October 4, 2018
PRTC Regular Meeting

<u>Information Items</u>
System Performance Reports
Fleet Audit Report
Revised Purchasing Authority Report
Wheels-to-Wellness Funding Status

October 4, 2018

TO: Madam Chair Anderson and PRTC Commissioners

FROM: Perrin A. Palistrant
Director of Operations and Operations Planning

THROUGH: Robert A. Schneider, PhD
Executive Director

SUBJECT: August System Performance and Ridership Report

OMNIRIDE Express and Metro Express Service

- August average daily ridership decreased 0.2 percent from July but was up 1.1 percent year-over-year. This is the first time in four (4) years for a monthly year-over-year increase.
- Ridership has been steadily increasing on the western County services due to fare incentives.

OMNIRIDE Local Bus Service

- August average daily ridership increased 3.1 percent from July
- Noticing increases related to schools and college back in session
- Saturday ridership down slightly overall but noticing less inconsistencies

Vanpool Alliance Program

- Enrollment stayed stable at 669 vans
- Ridership in August was 136,402, and represents the highest recorded number of passenger trips in the program's history.

OmniMatch Program

- Program Promotions:
  - **9/16** – National Science Foundation Commuter Fair
  - **8/30** – Manassas Mall Transit Options/I-66 Hot Lanes Construction Updates Table Top

- **7/29-8/1** - Staff attended the Association for Commuter Transportation (ACT) International Transportation Demand Management (TDM) Conference.
- **8/7-8** – Staff attended the Federal Transit Administration (FTA) sponsored/National Transit Institute (NTI) facilitated training: Managing Community Mobility.

Customer Service Statistics

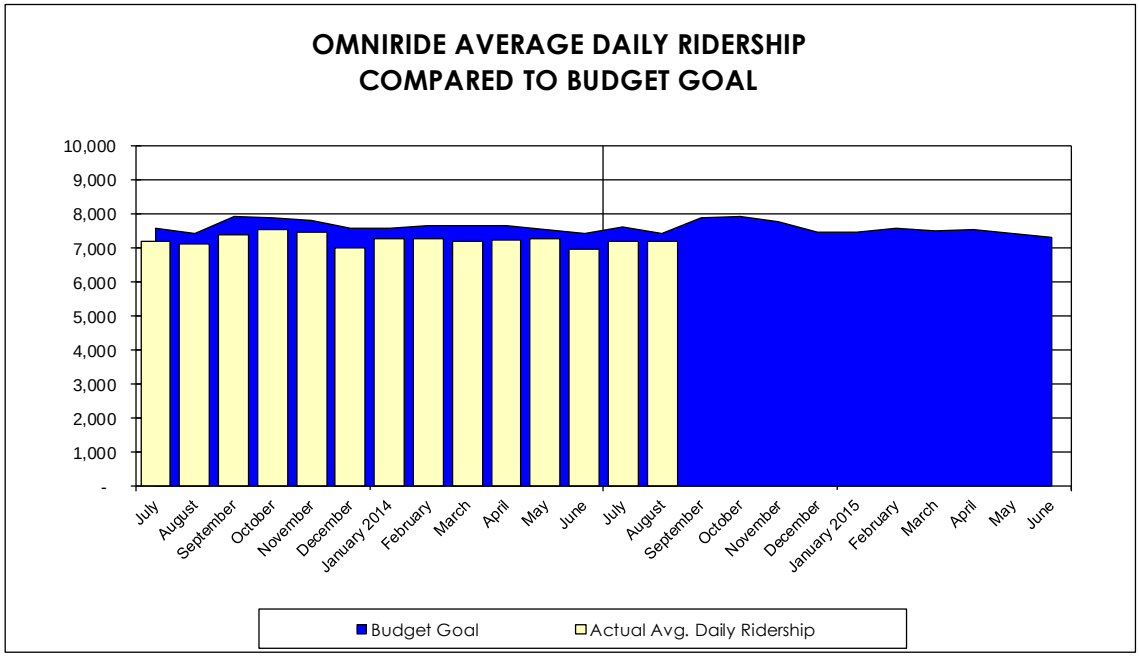
- The call center received 9,381 calls in August; the automated system handled 47 percent of those calls.
- Average wait time for remaining calls was 1:04.
- Responded to 46 general information emails in August
- Percentage of OMNIRIDE local trip denials remained flat from July

Passenger Complaints

- Complaint rate for OmniRide in August:
  - OMNIRIDE Express and Metro Express complaint rate increased 12% from this time in FY18
  - OMNIRIDE Local service complaint rate decreased 38% compared to this time in FY18

OMNIRIDE EXPRESS SERVICE

Month	Monthly Ridership FY18	Monthly Ridership FY19	Average Daily Ridership FY18	Average Daily Ridership FY19	% Change	FY19 Budget Goal	Change from Goal
July	140,343	147,825	7,225	7,211	-0.2%	7,628	(417)
August	164,929	163,900	7,114	7,194	1.1%	7,422	(228)
September							
October							
November							
December							
January							
February							
March							
April							
May							
June							
Year to Date	**305,272**	**311,725**	**7,170**	**7,203**	**0.5%**	**7,525**	**(323)**

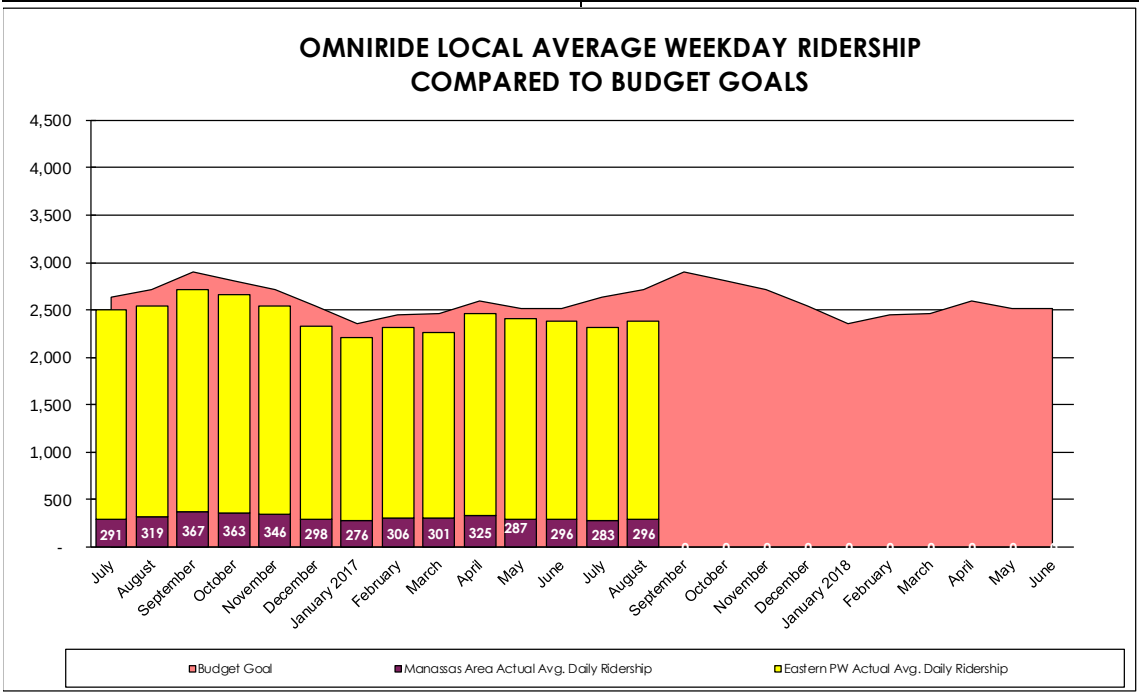


At year's end figures are revised, if needed, to account for any lingering data latency.

7/17- Avg. Daily ridership excludes days before and after Fourth of July Holiday (3,5,6,7)
9/17 - Avg. Daily Ridership Excludes Friday before Labor Day Holiday (1)
10/17-Avg. Daily Ridership Excludes Friday before Columbus Day and Columbus Day (5, 8)
11/17-Avg. Daily Ridership Excludes Day before Veterans Day (10), Week of Thanksgiving and Monday after (20-24 and 27), Christmas Tree Lighting ESP
12/17- Avg. Daily Ridership excludes holiday period (20-29)
1/18- Avg. Daily Ridership excludes New Year's holiday and weather related school closures (2-5), MLK Holiday (15), School closures-snow (17), Federal
2/18- Avg. Daily Ridership excludes weather related school closures and delays (7), Friday before President's Day (16) President's Day Holiday (19)
3/18- Avg. Daily Ridership excludes weather related school closures and delays (2,21,22), PWC Spring Break/Good Friday (26-30)
4/18- Avg. Daily Ridership excludes weather related road delays and service disruptions (16)
5/18- Avg. Daily Ridership excludes Friday before Memorial Day (25)
6/18- Avg. Daily Ridership excludes Capitals Stanley Cup Parade ESP Service (12)
7/18- Avg. Daily Ridership excludes week of Fourth of July holiday (2-6)
8/18- Avg. Daily Ridership excludes Friday before Labor Day (31)

OMNIRIDE LOCAL SERVICE

WEEKDAY							
	Monthly Ridership		Average Daily Ridership			FY19	Change from
Month	FY18	FY19	FY18	FY19	% Change	Budget Goal	Goal
July	49,365	48,194	2,507	2,309	-7.9%	2,636	(327)
August	58,330	54,757	2,536	2,380	-6.2%	2,712	(332)
September							
October							
November							
December							
January							
February							
March							
April							
May							
June							
Year to Date	**107,695**	**102,951**	**2,522**	**2,345**	**-7.0%**	**2,674**	**(330)**



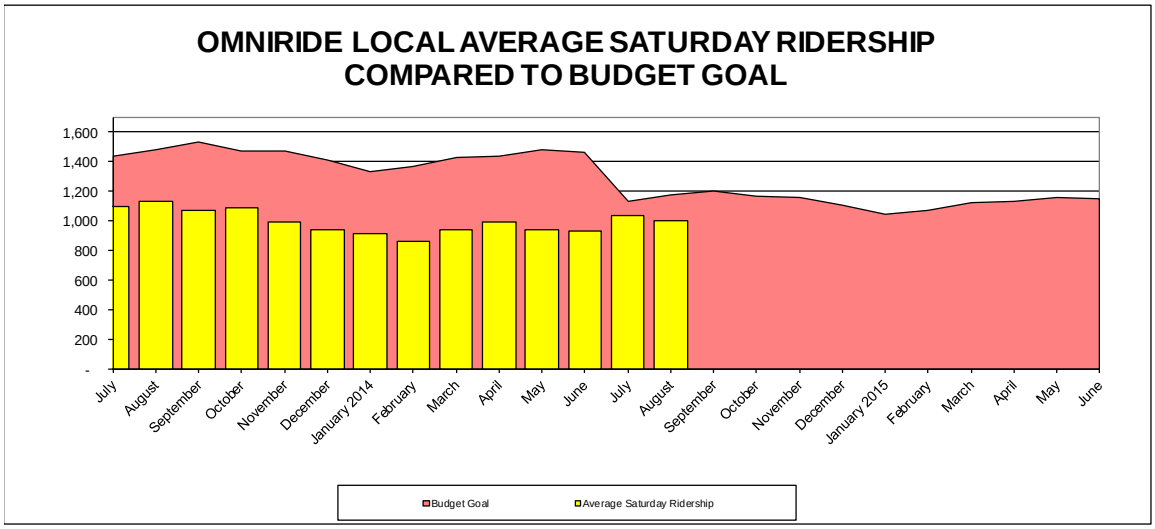
At year's end figures are revised, if needed, to account for any lingering data latency.

7/17-Avg. Daily Ridership excludes days before and after Fourth of July Holiday (3,5,6,7)
9/17- Avg. Daily Ridership excludes Friday before Labor Day (1)
10/17- Avg. Daily Ridership excludes Columbus Day (8)
11/17- Avg. Daily Ridership excludes Election Day (7), Veterans Day Observed (10), Wednesday before and Friday after Thanksgiving (23 and 25)
12/17- Avg. Daily Ridership excludes holiday period (20-29)

1/18- Avg. Daily Ridership excludes New Year's holiday and weather related school closures (2-5), MLK Holiday (15), School closures-snow (17)
2/18- Avg. Daily Ridership excludes weather related school closures (7), President's Day Holiday (19)
3/18- Avg. Daily Ridership excludes weather related school closures (2,21,22), Good Friday (30)
4/18- Avg. Daily Ridership excludes weather related roadway delays and ridership shifts (16)

OMNIRIDE LOCAL SERVICE

SATURDAY							
	Monthly Ridership		Average *Saturday* Ridership			*Average Saturday* FY19	Change from
Month	**FY18**	**FY19**	**FY18**	**FY19**	**% Change**	**Budget Goal**	**Goal**
July	5,606	3,788	1,099	1,040	-5.4%	1,134	(94)
August	4,528	4,001	1,132	1,000	-11.7%	1,172	(172)
September							
October							
November							
December							
January							
February							
March							
April							
May							
June							
Year to Date	**10,134**	**7,789**	**1,116**	**1,020**	**-8.6%**	**1,153**	**(133)**



At year's end figures are revised, if needed, to account for any lingering data latency.

