Pass Program Study

Recommended Option Modeling Results

February 6, 2018

four nines TECHNOLOGIES

Agenda

- Direction from PPWG to 49T
- Ridership & Revenue Projections
- Overall Modeling Results
- Components:
  - Base Fare Increase
  - Nonprofit Program
  - Low Income Fare Program
  - Youth Fare
  - Youth Pass Program
  - College Pass Program
  - EcoPass Program
  - FlexPass Program
  - Neighborhood EcoPass Program

Direction from PPWG to 49T

- Model the programs as proposed, working to manage the competing priorities and advance the guiding principles

Direction from PPWG	**Achieved?**
Do not increase Local base fare above $3.00 if possible (potential tradeoff: adjust Regional & Airport base fares)	✅ (Local - $3; Regional - $5.25)
Set low income eligibility threshold at 185% federal poverty level	✅ (185% FPL)
Offer as great of a discount to low income adults as possible	✅ (40% discount)
Eliminate $5 fee on EcoPass Program	✅
Offer 70% discount to youth with free for 12 & under (potential tradeoff: remove 6-12 free to offer 70% discount)	✅ (70% discount; 6-12 not free)
Eliminate stored value discount on MyRide to minimize future revenue losses as adoption grows	✅

Ridership & Revenue Projections

Boardings (millions)

Fiscal Year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Base System	80.1	80.6	81.1	81.5	82.1	82.6	83.1
FasTracks	12.1	15.7	19.3	20.9	21.8	22.5	23.2
Total Boardings	**92.2**	**96.6**	**100.6**	**102.5**	**104.0**	**105.1**	**106.3**
% Incr from Prior Year		**4.8%**	**4.2%**	**1.8%**	**1.4%**	**1.1%**	**1.1%**

- Base System includes Access-a-Ride paratransit
- Ridership growth due to regional population & employment growth
- Ridership growth due to completion of FasTracks
  - Gold (G) Line in 2018
  - Southeast Rail Extension Line (E, F & R) in 2019
  - North Metro Rail (N) Line in 2019

Ridership & Revenue Projections

Fare Revenue (millions)

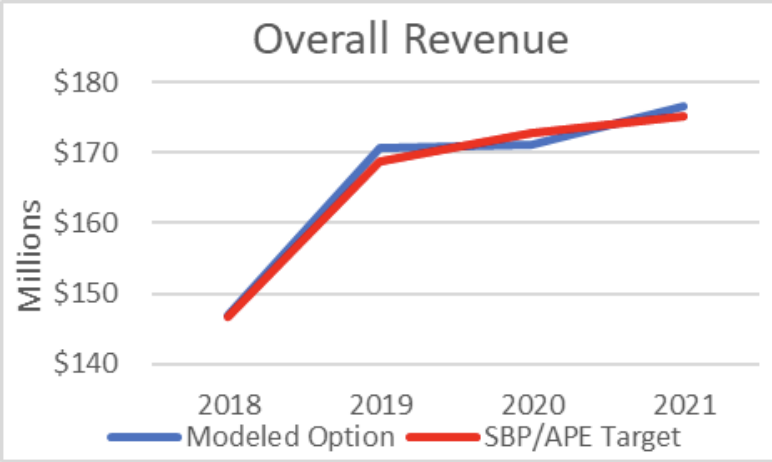
Fiscal Year	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
SBP (Strategic Budget Plan)	$114.2	$115.2	$127.7	$128.5	$129.3	$142.9	$143.7
APE (Annual Program Evaluation)	$26.4	$31.6	$41.2	$44.3	$46.0	$52.3	$54.0
Total Fare Revenue	**$140.6**	**$146.8**	**$168.9**	**$172.8**	**$175.3**	**$195.2**	**$197.7**
% Incr from Prior Year		**4.4%**	**15.0%**	**2.0%**	**1.0%**	**11.0%**	**1.0%**

- Base System (SBP) includes Access-a-Ride paratransit
- APE revenue targets consider the length of trips on new FasTracks lines
- Fare changes planned for every 3 years (FY2019 and FY2022)
  - ~ 10% revenue increase from fare increase

