EUGENE CITY COUNCIL
AGENDA ITEM SUMMARY

Work Session: Railroad Quiet Zone Update

Meeting Date: June 26, 2006
Department: Public Works
www.eugene-or.gov

Agenda Item Number: C
Staff Contact: Tom Larsen
Contact Telephone Number: 682-4959

ISSUE STATEMENT

The council asked for an update on the issue of train horn noise and the potential for establishing a Quiet Zone in which the routine sounding of train horns at specific railroad crossings would cease. In any proposed Quiet Zone, train horns would continue to be sounded for pedestrians, animals or other hazards on or near the track, other trains, switching activities, warning device malfunction and any other operating procedures of the railroad or in any other emergency as determined by the train engineer.

BACKGROUND

An explanation of the new Federal Railroad Administration (FRA) rule allowing local jurisdictions to obtain a Quiet Zone (QZ) was presented to the council on July 20, 2005. The new rule shortened the time horns sound prior to a crossing, set a maximum level (110 dB) for train horns and set criteria and a process for local communities to establish a Quiet Zone wherein the routine horn sounding for crossings could be eliminated. A Quiet Zone will not eliminate all horns sounding. The area identified for a potential QZ included the ten railroad crossings from Van Buren Street on the west to Hilyard Street at Eighth Avenue on the east. A major unknown cost component at that time was the possible need for additional railroad detection/pre-emption equipment, estimated at about $2 million. No federal or state funding is available for the crossing improvements needed to establish a QZ. The FRA position is that Quiet Zones are a local livability issue and the cost should be borne by local authorities. The council did not authorize or fund creation of a Quiet Zone. There was recognition that initial Supplemental Safety Measure (SSM) installation might not be adequate to obtain a QZ but would be a step toward a future QZ. At the July 20, 2005, meeting, the City Council directed staff to:

- Further refine cost estimates for specific construction of several of the Supplemental Safety Measures (SSM) required by the FRA to obtain a Quiet Zone.
- Monitor the QZ process and evaluate the progress made by other jurisdictions.

Cost Estimates

Union Pacific RR verified that the additional detection/pre-emption circuitry at a cost of $2 million is not needed. A copy of the updated cost memo to the Eugene Budget Committee is included as Attachment A. The SSMs most likely to be included in a future Eugene area QZ are four-quadrant gates with presence detection and median islands. The range of costs for SSMs is:

4-quadrant gates	$ 400,000 - $ 500,000 each
Crossing closure	$ 15,000 - $ 20,000
Medians	$ 15,000 - $ 20,000
One-way conversion	$ 60,000 - $ 100,000

Four-quadrant gates are the preferred SSM at High Street, which has the highest FRA Risk Index number. It is difficult to show calculated QZ feasibility in the corridor without addressing the High Street crossing. Due to the crossing geometry and intersection with Fifth Avenue, the High Street quad gate is estimated at $500,000. Madison and Lincoln are the best candidates for street closure. Because of the impacts to business driveways and street intersections Lawrence and Van Buren are the best candidates for median treatment. Washington and Jefferson offer the best potential for one-way conversion.

Quiet Zone Process

Since the new rule went into effect, 22 new Quiet Zones have been established nationally. FRA is aware of Notice of Intent for five others. Prior to the rule, there were about 220 pre-existing Quiet Zones in 29 states. Wisconsin has 64, including three new zones. Missouri has 36, including one new zone. There are three, pre-rule, whistle-free zones in Oregon: Pendleton, the Dalles and Umatilla. Five Oregon jurisdictions have seriously discussed new QZs with the ODOT Rail section and only one (Klamath Falls) is proceeding. ODOT Rail staff believes the cost of the required safety improvements discourages jurisdictions from pursuing a QZ. Nationally, various funding strategies have been used, including assessments to adjoining and benefited properties, special business taxes or surcharges and local general funds.

