



2016 3rd Quarter Report

Quarterly Performance Report



High Quality Service through Continuous Improvement

2016 3rd Quarter Performance Report

TriMet Board Meeting, December 14, 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 Rail Maintenance of Way all exceeded preventive maintenance objectives for the 2016 3rd Quarter as target set by the Federal Transit Administration is 80%. Bus maintenance well exceeded the goal and is up over last quarter to 98.3%. Rail Equipment Maintenance (REM) for the quarter is now back over the FTA target of 80% when compared to the last two quarters. MOW maintenance has also been showing positive improvement over the last quarter with 94.7%. Resources have been reallocated to ensure appropriate service levels are met. Fare equipment is consistently performing well. Last 31 days TVM reliability has been at 100%. This is strong performance even when comparing against other transit agencies.*
- *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.*
- *MAX light rail MDBF (Mean Distance Between Failure) performance is essentially flat over Q3, 2015. Type 5 issues this quarter are attributed to door failures, friction brake and propulsion related issues primarily. The focus on improving some of the MDBF issues on the Type 5 vehicles will take an estimated 1 year to address due to the fleet size and complexity of the repairs. The Type 1 performance also remains an issue with performance challenges related specifically to door fault issues, auxillary inverters and propulsion issues. A contractor is underway over the next year to review the performance and repair or replace problematic inverters.*

- *On a side note, we will be transitioning from the current method of calculating MDBF to a more appropriate measure that deals with MDBF which directly impacts service and is more in line with the definition now used by the industry and TriMet's benchmarking group. This is expected to take an estimated two more reporting periods to get annualized data and compare.*
- *Maintenance attendance is overall flat with an increase of .2% 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.

- *MAX and bus continue to demonstrate OTP increases over the previous year.*
- *Bus OTP has been under review to identifying ways to improve the performance. Specifically, bus OTP is showing an increase consistently over the past three quarters from 80.5% to the current quarter of 82.1% or a 1.6 increase.*
- *MAX service OTP increased from 77% from Quarter 3, 2015 to the last 31-day average of 84+%. Management is currently reviewing the next plan to increase OTP further over the remainder of the fiscal year.*
- *WES OTP Performance of 95.7% has declined due to rail signaling and infrastructure delay issues. This is not an overall concern as the OTP is a strong industry performer and the current quarter is well above Quarter 3, 2015, which experienced delays related to equipment issues.*
- *Transportation employee attendance remains flat at 90.2%. This is consistent with the last quarter.*
- *Boarding Rides per revenue hour for all modes show overall system ridership is down by 6.2% year over year. The largest decrease is on the bus system largely attributed to two key issues: A) the opening of the MAX Orange Line and, B) fuel prices, which are now at the lowest levels since the 2008 and 2009. There is currently a review underway to assess and better understand ways to increase ridership. MAX ridership has increased by 2.1% over the same period. Note that the Orange Line is still going through its initial introductory growth period, so the supply of MAX initial service is larger the demand. This will continue for a few additional years.*
- *WES incurred a slight increase of .8% with no additional service hour changes..*

3. Operator Support

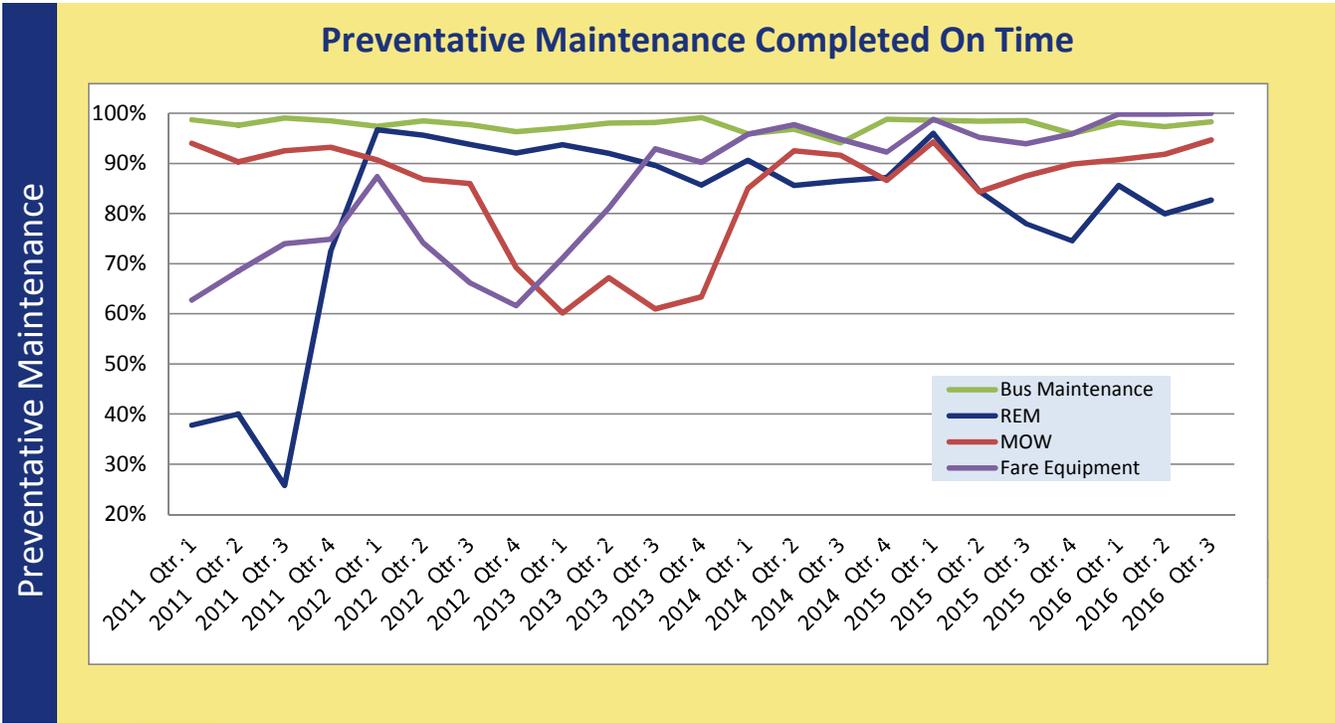
Goal: Improve safety and customer service through customized training programs for operators and supervisors.

