

# EUGENE CITY COUNCIL AGENDA ITEM SUMMARY



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## Railroad Crossing Quiet Zones

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Meeting Date: July 20, 2005  
Department: Public Works  
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Agenda Item Number: Agenda Item Number  
Staff Contact: Tom Larsen  
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### ISSUE STATEMENT

Council requested a work session to discuss new federal rules effective June 24, 2005, establishing a process to obtain a "quiet zone" designation from the Federal Railroad Administration.

### BACKGROUND

The sounding of train whistles or horns is a long established safety and warning practice. They are of necessity loud and attention getting. For many years the City has received complaints from residents who live near the tracks and are disturbed by the noise. In the late 1980s, the City attempted to obtain a "whistle free" zone under the then-current state rules. Southern Pacific was the principal operator of trains at that time and was strongly opposed to the "whistle free" zone. The City was successful in obtaining an Oregon Public Utility Commission Order to establish a "whistle free" zone in August 1990, conditioned on the City making a number of safety improvements to the crossings in the zone. Southern Pacific appealed in Marion County Circuit Court. On appeal the PUC Order was rescinded in September 1991. In large part the appeal was based on a July 1990 Federal Railroad Administration study showing a 195% increase in nighttime crossing crashes in Florida when whistles were silenced. The current operator, Union Pacific, has stated support for the status quo and current use of train horns.

The majority of citizen complaints come from the downtown and Whiteaker areas. There is no documentation that the sounding of train horns has gotten louder or become more frequent. While horns are sounded at other crossings in town, this discussion will focus on the stretch of railroad track between Van Buren Street on the west to Hilyard Street on the east. See Attachment A for a vicinity map.

The "quiet zone" rule does not restrict the railroad from using train horns as a warning or safety device when people or animals are crossing or walking along the tracks or when used for communication between engineers and train crews. The rules specify that a "quiet zone" must be at least ½ mile long, which means the City cannot apply for "quiet zone" designation for just one downtown crossing.

The Federal Railroad Administration (FRA) oversees the administration of the federal rules pertaining to "quiet zones". The FRA's role is that of administrator, assuring that jurisdictions



comply fully with the rules in the process of establishing a "quiet zone." The FRA's primary goal is the protection of public safety at rail crossings. Because the process of obtaining a "quiet zone" under the new rules would require modifications to existing grade crossings, the Oregon Department of Transportation Rail Division must approve the design and issue the implementing order. The affected railroad, Union Pacific, must also be involved in the design and approval process as they own and maintain all devices installed in the railroad right of way.

The new rule establishes supplemental safety measures (SSMs) required to obtain a "quiet zone." One of the principal goals of SSMs is to prevent vehicles from weaving through the existing crossing gates. There are several ways to accomplish this. Quad gates completely close the crossing by barring the vehicle from ducking around the gate to the left. Various forms of channelizing islands or medians also can be used to protect the crossing from unauthorized entry. Attachment B provides a schematic view of these two alternatives. Other options include changing the street to a one-way street with two gates to stop driving around a single gate or completely closing the railroad crossing to all other traffic. Under the new rule there is a wide variety of alternatives, each with a range of construction, maintenance, business and community costs (see Attachment C and D).

The FRA rule establishes a minimum time frame of six months to complete the approval process of establishing a "quiet zone." Approval to make modifications to the crossing must be obtained from the ODOT Rail Division. ODOT's six- to eight-month approval process would not start until after the first two months of the FRA process but may overlap the final four months of it. The design and construction processes would add to the total time to finally implement a "quiet zone." Community decisions as to the nature of the crossing modifications and a funding mechanism should proceed an initial application for the zone.

In Oregon, Pendleton is the only city with an existing "quiet zone," which was obtained under previous rules. Hood River is in the process of applying for "quiet zone" designation.

The new federal rule allows the creation of a "quiet zone" under three different alternatives. The first alternative is if the local agency installs approved SSMs at all crossings in the zone. This is the most expensive alternative but assures a truly "quiet zone" and maximizes public safety. A zone created in this manner will need recertification on about a five-year schedule. There is an option to attempt to establish a "quiet zone" by only installing sufficient SSMs to bring the average risk index for the zone below the current risk index with horns. This zone would require recertification on a two- to three-year cycle. The third alternative is to propose a series of SSMs that would lower the risk index below an established national risk level. The acceptable national risk level is higher than our current risk level and would result in a decrease in public safety. The national index is continually updated and, if a "quiet zone" were established under these conditions, it must be re-evaluated every year. If the national index falls, the City would be required to install new SSMs to retain a "quiet zone" designation.