Federal and State Rail Safety Initiatives

The U.S. Department of Transportation announced an initiative to improve safety at the nation's railroad crossings. The Secretary of Transportation, in a June 2004 Action Plan, called for the elimination of 25% of all at-grade crossings. An excerpt from that Action Plan is included as Attachment B. Projected growth in rail freight traffic and increasing efforts at improving rail crossing safety will result in increasing federal and ODOT Rail pressure on the City to close unnecessary, redundant or hazardous crossings. This initiative resulted in ODOT recently requesting the City agree to the closing of two unused crossings. Funding to accomplish crossing closure and improvements to consolidated crossings is provided by Federal Section 130 funds, administered by the ODOT Rail Section. Section 130 funds cannot be used for the purpose of making crossings improvements to establish a Quiet Zone. The ODOT program guidelines for active crossings state that half the crossings in a corridor must be closed in order to qualify for ODOT funding for improvements to the remaining crossings. Recent discussions with ODOT indicate a willingness to negotiate with the City to fund safety improvements to some corridor crossings in exchange for closure of less than half of the crossings in the corridor. According to ODOT and FRA sources, the decreased risk represented by crossing closure and ODOT safety improvements can be used as credit toward a QZ. The area containing six crossings in six blocks (Lincoln, Lawrence, Washington, Jefferson, Madison and Monroe streets) has been specifically mentioned as having "redundant" crossings. ODOT Rail would like to see four of the six crossings closed. The city has no current established process for closing streets at railroad crossings. Attachment C discusses the prioritization and potential for closing specific crossings in the corridor. Madison and Lincoln are the most likely candidate streets for closure, followed by Jefferson. Even if the council chooses to not proceed with crossing closure, ODOT Rail Section can still push for future crossing closures based on the safety history or redundancy analysis.

Last year's presentation to the council did not emphasize crossing closure as an alternative. Closure is contrary to recent City efforts to reopen closed streets and to revised connectivity standards in the City's development code. From the FRA and ODOT Rail standpoint, a closed crossing is the safest crossing.

Conversion to One-Way Streets

The FRA Quiet Zone rule is based on a calculation of the risk of crashes at crossings. The most preventable crash is the driver weaving around the standard crossing gates. Conversion of the crossing to one-way and using one or two gates on the approach side to close all lanes is considered to be more effective at reducing risk than a quad gate on a two-way street. The cost is also significantly lower than for quad gates. Conversion to one-way streets would fit into the existing street grid best at Washington and Jefferson streets as they already form a one-way couplet from Sixth Avenue south to 13th Avenue. Conversion of two-way streets into one-way streets is contrary to recent City projects that have converted downtown one-way streets into two-way streets. The goal of changing two-way streets into one-way streets is most clearly stated in the Central Area Transportation Study (CATS).

Enhancing Public Safety

Several SSMs are possible at most of the crossings in the corridor. There are multiple permutations of treatments that result in lowering the Risk Index in the corridor to below the FRA minimum. Attachment D lists several scenarios that meet the minimum FRA requirements for a Quiet Zone. A more detailed analysis may result in changes in the calculated Risk Indexes. Scenarios with lower Risk Indexes represent options that increase public safety above the level provided by train horns and are more likely to be successful in obtaining a Quiet Zone.

Scenarios which include street closures and/or one-way conversion have lower cost than those that keep all streets open and two-way. State administered funding for closures and consolidation is available with the level negotiated based on the number and the impact of closures at existing crossings.

The minimum estimated cost for a QZ with all streets open and two-way is $1,040,000. Detailed plans developed in the FRA process may increase the number of crossings needing SSM treatment and cost could exceed $1,500,000 if additional quad gates are required.

Summary

The City can, by installing SSMs, establish a Railroad Quiet Zone, silencing routine crossing horns, but not all horns. No state or federal funding is available for obtaining a Quiet Zone. Multiple scenarios of SSMs can result in a Quiet Zone with varying construction and community costs.

State-administered federal funding is available for safety improvements to consolidated crossings when redundant crossings are permanently closed. Reductions in the FRA Risk Index from crossing closure and consolidation can be used in the Quiet Zone eligibility calculations.

RELATED CITY POLICIES

- The CATS Study identifies a goal of converting many downtown one-way streets to two-way streets.
- The Eugene Development Code and State Land Use Goals encourage street connectivity
- In the Eugene Code 5.040, the duties of the City Manager or Designee include (1)(c) "Designate the direction of flow" and (1)(m) "Close or open any street to vehicular or pedestrian traffic. This does

not include the authority: 1. To abandon all or part of a pedestrian mall, 2. To vacate all or part of a street, or to close or open a street which the council or the city manger determines is of community wide interest."

