



High Quality Service through Continuous Improvement

2016 2nd Quarter Performance Report

TriMet Board Meeting August 10, 2016

Quality is a never ending quest and continuous improvement is a never ending way to discover and eliminate the root causes of problems. It accomplishes this by using sustainable, incremental improvements rather than implementing one large change. It is a way of looking at how we can do our work better.

Key performance indicators are performance measurements that identify the level of progress toward attaining stated objectives.

APPROACH

Focus on TriMet's three primary areas for improvement:

1. Vehicle and System Reliability

Goal: Reduce service disruptions through effective preventive maintenance and asset management.

Key Performance Indicators: preventive maintenance schedule compliance, mean distance traveled between mechanical failures, and maintenance attendance.

- *Bus Maintenance and Maintenance of Way all exceeded preventive maintenance objectives for the 2016 2nd Quarter as target set by the Federal Transit Administration is 80%. Rail Equipment Maintenance (REM) for the quarter is just below FTA target of 80%. This area will remain a challenge for the next quarter due to Type 5 warranty issues, Type 1 MDBF, service disruptions where mechanical damage resulted as well as catching up maintenance programs. Resources have been reallocated to ensure appropriate service levels are met. MOW performance has increased by 7.5% over previous years and is a significant contributor to improved OTP.*
- *Fare equipment is consistently performing well. Last 31 days TVM reliability has been 99%.*
- *Fixed route bus MDBF (Mean Distance Between Failure) is showing a decrease from last year as there is now an increased focus on the detail and increased reporting of data related to maintenance issues. This is anticipated to stabilize in the quarters ahead.*
- *MAX light rail MDBF (Mean Distance Between Failure) performance has dropped mainly due to auxiliary inverter performance issues on the fleet of Type 1s and Type 5s. A contractor is underway over the next several years to review the performance and repair or replace problematic inverters. The Type 5s have just undergone a software upgrade which is showing improved performance effective at the latter part of this Quarter.*
- *Maintenance attendance is overall flat with an increase of .1% over the previous quarter.*

2. Service Delivery

Goal: Ensure efficient service delivery by creating staffing levels and reporting structures that increase the ability to respond quickly to service and customer needs. Improve route design and service delivery through ongoing line reviews.

Key Performance Indicators: On time performance, operator attendance, and boarding rides per revenue hour.

- *All modes (MAX, bus, WES) Continue to demonstrate OTP increases over the previous year.*
- *MAX service OTP increased from 75% in December 2015 to the last 31-day average of 86%, or a full 11 percentage point increase. This focus will continue to build on this going forward.*
- *WES OTP Performance has returned to the high 90s OTP, with less freight track and signaling issues occurring.*
- *Transportation employee attendance remains flat at 90.2%. This has been fairly consistent over time.*
- *Boarding Rides per revenue hour show overall system reliability is down by 6.3% year over year. The largest decrease is on the bus system largely attributed to three key issues: A) the opening of the MAX Orange Line B) fuel prices and C) the new line 97 between Tualatin and Sherwood being implemented in this Quarter. WES incurred a slight decrease which was primarily caused by the effect of gasoline prices on ridership. Light rail ridership has increased from the prior quarter, however, rail riders per revenue hour have decreased. This is attributed to the new Orange Line which continues going through its growth period and helps shape new customer travel patterns.*

3. Operator Support

Goal: Improve safety and customer service through customized training programs for operators and supervisors.

Key Performance Indicators: annual operator recertification training rate, collisions, complaints and commendations.

- *Bus and MAX light rail operator annual training and recertification for Fiscal Year 2016 is now complete, being substantially ahead of schedule. New certification for the new fiscal year is underway.*
- *Bus collisions are up over the previous year by over 17.3%. However, bus unit collisions dropped by 38 over the previous Quarter. This is being monitored closely, including the review of selective training. MAX collisions with vehicles are down substantially from previous Quarter and more in line with previous year. These results now also include the Orange Line. The "Collision Other" category has been reduced notably since the reporting time attributed to zero yard derailments in this reporting period. Bus operator complaints have increased slightly by .9% over the previous year. The largest increase is in the area of public relations by 7.4%. This is being dealt with through increased training, a review of operator performance review processes and further scrutiny in the hiring and screening of new operators. Significant results have been*

achieved in Rail Complaints being down by almost 20% year over year. This is mainly attributed to the results achieved in On Time Performance.

- *Bus operator commendations continue to show strong performance results. Comparing a 46.6% increase over the previous year. Rail commendations are down by 43.5%. However, due to the very small base number, this can fluctuate significantly. This will be monitored over time for specific trends.*