## **RELATED CITY POLICIES**

Train horns impact both public safety and community livability policies. However, there are not specific policies related to the sounding of train horns.

## **FINANCIAL, SAFETY AND OTHER CONSIDERATIONS**



There are no City funds specifically earmarked for the construction or maintenance of the SSMs required under the new rule to obtain a "quiet zone." Railroads, ODOT and FRA do not participate in cost of installing SSMs to implement a local "quiet zone." The installation costs of all SSMs would be borne by the City. The City would need to enter into a maintenance agreement with the railroad for any new devices installed at the crossings.

Cost to implement a "quiet zone" is dependant on the type and extent of SSMs installed. Attachment C covers the potential range of constructions costs. The lowest cost alternative is to install medians at 6 of the crossings for an estimated \$115,000. While this alternative has the lowest construction cost, the impact to businesses within 100 feet of the crossing will be high. All driveways with 100 feet of the crossing must be closed. For some businesses this could be all their street access. As no detailed design has been done, the cost to modify or buy business properties is not included. For alternatives with quad gates the minimum construction estimate is over \$500,000. Any quad gate installation may require an upgrade to the railroad detection and crossing arm pre-emption system, estimated to cost about \$2,000,000. Any quad gate installation will require the City to enter into a maintenance agreement with the railroad. No annual maintenance cost estimate is available.

All of the existing crossings between Van Buren Street and Hilyard Street are already equipped with dual gates and flashing lights. The gates, in conjunction with use of train horns, provide the current standard of protection for motorists and pedestrians crossing the tracks. A "quiet zone" that met only the reduction of the risk index below the national level would increase the risk to citizens. Installation of SSMs at all crossing would increase crossing safety. Quad gates are the most expensive form of SSM. While median islands have a lower construction cost, the definition of a SSM median requires the closure of any commercial driveway within 100 feet of a railroad crossing and any street within 60 feet. For example, a median island at Washington would require the closing of Third Avenue, a median island at High Street would require the closing of Fifth Avenue, and a median island at Eighth and Hilyard would require the closing of either Eighth Avenue or Hilyard Street. For this reason the attached range of alternatives does not include medians at any of these three locations. Attachment E contains an overview of each the crossings and the approximate 100 foot zone where commercial driveways would be prohibited. At Monroe, Madison and Lincoln Streets the prohibition of commercial driveways could effectively close some adjoining businesses. The construction estimates in Attachment C do not account for loss of access or purchase of businesses.

## **COUNCIL OPTIONS**

Staff has identified three options for Council to consider relative to the new federal rules for railroad crossing "quiet zones":

1. Council can accept the current level of safety, mobility and livability and direct staff to not pursue a "quiet zone."
2. Council can take a measured approach to the "quiet zone" issue and direct staff to monitor other jurisdictions going through the "quiet zone" process and wait to take action until there is an established cost and procedure history.



3. Council can make establishment of a “quiet zone” a council priority, identify funding sources for impact analyses and community outreach, and direct staff to develop detailed cost estimates and appropriate funding mechanisms to construct and maintain enhanced SSMs at downtown crossings.

### **CITY MANAGER’S RECOMMENDATION**

The City Manager recommends option 2. The “quiet zone” rule is new and no jurisdiction has gone through the process under the new rule so there is no implementation history. Significant funding is required to implement the SSMs necessary to obtain “quiet zone” designation, and additional study is required to identify funding options should the council wish to proceed with implementation. Additional time also would allow staff to further study impacts on local businesses and the area transportation system.

In any event, the manager recommends that any “quiet zone” application be pursued under the “risk index with horns” criteria, not the “national risk index,” to assure the current level of protection of public safety is maintained.

### **SUGGESTED MOTION**

None is suggested.

