to create electrical energy to charge batteries.



FEVE Hydrogen Fuel Cell-Powered Vehicle



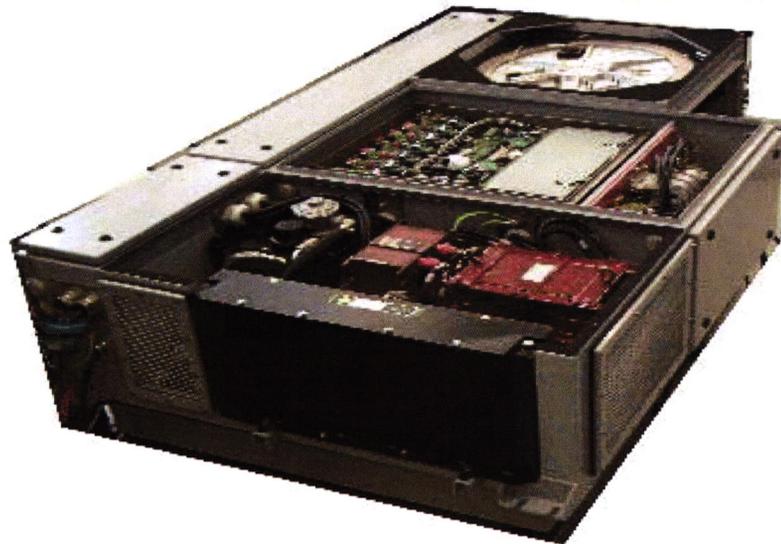
Alstom Regio Citadis diesel hybrid tram-train in Kassel, Germany

Wireless: Flywheel Energy Storage

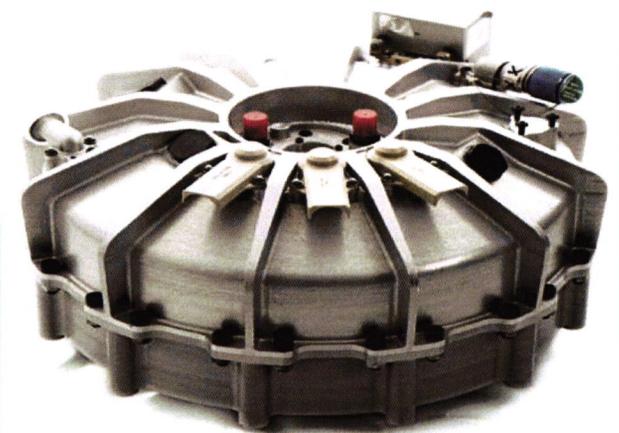
Since 2005, Alstom has been testing a Citadis LRV in Rotterdam with a CCM flywheel system.

Using the flywheel alone, the vehicle is capable of traveling for 1.2 miles at speeds up to 31 mph.

Alstom and Williams Hybrid Power are also testing the magnetically loaded composite (MLC) flywheel, which is expected to provide fuel savings of about 15%.