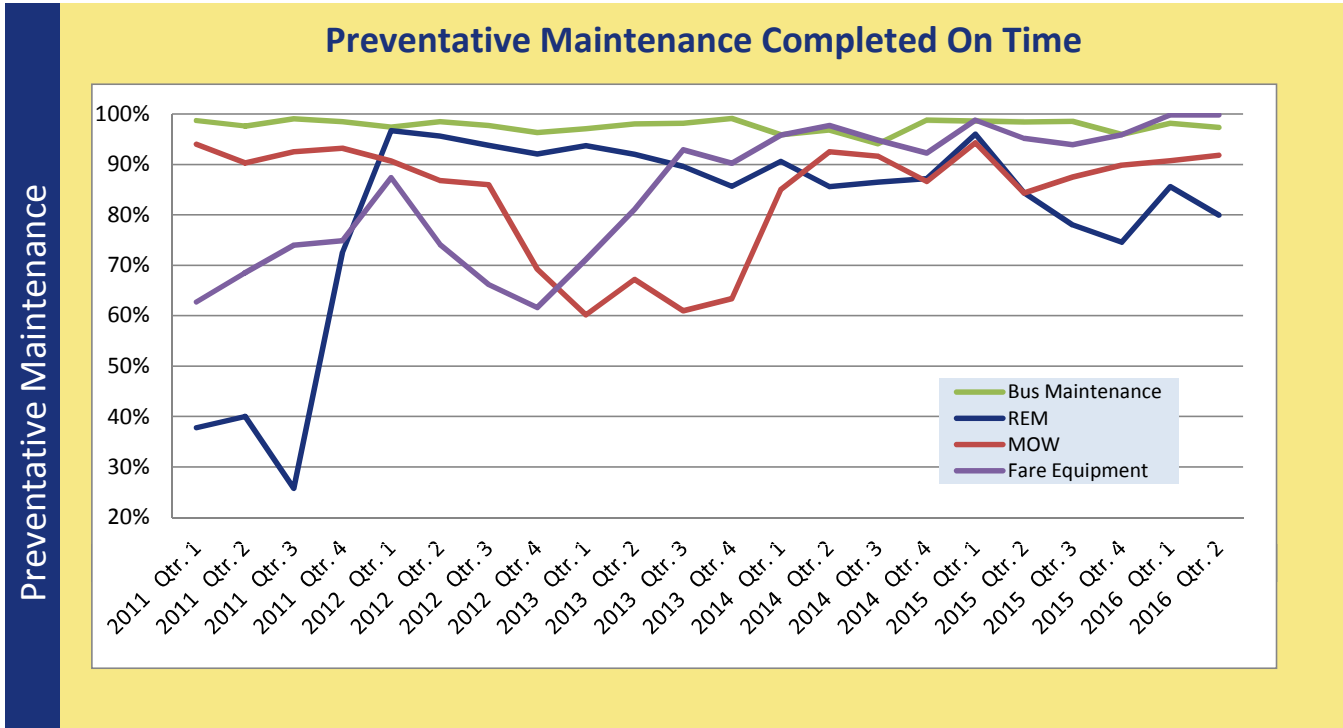


2016 2nd Quarter Report

Quarterly Performance Report

Preventative Maintenance Completed On Time

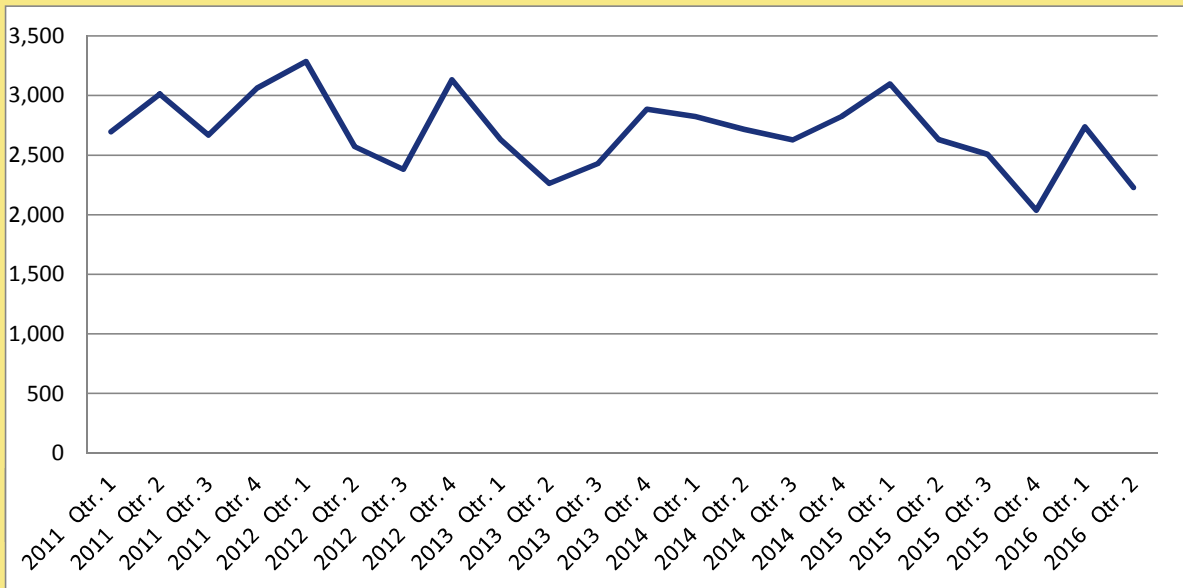
	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015</u> <u>Percent Pt. Change</u>
Bus Maintenance	97.4%	98.2%	98.4%	-1.0%
REM	79.9%	85.6%	84.4%	-4.4%
MOW	91.8%	90.7%	84.3%	7.5%
Fare Equipment	99.8%	99.8%	95.2%	4.7%



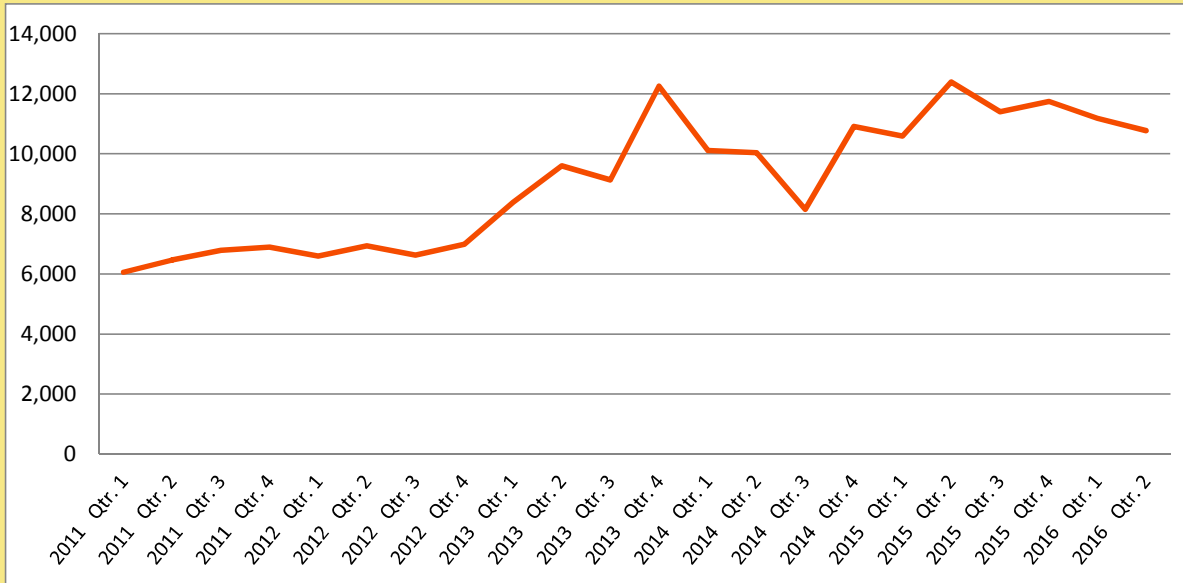
Mean Distance Between Failures (MDBF)

	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015 Percent Change</u>
MAX Light Rail	2,228	2,736	2,629	-15.3%
Fixed Route Bus	10,773	11,179	12,394	-13.1%

MAX Light Rail Car Miles / Service Related Repairs



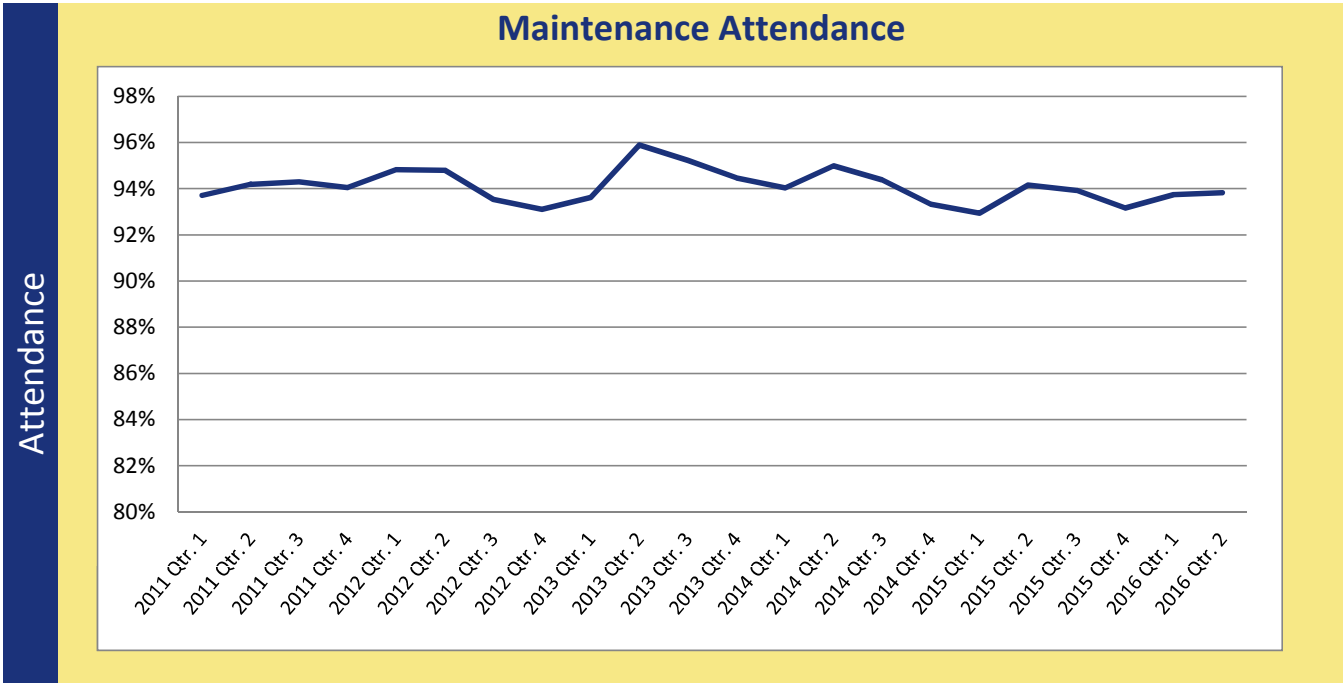
Fixed Route Bus Miles Between Mechanical Failures - Lost Service