Overall Modeling Results

- Option pricing assumptions meet the Strategic Budget Plan fare revenue target

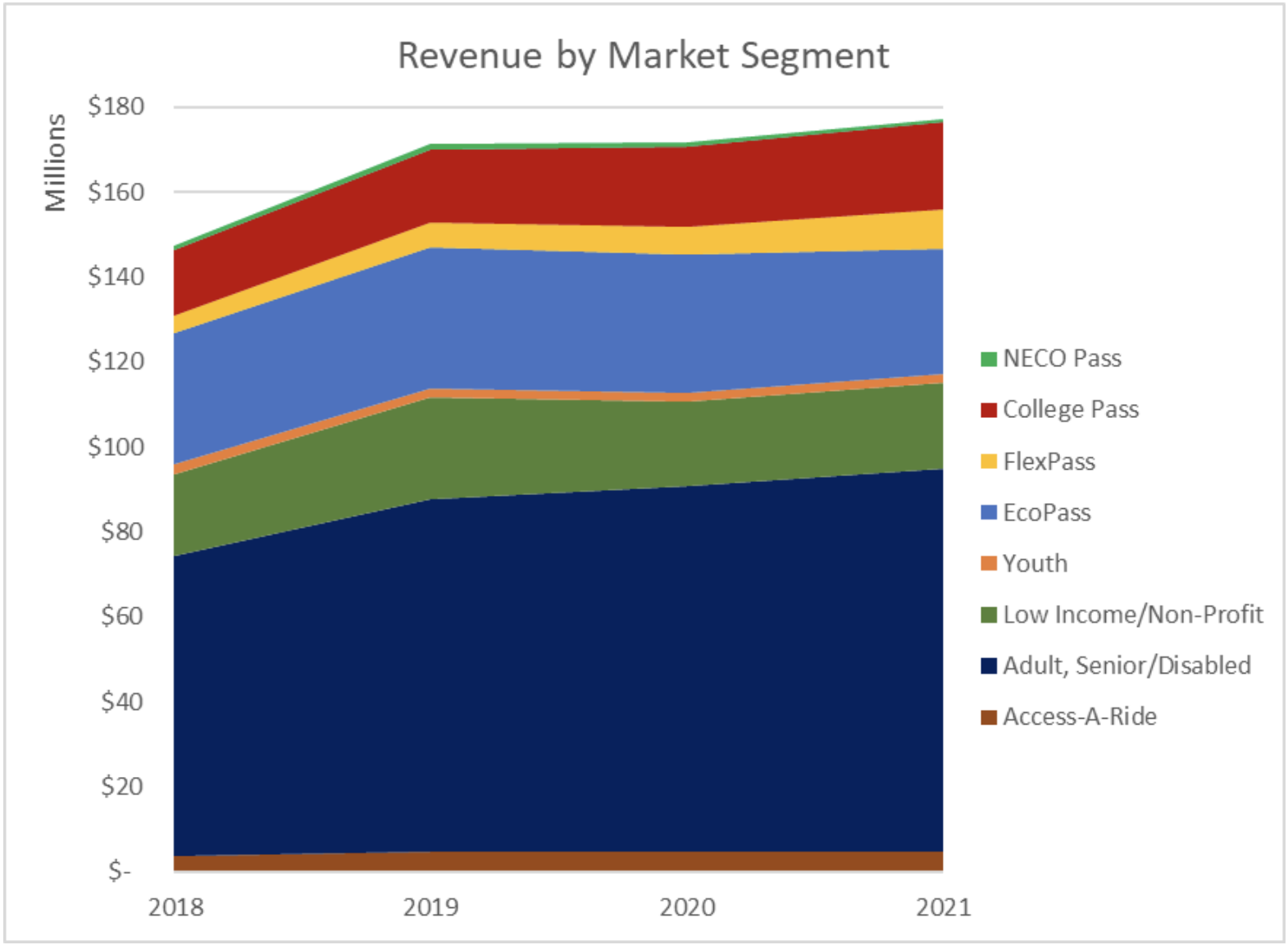
Revenue (millions)	2019	2020	2021
SBP/APE Target	$168.9	$172.8	$175.3
Modeled Option	$170.7	$171.2	$176.7
	+1%	-1%	+1%



- Compared to the baseline, Option results in marginally higher ridership

Ridership (millions)	2019	2020	2021
Baseline Model	99.7	102.0	103.5
Modeled Option	99.6	102.6	104.2
	0%	+1%	+1%

Overall Modeling Results



Base Fare Increase

- Base fare adjusted to reach Strategic Budget Plan revenue targets
- 3-hour transfer window replaced with 2-hour pass
- Current 1-day and monthly pass multiples retained