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

- *Bus and MAX operator annual training and recertification for this fiscal year is now underway. Nothing notable to report at this time.*
- *Bus collisions are down over the previous year by 10.9%. The “Fixed Object” results are up by 6.8% mainly attributed to the numerous new bus operators being hired. MAX collisions with vehicles are down from over a year ago by 6%, however are up when compared to Quarter 2, 2016. The “Collision Other” is up and mainly attributed to yard derailments and are relatively low in absolute numbers when compared to “zero” in the previous quarter. MAX is currently experiencing a significant number of vehicles in the ROW over previous years. Management is reviewing approaches and practices to speed up removal and to reduce this going forward. Bus operator complaints are flat over the previous year. The largest increase within this category is in the area of “Service Delivery” with an increase of 8.6%. When compared to the commendations increase this a small number, however, it is being dealt with through increased training, and a review of operator performance review processes.*
- *MAX operator complaints are down over the previous year by 24%. These are mainly attributed to a significant increase in OTP.*
- *Bus operator commendations continue to show exceptionally strong performance results. Comparing a 47.7% increase over the previous year. This can be attributed to an increased focus on hiring, training and communications. Rail commendations are down by 24%. However, due to the small base number, when compared to “Per Million Boardings”, this can fluctuate a great deal. To help increase our positive experience with our customers during disruptions, management is planning on introducing TriMet’s rail customer notification initiative. This is intended to assist rail operators in making timely and appropriate announcements on a more consistent basis during service disruptions. We are striving to provide our customers with more and consistent information during unplanned events to ensure we maintain their support and confidence in our current and future services.*

Preventative Maintenance Completed On Time

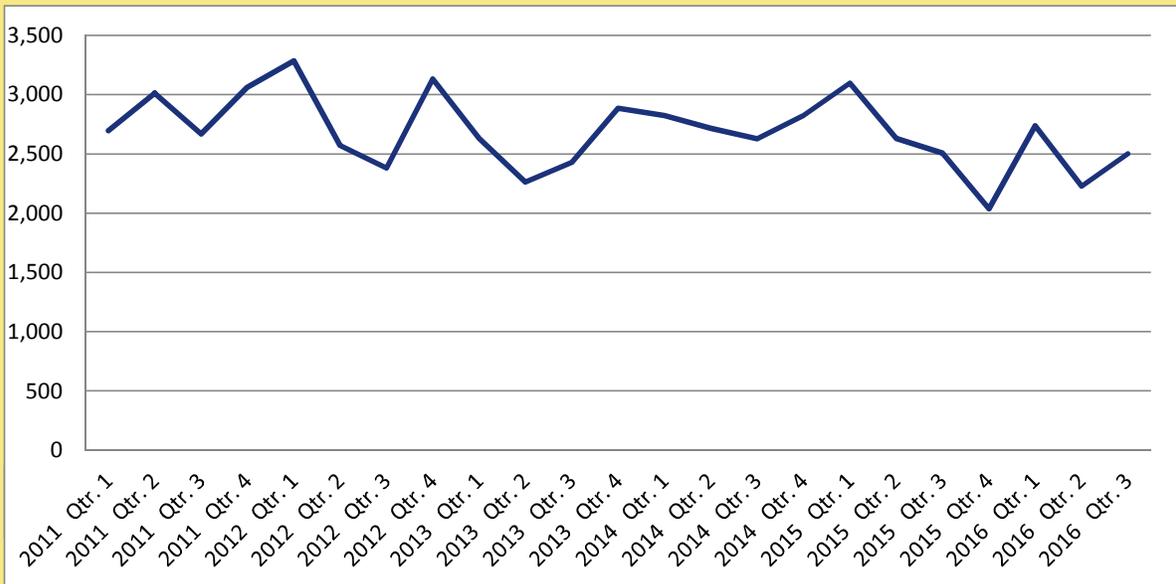
	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Pt. Change</u>
Bus Maintenance	98.3%	97.4%	98.5%	-0.2%
REM	82.7%	79.9%	78.0%	4.7%
MOW	94.7%	91.8%	87.5%	7.2%
Fare Equipment	100.0%	99.8%	93.9%	6.1%



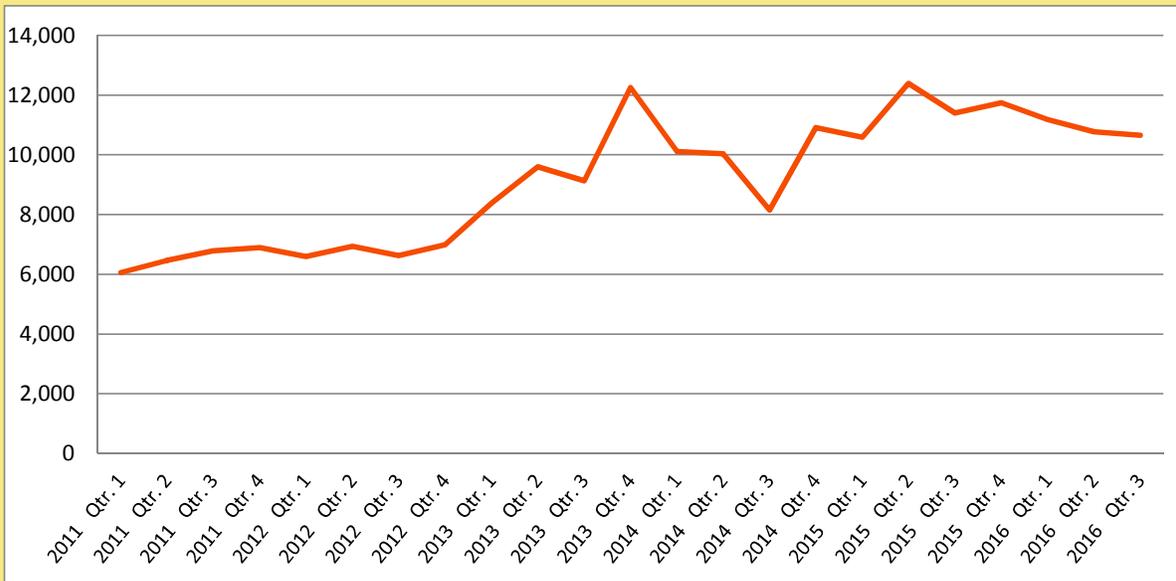
Mean Distance Between Failures (MDBF)

	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015 Percent Change</u>
MAX Light Rail	2,501	2,228	2,507	-0.2%
Fixed Route Bus	10,657	10,773	11,399	-6.5%

