

MEASURING OUTCOMES, IMPROVING PERFORMANCE

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Workshop Agenda

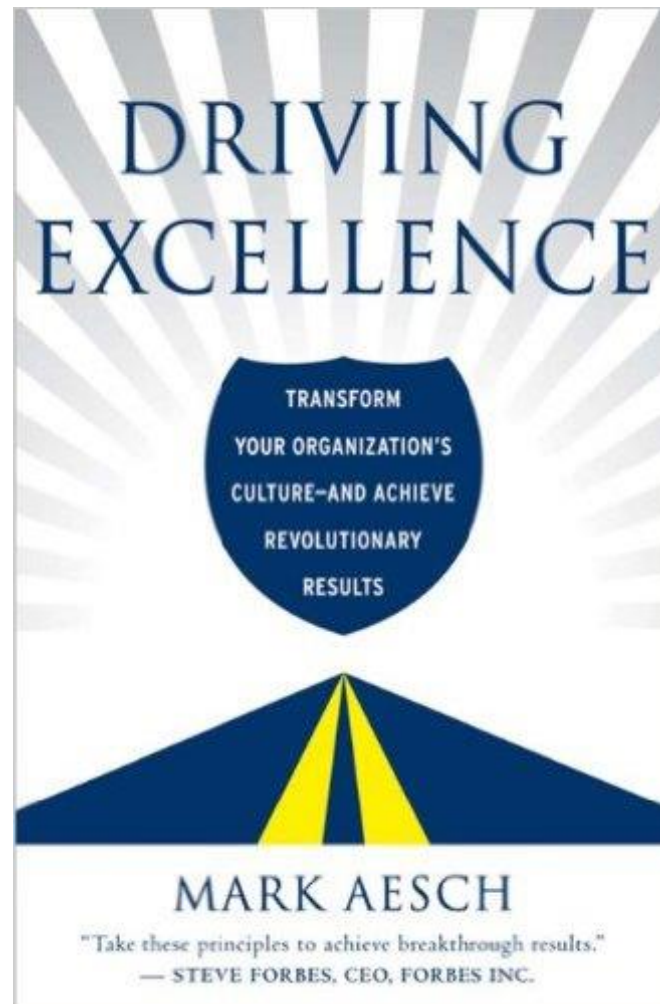
- Why measure performance?
- What should be measured and how frequently?
 - Who should collect the data?
 - How is the data collected?
 - What are reasonable targets?
- How do you communicate performance?
- Demonstration: Performance Dashboard

Why measure performance?



What gets
measured is
what gets
done

Mark Aesch – Driving Excellence



Why measure performance?

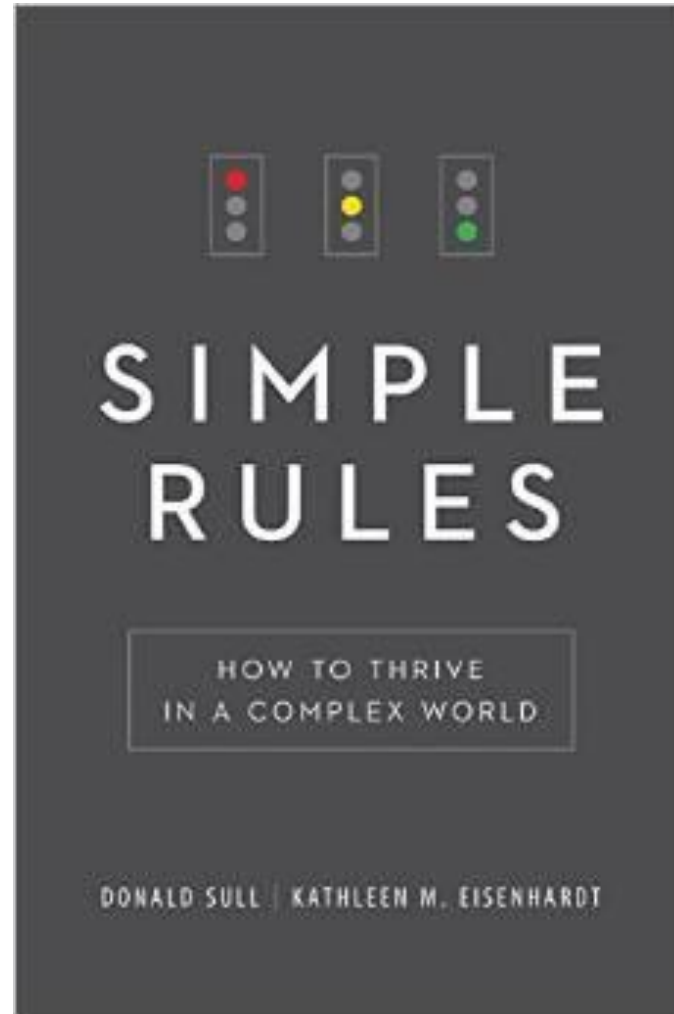
From a survey of managers in over 250 companies around the world:

- When asked to list their company's top priorities for the next few years, only half of the **managers** could name even their company's **single most important objective**.

- Simple Rules

Simple Rules

- Boundary Rules
- Prioritizing Rules
- Stopping Rules
- Process Rules
 - How
 - Coordination
 - Timing



What should be measured and how frequently?



Cautionary Tale

- 8 Goals
 - 25 Objectives
 - 26 Performance Measures
 - 68 Performance Standards

Five-Year Transit System Plans

Performance Metrics & Targets

- Two types of performance metrics and targets
 - Required metrics with suggested targets
 - Provider-determined metrics and targets
- Sources of targets
 - Historic performance/current trends
 - Peer systems
 - State/national rural averages

FYTSP Required Metrics and Suggested Targets

Metric	Target – Flex Route	Target – Demand Response	Frequency of Tracking/ Reporting
Cost per service hour	\$50	\$60	Track monthly; report annually
Cost per passenger trip	\$6	\$15	Track monthly; report annually
Passengers per hour	8 (community), 5 (rural)	3	Track monthly; report annually
On-Time performance	90% within published pick-up window	90% within published pick-up window	Track monthly; report annually
Percentage of communities with baseline span of service	75%	75%	Track and report annually
Trip denials	Tracked by type	Tracked by type	Track monthly; report annually

Trip Denials

- ADA definition
 - Capacity denials
 - Negotiation window
 - Roundtrip denial
- Unmet trip requests
 - Span
 - Service area
 - Policy

Local Priorities

- What is important to you and your community/organization?
- Short-term vs. long-term priorities
 - Addressing a specific issue/concern
 - Solutions, e.g. survey

