

# August 2019

## Monthly Operations Report



## Table of Contents

1.0	Volumes and Lane Usage .....	3
2.0	Revenues .....	5
3.0	Operational Incidents, Issues, and Closures .....	5
4.0	Mean Time Between Failure (MTBF) and Mean Time to repair (MTTR) .....	6
5.0	Hybrid Utilization .....	7

### TABLES

Table 1 – Monthly Traffic Summaries .....	4
Table 2 – Managed Lanes Closures to Date .....	6
Table 3 – ETCS Issues per CA Schedule 6 Appendix 6-2 .....	6
Table 4 - Status of Noncompliance Categories .....	7
Table 5 – Mean Time Between Failure & Mean Time To Repair .....	7
Table 6 – Hybrid Utilization .....	7

### FIGURES

Figure 1 – Monthly Traffic Distribution .....	4
Figure 2 – Daily Traffic Counts .....	5

# 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 August 2019. Operationally, August 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 August 2019 in the I-25 Central and US 36 Managed Lanes was 332,397 and 1,358,941, 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
<b>Total Monthly Traffic</b>	738,831	350,107	237,370	32,633	1,358,941	2,444
<b>Maximum Weekday Traffic</b>	34,087	16,257	9,149	1,502	59,002	128
<b>Average Weekday Traffic</b>	30,572	13,800	8,130	1,358	53,860	96
<b>Average Hourly AM Peak Traffic</b>	4,054	1,537	871	171	6,633	N/A
<b>Average Hourly PM Peak Traffic</b>	4,302	1,823	1,053	168	7,346	N/A

Traffic Summary (I-25C)						
	AVI	LPT	HOV	Non-Rev & Hybrid	Total	Hybrid
Total Monthly Traffic	159,309	99,345	62,107	11,636	332,397	865
Maximum Weekday Traffic	7,545	4,688	2,515	524	15,141	48
Average Weekday Traffic	6,688	4,138	2,342	489	13,168	37
Average Hourly AM Peak Traffic	885	619	311	63	1,815	N/A
Average Hourly PM Peak Traffic	796	472	273	68	1,541	N/A

Table 1 – Monthly Traffic Summaries

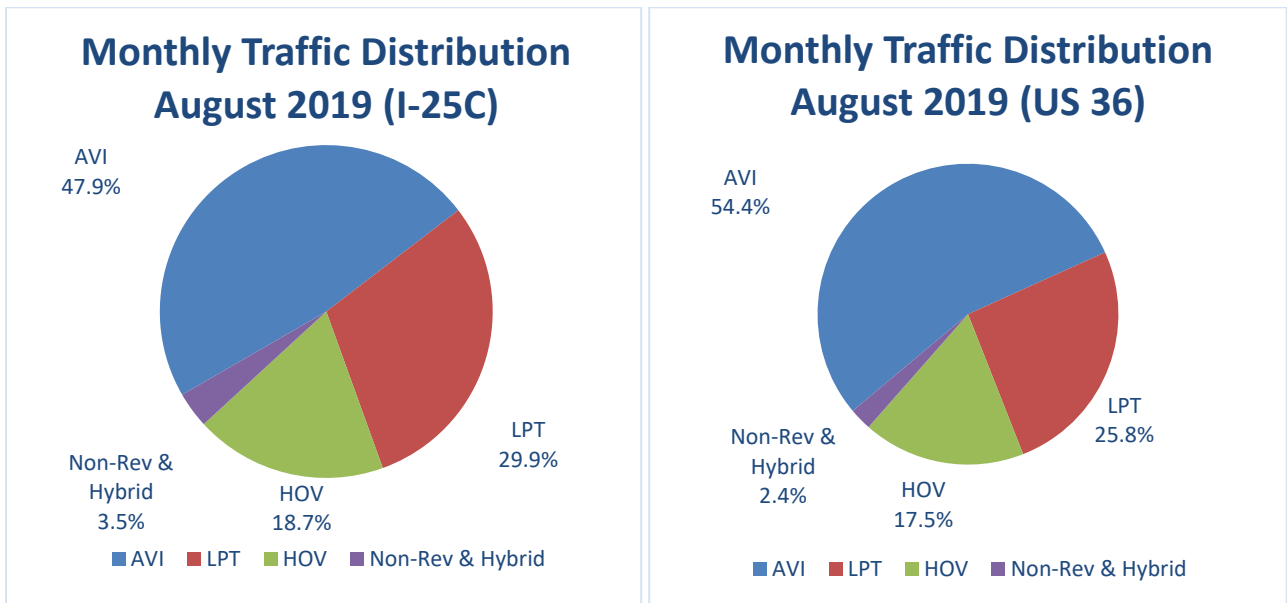
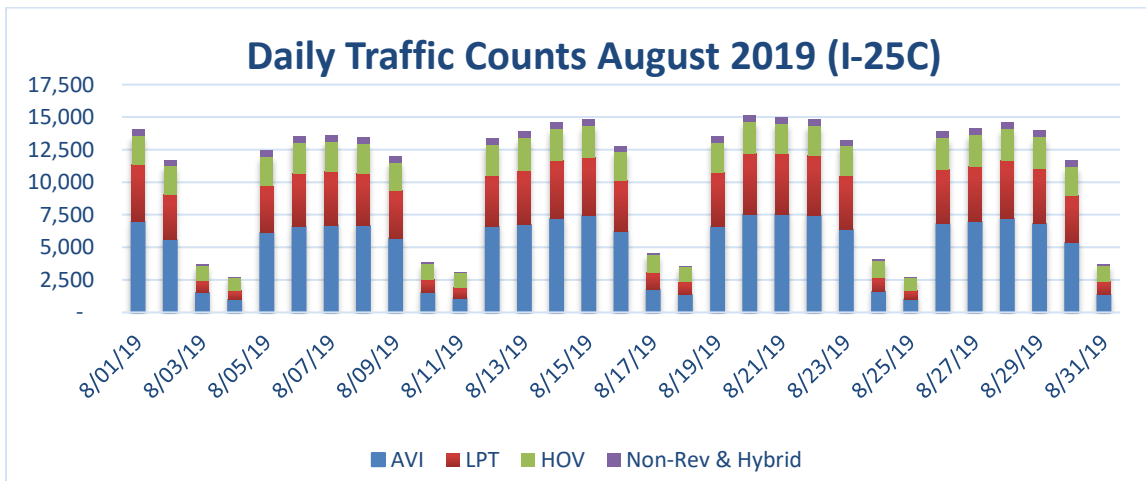


