

## **APPENDIX B**

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### COMMUTER BUS FAREBOX POLICY PEER REVIEW



## **APPENDIX B – COMMUTER BUS FAREBOX POLICY PEER REVIEW**

The following pages are excerpts from a DRAFT-version Fare Analysis report conducted by Nelson\Nygaard for the City of Colorado Springs Front Range Express (FREX) commuter bus service.



# CITY OF COLORADO SPRINGS FREX Fare Analysis



## **Chapter 1. Executive Summary**

FrontRange Express (FREX) is a commuter bus service that has been operating between Colorado Springs and Denver since October 2004. This service is a popular alternative to driving along this congested corridor, with strong ridership projections, and high customer satisfaction. It is the first and only public transit connection between the Pikes Peak Region and the Denver Metro Area, the two largest employment markets in Colorado.

Funding over the past two years has been provided by a Federal Congestion Mitigation Air Quality Program (CMAQ) grant. This demonstration funding ends in September 2007, with local funding identified to maintain and expand the program. In September 2006, the CDOT Transportation Commission recommended \$7.9 million in Senate Bill 1 (SB1) dollars be awarded to FREX. On November 8, 2006, the Pikes Peak Area Council of Governments (PPACG) awarded \$1.4 million in additional CMAQ money to continue FREX through its demonstration period. This funding will be used to both subsidize operations and to purchase a new fleet of vehicles dedicated to the FREX service.

FREX service operates between 3:45 am and 9:40 pm, with 15 minute headways and stops in Fountain, Colorado Springs, Monument, Castle Rock, Arapahoe and Denver. The predominant travel pattern of commuters is north towards Denver in the AM Peak, and south towards Colorado Springs in the PM peak, but reverse-commute service is available as well. Scheduled travel time between Colorado Springs and Denver is approximately 2 hours and 15 minutes, covering almost 70 miles. FREX is administered by the Transit Services Division of the City of Colorado Springs and operated by Mountain Metropolitan Transit, the local transit provider in Colorado Springs.

FREX buses have been 45-passenger coaches with high-back cushion seats. Wireless internet service was available on the buses, at no additional cost to passengers. Mechanical difficulties have forced FREX to temporarily replace these coaches with fixed-route buses. New 40-passenger coach buses, with restored internet service, will be put into service in mid-2007. Because it is a commute service, parallel paratransit service is not required, and not provided.

The fare structure has been relatively simple, ranging from \$2 one-way for the shortest-trips to \$6 one-way for the full length of the route. This fare structure is shown in Figure 1-1. Volume discounts are available in 10, 20 and 40-ride increments. A 50% discount is offered to seniors, Medicare and disabled passengers during off-peak hours (10 am – 3 pm). These fares were consistent during the duration of the two-year pilot project, but FREX wished to reconsider them as the program has become more firmly established and funding shifts from CMAQ to the local agencies (CDOT and PPRTA).

**Figure 1-1 Existing Fare Structure**

	<b>One-Way Cash Fare</b>	<b>10 Ride Ticket</b>	<b>20 Ride Ticket</b>	<b>40 Ride Ticket</b>
<b>Fountain</b>				
<b>Colorado Springs</b>	\$2	-	\$35	-
<b>Colorado Springs/Fountain</b>				
<b>Denver</b>	\$6	\$55	\$95	\$180
<b>Monument</b>				
<b>Colorado Springs</b>	\$3	\$27	\$50	\$90
<b>Denver</b>	\$4	\$35	\$65	\$120
<b>Castle Rock</b>	\$2	-	-	-
<b>Castle Rock</b>				
<b>Colorado Springs</b>	\$4	\$35	\$65	\$120
<b>Denver</b>	\$3	\$27	\$50	\$90
<b>Monument</b>	\$2	-	-	-

\*Cash fare for Senior Citizens (60 & over), Medicare and Disabled passengers during Non-Peak Hours (10 a.m. - 3 p.m.) is 50% of the one-way cash fare. No discount is available on multi-ride tickets.