### **ATTACHMENTS**

- A. Map of a proposed Quiet Zone
- B. Detail of Quad Gate installation and median installation
- C. Table with seven possible alternatives
- D. Discussion of alternative scenarios
- E. Details of specific crossings in the Quiet Zone

### **FOR MORE INFORMATION**

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## ATTACHMENT D

### ALTERNATIVE SCENARIOS

#### Alternative A Quad Gates All crossings

Installing quad gates at all ten crossing will meet the SSM at all crossing requirement but is expensive. The FRA calculator estimates the cost to add quad gates as \$100,000-\$125,000 per crossing. Union Pacific estimates the cost of up-grading the gates at \$400,000 each. ODOT rail estimates a generic dual gate to quad gate up-grade at \$250,000-\$500,000, but points out the close spacing of Eugene's crossings could force up-grades to the overall detection/prediction system "costing several millions." To provide a Quiet Zone with quad gate upgrades at all ten crossings would cost over \$1,000,000 using the FRA estimate and \$4-5 million using the UP or ODOT estimate. Both ODOT and UP say an upgrade to the detection system may be needed and could cost up to \$2,000,000. These are construction costs and do not include the annual maintenance agreement with the UP. This alternative increases public safety by reducing the risk index below the "index with horns."

#### Alternative B Channelizing Islands except where streets must be closed

Installing median islands is estimated to cost \$15,000 -20,000 per crossing in the FRA calculator. Theoretically medians at each crossing could be done for about \$200,000. There are very restrictive rules about medians requiring closure of all commercial driveways within 100 feet of the crossing gate. Medians will have major impacts to the existing businesses. At Jefferson Street the grain elevator driveway would be closed. On Pearl Street the Steelhead parking lot would be closed. At Monroe, Madison and Lincoln businesses are likely to close from lack of access or have major parking and driveway modifications. Some accesses near every crossing will be impacted. This alternative will increase public safety by reducing the risk index below the "index with horns."

#### Alternatives C, D and E Mixed SSMs meeting the national risk index

The highest risk crossing in this area is High Street. A package of SSMs consisting of quad gates at High street and a number of median installations can lower the risk index below the National Index. For a lower construction cost installation of 5 medians can meet the national risk index criteria. The cost to local business from loss of access will be much higher. If implemented this zone would be subject to annual review. These alternatives result in an increased risk index above existing conditions.



Alternatives F Mixed SSMs meeting the risk index with horns

Medians at Van Buren, Monroe and Lincoln Streets with quad gates at High Street meet the risk index with horns standard for a Quiet Zone. While the cost of RR crossing improvements could be about half a million dollars, the detection upgrade could add \$2,000,000 to the cost.

Alternative G Medians as SSM, meeting the risk index with horns

Most combinations of six out of the seven crossing where median installation would not force a street closure will meet the risk index with horns criteria. While the construction cost is low, the cost to local businesses from loss of access and driveway modification will be high. No detailed plans or estimate of the additional cost has been prepared.

ATTACHMENT C  
SEVEN POSSIBLE ALTERNATIVES

RR STREET CROSSING	Supplemental Safety Measures at all x'ings				Meet National Risk index					Meet risk index w/ Horns				
	Alternative A		Alternative B		Alternative C		Alternative D		Alternative E		Alternative F		Alternative G	
	Quad Gates	Medians where possible	Average Traffic Volume	Close X'ing ?							Protect access		Closing driveways	
Van Buren	\$350,000	\$20,000	9700		Median	\$20,000			Median	\$20,000	Median	\$20,000	Median	\$20,000
Monroe	\$350,000	\$15,000 *	2300	Possible			Close	\$10,000	Median *	\$15,000	Median *	\$15,000	Median *	\$15,000
Madison	\$350,000	\$20,000 *	2300	Possible					Median *	\$20,000			Median *	\$20,000
Jefferson	\$400,000	\$20,000 *	3250										Median *	\$20,000
Washington	\$400,000	\$400,000 **	4800											
Lawrence	\$450,000	\$20,000	2000	Possible					Median	\$20,000	Median	\$20,000	Median	\$20,000
Lincoln	\$500,000	\$20,000 *	2100	Possible					Median *	\$20,000				
Pearl	\$500,000	\$20,000 *	3500										Median *	\$20,000
High	\$500,000	\$400,000 **	4800		Quad Gate	\$500,000	Quad Gate	\$500,000			Quad gate	\$500,000		
8th and Hilyard	\$500,000	\$500,000 **	50	Possible ***										
ESTIMATED CONSTRUCTION COST	\$4,300,000	\$1,435,000				\$520,000		\$510,000		\$95,000		\$555,000		\$115,000

\* major driveway impacts

\*\* Median requires closure of intersecting street

\*\*\* As part of redevelopment/undercrossing project

Any Quad gate installation may require RR detection upgrade costing +/- \$2,000,000

All Quad gate installations will be subject to negotiated maintenance agreement with Union Pacific