Mean Distance Between Failures (MDBF)

Maintenance Employee Attendance

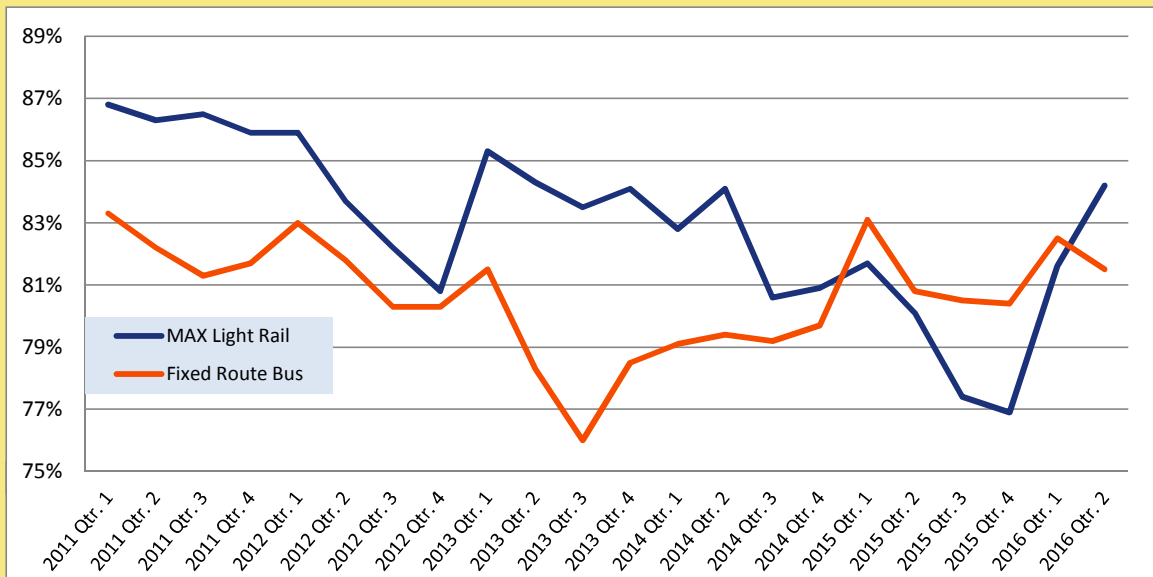
	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015</u> <u>Percent Pt. Change</u>
Maintenance	93.8%	93.7%	94.2%	-0.3%



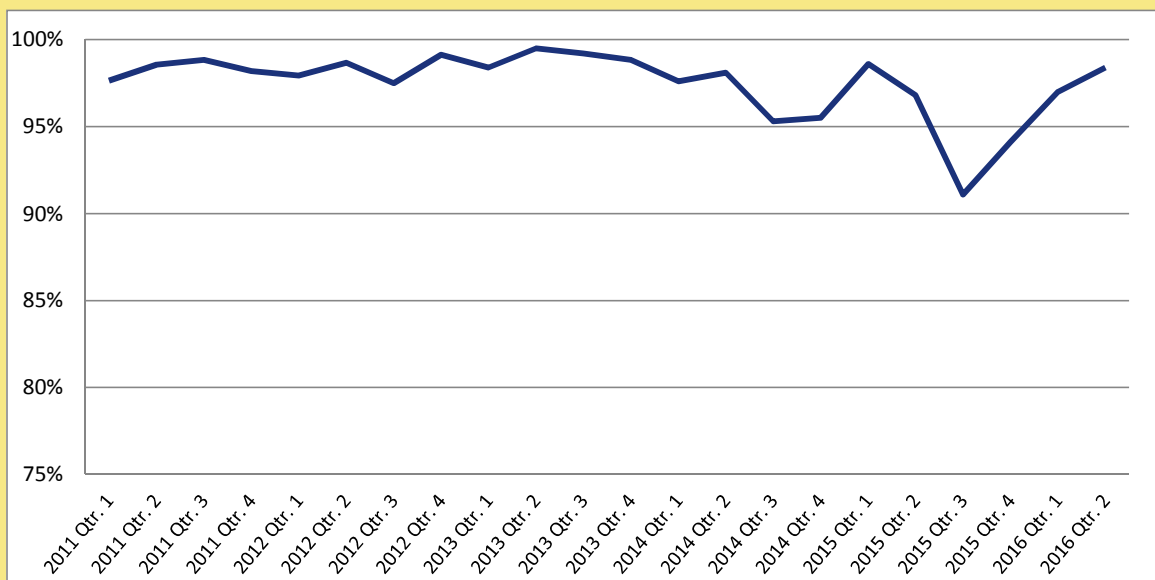
On Time Performance

	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015</u> <u>Percent Pt. Change</u>
Fixed Route Bus	81.5%	82.5%	80.8%	0.7%
MAX Light Rail	84.2%	81.6%	80.1%	4.1%
WES Commuter Rail	98.4%	97.0%	96.8%	1.6%

