Best Practices for NTD Reporting and Data Analysis

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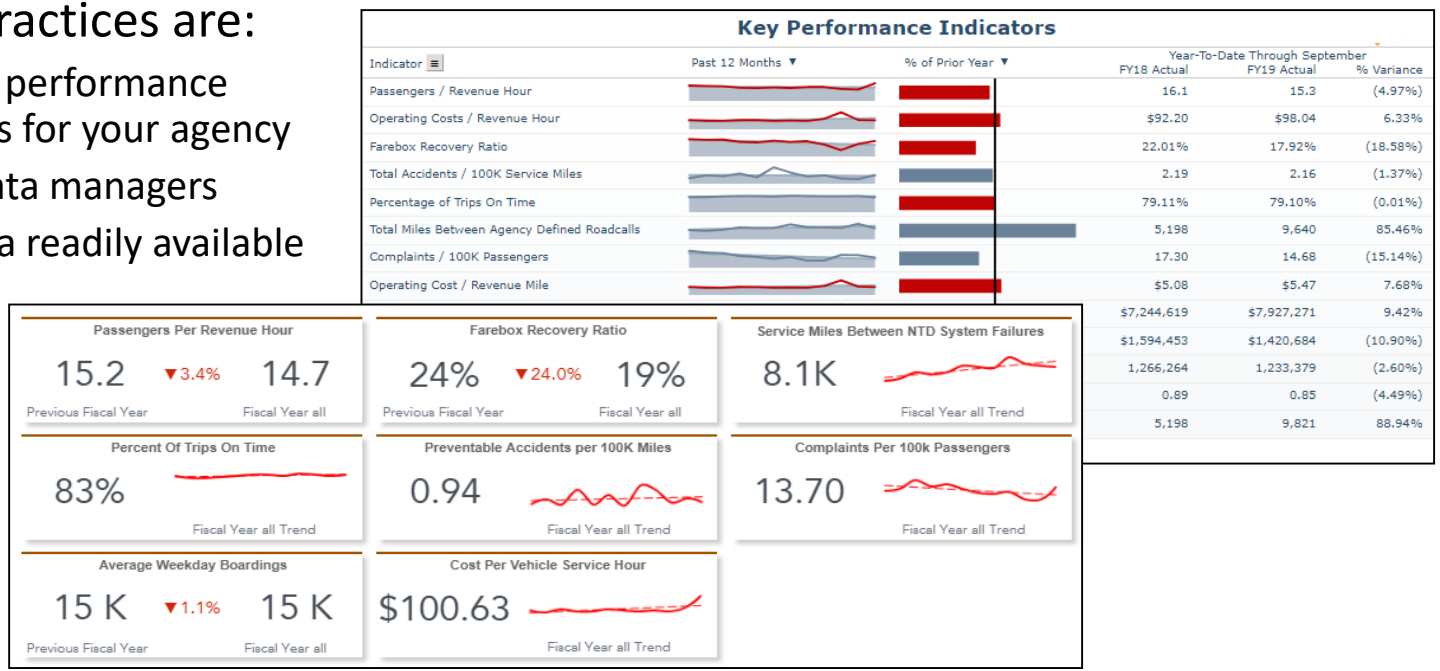
Best Practices

- Key best practices are:
  - Establish performance indicators for your agency
  - Assign data managers
  - Have data readily available to staff



Best Practices

- Most importantly, the best practice is to review data regularly (daily, weekly, monthly)
  - Reviewing regularly allows for clean metrics for other purposes throughout year, not only NTD
  - Key NTD data sets:
    - Financial
    - Core metrics (hours/miles)
    - Safety
    - Fleet

Financial Data

- Review financial data and allocations monthly allowing for accurate financial metrics
  - Operating costs
  - Revenues/farebox recovery ratio

FY18 -- Monthly Performance Statistics
Systemwide Summary
All Routes

Performance Statistics for Year-To-Date Through June -- July 1, 2017 to June 30, 2018