Tracking Performance for System Management

Metric	Frequency
Service area coverage	Annual
Service hours per capita	Annual
Frequency of service	Annual
Subsidy per passenger	Annual
Farebox recovery	Monthly
Miles between road calls	Annual
Preventable accidents per 100,000 service miles	Annual
Percent scheduled trips operated by mode	Monthly
Valid complaints per 100,000 passengers	Annual
Fatalities/injuries	Annual
Safety events	Monthly
Average phone hold time	Monthly
Percent passenger cancellations (same day vs. 1+ day)	Monthly
Percent no-shows	Monthly
Average reservation negotiation window	Annual
Average advance reservation time	Annual
Continuous access at stops	Annual
Bicycle parking at transit stops	Annual
Number of Shelters	Annual
Percent vehicles by type that exceed useful life benchmark	Annual
Facility condition	Annual

PERFORMANCE INDICATORS – FY18

(Unaudited)

Passenger/Hour:

Town Shuttle:	27.3
Village:	27.7
Commuter:	17.9
ADA:	1.5

Passenger/Mile

Town Shuttle:	1.96
Village:	1.09
Commuter:	0.51
ADA:	0.18

Cost/Hour

Town Shuttle:	\$ 78.44
Village:	\$ 98.38
Commuter:	\$ 109.77
ADA:	\$ 53.70

Cost/Mile

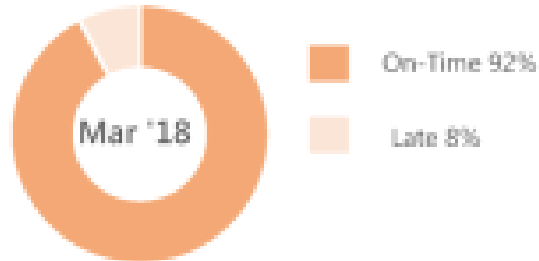
Town Shuttle:	\$ 5.65
Village:	\$ 3.89
Commuter:	\$ 3.11
ADA:	\$ 6.32

Transit																										
2017-18																										
Service Metrics	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual Trend	Annual Trend	1Q - Total	2Q - Total	3Q - Total	4Q - Total	YE - Total	Qtr Trend	1Q - Avg.	2Q - Avg.	3Q - Avg.	4Q - Avg.	YE - Avg.	Qtr Avg.
Passengers	519,657	429,860	163,715	290,061	458,194	380,392	410,678	186,806	101,470	96,410	91,138	631,025			1,113,232	1,128,647	698,954	818,573	3,759,406		371,077	376,216	232,985	272,858	313,284	
Revenue Hours	19,500	18,161	12,766	13,733	17,577	17,178	17,958	14,436	12,287	12,421	11,208	19,924			50,427	48,488	44,681	43,553	187,149		16,809	16,163	14,894	14,518	15,596	
Avg Miles b/w Chargeable road calls	5,054	6,222	5,582	6,973	8,784	6,007	6,797	4,206	3,781	4,273	5,427	3,905			16,858	21,763	14,784	13,605	67,010		5,619	7,254	4,928	4,535	5,584	
Avg No. of City Route Passengers/Hour (Fixed Route)	10.36	9.89	9.10	9.60	10.12	9.42	9.00	8.58	9.61	8.81	9.12	9.18			29	29	27	27	113		10	10	9	9	9	
Year to Date Net Cost per System Passenger	\$0.46	\$0.98	\$0.92	\$1.05	\$1.00	\$1.09	\$1.04	\$1.17	\$1.34	\$1.49	\$1.81				2	3	4	3	12		1	1	1	2	1	
Performance Metrics	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual Trend	Annual Trend	1Q - Total	2Q - Total	3Q - Total	4Q - Total	YE - Total	Qtr Trend	1Q - Avg.	2Q - Avg.	3Q - Avg.	4Q - Avg.	YE - Avg.	Qtr Avg.
Year to Date Recovery Ratio (goal 50%)	76.99%	75.04%	64.98%	61.35%	61.93%	59.42%	60.97%	58.69%	55.99%	53.97%	49.23%				NA	NA	NA	NA	NA	NA	72.34%	60.90%	58.55%	51.60%	60.85%	
On-Time Performance Fixed Route (goal 98%)	92.32%	92.24%	96.85%	98.15%	96.67%	97.54%	97.69%	99.13%	97.76%	95.87%	98.28%	100%			NA	NA	NA	NA	NA	NA	93.80%	97.45%	98.19%	98.05%	96.88%	
On-Time Performance DRS (goal 98%)	74.66%	75.41%	75.06%	76.47%	73.96%	76.90%	78.68%	84.38%	76.74%	78.21%	77.50%	77.10%			NA	NA	NA	NA	NA	NA	75.04%	75.78%	79.93%	77.60%	77.09%	
Missed Trips (goal < 10/month)	7	2	2	2	4	0	4	0	1	0	0	0			NA	NA	NA	NA	NA	NA	4	2	2	0	2	

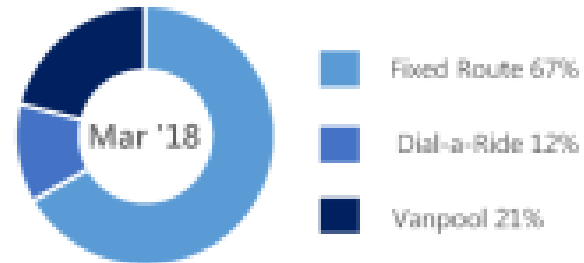
		Data Collection Method	Frequency	Data requirements
1	Ridership			
	System-wide	APC	Monthly	APC/AVL
	By route	APC	Monthly	APC/AVL
2	Vehicle Revenue Miles		Monthly	TripSpark report
3	Vehicle Revenue Hours		Monthly	TripSpark report
4	Farebox revenue			
	System-wide		Daily/monthly	Farebox system
	By route		Monthly	Farebox system
5	On-time performance			
	System-wide	AVL	Monthly	AVL data
	By route	AVL	Monthly	AVL data
6	System costs			
	System-wide	Manual	Monthly	Financial system
	By route	Manual	Monthly	Financial system
7	Accidents			
	Preventable and non-preventable	Manual	Monthly	Incident/dispatcher logs
8	Road calls	Manual	Monthly	Schedule/Incidents/Dispatcher logs
9	Missed trips	Manual	Monthly	Schedule/Incidents/Dispatcher logs
10	Fleet age	Manual	Bi-annual	Age of each vehicle in the fleet
11	Stop accesibility	Manual	Bi-annual	Bus stop log/windshield survey
12	Customer service			
	Complaints, comments and commendations	Manual	Quarterly	Customer service representatives logs/drivers logs/comment card box
	Survey	Manual	Every three years	Develop customer service survey