Key considerations when establishing a new fare structure for the service were increasing costs, especially fuel costs, and the stated goal of meeting 50% of operating costs with farebox revenues. Ridership is expected to be sensitive to a fare increase; the analysis therefore considered estimated fare revenues given a projected temporary drop in ridership. Other considerations included: inflation (especially of costs directly related to transit service provision), life-cycle capital costs, new marketing initiatives, and expectations of continued growth in ridership as the FREX service becomes more well-known in the region.

Several basic fare options were explored, including an across the board increase in fares, or different fare levels for different route segments, time-periods, and/or passenger categories. The elasticity of demand for the service was estimated to evaluate the potential impact on ridership due to changes in the fares.

## Chapter 4. Peer Review

This chapter presents the results of a peer review of similar commute services elsewhere in the United States. The primary objective of the review was to compare and contrast characteristics between agencies and to understand their fare structure and policies. This information provides a good benchmark for FREX, to assist in its fare restructuring and development of fare policies.

Five similar commute services were reviewed:

- Antelope Valley Transit Authority (AVTA) – service from the Antelope Valley to Los Angeles, California
- Clear Air Express – service from Lompoc and Santa Maria to Santa Barbara and Goleta, California
- Roseville Transit – service from Roseville to Sacramento, California
- Santa Clarita Transit – service from Santa Clarita to Los Angeles
- Sound Transit Express – comprehensive service throughout the Seattle, Washington metropolitan region, including service to and from Tacoma and Everett.

Some agencies provide both commuter and local service. This peer review specifically examines their commute services. Comprehensive data on operating characteristics was gathered to compare services, performance, and costs. Most peer agencies reviewed have similar services as FREX, with at most a few commute routes and less than 500,000 annual boardings and less than \$3 million in annual operating costs. Sound Transit is an exception, with almost 9 million annual boardings and almost \$60 million in annual operating costs. Their express bus network is much larger than FREX and the other peers, but might represent a longer-term service goal of the Front Range region. Also, Sound Transit currently charges fares based upon a zone system, which is a potential future fare structure option for FREX.

The peer review consisted of a three-step process. First, a questionnaire was developed to gather information about service area, operating characteristics, fare structure and policy (a copy of the questionnaire is provided in Appendix A). To minimize the burden on peer agencies, some data was gathered in advance from the National Transit Database and respective transit agency websites. The questionnaire was then sent to a contact at each agency who filled in the remaining data. In some cases, a follow-up phone call helped clarify information, and provided an opportunity to gather more qualitative information about fare policy and agency experiences.

## **Peer Agency Operating Characteristics**

All five agencies are located on the west coast, either in California or in the case of Sound Transit, the State of Washington. The service area populations of smaller commute services range from 210,000 (Santa Clarita) up to 400,000 (Antelope Valley), with 2.6 million in the Sound Transit service area. The service area population for FREX is almost 1 million, including over 500,000 in the City of Denver. Figure 4-1 presents operating characteristics and transit data on the peer agencies.

Hours of operation vary. All agencies provide commute service during AM and PM peak hours. Some operate all day Monday through Friday and/or have weekend service. Peak hour headways range from 10 minutes up to an hour. FREX service is currently available all day Monday-Friday, from 3:45 am - 9:40 pm, with 15 minute peak hour headways.

Annual boardings in 2005 ranged from 86,170 (Roseville Transit) up to 314,647 (Santa Clarita Transit), with Sound Transit Express having 8.8 million annual boardings. FREX had 118,389 boardings in 2005 and 154,861 boardings in 2006.