12/17 - Excludes weather (9) and New Years Eve weekend/very cold weather (30)

1/18- Excludes snow/very cold weather (6)

3/18- Excludes wind event/early mall closures and severe traffic (3)

7/18- Excludes significant rain/storms and traffic (21)

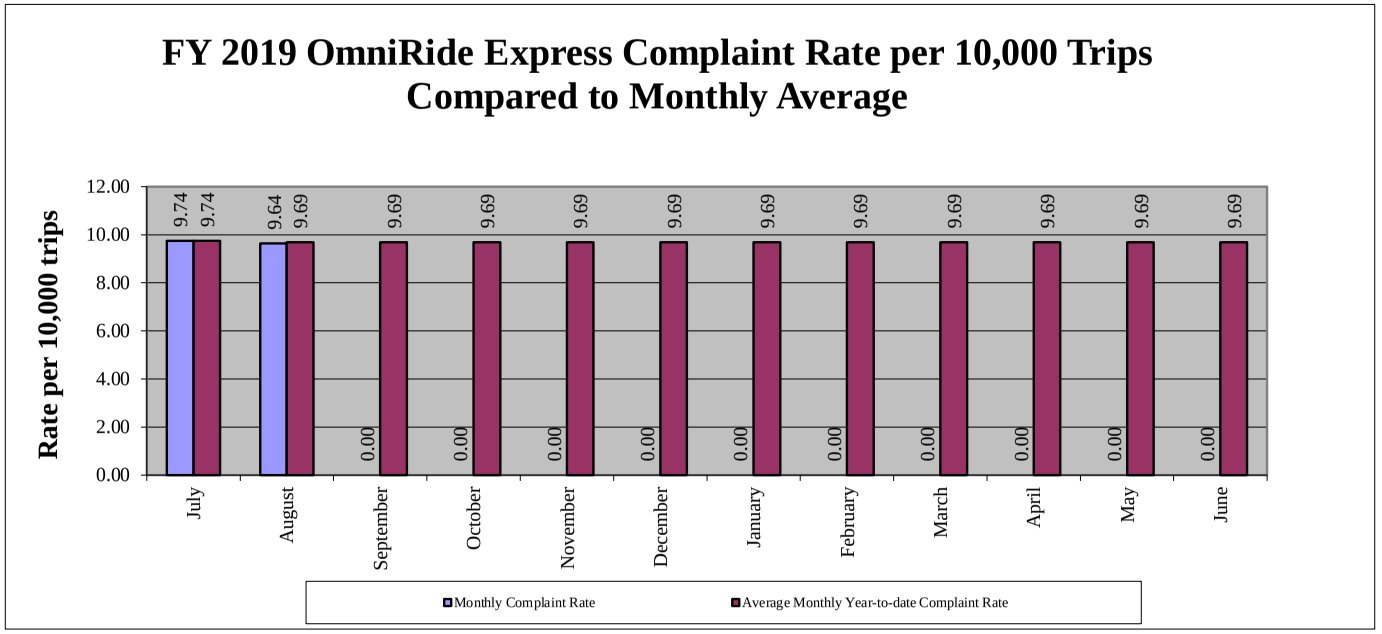
OMNIMATCH / VANPOOL ALLIANCE

	OmniMatch				*Vanpool Alliance*			
	FY18	FY19	FY18	FY19	FY18	FY19	FY18	FY19
	New Applications Received	New Applications Received	Other Applications Received	Other Applications Received	Vanpools Enrolled	Vanpools Enrolled	Monthly Passenger Trips	Monthly Passenger Trips
July	34	53	5	6	653	669	117,257	125,864
August	36	42	20	27	658	669	133,874	136,402
September								
October								
November								
December								
January								
February								
March								
April								
May								
June								
Average	**35**	**48**	**13**	**17**	**656**	**669**	**125,566**	**131,133**

1) "New PRTC Applications Received" include all new customers inquiring about rideshare options in Prince William, Manassas, and Manassas Park.
2) "Other Applications Received" include reapplicants, deletions and commuters contacted as a follow-up interested in remaining in the program.
3) "Vanpools Enrolled" includes all vanpools approved as of last day of the month.

FY 2018 Year-to-date OmniRide Express Complaints			
	Ridership	Complaints	Per 10k Trips
July	140,343	133	9.48
August	164,929	132	8.00
September			
October			
November			
December			
January			
February			
March			
April			
May			
June			
Year-to-date totals	**305,272**	**265**	**8.68**

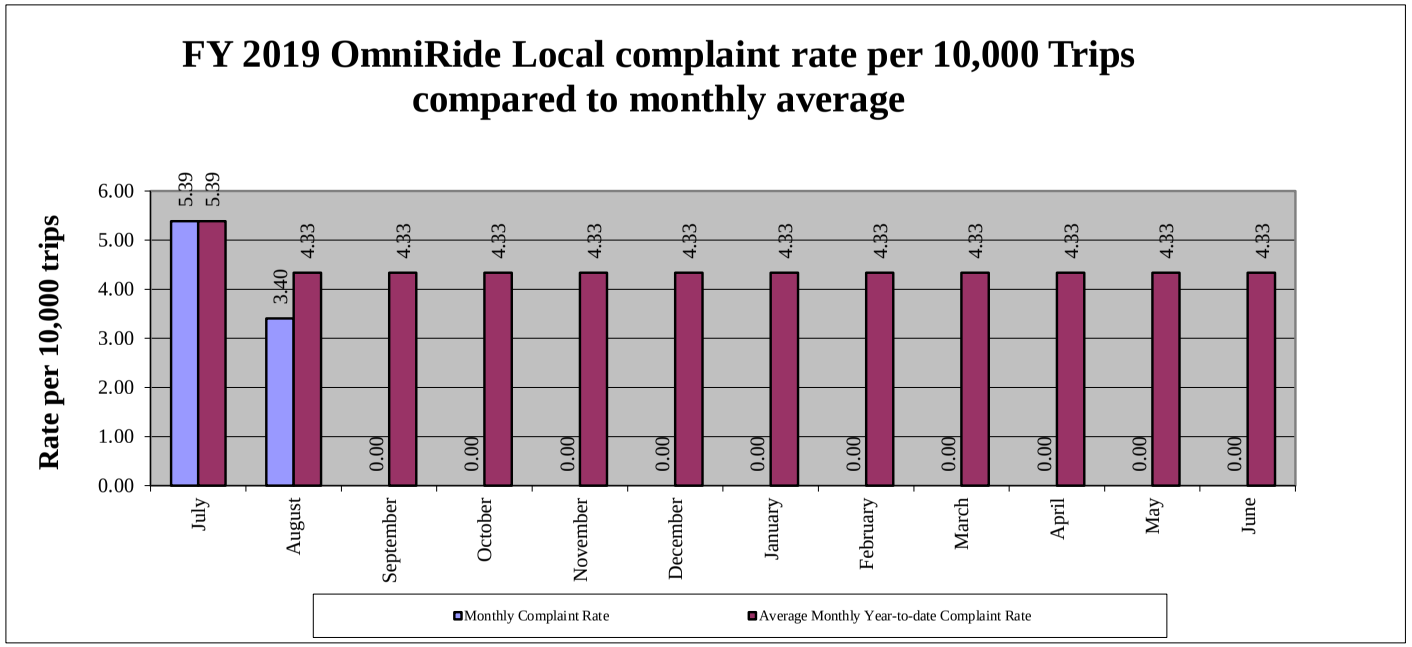
FY 2019 Year-to-date OmniRide Express Complaints			
	Ridership	Complaints	Per 10k Trips
July	147,825	144	9.74
August	163,900	158	9.64
September			
October			
November			
December			
January			
February			
March			
April			
May			
June			
Year-to-date totals	**311,725**	**302**	**9.69**



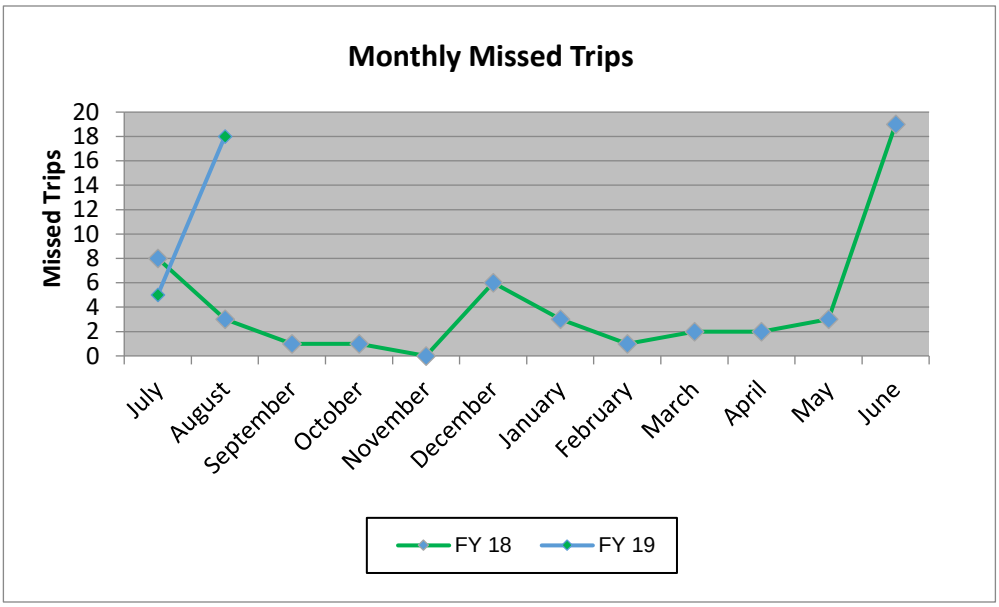
Complaint rates for OmniRide Express service for the current month and for the year-to-date in contrast to fiscal year 2018 overall rate, which is the benchmark for evaluating contractor performance for fiscal year 2019 in the bus services contract.

FY 2018 Year-to-date OmniRide Local Complaints			
	Ridership	Complaints	Per 10k Trips
July	54,971	40	7.28
August	62,858	42	6.68
September			
October			
November			
December			
January			
February			
March			
April			
May			
June			
Year-to-date totals	**117,829**	**82**	**6.96**

FY 2019 Year-to-date OmniRideLocal Complaints			
	Ridership	Complaints	Per 10k Trips
July	51,982	28	5.39
August	58,758	20	3.40
September			
October			
November			
December			
January			
February			
March			
April			
May			
June			
Year-to-date totals	**110,740**	**48**	**4.33**



Complaint rates for OmniRide Local service for the current month and for the year-to-date in contrast to fiscal year 2018 overall rate, which is the benchmark for evaluating contractor performance for fiscal year 2019 in the new bus services contract.


Monthly Missed Trips
Missed Trips
20
18
16
14
12
10
8
6
4
2
0
July
August
September
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March
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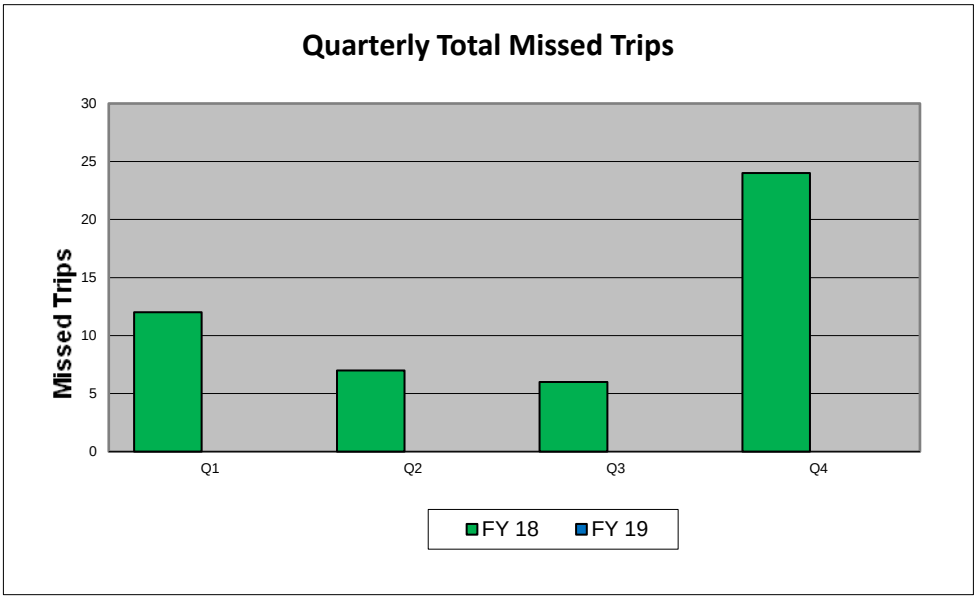
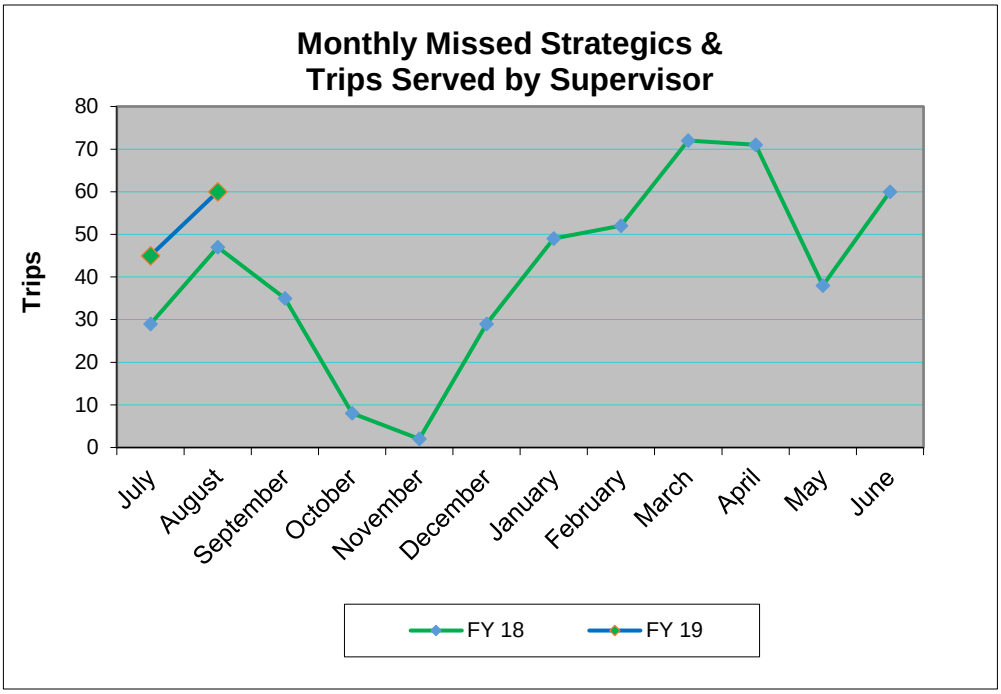
May
June
FY 18
FY 19