MAX Light Rail Car Miles / Service Related Repairs



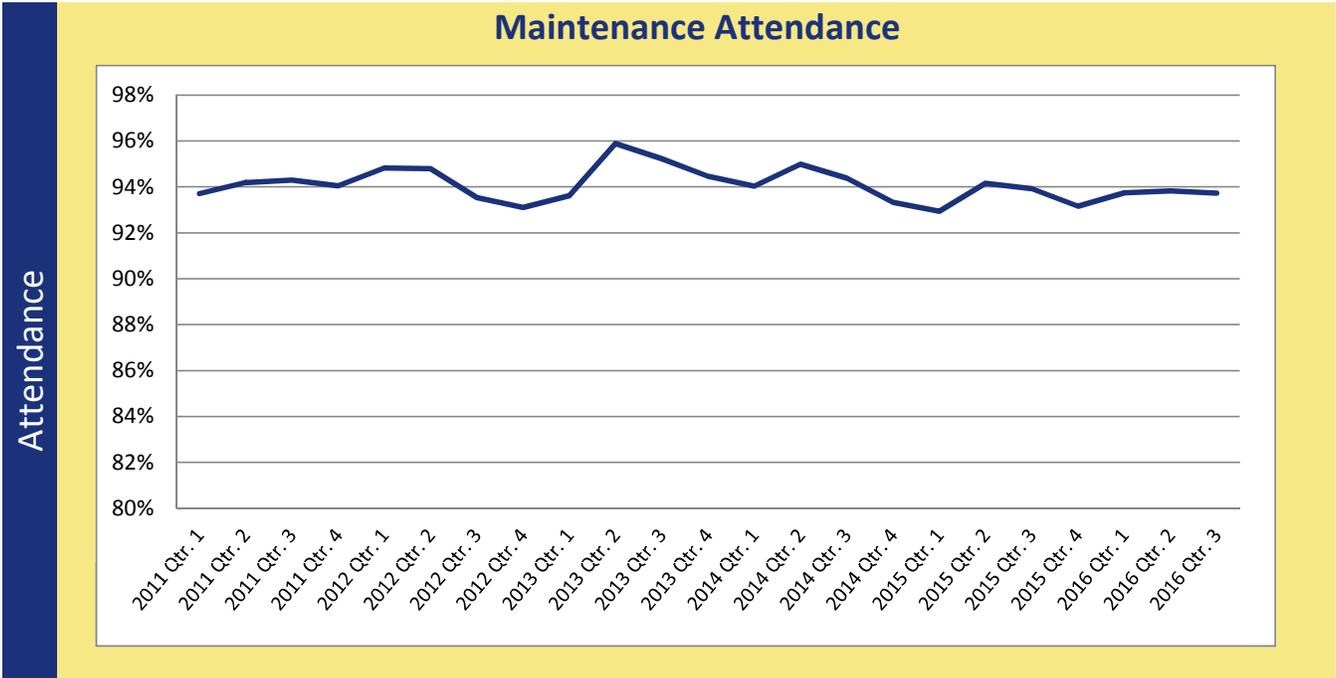
Fixed Route Bus Miles Between Mechanical Failures - Lost Service



Mean Distance Between Failures (MDBF)

Maintenance Employee Attendance

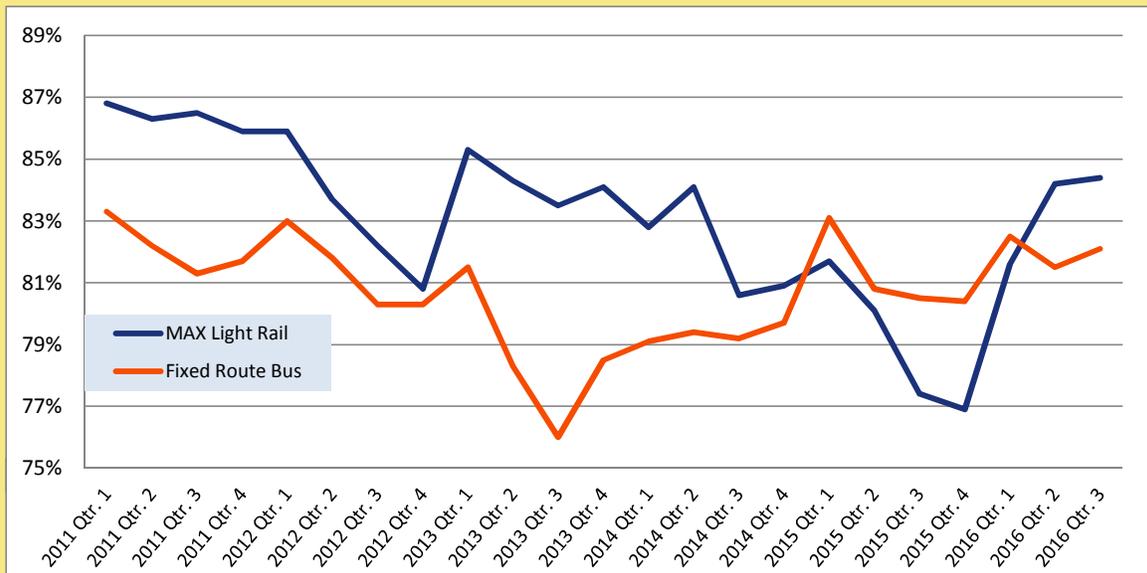
	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Pt. Change</u>
Maintenance	93.7%	93.8%	93.9%	-0.2%



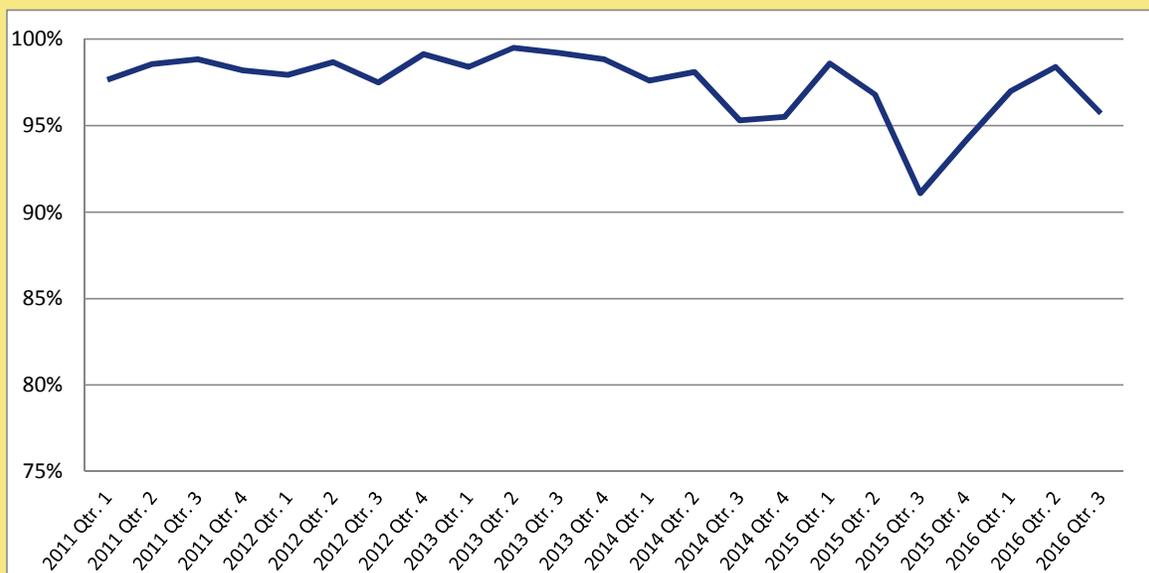
On Time Performance

	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Pt. Change</u>
Fixed Route Bus	82.1%	81.5%	80.5%	1.6%
MAX Light Rail	84.4%	84.2%	77.4%	7.0%
WES Commuter Rail	95.7%	98.4%	91.1%	4.6%