**FREX Fare Analysis**

CITY OF COLORADO SPRINGS

**Figure 4-1 Comparison of Commuter Service Operating Statistics**

Transit Agency	AVTA	Clean Air Express	Roseville Transit	Santa Clarita Transit	Sound Transit	FREX
Location	Antelope Valley, CA	Santa Barbara, CA	Roseville, CA	Santa Clarita, CA	Seattle, WA	Colorado Springs, CO
Service Area Population	400,000	277,449	108,848	210,000	2,653,000	414,000
Service Area Size (sq. mi.)	1,200	2,737	33	60	1,086	100
Primary Destination	Los Angeles	Goleta & Santa Barbara	Sacramento	Los Angeles	Seattle	Denver
Population	3.7 million	147,529	445,287	3.7 million	572,600	554,636
<b>Service Characteristics</b>						
# of Routes	3	4	7	10	25	1
Average Route Length (approx)	67	60	21	35	25	89
Peak Hour Headways (approx.)	20-40 min	30-40 min	16 min	10 min	15-30 min	15 min
Service Days	Monday-Friday	Monday-Friday	Monday-Friday	Monday-Friday	7 days a week	Monday-Friday
Service Hours	3:45-8:50 am, 3:00-7:40 pm	5:15-8:00 am, 3:30-6:30 pm	5:00 am-9:00 am, 3:20-7:00 pm	3:45 am - 8:45 pm	6:00 am - midnight	3:45 am - 9:40 pm
<b>Operating Statistics</b>						
Annual Revenue Hours	20,176	6,512	6,463	32,644	418,167	23,608
Annual Revenue Miles	657,863	296,422	160,520	826,850	10,254,710	795,456
Annual Boardings	289,022	127,435	86,170	314,647	8,815,793	154,861
Annual Operating Cost	\$ 1,523,731	\$ 948,000	\$359,600	\$ 2,988,932	\$ 57,151,186	\$ 1,427,939
Annual Passenger Fares	\$ 1,392,302	\$ 602,173	\$288,842	\$ 962,788	\$ 13,429,855	\$ 555,156
<b>Farebox Recovery Ratio</b>	<b>91%</b>	<b>64%</b>	<b>80%</b>	<b>32%</b>	<b>23%</b>	<b>39%</b>
<i>Year for which operating statistics given</i>	<i>FY 05</i>	<i>2005</i>	<i>FY 05-06</i>	<i>FY 05-06</i>	<i>2005</i>	<i>2006</i>

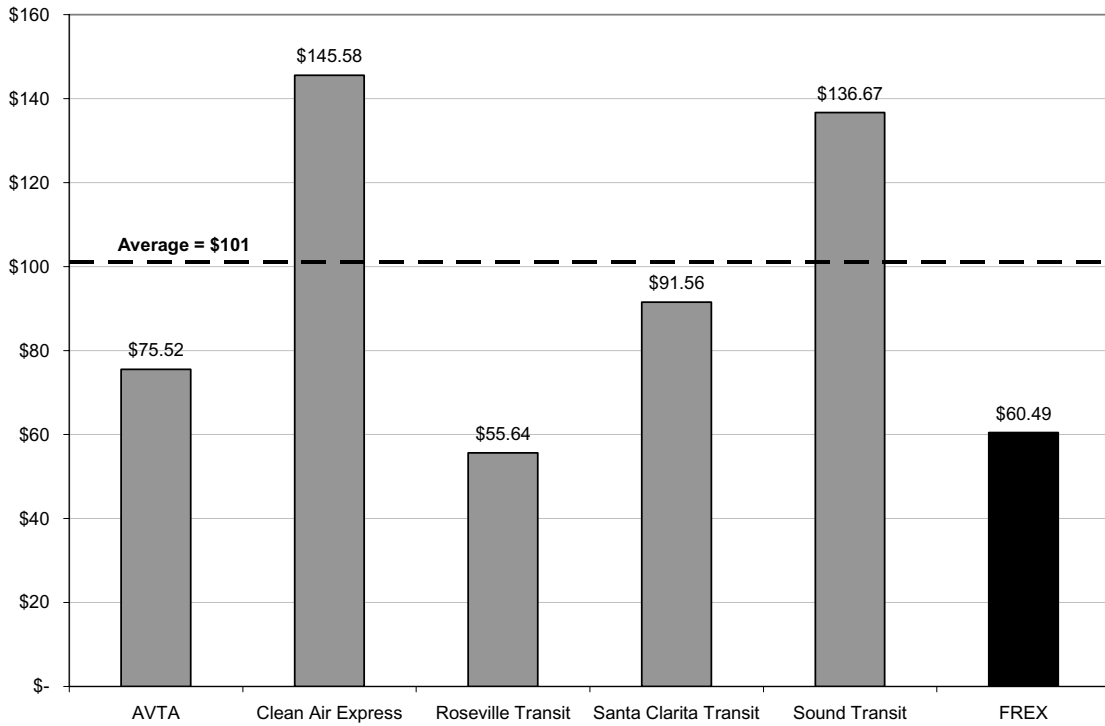
**Data Sources:** 2005 National Transit Database, US Census American Community Survey (2005), local service implementation plans and annual reports, and information provided by transit agency staff.