Alstom CCM Flywheel Package

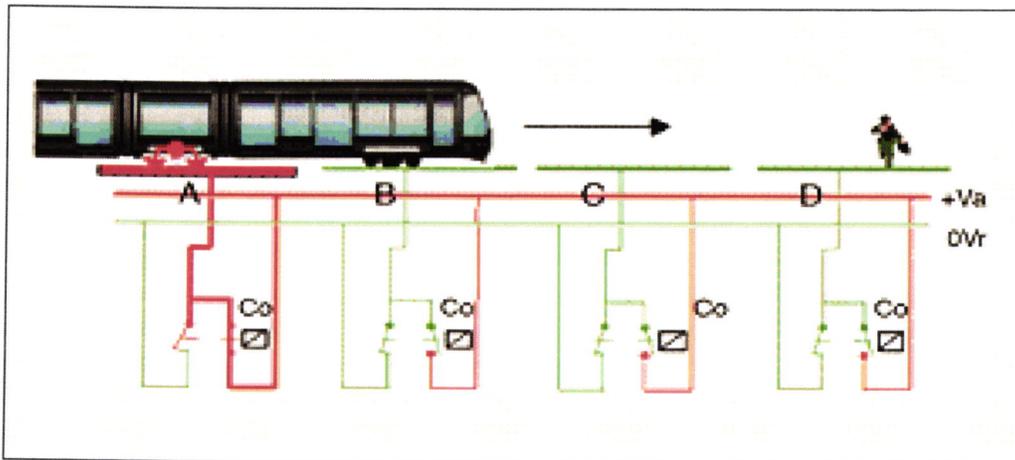


Williams Hybrid Power Flywheel

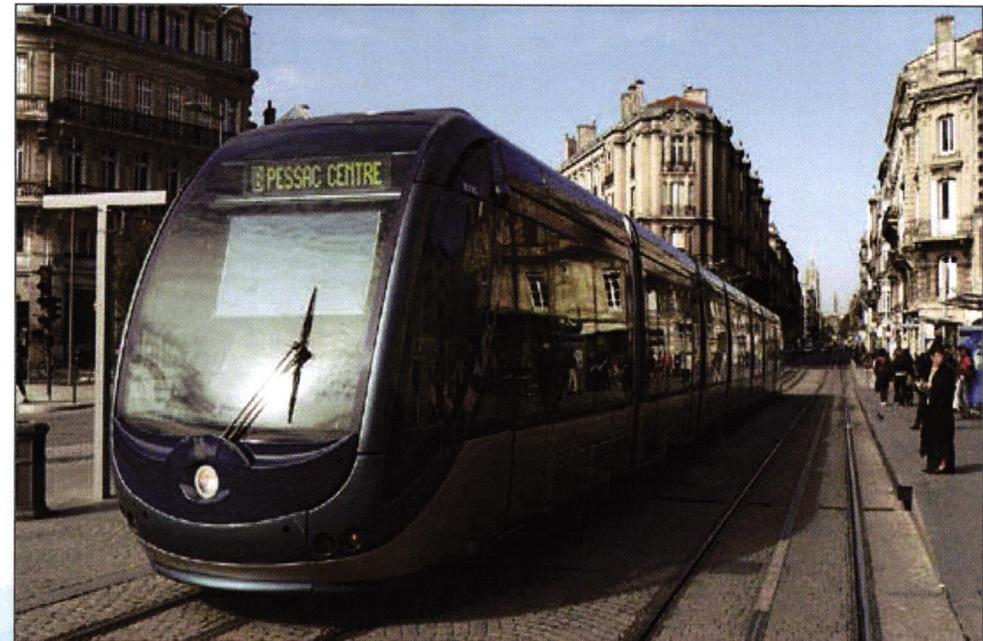
Wireless: Embedded Third Rail

Electronically-Activated Third Rail - The third rail system consists of short segments of conductor rail separated by insulated segments installed between the running rails.

The conductor rail is only “live/energized” when it is covered by the vehicle.