Level Item	Passengers	Revenue Hours	Operating Costs	Passenger Revenue	Passengers Per Rev. Hour	Operating Cost Per Passenger	Operating Cost Per Rev. Hour	Passenger Revenue Per Passenger	Passenger Revenue Per Rev. Hour	Farebox Recovery Ratio
Reporting Route #:										
01	438,395	14,749.0	$1,639,839	$450,041	29.7	$3.74	$111.18	$1.03	$30.51	27.44%
03	360,023	15,960.7	$1,808,040	$336,159	22.6	$5.02	$113.28	$0.93	$21.06	18.59%
04	189,173	9,612.7	$1,051,736	$176,935	19.7	$5.56	$109.41	$0.94	$18.41	16.82%

Level Item	Passengers	Revenue Hours	Operating Costs	Passenger Revenue	Passengers Per Rev. Hour	Operating Cost Per Passenger	Operating Cost Per Rev. Hour	Passenger Revenue Per Passenger	Passenger Revenue Per Rev. Hour	Farebox Recovery Ratio
Program:										
1. Local	3,749,403	167,074.1	$18,789,881	$3,969,942	22.4	$5.01	$112.46	$1.06	$23.76	21.13%
2. Shuttle	176,912	14,308.8	$1,456,299	$416,532	12.4	$8.23	$101.78	$2.35	$29.11	28.60%
3. Express	206,390	22,126.4	$3,022,963	$200,048	9.3	$14.65	$136.62	$0.97	$9.04	6.62%
4. Flex	50,186	15,151.0	$1,768,497	$37,375	3.3	$35.24	$116.73	$0.74	$2.47	2.11%
5. On Call	3,516	2,410.7	$294,534	$8,594	1.5	$83.77	$122.18	$2.44	$3.56	2.92%
Cab	11,462	3,856.0	$308,343	$135,056	3.0	$26.90	$79.96	$11.78	$35.03	43.80%
Paratransit	91,210	40,974.2	$3,458,281	$1,083,872	2.2	$37.92	$84.40	$11.88	$26.45	31.34%
RideShare	235,716	41,581.8	$1,445,047	$782,388	5.7	$6.13	$34.75	$3.32	$18.82	54.14%
Mode:										
Bus (Motorbus)	4,183,102	218,721.4	$25,051,797	$4,624,252	19.1	$5.99	$114.54	$1.11	$21.14	18.46%
Demand Response	94,515	43,323.7	$3,738,657	$1,092,110	2.2	$39.56	$86.30	$11.55	$25.21	29.21%
Demand Response Taxi	11,462	3,856.0	$308,343	$135,056	3.0	$26.90	$79.96	$11.78	$35.03	43.80%
Vanpool	235,716	41,581.8	$1,445,047	$782,388	5.7	$6.13	$34.75	$3.32	$18.82	54.14%
System Total:	4,524,795	307,482.9	$30,543,843	$6,633,806	14.7	$6.75	$99.34	$1.47	$21.57	21.72%

Financial Data

- With regular review throughout the year, NTD financial reporting should be relatively painless

FY18 -- Operating Expenses (F-30)

Mode & Service Type: Bus (Motorbus) / Directly Operated

All Routes

	Vehicle Operations (VO)	Vehicle Maintenance (VM)	Facility Maintenance (FM)	General Administration (GA)	Total
Labor (5010)					
Operators' Salaries and Wages (5011)	$6,100,575	-	-	-	**$6,100,575**
Operators' Paid Absences (5012)	$307,996	-	-	-	**$307,996**
Other Salaries and Wages (5013)	$1,411,836	$1,817,691	$211,244	$1,806,295	**$5,247,066**
Other Paid Absences (5014)	$152,420	$160,960	$26,539	$213,154	**$553,072**
Fringe Benefits (5015)	$3,363,981	$941,357	$86,636	$654,683	**$5,046,657**
Services (5020)	$12,754	$99,667	$408,278	$2,331,385	**$2,852,085**
Materials and Supplies (5030)					
Fuel and Lubricants (5031)	$1,322,666	$84,283			**$1,406,949**
Tires and Tubes (5032)	$117,198	$5,446			**$122,644**
Other Materials and Supplies (5039)	$19,960	$1,543,453	$258,711	$76,138	**$1,898,262**
Utilities (5040)	-			$324,889	**$324,889**
Casualty and Liability Costs (5050)				$810,587	**$810,587**
Taxes (5060)	-	-	-	-	**-**
Purchased Transportation (5100)					
Purchased Transportation In Report (5101)	-	-	-	-	**-**
Purchased Transportation Filing Separate Report (5102)	-	-	-	-	**-**
Miscellaneous Expenses (5090)	$91,188	$23,778	$39,796	$329,337	**$484,099**
Total	**$12,900,573**	**$4,676,635**	**$1,031,204**	**$6,546,468**	**$25,154,880**