Bus and MAX Light Rail OTP



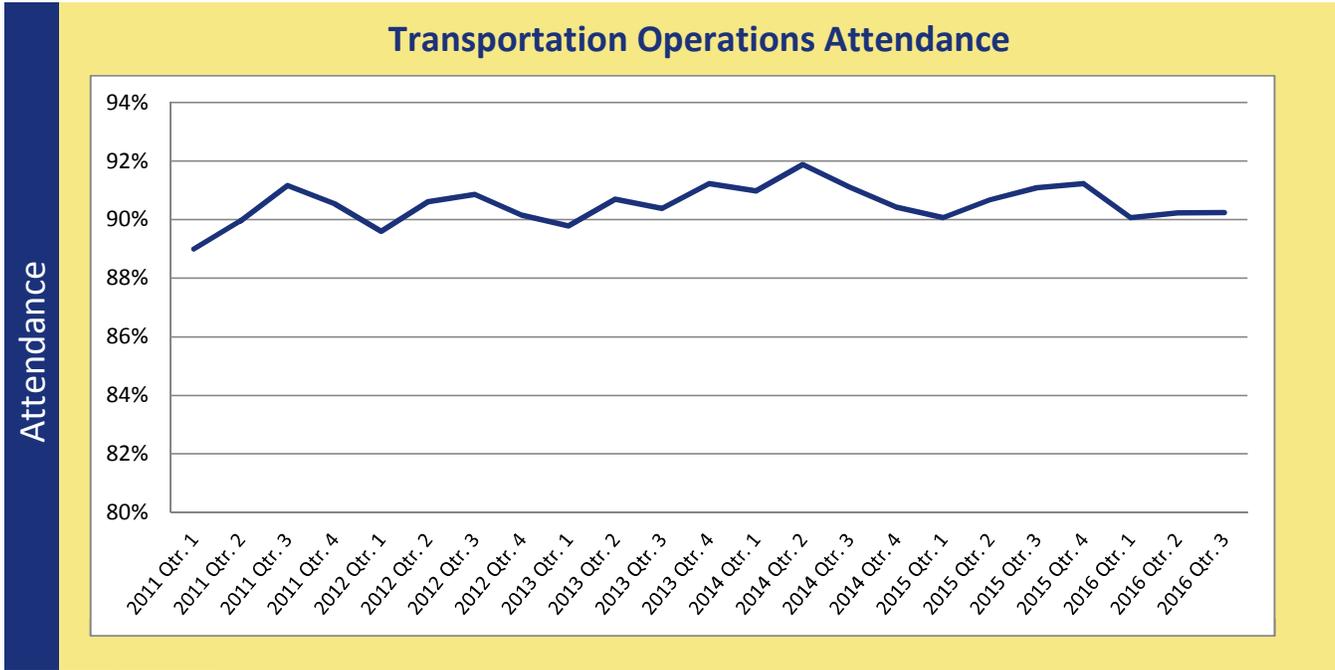
WES Commuter Rail OTP



On Time Performance

Transportation Operations Employee Attendance

	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Pt. Change</u>
TransOps	90.2%	90.2%	91.1%	-0.8%

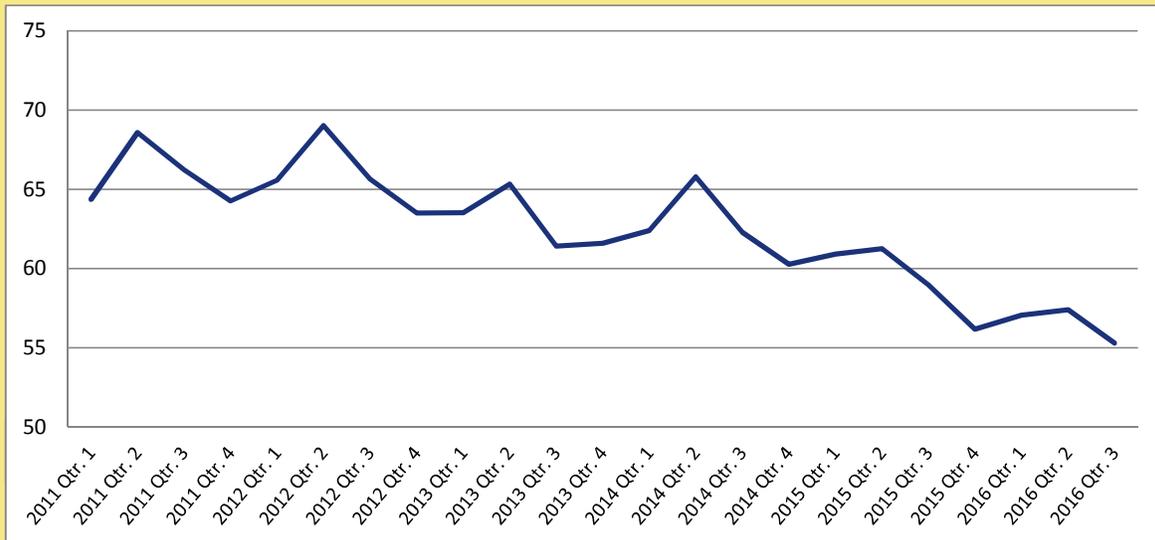


Boarding Rides Per Revenue Hour

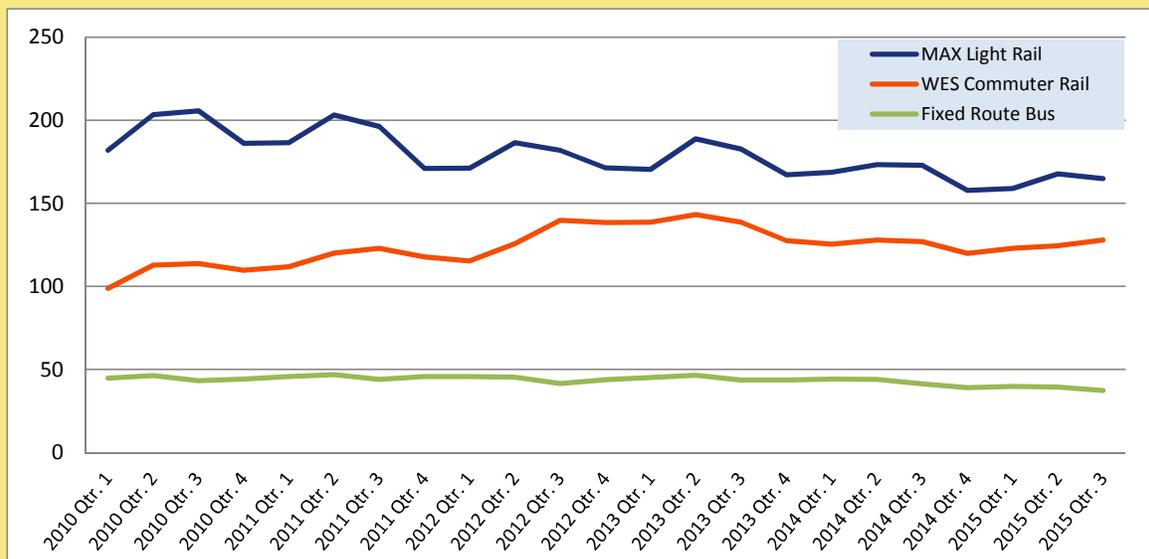
	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Change</u>
Total	55.3	57.4	59.0	-6.2%
Fixed Route Bus	37.4	39.4	41.3	-9.4%
MAX Light Rail	164.8	167.8	172.9	-4.7%
WES Commuter Rail	128.0	124.5	126.9	0.8%