Quarterly Total Missed Trips
Missed Trips
30
25
20
15
10
5
0
Q1
Q2
Q3
Q4
FY 18
FY 19


Monthly Missed Strategics &
Trips Served by Supervisor
Trips
80
70
60
50
40
30
20
10
0
July
August
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November
December
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February
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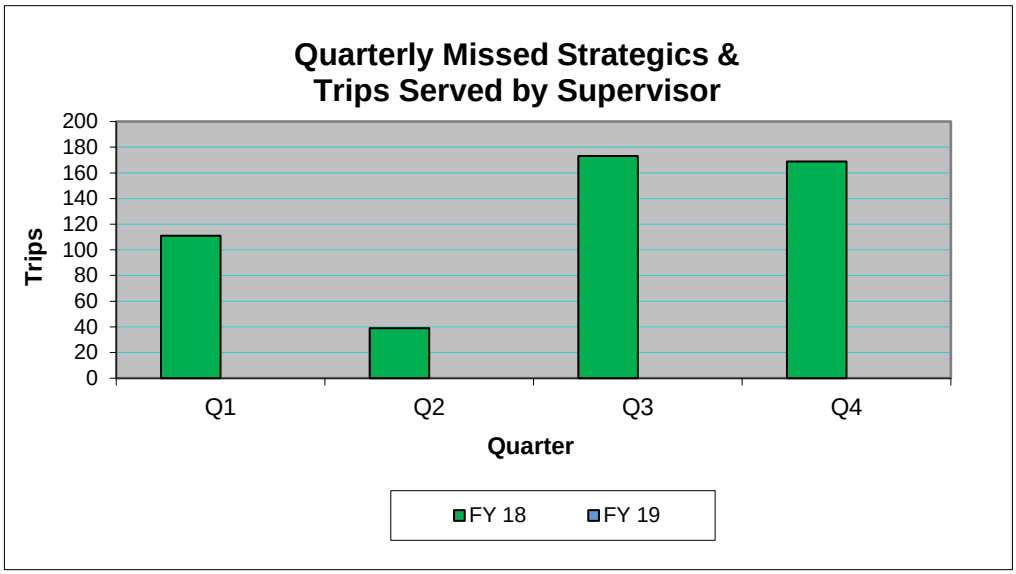
June
FY 18
FY 19


Quarterly Missed Strategics &
Trips Served by Supervisor
Trips
200
180
160
140
120
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80
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Q1
Q2
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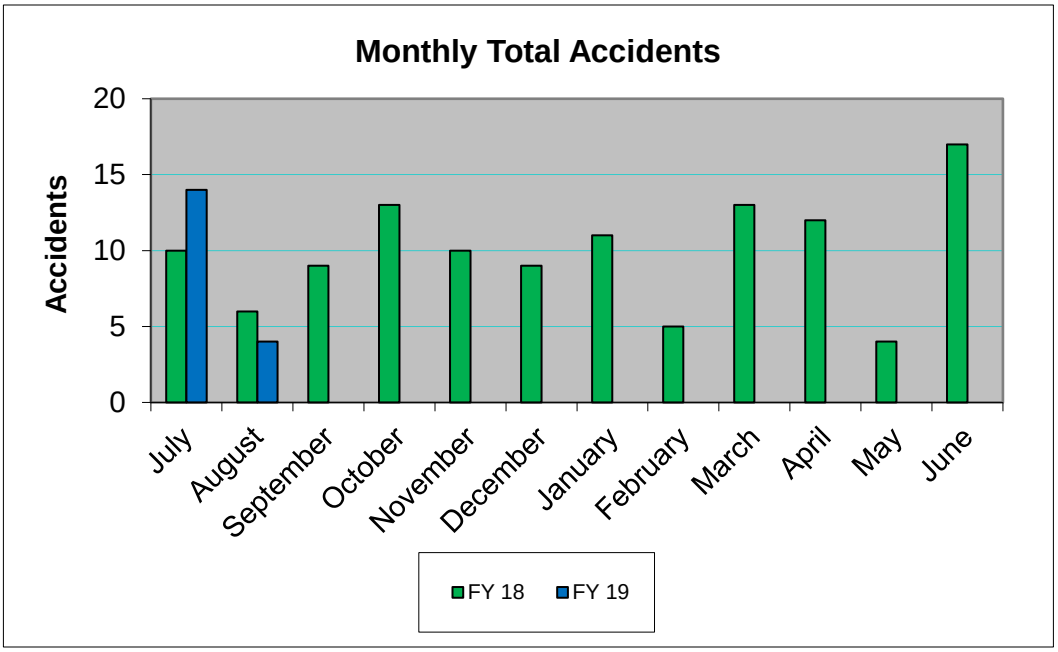
FY 19


Monthly Total Accidents
Accidents
20
15
10
5
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July
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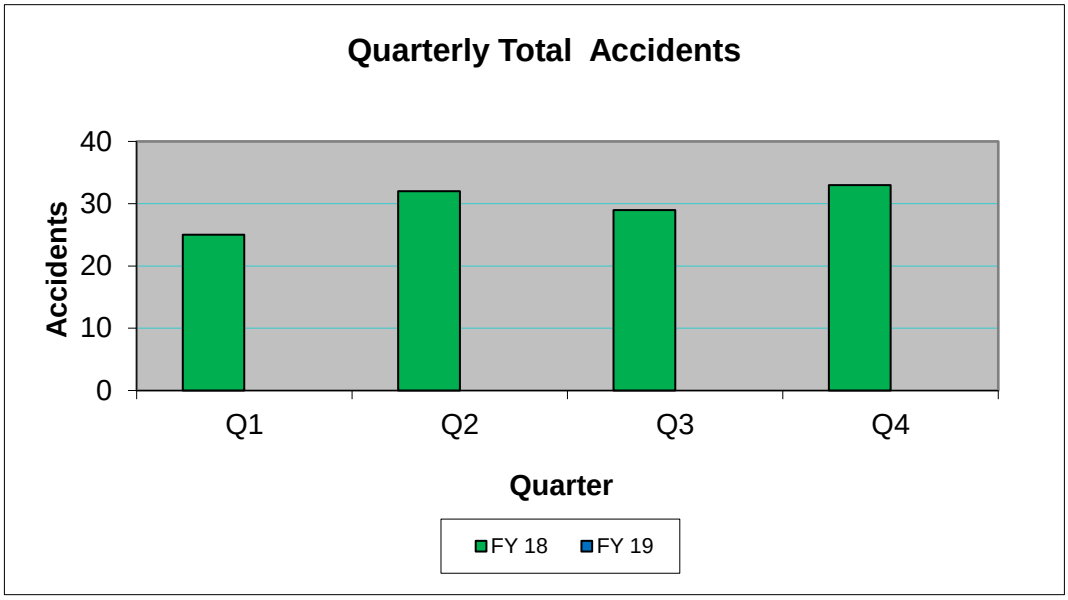
October
November
December
January
February
March
April
May
June
FY 18
FY 19


Quarterly Total Accidents
Accidents
40
30
20
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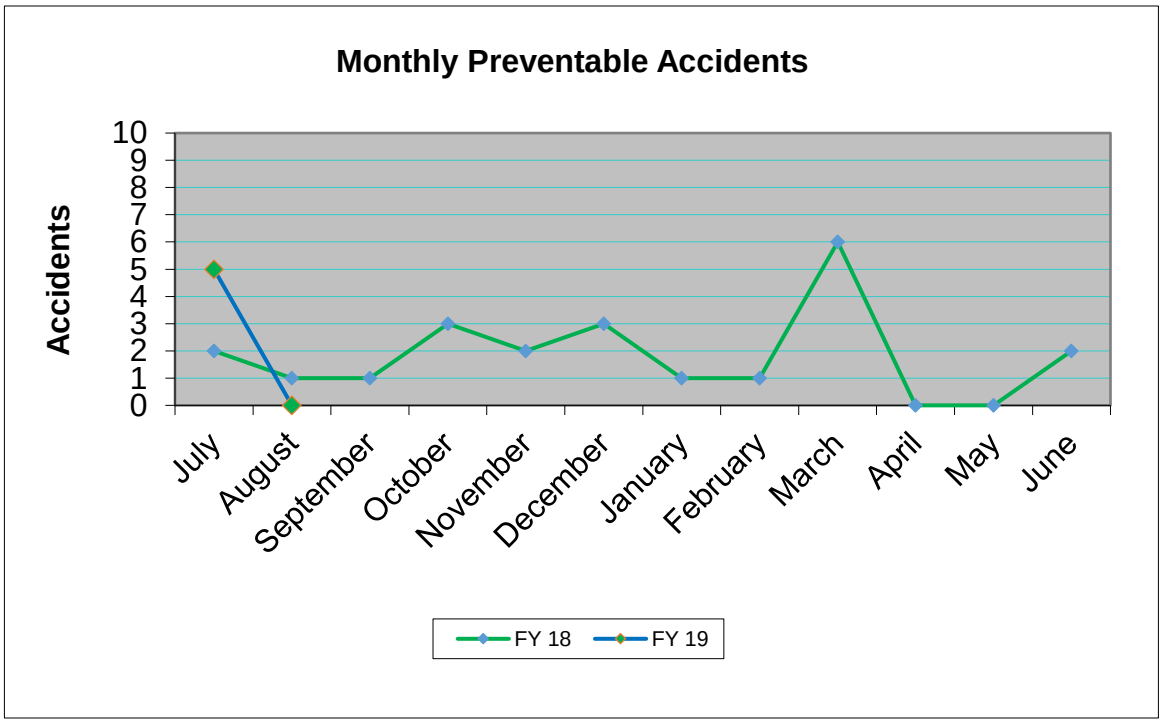
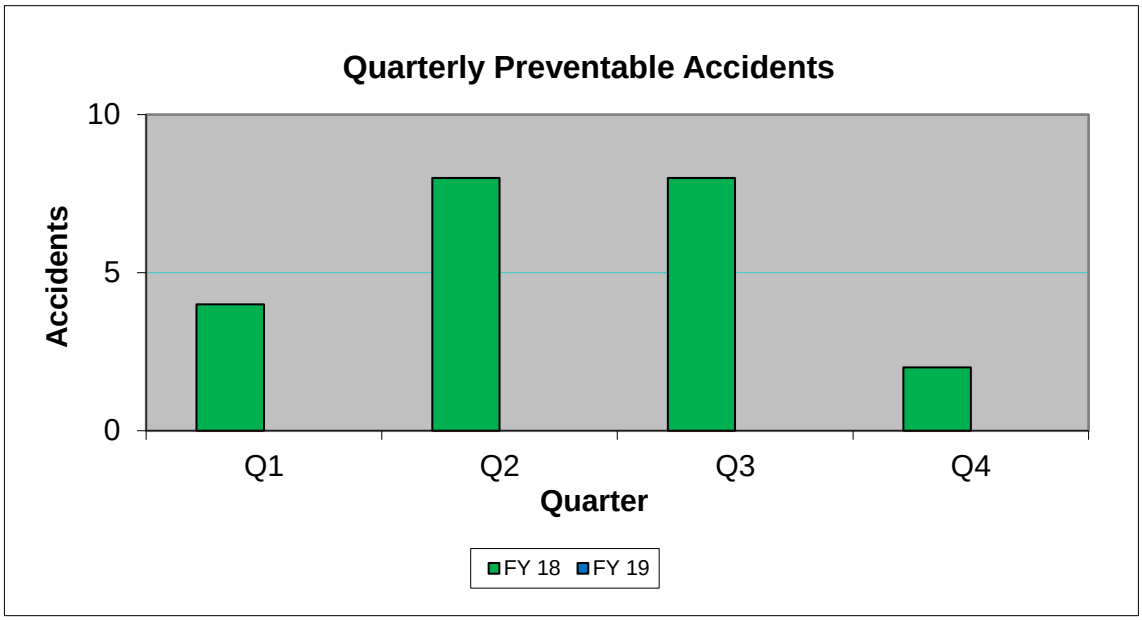
0
Q1
Q2
Q3
Q4
Quarter
FY 18
FY 19