Year-to-Date Report for March 2018

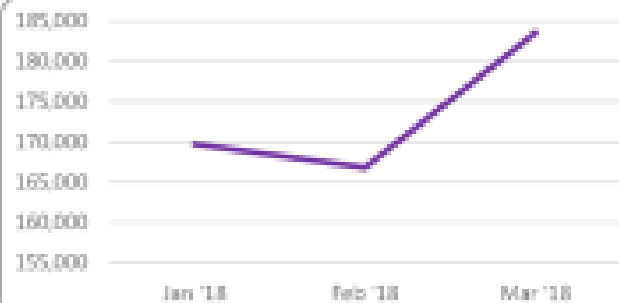
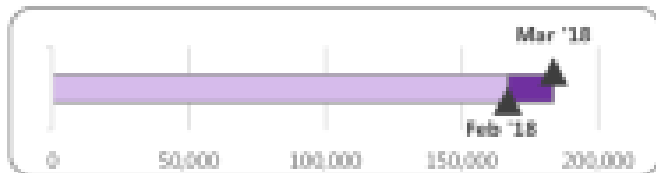
System On-Time Performance



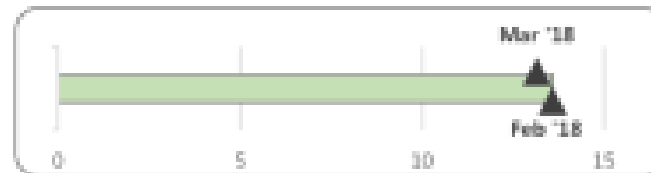
Boardings by Mode

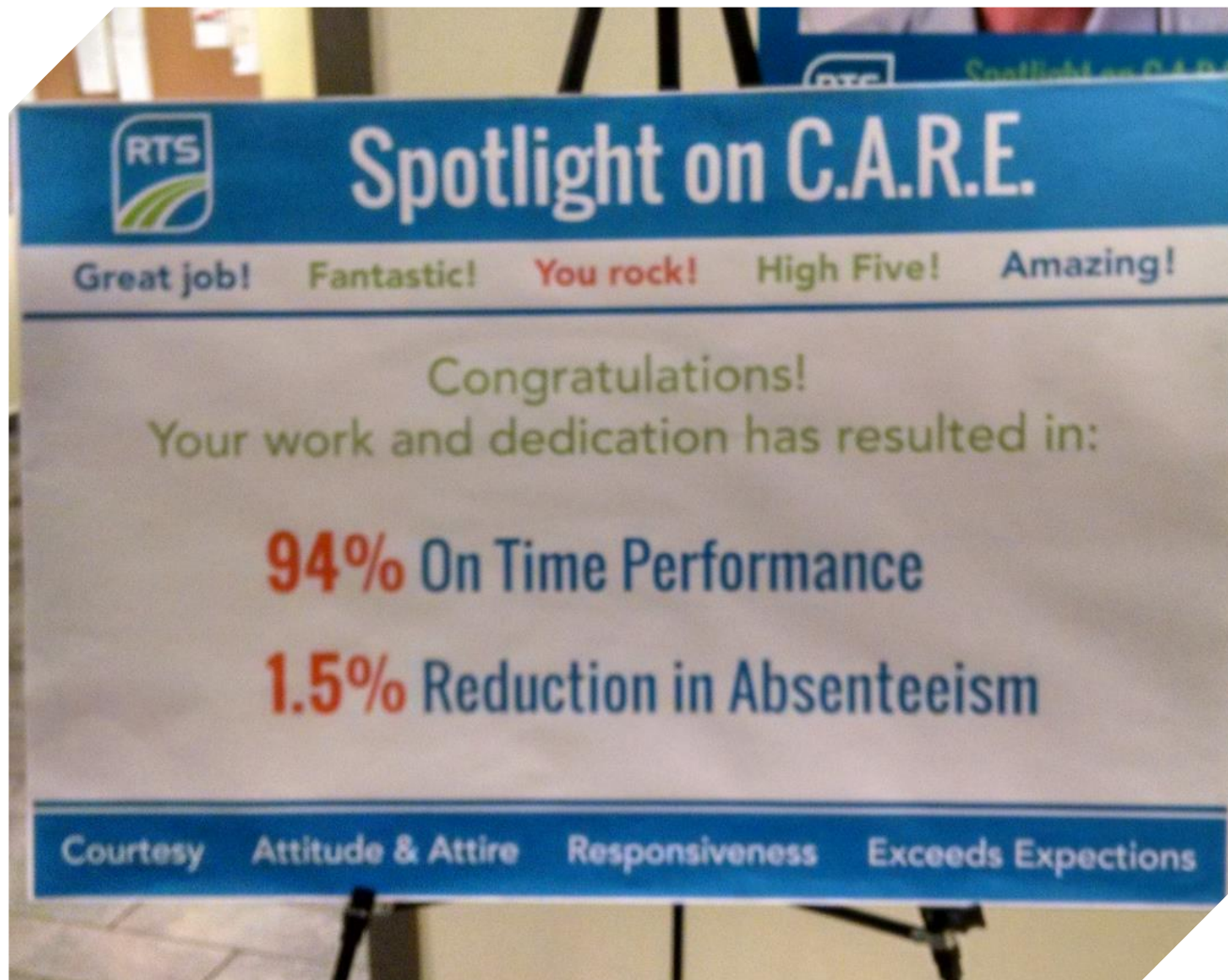


Unlinked Boardings (Fixed Route)



Boardings per Revenue Hour





MBTA Open Data Portal

Transparency In Transit

Explore the platform for downloading and analyzing
data from the Massachusetts Bay Transportation Authority.

Data by Mode

Explore public datasets by each of the five MBTA services provided.



Rapid Transit



Bus



Commuter Rail



Ferry



The RIDE

Data by Category

Browse available hosted tables and shapefiles below by data content.



