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TR-220065

April 6, 2022

UP QZ ID: WA033001

Rob Brown, P.E.
City Traffic Engineer
Transportation Engineering/Public Works Department
220 Fourth Ave, South
Kent, WA 98032

Subject: Notice of Intent to Establish a Quiet Zone
City of Kent, Washington – UP Seattle Subdivision

Dear Mr. Brown:

Union Pacific (UP) is in receipt of the City of Kent, Washington, (Public Authority) Notice of Intent (NOI) that was received on February 10, 2022, to establish a new quiet zone (QZ) at the crossings listed below. The QZ is proposed to be established in accordance with 49 CFR 222.39(b)(1), public authority application (PAA) to the FRA.

Proposed QZ Crossings

DOT	Crossing Type	Milepost	Street Name
396581U	Public	166.65	Willis Street/SR 516
396580M	Public	166.88	Meeker Street
396579T	Public	166.99	Smith Street
396578L	Public	167.25	James Street
396575R	Public	169.02	212th Street

Please recognize that UP is of the opinion that sounding the locomotive horn at highway-rail grade crossings enhances safety whereas QZs increase risk to motorists, pedestrians, and trespassers. Train horns are intended to alert the motoring and pedestrian public to train movement. At a minimum, a diagnostic to evaluate the proposed QZ is recommended, and safety treatments should be implemented at each crossing which can include SSMs and/or alternative safety measures (ASMs).

UP interprets the FRA Train Horn Rule (Rule), 49 CFR Part 222, as a guideline of minimum safety measures to be implemented at QZs. In the interest of safety, each crossing to be considered for a QZ should be evaluated individually rather than basing the selection of crossings to achieve an averaged risk below the Nationwide Significant Risk Threshold (NSRT) or the Risk Index with Horn (RIWH).

A diagnostic was performed on June 23, 2021, attended by representatives from the Public Authority, Washington Utilities and Transportation Commission (UTC), Washington State Department of Transportation (WSDOT), Federal Railroad Administration, and Alfred Benesch (consultants for UP). The diagnostic notes were provided to all attendees.

UNION PACIFIC RAILROAD
ATTN: Engineering-Public Projects
Quiet Zone Establishment
1400 Douglas Street MS910
Omaha, Nebraska 68179

UP has reviewed the NOI per the requirements outlined in the Train Horn Rule 49 CFR Part 222 (Rule) and comments as follows.

1. Constant Warning Time on Industrial Spur

The industrial spur lines at Willis Street and Smith Street do not have constant warning time (CWT) devices. The Rule states that each public highway-rail grade crossing in a new QZ must be equipped with CWT devices, if reasonably practical. The diagnostic team determined that CWT is not reasonably practical on the spur tracks. This is documented in the diagnostic notes dated June 23, 2021.

2. DOT 396581U Willis Street/SR 516

- The Public Authority proposes SSM improvements at this crossing. The plans depict 155 feet of non-traversable median on the eastbound approach to the crossing. For the westbound approach, the existing median will be extended to 120 feet. Per the diagnostic notes all non-traversable medians will be seven inches in nominal height which exceeds the six-inch requirement of the Rule.

- There is a traffic signal located approximately 160 feet west of the crossing at the intersection of the Interurban Trail and 74th Avenue South. Westbound traffic was observed queuing over the track during the diagnostic meeting. The diagnostic team recommended the Public Authority evaluate the existing preemption time and operation to confirm it is adequate to move vehicles off the track prior to train arrival.

- It is noted that the roadway shoulders are located inside the crossing gates and pedestrians currently cross between vehicle lanes and the gates. The diagnostic team recommended relocating the crossing gates closer to traffic lanes and installing sidewalks behind the gates.

- The Public Authority's plans show the existing fence parallel to the Interurban Trail in the southwest and southeast quadrants of the crossing will be extended to the proposed sidewalk. The Public Authority is responsible to ensure the fence is installed prior to the QZ establishment. Maintenance of the fence is the responsibility of the Public Authority for the duration of the QZ.

3. DOT 396580M Meeker Street

- The Public Authority proposes non-SSM improvements at this crossing. Due to intersecting driveways on both approaches to the crossing, no credit will be taken in the QZ calculations. For the eastbound approach to the crossing, 120 feet of non-traversable median is proposed. There is a commercial driveway within 60 feet of the gate arm in the southwest quadrant that provides access to a commercial loading dock. UP notes large trucks may have difficulty accessing the dock with the proposed median installation.

- For the westbound approach, 30 feet of non-traversable median is planned on Meeker Street and 100 feet of non-traversable median for the 6th Avenue northbound approach to Meeker Street per the diagnostic team's recommendation.

- The Interurban Trail crossing is located approximately 215 feet west of the crossing with a flashing beacon. The diagnostic team did not observe queuing near the crossing and the Public Authority stated that traffic does not queue back to the tracks.