Financial Data

FY18 -- Source of Funds (F-10)

System : System-wide
All Routes

Directly Generated Funds - Passenger Fares (4110)

Field	Passenger-Paid Fares (4111)	Organization-Paid Fares (4112)	Total
DR/DO	$1,091,562	-	$1,091,562
MB/DO	$3,738,216	-	$3,738,216
VP/DO	$782,388	-	$782,388
DT/PT	$135,053	-	$135,053
Total Passenger Fares	$5,747,219	-	$5,747,219

Directly Generated Funds (4100)

Field	Funds Earned	Funds Expended on Operations	Funds Expended on Capital
Total Passenger Fares (4110)	$5,747,219	$5,747,219	-
Park and Ride Parking Revenues (4120)	-	-	-
Non-Public Transportation Revenues (4130)	$83,053	$83,053	-
Auxiliary Transportation Funds (4140)			
Auxiliary Transportation Funds - Advertising Revenues (4141)	$283,933	$283,933	-
Auxiliary Transportation Funds - Concessions (4142)	-	-	-
Auxiliary Transportation Funds - Other (4149)	$145,343	$145,343	-
Other Agency Revenues (4150)	-	-	-
Revenues Accrued Through a Purchased Transportation Agreement (4160)			
Revenues Accrued Through a Purchased Transportation Agreement (With an NTD Reporting Agency)	-	-	-
Revenues Accrued Through a Purchased Transportation Agreement (With a non-NTD Reporting Agency)	-	-	-
Subsidy from Other Sectors of Operations (4170)	-	-	-
Extraordinary and Special Items (4180)	-	-	-
Total Recoveries (4190)	-	-	-
Total Directly Generated Funds	$6,259,549	$6,259,549	-

Local Government Funds (4300)

Field	Funds Earned	Funds Expended on Operations	Funds Expended on Capital
General Revenues of the Local Government (4310)	-	-	-
Income Taxes (4321)	-	-	-
Sales Taxes (4322)	-	-	-
Property Taxes (4323)	$17,966,723	$17,966,723	-
Fuel Taxes (4324)	-	-	-
Other Taxes (4325)	-	-	-
Bridge, Tunnel and Highway Tolls (4326)	-	-	-
High Occupancy Tolls (4327)	-	-	-
Other Dedicated Funds (4329)	-	-	-
Extraordinary and Special Items (4330)	-	-	-
Other Local Funds (4390)	-	-	-
Total Local Government Funds	$17,966,723	$17,966,723	-

State Government Funds (4400)

Field	Funds Earned	Funds Expended on Operations	Funds Expended on Capital
General Revenues of the State Government (4410)	-	-	-
State Transportation Funds (4420)	$2,316,779	$2,316,779	-
Extraordinary and Special Items (4430)	-	-	-
Total State Government Funds	$2,316,779	$2,316,779	-

Financial Data

FY 2018 -- Uses of Capital Form (F-20)

System : System-wide

Rehabilitation / Reconstruction / Replacement / Improvement for Existing Service

	Guideway (6100)	Passenger Stations (6200)	Administrative Buildings (6300)	Maintenance Buildings (6400)	Revenue Vehicles (6500)	Service Vehicles (6600)	Fare Revenue Collection Equipment (6700)	Communication/ Information Systems (6800)	Other (6900)	Total
CB / PT	-	-	-	-	-	-	-	$4,647	$1,457	$6,103
DT / PT		-	-	-	-	-	-	$1,564	$1,077	$2,640
MB / PT	-	-	$6,875	$1,398,682	$8,771,523	$132,718	-	$243,664	$192,163	$10,745,625
Total	-	-	$6,875	$1,398,682	$8,771,523	$132,718	-	$249,874	$194,696	$10,754,369