Bus and MAX Light Rail OTP



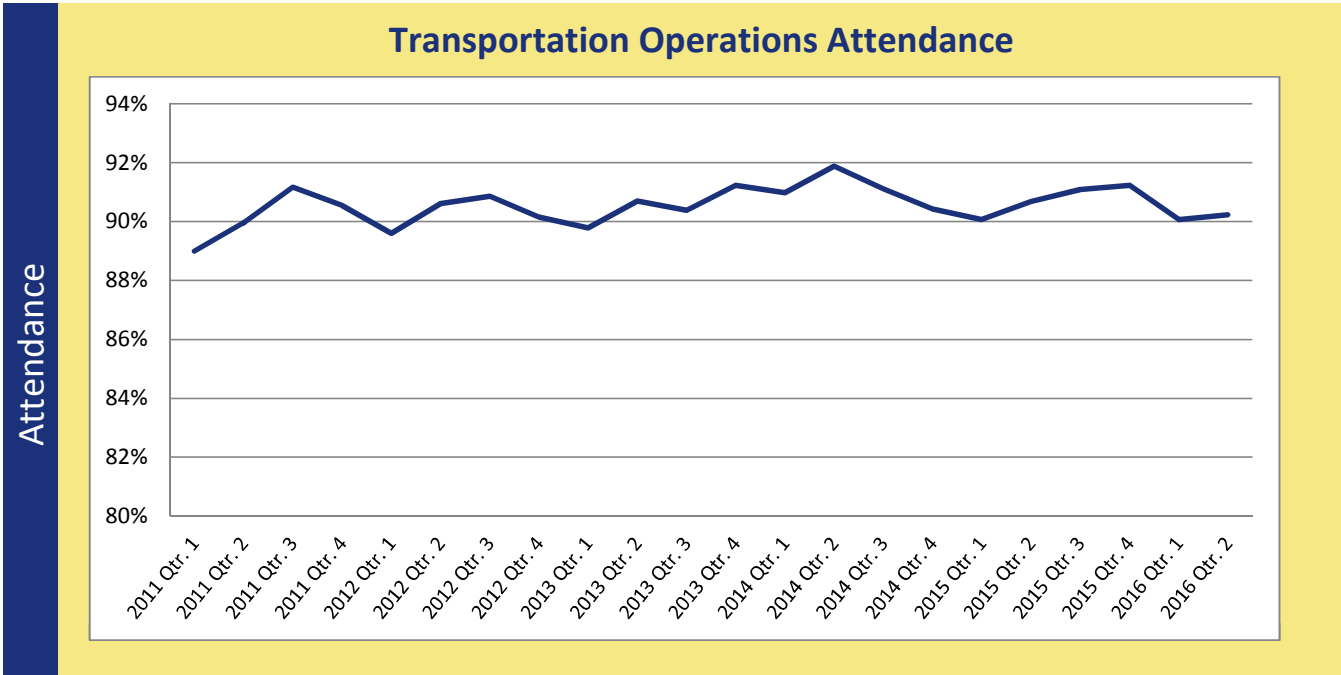
WES Commuter Rail OTP



On Time Performance

Transportation Operations Employee Attendance

	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015</u> <u>Percent Pt. Change</u>
TransOps	90.2%	90.1%	90.7%	-0.4%

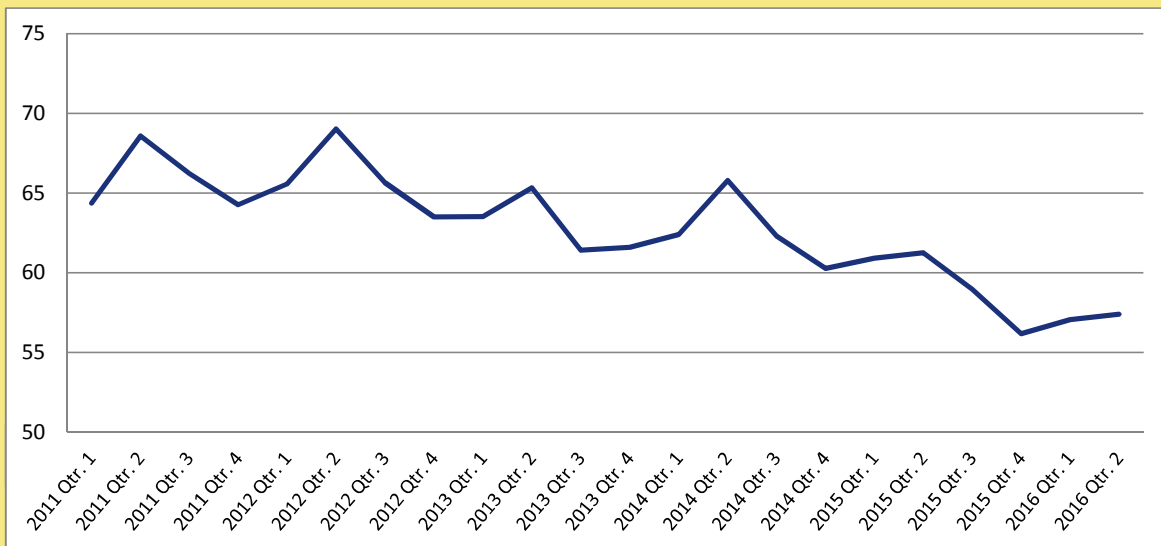


Boarding Rides Per Revenue Hour

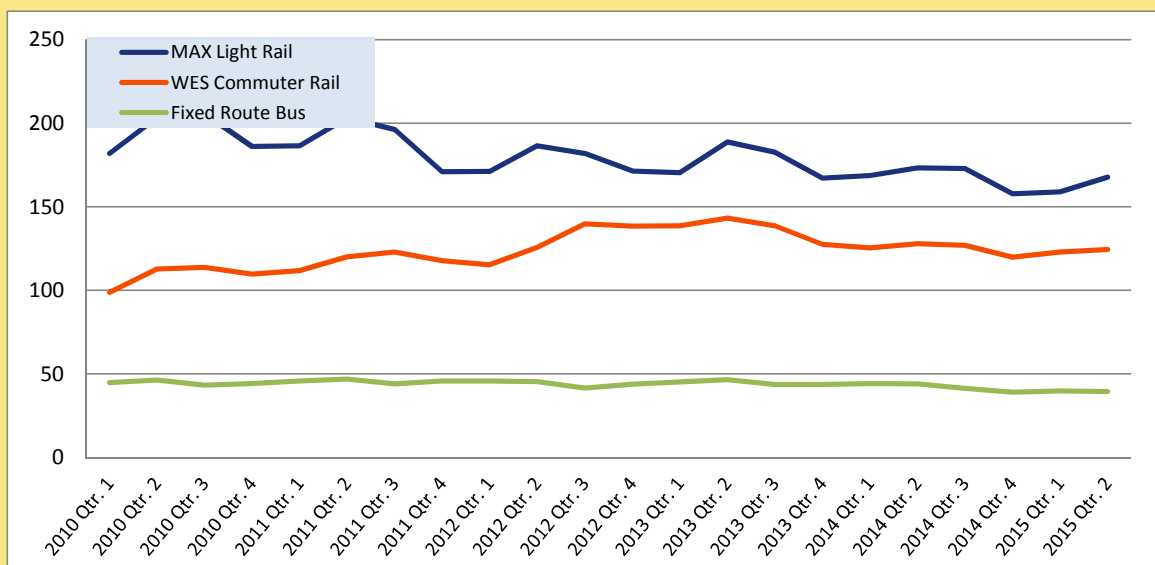
	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015 Percent Change</u>
Total	57.4	57.1	61.3	-6.3%
Fixed Route Bus	39.4	39.9	44.0	-10.5%
MAX Light Rail	167.8	159.0	173.4	-3.2%
WES Commuter Rail	124.5	122.9	127.9	-2.6%