- The NOI indicates the Public Authority plans to install ADA-compliant sidewalks behind the gates with detectable warning surfaces on all four pedestrian approaches.

4. DOT 396579T Smith Street

- The Public Authority proposes implementation of ASMs at this crossing. The plans depict 120 feet of non-traversable median on the eastbound approach and 80 feet of non-traversable median on westbound approach.

- There is a traffic signal stop line located approximately 205 feet west of the crossing at the Interurban Trail which may cause westbound traffic to queue over the track. The traffic signal is not interconnected to the railroad warning system and the Public Authority stated traffic does not queue near the crossing.

- The diagnostic team evaluated the sidewalks and provided recommendations that include detectable warning, signage, and improvement of crossing surface.

5. DOT 396578L James Street

- The Public Authority proposes implementation of ASMs at this crossing.

- For the eastbound approach, 90 feet of non-traversable median is proposed. Appendix A.3.b of the Rule states that medians or channelization devices must extend at least 100 feet from the gate arm, or if there is an intersection within 100 feet of the gate, the median or channelization device must extend at least 60 feet from the gate arm. To provide a break in the median for the Interurban Trail, the diagnostic team recommended a 10-foot gap with a bollard in the middle. The bollard will prevent small vehicles from using the gap to drive around the median less than 100 feet from the gate. However, in an email dated July 17, 2021, the Public Authority notified the diagnostic team that the plans for the trail median opening would be 15 feet and no bollard is planned to be installed. As such, this gap may impact the credit that can be taken in the QZ calculations for the median length. UP urges the Public Authority to reconsider implementing the original 10-foot gap with bollard.

- For the westbound approach to the crossing, the Public Authority proposes installing 120 feet of non-traversable median. This will involve installing 60 feet of new non-traversable median from the gate arm to the start of existing mountable median. From this point, 60 feet of the existing mountable median will be replaced by non-traversable median.

- There is a traffic signal stop line located approximately 105 feet west of the crossing at the Interurban Trail which may cause westbound traffic to queue over the track. The traffic signal is interconnected with the railroad warning system. The diagnostic team recommended the Public Authority evaluate the preemption and consider locating the traffic signal closer to the crossing to stop westbound vehicles at the railroad gate stop line when the pedestrian crossing is activated.

6. DOT 396575R 212th Street

- The Public Authority proposes implementation of ASMs at this crossing.

- For the eastbound approach, the Public Authority's plans depict installation of 90 feet of non-traversable median, a 15-foot gap for the Interurban Trail, and 20 additional feet of non-traversable median. Appendix A.3.b of the Rule states that medians or channelization devices must extend at least 100 feet from the gate arm, or if there is an intersection within 100 feet of the gate, the median or channelization device must extend at least 60 feet from the gate arm. The diagnostic team recommended a 10-foot gap with a bollard in the middle. The bollard will prevent small vehicles from using the gap to drive around the median less than 100 feet from the gate. However, in an email dated July 17, 2021, the Public Authority notified the diagnostic team that the plans for the trail median opening would be 15 feet and no bollard is planned to

be installed. As such, this gap may impact the credit that can be taken in the QZ calculations for the median length. UP urges the Public Authority to reconsider implementing the original 10-foot gap with bollard.

- For the westbound approach, the Public Authority proposes construction of non-traversable median for a total length of 120 feet.

- There is a traffic signal stop line located approximately 70 feet west of the crossing at the Interurban Trail which may cause westbound traffic to queue over the track. The traffic signal is interconnected with the railroad warning system. The diagnostic team recommended the Public Authority evaluate the preemption and consider locating the traffic signal closer to the crossing to stop westbound vehicles at the railroad gate stop line when the pedestrian crossing is activated.

- The sidewalks are currently located behind the gate masts which are equipped with both roadway and pedestrian gates. The diagnostic team agreed the existing pedestrian gate configuration should remain in place. The Public Authority agreed to consider off-quadrant pedestrian flashers and pursue Section 130 funding for installation.

7. Quiet Zone Calculations

The Public Authority QZ calculations were provided to UP in an email dated February 10, 2022, and attached to this response. Willis Street is Crossing Number 5 and the SSM column shows the number 13 for SSM non-traversable median which results in a risk of 7.502 for the "Initial Quiet Zone Risk Index w/o Horns." However, the initial QZRI should not include the reduction of the risk due to implementation of an SSM. That column should reflect the risk before any SSM credit is taken. Based on UP calculations and existing FRA data, the initial QZRI should be 37,511.17 for Willis Street. This will result in an average initial QZRI of 58,578 instead of the proposed 45,144.72. The UP calculations also indicate higher initial QZRI for South 212th and West James Streets. Accurate calculations and methodology will be required in the PAA submission.