Expansion of Service

	Guideway (6100)	Passenger Stations (6200)	Administrative Buildings (6300)	Maintenance Buildings (6400)	Revenue Vehicles (6500)	Service Vehicles (6600)	Fare Revenue Collection Equipment (6700)	Communication/ Information Systems (6800)	Other (6900)	Total
MB / PT	-	$5,800	-	-	$-	-	-	-	-	$5,800
Total	-	$5,800	-	-	$-	-	-	-	-	$5,800

Total of All Uses of Capital

	Guideway (6100)	Passenger Stations (6200)	Administrative Buildings (6300)	Maintenance Buildings (6400)	Revenue Vehicles (6500)	Service Vehicles (6600)	Fare Revenue Collection Equipment (6700)	Communication/ Information Systems (6800)	Other (6900)	Total
CB / PT	-	-	-	-	-	-	-	$4,647	$1,457	$6,103
DT / PT	-	-	-	-	-	-	-	$1,564	$1,077	$2,640
MB / PT	-	$5,800	$6,875	$1,398,682	$8,771,523	$132,718	-	$243,664	$192,163	$10,751,425
Total	-	$5,800	$6,875	$1,398,682	$8,771,523	$132,718	-	$249,874	$194,696	$10,760,169

Core Metrics – Fixed Route

- Exceptions to plan
  - Route calendar
  - Route plan
  - Track incidents with lost/added service

Date	Vehicle #	Route #	Direction	Incident Reason	Change In Revenue Hours	# Missed Trips
09/27/2018 19:10	13403	142	West	Roadcall/Equipment Breakdown -- See Problem	(1.83)	2
09/21/2018 18:13	13402	142	West	Roadcall/Equipment Breakdown -- See Problem	(0.50)	1
09/17/2018 06:38	13402	142	West	Collision Accident	(1.62)	2
09/08/2018 15:30	13401	142	East	Missed Trip	(1.75)	2

Monthly Service Reconciliation Report
FY 18-19 - September

Level: Program
Level Item: ALL

Revenue Hours

Route #	Day Type	Runcut Version	Schedule Type	Revenue Hours	Route Calendar Days	Actual
142	Weekday	09/01/2018	Weekday	29.47	14	412.58
		09/23/2018	Weekday	29.47	5	147.35
					Route 142 - Scheduled Revenue Hours	559.93
					Monthly Service Change Summary	(3.95)
					Weekday Total	**555.98**
		09/01/2018	Saturday	26.43	4	105.72
		09/23/2018	Saturday	26.43	1	26.43
					Route 142 - Scheduled Revenue Hours	132.15
					Monthly Service Change Summary	(1.75)
					Saturday Total	**130.40**
		09/01/2018	Sunday	26.43	4	105.72
		09/23/2018	Sunday	26.43	2	52.86
					Route 142 - Scheduled Revenue Hours	158.58
					Monthly Service Change Summary	-
					Sunday Total	**158.58**
					Route Total: 142	**844.96**

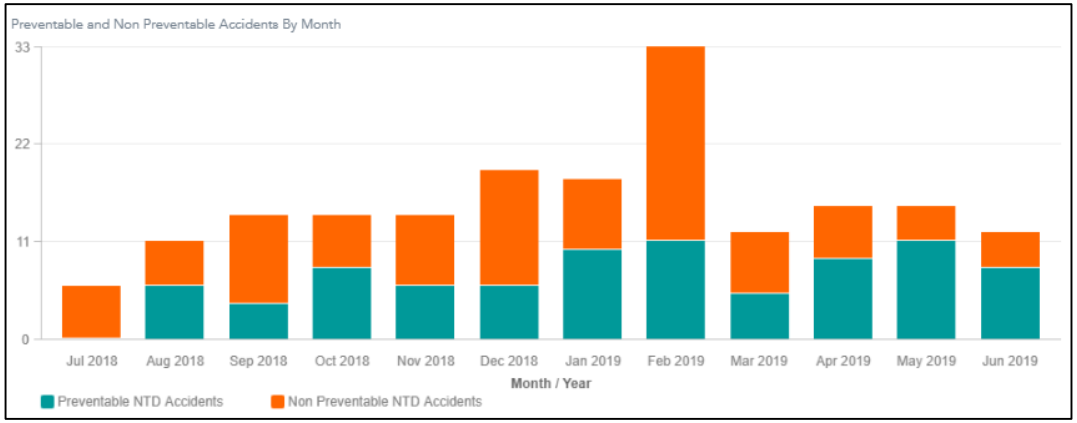
Core Metrics – Demand Response

- Trip Sheet Data
  - Reviewing trip sheet data to determine errors in data entry
  - Calculated MPH can display errors that are not easily noticed