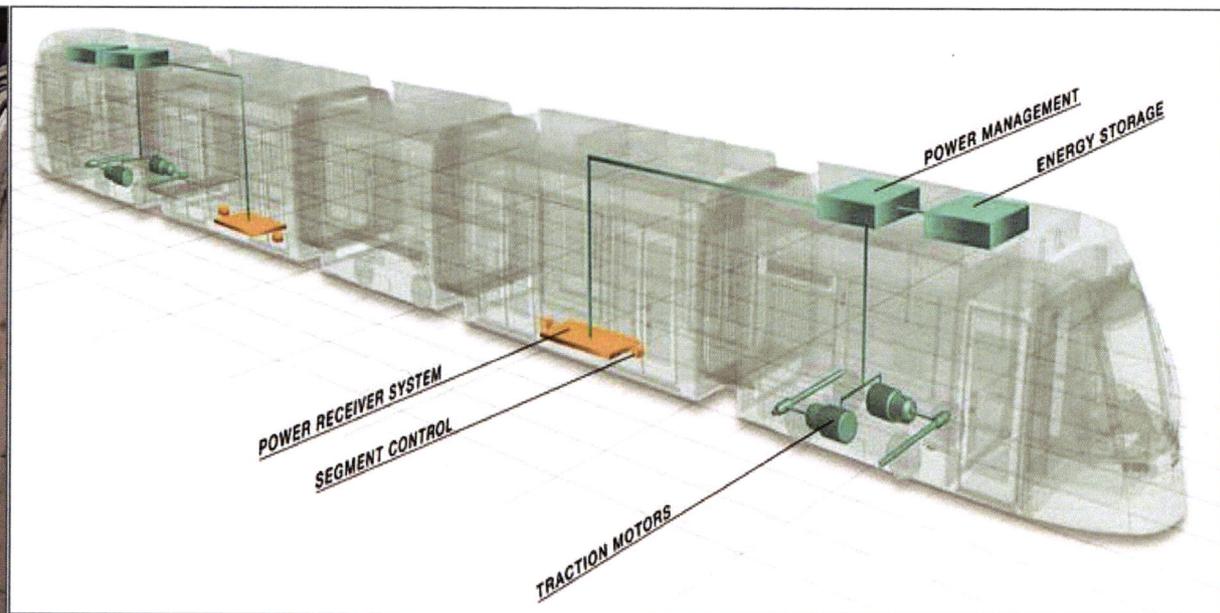
Live Third Rail Only Under the Vehicle



Alstom Citadis Tram in Bordeaux,
France

Wireless: Embedded Third Rail

Inductively-Activated Third Rail – PRIMOVE is a contactless energy transfer technology developed by Bombardier; installed on a 1/2-mile section in Augsburg, Germany in 2010.



Bombardier Primove System

Wireless: Pros & Cons

- Diesel-electric LRT hybrids with no OCS are quite reliable.
- Wireless equipment adds 10-15% to the LRV cost, but there may be some reduction in the cost of OCS.
- On-board storage systems, with a combination of supercapacitors and batteries, are now a fairly mature technology and have excellent reliability.
- Third rail systems appear to be a reliable technology, although they should be carefully assessed against the specific operating environment.
- Flywheel energy storage technology is not yet fully developed for LRV use, and its reliability in a rail system environment is still unknown.
- Fuel cell technology is not yet fully developed, and its reliability in a rail system environment is unknown.
- **Bottom line: there are wireless rail options available for Aspen.**



QUESTIONS / DISCUSSION

AGENDA ITEM SUMMARY

EOTC SESSION DATE: October 20, 2016

AGENDA ITEM TITLE: Basalt Pedestrian Underpass Update

STAFF RESPONSIBLE: G.R. Fielding – Pitkin County Engineer, Project Regional Engineer
Brian Pettet – Pitkin County Public Works Director

ISSUE STATEMENT: The EOTC contributed \$750,000 to the construction of the Basalt Underpass. This project is now underway and this item is to update the EOTC on the progress of the project.

BACKGROUND:

The contract for \$7.1M was awarded to United Companies. This project will be built in two phases. During these phases, all State Highway 82 traffic will be relocated from one side of the Highway and then to the other in order to complete the 140' long underpass one half at a time.

Work commenced on September 19th with clearing of trees in areas where the highway is being widened and where there are significant changes in grade. United mobilized in heavy equipment on October 10th in order to begin the earthmoving.

Ongoing work at this time:

- Widen highway and roadways to accommodate new alignments of Basalt Ave and temporary lanes of SH 82
- Place Temporary Signal Poles and Signal Heads on Highway
- Establish drainage to facilitate dewatering for tunnel construction

Upcoming milestones:

- First traffic switch – 11/21
- Box Excavation and Construction – 11/22 – 1/23

KEY DISCUSSION ITEMS:

This item is informational.

ATTACHMENTS:

Town of Basalt Project Announcement

BASALT PEDESTRIAN UNDERPASS

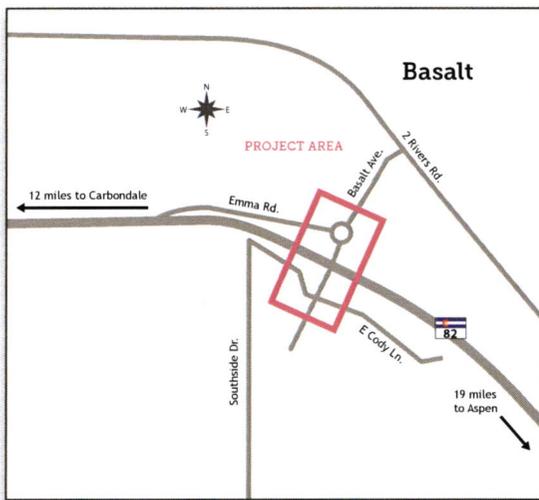
Overview

On Monday, September 19, the Town of Basalt began a project to construct a pedestrian underpass under State Highway 82 (SH 82). The project will provide safety improvements for all modes of transportation by building an underpass for non-motorist traffic at the intersection of SH 82 and Basalt Avenue.

The new underpass is designed to be 140 feet long, up to 9 feet tall, 16 feet wide. It will also be illuminated. The project will require the removal of over 8,000 cubic feet of dirt. The construction of the underground path combined with the installation of new traffic signals and an upgraded storm water drainage system are anticipated to improve the flow of traffic and pedestrian safety along this busy stretch of the highway.