**Note:** FREX - Service Area Population is sum population of cities served except Denver (Fountain, Colorado Springs, Monument and Castle Rock). Clean Air Express -- Population is Census 2005 combined for cities served: Santa Maria, Lompoc, Santa Barbara, and Goleta.

### Operating Cost per Revenue Hour

The cost per revenue hour ranges from \$55.64 (Roseville Transit) up to \$145.58 (Clean Air Express), with an average of \$101 (excluding FREX). FREX had an operating cost of \$60.49 per revenue hour in 2006, significantly lower than most other agencies.

**Figure 4-2 Operating Cost per Revenue Hour**

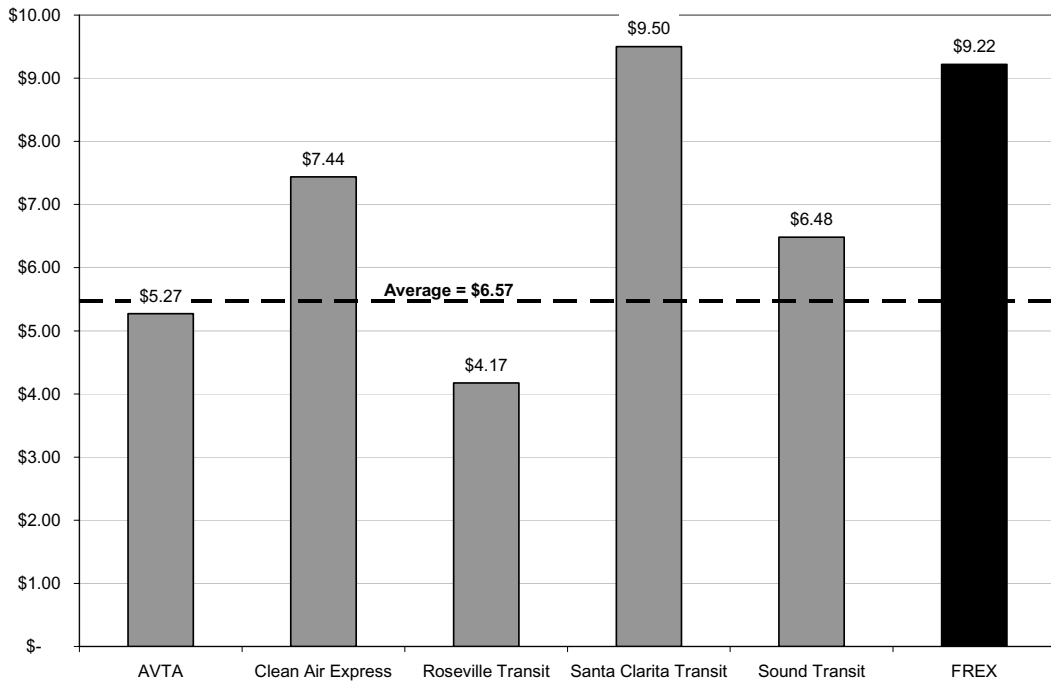


Note: Average excludes FREX

### Operating Cost per Passenger

The operating cost per boarding ranges from \$4.17 (Roseville Transit) up to \$9.50 (Santa Clarita Transit), with an average passenger cost of \$6.57. FREX had an operating cost of \$9.22 per passenger in 2006, relatively high compared to most other agencies. The operating cost per passenger is expected to drop as FREX ridership continues to climb.