TriMet Boarding Rides Per Revenue Hour

Total Fixed Route Rides Per Revenue Hour



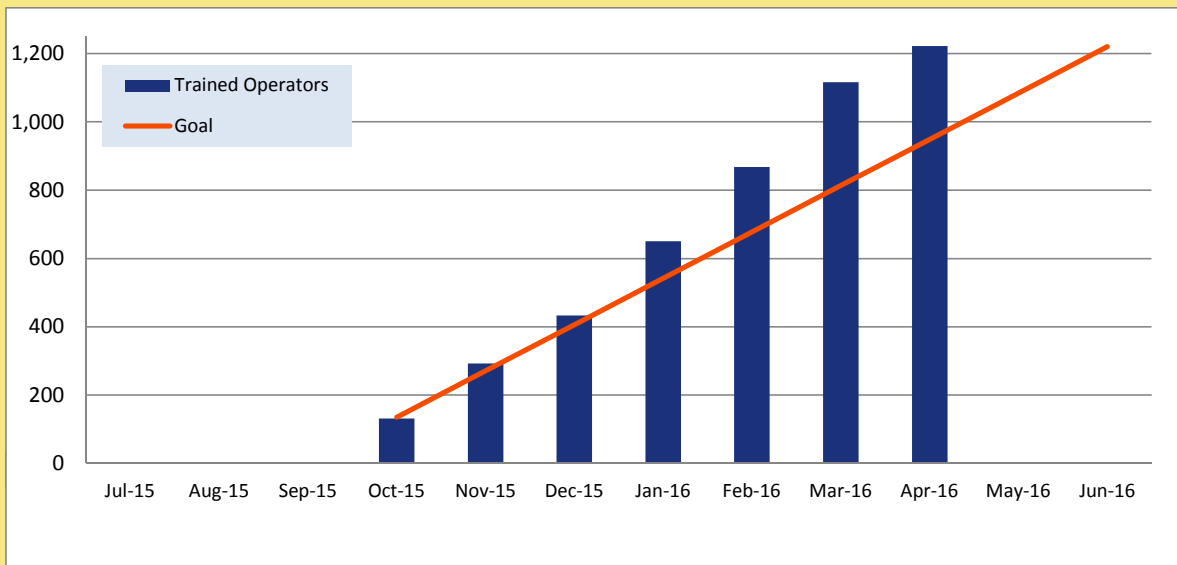
Rides Per Revenue Hour By Mode



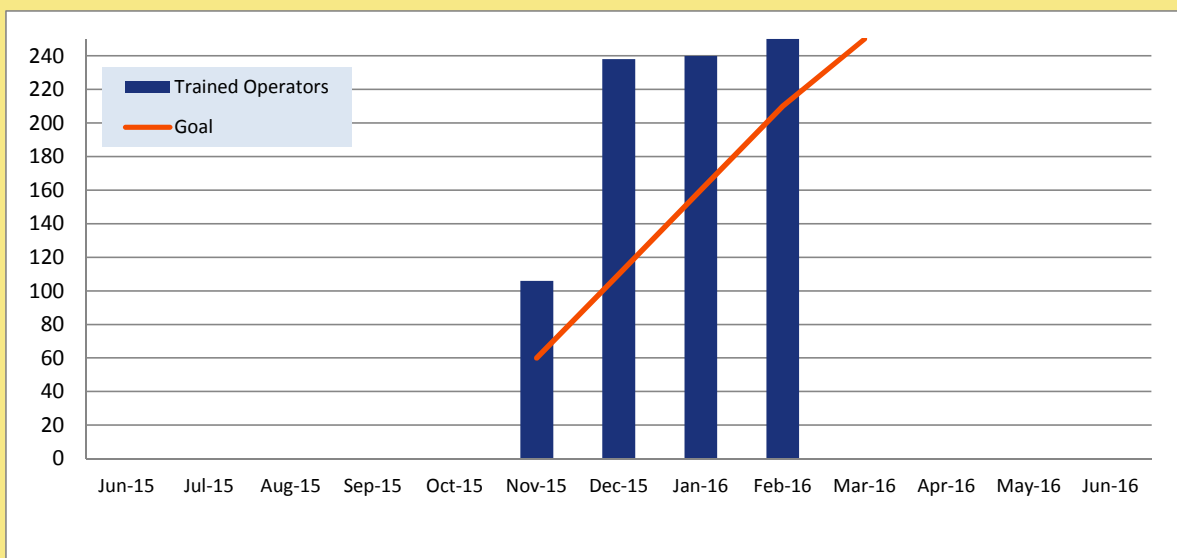
Annual Operator Recertification Training

	<u>Feb-15</u>	<u>Mar-16</u>	<u>Apr-16</u>	<u>Fiscal Year</u>
Bus Trained	868	1,116	1,222	1,222
Cumulative Goal	678	813	949	1,222
MAX Trained	250	250	250	250
Cumulative Goal	210	250	250	250