Figure 1 – Monthly Traffic Distribution



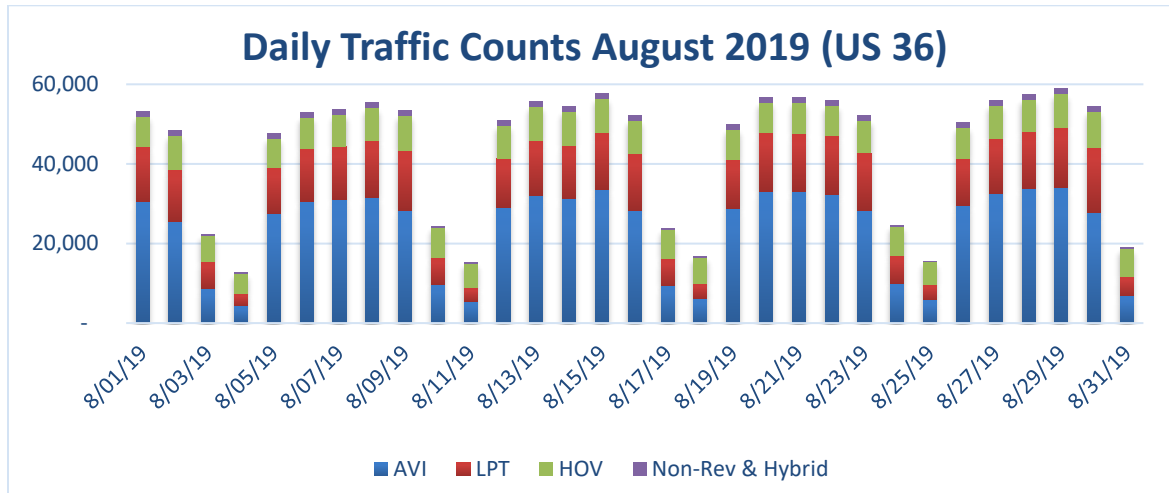


Figure 2 – Daily Traffic Counts

## 2.0 REVENUES

During the month of August 2019, PRD collected \$825,872 and \$766,481 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.

The week of July 9, 2019, there was a pavement defect noted that was progressing in severity near the Church Ranch Blvd. Interchange affecting US36 mainline in the eastbound direction. After further site investigation by CDOT, HPTE, PRD and Ferrovial Services, it was decided that the roadway should be closed on July 12, 2019. In order to facilitate traffic movement, the eastbound lanes were placed in the westbound direction. The final configuration of traffic required a closure of the EB and WB Promenade toll point. The closure of the toll point is still in effect through August.