Monthly Preventable Accidents
Accidents
10
9
8
7
6
5
4
3
2
1
0
July
August
September
October
November
December
January
February
March
April
May
June
FY 18
FY 19


Quarterly Preventable Accidents
Accidents
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Q1
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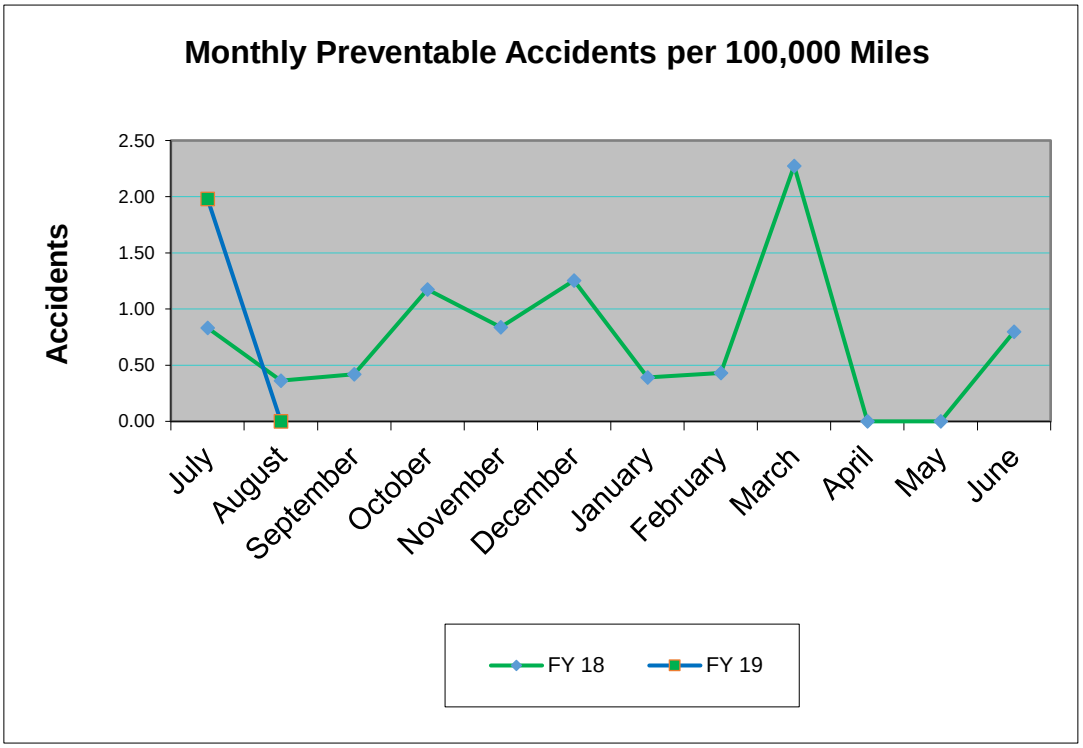
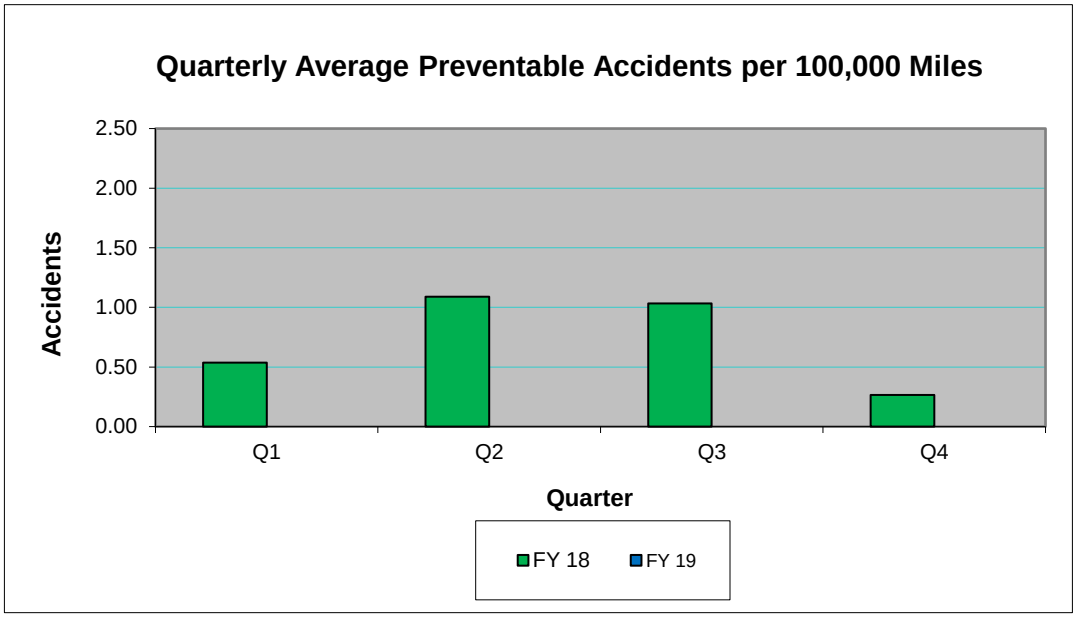
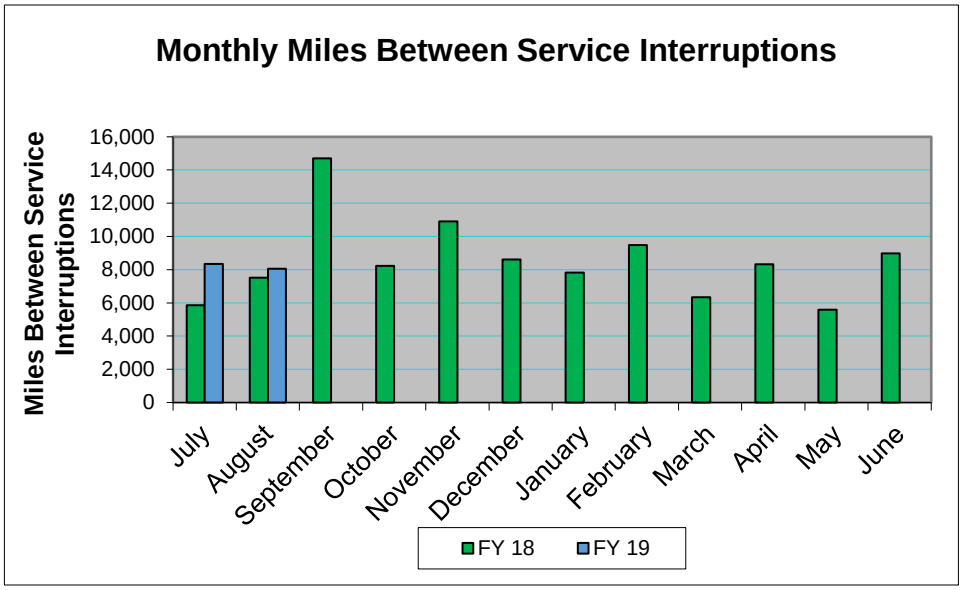
Q3
Q4
Quarter
FY 18
FY 19


Monthly Preventable Accidents per 100,000 Miles
Accidents
2.50
2.00
1.50
1.00
0.50
0.00
July
August
September
October
November
December
January
February
March
April
May
June
FY 18
FY 19


Quarterly Average Preventable Accidents per 100,000 Miles
Accidents
2.50
2.00
1.50
1.00
0.50
0.00
Q1
Q2
Q3
Q4
Quarter
FY 18
FY 19


Monthly Miles Between Service Interruptions
Miles Between Service Interruptions
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
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July
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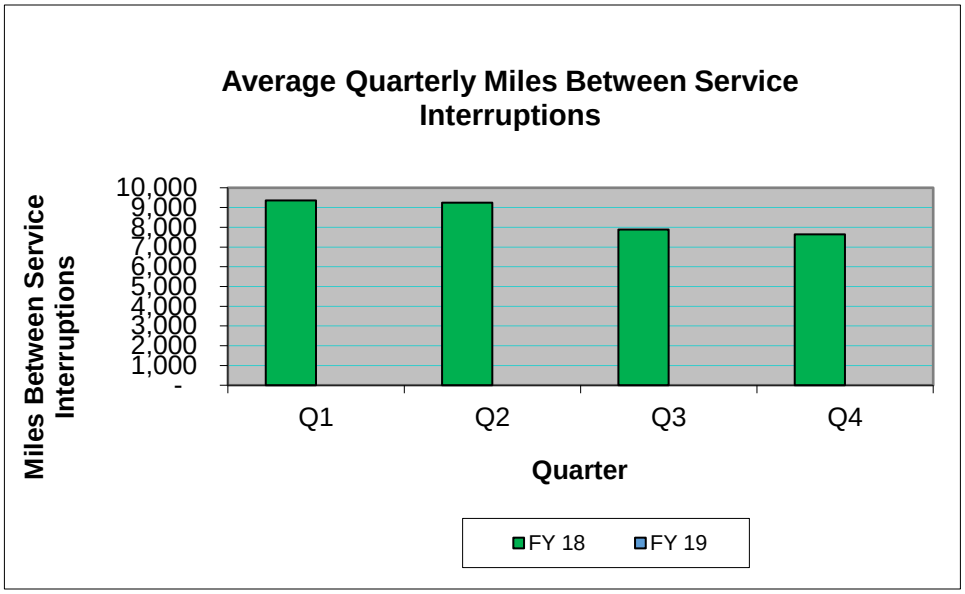
December
January
February
March
April
May
June
FY 18
FY 19


Average Quarterly Miles Between Service Interruptions
Miles Between Service Interruptions
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Q1
Q2
Q3
Q4
Quarter
FY 18
FY 19

October 4, 2018

TO: Madam Chair Anderson and Commissioners

FROM: Perrin Palistrant
Director of Operations and Operations Planning

THROUGH: Robert A. Schneider, PhD
Executive Director

RE: August 2018 Fleet Maintenance Audit

Overview

The most recent fleet maintenance audit (attached) was conducted in August 2018. Random sample audits are conducted three times per year by PRTC's independent contractor, Transit Resource Center (TRC) -- the report summary is presented below. Average defects decreased significantly for both active and contingency vehicles. First Transit management worked diligently to reduce the number of defects and improved processes to assist maintenance staff. OmniRide's management continues to work with First Transit management staff to ensure TRC's suggested improvements are being followed, and will maintain stepped up service monitoring of various aspects of maintenance activities.

Report Summary

Bus audits are conducted of First Transit three times annually (one every four months) on behalf of the Potomac and Rappahannock Transportation Commission (PRTC) by Transit Resource Center (TRC). First Transit is under contract to PRTC to maintain PRTC's bus fleet. This is the sixteenth audit conducted of First Transit since their new contract with PRTC began on July 1, 2013.

Audits consist of a physical bus inspection of 51 buses, which represents about one-third of the total fleet. The audits also include a fluids analysis, records review, and road test of one-quarter of the sample. A review is also made of maintenance worker qualifications as agreed to by PRTC and First Transit. Reporting is based on a random sampling of the active fleet (47 buses) with separate analysis made of the contingency fleet (4 buses).

For this audit there was an average of 2.6 defects per bus for all buses inspected (active and contingency buses combined), a reduction from 3.0 last audit. The 47 active buses inspected

also averaged 2.6 defects per bus, compared to 2.8 per bus last audit, while the four contingency buses averaged 3.3 defects per bus, compared to 4.8 per bus last audit.

The summary table which follows compares active and contingency buses in several defect categories for the past four audits; defects are down in all categories for the two consecutive audits. On-time adherence to preventive maintenance inspections (PMIs) scheduled at 6,000-mile intervals continues to be perfect at 100% for thirty-three consecutive audits.

TABLE 1
Comparison of Active & Contingency Buses

	Aug. '17	**Dec. '17**	**Apr. '18**	**Aug. '18**
Average # of Defects per Bus: All Buses	3.5	4.75	3.0	2.6
Average # of Defects per Bus: Active Fleet	3.3	4.2	2.8	2.6
Mechanical Defects (net of cosmetic defects): Active Fleet	2.1	2.6	1.8	1.4
Average # of Defects per Bus: Contingency Fleet	6.2	11.0	4.8	3.3
Average # of "A" Defects per Bus: All Buses	0.31	0.41	0.23	0.20
Average # of "A" Defects per Bus: Active Fleet	0.25	0.40	0.23	0.21
Average # of "A" Defects per Bus: Contingency Fleet	1.0	0.50	0.25	0.0
PMI Adherence	100%	100%	100%	100%

The number of "A" defects, which totaled 12 last audit, decreased to 10 this audit. "A" defects are those agreed upon by PRTC and First Transit as being more serious, those that would keep a bus from resuming revenue service until repaired. "A" category defects were reported to First Transit shortly after being identified. A copy of the "A" defect list used for all audits is attached as Appendix B.

