

November 2018

Monthly Operations Report



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INTRODUCTION

Pursuant to Schedule 6, Section 1.8.2(a) of the Concession Agreement, Plenary Roads Denver (“PRD”) is required to submit a monthly report covering all essential statistics related to the Managed Lanes. The following data covers the month of November 2018. Operationally, November was a positive month. Several routine maintenance tasks were completed, there were minimal incidents to maintained elements, and traffic volumes were consistent with expectations.

1.0 VOLUMES AND LANE USAGE

Over the last several months as more commuters use the transponders for either ExpressToll™ (AVI) or HOV travel, License Plate (LPT) transactions have consistently decreased as a percentage of total traffic volume. The total monthly gantry traffic volume for November 2018 in the I-25 Central and US 36 Managed Lanes was 280,322 and 1,410,806, respectively.

The table below provides the monthly summary for each Managed Lanes roadway, along with a detailed breakdown of weekday volumes. For reference, the AM Peak Period is considered to be weekdays from 6:45 am – 8:45 am. The PM Peak Period is considered to be, weekdays, from 4:15pm – 5:45pm. It should be noted, that the I-25 Managed Lane traffic reflects traffic counts from a single gantry and US 36 Managed Lane counts reflect fourteen gantries, seven gantries in each direction. Therefore, US 36 data will indicate far greater traffic counts that are not comparative to those of I-25.

The following charts depict the distribution of traffic by type (Figure 1) and the daily traffic counts (Figure 2) and for the month.

Traffic Summary (US 36)						
	AVI	LPT	HOV	Non-Rev & Hybrid	Total	Hybrid
Total Monthly Traffic	825,043	330,649	213,971	41,143	1,410,806	4,326
Maximum Weekday Traffic	45,403	17,486	11,178	1,985	73,107	252
Average Weekday Traffic	34,688	13,354	7,530	1,723	57,295	181
Average Hourly AM Peak Traffic	5,082	1,651	827	212	7,772	N/A
Average Hourly PM Peak Traffic	5,655	2,010	1,081	211	8,957	N/A

Traffic Summary (I-25C)						
	AVI	LPT	HOV	Non-Rev & Hybrid	Total	Hybrid
Total Monthly Traffic	104,092	112,022	52,467	11,741	280,322	1,132
Maximum Weekday Traffic	5,749	6,098	2,333	585	14,648	67
Average Weekday Traffic	4,457	4,724	2,044	497	11,225	49
Average Hourly AM Peak Traffic	621	641	293	66	1,555	N/A
Average Hourly PM Peak Traffic	578	562	258	69	1,398	N/A