Ridership

Explore passenger volume
data across all modes



Performance

Review service reliability
and rider satisfaction



GTFS

View the map containing
the General Transit Feed
Specification



System Information

Retrieve data on
services provided by
the MBTA



Financials

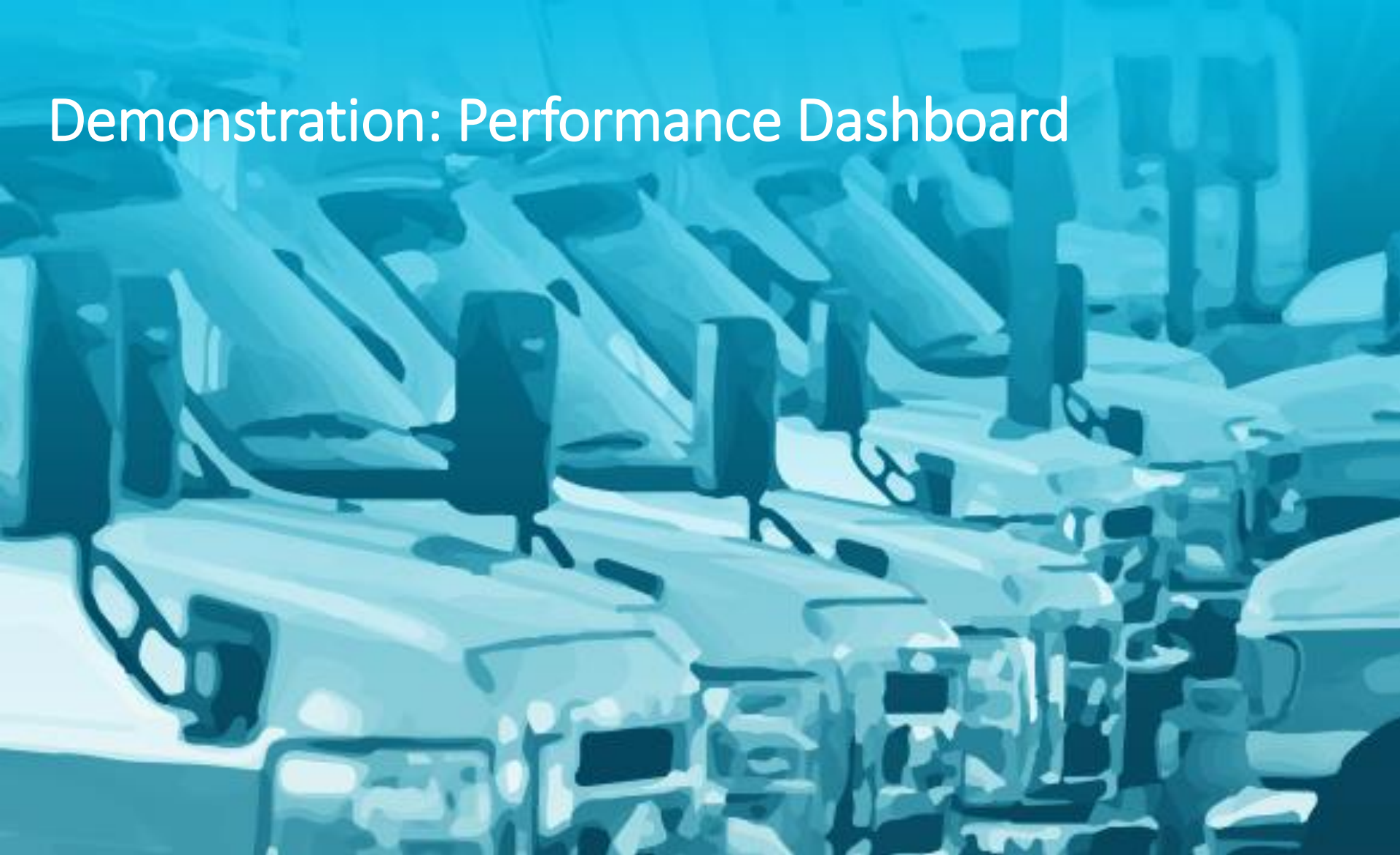
Explore historical operating
expenses, revenue, and
other financial information



Assets

View currently
managed assets


Demonstration: Performance Dashboard



Introduction to the Performance Dashboard

- Microsoft Excel-based platform
- Enter data when it's most convenient for you
- Track metrics against targets
- Produce reports/graphics that show monthly, annual, or year-over-year statistics
- One-stop platform to share performance statistics

Setup

 **DEPARTMENT OF
TRANSPORTATION**

MnDOT Performance Dashboard Setup

1

Choose transit provider:

Arrowhead

Arrowhead

Becker County

Brown County

Central Community Transit

Chisago-Isanti Express

Crow Wing Transit

Fosston Transit

Granite Falls

2

Choose Metrics

Metrics

3

Enter Data

Monthly Data

Annual Data

4

Choose report type and period

REPORT TYPE:

☒ Monthly Report

☐ Annual Report

BEGINNING PERIOD:

2020

January

ENDING PERIOD:

2020

April

☒ Dataset Complete

Clear Range

5

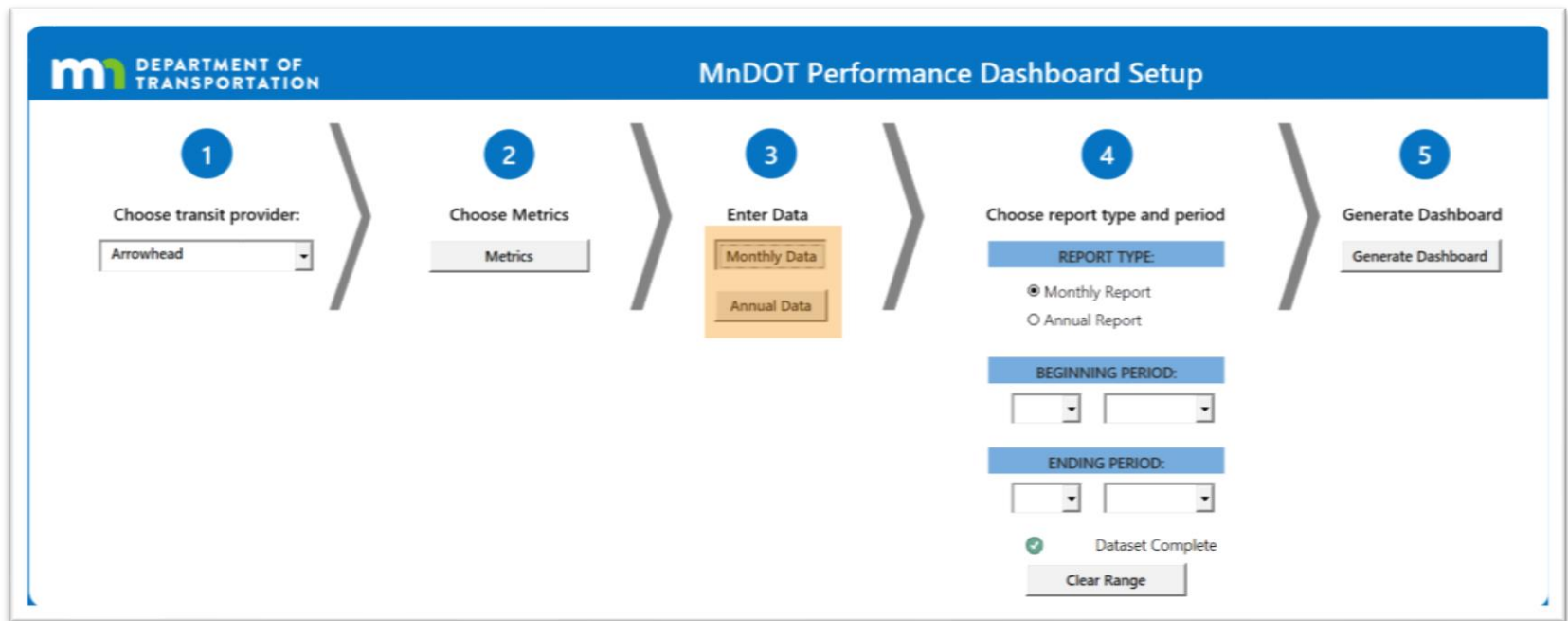
Generate Dashboard

Generate Dashboard

Choosing Metrics

Metrics		Select All	Unselect All	Return to Setup
<input checked="" type="checkbox"/> General Performance Indicators				
<input checked="" type="checkbox"/> Baseline Span of Service				
<input checked="" type="checkbox"/> Trip Denials				
<input checked="" type="checkbox"/> On-Time Performance				
<input checked="" type="checkbox"/> Overview				
<input checked="" type="checkbox"/> Service Area				
<input checked="" type="checkbox"/> Operating Cost				
<input checked="" type="checkbox"/> Operating Cost				
<input checked="" type="checkbox"/> Operating Cost per trip				
<input checked="" type="checkbox"/> Operating Cost per hour				
<input checked="" type="checkbox"/> Operating Cost per mile				
<input checked="" type="checkbox"/> Passenger Revenue				

