

Technical Assessment of Allocation Test Model Components

This memo assesses how the 24 initial allocation test models are impacted by the three characteristics that define each model:

1. Scenarios
2. Sizing factors
3. Performance Metrics

1. Assessment of Scenarios 1A and 2A

Common Elements

- Improvement is encouraged
- Existing high performance is not rewarded
 - In the example below, Charlottesville and Williamsburg are similar sized agencies (based on operating cost). Williamsburg performed at a higher level in both FY11 and FY12, yet Charlottesville is allocated more money under both Scenarios 1A and 2A. Charlottesville's improvement is rewarded, but Williamsburg's higher performance is not.

Agency	Size Weight (Cost)	FY11 Customers per Hour	FY12 Customers per Hour	Performance Change	Performance Weight	1A Allocation	2A Allocation
Charlottesville	0.348	26.03	28.81	11%	1.12	\$127,364	\$182,296
Williamsburg	0.348	29.61	29.56	0%	1.01	\$114,801	\$60,488

- Continued improvement becomes more difficult over time, so the potential for improvement-based reward diminishes
 - Agencies that start at a higher level of performance have less room for improvement, and thus less potential for reward, than agencies that start at a lower level of performance. This is borne out by the data below, which indicates a negative correlation between initial performance and performance weight.

Metric	Initial Performance-Performance Weight Correlation
Customers per Hour	-0.11
Customers per Mile	-0.13

- Agencies compete against each other

Differences

- Agencies are rewarded twice for improved performance
 - Agencies that achieved performance improvement received a funding boost under Scenario 2A as compared to Scenario 1A. This is illustrated in the table below, which displays average funding difference between the scenarios for the Customers per Revenue Hour allocation.

Performance Gain	Funding Change from Scenario 1A to 2A
Yes	42%
No	-47%

2. Assessment of Sizing Factors

Operating Cost

- Agencies with high operating cost have the potential for a larger portion of revenue
- Could provide a negative incentive for cost effectiveness

Passengers

- Agencies with higher ridership per operating unit have the potential for a larger portion of revenue
 - This is illustrated in the table below. The table below indicates agencies that experienced a higher level of funding with Passengers as a sizing factor than with Operating Cost as a sizing factor. The nine agencies that experienced higher funding are all within the top ten highest performing agencies in Gross Cost per Passenger.

Recipient	Test Model 1-5	Test Model 2-6	Test Model 3-7	Test Model 4-8	Rank of Gross Cost per Passenger
WMATA Rail	59%	64%	60%	65%	4
City of Alexandria Office of Transit Services and Programs	7%	10%	7%	11%	9
Greater Roanoke Transit Company	6%	8%	6%	9%	7
Charlottesville Area Transit	44%	48%	45%	49%	5
Blacksburg Transit	155%	158%	156%	160%	2
Greater Lynchburg Transit Company	9%	12%	10%	13%	10
Williamsburg Area Transit Authority	65%	70%	66%	71%	3
City of Harrisonburg Dept. of Public Transportation	164%	171%	165%	172%	1
City of Fairfax	17%	21%	18%	21%	6

- One potential issue with using Passengers for a sizing factor is that cost does not increase incrementally with passengers within given ranges in ridership. This is important since the goal is to use a sizing factor that allows for the potential revenue portion that is commensurate with the inherent costs involved in operating each agency.

Cost-Passenger Hybrid

- A cost-passenger hybrid tempers the funding differences between models with a cost-based size factor and models with a passenger-based size factor.

3. Assessment of Performance Metrics

The characteristics of the various performance metrics discussed below are mitigated to a degree by Scenario 1A and 2A's assessment of change in performance rather than absolute performance. This discussion is included to provide an understanding of how the metrics would

Customers per Hour and Customers per Mile

- Rewards scheduling efficiency
- Performance potential not uniform across agencies

Net Cost per Hour and Net Cost per Mile

- Rewards cost efficiency
- "Net Cost" component rewards self-generated revenue, such as subsidy and advertising revenue
- Performance potential not uniform across agencies

Gross Cost per Hour and Net Cost per Mile

- Rewards cost efficiency
- "Gross Cost" component does not reward self-generated revenue, such as subsidy and advertising revenue
- Performance potential not uniform across agencies

Net Cost per Passenger

- Rewards cost efficiency
- "Net Cost" component rewards self-generated revenue, such as subsidy and advertising revenue
- Rewards agencies twice for high ridership
- Not normalized by a factor that is cost-incremental (more passengers does not always mean more cost, as with hours and miles)
- Performance potential not uniform across agencies

Gross Cost per Passenger

- Rewards cost efficiency
- “Gross Cost” component does not reward self-generated revenue, such as subsidy and advertising revenue
- Rewards agencies twice for high ridership
- Not normalized by a factor that is cost-incremental (more passengers does not always mean more cost, as with hours and miles)
- Performance potential not uniform across agencies