Table 1 – Monthly Traffic Summaries

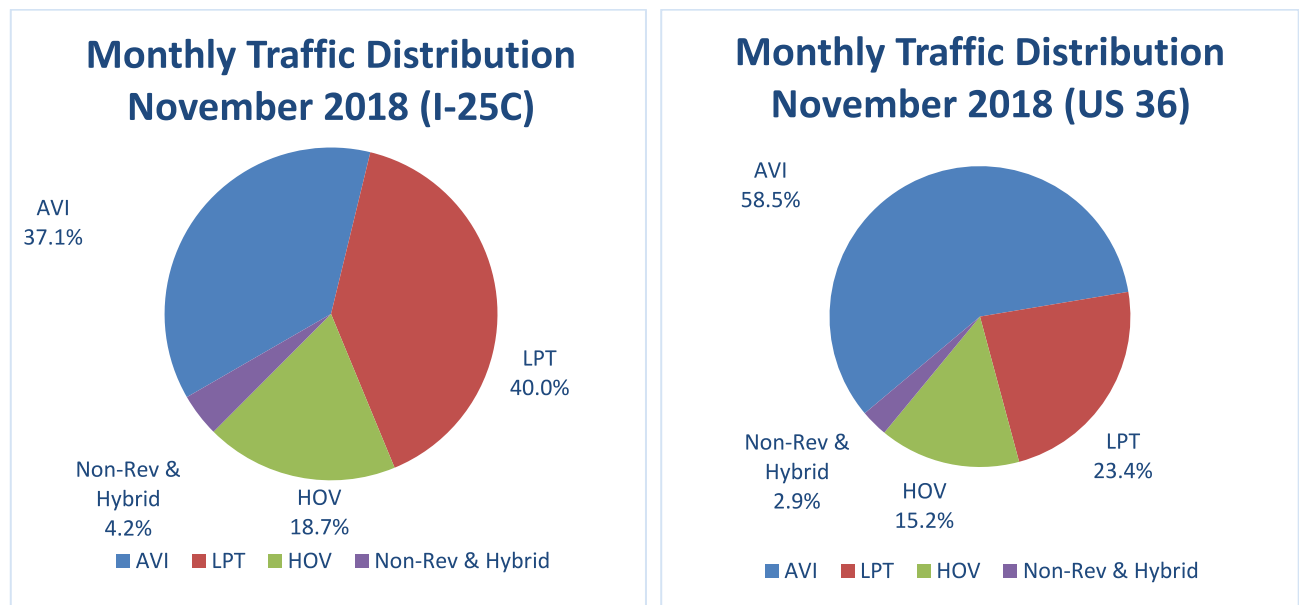
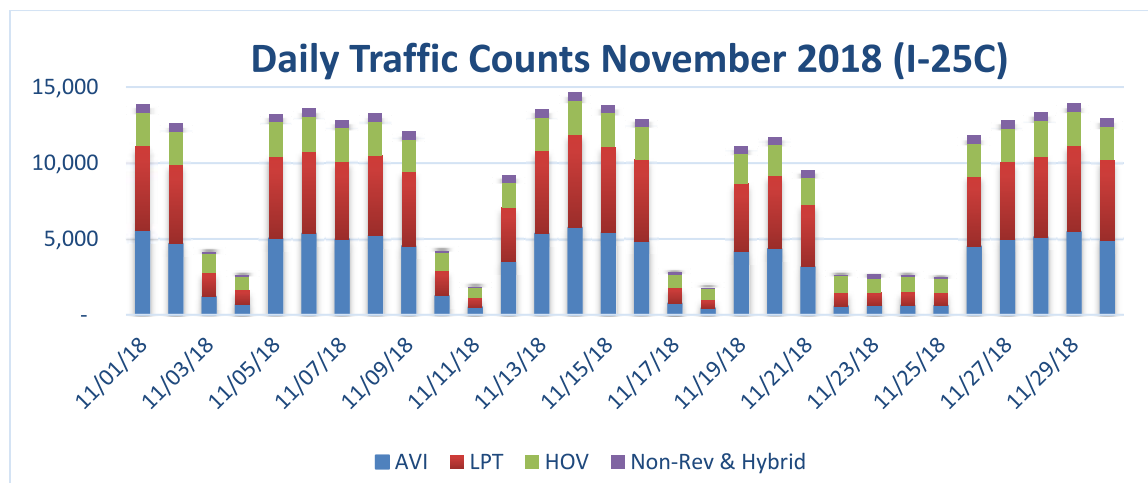