TriMet Boarding Rides Per Revenue Hour

Total Fixed Route Rides Per Revenue Hour



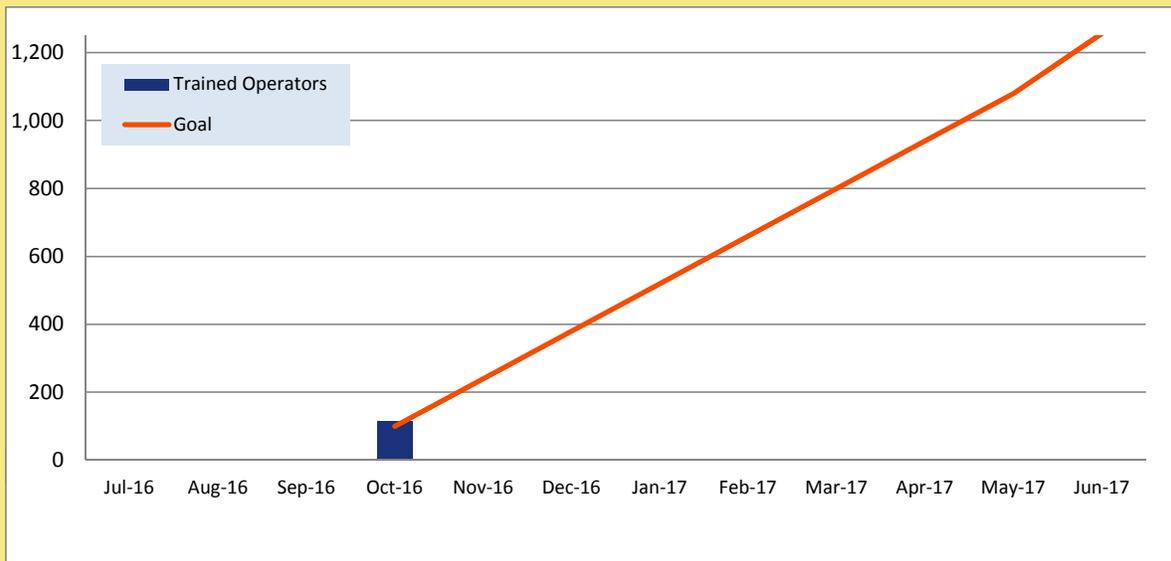
Rides Per Revenue Hour By Mode



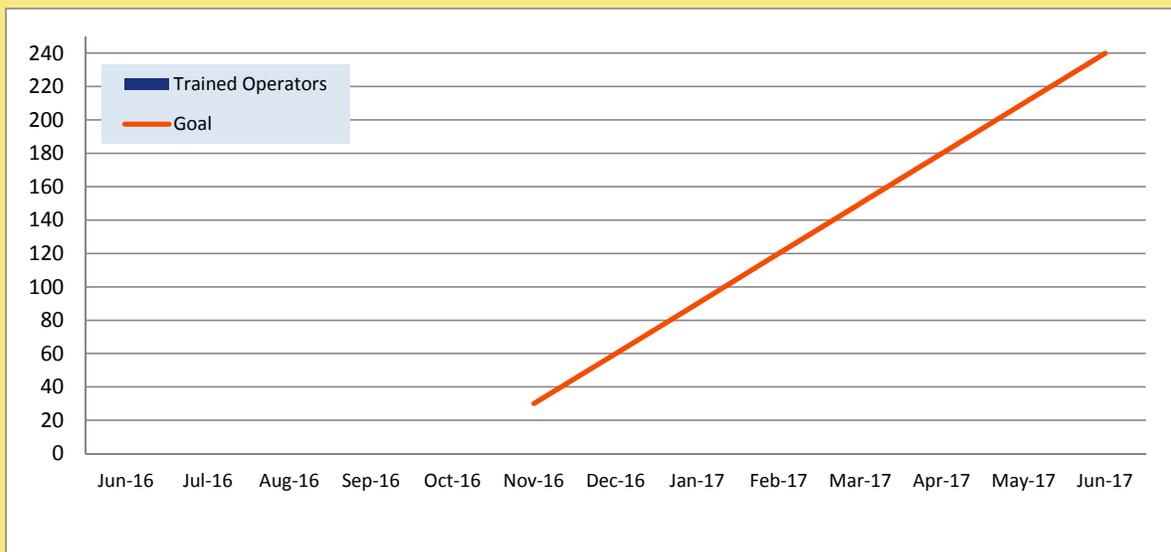
Annual Operator Recertification Training

	<u>Aug-16</u>	<u>Sep-16</u>	<u>Oct-16</u>	<u>Fiscal Year</u>
Bus Trained	-	-	114	114
Cumulative Goal	-	-	100	1,256
MAX Trained	-	-	-	-
Cumulative Goal	-	-	-	250