The four contingency buses inspected averaged 3.3 defects per bus, compared to 4.8 last audit and 11 the audit before last. This compares to an average of 2.6 defects for the active fleet. Conclusions drawn from such a small fleet sampling (only four buses) are difficult to make.

TRC will continue to conduct a separate analysis of contingency buses, determine if operators are reporting defects as part of their pre and post trip inspections, and whether First Transit is correcting those defects. In conducting the analysis of four contingency buses, TRC found that four of the 13 contingency fleet defects should have been noted by the operator. Of the four defects, none were noted by operators on the Zonar pre/post- trip inspection reports. Last audit, operators noted all seven of the defects that should have been noted on Zonar pre/post-trip inspection reports.

Other aspects of the audit revealed:

- The workshop continues to be clean.
- PMI records, filed electronically, continue to be extremely well organized and easy to locate.
- Bus exteriors and interiors are exceptionally clean.
- Exterior-related body defects for the active fleet increased to 53 for this audit compared to 46 last audit and 65 the audit before last. Exterior-related body defects continue to rank as the highest defect category after Engine Compartment defects, a total of 23 for the active fleet this audit.
- The number of interior condition defects for the active fleet fell again to only one (1) compared to three last audit and nine the audit before last.
- When cosmetic (interior condition and exterior body) defects are removed from the active fleet totals, the number of mechanical defects equals 1.4 per bus compared to 1.8 last audit.
- Bus areas where no defects were found on any of the active buses inspected include Passenger Controls, Electrical Systems and Exhaust. Climate control defects totaled four for this audit, but lack of any such defects in 14 of the past 18 audits is impressive.
- Three categories saw a significant decrease in the number of average defects per bus: Driver's Controls, Engine/Engine Compartment and Transmission.
- Three categories saw a significant increase: Climate Control, Structure/Chassis/Fuel Tank and Lights.
- The road tests of the 13 buses selected at random revealed no defects this audit compared to one defect last audit.
- Refrigerant-related air conditioning (AC) repairs examined were all performed by EPA certified personnel as required by PRTC.
- First Transit management continues to show a willingness to minimize defects by immediately repairing "A" defects shortly after being identified.
- The review of PMI records revealed that First Transit continues to have a process to follow up on defects identified during PM inspections.
- Testing of fluid samples showed five alerts compared to six last audit: three engine oil, one transmission, one coolant. Of the five alerts, one is severe and all require some action to be taken before the next PM interval. Results appear to be providing an early warning of possible problems as opposed to neglected maintenance.

- Regarding fluid alerts reported last audit where First Transit was recommended by the lab to take corrective action, an examination found that follow-up action was taken in all cases.
- First Transit is compliant in three of the four workforce categories (two employees do not meet minimum work experience requirements).
- Required annual refresher training is at full compliance.
- First Transit management continues to be cooperative with regard to providing the buses and workspace needed for carrying out inspections in a timely fashion.
- A review of all contingency bus records revealed that all but three were driven at least 30 miles per month; all three were down for extensive repairs. All contingency buses have current registrations, all are being given required maintenance attention, and the four contingency buses selected for inspection for this audit did start prior to being inspected.

Attachment: As stated

TRANSIT RESOURCE CENTER

Presents:

Fleet Maintenance Audit Report
August 2018

Presented to:

Potomac & Rappahannock Transportation Commission
14700 Potomac Mills Road
Woodbridge, VA 22192

September 12, 2018

TRANSIT RESOURCE CENTER

5840 Red Bug Lake Road
Suite 165
Winter Springs, FL 32708
Phone: (407) 977-4500
Fax: (407) 977-7333
Email: tranrc@earthlink.net

Potomac and Rappahannock Transportation Commission (PRTC)

VEHICLE MAINTENANCE AUDIT
Conducted August 13-17, 2018

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POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION
VEHICLE MAINTENANCE AUDIT
Conducted August 13-17, 2018

SUMMARY

Bus audits are conducted of First Transit three times annually (one every four months) on behalf of the Potomac and Rappahannock Transportation Commission (PRTC) by Transit Resource Center (TRC). First Transit is under contract to PRTC to maintain PRTC's bus fleet. This is the sixteenth audit conducted of First Transit since their new contract with PRTC began on July 1, 2013.

Audits consist of a physical bus inspection of 51 buses, which represents about one-third of the total fleet. The audits also include a fluids analysis, records review, and road test of one-quarter of the sample. A review is also made of maintenance worker qualifications as agreed to by PRTC and First Transit. Reporting is based on a random sampling of the active fleet (47 buses) with separate analysis made of the contingency fleet (4 buses).

For this audit there was an average of 2.6 defects per bus for all buses inspected (active and contingency buses combined), a reduction from 3.0 last audit. The 47 active buses inspected also averaged 2.6 defects per bus, compared to 2.8 per bus last audit, while the four contingency buses averaged 3.3 defects per bus, compared to 4.8 per bus last audit.

The summary table which follows compares active and contingency buses in several defect categories for the past four audits; defects are down in all categories for the two consecutive audits. On-time adherence to preventive maintenance inspections (PMIs) scheduled at 6,000-mile intervals continues to be perfect at 100% for thirty-three consecutive audits.

TABLE 1
Comparison of Active & Contingency Buses

	Aug. '17	Dec. '17	Apr. '18	Aug. '18
Average # of Defects per Bus: All Buses	3.5	4.75	3.0	2.6
Average # of Defects per Bus: Active Fleet	3.3	4.2	2.8	2.6
Mechanical Defects (net of cosmetic defects): Active Fleet	2.1	2.6	1.8	1.4
Average # of Defects per Bus: Contingency Fleet	6.2	11.0	4.8	3.3
Average # of "A" Defects per Bus: All Buses	0.31	0.41	0.23	0.20
Average # of "A" Defects per Bus: Active Fleet	0.25	0.40	0.23	0.21
Average # of "A" Defects per Bus: Contingency Fleet	1.0	0.50	0.25	0.0
PMI Adherence	100%	100%	100%	100%

The number of "A" defects, which totaled 12 last audit, decreased to 10 this audit. "A" defects are those agreed upon by PRTC and First Transit as being more serious, those that would keep a bus from resuming

revenue service until repaired. "A" category defects were reported to First Transit shortly after being identified. A copy of the "A" defect list used for all audits is attached as Appendix B.

The four contingency buses inspected averaged 3.3 defects per bus, compared to 4.8 last audit and 11 the audit before last. This compares to an average of 2.6 defects for the active fleet. Conclusions drawn from such a small fleet sampling (only four buses) are difficult to make.

TRC will continue to conduct a separate analysis of contingency buses, determine if operators are reporting defects as part of their pre and post trip inspections, and whether First Transit is correcting those defects. In conducting the analysis of four contingency buses, TRC found that four of the 13 contingency fleet defects should have been noted by the operator. Of the four defects, none were noted by operators on the Zonar reports. Last audit, operators noted all seven of the defects that should have been noted on Zonar reports.

Other aspects of the audit revealed:

- The workshop continues to be clean.
- PMI records, filed electronically, continue to be extremely well organized and easy to locate.
- Bus exteriors and interiors are exceptionally clean.
- Exterior-related body defects for the active fleet increased to 53 for this audit compared to 46 last audit and 65 the audit before last. Exterior-related body defects continue to rank as the highest defect category after Engine Compartment defects, a total of 23 for the active fleet this audit.
- The number of interior condition defects for the active fleet fell again to only one (1) compared to three last audit and nine the audit before last.
- When cosmetic (interior condition and exterior body) defects are removed from the active fleet totals, the number of mechanical defects equals 1.4 per bus compared to 1.8 last audit.
- Bus areas where no defects were found on any of the active buses inspected include Passenger Controls, Electrical Systems and Exhaust. Climate control defects totaled four for this audit, but lack of any such defects in 14 of the past 18 audits is impressive.
- Three categories saw a significant decrease in the number of average defects per bus: Driver's Controls, Engine/Engine Compartment and Transmission.
- Three categories saw a significant increase: Climate Control, Structure/Chassis/Fuel Tank and Lights.
- The road tests of the 13 buses selected at random revealed no defects this audit compared to one defect last audit.
- Refrigerant-related air conditioning (AC) repairs examined were all performed by EPA certified personnel as required by PRTC.
- First Transit management continues to show a willingness to minimize defects by immediately repairing "A" defects shortly after being identified.
- The review of PMI records revealed that First Transit continues to have a process to follow up on defects identified during PM inspections.
- Testing of fluid samples showed five alerts compared to six last audit: three engine oil, one transmission, one three coolant. Of the five alerts, one is severe and all require some action to be taken before the next PM interval. Results appear to be providing an early warning of possible problems as opposed to neglected maintenance.
- Regarding fluid alerts reported last audit where First Transit was recommended by the lab to take corrective action, an examination found that follow-up action was taken in all cases.
- First Transit is compliant in three of the four workforce categories (two employees do not meet minimum work experience requirements).

- Required annual refresher training is at full compliance.
- First Transit management continues to be cooperative with regard to providing the buses and workspace needed for carrying out inspections in a timely fashion.
- A review of all contingency bus records revealed that all but three were driven at least 30 miles per month; all three were down for extensive repairs. All contingency buses have current registrations, all are being given required maintenance attention, and the four contingency buses selected for inspection for this audit did start prior to being inspected.

Given the significant improvement in maintenance performance, there continue to be no specific recommendations except to continue taking steps to reduce exterior-related defects, engine/engine compartment defects, contingency bus defects, and "A" defects.

Audit details are presented in the various sections found in the body of this report. Various tables used throughout this report are based on more complete data contained in Excel spreadsheets included on a separate CD.

BUSES INSPECTED

TRC selected at random 47 active buses and four contingency buses (51 in total) for a physical fleet inspection and then selected 13 of them at random to receive a Fluids Analysis Audit and a Records Review. Thirteen buses were also selected at random by TRC to undergo road tests. Appendix A identifies those buses.

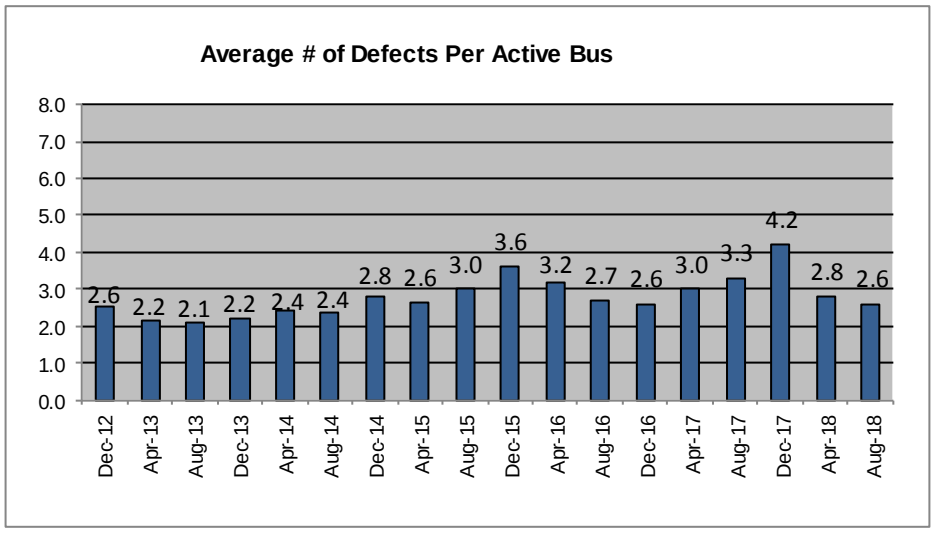
FINDINGS

Overall Fleet Condition – Active Buses

The PRTC fleet continues to be exceptionally clean. The number of interior condition defects for the active fleet fell significantly from three last audit to only one (1) this audit. Exterior body defects, which fell from 65 for the active fleet two audits ago to 46 last audit, increased slightly to 53 this audit. Tight parking conditions where approximately 122 parking spots must accommodate 153 buses could be contributing to higher exterior body damage defects.

Defects continue to remain in the three-per-bus average. Only once in the past twenty-five audits did defect averages exceed four. **Table 2** which follows shows the historical defect trend for the last 18 audits of First Transit. During that 18-audit period, 14 audits averaged three defects or less per bus. Although the industry does not have a standard for per-bus defects, an average of defects in the range traditionally exhibited by First Transit is exceptional based upon similar audits conducted by TRC for other transit agencies. A more detailed analysis of the defects is provided in report sections that follow.

Table 2: Summary of Average Defects per Active Bus



Overall Defect Summary – Active Buses

All defects identified during the inspections were entered in a database, which was used to generate a Master Defect Sheet. Data contained in that spreadsheet were then used to produce a series of detailed Excel reports, which are included as a CD attachment to this report.