Figure 1 – Monthly Traffic Distribution



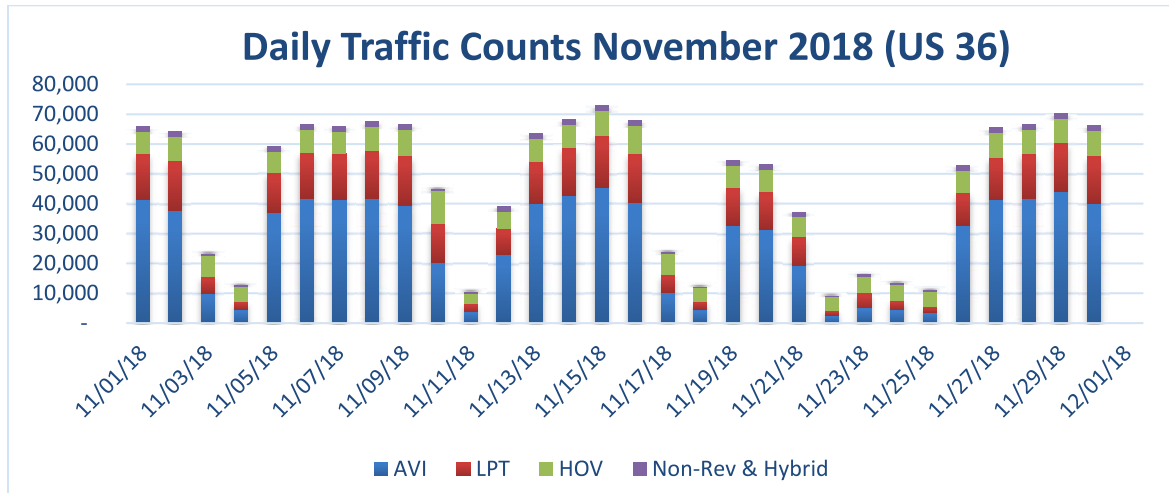


Figure 2 – Daily Traffic Counts

2.0 REVENUES

During the month of November 2018, PRD collected \$716,926 and \$821,391 from users of the I-25 Central and US36 Managed Lanes, respectively. For purposes of this report, revenues are recognized at the time of collection, which is typically sometime after they have been incurred for those customers who are billed based on their license plate. For example, if a single-occupant vehicle uses the lanes in October but pays in January, the associated revenue is attributed to January.

3.0 OPERATIONAL INCIDENTS, ISSUES, AND CLOSURES

The project had numerous routine debris removals, lighting incidents, guardrail incidents, sign incidents, and graffiti control during the month. The routine lighting, guardrail, roadway markings and sign incidents are all planned for repair within the allowable response period and several previously identified lighting incidents were repaired. All incidents were responded to and rectified within the allowable timeframes.

Date	Start	Stop	Duration
July 3, 2018	15:42	16:20	0:38
July 6, 2018	11:08	12:55	1:47
July 16, 2018	10:09	10:52	0:43
July 20, 2018	15:40	16:32	0:52
July 24, 2018	15:15	16:04	0:49
August 9, 2018	09:25	11:04	1:39
August 10, 2018	16:39	18:11	1:33

August 16, 2018	09:20	10:07	0:47
August 20, 2018	06:45	07:17	0:32
August 21, 2018	17:30	17:56	0:26
August 30, 2018	09:16	10:37	1:21
September 4, 2018	17:15	17:52	0:37
September 9, 2018	02:39	03:10	0:31
September 19, 2018	06:35	07:09	0:34
September 19, 2018	17:23	18:40	1:17
September 20, 2018	10:31	12:18	1:47
September 26, 2018	15:45	16:21	0:36
October 10, 2018	08:26	08:52	0:26
October 17, 2018	06:50	07:39	0:49
October 17, 2018	07:58	08:29	0:31
October 26, 2018	07:03	07:41	0:38
October 31, 2018	08:48	09:40	0:52
November 7, 2018	18:13	18:51	0:38
November 8, 2018	07:50	08:29	0:39
November 30, 2018	17:32	17:58	0:26
Total			21 hours 31 minutes
Remaining Closure Hours Available (Ref: CA 29.7)			0 hours 0 minutes

Table 2 – Managed Lanes Closures to Date

The table below provides a listing of ETCS items recorded this month, consistent with Appendix 6-2 of Schedule 6.

Element ID	Cat	Element	Performance Item	PRD Notified	Contractual Cure Period	Cure Achieved
None						

Table 3 – ETCS Issues per CA Schedule 6 Appendix 6-2

The table below provides a status of all Noncompliance categories in accordance with paragraph 1.2 of Schedule 10.

Non-compliance Location	Nature	Cause	Cure Date	Uncured Non-	Unexpired	365 Day Expiration Date	1095 Day Expiration Date
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				compliance Point	Non-compliance Point		
Promenade West Toll Point	Incorrect toll schedule	Incorrect Toll Schedule was applied during a software update on 3/7/16	3/16/16 (Period II) Customer Accounts Corrected	0	3	3/16/17	3/16/19

Table 4 – Status of Noncompliance Categories

4.0 MEAN TIME BETWEEN FAILURE (MTBF) AND MEAN TIME TO REPAIR (MTTR)

Mean Time Between Failure (MTBF) and Mean Time To Repair (MTTR) data is provided in the table below. Only Maintained Elements that were repaired during the reporting period and had a failure type breakdown are listed in the table. We consider a breakdown to be a failure when the element cannot be used for its intended purpose until repaired.