Bus Operator Annual Recertification - Actual to Goal



MAX Light Rail Annual Recertification - Actual to Goal

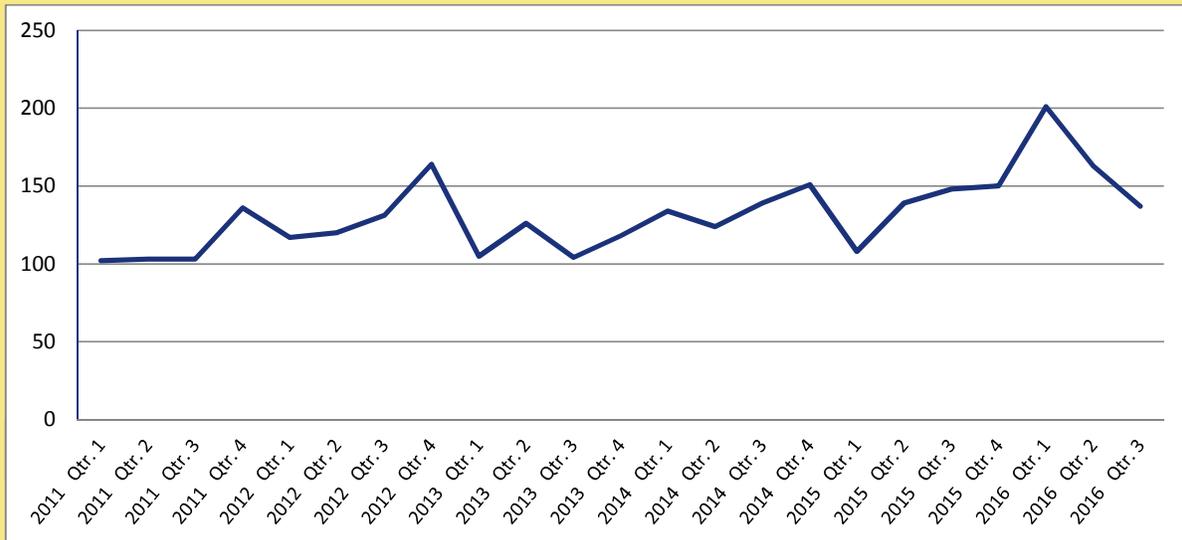


Operator Recertification Training

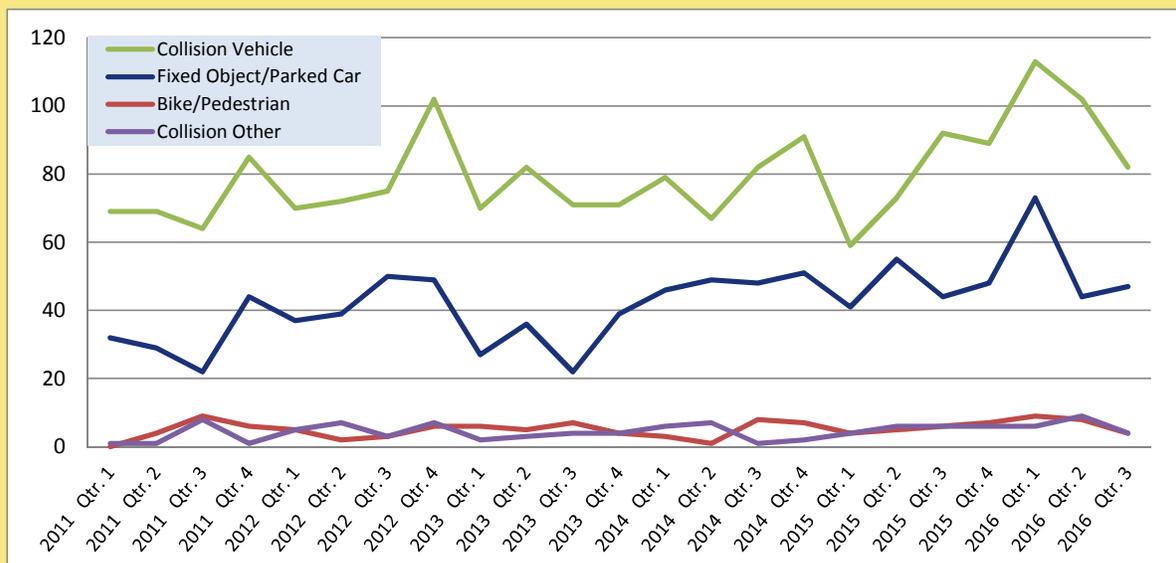
Fixed Route Bus Collisions

	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Change</u>
Total	137	163	148	-7.4%
Collision Vehicle	82	102	92	-10.9%
Fixed Object/Parked Car	47	44	44	6.8%
Bike/Pedestrian	4	8	6	-33.3%
Collision Other	4	9	6	-33.3%

Total Bus Collisions



Bus Collision Types

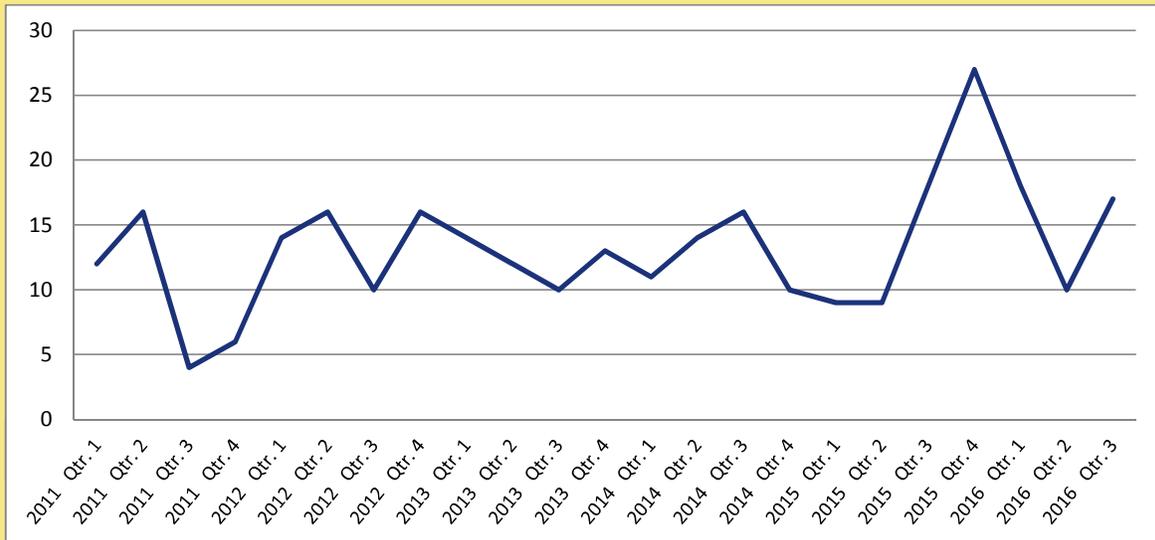


Fixed Route Bus

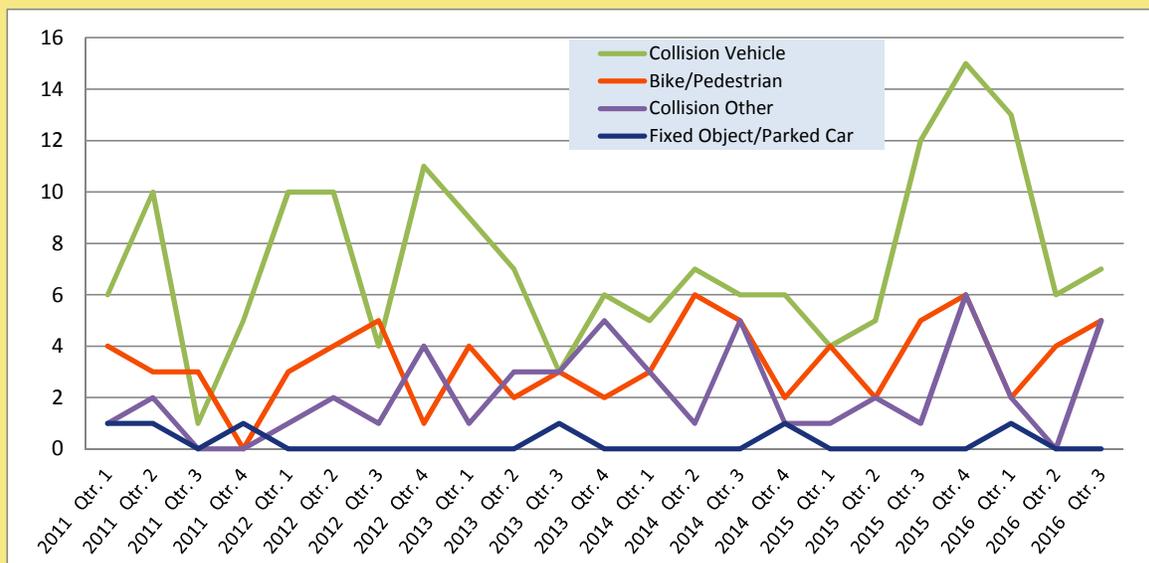
MAX Light Rail Collisions Per 100,000 Miles