Bus Operator Annual Recertification - Actual to Goal



MAX Light Rail Annual Recertification - Actual to Goal

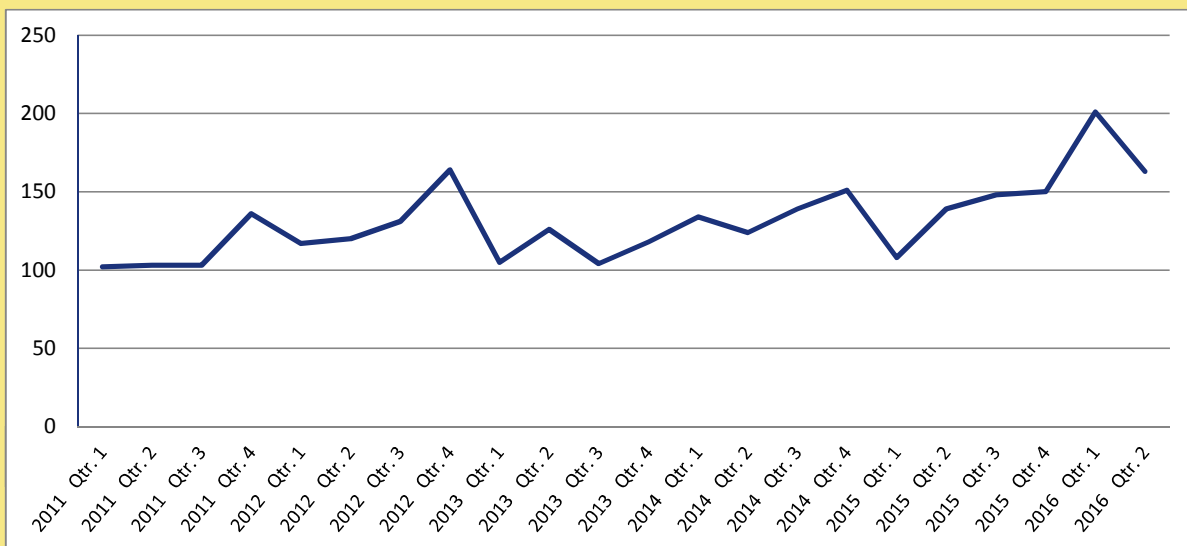


Operator Recertification Training

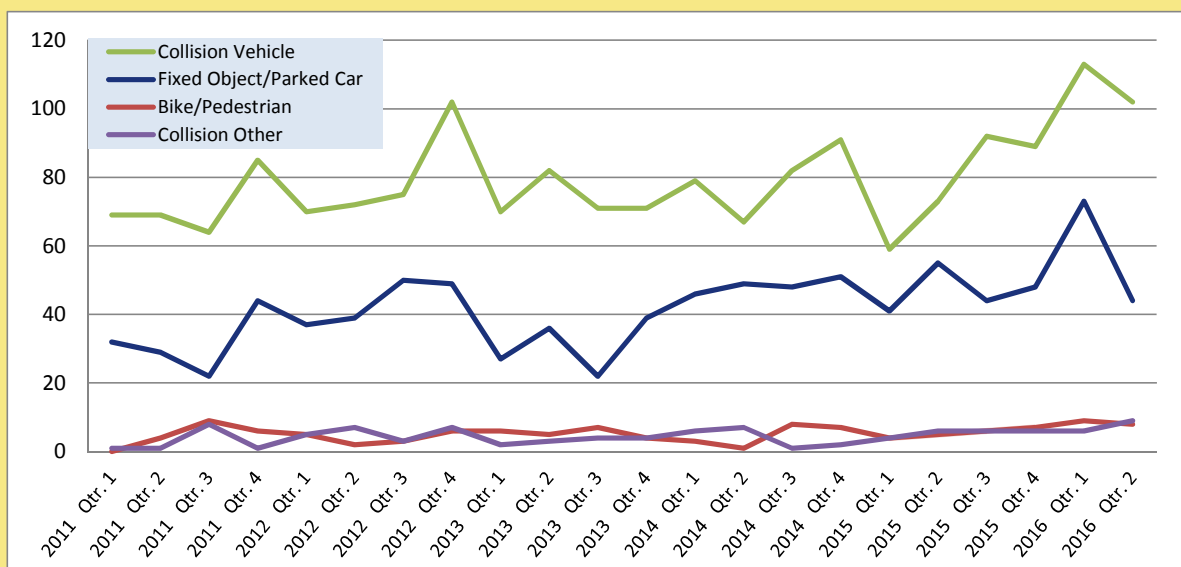
Fixed Route Bus Collisions

	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015</u> <u>Percent Change</u>
Total	163	201	139	17.3%
Collision Vehicle	102	113	73	39.7%
Fixed Object/Parked Car	44	73	55	-20.0%
Bike/Pedestrian	8	9	5	60.0%
Collision Other	9	6	6	50.0%

Total Bus Collisions



Bus Collision Types

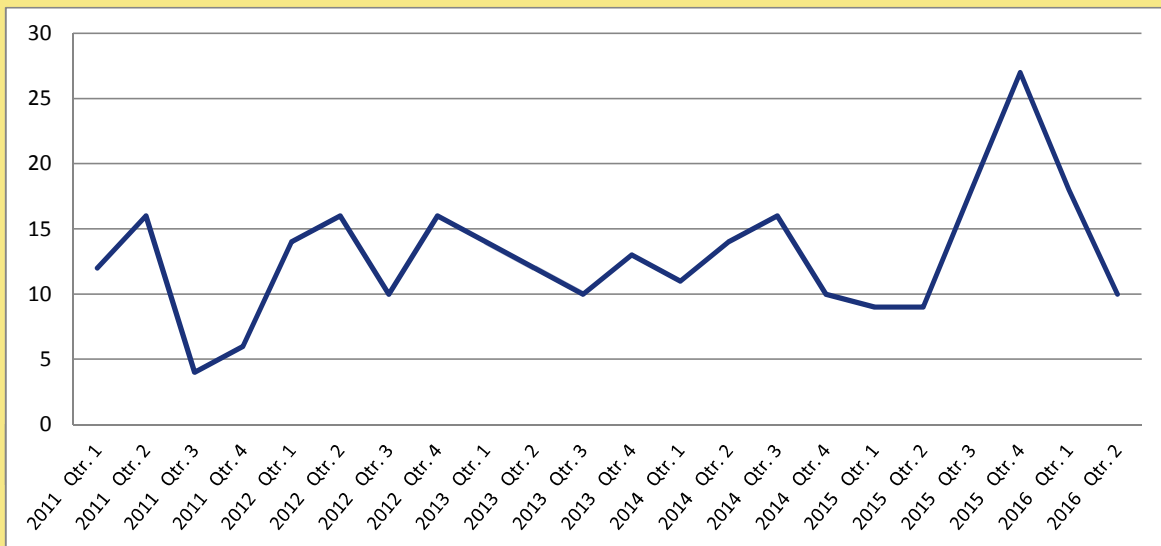


Fixed Route Bus

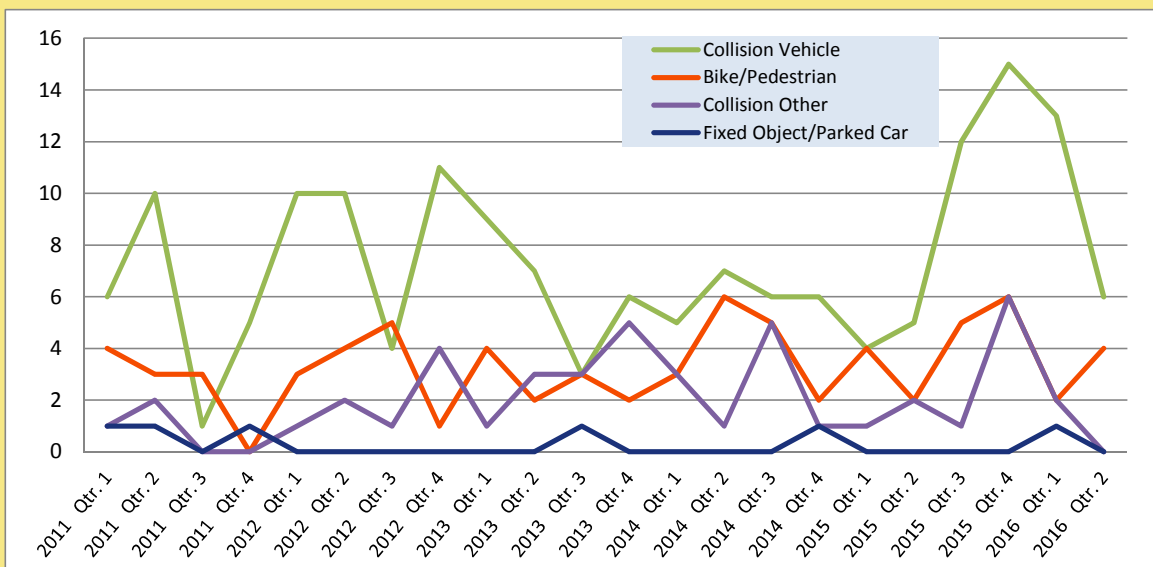
MAX Light Rail Collisions Per 100,000 Miles

	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015 Percent Change</u>
Total	10	18	9	11%
Collision Vehicle	6	13	5	20%
Fixed Object/Parked Car	-	1	-	0%
Bike/Pedestrian	4	2	2	100%
Collision Other	-	2	2	-100%

