

**From:** [Young, Betty \(UTC\)](#)  
**To:** [Sonnen, Lora](#)  
**Cc:** [Hunter, Kathy \(UTC\)](#); [Biggs, Jason R.](#); [Pate, Ron](#)  
**Subject:** FW: WSDOT Ramp Meter Monitoring Report to UTC 2021-22  
**Date:** Thursday, February 16, 2023 3:04:00 PM  
**Attachments:** [image001.png](#)  
[UTC Report Cover Letter 2021-2022.pdf](#)  
[WSDOT Required Monitoring of Ramp Meter Interconnections - 2021-2022.pdf](#)

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Thank you, Lora. I'll get this filed in the respective dockets. I understand that WSDOT will file its final report with 2023 data in early 2024.

**Betty Young** (she/her/hers)

Rail Operations Manager

(360) 292-5470 – Cell

**Utilities and Transportation Commission (UTC)**

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**From:** Sonnen, Lora <SonnenL@wsdot.wa.gov>

**Sent:** Friday, January 27, 2023 3:00 PM

**To:** Young, Betty (UTC) <betty.young@utc.wa.gov>

**Cc:** Hunter, Kathy (UTC) <kathy.hunter@utc.wa.gov>; Biggs, Jason R. <BiggsJR@wsdot.wa.gov>; Pate, Ron <PateRD@wsdot.wa.gov>

**Subject:** WSDOT Ramp Meter Monitoring Report to UTC 2021-22

### External Email

Hello Betty,

Please find attached the report from WSDOT entitled Monitoring of Ramp Meter Interconnections for the years 2021 and 2022, along with the associated cover letter. This report presents the data and analysis of the monitoring that WSDOT performed in 2021 and 2022 of the 41st Division Drive and Barksdale Avenue crossings. WSDOT submits this report in accordance with UTC orders issued in dockets TR-143846, TR-150508, TR-150509, and TR-150624, concerning the queuing instances over the crossings, and the impacts and effectiveness of the interconnection between the railroad signals and the ramp meters. If you should have any questions regarding the report, please contact Jason Biggs.

Thank you,

**Lora Sonnen** (she/her)

Rail Operations Coordinator  
Rail, Freight, & Ports Division  
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January 26, 2023  
Washington Utilities and Transportation Commission  
621 Woodland Square Loop SE  
Lacey, WA 98503

Washington Utilities and Transportation Commission:

The Washington State Department of Transportation (WSDOT) submits the updated attached report entitled “Monitoring of Ramp Meter Interconnections (Impacts and analysis of effectiveness of the interconnection between the railroad signals and the ramp meter).” This report presents the data and analysis of the monitoring that WSDOT performed in 2021 and 2022 of the 41st Division Drive and Barksdale Avenue crossings. Berkeley Street SW, Clover Creek Dr SW, and N Thorne Lane SW crossings are no longer being monitored by WSDOT as Clover Creek Dr does not have a ramp connection to I-5 and Berkeley Street SW and N Thorne Lane SW were grade separated in June 2021.

The report summarizes the data that was collected in 2021 and 2022 and provides an analysis of that data. The report draws from a variety of sources including visual observations and induction loop data. The information presented in this report is intended to provide the UTC, WSDOT, and all other stakeholders with a snapshot of the effectiveness of the interconnected ramp meters and railroad signals.

Passenger rail service returned to the Point Defiance Bypass in November 2021 after a nearly four-year service suspension following the derailment of Amtrak 501 on December 18, 2017. Since the resumption of passenger rail service, WSDOT has not observed any queuing issues at the two crossings included in the attached report.

If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'JB', with a long horizontal line extending to the right.

Jason Biggs  
Program Manager  
WSDOT Rail, Freight, and Ports Division

cc: Ron Pate - WSDOT  
Kathy Hunter - UTC  
Betty Young - UTC



**Washington State  
Department of Transportation**

# **Monitoring of Ramp Meter Interconnections**

## **Impacts and analysis of effectiveness of the interconnection between the railroad signals and the ramp meter for 2021 and 2022**

Prepared for:  
Washington Utilities and Transportation  
Commission

Prepared by:  
Washington Department of Transportation –  
Rail, Freight, and Ports and the Olympic Region  
Traffic Management Center

**UTC Dockets:**  
**(143846, 150508, 150509, 150624)**

**Updated - January 2023**

## **Introduction and Executive Summary**

The Washington Department of Transportation (WSDOT) submits this report in accordance with Utilities and Transportation Commission (UTC) orders issued in dockets TR-143846, TR-150508, TR-150509, and TR-150624, concerning the queuing instances over the crossings, and the impacts and effectiveness of the interconnection between the railroad signals and the ramp meters.

In 2014, the city of Lakewood petitioned the UTC to upgrade Berkeley Street Southwest (085829U). WSDOT installed an interconnected ramp meter at that location in conjunction with the Lakewood upgrades. WSDOT is including the monitoring data for that crossing in this report at the request of UTC staff.