Fare Products	Local			Regional			Airport		
	2016	2019	% Δ	2016	2019	% Δ	2016	2019	% Δ
2-Hour Pass	$2.60	$3.00	15%	$4.50	$5.25	17%	$9.00	$10.50	17%
1-Day Pass	$5.20	$6.00	15%	$9.00	$10.50	17%	Included in the Regional/Airport Pass		
Monthly Pass	$99	$114	15%	$171	$199.50	17%			
10-Ticket Book	Product discontinued (previously 10% discount)								
MyRide Discount	Discount discontinued (previously $0.25 discount)								
Annual Pass	Product discontinued (previously 11 months for price of 12 months)								

Peer Fare Prices

Peer	Local	Regional/Express	Transfers/Pass
Denver: RTD	$2.60	$4.50	3 hour transfers
Boston: MBTA	$1.70-$2.00	$2.25-$2.75	2 hour transfer
Dallas: DART	$2.50	$3.50-$5.00	2 hour pass
Houston: METRO	$1.25	$2.00-$4.50	3 hour transfer
Los Angeles: Metro	$1.75	n/a	2 hour transfers
Minneapolis: Metro Transit	$2.00-$2.50	$2.50-$6.25	2½ hour transfer
Phoenix: Valley Metro	$2.00	$3.25	no transfers
Portland: TriMet	$2.50	n/a	2½ hour pass
San Francisco: Muni	$2.75	n/a	90 min transfers
Santa Clara: VTA	$2.25	$4.50	2 hour transfers
Seattle: King County Metro*	$2.75	n/a	2 hour transfers
St. Louis: Metro	$3.00	n/a	2 hour pass (single ride $2.00-$2.50)
Washington D.C.: WMATA	$2.00	$4.25 (bus only)	2 hour transfers

Notes:

* King County Metro fare adopted for implementation in July 2018.

Farebox recovery targets for an agency and different local funding sources influence the fare pricing.

Nonprofit Program

- 2-hour and 1-day passes would be sold in bulk to eligible 501(c)(3) nonprofit or governmental community/social service organizations that provide assistance to low income and homeless individuals
- Monthly passes would no longer be distributed at a discount through the Nonprofit Program. Organizations could still buy them at full face value
- The discount provided would range from 40-70% off of the adult full fare
- Fares would continue to be distributed as paper products

Nonprofit Program

Nonprofit Program	Discount	Local	Regional	Airport
2-Hour Pass				
Low Income Adult	40%	$1.80	$3.30	$6.60
Senior/Disabled	50%	$1.50	$2.60	$5.20
Youth	70%	$0.90	$1.60	$3.20
1-Day Pass				
Low Income Adult	40%	$3.60	$6.60	
Senior/Disabled	50%	$3.00	$5.20	
Youth	70%	$1.80	$3.20	
Monthly Pass				
Adult	0%	$114	$199.50	
Senior/Disabled	50%	$57	$98.75	
Youth	70%	$34.25	$60.75	

Low Income Fare Program

- Low income adults would be able to register for the low income program
- Modeling assumptions:
  - Income eligibility threshold: 185% of the federal poverty level
  - Low income fare discount: 40% off of the adult full fare 2-hour pass
  - Low income adoption rate: 50% of eligible linked trips
  - Launch date: 2020

Low Income Fares	Local	Regional	Airport
2-Hour Pass	$1.80	$3.15	$6.30

- Challenges:
  - Costs and logistics of eligibility testing and issuing identification
  - Implementation with current technology and fare collection system
  - Retail network and distribution of media
  - Enforcement of eligibility

Peer Low Income Fare Programs

- All new low income fare programs are being implemented on smart card:
  - Seattle ORCA Lift
  - Minneapolis Metro Transit
  - Portland TriMet
- Los Angeles Metro is in the process of transitioning its low income pass subsidy program to smart card
- Tucson SunTran who has a low income program since 1972 has now integrated its ID and smart card. SunTran has struggled to discontinue accepting cash since the program was introduced prior to smart card