Date	Route #	Vehicle	Revenue Hours	Deadhead Hours	Total Hours	Revenue Miles	Deadhead Miles	Total Miles	Total # Trips	Revenue MPH	Deadhead MPH	Total MPH
10/11/2018	1	1710	11.08	0.60	11.68	54.05	573.53	627.58	1	4.88	955.88	53.72
10/12/2018	90	1717	2.13	0.33	2.47	54.00	104.00	158.00	0	25.31	312.00	64.05
10/10/2018	1	1710	11.08	0.60	11.68	0.00	62.14	62.14	4	0.00	103.57	5.32
10/23/2018	97	1721	2.75	0.67	3.42	0.00	59.03	59.03	0	0.00	88.55	17.28
10/10/2018	90	1716	1.00	0.48	1.48	28.00	26.00	54.00	0	28.00	53.79	36.40
10/23/2018	93	1721	2.43	0.90	3.33	0.00	37.90	37.90	0	0.00	42.11	11.37

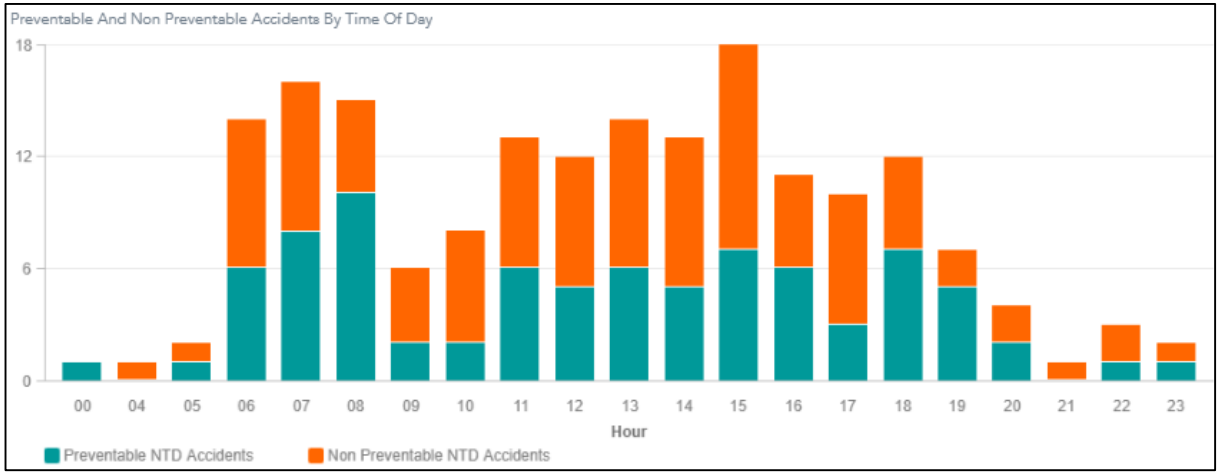
Safety Data

- Use safety data collected to find patterns and take corrective action
- Look at monthly data to review reasons for abnormalities
  - Weather
  - New operators
  - Service change



Safety Data

- Look at data by time of day
  - AM/PM Peak
  - School times



Safety Data

- Review the location of where incidents occurred to look for patterns
  - Target training to specific trouble spots

Fleet Data

- Roadcalls
  - Use incidents with lost service to verify and classify roadcalls
  - Use roadcall information to identify patterns which can be used to correct issues preemptively

Date	Vehicle #	Route #	Incident Type	Incident Reason	NTD Status
09/30/2018 08:16	1608	6	Farebox	0. Unassigned Farebox	Non-Reportable (NTD)
09/29/2018 08:02	1609	7	Equipment - Interior	0. Unassigned Equipment Issue - Interior	Non-Reportable (NTD)
09/28/2018 23:45	1005	4	Equipment - Exterior	0. Unassigned Equipment Issue - Exterior	Major Mechanical System Failures (NTD)
09/28/2018 19:28	28458	60	From EAM	4 Roadcall	Major Mechanical System Failures (NTD)