The project is located on SH 82 near MP 23.1 in Basalt, approximately 19 miles outside of Aspen. The new underpass will be built on the Aspen side of the SH 82 intersection with Basalt Avenue. It will connect from the Basalt Store area to the bus station and parking lot.

The Town of Basalt awarded United Companies of Mesa County the \$6.2 million bid for this project.



Project Timeline

The 13-month project began in mid-September and is scheduled for completion in late October 2017. Here is the schedule of major phases of work planned for this project:

- **October 2016–March 2017: North Phase**
 - Temporary bus stop placements
 - Building temporary lanes vehicle traffic
 - Removal of asphalt and underpass excavation/digging
 - Retaining wall construction along Basalt Avenue
- **February 2017–August 2017: South Phase**
 - Asphalt, excavation and retaining wall work
 - Final pavement, signals, striping, drainage, safety work
 - Reactivation of bus stations
- **September 2017–October 20, 2017: Final Phase**
 - Trail construction
 - Curb, gutter and guardrail installation
 - Final striping and landscaping

Work Hours and Traffic Impacts

Normal working hours for the project will be Monday through Friday, beginning at 7 am and ending at 7 pm, with seasonal adjustments for daylight hours. No work is planned on holidays or weekends.

Additional impacts to travelers on SH 82 should be minimal. Five lanes of traffic will be maintained throughout the project duration, with temporary asphalt side pavement. Traffic control operations will not interfere with the flow of morning and afternoon peak traffic on SH 82.

Traffic speeds will be reduced to 35 mph in the work zone. Please use caution while traveling through the construction zone and follow flaggers' directions.

Contacting the Project Team

To receive updates on the project, please contact the Public Information Team. Call the project hotline or dedicated email address for current schedule information. We will work to return your call or email within 24 business hours.



Phone: 970-718-5818
Email: Basalt@PublicInfoTeam.com
Web: www.basalt.net

BASALT PEDESTRIAN UNDERPASS

Project Announcement

September 2016

Public Information Manager
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700 E. 24th Avenue, Suite #2
Denver, CO 80205



Anuncio del Proyecto

BASALT TUNEL SUBTERANEO PARA PEATONES EN SH 82

Resumen

El lunes 19 de septiembre, la ciudad de Basalt iniciará un proyecto para construir un túnel subterráneo debajo de la carretera 82 (SH 82). El proyecto proporcionará mejoramiento a la seguridad para peatones y otros modos de transporte mediante la construcción de un túnel subterráneo para tráfico no motorizado en la intersección de SH 82 y Basalt Ave.

El nuevo túnel subterráneo está diseñado con medidas de 140 pies de largo, de hasta 9 pies de alto, y 16 pies de ancho. También estará iluminado. El proyecto requerirá la eliminación de más de 8.000 pies cúbicos de tierra. La construcción del túnel subterráneo combinado con la instalación de nuevas señales de tráfico y un sistema renovado de drenaje de aguas pluviales, anticipa mejoramiento del flujo de tráfico y la seguridad de los peatones a lo largo de esta sección de la carretera que es muy transitada.

El proyecto se encuentra en SH 82, cerca de MP 23.1 en Basalt, aproximadamente 19 millas fuera de Aspen. El nuevo túnel subterráneo se construirá en el lado de la intersección de Aspen SH 82 con Basalt Ave. Conectará desde la zona de Basalt Store a la estación de autobuses y el lote de estacionamiento.

La ciudad de Basalt otorgó a las empresas Oldcastle / United la licitación por \$6.2 millones para este proyecto.

Línea de Tiempo del Proyecto

El Proyecto de 13 meses comenzará a finales de septiembre y está programado para completarse a finales de octubre del 2017. Este es el calendario de las principales fases de trabajo previsto para este proyecto:

- **Septiembre 2016 a marzo 2017: Fase Norte**
 - Colocación de paradas de autobús temporales
 - Construcción de carriles temporales para el tráfico de vehículos
 - Retirada del asfalto y la excavación del túnel a desnivel
 - Construcción del muro de contención a lo largo de Basalt Avenue
- **Febrero 2017 a agosto 2017: Fase Sur**
 - Asfalto, excavación y trabajo en muro de contención
 - Pavimentación final, señales, rayas, drenaje, seguridad en el trabajo
 - Reactivación de estaciones de autobuses
- **Septiembre de 2017 20 de octubre de 2017: Fase Final**
 - La construcción del corredor
 - Instalación de la banquetta, alcantarilla e instalación de bardas protectoras
 - La creación final de franjas y jardinería

Horas de Trabajo e Impactos al Tráfico

El horario normal de trabajo para el proyecto será de lunes a viernes, comenzando a las 7 a.m. y terminando a las 7 p.m. con ajustes dependiendo de la temporada y los ajustes de horas diurnas. Ningún trabajo esta planeado durante los días festivos o fines de semana.