Peer Low Income Fare Programs

- Advantages of implementing low income fare programs on electronic fare media identified by peers include:
  - **Operations & On-time Performance** - use of electronic fare media simplifies and speeds up boardings
  - **Enforcement** - secure media and identification cards are key to managing eligibility and controlling abuse in special fare programs
  - **Performance Reporting** - track productivity & effectiveness
  - **Reduce Operator/Rider Conflict** - individual must have valid electronic fare media with sufficient value/pass in order to obtain the low income discount; limits number of riders boarding with a low income fare without having their income verified
  - **Management of Eligibility** - online database that allows partner agencies to manage registration data can reinforce the effectiveness of program management through efforts to manage eligibility

Youth Fare

- Youth ages 6-19 would receive a 70% discount off of the adult full fare
- Children 5 years of age or younger ride free with a fare-paying rider (limit three children with each fare-paying rider)
- Challenges:
  - Discussion with bus operators necessary to understand implications on operations and fare collection
  - Discussions with retail outlets necessary to understand implications on distribution of passes; discontinuation of pre-sale of 10-ride tickets and migration to MyRide may be an opportunity to free up drawer space

Youth Fares	Local	Regional	Airport
2-Hour Pass	$0.90	$1.60	$3.20
1-Day Pass	$1.80	$3.20	
Monthly Pass	$34.25	$60.75	

Youth Pass Program

- Organizations can work with RTD to form a Youth Pass for their jurisdiction
- Youth Passes would be distributed on electronic fare media
- 1st year pricing would be based on number of passes distributed. The price of the pass would 12 monthly passes at 94% Local/6% Regional
- 2nd year pricing would be based on the number of participants and the prior year utilization data per pass
- An organization can choose to distribute to all youth in its jurisdiction or to a subset of youth (e.g., low income youth that are eligible for free or reduced priced lunch)
- Challenges:
  - Distribution and administration of the passes
  - Implementation with current technology and fare collection system

Phasing Pass Programs

- Pass price increases phased in for EcoPass, Neighborhood EcoPass, and College Pass over three years (2019-2021)
- Phasing proposed over three years in order to:
  - Better retain organizations and assist in participating organization budgeting
  - Complete the transition prior to next fare increase in 2022 per SBP
- Phasing modeling assumptions:
  - Eco, College & NECO Pass: 20% max increase in years 1 & 2; remainder of the increase in year 3
  - College & NECO Pass: decrease in pass price passed on in year 1
  - EcoPass: max decrease in pass price in years 1 & 2 is set at 20% to minimize impact on RTD and apply “insurance” model EcoPass-wide

Phasing Pass Programs

- Example of phasing in modeling assumptions:

Neighborhood	% Change in Pricing	% Increase per Year		
		Year 1	Year 2	Year 3
1	15%	15%	-	-
2	55%	20%	20%	15%
3	-25%	-25%	-	-

Employer	% Change in Pricing	% Increase per Year		
		Year 1	Year 2	Year 3
1	15%	15%	-	-
2	55%	20%	20%	15%
3	-25%	-20%	-5%	-

College Pass Program

- College Pass Program priced based on the adult face value of the trips taken by students associated with an institution
- Pricing for each institution would be updated annually to reflect utilization per student
- Surveying would be required for institutions that are interested in joining the College Pass Program
- Modeling assumptions:
  - Pricing based on 2016 linked trips
  - Pricing increases over 20% phased in over three years
  - Pricing decreases passed on in year 1
  - All current institutions remain in the College Pass program and no new institutions join

EcoPass Program

- EcoPass Program priced based on the adult face value of the trips taken
- Pricing would be determined for each Service Level Area (SLA) and employer size bucket
- Pricing of the SLA and employer size buckets would be updated annually to reflect utilization per employee
- SLA boundaries would be reviewed annually

EcoPass Program

- Modeling assumptions:
  - No additional fee included in EcoPass pricing
  - Pricing based on 2016 linked trips
  - SLA boundaries updated to reflect opening of the A-Line & R-Line as well as other locations with nearby bus stops with 25 or more trips (discussed on following slide)
  - Pricing increases and decreases over 20% phased in over three years
  - The pricing of the SLAs is estimated for years 2 & 3 based on modeled attrition and attraction of employers
  - For a new employer that signs up for EcoPass, modeling assumes a 20% of transit ridership from that employer would be new growth not previously taking place on RTD
  - For a current employer who drops out of EcoPass, modeling assumes 33% migrate to FlexPass, 33% pay their own fare, 33% stop riding RTD