	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Change</u>
Total	17	10	18	-6%
Collision Vehicle	7	6	12	-42%
Fixed Object/Parked Car	-	-	-	0%
Bike/Pedestrian	5	4	5	0%
Collision Other	5	-	1	400%

MAX Light Rail Collisions Per 100,000 Miles



MAX Collision Types Per 100,000 Boarding Rides

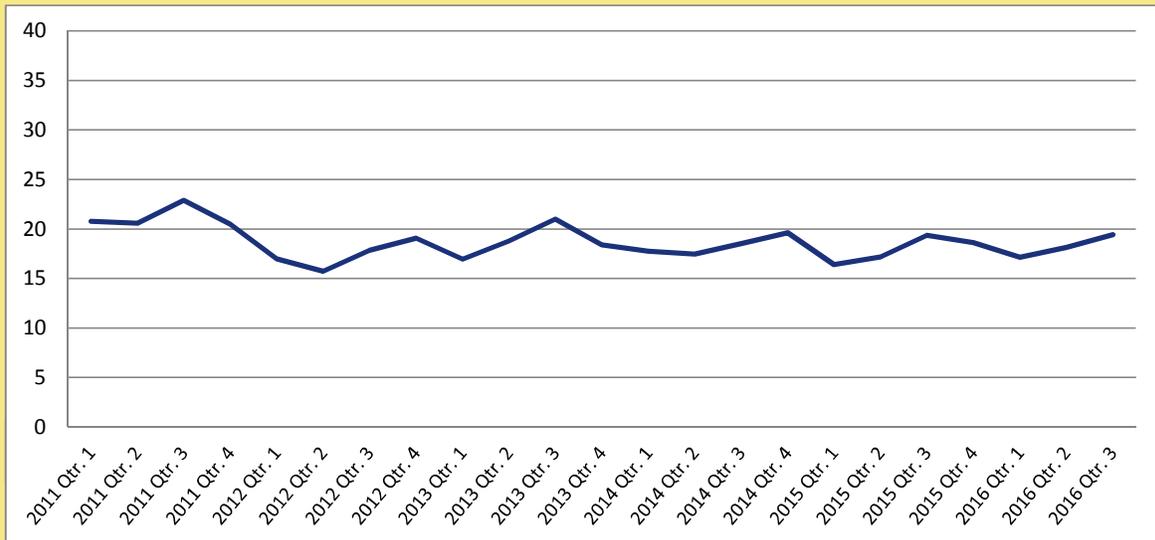


MAX Light Rail

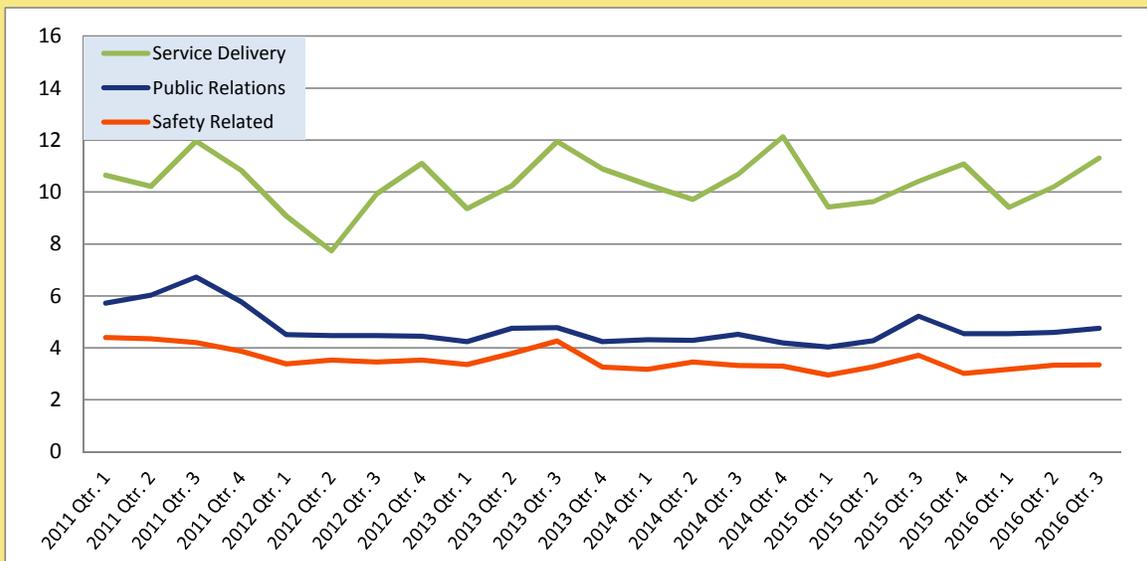
Fixed Route Bus Complaints Per 100,000 Boarding Rides

	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Change</u>
Total	19.4	18.1	19.4	0.3%
Service Delivery	11.3	10.2	10.4	8.6%
Public Relations	4.8	4.6	5.2	-8.9%
Safety Related	3.3	3.3	3.7	-9.9%