MAX Light Rail Collisions Per 100,000 Miles



MAX Collision Types Per 100,000 Boarding Rides

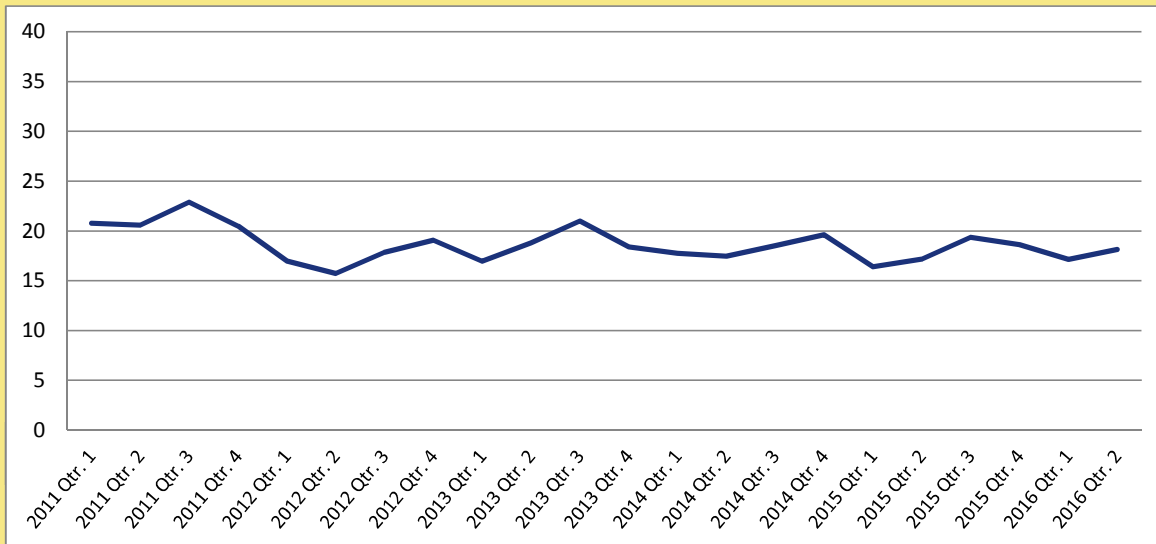


MAX Light Rail

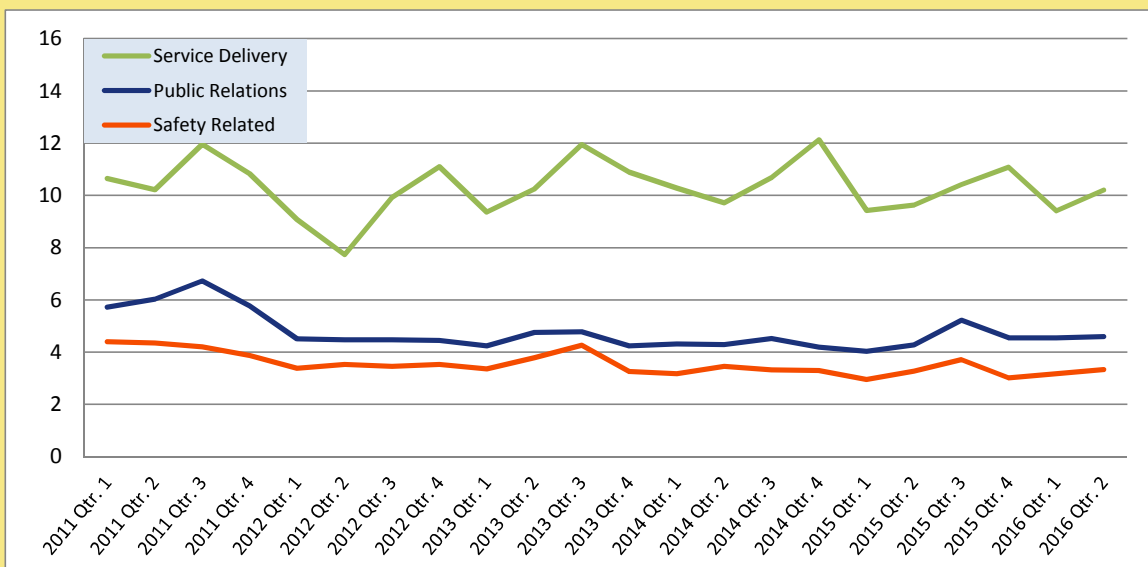
Fixed Route Bus Complaints Per 100,000 Boarding Rides

	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015</u> <u>Percent Change</u>
Total	18.1	17.1	17.2	5.6%
Service Delivery	10.2	9.4	9.6	5.9%
Public Relations	4.6	4.5	4.3	7.4%
Safety Related	3.3	3.2	3.3	2.0%