Service Level Areas

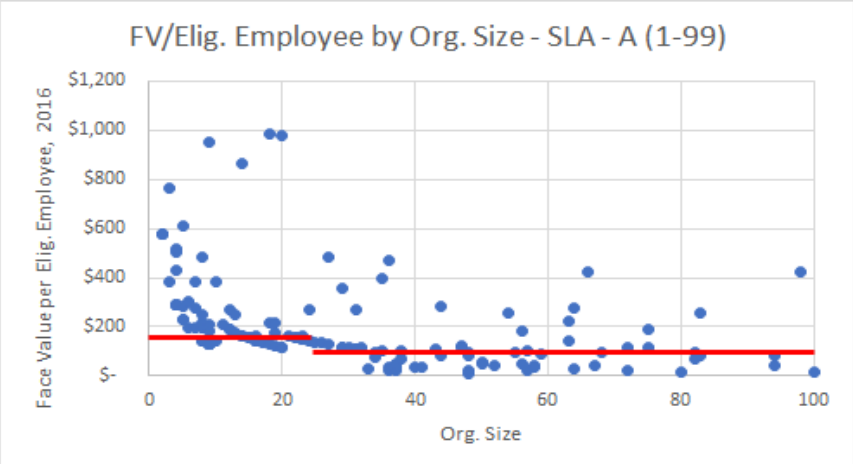
- Board Adopted Service Level Area Definitions:
  - SLA A: <25 trips from 7:00-7:59 am within 0.3 mile
  - SLA B: >25 trips from 7:00-7:59 am within 0.3 mile
  - SLA C: Downtown Denver CBD
  - SLA D: Denver International Airport
- Following changes included in model run:
  - SLAs updated to reflect opening of the A-Line & R-Line
  - SLAs updated to reflect bus stops with 25+ trips
  - Upon review of the service levels service W-Line stations, these station areas do not meet the service level thresholds used to define SLA B and have been assigned to SLA A
  - The new boundaries would impact 27 of the 2018 EcoPass employers by shifting them from SLA A to SLA B
  - Adjustment of SLA categorization of these employers would result in a slightly lower SLA A price and higher SLA B price

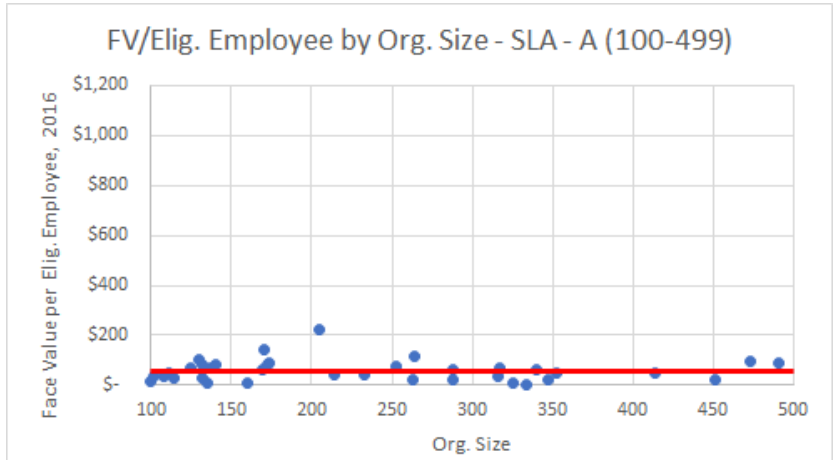
Employer Size Buckets

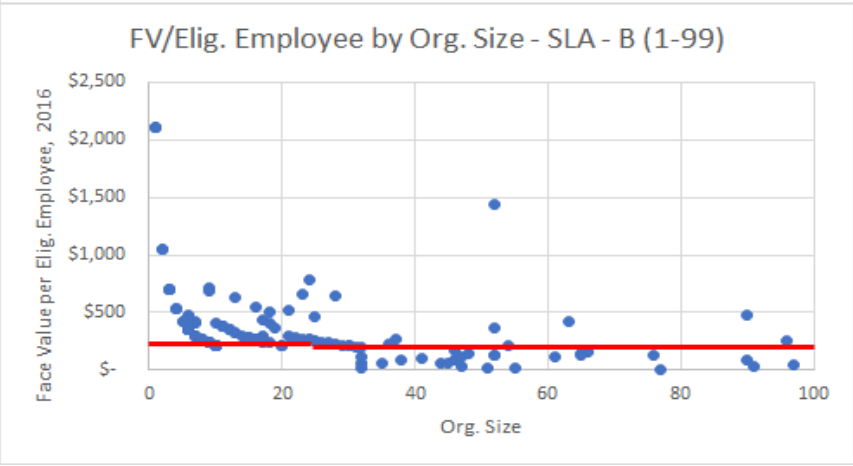
- Following changes being analyzed but not included in the model run
- Single-SLAs employers with less than 500 employees
  - Organization priced based on employer buckets: 1-24, 25-99 & 100-499
  - Flat pricing per employee for DIA employers 1-499
  - Contract minimums would apply
- Multi-SLAs employers with less than 500 employees
  - Organization priced at highest priced SLA or organization must set up separate contracts
- Single-SLA employers with 500+ employees
  - Organization specific pricing
- Multi-SLAs employers with 500+ employees
  - Organization specific pricing