Entering Data



The image shows a five-step process for setting up the MnDOT Performance Dashboard. Step 1: Choose transit provider (Arrowhead). Step 2: Choose Metrics (Metrics). Step 3: Enter Data (Monthly Data, Annual Data). Step 4: Choose report type and period (Monthly Report, Annual Report, Beginning Period, Ending Period). Step 5: Generate Dashboard (Generate Dashboard). The 'Enter Data' step is highlighted with an orange box.

m DEPARTMENT OF
TRANSPORTATION

MnDOT Performance Dashboard Setup

- 1**
Choose transit provider:
Arrowhead
- 2**
Choose Metrics
Metrics
- 3**
Enter Data
Monthly Data
Annual Data
- 4**
Choose report type and period
REPORT TYPE:
☒ Monthly Report
☐ Annual Report
BEGINNING PERIOD:
[] []
ENDING PERIOD:
[] []
☒ Dataset Complete
Clear Range
- 5**
Generate Dashboard
Generate Dashboard

Entering Data

Monthly Data Input

[Return to Setup](#)

Step 1. Enter monthly data by using the year and month dropdown lists

Step 2. Choose service type using dropdown menu. Optional: type in service name



Data for all services of the same mode (e.g. fixed route) may be entered on the same line instead of entering individual services separately (e.g. Route A)

Step 3. Enter performance data by individual route **OR** by mode on the green lines provided

Year	Month	Service Mode	Service Name (Optional)	Baseline Span of Service	Trip Denials	On-Time Performance	Service Area	Frequency
2020	Jan	Fixed Route	Test	83%	#N/A	76%	77%	
2020	Feb	Fixed Route	Test	73%	#N/A	73%	62%	
2020	Mar	Fixed Route	Test	64%	#N/A	77%	63%	
2020	Apr	Fixed Route	Test	52%	#N/A	85%	70%	



Important. Only enter "0" if the value for that metric is zero. If the metric is not applicable, then leave the cell blank.

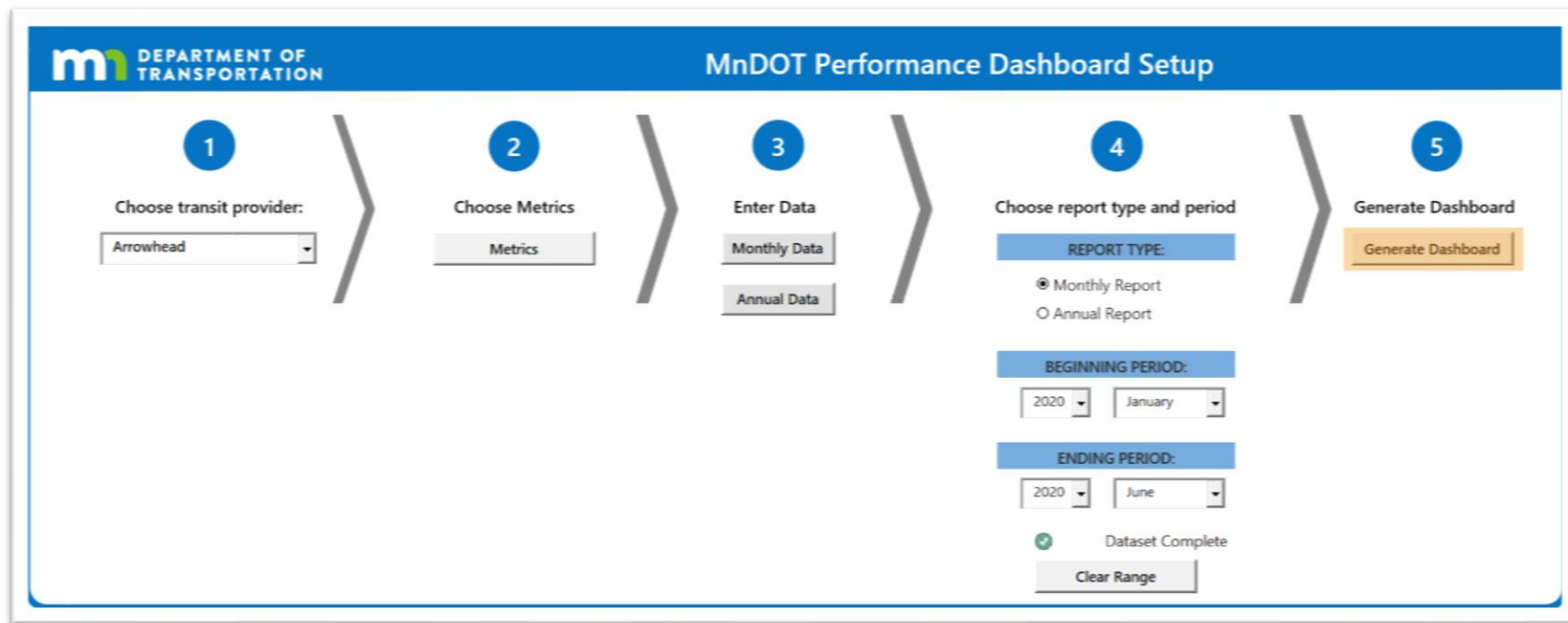
Defining Report Parameters

m1 DEPARTMENT OF TRANSPORTATION

MnDOT Performance Dashboard Setup

- 1**
Choose transit provider:
Arrowhead
- 2**
Choose Metrics
Metrics
- 3**
Enter Data
Monthly Data
Annual Data
- 4**
Choose report type and period
REPORT TYPE:
☒ Monthly Report
☐ Annual Report
BEGINNING PERIOD:
2020 January
ENDING PERIOD:
2020 February
March
April
Clear
- 5**
Generate Dashboard
Generate Dashboard

