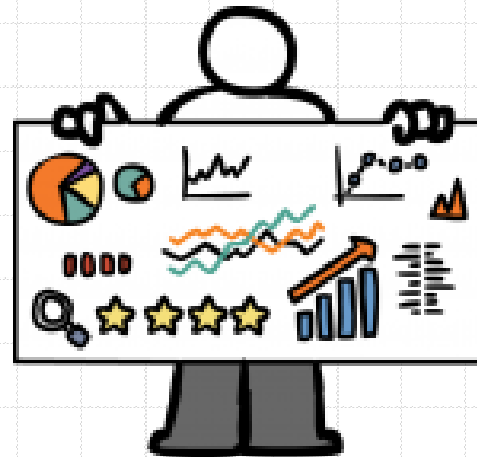


DRT Performance Measurement: the U.S. Experience



International Conference on Demand Responsive Transportation
Breckenridge, Colorado
September 2016

DRT Performance Measurement: The Early Years

Performance Measures for Dial-A-Ride Service

- Passengers per hour
- Passengers per mile
- Wait time
- Wait time deviation
- Ride time
- Complaints
- Road calls
- Accidents



DAVE SYSTEMS, INC.



DRT Performance Measures: The Many

Table 4-1: Common Performance Measures Used For DRT*

Operating Cost per Passenger Trip
Operating Cost per Vehicle Hour
Operating Cost per Vehicle Mile
Operating Cost per Passenger Mile
Passenger Revenue per Total Operating Cost
(Farebox Recovery Ratio)
Passenger Trips per Vehicle Hour
Passenger Trips per Vehicle Mile
Accidents per 100,000 Vehicle Miles
No-Shows per Scheduled Trips
On-Time Pick-Ups to Total Pick-Ups
(On-Time Performance)
Complaints per 1,000 Passenger Trips
Average Trip Length
Average Vehicle Travel Time
System Speed
Response Time
(As measured by the minimum time between when service is
requested and when provided)
Trip Denials per Trips Requested

* From TCRP Report 124



DRT Performance Measurement: ADA Paratransit

ADA Service Criteria, Ensuring Comparability

1. **Service Area:** Service must be provided in $\frac{3}{4}$ -mile corridors around bus routes and rail stations.
 2. **Reservations:** Trip reservations for any particular day must be taken during business hours on the day before, and, optionally, up to 14 days in advance.
 3. **Fares.** The fare can be no more than twice the non-discounted fare for fixed route service.
 4. **Trip purpose.** There can be no restrictions or priorities based on trip purpose.
 5. **Hours and days of service.** Service must be provided during the same hours and days as the fixed route service.
 6. **Capacity constraints.** Service must be provided without capacity constraints, meaning no waiting lists for service, trip caps, or pattern or practices of a substantial number of trip denials, untimely pick-ups, or excessively long trips
- Performance Measures To Ensure Compliance
 - Trip denials
 - Missed trips
 - On-time performance
 - Travel time (on-board trip length)
 - Telephone availability for trip reservations (hold time, etc.)