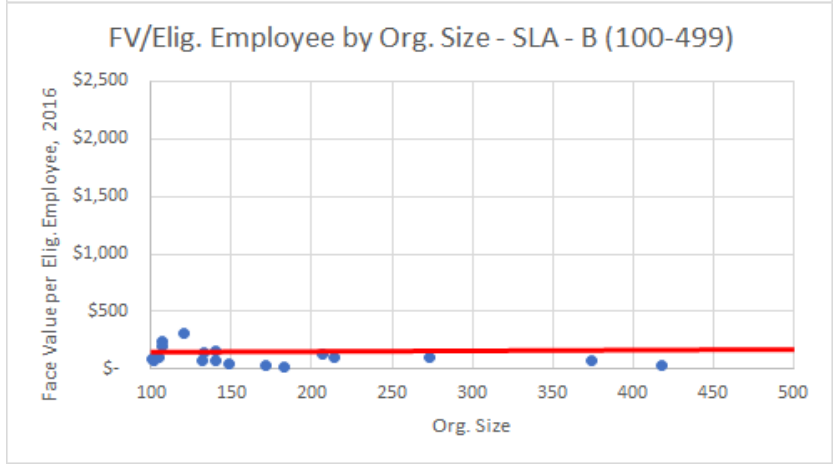
Employer Size Buckets

- Employers in SLA A, B & C in three employer buckets have similar usage rates:
  - 1-24, 25-99, 100-499
  - Employer size definitions identical to 2009 Proposal