Generating the Dashboard



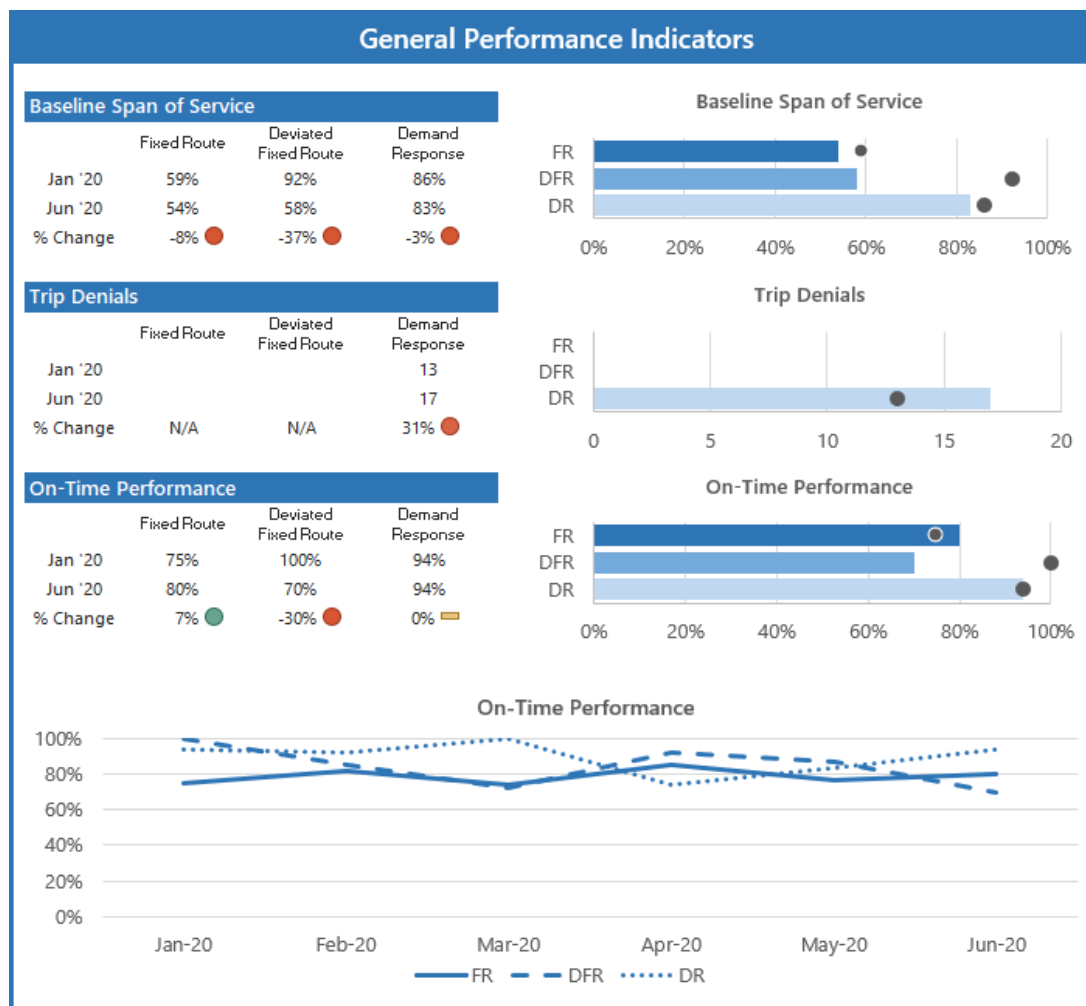
The flowchart illustrates the five steps for generating the MnDOT Performance Dashboard. Step 1 involves selecting a transit provider from a dropdown menu. Step 2 is selecting metrics. Step 3 is entering data, with options for monthly or annual data. Step 4 is choosing the report type and period, including selecting the report type (monthly or annual), the beginning and ending periods, and a 'Dataset Complete' checkbox. Step 5 is generating the dashboard.

m1 DEPARTMENT OF TRANSPORTATION

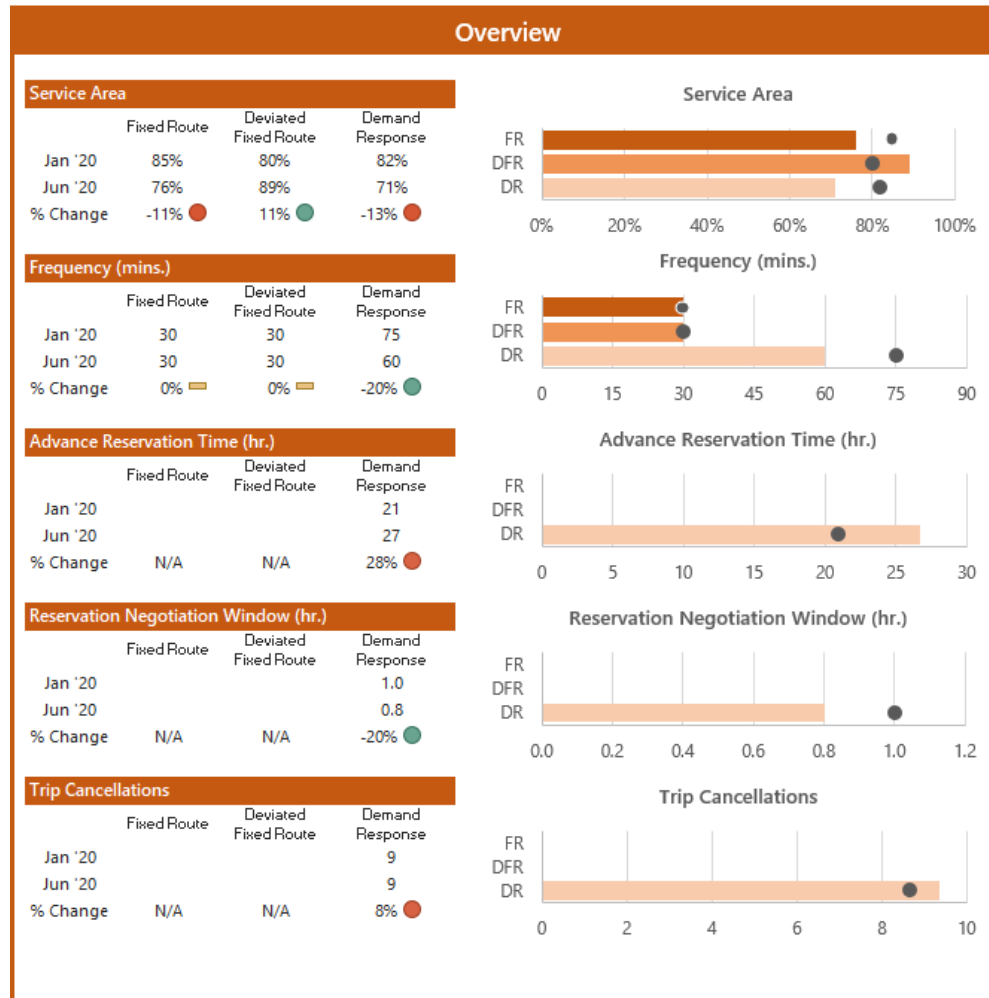
MnDOT Performance Dashboard Setup

- 1**
Choose transit provider:
Arrowhead
- 2**
Choose Metrics
Metrics
- 3**
Enter Data
Monthly Data
Annual Data
- 4**
Choose report type and period
REPORT TYPE:
☒ Monthly Report
☐ Annual Report
BEGINNING PERIOD:
2020 January
ENDING PERIOD:
2020 June
☒ Dataset Complete
Clear Range
- 5**
Generate Dashboard
Generate Dashboard