Date	Start	Stop	Duration
July 5, 2019	15:42	16:27	0:45

July 9, 2019	17:30	18:15	0:45
July 12, 2019	19:15	On-going	On-going
July 10, 2019	13:35	14:32	0:57
July 25, 2019	08:57	10:10	1:13
Total			3 hours 40 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-compliance Point	Unexpired Non-compliance Point	365 Day Expiration Date	1095 Day Expiration Date
None							

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	865
US 36	2,444

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.

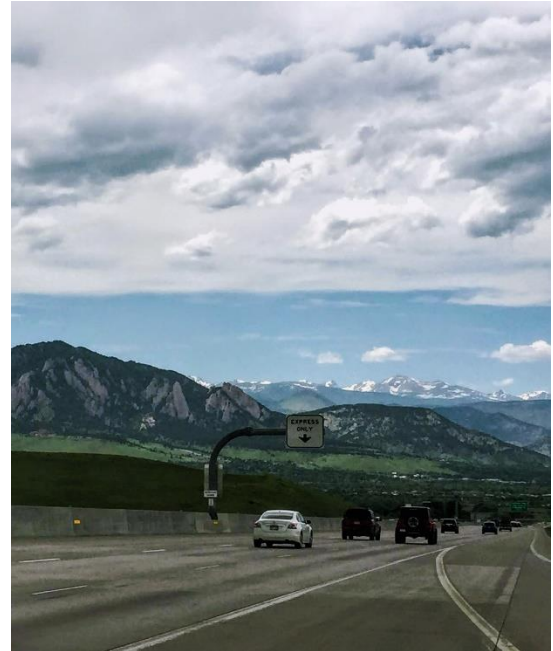
OPERATIONS AND  
MAINTENANCE  
MONTHLY REPORT  
AUGUST 2019

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



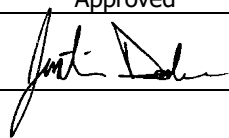
Prepared By:

Ferrovial Services  
10525 West 120<sup>th</sup> Avenue  
Broomfield, CO 80021  
United States of America

Justin Doles, PE  
Project Manager



OPERATIONS AND MAINTENANCE – MONTHLY REPORT  
AUGUST 2019  
US 36 and I-25 Express Lanes Project

Revision	Date	Approved
Rev. 0	09/08/2019	

This report titled *Operations and Maintenance Monthly Report, August 2019* 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.

This report is Ferrovial Services pdf file: OM Monthly Report August 2019.pdf. Any reproductions or modifications of this report are uncontrolled and may not be the most recent revision.

---

The O&M Monthly Report contains all relevant information for the month of August 2019. 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:

- Impairment
- Learn to See Hazards
- Addressing Safety Hazards

### A. Summary of the Planned Maintenance Activities for the Upcoming Month – September 2019

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 September 2019 is included below.

**FIG. A-1 Planned Maintenance Activities for September 2019**

*X – Indicates the day the task is planned.*

Performance Standard Identification Number (Table 6.1)	Work Activity-Description	Frequency	Sep-19																													
			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
			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
ML-1	MAINTENANCE PATROL	Daily			X	X	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X			X
ML-1	FLEXIBLE PAVEMENT OBSERVATION / REPAIR	F-52					X			X							X							X								
ML-1	RIGID PAVEMENT OBSERVATION / REPAIR	F-52					X			X							X															
ML-10	CRACK SEALING	F-1			X	X	X	X			X	X	X	X	X			X	X	X	X	X										
ML-4	DELINEATORS & MARKERS OBSERVE / CLEAN / REPAIR	F-12					X													X												
ML-2	DRAINAGE (INLET) OBSERVE/ CLEAN / REPAIR	F-12											X																			
ML-2	DRAINAGE (PIPE/CULVERT) OBSERVE / CLEAN / RPR	F-12											X																			
ML-5.1	GUARDRAIL, SAFETY BARRIER									X																						
ML 5.2	IMPACT ATTENUATORS									X																						
ML-6	SIGN OBSERVATION / REPAIR	F-52				X				X							X							X							X	
ML-8	STREET LIGHTING OBSERVATION / REPAIR	F-52				X				X							X							X							X	
ML-8	ELECTRICAL SUPPLY INSPECTION / REPAIR	F-12																X														
ML-8	ACCESS PANEL OBSERVATION / REPAIR	F-12																X														
ML-10	HERBICIDE & WEED CONTROL MAINTENANCE	F-52					X							X								X						X				
ML-12	GRAFFITI OBSERVATION / REMOVAL	F-52					X							X								X						X				
ML-14	MECHANICAL ROAD SWEEPING	F-12															X	X	X	X												
ML-14	LITTER OBSERVATION / REMOVAL	Daily			X	X	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X		X	
ML-15	SAND STORAGE DOME MAINTENANCE	F-1																								X						
ML-15	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		X	