Maintained Element	Mean Time Between Failure (MTBF) (Hours)	Mean Time To Repair (MTTR) (Hours)
None	N/A	N/A

Table 5 – Mean Time Between Failure & Mean Time To Repair

5.0 HYBRID UTILIZATION

Total Hybrid Trips	
I-25 Central	1,132
US 36	4,326

Table 6 – Hybrid Utilization

Fuel-efficient “Hybrid” vehicles are permitted to access the Express Lanes free of charge, regardless of occupant numbers, provided that they have obtained a permit from CDOT, obtained a Hybrid transponder from E-470, and display an E-470 Hybrid decal on the vehicle’s windshield.

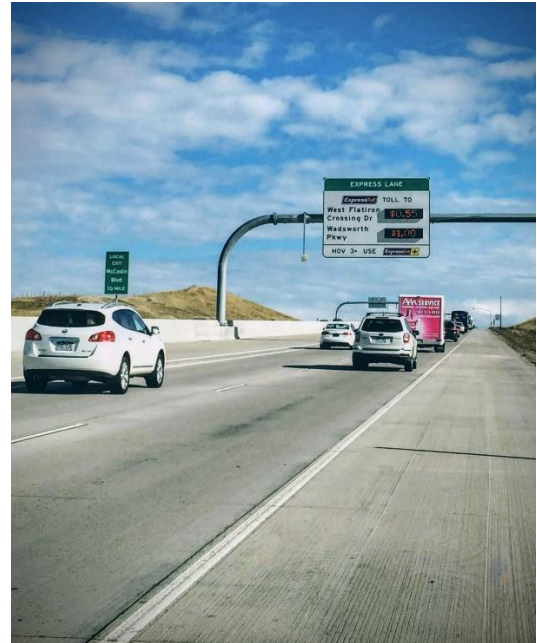
OPERATIONS AND
MAINTENANCE
MONTHLY REPORT
NOVEMBER 2018

US 36 and I-25 Express
Lanes Project

Prepared for:

Plenary Roads Denver, LLC
1700 Lincoln Street, Suite 3000
Denver, CO 80203

Attention: Mr. Christian Guevara, PE

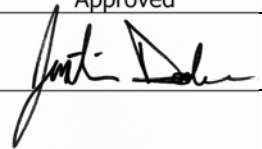


Prepared By:

Ferrovial Services
10525 West 120th Avenue
Broomfield, CO 80021
United States of America

Justin Doles, PE
Project Manager

OPERATIONS AND MAINTENANCE – MONTHLY REPORT NOVEMBER 2018 US 36 and I-25 Express Lanes Project

Revision	Date	Approved
Rev. 0	12/08/2018	

This report titled *Operations and Maintenance Monthly Report, November 2018* has been prepared by Ferrovial Services for the exclusive use of Plenary Roads Denver, LLC (PRD). No other party is an intended beneficiary of this report or the information, opinions, and conclusions contained herein. Any use by any party other than PRD of any of the information, opinions, or conclusions is the sole responsibility of said party. The use of this report shall be at the sole risk of the user regardless of any fault or negligence of PRD or Ferrovial Services.

The information and analyses contained herein have been completed to a level of detail commensurate with the objectives of the assignment and in light of the information made available to Ferrovial Services at the time of preparation. This report and its supporting documentation have been reviewed and/or checked for conformance with industry-accepted norms. To the best of the information and belief of Ferrovial Services, the information presented in this report is accurate to within the limitations specified herein.

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The O&M Monthly Report contains all relevant information for the month of November 2018. Ferrovial Services continues ongoing and preventive maintenance activities for the I-25 and US36 Managed Lanes Project.

Ferrovial Services Commitment to Safety

Ferrovial Services conducted weekly toolbox talk meetings during the month. The purpose of the tool box talks is to cover important safety items that relate to the project such as near misses, “better ways” as to how safety is conducted for the Project, and discussion on safety procedures for maintenance activities. In addition to the toolbox talks, Ferrovial Services conducts a weekly progress meeting. This is a forum for feedback from staff on Operations, Incident Response, and Maintenance activities.