Table 3, which follows summarizes active bus defects under each of the 18 functional categories and compares them to the previous audit. For this audit, three categories saw a significant decrease in the number of average defects per bus: Driver's Controls, Engine/Engine Compartment and Transmission. Three Categories saw a significant increase: Climate Control, Structure/Chassis/Fuel Tank and Lights.

Seven of the active buses inspected had no defects found. In addition, as shown in **Table 3**, there were no defects found in three of the 18 functional categories for all active buses inspected: Electrical Systems, Exhaust and Passenger Controls.

Defects by category for the last four audits are shown in **Table 3 which follows**. Trend tabs in the attached spreadsheet show defect trends over longer intervals.

TABLE 3 *Defects by Category - Active Buses*					
Defect Category	**Aug. '17 Defects Avg. per Bus**	**Dec. '17 Defects Avg. per Bus**	**Apr. '18 Defects Avg. per Bus**	**Aug. '18 Defects Avg. per Bus**	**Significant Increase (+) or Decrease (-) Current vs. Prior Audit**
Accessibility Features	0.17	0.17	0.15	0.09	
Air System/Brake System	0.13	0.17	0.11	0.06	
Climate Control	0.00	0.00	0.00	0.09	+
Destination Signs	0.00	0.09	0.02	0.04	
Differential	0.02	0.04	0.06	0.06	
Driver's Controls	0.15	0.06	0.23	0.09	-
Electrical System	0.04	0.11	0.02	0.00	
Engine/Engine Compartment	1.00	1.28	0.96	0.49	-
Exhaust	0.00	0.02	0.00	0.00	
Exterior Body Condition	0.91	1.38	0.98	0.13	
Interior Condition	0.32	0.19	0.06	0.02	
Lights	0.04	0.04	0.06	0.17	+
Passenger Controls	0.00	0.00	0.00	0.00	
Safety Equipment	0.06	1.13	0.00	0.04	
Structure/Chassis/Fuel Tank	0.02	0.02	0.00	0.09	+
Suspension/Steering	0.30	0.34	0.04	0.04	
Tires	0.04	0.00	0.00	0.02	
Transmission	0.11	0.17	0.11	0.04	-
Active Bus Defect Totals:	**156**	**198**	**132**	**121**	
Active Buses Inspected:	**47**	**47**	**47**	**47**	
Average Defects per Bus:	**3.3**	**4.2**	**2.8**	**2.6**	

As indicated above, each defect was given a severity code:

A – Indicates a critical defect that when identified during a regularly scheduled PMI requires immediate repair before the vehicle could resume revenue service.

B – Indicates a non-critical defect, the repair of which could be deferred to later time.

"A" Defect Summary – All Buses

A total of 10 "A" defects were identified for this audit for all buses inspected compared to 12 last audit and 21 the audit before last. **Table 4** which follows shows a breakdown of those defects classified under active and contingency buses.

TABLE 4 *A-Category Defects*		
Defect Category	**A-Defects Active Fleet**	**A-Defects Contingency Fleet**
Accessibility		
- Wheelchair lift barrier	2	
- Sensitive edge	1	
- Won't stow	1	
- Ramp	1	
- Alarm	1	
Safety Equipment		
- Decal	1	
- Alarm	1	
Exterior Body - Windshield	1	
Lights - Turn signal	1	
Subtotal "A" Defects	**10**	**0**
Total "A" Defects	**10**	

First Transit understood they would not operate buses with "A" defects until those defects were repaired. It should be noted that not all "A" defects will keep the bus from service according to DOT standards. Air leaks, for example, have an acceptable DOT allowance and can lose three pounds of air pressure in just two minutes.

Contested Defects

First Transit contested three defects this audit compared to no defects last audit. Upon further review, three of the three defects were changed from "A" status to "B" status because 1) the "A" defect sheet correctly states that more than one brake light needs to be inoperative, 2) a screw found in a tire that holds air pressure is not a defect according to the "A" defect sheet, and 3) over 50% of LED lights in a turn signal lamp (or other critical lamp) need to be inoperative to be classified as an "A" defect. Despite being reversed, the screw found in a tire was brought to First Transit's attention with a strong recommendation that the tire be thoroughly inspected before returning the bus to revenue service. Appendix D provides further detail of contested defects.

Defect Analysis (Active and Contingency Buses)

Defects identified by TRC were analyzed to determine the severity or detrimental impact they pose in terms of safety, comfort and convenience, structural integrity, and life expectancy of major components.

Safety

There were 11 "A" category defects identified during this audit for all buses inspected compared to 12 found last audit. Of the 10 "A" defects, all should have been noted by operators during their daily inspections understanding that some may be difficult for operators to detect. There were two defects related specifically to safety equipment compared to none last audit.

Comfort and Convenience

Exteriors and interiors continue to be exceptionally clean. There were five climate control defects this

audit for all buses. Since August 2013 only eight climate control defects were found. There were no Passenger Control defects for two consecutive audits. Interior-related defects for all buses inspected totaled four compared to the same number last audit.

Structural Integrity
There continue to be no defects that impact structural integrity.

Life Expectancy of Major Components
First Transit continued its perfect adherence to scheduled PM inspections. The changing of fluids that occurs during these inspections combined with fluid analysis maximizes the life expectancy of major components.

Regarding fluid samples taken by TRC, there were five alerts reported this audit compared to six last audit: three engine, one transmission, and one coolant. Of the five alerts, one was severe and all require action to be taken before the next PM inspection. First Transit immediately responded with the action it would take in response to these alerts. The alerts are consistent with First Transit's fluid analysis program providing an early warning of potential problems as opposed to neglected maintenance.

Records also continue to show that First Transit has an aggressive program to follow up on defects noted during PMIs (i.e., getting them repaired in a timely fashion) and quickly investigating fluid sampling alerts, which together help extend vehicle and component life.

Trend Analysis

The long-term trend lines for all defects as shown in the separate spreadsheet tab continue to indicate a very gradual upwards trajectory. Mechanical defects (excludes interior and exterior body defects), however, continue on a more pronounced downward slope (fewer defects). Other categories where defects are on a downward trend include Driver's Controls, Air/Brake System, Safety, Interior Body, Lights, Differential, Climate Control, Steering/Suspension, Transmission and Passenger Controls. Categories with an overall long-term trend increase include Electrical Systems, and Exterior Condition. The trend for "A" defects for all buses, which had increased steadily from December of 2016 (10) to December 2017 (21), has now reversed that trend and the number has fallen for the past two audits. TRC will continue to monitor.

RECORDS REVIEW

PMI Schedule Adherence

TRC examined the records of 13 buses selected at random (12 active, 1 contingency) to determine if PMIs are being done at scheduled 6,000-mile intervals. PMI intervals are considered "on time" if performed on or before 6,600 miles ("late window" of 10% or 600 miles).

All PMI records, now filed electronically, are well organized and very easy to access and locate.

Table 5 which follows shows the PMI intervals compared to the previous PMIs performed by First Transit for each of the 13 buses selected at random.

TABLE 5 *PMI Schedule Adherence*		
Bus #	**PMI Mileage Intervals**	**Notes**
187	6089	On time
197	6470	On time
275	6044	On time
288	6175	On time
301-C	6309	On time
328	6417	On time
335	6232	On time
347	6461	On time
356	6491	On time
366	5882	On time
384	6498	On time
389	6483	On time
293	6044	On time

The review of records by TRC revealed that all 13 buses (100%) had their PM inspections done on time. The on-time performance for PMI schedule adherence remains at 100% for thirty-three consecutive audits, an impressive accomplishment. First Transit management continues its process whereby upcoming PMIs are identified and reviewed daily to ensure on-time completion.

Repair of Defects Identified During PMIs

TRC reviewed the last three PMI e-files for all 13 buses chosen at random (39 PMI records total) to determine if repairs were performed properly and made promptly. TRC examined the PMI files to determine if First Transit has:

- A process in place to distinguish those defects identified and repaired during the PMI from those scheduled for repair at a later date; and
- Actually followed up and repaired the defects identified during the previous PMI.

Of the 39 bus records reviewed, there were eight cases where similar defects seem to reappear. An in-depth review of the seven cases revealed that in all cases First Transit had deferred repairs to the next PM where action was taken to correct the defect.

With its change to electronic filing, First Transit continues to have a record-keeping system that clearly distinguishes defects that get deferred or repaired as a follow-up to scheduled PM inspections.

Mechanic Training & Certification

TRC set out to determine if qualified mechanics are performing maintenance tasks by virtue of documented training and certification by selecting five HVAC repairs/inspections at random. TRC then asked First Transit to provide a copy of the repair order and the name of the mechanic performing the repair or inspection. **Table 6** which follows shows the five HVAC work orders examined.

TABLE 6 *A/C Repairs by Certified Mechanics*			
Bus #	**Date**	**HVAC Repair**	**Mechanic**
333	7-17-18	AC inop. Replaced compressor seal and recharge system	Brownell
375	7-18-18	AC low, solder leak and recharge system	Beittia
372	7-18-18	AC low, added refrigerant	Brownell
322	8-8-18	AC inop. Repaired leaking hose and recharge system	Ahanda
331	7-30-18	Freon leak, tighten compressor face plate, recharge system	Nickens

TRC then compared the mechanic(s) who performed the HVAC repairs to the listing of certified technicians compiled for this audit. **Table 7** which follows shows all mechanics along with those certified to perform HVAC (refrigerant-related) repairs and their AC certification status.

TABLE 7 *Mechanic and Foreman Work Status*	
Mechanic's Name	**AC Certification**
Andy Velez (Foreman) (FT)	YES
S. Nanthavongsa (FT)	YES
F. Brownell (Foreman) (FT)	YES
W. Nickens (FT)	YES
R. Ahenkora (15 per week – 50%)	YES
F. Artieda (FT)	YES
J. Mitchell (30 per week – 75%)	YES
A. Romano (FT)	YES
D. Alemayehu (30 per week – 75%)	YES
C. Adkins (FT)	YES
A. Ahanda (30 per week – 75%)	YES
W. Morales (FT)	YES
M. Osei (FT)	YES
T. Criste (FT)	YES
M. Moore (FT)	YES
S. Bacchus (FT)	YES
C. Graham (FT)	YES
T. Tsega (FT) (15 per week – 50%)	YES
J. Bowles (FT)	YES
B. Terrell (FT)	YES
M. Amankwah (15 per week – 50%) (recent hire)	YES
D. Espinal (FT)	YES
J. Galo (FT)	YES
F. Reinoso (20 per week – 50%)	YES
D. Betitia (Foreman) (FT)	YES
A. Gugessa (new hire)	YES

TRC found that all HVAC repairs involving refrigerant were performed by a certified AC technician. In fact, all 26 mechanics/foremen are AC certified.

As part of this inspection, TRC also requested an updated listing of all First Transit technicians and a summary of their experience and ASE certifications to determine compliance with the following PRTC requirement:

> Maintenance Personnel will be trained to proficiency on each of PRTC's vehicles and sub-systems prior to the start of service. Contractor will be required to ensure that all repairs involving warrantied vehicles, sub-systems, parts, etc., are performed at all times by maintenance personnel who are properly certified to perform such work such that qualifications cannot be questioned when submitting warranty claims. All mechanics (defined as mechanics and foremen) must have at least one ASE certification and five (5) years' experience on heavy duty trucks or buses. Alternately, mechanics may be graduates of a certified two-year technical/vocational institute and have two (2) years' experience with heavy duty trucks or buses. At least 33 percent of the maintenance staff (defined as mechanics only) shall be ASE Master Certified for medium and heavy duty trucks (or transit buses). In addition, all mechanics (defined as mechanics and foremen) shall receive a minimum of 16 hours of technical/refresher training annually.

PRTC also requires that the ratio of buses per mechanic not exceed eight. As indicated in **Table 7** above, full-time employees are classified as "(FT)"; others include the number of hours they work per week (e.g., 30 per week). Those working 15-20 hours per week are classified as 0.50; 30 per week are classified as 0.75 equivalent of a full-time worker. **Table 8** which follows shows required versus actual staffing levels, experience/certifications, and annual refresher/technical training compliance. The table is based on First Transit's current staffing levels of 22.5 full time equivalent mechanics (19 full time + 3.5; 4 @ 0.50 + 3 @ 0.75 = 22.5) and three full-time foremen. There are a total of 26 maintenance employees: three full-time foremen and 23 full or part-time mechanics. No new mechanics have been hired since the last audit.

TABLE 8
Mechanic Staffing Level, Certifications, and Experience

Measure	**Ratio of buses to mechanics** (excluding foremen)	**Mechanics/foremen with ASE & 5 years exp. or voc. degree & 2 years exp.**	**Mechanics/ w/ ASE Master Certification**	**Mechanics/foremen w/ min. 16 hours annual refresher/technical training**
Required	Max. 8.0	100%	Min. 33% of techs	100%
Actual	6.8 (153/22.5 full time equivalent mechanics)	**92%** (24 of 26 total mechanics/foremen)	36% (8 of 22.5 full time equivalent mechanics)	**100%** (26 of 26 total mechanics/foremen)*

Based on a review of the documentation provided, First Transit is compliant in three of the four workforce categories. Two employees do not meet the experience requirements as described above and bring compliance down to 92% instead of the required 100%.