General Performance Indicators



Overview



Ridership and Level of Service

Monthly Ridership

Passenger Trips

	Fixed Route	Deviated Fixed Route	Demand Response
Jan '20	7,630	3,980	6,198
Jun '20	8,633	3,757	6,328
% Change	13%	-6%	2%

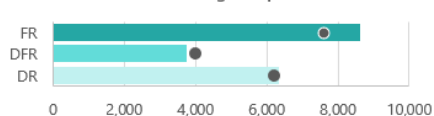
Passengers per hour

	Fixed Route	Deviated Fixed Route	Demand Response
Jan '20	4.9	14.7	2.6
Jun '20	6.3	13.2	3.4
% Change	28%	-10%	31%

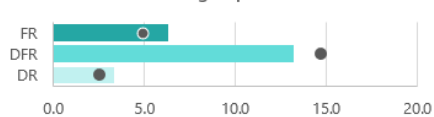
Passengers per mile

	Fixed Route	Deviated Fixed Route	Demand Response
Jan '20	0.7	3.6	0.7
Jun '20	0.7	3.4	0.7
% Change	6%	-8%	-2%

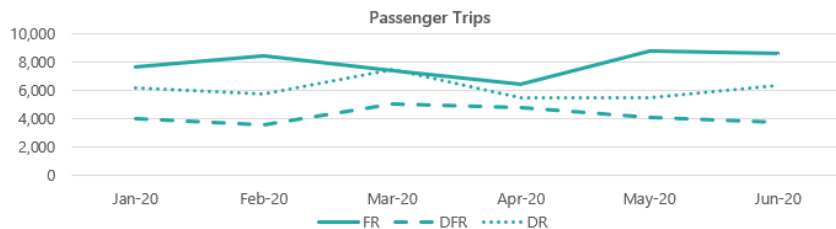
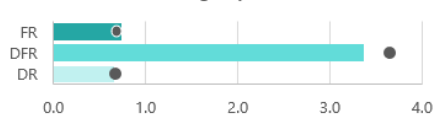
Passenger Trips



Passengers per hour



Passengers per mile



Revenue Miles & Hours

Revenue Miles

	Fixed Route	Deviated Fixed Route	Demand Response
Jan '20	10,996	1,092	9,159
Jun '20	11,745	1,115	9,582
% Change	7%	2%	5%

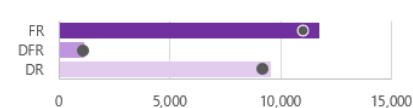
Revenue Hours

	Fixed Route	Deviated Fixed Route	Demand Response
Jan '20	1,549	271	2,416
Jun '20	1,366	285	1,887
% Change	-12%	5%	-22%

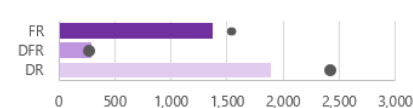
Revenue Hours per capita

	Fixed Route	Deviated Fixed Route	Demand Response
Jan '20	0.5	0.4	0.5
Jun '20	0.4	0.4	0.4
% Change	-17%	16%	-25%

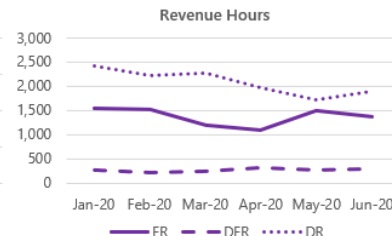
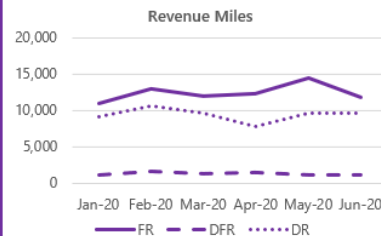
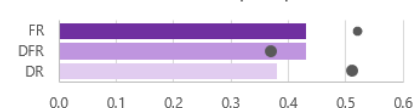
Revenue Miles



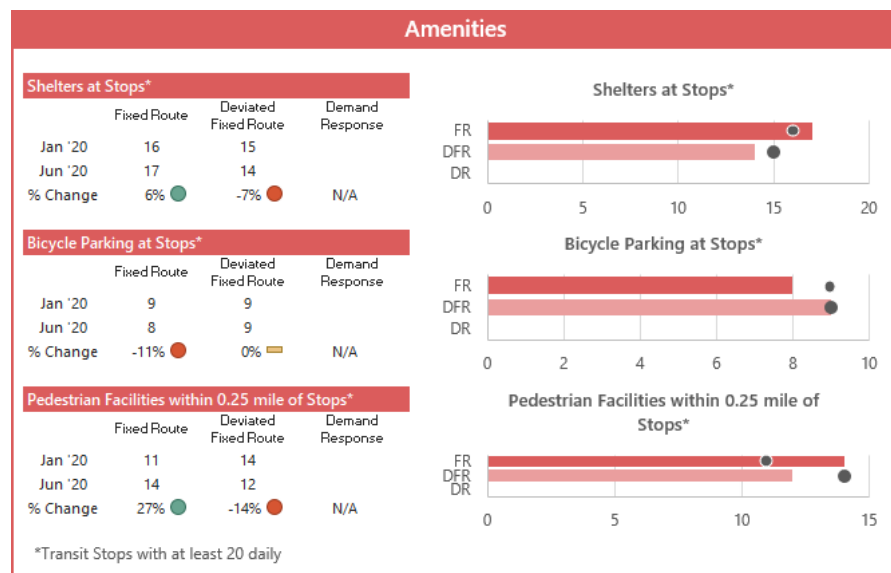
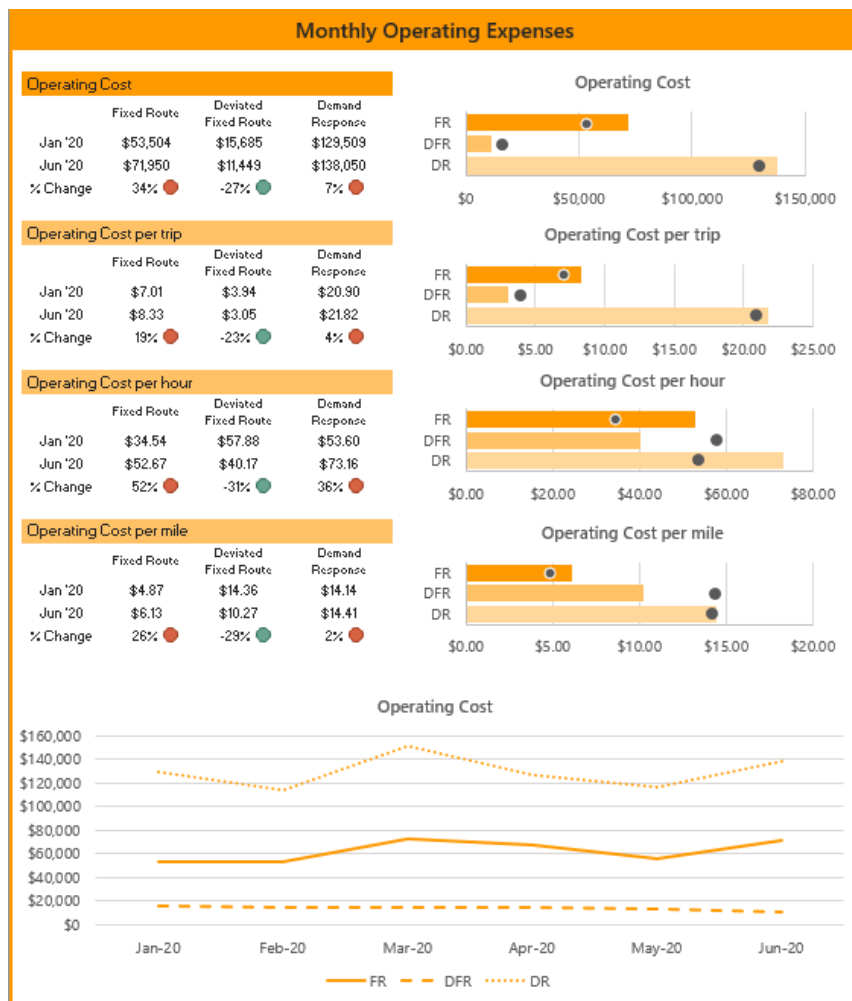
Revenue Hours