Fleet Data

- Collection of miles and fueling data along with costs
  - Use to monitor vehicles and identify under performing vehicles

Vehicle #	Mileage	Date	Fuel Type	Gallons of Fuel	Fuel Costs
1501	212,599	11/15/2018	Diesel Fuel	9.8	$22.50
1502	303,600	11/15/2018	Diesel Fuel	25.3	$58.15
1505	278,295	11/15/2018	Diesel Fuel	8.2	$18.82
22411	455,692	11/15/2018	Diesel Fuel	16.7	$38.27
22412	418,145	11/15/2018	Diesel Fuel	9.6	$21.97

Monthly Fleet Fuel & Cost Summary Report

FY18 - YTD Thru June

1. Local

Vehicle #	Miles	Fuel Quantity	Miles Per Gallon	Fuel Cost	Labor Hours	Labor Costs	Parts Costs	Service Costs	Other Costs	Total Costs	Cost Per Mile
2016-NEW FLYER-XD40-40FT LF											
1627	49,197	9,885.6	5.0	$18,255.92		$2,336.33	$721.01	$0.00	$0.00	$21,313.26	$0.43
1628	47,117	9,658.0	4.9	$17,819.15		$3,259.25	$5,576.46	$747.70	$0.00	$27,402.56	$0.58
1629	50,369	9,734.9	5.2	$17,821.72		$2,769.21	$765.74	$1,398.76	$0.00	$22,755.43	$0.45
1630	50,528	9,685.9	5.2	$17,855.11		$4,355.20	$1,312.69	$0.00	$0.00	$23,523.00	$0.47
Series Totals	197,211	38,964.3		$71,751.90		$12,719.99	$8,375.90	$2,146.46	$0.00	$94,994.25	
1. Local Totals	**197,211**	**38,964.3**		**$71,751.90**		**$12,719.99**	**$8,375.90**	**$2,146.46**	**$0.00**	**$94,994.25**	

Fleet Data

- Validating fleet data throughout year makes the A-30 data easy to compile

FY 2018 -- Revenue Vehicle Inventory (A-30)

Mode & Service Type: Commuter Bus / Purchased Transportation

RVI ID	Subfleet	# of Vehicles in Total Series	Dedicated Series	Vehicle Type Code	Ownership Code	Funding Source	Year of Mfg.	Year of Rebuild	Mfg. Code	Model #	# of Active Vehicles in Series	# with ADA Access	# of Emergency Contigency Vehicles	Fuel Type Code	Vehicle Length (in Feet)	Seating Capacity	Standing Capacity	Total Miles on Active Vehicles During the Period	Average Lifetime Miles per Active Vehicles	Supports Another Mode
59368	2008 MCI (CB/PT)	9	Yes	BR	OOPA	UA	2008		MCI	D4500	9	9	0	DF	45.0	57	15	316,416	258,276	
59369	2009 MCI (CB/PT)	34	Yes	BR	OOPA	UA	2009		MCI	D4500	34	34	0	DF	45.0	57	15	743,480	256,113	
	Total	43																1,059,896		

Change in Vehicle Life Miles

FY 2017, Dec to FY 2018, Dec

Series - 2008 MCI (CB/PT) (RVI #: 59368)

Vehicle #	Lifetime Miles FY 2017, Dec	Lifetime Miles FY 2018, Dec	Change in Lifetime Miles
7001	234,361	272,760	38,399
7002	229,535	265,069	35,534
7003	198,497	233,560	35,063
7004	217,990	247,496	29,506
7005	229,912	261,057	31,145
7006	199,097	234,668	35,571
7007	232,717	270,695	37,978
7008	233,181	269,430	36,249
7009	232,776	269,747	36,971
Total	2,008,066	2,324,482	316,416
Average	223,118	258,276	35,157

Key Takeaways

Frequent data review provides:

1) Simplified NTD reporting process at year end
2) Valuable, organized data to make good business decisions throughout year

Contact Information

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