Frequency of Activity:

Daily – Daily Activity

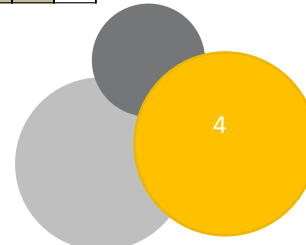
F-4 – Quarterly Activity

F-52 – Weekly Activity

F-2 – Semi-Annual Activity

F-12 – Monthly Activity

F-1 – Annual Activity

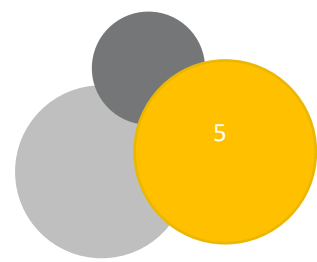


## B. Summary of Performed and Completed Maintenance Activities

*Fig. B-1 Performed and Complete Maintenance Activities for August 2019*

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

Performance Standard Identification Number (Table 6.1)	Work Activity-Description	Frequency	Aug-19																														
			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
			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	T	W	T	F	S
ML-1	MAINTENANCE PATROL	Daily	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X	
ML-1	FLEXIBLE PAVEMENT OBSERVATION / REPAIR	F-52						X						X								X								X			
ML-1	RIGID PAVEMENT OBSERVATION / REPAIR	F-52						X						X								X								X			
ML-9	CONCRETE SEALING	-												X																			
ML-4	DELINEATORS & MARKERS OBSERVE / CLEAN / REPAIR	F-12											X																				
ML-2	DRAINAGE STRUCTURE (INLET) INSPECTION	F-1															X																
ML-2	DRAINAGE (INLET) OBSERVE/ CLEAN / REPAIR	F-12															X																
ML-2	DRAINAGE (PIPE/CULVERT) OBSERVE / CLEAN / RPR	F-12															X																
ML-6	SIGN OBSERVATION / REPAIR	F-52					X						X							X								X					
ML-8	STREET LIGHTING OBSERVATION /REPAIR	F-52					X						X							X								X					
ML-8	ELECTRICAL SUPPLY INSPECTION / REPAIR	F-12																							X								
ML-8	ACCESS PANEL OBSERVATION / REPAIR	F-12																							X								
ML-10	HERBICIDE & WEED CONTROL MAINTENANCE	F-52		X								X					X							X							X		
ML-12	GRAFFITI OBSERVATION / REMOVAL	F-52					X						X							X							X						
ML-14	MECHANICAL ROAD SWEEPING	F-12																			X	X	X	X	X								
ML-14	LITTER OBSERVATION / REMOVAL	Daily	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X			X	X	X	X	X	
ML-15	SAND STORAGE DOME MAINTENANCE	F-1															X																
ML-15	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	X	X	X	



*Fig. B-2 Work Accomplished This Month*

<b>Activity</b>	<b>Actual Work</b>
102 Patrolling and Inspect (HR)	21
152 Flex Patch /Minor Repairs (SY)	151
153 Concrete Pave Surface Rpr (SY)	2
202 Clean Drains (EA)	15
210 Slope Repairs (CY)	168
216 Fence Maint (LF)	200
218 Litter Removal (CY)	42
218A Debris in Roadway (HR)	10
222 Sweep/Hnd/Assist/Sm Brm (MI)	116
254 Veg Cntrl Hnd/Chem (HR)	99
301 Sign Maintenance (EA)	11
304 Del Post Maint (EA)	35
314 Reversible Lane Operations (HR)	322
540 Graffiti Removal (SF)	2
601 Incident Manag (HR)	2

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

Ferrovial Services completed all scheduled maintenance activities for the period of August, 2019. 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: None