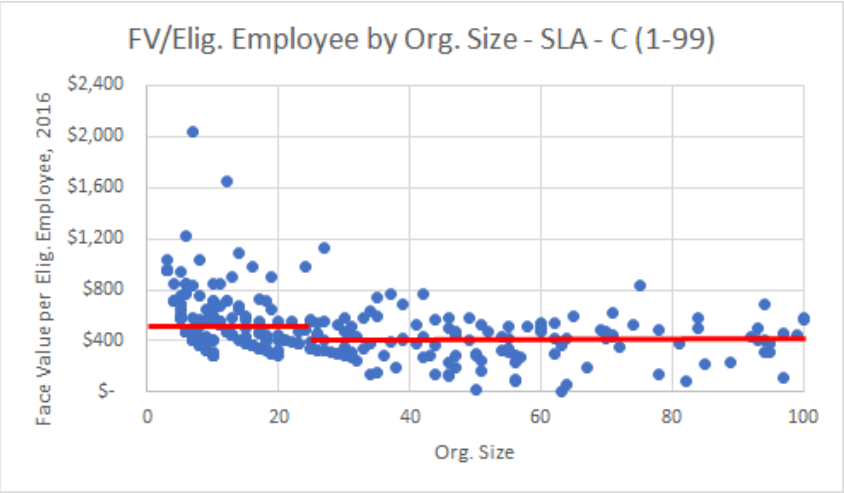


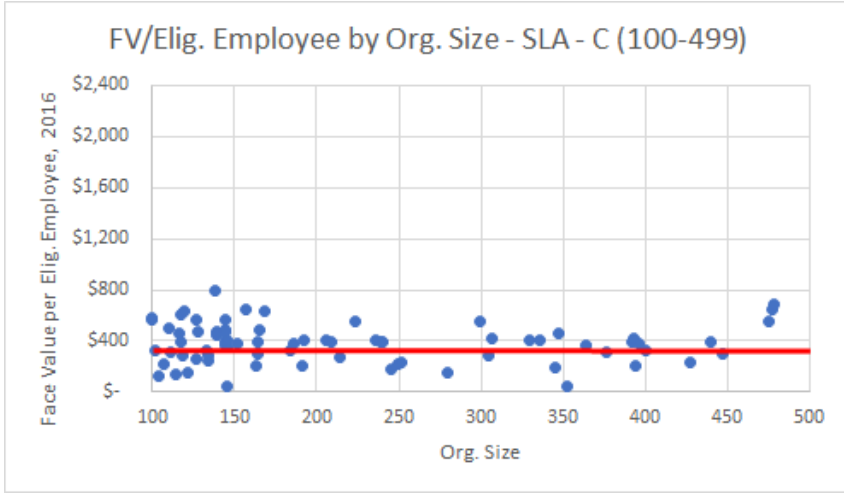




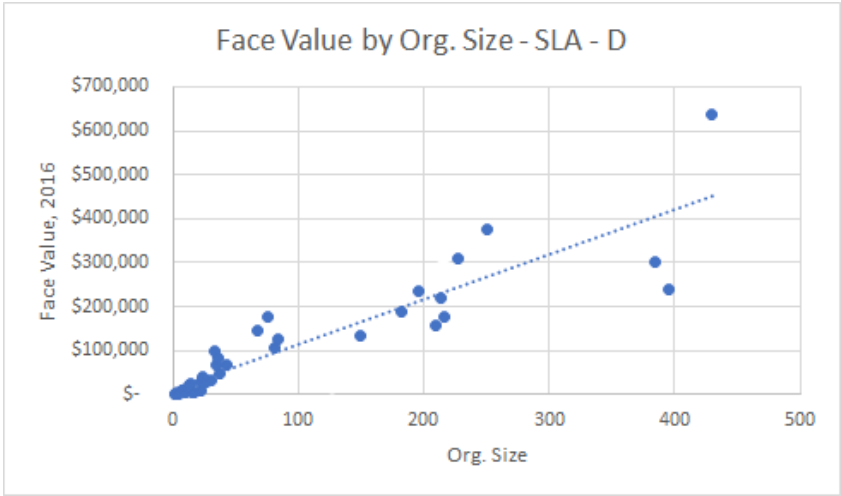


Employer Size Buckets



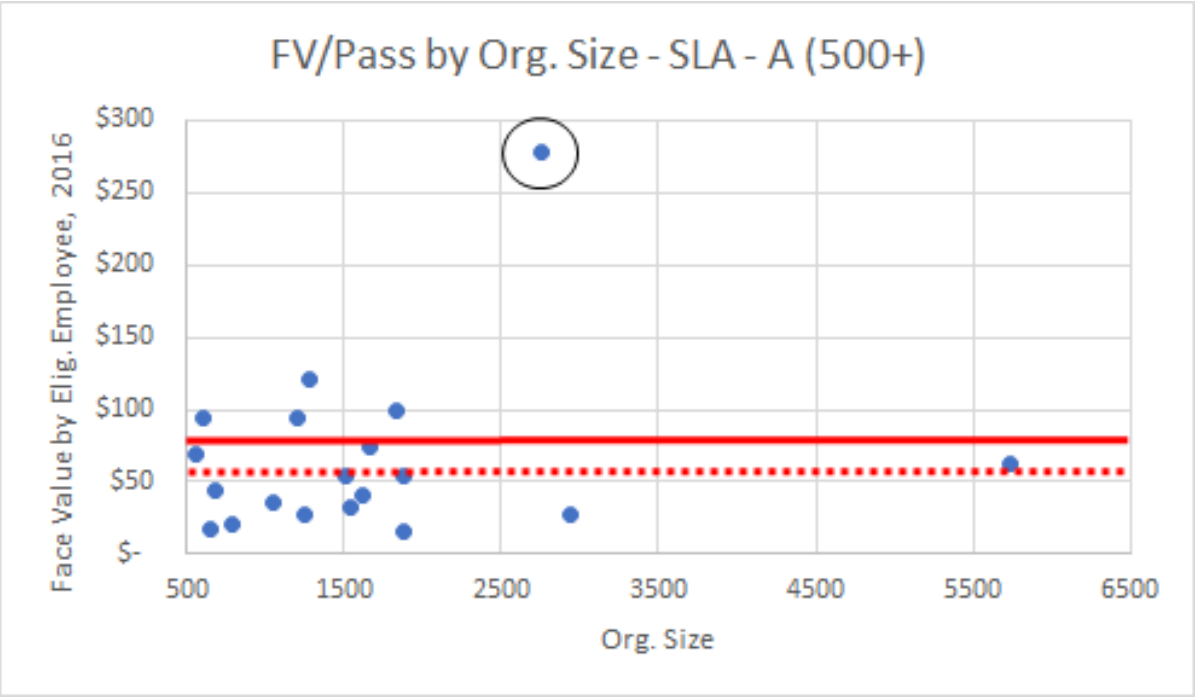


- Employers in SLA D have similar usage rates regardless of size (i.e., flat price per employee, with contract minimum)