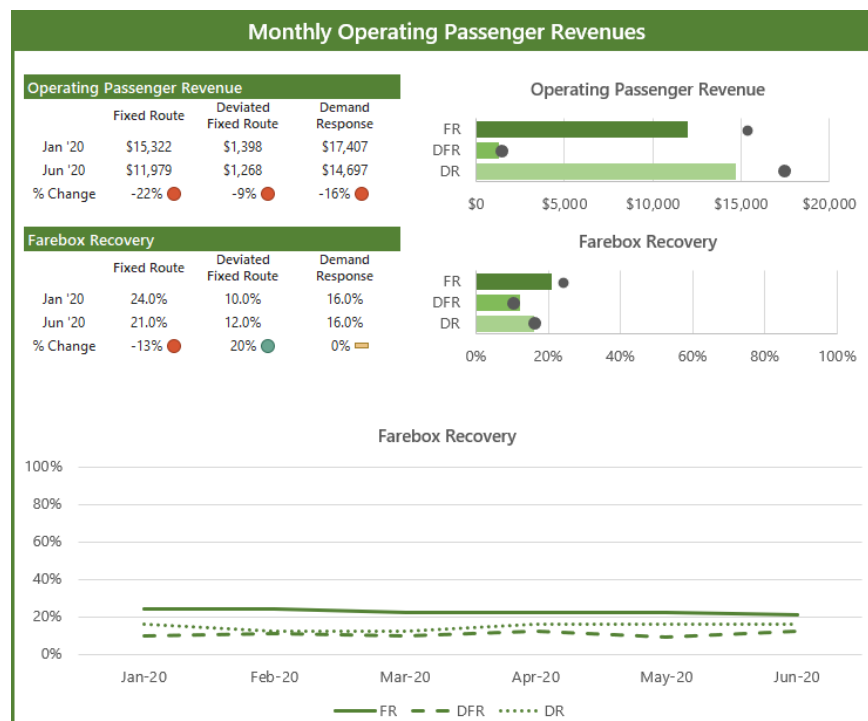
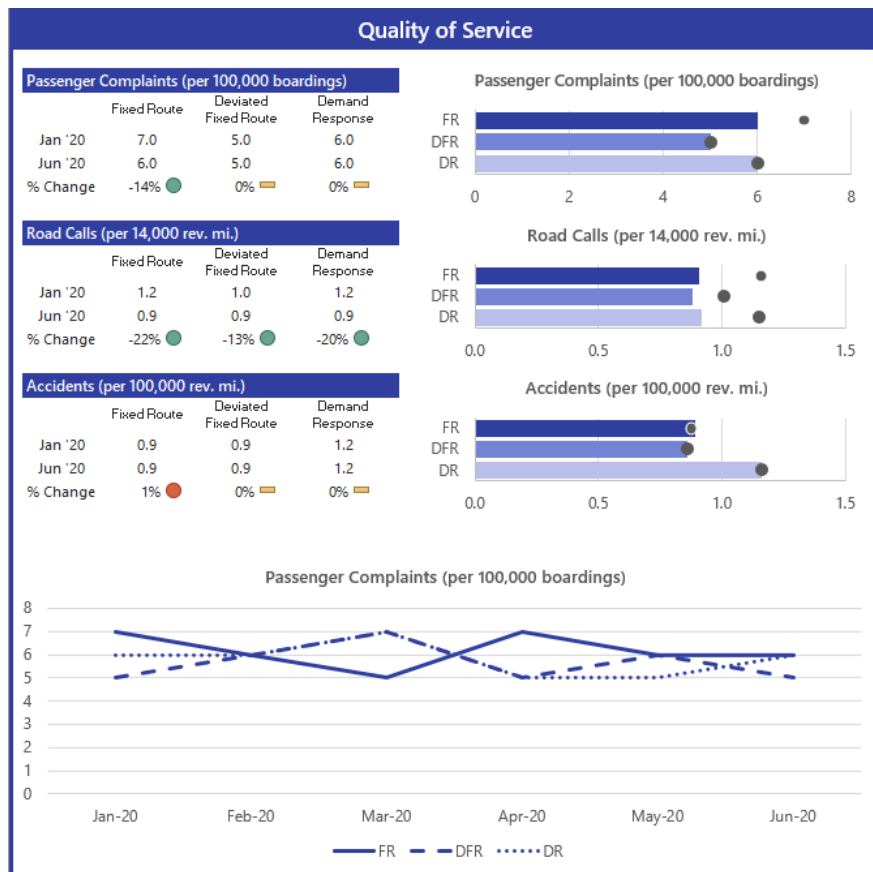
Revenue Hours per capita



Operating Expenses and Amenities



Quality of Service and Passenger Revenues



Summary

- Tracking performance informs decision-making

Goal: System average 5 passenger per hour

Rule: Start new service only if > 5 passengers per hour

Rule: Detailed evaluation of any service < 3 passenger per hour

Rule: Board says to provide the service

Summary

- Communicating performance helps stakeholders understand successes and constraints
- Handout contains user guide for performance dashboard
- All materials will be available on the MNRTAP website

Presenter Contact Information

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Questions and Discussion