In 2015, WSDOT petitioned the UTC to alter four crossings on what is referred to as the Point Defiance Bypass. The UTC approved the alterations of the crossings, stipulating that WSDOT report to the Commission annually, for a period of three years, about the number of queuing instances over the crossings, and the impacts and effectiveness of the interconnection between the railroad signals and the ramp meters. The reporting period was to begin on January 1, 2018, and end December 31, 2020. The reports were originally to be due yearly on January 1<sup>st</sup> of 2019, 2020, and 2021. The data contained in this document was collected by the employees of the WSDOT Olympic Region (OR) Traffic Management Center (TMC).

On December 18, 2017, Amtrak train 501 derailed at Dupont, WA. Amtrak trains subsequently returned to BNSF's Seattle Subdivision and all Amtrak service was discontinued on the Point Defiance Bypass.

In April 2019, WSDOT submitted the first report to the UTC on findings from the department's review of crossing and queuing data from 2018. WSDOT requested relief from submitting reports to the UTC on the crossings until Amtrak service was restored to the Point Defiance Bypass.

On November 16, 2021, Amtrak trains returned to the Point Defiance Bypass. This update to the April 2019 report covers years 2021 and 2022 and addresses the grade separations of Berkeley Street SW and N Thorne Lane SW that occurred in June 2021.

WSDOT will provide an annual report to UTC by January 31<sup>st</sup> for years 2021, 2022, and 2023.

## **The Data Collection and Analysis Process**

The TMC monitors the crossings for any incidents of queuing across the railroad tracks and reports them using their established TMC log. They note for each incident whether the ramp meter was turned on or off. They also list any available information about the incident, including the start and end time of the incident, any people called to address the situation, what measures were taken to resolve the situation, and the likely cause or root cause analysis if available. At the close of each incident, the TMC emails the report, along with any screen shots of the installed cameras that can see each of these crossings (except for Clover Creek Drive) that are helpful, to a distribution list provided by the Rail, Freight and Ports Division (RFP). TMC does not monitor each crossing continually, only when there is an incident (such as an impact to I-5 caused by unusual congestion or diversion), to verify ramp meter activation/deactivation, or when the ramp meters show that

there is queuing back to the advanced queue loop.

WSDOT Rail, Freight and Ports Division reviews each incident and determines whether it appears that the ramp meter/railroad signal interconnect is not working properly or there is a queuing issue across the railroad tracks. If any issues are identified, the division works with the stakeholders to correct them. For further information regarding the WSDOT data collection and analysis process please see **Appendix A**.

WSDOT has included an analysis of the data created by the induction loops that are connected to the ramp meter system. These loops monitor traffic on the ramp. While they can tell us how long the queue on the ramp is, they cannot identify times when cars are sitting on the crossing. The inclusion of the data from the induction loops is not required in the UTC orders. WSDOT has included the analysis of the loops to help provide a clearer picture of the traffic at the crossings.

## **Berkeley Street Southwest**

**USDOT:** 085829U **Docket Number:** TR-143846 (**Appendix B**)

**Data Source:** None

**Date range:** Periodic monitoring during entire years of 2021 and 2022

The construction for grade separation of the Berkeley crossing started at the end of October 2018. Due to the construction, the induction loops were moved to accommodate work and did not always align with the lane configurations. This resulted in WSDOT having periodic lapses in induction loop queue data; however, TMC Staff continued to visually monitor for queuing over the tracks. In June 2021, the grade separation project was completed.

*Figure 1. Berkeley Street Southwest Grade Separation*



**Recorded Incidents in 2021 and 2022:** No recorded incidents.

**Analysis:** The grade separation of Berkeley Street Southwest was completed in June 2021.

## **Barksdale Avenue (Steilacoom-DuPont Road)**

**USDOT:** 085836E **Docket Number:** TR-150508 (Appendix C)

**Data Source:** Advanced Queue Loop, roughly 50~60ft from rail crossing

**Date range:** Periodic monitoring during entire years of 2021 and 2022



*Figure 2. Barksdale Avenue Loop*



*Figure 3. Barksdale Avenue Satellite View*

**Recorded Incidents in 2021 and 2022:** No recorded incidents.

**Analysis:** Ramp meter data was evaluated for queuing to the advanced queue loop. While there were instances of queuing to the advanced loop, no queuing over the tracks was observed. Induction loop queuing data is available for review at WSDOT offices.

### 41<sup>st</sup> Division Drive (JBLM Main Gate)

**USDOT:** 085830N **Docket Number:** TR-150509 (Appendix D)

**Data Source:** Advanced Queue Loop, roughly 600ft from rail crossing

**Date range:** Periodic monitoring during entire years of 2021 and 2022



*Figure 4. 41<sup>st</sup> Division Drive Loop*



*Figure 5. 41<sup>st</sup> Division Drive Satellite View*

**Recorded Incidents in 2021 and 2022:** No recorded incidents.



**Analysis:** Ramp meter data was evaluated for queuing to the advanced queue loop. While there were instances of queuing to the advanced loop, no queuing over the tracks was observed. Induction loop queuing data is available for review at WSDOT offices.