Toolbox Talks this month included:

- Aerial Lift Safety
- Safe Lifting
- Night Shift Safety
- Thermal Stress
- Frostbite

A. Summary of the Planned Maintenance Activities for the Upcoming Month – December 2018

Ferrovial Services has identified the upcoming planned maintenance activities as described in Table 1.7.1.3 of The Maintenance Management Plan. These activities include preventative and routine maintenance in order to successfully operate and maintain the Project. A listing of the planned maintenance activities for the month of December 2018 is included below.

FIG. A-1 Planned Maintenance Activities for December 2018
X – INDICATES THE DAY THE TASK IS PLANNED.

Work Activity- Description	Frequency	Dec-18																														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M
MAINTENANCE PATROL	Daily			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X				X	X	X				
FLEXIBLE PAVEMENT OBSERVATION / REPAIR	F-52			X							X							X								X						X
RIGID PAVEMENT OBSERVATION / REPAIR	F-52			X							X							X								X						X
DELINEATORS & MARKERS OBSERVE / CLEAN / REPAIR	F-12																											X				
DRAINAGE STRUCTURE (INLET) INSPECTION	F-1							X																								
DRAINAGE (INLET) OBSERVE/ CLEAN / REPAIR	F-12							X																								
DRAINAGE (PIPE/CULVERT) OBSERVE / CLEAN / RPR	F-12							X																								
GUARDRAIL, SAFETY BARRIER				X														X														
IMPACT ATTENUATORS																		X														
SIGN CLEANING	F-1																										X	X				
SIGN OBSERVATION / REPAIR	F-52			X							X							X														X
STREET LIGHTING OBSERVATION /REPAIR	F-52				X																											
ELECTRICAL SUPPLY INSPECTION / REPAIR	F-12				X																											
ACCESS PANEL OBSERVATION / REPAIR	F-12				X																											
HERBICIDE & WEED CONTROL MAINTENANCE	F-52							X																					X			
MECHANICAL ROAD SWEEPING	F-12														X			X	X	X												
LITTER OBSERVATION / REMOVAL	Daily			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X				X	X	X	X			
NODE BUILDING 2 MAINTENANCE	F-1														X													X				
SAND STORAGE DOME MAINTENANCE	F-1																	X														
LIQUID STORAGE FACILITY MAINTENANCE	F-1																	X														
REVERSIBLE LANE OPERATIONS	Daily			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X					X	X	X			X

Frequency of Activity:

Daily – Daily Activity

F-4 – Quarterly Activity

F-52 – Weekly Activity

F-2 – Semi-Annual Activity

F-12 – Monthly Activity

F-1 – Annual Activity

B. Summary of Performed and Completed Maintenance Activities

Fig. B-1 Performed and Complete Maintenance Activities for November 2018

X Indicates the day of the month that the task was completed.

Work Activity- Description	Frequency	Nov-18																													
		1 T	2 F	3 S	4 S	5 M	6 T	7 W	8 T	9 F	10 S	11 S	12 M	13 T	14 W	15 T	16 F	17 S	18 S	19 M	20 T	21 W	22 T	23 F	24 S	25 S	26 M	27 T	28 W	29 T	30 F
MAINTENANCE PATROL	Daily	X	X			X	X	X	X			X	X	X	X	X	X			X	X	X						X	X	X	X
FLEXIBLE PAVEMENT OBSERVATION / REPAIR	F-52					X						X									X							X			
RIGID PAVEMENT OBSERVATION / REPAIR	F-52					X						X								X								X			
CONCRETE CRACK SEALING	F-1					X	X	X				X	X	X	X	X															
DELINEATORS & MARKERS OBSERVE / CLEAN / REPAIR	F-12																														
DRAINAGE STRUCTURE (INLET) INSPECTION	F-1																														
DRAINAGE (INLET) OBSERVE/ CLEAN / REPAIR	F-12																														
DRAINAGE (PIPE/CULVERT) OBSERVE / CLEAN / RPR	F-12																														
GUARDRAIL, SAFETY BARRIER	F-12					X						X								X							X				
IMPACT ATTENUATORS	F-12					X						X								X							X				
SIGN OBSERVATION / REPAIR	F-52													X								X									
STREET LIGHTING OBSERVATION /REPAIR	F-52	X							X							X															X
ELECTRICAL SUPPLY INSPECTION / REPAIR	F-12																			X											
ACCESS PANEL OBSERVATION / REPAIR	F-12															X															X
HERBICIDE & WEED CONTROL MAINTENANCE	F-52															X						X								X	
MECHANICAL ROAD SWEEPING	F-12																														
LITTER OBSERVATION / REMOVAL	Daily	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X					X	X	X	X	X
NODE BUILDING 2 MAINTENANCE	F-1		X							X							X										X				X
SAND STORAGE DOME MAINTENANCE	F-1		X							X							X										X				X
LIQUID STORAGE FACILITY MAINTENANCE	F-1		X							X							X										X				X
REVERSIBLE LANE OPERATIONS	Daily	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X					X	X	X	X	X
GATE MAINTENANCE & REPAIR						X						X								X								X			