Los impactos adicionales a los viajeros sobre la carretera SH 82 deberán ser mínimos. Cinco carriles de tráfico se mantendrán durante toda la duración del proyecto, con pavimento de asfalto temporal en un costado. Las operaciones de control de tráfico no interferirán con el flujo de tráfico en las horas pico en la mañana y por la tarde en SH 82.

La velocidad del tráfico se reducirá a 35 millas por hora en la zona de trabajo. Por favor tenga cuidado al viajar a través de la zona de construcción y siga las instrucciones de los abanderados.

MEMORANDUM

TO: Elected Officials Transportation Committee (EOTC)
FROM: David Johnson, RFTA
DATE OF MEMO: October 12, 2016
MEETING DATE: October 20, 2016
RE: RFTA Update

Summary

This update covers the following items:

1. Integrated Transportation System Plan (Organizational Capacity and Efficiency Review)
2. Ridership Summary
3. Safety and Security Issues
4. Grand Avenue Bridge Transit Mitigation Plan
5. Capital Projects

Integrated Transportation System Plan

The purpose of the ITSP process is to create a vision and 10-20 year plan for RFTA, consistent with its mission to “Pursue excellence and innovation in providing preferred transportation choices that connect and support vibrant communities.”

RFTA contracted with Parsons Transportation Group to conduct the multi-year study, which is divided into four stages:

- Stage I – Define the Vision
- Stage II – Determine Future Needs
- Stage III – Analyze Options
- Stage IV -- Establish Financial Plan

RFTA and Parsons recently released the Final Draft **Organizational Capacity and Efficiency Review** (OCE Review). The review, which can be found at <https://www.rfta.com/wp-content/uploads/2016/10/final-rfta-efficiency-and-organizational-structure-review-10-7-16-1.pdf>, is an assessment of RFTA’s existing conditions, strengths and weaknesses, and sustainability, in terms of services provided, organizational structure and long-term finances. This deliverable was a product of Stage I, as it is intended to help RFTA understand how to adapt to future transportation options, to be defined in Stage III.

Ralph Trapani will be discussing the Upper Valley Mobility Study and other aspects of the ITSP.

Ridership Summary

RFTA's most current ridership estimates (August 2016), show that overall ridership has increased by 8% from last year. Ridership increased on all routes (particularly within City of Aspen), except for Ride Glenwood Springs and RFTA's valley-wide service, which, unlike BRT, services all 50-60 stops between Glenwood Springs and Aspen.

RFTA System-Wide Ridership Comparison				
Service	YTD Ridership		Variance	Variance
	August 2015	August 2016	#	%
City of Aspen	768,354	1,018,061	249,707	32%
RF Valley Commuter	1,874,729	1,814,091	(60,638)	-3%
Grand Hogback	58,941	66,739	7,798	13%
Aspen Skiing Company	434,437	467,171	32,734	8%
Ride Glenwood Springs	137,765	128,128	(9,637)	-7%
Glenwood N/S Connector	-	4,940	4,940	--
X Games/Charters	23,165	29,440	6,275	27%
Senior Van	2,310	2,845	535	23%
MAA burlingame	31,709	58,589	26,880	85%
Maroon Bells	109,900	129,950	20,050	18%
Total	3,441,310	3,719,954	278,644	8%

Subset of Valley Commuter Service with BRT in 2016				
Service	YTD Ridership		Variance	Variance
	August 2015	August 2016	#	%
Highway 82 Corridor Local/Express	692,429	622,298	(70,131)	-10%
BRT	597,268	602,638	5,370	1%
Total	1,289,697	1,224,936	(64,761)	-5%

Safety and Security Issues

At the RFTA Board's annual retreat this summer, the Board requested an increased focus on safety and security, on buses and at boarding locations. It is now a specific goal in RFTA's Strategic Plan. At the RFTA Board meeting last month, Dan Blankenship cited reports filed by RFTA staff indicating a lack of respect for RFTA personnel and for the safety and tranquility of our passengers. Problems are becoming particularly acute at Rubey Park and late night between Aspen and Snowmass Village. Tom Dalessandri of Colorado Protective Services (CPS), attending the meeting with Blankenship, has been providing security at Rubey Park on weekends, and his staff ride buses between Aspen and the Intercept Lot. Dalessandri emphasized that the solution starts before people get to the bus stops; we must communicate expectations to visitors and employees and let the community know that there are boundaries for behavior. CPS has discussed standards for behavior with employers and employees at the beginning of the winter season, and believes it has been effective.