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	Notified	Response to Defects		
				Category 1		Category 2
				Hazard Mitigation	Permanent Remedy	Permanent Repair
GP5.1	Barrier (Impact Damage)	MP 57.1 WB	6/4/2019 08:20:00	N/A	N/A	Reqd: 6 Months Respd: -- Actual: In Progress
ML5.2	Attenuator (Impact Damage)	MP 56.1 EB	6/13/2019 06:40:00	N/A	N/A	Reqd: 6 Months Respd: -- Actual: In Progress
GP5.1	Guardrail (Impact Damage)	MP 54.4 WB	7/17/2019 00:30:00	N/A	N/A	Reqd: 6 Months Respd: -- Actual: In Progress
GP1.1	DEBRIS (Cleared Debris From Lanes)	MP 41.8 WB	7/30/2019 14:45:00	Reqd: 1 Hours Respd: 7/30/2019 15:30 Actual: 0.75 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Tire Tread From Lanes)	MP 54.4 EB	7/30/2019 14:45:00	Reqd: 1 Hours Respd: 7/30/2019 15:30 Actual: 0.75 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Metal From Lanes)	MP 48.6 EB	7/30/2019 15:00:00	Reqd: 1 Hours Respd: 7/30/2019 15:50 Actual: 0.83 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Tire From Lanes)	MP 51.8 EB	8/3/2019 23:10:00	Reqd: 1 Hours Respd: 8/3/2019 23:40 Actual: 0.49 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Dead Animal From Lanes)	MP 54.9 EB	8/4/2019 19:19:00	Reqd: 1 Hours Respd: 8/4/2019 19:51 Actual: 0.53 Hours	N/A	N/A
GP12.1	GRAFFITI (Removed Graffiti)	MP 39.2 EB	8/5/2019 00:49:00	N/A	Reqd: 10 Days Respd: 8/5/2019 02:18 Actual: 0.06 Days	N/A
GP12.1	GRAFFITI (Removed Graffiti)	MP 37.7 EB	8/5/2019 02:50:00	N/A	Reqd: 10 Days Respd: 8/5/2019 06:38 Actual: 0.15 Days	N/A
GP12.1	GRAFFITI (Removed Graffiti)	MP 37.6 WB	8/5/2019 00:49:00	N/A	Reqd: 10 Days Respd: 8/5/2019 02:36 Actual: 0.07 Days	N/A
ML1.1	DEBRIS (Cleared Cone From Lanes)	MP 43.30 EB	8/8/2019 11:27:00	Reqd: 1 Hours Respd: 8/8/2019 12:22 Actual: 0.91 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Tire From Lanes)	MP 55.10 EB	8/9/2019 08:19:00	Reqd: 1 Hours Respd: 8/9/2019 08:47 Actual: 0.46 Hours	N/A	N/A
GP12.1	GRAFFITI (Removed Graffiti)	MP 37.7 EB	8/13/2019 17:00:00	N/A	Reqd: 10 Days Respd: 8/14/2019 18:17 Actual: 1.05 Days	N/A
GP1.1	DEBRIS (Cleared Tire From Lanes)	MP 45.4 WB	8/15/2019 12:45:00	Reqd: 1 Hours Respd: 8/15/2019 13:32 Actual: 0.78 Hours	N/A	N/A
GP13.1	Incident Response (Traffic Control for Accident Scene)	MP 43.9 WB	8/16/2019 06:06:00	Reqd: 1 Hours Respd: 8/16/2019 06:41 Actual: 0.58 Hours	N/A	N/A

Element Category	Description	Location	Notified	Response to Defects		
				Category 1		Category 2
				Hazard Mitigation	Permanent Remedy	Permanent Repair
GP1.1	DEBRIS (Cleared Carpet From Lanes)	MP 53.10 EB	8/16/2019 07:24:00	Reqd: 1 Hours Respd: 8/16/2019 07:34 Actual: 0.16 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Clothes From Lanes)	MP 52.2 WB	8/16/2019 16:15:00	Reqd: 1 Hours Respd: 8/16/2019 17:02 Actual: 0.78 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Ladder From Lanes)	MP 54.8 EB	8/16/2019 09:02:00	Reqd: 1 Hours Respd: 8/16/2019 09:16 Actual: 0.23 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Tire From Lanes)	MP 54.8 EB	8/20/2019 15:28:00	Reqd: 1 Hours Respd: 8/20/2019 16:06 Actual: 0.63 Hours	N/A	N/A
GP1.1	DEBRIS (Cleared Bat From Shoulder)	MP 57.1 EB	8/20/2019 08:27:00	Reqd: 1 Hours Respd: 8/20/2019 09:20 Actual: 0.88 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.