Employer Size Buckets

- Employers over 500+ tend to have slightly greater variation in their cost per employee
- Because of their size, a single large business in this size category can skew pricing for an entire SLA, particularly if the organization has significantly higher than average usage of EcoPass.



- Price per Elig. Employee
  - $54, excl. Outlier
  - $75, with Outlier
- ~39% average price increase applied to all 19 businesses, because of a single organization
- 7 of 19 organizations would see a >100% price increase, likely leading to opt-out

Employer Size Buckets

- Benefits of adjusting employer size buckets and organization specific pricing for larger employers (i.e., 500+ employees):
  - Large employers with multiple employees in different SLAs won't have to manage multiple portals and confirm that employees are assigned to the correct SLA
  - Removing larger employers prevents the skewing of SLA pricing
- Analysis of changes to employer size buckets still underway:
  - Objective: understand impact of adjusting employer size buckets on SLA pricing and retention

NEW SLIDE

Employer Size Buckets

Current Employer Size Buckets	Adjusted Employer Size Buckets
1-24 employees	1-24 employees
25-249 employees	25-99 employees
250-999 employees	100-499 employees
1,000-1,999 employees	500+ employees -> priced by organization as Master contract
2,000+ employees	

NEW SLIDE

Employer Size Buckets

Analysis of changes to employer size buckets:

- Employers with 100-249 employees would see a price decrease, as they are grouped with employers with 250-499 employees who have a lower face value of trips taken per employee than employers with 25-99 employees
- Price increase for employers with 250-499 employees, as they are no longer grouped with employers with 500-999 employees who have lower face value of trips taken per employee
- For Master contracts for employers 500+
  - 41 employers would qualify based on 2016 organizations in EcoPass
  - Average # of eligible employees: 1,870 employees
  - Median # of eligible employees: 1,080 employees
  - 25 employers would see a price decrease (14 with decrease >50%)
  - 16 employers would see an increase a price increase (3 with increase between 50-100% and 3 with increase >100%)

NEW SLIDE

Employer Size Buckets

Findings of changes to employer size buckets:

- Adjusted employer size buckets result in lower revenue in Years 1 and 2 and greater revenue in Year 3 than current employer size buckets
  - Year 1: new employer size buckets -$1.5m
  - Year 2: -$1.3m
  - Year 3: +$1.8m
- In Years 1 and 2, the revenue loss associated with the pricing decreases is greater than the revenue gained from the pricing increases
- In Year 3, phasing is complete and all employers priced based on estimated face value of trips for remaining employers thus addressing issues with imbalance between price increases and decreases
- Approach appears to result in moderately improved employer retention within EcoPass program

FlexPass Program

- Employers and employees would continue to be able to purchase monthly passes through the FlexPass Program
- No discount would be provided on the monthly passes distributed through the FlexPass Program
- Employers would still be able to pass on costs to employees
- Challenge:
  - Employers may no longer participate with the elimination of the discount

Neighborhood EcoPass Program

- Neighborhood EcoPass Program priced based on the face value of the trips taken by households within a neighborhood
- Face value of trips would account for residents who qualify for a discounted youth, senior & disabled fare
- Pricing would not account for residents who may qualify for a low income fare since the neighborhood coordinators would not be authorized to verify income
- Pricing for each neighborhood would be updated annually to reflect utilization per household
- Surveying would be required for a neighborhood that is interested in joining the Neighborhood EcoPass Program

Neighborhood EcoPass Program

- Modeling assumptions:
  - Pricing based on 2016 linked trips
  - Pricing increases over 20% phased in over three years
  - Pricing decreases passed on in year 1
  - For a new neighborhood that signs up for NECO, modeling assumes a 20% growth in transit ridership from that neighborhood
  - For a current neighborhood who drops out of NECO, modeling assumes 67% pay their own fare, 33% stop riding RTD