Management of Fluid Analysis Program

First Transit is required to send engine oil, transmission, and coolant fluid samples to a laboratory for testing and evaluation at each PMI to determine if:

a) fluid samples were taken at each PMI;
b) fluid records were filed and had easy access; and
c) the contractor is making use of the fluids analysis results as part of its maintenance program.

Samples are sent out weekly and results are returned in about seven days. Copies are made of each report and filed; this is in addition to computerized records that First Transit maintains for each sampling. Locating fluid analysis reports for each of the 13 buses examined was again made easy because of the well-organized electronic recordkeeping system.

First Transit's fluid analysis vendor uses a coding system of 1-5, where "1" indicates the sample finding is normal and "5" indicates the most critical condition. A review of each record found that First Transit continues its practice of highlighting in yellow each lab recommendation for follow-up.

In examining the last two PMIs for each of the 13 buses selected at random (26 records), TRC found that:

- Evidence exists that in all cases fluid samples were taken at the appropriate interval.
- Recordkeeping of the fluid analysis program is adequate.

Results indicate the fluid analysis program is doing its job by providing First Transit with early warnings of potential engine and transmission-related failures. There were no cases where corrective action was recommended by the lab for the 26 bus records reviewed for this audit (all samples were normal).

TRC also drew engine, transmission, and coolant fluid samples from 13 buses selected at random (39 samples) to provide another level of fluid condition verification. The results from TRC's lab, which uses a different grading system than First Transit's lab, are shown below. In each case, First Transit responded with an action plan for resolving the deficiencies.

Engine Oil

There were three engine oil alerts compared to one last audit.

197 – Caution: All engine wear rates normal. Sodium level (possible coolant chemical) elevated. Water content acceptable. Silicon level (dirt/sealant material) satisfactory. Viscosity within specified operating range. Action: Check for source of possible coolant leak. Change oil and filter(s) if not already done. Resample at a reduced service interval to further monitor.

> **FT response – With 2,000 miles on current engine oil, we are inspecting for internal coolant leaks and changing lube oil and filter including a resample to confirm the findings. WO 51691133**

275 – Caution: All engine wear rates normal. Sodium level (possible coolant chemical) elevated. Water content acceptable. Silicon level (dirt/sealant material) satisfactory. Viscosity within specified operating range. Action: Check for source of possible coolant leak. Change oil and filter(s) if not already done. Resample at a reduced service interval to further monitor.

> **FT response – With 4,000 miles on current engine oil, we are inspecting for internal coolant leaks and changing lube oil and filter including a resample to confirm the findings. WO 51691147**

389 – Severe: All engine wear rates normal. Sodium and potassium levels indicate internal coolant leak. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range. Action: Check for source of coolant leak and repair. Change oil and filter(s) if not already done. Resample after corrective action to further monitor.

> **FT response – Typical efforts took place as a direct result of the last First Transit fluid sample showing potential internal coolant leak, check the obvious and resample to confirm. A deeper look is taking place using this sample as verification. WO 51552823**

Transmission Fluid

There was one transmission fluid alert compared to two last audit.

288 – Abnormal: Increase in Iron level noted. Torque converter/pump wear indicated. Silicon level (dirt/sealant material) satisfactory. Water content acceptable. Viscosity within specified operating range. Action: Drain oil from unit if not already changed. Resample at a reduced service interval to further monitor.

> **FT response – Fluid life is nearly used up at 41,000 miles. There is a transmission torque converter campaign going on at the Allison dealer which affects this bus. Communications have been established to get this completed.**

Coolant

There was one coolant alert compared to three last audit.

293 – Abnormal: Glycol level is high. pH level is normal. Pressure check radiator cap, if it fails replace cap and recheck pressure. Check that proper coolant volume is being maintained. Recommend adjust coolant to a 50/50 mix. Recommend take corrective action and resample to monitor.

> **FT response – Fluid sample result verified with FT latest sample. Glycol percentage is above 50/50, testing and adjustments will be made to correct the percentage and the radiator cap will be replaced. WO 51691198**

For this audit, the number of fluid alerts from the samples taken by TRC totaled five compared to six last audit. Of the six alerts, one is severe and all require corrective action before the next scheduled PM inspection. First Transit initiated corrective action as a result of the findings. The findings are consistent with a program that provides early warning of more serious potential future problems. For alerts reported during TRC's fluid sampling last audit, there was evidence to support that First Transit followed up and took necessary corrective action as recommended by TRC's lab.

ROAD TEST INSPECTION

TRC conducted a road test of 13 buses selected at random after the static inspections had been conducted. The road testing began during the October 2007 audit. As indicated earlier, a protocol for assigning any defects identified during the road test was established for this audit. Road test defects are classified as those that would render a vehicle out of service or not according to PRTC's **"**Out of Service Defects – While Operating" criteria. The Road Test protocol is fully described in Appendix E.

Defects identified during the road tests are not included with the static inspection defects to maintain consistency with previous audits where road tests were not part of the audit. Details of any road test defects found are shown in the "Road Test Defects" tab of the attached spreadsheet.

No road test defects were found this audit compared to one such defects last audit. A historical summary of road test defects, including those that would render a bus out of service, is shown in **Table 9**.

TABLE 9
Summary of Road Test Defects

	Apr. '17	Aug. '17	Dec. '17	Apr. '18	Aug. '18
Total Road Test Defects	2	0	3	1	0
Out-of-Service Total	0	0	0	1	0
Nature of Out-of-Service Defect(s)	n/a	n/a	n/a	Erratic acceleration	n/a

ANALYSIS OF CONTINGENCY BUSES INSPECTED

The four contingency buses inspected averaged 3.3 defects per bus compared to 4.8 defects last audit and 11 the audit before last. The active bus fleet averaged 2.6 defects per bus by comparison. TRC will continue to monitor contingency buses. There were no "A" defects found on contingency buses for this audit compared to one last audit.

No contingency bus was found with an abnormal fluid finding.

A historical summary of contingency bus defects compared to the active fleet is shown in **Table 10**.

TABLE 10
Summary of Contingency Bus Defects

	Aug. '17	Dec. '17	Apr. '18	Aug. '18
Total Defects - Contingency Bus	25	44	19	13
Average Defects per Contingency Bus	6.2	11.0	4.75	3.25
Average Defects per Active Bus	3.3	4.2	2.8	2.6
Average # of "A" Defects per Bus: Contingency Fleet	1.0	0.5	0.25	0.0
Average # of "A" Defects per Bus: Active Fleet	0.25	0.40	0.23	0.21

All contingency buses selected at random for inspection were inspected first to determine if their engines would start -- an indication if First Transit is keeping the fleet ready for operation. Of the four contingency buses inspected, all started this audit compared to the same number last audit.

ANALYSIS OF ALL CONTINGENCY BUS RECORDS

An analysis of all Contingency Bus records was conducted to determine if First Transit is meeting its contractual requirements to conduct the following:

- Perform PMIs twice per year, including oil and filter changes
- Keep batteries charged, air systems operational, etc.
- Maintain current state inspections
- Operate buses frequently and for substantial periods of time (minimum 30 miles per month)

It was agreed that a minimum of 30 miles per month (360 miles per year) would be sufficient for the contingency fleet, and two full PMs including oil and filter changes would be conducted annually

regardless of accumulated mileage and regardless of the number of specialized "Contingency Bus Inspections" already conducted to check safety items. It was also agreed that subsequent audits would first begin with an inspection of the Contingency Buses selected for the audit as a way to determine if buses would start and, therefore, be ready for service on a moment's notice if needed. The 30-miles-per-month-per-contingency-bus requirement will be monitored and is subject to change.

A review of all Contingency Buses in meeting contract requirements is shown in **Table 11**. The number of designated Contingency Buses in the fleet totaled nine this audit, same as last. The review revealed two of the nine Contingency Buses received a minimum of two full PMIs during the past year (Contingency Buses 269 and 270 continue to be down for extensive repairs). Three Contingency Buses failed to travel a minimum of thirty miles per month for the entire three-month period (Contingency Bus 300 was also down for extensive repairs for the month of May). The review also indicated that five of the nine Contingency Buses showed activities related to battery maintenance, and three buses had air system maintenance activity. It should be noted that not all buses need this service within a three-month period. As mentioned above, all Contingency Buses inspected did start prior to conducting the inspections. **Table 11** also shows that all annual state inspections are current.

TABLE 11
Review of Contingency Bus Records

Bus Number	Last Two PMs Performed	Batteries Charged & Air Systems	Valid State Inspections	Miles Traveled Per Month (30 min.) Since Last Audit
262	01/17/18 07/13/18	Charge batteries: 02/8/18 Replace batteries 08/2/18 No air system activity found	Yes	May – 32 June – 34 July – 32
267	01/17/18 08/1/17	Replace batteries: 07/31/18 No air system activity found	Yes	May – 40 June – 36 July – 35
268	03/27/18 08/1/18	Replace batteries: 12/11/17 Replace batteries: 07/18/18 No air system activity found	Yes	May – 38 June – 43 July – 36
269	02/28/17 (no other PM found)*	No battery activity found No air system activity found	Yes	May – 0* June – 0* July – 0*
270	08/1/17 (no other PM found)*	Replace batteries: 8/25/17	Yes	May – 0* June – 0* July – 0*

TABLE 11 *Review of Contingency Bus Records*				
Bus Number	**Last Two PMs Performed**	**Batteries Charged & Air Systems**	**Valid State Inspections**	**Miles Traveled Per Month (30 min.) Since Last Audit**
		No air system activity found		
300	10/4/17 07/21/18	Charge batteries 10/5/17 Replace air drier valve 10/4/17	Yes	May – 0* June – 1866 July – 3359
301	05/24/18 07/12/18	No battery activity found No air system activity found	Yes	May – 2918 June – 4223 July – 4630
302	04/30/18 07/20/18	No battery activity found Service air drier 12/27/17	Yes	May – 3263 June – 921 July – 3439
303	03/2/18 07/5/18	Replace batteries: 11/10/17 Replace air drier valve 5/7/18	Yes	May – 2643 June – 3713 July – 3032

** Failed to meet requirement (269, 270 & 300 (May only) are down awaiting repairs)*

Additional Contingency Bus Records Inspection

As noted in Table 11 above, the average defects for the Contingency Bus fleet equaled 3.3 per bus compared to 2.6 for the active fleet, an improvement over last audit of 4.8 versus 2.8. Contingency bus defects have fallen for the last two audits. It should be noted that direct comparisons between the two fleets is difficult to make because of the small sampling size of the Contingency Bus fleet. Contingency Buses are also older and are driven less frequently than active buses, which typically results in a higher number of defects. TRC will continue to conduct a separate analysis for this subfleet to include if operators are reporting defects as part of their pre and post trip inspections.

Of the four Contingency Buses inspected, the analysis found four of the 13 defects identified were ones that an operator should have noted (see **Table 12)**. Of the four defects that an operator should have noted, none were found in the Zonar records. Last audit, operators noted all seven of the defects that should have been noted on Zonar reports.

Table 12 *Additional Review of Contingency Bus Records*			
Bus Number	**Defects that Should Have Been Identified by Operator**	**Zonar Record**	**Action Taken by First Transit**
301	- Interior seat will not lock upright	- No such defects noted	n/a

	- Interior trim @ window broken		
268	- Body Damage, c/s lower panel	- No such defect noted	n/a
267	- Water leak roof hatch	- No such defect noted	n/a

RECOMMENDATIONS

Given the significant improvement in maintenance performance, there are no specific recommendations except to continue taking steps to reduce exterior-related defects, engine/engine compartment defects, contingency bus defects, and "A" defects.

APPENDIX A – List of Buses Inspected

TABLE 1 *Buses Inspected*		
FLEET INSPECTION	**RECORDS & FLUIDS ANALYSIS**	**ROAD TEST INSPECTION**
2005-06 GILLIG 40’ Phantom 184-188		
187	187	187
188		
2010-12 GILLIG 40’ LF 189-199,1000-1002		
189		
193		
197	197	
198		198
1002		
2004-13 GILLIG 30’ 262, 267-288		
267-C		
268-C		
275	275	275
276		
277		
286		
288	288	288
2002-06 MCI 300-360		
300-C		
301-C	301-C	
304		
305		
310		
312		
314		
321		
324		
328	328	328
333		
335	335	335

TABLE 1 ***Buses Inspected***		
FLEET INSPECTION	**RECORDS & FLUIDS ANALYSIS**	**ROAD TEST INSPECTION**
337		
340		
346		
347	347	347
351		
354		
356	356	356
358		
2008-14 MCI **361-393**		
361		
363		
366	366	366
372		
374		
377		
380		
384	384	384
385		
387		
389	389	389
2016 Gillig **1003-1009**		
1003		
1005		
2016 Gillig Low Floor **289-294**		
291		
293	293	293
2017 MCI **394-398**		
394		
396		
TOTAL: 51 **47 Active** **4 Cont.**	**TOTAL: 13** **12 Active** **1 Cont.**	**TOTAL: 13** **12 Active** **1 Cont.**

APPENDIX B – Evaluation Criteria & Methodology

TRC continued its audit process of evaluating fleet condition, records, fluids, and worker certification/training using identical procedures from the previous audits. A team of three bus inspectors was assigned to physically inspect the buses, conduct road tests, and draw oil samples. A separate Project Manager organized the overall inspection process, performed the Records and Fluids Analysis Audit, and prepared the final report.