8. Other Comments

- The Public Authority proposes implementing this QZ in accordance with 49 CFR § 222.39(b)(1). This requires use of the FRA QZ Calculator to demonstrate the QZRI is at or below the RIWH. Please ensure the Annual Average Daily Traffic (AADT) counts are current as of the last three years from date of the PAA submission and used in the submittal calculations. Additionally, the AADT must be submitted to WSDOT for update in the FRA National Inventory.

- Reference Appendix A of the Rule which specifies the criteria for medians to qualify as SSMs and Appendix B of the Rule for modified SSMs.

- Upon completion of all planned safety measures submitted in the NOI and recommendations by the diagnostic team, a Notice of Establishment (NOE) must be served by certified mail, return receipt requested, to the following:

  - all railroads operating over the public highway-rail grade crossing(s) within the QZ;
  - the highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the QZ;
  - the landowner having control over any private crossings within the QZ;
  - the State agency responsible for highway and road safety;
  - the State agency responsible for grade crossing safety; and
  - the FRA Associate Administrator.

The NOE will serve as notice that all safety measures comply with the Rule and plans submitted with the NOI have been implemented. We encourage communication with UP of any changes to the proposed QZ plan to allow further review and comment, as necessary.

- To assist with internal notifications and preparation efforts, UP respectfully requests **60 days advance notice** of the planned QZ establishment. This communication can be made by email or phone in advance of the NOE mailing.

- UP encourages an awareness program to educate the community about QZs and what to expect. Although trains will cease routine sounding of the horn at grade crossing(s) within the QZ, there are numerous situations when sounding of the horn will be required. For example, an engineer will exercise discretion to sound the horn for safety purposes when pedestrians or workers are in proximity of the crossing(s) and when necessary to comply with any other train operating rules.

- Prior to establishing the new QZ, each approach to the grade crossing(s) must be equipped with an advance warning sign advising users that train horns are not sounded at the crossing(s). These signs must conform to the standards contained in the MUTCD. Additionally, all signs and pavement markings should be inspected to be in good condition for both day and night visibility.

If you have questions or comments, please contact me at (402) 544-3992 or msdubay@up.com.

Sincerely,

DocuSigned by:
M DuBay
C56FA18B605E4A2...

4/6/2022

Melinda DuBay
Manager I
Engineering-Public Projects

cc: Karl Alexy-FRA Associate Administrator for Safety

by email:

Jeffrey Stewart-FRA
Connie Raezer-WSDOT
Mike Turcott-UTC
Peggy Ygbuhay-UP
Aaron Hunt-UP

Attachment: Public Authority QZ Calculations with UP Comments

FRA Quiet Zone Risk Indices

Road Authority: City of Kent, WA **Railroad:** Union Pacific Railroad Company **Date:** February 4, 2022

Crossing Numnber	ZoneID	SenarioID	US DOT Crossing	Street	Warning Device	SSM	Pre SSM	Initial Quiet Zone Risk Index w/o Horns (+66.8%)	Effectiveness of Pre-SSMs	Effectiveness of New SSMs	Risk Index With Horns (RIWH)	Risk Index with Pre-SSMs	Effectivness of Pre-ASMs	Risk Index with Pre-ASMs	ASM / Modified SSM Effectiveness	Quiet Zone Risk Index	Modified SSM Description
	FRA Online Calculator								Calculations from FRA Spreadsheet								
1	58103	65967	396575R	South 212th Street	Gates	0	0	57,857	-	-	34,686	34,686	-	34,686	0.73	15,621	Modified Non-Traversable Curb Medians with or without Channelization Devices. 84 foot median west of the westerly gate. 120 foot median east of the easterly gate
2	58103	65967	396578L	West James Street	Gates	0	0	102,144	-	-	61,237	61,237	-	61,237	0.60	40,858	Modified Non-Traversable Curb Medians with or without Channelization Devices. 90 foot median west of the westerly gate. Commercial driveway 60 feet east of the easterly gate
3	58103	65967	396579T	West Smith Street	Gates	0	0	32,633	-	-	19,564	19,564	-	19,564	-	32,633	
4	58103	65967	396580M	West Meeker Street	Gates	0	0	25,588	-	-	15,341	15,341	-	15,341	-	25,588	
5	58103	65967	396581U	Willis Street/WA 516	Gates	13	0	7,502	-	0.80	22,490	22,490	-	22,490		7,502	
										Averages:	30,664	30,664		30,664		**24,440**	

Nationwide Significant Risk Threshold (NSRT): 15,488
Risk Index with Horns (RIWH): **30,664**
Quiet Zone Risk Index (QZRI): **24,440**
QZ Risk Reduction Qualifies for Quiet Zone: **Yes**

This risk should be 37,511.17 not 7,502 which reflects credit for SSM non-traversable median as shown by the number 13 in the SSM column.
Initial QZRI = 37, 511.17 times (1-0.8) = 7,502.23