**Figure 4-3 Operating Cost per Boarding**

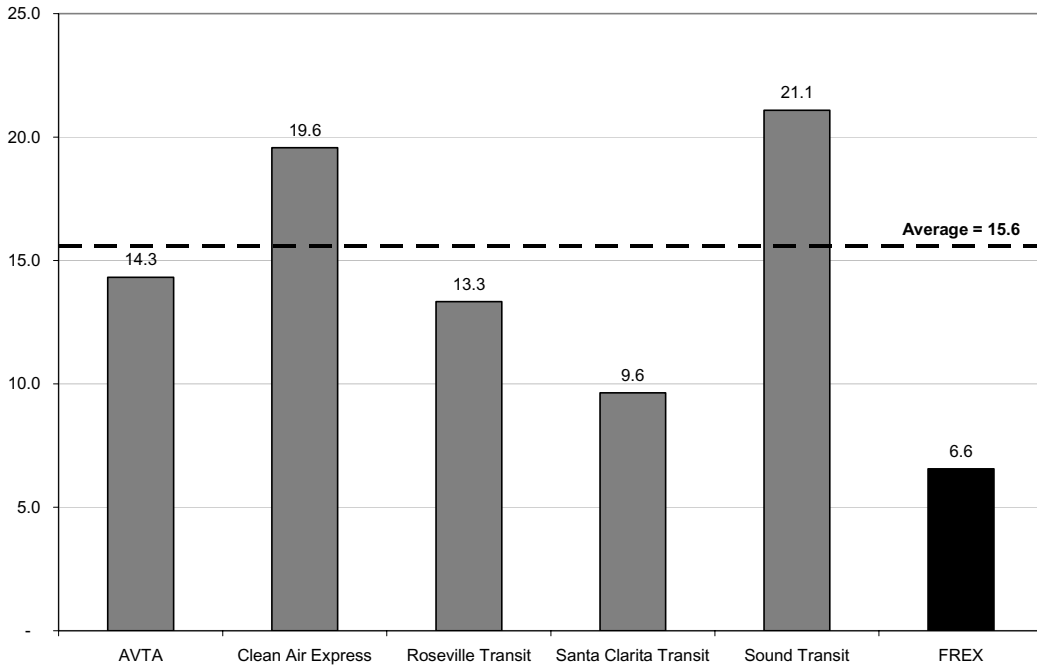


Note: Average excludes FREX

### Passengers per Revenue Hour

The number of passengers per revenue hour ranges from 9.6 (Santa Clarita Transit) up to 21.1 (Sound Transit), with an average of 15.6 passengers per revenue hour. FREX had 6.6 passengers per revenue hour, significantly lower than the other agencies. As with per passenger operating costs, productivity is expected to improve with an increase in ridership.

**Figure 4-4 Passenger per Revenue Hour**



Note: Average excludes FREX

**Farebox Recovery Ratio**

There is significant variation in the farebox recovery ratio between agencies, ranging from a low of 23% for Sound Transit up to 91% for AVTA. The farebox recovery ratio for FREX was 39% in 2006. This information is summarized in Figure 4-5.

Targets vary as well – Sound Transit has a low target recovery ratio of 20%, whereas targets for Antelope Valley and Clean Air Express are 90% and 100%, respectively. Targets are set based upon a variety of factors, including political support for public subsidies. One peer agency noted that commute express service caters to “choice-riders” who can afford higher fares.

**Figure 4-5 Farebox Recovery Ratio**

Agency	Percent
AVTA	91%
Clean Air Express	64%
Roseville Transit	80%
Santa Clarita Transit	32%
Sound Transit	23%
<i>Average for all peer agencies</i>	<i>58%</i>
<b>FREX</b>	<b>39%</b>

## Average Fare per Passenger

As shown in Figure 4-6 below, the average fare per passenger ranges from \$1.52 (Sound Transit) up to \$4.73 (Clean Air Express). In 2006, FREX had an average fare per passenger of \$3.45, very similar to the average of \$3.50 for the other agencies. However, Sound Transit is a much larger agency with different operating characteristics. The average fare for the other transit agencies is \$4.00, excluding Sound Transit. Note that this figure is for all fare types, calculated by dividing the total annual farebox revenue by total number of passengers.

**Figure 4-6 Average Fare per Passenger**

<b>Agency</b>	<b>Average Fare</b>
AVTA	\$ 4.82
Clean Air Express	\$ 4.73
Roseville Transit	\$ 3.35
Santa Clarita Transit	\$ 3.06
Sound Transit	\$ 1.52
<i>Average</i>	<i>\$ 3.50</i>
<i>Average (Sound Transit excluded)</i>	<i>\$ 4.00</i>
<b>FREX</b>	<b>\$ 3.45</b>

## Peer Agency Fare Structure and Passenger Discounts

Figure 4-7 shows the fare structure for commute service among the peer agencies and FREX. It lists the cash fare and all pre-paid fare instruments including multi-ride tickets and monthly passes as well as other special features of each agency's fare structure.