DRT Performance Measurement: Typology of Systems

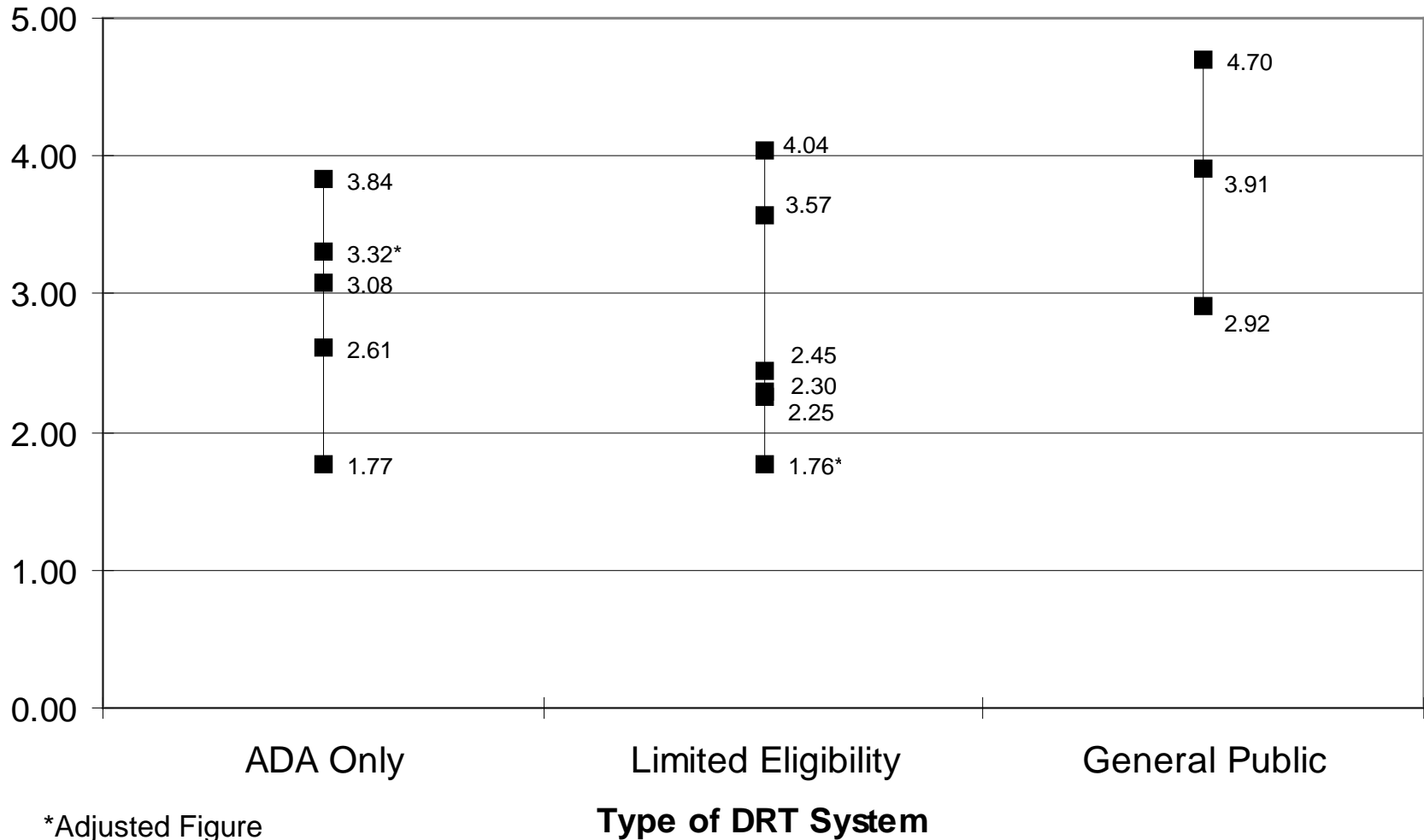
Table 5-2: TYPOLOGY OF DRT SYSTEMS *

Small Urban DRT Systems <i>50,000 – up to 200,000 Population</i>			Large Urban DRT Systems <i>200,000 - 1 Million Population</i>		Largest Urban DRT Systems <i>Over 1 Million Population</i>	
ADA Paratransit Only	Limited Eligibility DRT	General Public DRT	ADA Paratransit Only	Other DRT	ADA Paratransit Only	Other DRT