Fig. B-2 Work Accomplished This Month

Activity	Actual Work
152 Asphalt Pavement Surface Rpr (YD2)	1
153 Concrete Pavemnt Surface Rpr (YD2)	0.75
162 Surface Shldr Rprs (SY)	1,200
210 Slope Repairs (YD3)	220
214 Concrete Rpr Barrier Wall (LF)	15
218 Debris in Roadway (HR)	20
218 Litter Barrel Trash Cleanup (YD3)	32.5
220 Sweeping (Mech) (MI)	120
222 Sweeping - Hand (HR)	19
254 Veg Cntrl Hnd/Chem (HR)	5.5
301 Misc Sign Maint (EA)	17
304 Del Post Maint (EA)	687
306 Metal Guardrail Maint (LF)	330
314 Reversible Lane Ops (HR)	313.5
329 Courtesy Assistance (HR)	409.5
364 Bridge Joint Mnt Cln/Rpr (LF)	160
540 Graffiti Removal (SF)	100

C. Summary of Planned Maintenance that was Not Completed for the Month

Ferrovial Services completed all scheduled maintenance activities for the period of November, 2018. Frequencies and/or actual date of the month of some activities may have been adjusted based on actual conditions.

D. Summary of the Maintenance Activities and Results Performed for the Month Beyond Planned Maintenance

A summary of unplanned maintenance activities provided below:

Snow and Ice Control:

Precipitation Event Start		Equipment Deployed		Precipitation Event End		Service Level "A" Achieved in ML		Service Level "B" Achieved in GP	
11/10/2018	23:25	11/10/2018	22:00	11/12/2018	13:59	11/12/2018	9:30	11/12/2018	9:30
11/17/2018	6:20	11/17/2018	3:00	11/18/2018	8:45	11/18/2018	6:22	11/18/2018	6:22
11/24/2018	21:45	11/24/2018	16:15	11/25/2018	4:25	11/25/2018	1:20	11/25/2018	1:20

Courtesy Patrol: None

Hazardous Materials Incidents: None

E. Operating Contractor's Incident Response Logs Related to Maintenance Activities

This section provides a summary of Ferrovial Services performance related to the Performance and Measurement Criteria listed in Appendix 6-1.1 of the Operating Contract.

The table below provides a listing of items recorded this month:

Element Category	Description	Location	BRS Notified	Response to Defects		
				Category 1		Category 2
				Hazard Mitigation	Permanent Remedy	Permanent Repair
GP11.2	Erosion (Hail Storm Damage)	US36 MP 40-43.4	5/19/2018 19:16:00	N/A	N/A	Reqd: 6 Months Respd: 11/9/2018 15:30 Actual: 5.79 Months
ML5.1	Median Barrier (Impact Damage)	US36 MP 53.25	7/6/2018 11:15:00	N/A	N/A	Reqd: 6 Months Respd: 11/16/2018 13:00 Actual: 4.43 Months
GP5.1	Guardrail (Impact Damage)	US36 MP 46.7 EB	7/23/2018 11:30:00	N/A	N/A	Reqd: 6 Months Respd: 11/19/2018 05:00 Actual: 3.95 Months
GP5.1	Guardrail (Impact Damage)	US36 MP 43.10 EB	8/3/2018 15:50:00	N/A	N/A	Reqd: 6 Months Respd: 11/20/2018 12:00 Actual: 3.62 Months
GP5.1	Guardrail (Impact Damage)	US36 MP 40.2 WB	8/23/2018 07:56:00	N/A	N/A	Reqd: 6 Months Respd: 11/19/2018 05:00 Actual: 2.92 Months
GP5.1	Guardrail (Impact Damage)	US36 MP 54.80 WB	9/12/2018 14:18:00	N/A	N/A	Reqd: 6 Months Respd: 11/19/2018 05:00 Actual: 2.25 Months
GP5.1	Guardrail (Impact Damage)	US36 MP 54.4 WB	9/12/2018 08:00:00	N/A	N/A	Reqd: 6 Months Respd: 11/19/2018 05:00 Actual: 2.26 Months
GP5.1	Guardrail (Impact Damage)	US36 MP 52.3 EB	9/29/2018 15:30:00	N/A	N/A	Reqd: 6 Months Respd: 11/19/2018 02:00 Actual: 1.68 Months
GP6.1	Sign (Impact Damage)	US36 MP 43.40 WB	10/8/2018 08:42:00	N/A	N/A	Reqd: 6 Months Respd: 11/1/2018 13:00 Actual: 0.80 Months
GP5.1	Guardrail (Impact Damage)	US36 MP 57.1 EB	10/25/2018 15:30:00	N/A	N/A	Reqd: 6 Months Respd: 11/29/2018 14:00 Actual: 1.16 Months
GP14.2	Litter (Cleared ROW of Litter)	US36 MP 34.7-57.1	11/13/2018 13:30:00	N/A	N/A	Reqd: 28 Days Respd: 12/5/2018 15:00 Actual: 22.06 Days
GP1.1	Debris (Cleared Hot Tub Cover from Lanes)	US36 MP 48.00 EB	11/15/2018 10:10:00	Reqd: 1 Hours Respd: 11/15/2018 10:34 Actual: 0.40 Hours	N/A	N/A
GP1.1	Debris (Cleared Mattress from Lanes)	US36 MP 57.30 WB	11/15/2018 09:39:00	Reqd: 1 Hours Respd: 11/15/2018 09:57 Actual: 0.29 Hours	N/A	N/A
GP1.1	Debris (Cleared Door from Lanes)	US36 MP 52.20 EB	11/16/2018 12:40:00	Reqd: 1 Hours Respd: 11/16/2018 13:31 Actual: 0.84 Hours	N/A	N/A
GP1.1	Debris (Cleared Tire from Lanes)	US36 MP 50.4 WB	11/19/2018 15:41:00	Reqd: 1 Hours Respd: 11/19/2018 16:10 Actual: 0.48 Hours	N/A	N/A
GP5.1	Guardrail (Impact Damage)	US36 MP 57.2 EB	11/19/2018 11:50:00	N/A	N/A	Reqd: 6 Months Respd: 11/29/2018 14:00 Actual: 0.33 Months
GP1.1	Debris (Cleared Debris from Lanes)	US36 MP 53.0 EB	11/28/2018 14:52:00	Reqd: 1 Hours Respd: 11/28/2018 15:15 Actual: 0.38 Hours	N/A	N/A
GP1.1	Debris (Cleared Debris from Lanes)	US36 MP 43.3 EB	11/28/2018 16:12:00	Reqd: 1 Hours Respd: 11/28/2018 16:30 Actual: 0.29 Hours	N/A	N/A

All items were completed within the required response time. Items that are *In Progress* are still within the allowed response time.

F. Detailed Results of All Inspections, Assessments, and Testing Activities

During this reporting period there were no special inspections, assessments, or testing results outside normal operating condition.

G. Monthly Toll System Performance Reports

Toll system operated within proposed parameters per Ferrovial Services observations.

H. Preventative Maintenance Plan and Progress

Preventative Maintenance work is contingent on Initial Works Package implementation.

I, J. Mean Time between Failure (MTBF), Mean Time To Repair (MTTR)

No Maintained Elements experienced a failure type breakdown this month. Ferrovial Services considers a breakdown to be a failure when the element cannot be used for its intended purpose until repaired.