Blankenship added that public transportation is an important service to offer when the bars close. But we must send a message that we will not tolerate abuse of RFTA employees and passengers. This may require additional resources from RFTA and from the jurisdictions. RFTA staff and CPS are meeting this month to discuss a security plan and budget for 2017.

Grand Avenue Bridge Transit Mitigation Plan

The Grand Avenue Bridge will be closed from roughly August 14 to December 8, a period of 117 days. RFTA will be the main component of transportation mitigation during the bridge closure and during the extensive pre and post construction activities. In the original GAB Transit Mitigation Plan, RFTA proposed service modifications for 5 days per week for 90 days. For consistency, staff is recommending 7 day per week service with additional services provided prior to the bridge closure, to help create familiarity for transit services.

Transit mitigation is comprised of four primary routes:

1. 27th Street to Amtrak
2. West Glenwood Springs Park and Ride to 27th Street
3. West Glenwood Park and Ride to North Bridge (6th Street)
4. Grand Hogback service for North Bridge (6th Street) extending to Parachute, with additional frequency

The Elected Officials Transportation Committee (Aspen, Snowmass Village, and Pitkin County) committed to providing \$335,000 to RFTA to fund the transit mitigation plan for the anticipated 3-month Grand Avenue Bridge closure at 5 day/week service. The recommended service changes will increase total cost to \$481,000, and the fares for the Grand Hogback service and in-town regional services will be waived during the transit mitigation period.

Capital Projects Update

RFTA has made significant progress this year on advancing grant-funded projects and on closing out grants. The following is a summary:

Aspen Maintenance Facility

AMF Phases I, II, III are nearly complete; 71% of the \$11 million SGR grant is expended, and the project is anticipated to be complete by end of 2016. The State of Good Repair Grant which funded this project will be closed out in early 2017. AMF Phase IV, funded by a roughly \$900,000 grant will be complete by the end of the year as well; two years ahead of grant expiration.

Vehicles

RFTA will receive six (6) 57-passenger, CNG-powered MCI coaches by end of October. The CNG engines were funded by a roughly \$1 million grant from the Energy and Mineral Impact Assistance Fund (EMIAF) program. The 24-passenger Carbondale Circulator vehicle, funded by a \$96,000 FTA grant and a roughly \$35,000 grant from EMIAF for the CNG engine, will arrive in October. Barring any manufacturing issues, it will be put into service shortly thereafter. All grants will be closed by the end of the year.

RFTA is waiting on contracts from CDOT for 2017 FASTER Statewide (\$500,000) and FASTER Local (\$450,000) grants to purchase two new 40-ft CNG-powered Gillig buses. We hope to obtain fully executed contracts by the end of the year, and order the vehicles by end of the year

Park and Rides

Both the New Castle PNR and Carbondale PNR expansion projects are complete, and the grants (\$200,000 and \$800,000 respectively) have been closed out.

Glenwood Springs Maintenance Facility/West Glenwood Springs PNR and Trail RFTA received a \$105,000 EMIAF grant for design, and two grants totaling \$1,142,000 for construction of the West Glenwood Springs PNR, the surrounding trail extension, and construction activities related to the GMF. The PNR and trail will be complete by the end of the year. The latter two grants for construction will be closed out by the end of the year, two years ahead of expiration. The \$105,000 design grant has been closed.

Rubey Park Renovation and Expansion Rubey Park received a \$2 million Federal Land Access Program grant and a \$1 million FASTER grant. Both grants have been fully expended and the project is complete.

On-Board Video

Thanks to a \$400,000 FTA grant, RFTA's roughly 100-bus fleet, formerly equipped with a variety of outdated video cameras, has been entirely retrofitted with one new state of the art, on-board video monitoring system. These systems will be used for training and for safety and security purposes.

Rio Grande Trail Improvements

RFTA received a roughly \$180,000 grant from Colorado Parks and Wildlife to construct trail enhancements. RFTA believed it would need to postpone the project to spring 2017, due to CPW contracting delays. On October 7, RFTA received the contract from CPW. RFTA will work with the contractor to complete as much as possible this year, though some work may be postponed to next spring. The 200 or so goats involved with weed control have moved to greener, weedier pastures. They will likely be invited back.