The material which follows describes the evaluation criteria and methodology used by TRC to conduct the various audit inspections.

Fleet Inspection

Specific defects noted during the bus inspections were classified under 18 functional categories:

1) Accessibility Features
2) Air System/Brake System
3) Climate Control
4) Destination Signs
5) Differential
6) Driver's Controls
7) Electrical System
8) Engine Compartment
9) Exhaust
10) Exterior Body Condition
11) Interior Condition
12) Lights
13) Passenger Controls
14) Safety Equipment
15) Structure/Chassis/Fuel Tank
16) Suspension/Steering
17) Tires
18) Transmission

An "A/B" designation system was used to denote defects requiring immediate repair from those that could be repaired at a later time.

A – Indicates a critical defect that when identified during a regularly scheduled PMI requires immediate repair and would keep the vehicle from returning to revenue service until the defect is corrected.

B – Indicates a non-critical defect, the repair of which could be deferred to a later time.

"A" category defects were agreed upon by PRTC and First Transit early in the audit process and remain the same to keep audit comparisons consistent. A copy of the "A" defects used for all audits is attached as Appendix B. TRC informed First Transit management of "A" category defects as soon as they were

identified, which First Transit repaired immediately or scheduled for repair soon afterwards. First Transit was given an opportunity to contest defects as soon as they were brought to their attention.

TRC shared the entire list of preliminary defects found during each day's inspections with First Transit management with the understanding that the defects would need to be reviewed by TRC and may change based on that review. The sharing of defects is intended to keep First Transit informed of TRC's findings as part of a cooperative and objective evaluation process. TRC inspectors also worked with First Transit personnel to confirm operation of certain controls in advance to ensure that defects were legitimate and not the result of the inspectors not being familiar with specific PRTC bus equipment. If there was any doubt about a defect, TRC either removed it from the list or downgraded "A" defects to "B" level status.

Records and Fluids Analysis Audit

Thirteen buses were selected at random by PRTC for the Records and Fluids Analysis Audits. The records examination set out to determine if:

- Preventive maintenance (PM) had been performed correctly and at prescribed intervals;
- Repairs had been performed properly and made promptly;
- Qualified mechanics performed maintenance tasks by virtue of documented training certification; and
- The fluids analysis program is being administered properly.

PM Intervals

To determine if preventive maintenance inspections (PMIs) were performed correctly and on time, TRC examined the PMI records of the thirteen buses selected at random. Mileage between the last two PMIs was calculated to determine if the inspections were performed on time (within 10% or 600 miles of the scheduled 6,000-mile interval).

Repairs

To determine if repairs were performed properly and made promptly, two audit procedures were used:

1) PMI sheets going back three PMIs were examined for each of the thirteen buses selected at random to determine if and when defects noted during the PMI process were repaired.
2) Defects from the previous PMIs were then compared to determine if any defects were repeated from one PMI to the next.

From this comparison TRC could determine if the defects were repaired or if they were simply noted on subsequent inspections.

Mechanic Qualification

To determine if qualified mechanics performed maintenance tasks by virtue of documented training and certification, TRC selected five (5) air conditioning (AC) repairs at random from the work orders.

TRC examined AC-related work orders to identify a) the nature of the repair, and b) the mechanics performing the actual work. TRC then compared the name of the mechanic performing the repair to the list of AC certified technicians that TRC updated with First Transit to determine if the technicians were certified to perform the tasks. Technicians performing routine mechanical tasks to AC systems (i.e., those that do not involve refrigerant) are not required to be certified.

TRC also collected and reviewed a listing of Automotive Service Excellence (ASE) certifications and work experiences of all First Transit mechanics to allow PRTC to determine compliance with established requirements.

Fluids Analysis Management

To determine if the fluids analysis program is being administered properly, TRC examined oil analysis records for each of the thirteen buses selected at random for the Records Inspection. TRC noted if the fluid analysis was being performed at the appropriate PMI interval, if fluid analysis records were properly filed for easy reference, and if any actions were being taken as a result of the fluid analysis findings.

TRC also drew engine oil, transmission fluid, and coolant samples from thirteen buses selected at random and reviewed those results (39 samples total). In reviewing the results, TRC looked for evidence of inappropriate levels of deterioration. TRC also looked for evidence that First Transit is making use of the fluids analysis results. In addition, TRC reviewed the actions recommended by the lab for the samples it took during the last audit to determine if First Transit did, in fact, act on those recommendations.

Road Test Protocol

A defined protocol based on PRTC's "Out of Service Defects While Operating" list was used for assigning defects identified during the road test of 13 buses. All road test defects continue to be listed separately and are not included in the fleet defect totals. Instead of assigning an "A" or "B" designation as is done with static inspection defects, road test defects are classified as either:

- Those that in the opinion of the operator would render the vehicle out of service according to PRTC's "Out of Service Defects While Operating" list.
- Those that would not render the vehicle out of service in the opinion of the operator.

PRTC's "Out of Service Defects While Operating" list is attached as Appendix F, which also describes the entire Road Test Protocol as agreed to by PRTC and First Transit.

Contingency Bus Records Review

A review of all contingency bus records (9 in total for this audit) was made to determine if contract obligations are being met by First Transit to:

- Conduct a minimum of two PM inspections annually, including oil and filter changes
- Make sure batteries are charged and air systems operational
- Make sure current annual state inspections are maintained
- Make sure buses are operated frequently and for sustained periods of time (minimum 30 miles per month).

APPENDIX C – Excel Spreadsheet Reports
(Attached as a CD)

- Defect Summary – All Buses
- Defect Summary – Active Buses
- Defect Summary – Contingency Buses
- Static Defects – All Buses
- Road Test Defects – All Buses
- Defects by Category – All Buses
- "A" Defects – All Buses
- Static Defects – Active Buses
- Road Test Defects – Active Buses
- Defects by Category – Active Buses
- "A" Defects – Active Buses
- Static Defects – Contingency Buses
- Road Test Defects – Contingency Buses
- Defects by Category – Contingency Buses
- "A" Defects – Contingency Buses
- Defect Category Trends – Active Buses
- All Buses Inspected
- Active Buses Inspected
- Contingency Buses Inspected

APPENDIX D – Listing of "A" Category Defects

PRTC "A" Defect List

- Fire extinguisher (expired tag OK unless indicator in red)
- Headlights
- Wipers (either)
- Cracked windshield in driver's view (larger than a quarter)
- Seat belts, driver
- Turn signals
- Horn
- Emergency flashers
- Brake lights (more than one)
- Air pressure/Air leaks (except series 60 EGR engines at dryer and air operated wipers on delay)
- Brake lining thickness @ 7/32-inch; Disc lining at 1/8-inch
- Tire tread depth @ 2/32 rear; 4/32 front
- Fuel leak
- Exposed wires (insulation missing)
- Oil/Grease on brakes (saturated)
- Wheelchair lift/Ramp & securement
- Sharp edges – interior
- Tripping hazard – interior
- Critical steering/Suspension play, wear
- Sensitive edges – doors – not working at all
- Tire pressure below 80 psi (tag tires 70 psi)
- Wheel lug nuts
- Exhaust leak into bus
- Back-up alarm
- Excessive slack adjuster throw: 30=2"; 36=2.5"
- Emergency window won't open

APPENDIX E – Listing of Contested Defects and TRC Response

Bus Number	Defect and Reason for Being Contested	TRC Response
197	(One) brake light inoperative "A" defect sheet states more than one brake light needs to be out	Correct observation Defect was downgraded to "B" status
291	c/s inner rear tire has a screw in it "A" defect sheet only addresses low pressure; the tire in question did hold more than 80 psi of pressure	Correct, the "A" defect sheet does not address a screw imbedded in tire and the tire did hold air. However, although not specifically called out on the "A" defect sheet, this defect if noted by driver or technician would warrant holding the bus out of service until examined. As a result, the screw was brought to First Transit's attention with a strong recommendation that the tire be thoroughly inspected before returning the bus to revenue service. Defect was downgraded to "B" status to maintain audit consistency. Note recommendation made above to inspect tire.
358	c/s rear turn signal lamp inoperative 50% of the LED lights on that particular lamp were operational	Correct observation Defect was downgraded to "B" status

APPENDIX F – Road Test Protocol

A) Process

First Transit assigns consistent operator(s) to road test approximately 25% of buses selected for each maintenance audit. The process consists of a TRC inspector accompanying the operator during the road test, asking questions if needed to ensure the operator has not overlooked a defect.

Defects and abnormalities are classified as either:

- Those that in the opinion of the operator would render the vehicle out of service according to PRTC's **"**Out of Service Defects – While Operating" list (see below).
- Those that would not render the vehicle out of service in the opinion of the operator.

Defects that render the vehicle out of service are then inspected by First Transit with a TRC inspector serving as an observer. First Transit indicates the findings of their investigation to the TRC inspector along with the proposed corrective action (if any). The TRC inspector records this information and gains concurrence from First Transit that the report is accurate. The TRC inspector then adds his observations separately.

All road test defects and reporting are itemized separately in the Audit Report and are not counted or reported with the static defect totals.

B) Out of Service Defects – While Operating

Per the PRTC/First Transit Bus Service Operating Procedures, the following items require the operator to stop the bus as soon as it is safe to do so and contact dispatch. If they occur during a road test, they will be noted as such in the Audit Report.

1. Transmission
   a. slips
   b. will not shift
   c. overheats

2. Engine Problems
   a. hot engine
   b. cuts off
   c. unusual acceleration (e.g., bucks, hesitates, sticking accelerator)

3. Oil System Problems
   a. Oil light
   b. Severe oil leak

4. Air System Problems
   a. No or low air pressure (under 80 psi)

5. Brake System Problems
   a. Hot brakes or wheels
   b. Slack brakes

6. Fuel leak or smell
7. Excessive steering condition
8. Exhaust fumes leaking into bus (obvious smell)
9. Inoperative defroster system
10. Flat tire(s)
11. Inoperative windshield wiper(s)
12. Any other defect rendering the vehicle unsafe to operate

October 4, 2018

TO: Madame Chair Anderson and PRTC Commissioners

FROM: Robert A. Schneider, PhD
Executive Director

RE: Revised Purchasing Authority Report

On June 4, 2015, the Commission approved increasing the Executive Director's delegated purchasing authority from $50,000 to $100,000. It was resolved that any purchase greater than $50,000 would be communicated to the Board as an information item.

In July and August 2018 there were no purchase orders issued within the Executive Director's new spending authority.

Wheels-to-Wellness Funding Status
As of August 31, 2018

Grant/Contribution	Organization	Amount	Notes	
Enrollment Fees Collected		$30		
Sub Total		**$30**		

Pending

Grant/Contribution	Organization	Amount	Notes	
Sub Total		**$0**		

Previously Reported

Grant/Contribution	Organization	Amount	Notes	Date
Enrollment Fees		$3,347		
Contribution	Lake Jackson Volunteer Fire & Rescue Department - Bingo Account	$500		02/09/2018
Contribution	Linda Lee - Go Fund Me	$931		02/16/2018
Contribution	Davita Dialysis Center	$1,261	Net IEC 3% admin fee per agreement (actual donation	01/18/2018
Grant	MWCOG Enhanced Mobility Grant/Potomac Health Foundation 50% match (disabled and seniors)	$250,000		06/14/17
Contribution	First United Presbyterian Church of Dale City	$500		08/31/16
Contribution	St. Francis of Assisi Church	$2,000		08/25/16
Grant	Kaiser Permanente (low income individuals)	$72,750	Net IEC 3% admin fee per agreement (actual grant was $75,000)	8/9/2016
Contribution	Prince William County	$75,000		July 2016
Contribution	First United Presbyterian Church of Dale City	$500		06/21/16
Contribution	Zion Baptist Church in Baltimore	$700		05/10/16
Contribution	First United Presbyterian Church of Dale City	$500		04/25/16
Contribution	Gregg and Jean Reynolds	$50		04/19/16
Contribution	NOVEC (corporate)	$500		04/14/16
Grant	Transurban Express Lane Grant	$1,500		04/11/16
Contribution	Malloy	$500		04/11/16
Contribution	NOVEC HELPS	$485	Net IEC 3% admin fee per agreement (actual contribution was $500)	04/08/16
Contribution	Findley Asphalt	$1,000		03/31/16
Contribution	Lustine Toyota	$2,000		03/29/16
Contribution	Infinity Solutions, Inc	$250		03/29/16
Contribution	Sacred Heart Catholic Church	$200		03/21/16
Contribution	Holy Family Catholic Church	$1,000		03/21/16
Contribution	First Baptist Church of Woodbridge	$5,000		03/08/16
Contribution	First United Presbyterian Church of Dale City	$1,000		02/25/16
Contribution	First Mount Zion	$5,000		02/01/16
Contribution	Prince William County	$160,000		Aug 2015
Sub Total:		**$586,474**		
Grand Total (excluding Pending)		**$586,504**		
Remaining (excluding Pending)		**$115,668**		