Total Operator Complaints Per 100,000 Boarding Rides



Type of Operator Complaints Per 100,000 Boarding Rides

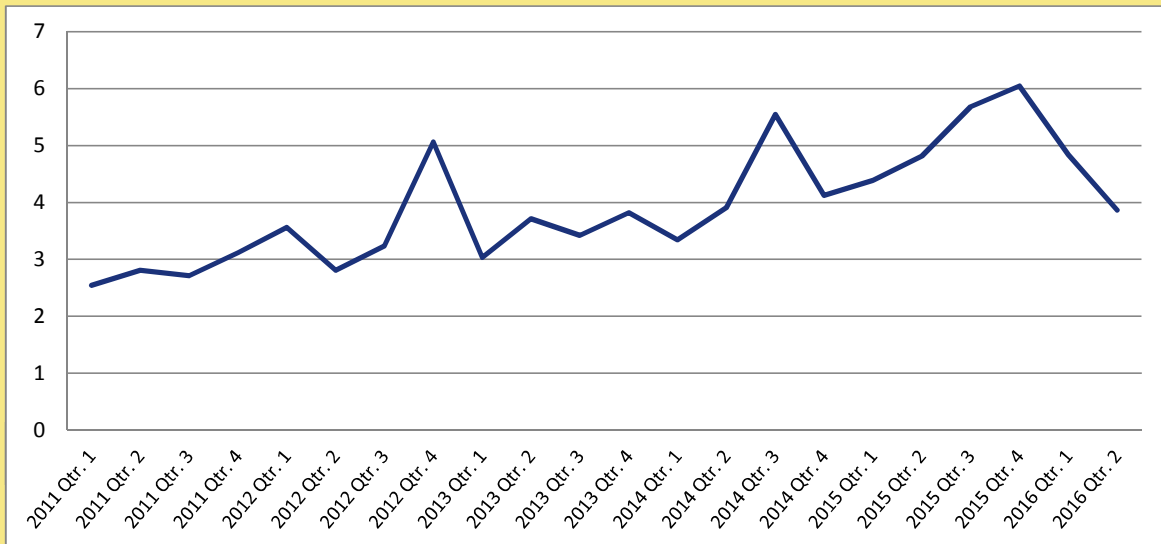


Fixed Route Bus

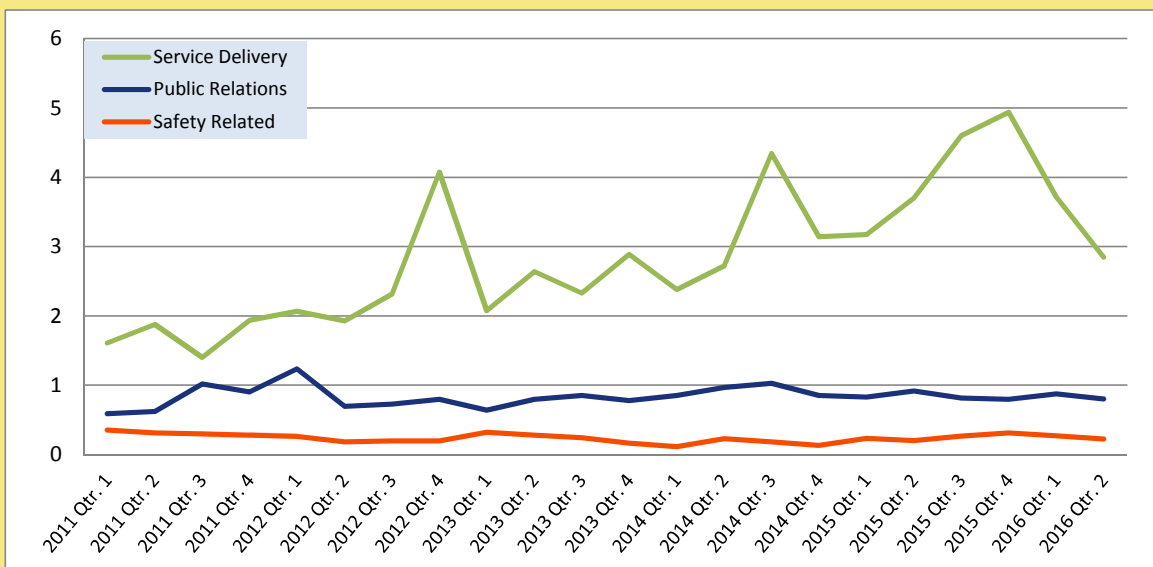
MAX Light Rail Complaints Per 100,000 Boarding Rides

	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015 Percent Change</u>
Total	3.9	4.8	4.8	-19.7%
Service Delivery	2.8	3.7	3.7	-23.1%
Public Relations	0.8	0.9	0.9	-12.6%
Safety Related	0.2	0.3	0.2	12.2%

Total Operator Complaints Per 100,000 Boarding Rides



Type of Operator Complaints Per 100,000 Boarding Rides

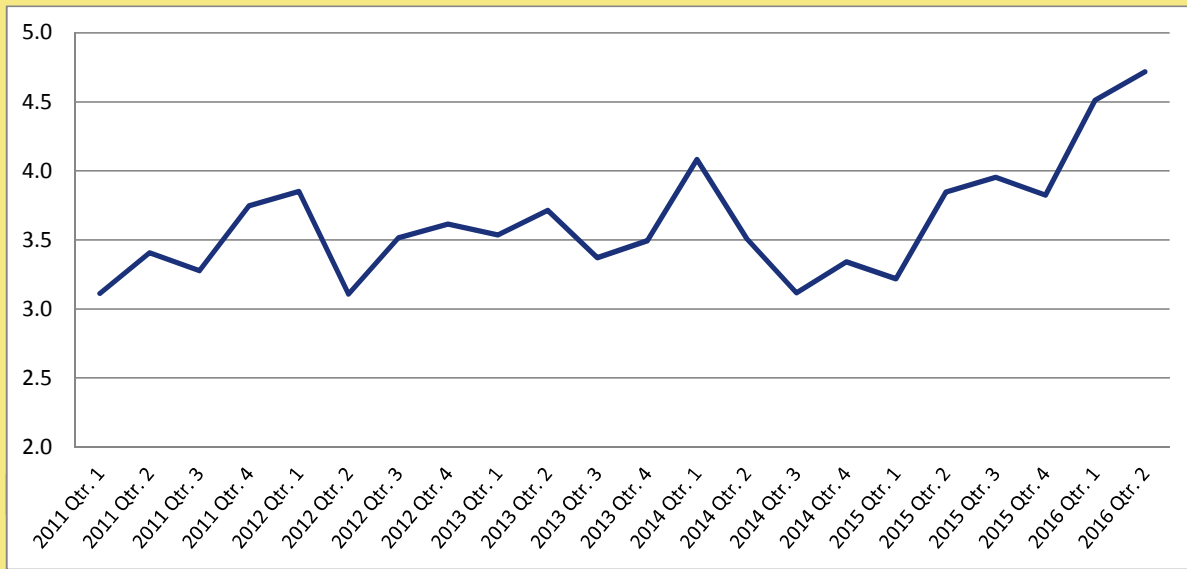


MAX Light Rail

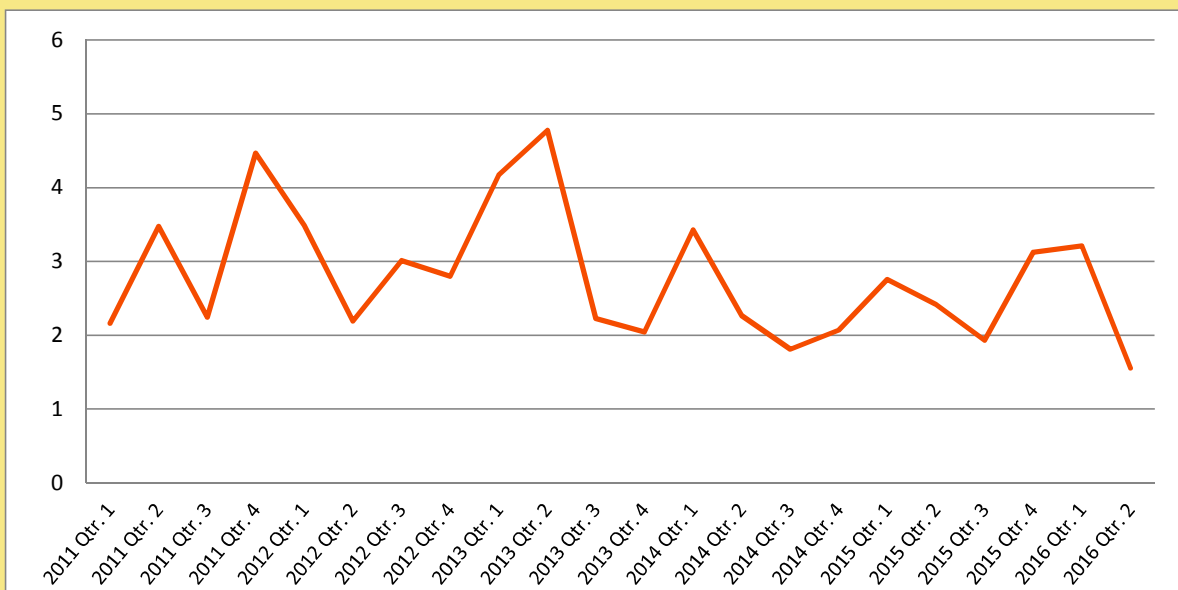
Fixed Route Bus and MAX Light Rail Commendations

	<u>2016 Qtr. 2</u>	<u>2016 Qtr. 1</u>	<u>2015 Qtr. 2</u>	<u>2016 - 2015 Percent Change</u>
Fixed Route Bus Per 100,000 Boardings	4.7	3.8	3.2	46.6%
MAX Light Rail Per Million Boardings	1.6	3.1	2.8	-43.5%

Total Bus Operator Commendations Per 100,000 Boarding Rides



Total MAX Light Rail Commendations Per Million Boarding Rides



TriMet Bus and MAX Commendations