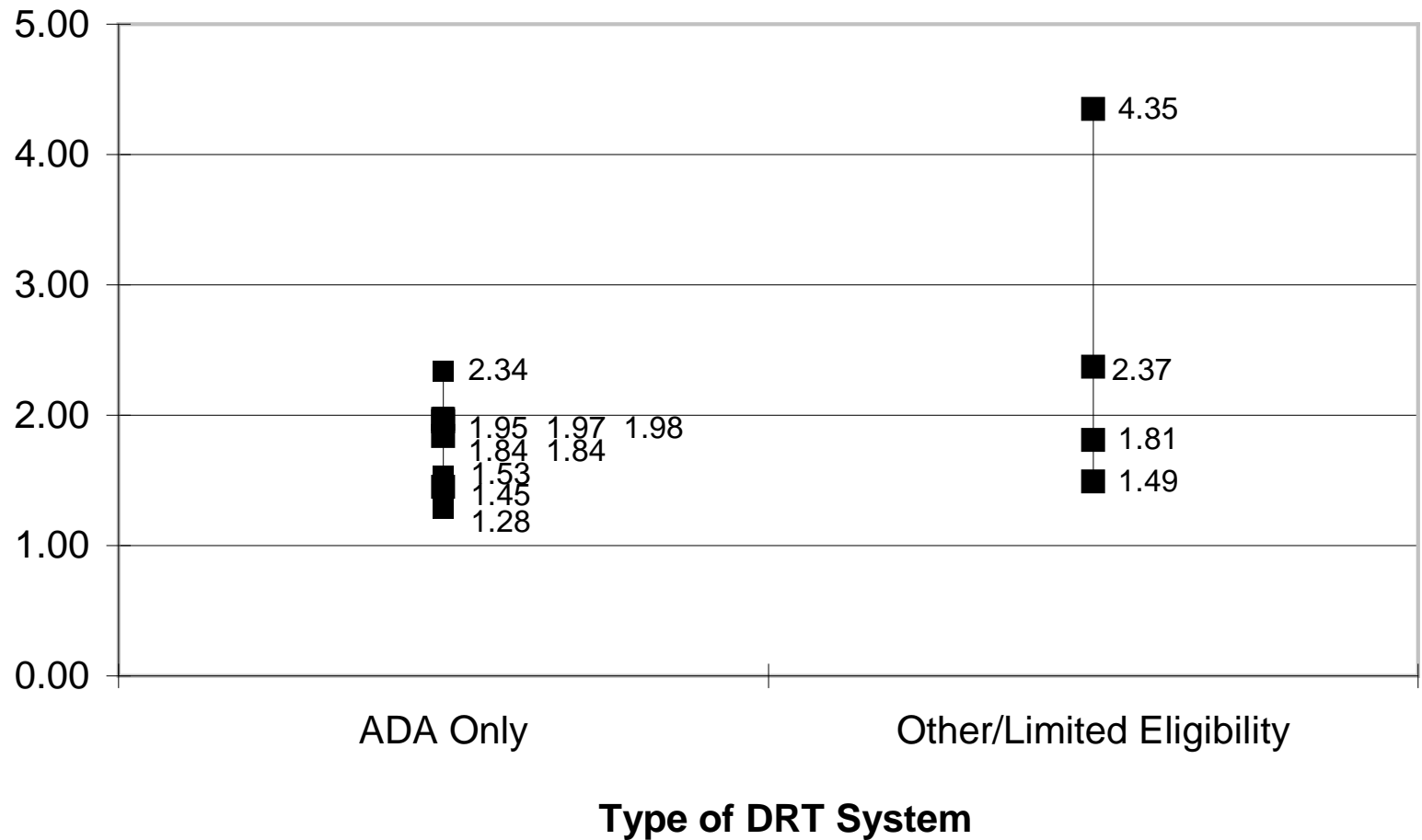
* From TCRP Report 124



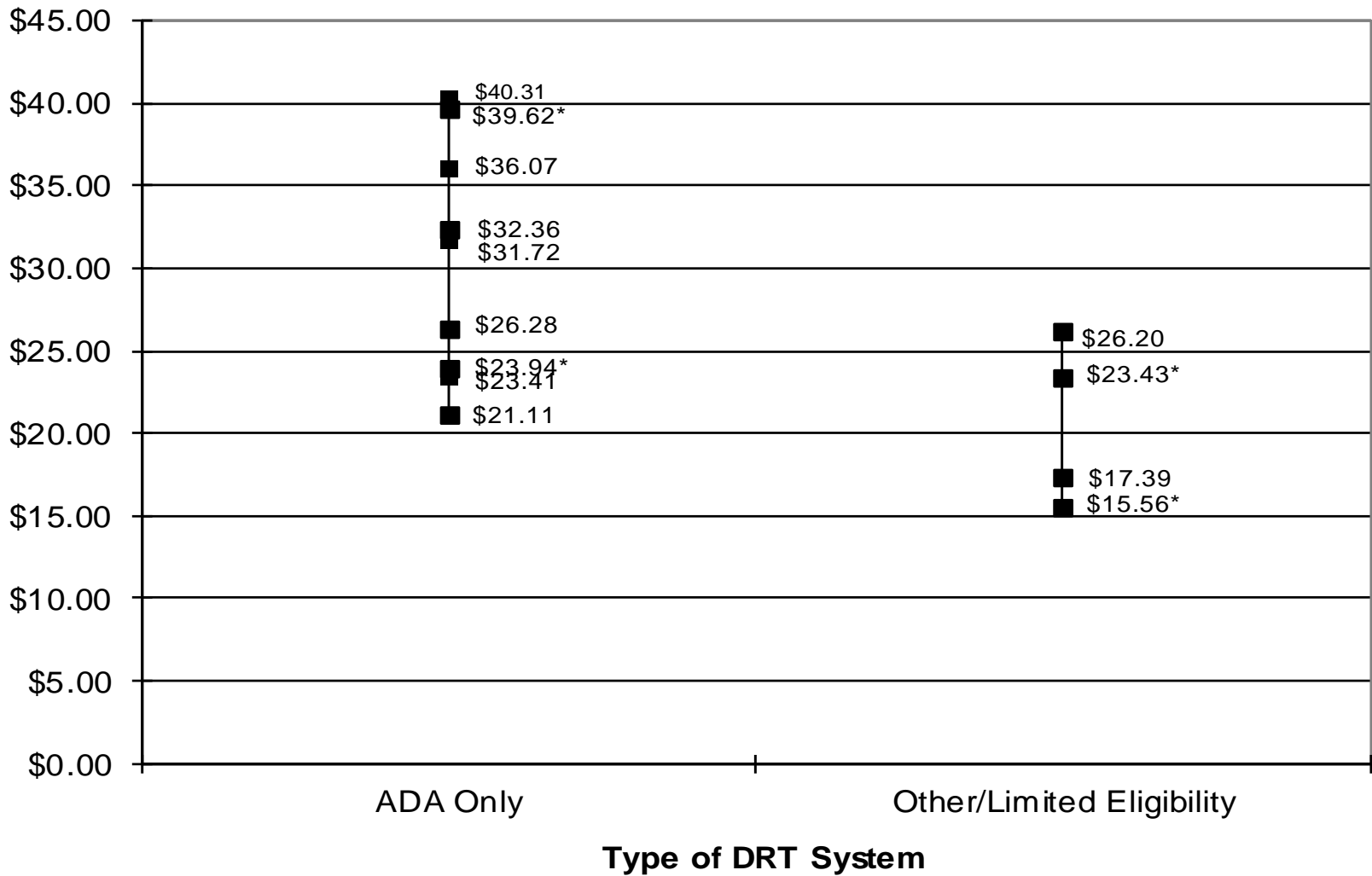
Small Urban DRT Systems: Passenger Trips Per Revenue Hour



Largest Urban DRT Systems: Passenger Trips Per Revenue Hour



Largest Urban DRT Systems: Operating Cost Per Passenger Trip



Measuring Performance: Data?

National Transit Database (NTD)

- Established by Congress in 1974
- Repository of data on the financial, operating and asset condition of US transit agencies
- Who reports:
 - Transit agencies receiving funds from the Federal grant programs for urban and rural transit
 - 660+ transit agencies submit data
- Data products:
 - Transit profiles: Frequently sought data on any transit provider
 - National transit summaries and trends
 - Time series data on transit systems dating back to 1991
 - Up-to-date time series of monthly ridership data
 - Time series of safety data



DRT Performance Measurement: the U.S. Experience

- Current Focus: Sustainable?

A Large Urban Transit Agency's ADA Paratransit Service: 2015 Baseline and 2025 Forecast

2015 Ridership	2015 Operating Cost	2025 Ridership	2025 Operating Cost
2.2 M	\$98 M	3.1 M	\$168.4 M

- Towards Sustainability: Small Sample of Options

- Demand management

- Bus stop and pedestrian infrastructure improvements
- Travel training
- Trip-by-trip eligibility enforcement

- Leverage human service agencies

- Vehicles
- Subsidy

- Cost reduction

- Non-dedicated providers (taxis, others)