Adult cash fares range from \$1.50 (Sound Transit) up to \$10 (AVTA). The cash fare for some agencies varies depending on distance traveled and other agencies have a flat fare. Sound Transit has a zone-system for fares, with three zones.

**FREX Fare Analysis**

CITY OF COLORADO SPRINGS

**Figure 4-7 Fixed Route Fare Structure for Commuter Bus Services**

	AVTA	Clean Air Express	Santa Clarita Transit	Roseville Transit	Sound Transit	FREX
	Antelope Valley, CA	Santa Barbara, CA	Santa Clarita, CA	Roseville, CA	Seattle, WA	Colorado Springs
Cash	\$10	\$6	\$3.50 - \$4.00	\$2.75 - \$3.80	\$1.50 one-zone \$2.50 two-zone	\$2.00 - \$6.00
Monthly Pass	\$206-\$247	\$135	\$118 - \$133	\$95 - \$130	\$54.00 one-zone \$90 two-zone \$108 three-zone	N/A
	\$228-\$268 EZ Pass (all MTA)		\$60 - \$67 for Seniors, Disabled, Students	\$125 pass includes local transfers (\$110 for Seniors and Disabled)		
Tickets						
10-ride	\$75	\$45	N/A	N/A	N/A	\$27 - \$55
20-ride	N/A	N/A	\$70 - \$80	\$55 - \$76	N/A	\$35 - \$95
40-ride	N/A	N/A	N/A	N/A	N/A	\$90 - \$180
Transfers	FREE to Local Service	FREE to Local Service	FREE for SCT, \$0.25 for MTA	FREE with Cash Fare	FREE	No
Other	Seniors and Disabled 50% Discount		50% discount for Seniors, Disabled, and Students.	Lower fares for residents and reverse commute, higher fares for non- residents	Seniors and Disabled: approx. 50% Discount; Students approx. 1/3 off	Seniors, Disabled 50% discount 10 am - 3 pm

## FREX Fare Analysis

CITY OF COLORADO SPRINGS

All agencies offer a monthly pass and/or multi-ride tickets. None offer day, weekly, or 31-day rolling passes. AVTA and Clean Air Express both offer a 25% per-ride discount on 10-ride tickets. Santa Clarita Transit and Roseville Transit offer 20-ride tickets but only as a convenience, at the same per-ride cost as one-way cash fares. Comparatively, FREX offers multi-ride tickets, with a 25% discount on 40-ride tickets and lesser discounts on 10- and 20-ride tickets.

**Figure 4-8 Discounts on Multi-Ride Tickets**

Agency	Ticket Type	Cost	Cost per Ride	Cash Fare	% Discount over Cash Fare
AVTA	10-Ride	\$75	\$7.50	\$10.00	25%
Clean Air Express	10-Ride	\$45	\$4.50	\$6.00	25%
Roseville Transit	20-Ride	\$55	\$2.75	\$2.75	0%
Santa Clarita Transit	20-Ride	\$75	\$3.75	\$3.75	0%
FREX	10-Ride	\$27-\$55	\$2.70-\$5.50	\$2 - \$6	8.3-12.5%
	20-Ride	\$35-\$95	\$1.75-\$4.75	\$2 - \$6	17-21%
	40-Ride	\$90-\$180	\$2.25-\$4.50	\$2 - \$6	25%

Note: Sound Transit does not offer multi-ride passes

The multiplier on monthly passes ranges from 21 up to 36 (see Figure 4-9). The multiplier is the number that is multiplied by the cash fare to determine the price of the monthly pass.

**Figure 4-9 Multiplier on Monthly Pass**

Multiplier on Monthly Pass	
AVTA	21-25
Clean Air Express	23
Roseville Transit	35
Santa Clarita Transit	34
Sound Transit	36
FREX	n/a

## Fare per Mile

Figure 4-10 compares the approximate fare per mile for each peer agency. The fare is for travel along the full length of the route. Cash fares are about \$0.10 per mile for most agencies, though Roseville Transit and AVTA are higher. Before FREX fares increased in February 2007, the average fare per mile was about \$0.09.