## Thorne Lane

**USDOT:** 085828M **Docket Number:** TR-150624 (Appendix E)

**Data Source:** Queue Loop, roughly 100~110ft from rail crossing. Advanced Queue does not exist due to short length of ramp

**Date range:** Periodic monitoring during entire years of 2021 and 2022

The construction for grade separation of the Thorne LN crossing started in 2018. In June 2021, the grade separation project was completed.

*Figure 6. Thorne Lane Grade Separation*



**Recorded Incidents:** No recorded incidents.

**Analysis:** Ramp meter data was evaluated for queuing to the queue loop closest to the rail. While there were instances of queuing to the closest loop, no queuing over the tracks was observed. Induction loop queuing data is available for review at WSDOT offices.

## **Conclusion**

The data that was collected for 2021 and 2022 appears to show that the interconnection is mitigating instances of vehicles queuing across the railroad tracks at Barksdale Avenue and 41<sup>st</sup> Division Drive. WSDOT will continue to monitor the crossings and record any queuing instances over the crossing that are observed.

Please direct any questions concerning this report to:

Jason Biggs  
Capital and Operations Program Manager  
Rail, Freight and Ports Division  
Email: [Biggsjr@wsdot.wa.gov](mailto:Biggsjr@wsdot.wa.gov)  
Office: 360-705-6902 | Cell: 503-862-7990

# Appendix A

## WSDOT Rail, Freight, and Ports Division Plan for UTC Required Monitoring of Ramp Meter Interconnections Version 2.0 12/28/2022

The UTC entered orders in 2015 in Docket Numbers 143846, 150508, 150509, 150623, and 150624. The orders approved changes to the crossings on the Point Defiance Bypass at Barksdale, 41<sup>st</sup> Division, Berkley, Clover Creek Drive, and Thorne Lane. A condition in the orders that the interconnect between the railroad signals and ramp meters for on ramps to south bound I-5 be monitored for 3 years to identify and report to the UTC incidents of queuing events that block the any of the railroad crossings. The plan and procedure for monitoring these crossings for such events is provided below. Please note that the railroad signals at Clover Creek Drive are not connected to any ramp meters because there is no proximal freeway ramp.

The UTC Orders read: “As a condition of approving the crossing signal modifications, the Commission required WSDOT to report to the Commission annually, for a period of three years, about the number of queuing instances over the crossing, and the impacts and effectiveness of the interconnection between the railroad signals and the ramp meter.” Reports are due 1/31/2021, 1/31/2022, and 1/31/2023.

Monitoring: WSDOT Olympic Region (OR) Traffic Management Center (TMC) will monitor the crossings for any incidents of queuing across the railroad tracks and report them using their established “incident tracking system”. They will note for each incident whether the ramp meter was turned on or off. They will also list any available information about the incident, including the start and end time of the incident, any people called to address the situation, what measures were taken to resolve the situation, and the likely cause or root cause analysis if available. At the close of each incident, the TMC will email the report, along with any screen shots that are helpful, to a distribution list provided by the Rail, Freight and Ports Division (RFP). The initial list is included at the bottom of this email. Olympic Region Traffic has installed cameras that can see each of these crossings (except for Clover Creek Drive). OR TMC does not intend to monitor each crossing continually, only when there is an incident, or the ramp meters show that there is queuing back to the advance loop.

Analysis and Reporting: WSDOT Rail, Freight and Ports Division will review each incident and determine whether it appears that the ramp meter/railroad signal interconnect is not working properly or there is a queuing issue across the railroad tracks. Annually by January 31 of 2021, 2022, and 2023, the RFP division will prepare and submit a report to the UTC containing the information required by the orders.

Initial distribution list for incident reporting:

- Jason Biggs, WSDOT RFP: [biggsjr@wsdot.wa.gov](mailto:biggsjr@wsdot.wa.gov)
- Kirk Fredrickson, WSDOT RFP: [fredrik@wsdot.wa.gov](mailto:fredrik@wsdot.wa.gov)
- Lora Sonnen, WSDOT RFP: [sonnenl@wsdot.wa.gov](mailto:sonnenl@wsdot.wa.gov)
- WSDOT RFP Division: [rail@wsdot.wa.gov](mailto:rail@wsdot.wa.gov)
- Timothy McCall, WSDOT OR TMC: [mccallt@wsdot.wa.gov](mailto:mccallt@wsdot.wa.gov)
- Jeffrey Le Cates, WSDOT OR TMC: [lecatej@wsdot.wa.gov](mailto:lecatej@wsdot.wa.gov)