Total Operator Complaints Per 100,000 Boarding Rides



Type of Operator Complaints Per 100,000 Boarding Rides



Fixed Route Bus

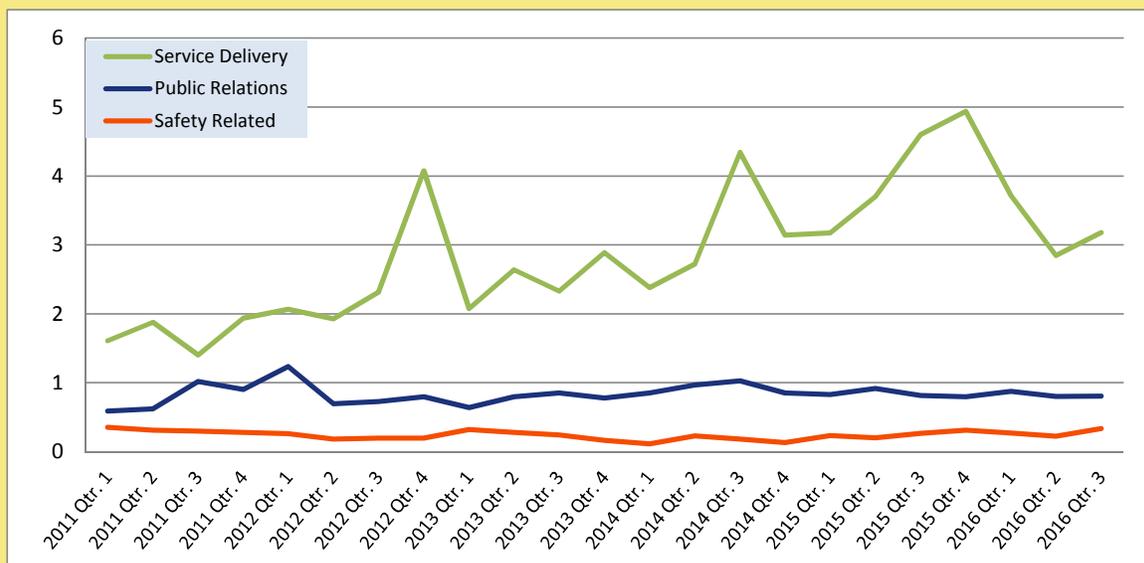
MAX Light Rail Complaints Per 100,000 Boarding Rides

	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015</u> <u>Percent Change</u>
Total	4.3	3.9	5.7	-24.0%
Service Delivery	3.2	2.8	4.6	-31.0%
Public Relations	0.8	0.8	0.8	-1.3%
Safety Related	0.3	0.2	0.3	0.0%

Total Operator Complaints Per 100,000 Boarding Rides



Type of Operator Complaints Per 100,000 Boarding Rides

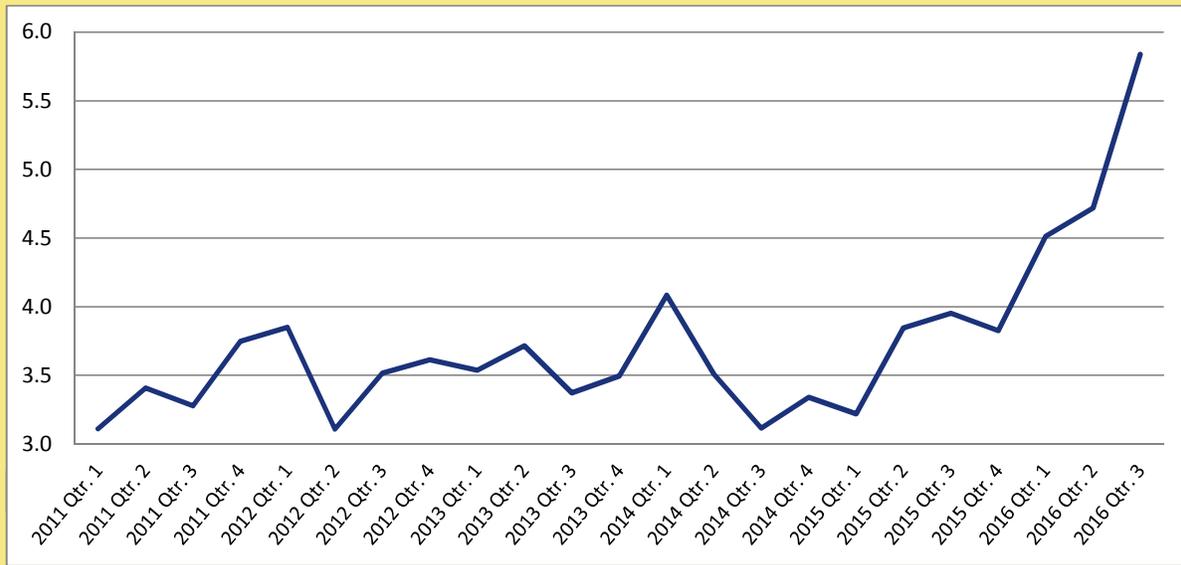


MAX Light Rail

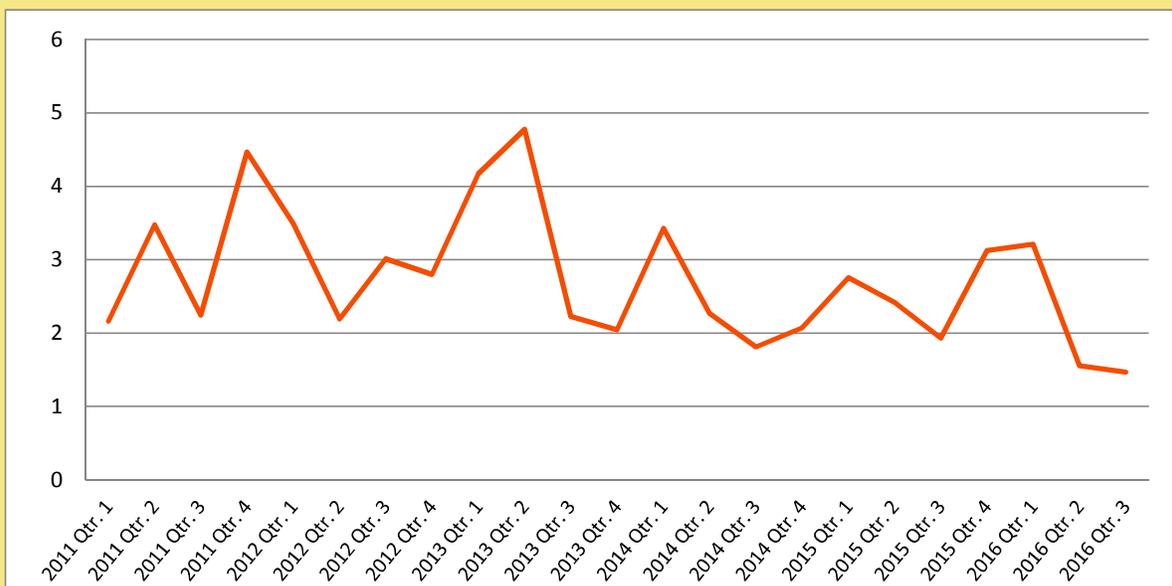
Fixed Route Bus and MAX Light Rail Commendations

	<u>2016 Qtr. 3</u>	<u>2016 Qtr. 2</u>	<u>2015 Qtr. 3</u>	<u>2016 - 2015 Percent Change</u>
Fixed Route Bus Per 100,000 Boardings	5.8	4.7	4.0	47.7%
MAX Light Rail Per Million Boardings	1.5	1.6	1.9	-24.0%

Total Bus Operator Commendations Per 100,000 Boarding Rides



Total MAX Light Rail Commendations Per Million Boarding Rides



TriMet Bus and MAX Commendations