**Figure 4-10 Fare per Mile**

<b>Agency</b>	<b>Approx. Route Length (miles)</b>	<b>One-Way Cash Fare</b>	<b>Approx. Fare per Mile</b>
AVTA	67	\$ 10.00	\$ 0.15
Clean Air Express	60	\$ 6.00	\$ 0.10
Roseville Transit	21	\$ 2.75	\$ 0.13
Santa Clarita Transit	35	\$ 3.50	\$ 0.10
Sound Transit	25	\$ 2.50	\$ 0.10
<i>AVERAGE (excluding FREX)</i>	<i>42</i>	<i>\$ 4.95</i>	<i>\$ 0.12</i>
FREX	68	\$ 6.00	\$ 0.09

**Transfers**

Transfer policy varies between agencies. Those with both local and commuter service generally offer free transfers to their own local fixed-route service, though Roseville Transit offers free transfers only to cash-fare passengers or those whom have purchased a higher-cost monthly pass (\$125, compared to \$90 for commute-route only pass. This pass is available only to residents of the City of Roseville). FREX does not currently offer free transfers to the local fixed-route service in Colorado Springs (Mountain Metropolitan Transit).

Transfers are generally not offered to local fixed-route service provided by other neighboring agencies, though Santa Clarita Transit riders can obtain an MTA (Los Angeles Metropolitan Transit Agency) local-bus transfer for \$0.25. AVTA riders can purchase a higher cost “EZ Pass” from MTA that includes unlimited rides on AVTA buses and all services within the MTA system.

Sound Transit Express tickets are accepted as a free transfer to local service on Pierce Transit (serving the City of Tacoma and surrounding Pierce County, Washington) and Community Transit (Southwest Snohomish County, Washington). Sound Transit Express tickets are also accepted as a free one-zone transfer on the King County Metro system. Likewise, local passes from these three systems are accepted as a one-zone transfer on Sound Transit Express buses.

**Discounts Tickets**

Consistent with Federal requirements, all agencies offer a discount to seniors and disabled passengers, typically about 50% of full fare for cash-fares, multi-ride passes and monthly passes. FREX offers a 50% discount to seniors and disabled passengers during off-peak hours (10 am – 3 pm). Two agencies offer a student discount: Santa Clarita offers a 50% discount and Sound Transit provides an approximately 33% discount to students. FREX does not offer a student discount, nor is it typical for commute services to offer student discounts.



## **FREX Fare Analysis**

CITY OF COLORADO SPRINGS

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None of the peer agencies offer a discount during off-peak hours. Roseville Transit offers a lower price to residents and reverse-commuters (living in Sacramento and working in Roseville). AVTA offers a 10% discount for passes purchased online

### **Innovative Fare Policies**

Sound Transit has developed two programs in coordination with the community to reduce commute costs:

1. A "FlexPass" is available for employers to offer to their employees, costing \$285 per year (or \$341 with unlimited use of multiple systems in the region, including Community Transit and Metro VanPool). The program requires that a pass be purchased for every regular, full-time employee regardless of their current commute behavior. Currently 119,000 FlexPasses are in circulation.
2. The "U-Pass," available to students, staff and faculty of the University of Washington, is accepted as full fare on all Metro Transit, Community Transit, and Sounder Commuter Rail services. The cost per-quarter is \$44 for students and \$61.80 for faculty and staff. Currently about 44,000 U-Passes are in circulation.

### **Conclusions**

The peer review examined a broad range of agencies and their experiences with fare structure and policy, leading to some conclusions about FREX's fares and some suggested strategies for successfully implementing a new fare structure.

Overall, FREX has a somewhat lower average fare per passenger compared to other commute services. It is expected that the average fare per passenger will increase and become more inline with other agencies when the fare increase adopted in 2007 and potential fare increase in 2008.

Other agencies generally offer free transfers to local service, whereas FREX does not offer free transfers. Free transfers can lead to reduced fares per passenger, but also have the potential to increase ridership and overall revenue.

FREX appears to be providing cost-effective service and if ridership and revenue continue to climb, operating costs per passenger and passengers per revenue hour are expected to approach those of other similar services.