COUNCIL OPTIONS

Staff has identified three options for the council to consider under the new quiet zone rules:

1. The council can accept the current level of safety, mobility and livability and direct staff to continue to monitor the continuing QZ process in Oregon and other states.
2. The council can direct staff to pursue a Quiet Zone while maintaining current mobility levels, identify funding sources for design and public process and direct staff to begin detailed plans for necessary safety improvements.
3. The council can accept the changes in mobility from crossing closures and one-way streets and begin safety improvements by directing staff to enter into negotiations with ODOT Rail for Section 130 Safety improvement funds based on crossing closures and conversion of streets to one-way.

CITY MANAGER'S RECOMMENDATION

The City Manager recommends Option 3. The opportunity to use Section 130 funds to improve local railroad safety and make progress toward a future Quiet Zone represents an effective and efficient use of resources. The council will have the opportunity to revisit establishment of Quiet Zone and its costs at the conclusion of the ODOT process.

SUGGESTED MOTION

Move to direct the City Manager to take the necessary steps to close up to four railroad crossings and/or convert streets to one-way at railroad crossings in order to obtain State Section 130 funding for crossing safety improvements.

ATTACHMENTS

A. Updated cost memo to the Budget Committee
B. Federal DOT excerpt on RR crossing closure
C. Discussion and prioritization of street closures
D. Table of possible scenarios

FOR MORE INFORMATION

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ATTACHMENT A

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MEMORANDUM

Date: April 11, 2006

To: Mayor and City Council
Eugene Budget Committee

From: Thomas C. Larsen, P.E.,
City Traffic Engineer

Subject: Railroad Quiet Zone Component Costs for Budget Committee

BACKGROUND

Subsequent to a City Council Work Session on this topic in July, 2005, the Council directed staff to further refine cost estimates for the construction of a typical quad gate and a median island as Supplemental Safety Measures (SSM) required by the Federal Railroad Administration (FRA) to obtain a Quiet Zone (QZ). Council did not authorize creation of a Eugene Quiet Zone, but asked that the revised cost estimates be furnished to the budget committee for consideration. Council recognized that the initial SSM installation would not be adequate to obtain a QZ but would be a step in that direction.

COST ESTIMATES

One major cost component previously identified was the possible need for additional railroad electronic detection/pre-emption equipment, estimated at about $2,000,000. Union Pacific RR has since verified that the additional detection/pre-emption circuitry is not needed.

Four quadrant gates are the most expensive SSM. Quad gates, a system of four independent gates that effectively fully preclude vehicle access, are the preferred SSM at High Street which has the highest FRA Risk Index number. Costs were developed for this location as it is very difficult to show calculated QZ feasibility in the corridor without addressing the High Street crossing.

Median islands are less expensive, but would require the closure of all commercial driveways within 100 feet of the tracks and all streets within 60 feet. For several existing crossings, the driveway restriction would eliminate all access to some businesses. Median islands without major driveway or street impact are feasible only at Lawrence and Van Buren Streets.

The cost for the above SSMs is estimated at:

4 quadrant gates at High Street	$ 500,000
Median island at Lawrence	$ 15,000

Installation of these two SSMs would not result in lowering the Risk Index sufficiently for the City to obtain a Quiet Zone; the full implementation of a Quiet Zone would involve either the installation of some combination of quad gates and raised medians at each of the ten existing crossings through the downtown area or closing one or more of them. Obviously, there would be a wide range of total implementation costs depending upon the preferred option chosen. A follow up work session with the City Council will be scheduled later this year to provide further information on QZ progress in other jurisdictions and possible funding mechanisms. Please contact me at x4959 or via e-mail at tom.c.larsen@ci.eugene.or.us if you have additional questions regarding this.

Cc: Kurt Corey, Public Works Director
Jeff Lankston, Public Works Maintenance Division Manager

5. Close Unneeded Crossings

In 1991, the Federal Railroad Administrator endorsed a goal of closing 25 percent of all highway-rail crossings, and the 1994 Action Plan included several program elements intended to help achieve that goal. Although that target has not yet been achieved, DOT leadership has provided significant support for efforts by States and railroads to eliminate redundant and particularly hazardous crossings through consolidation of nearby crossings on major rail lines, grade separations, and other means. Outreach conducted in developing this plan revealed a strong conviction among highway-rail crossing experts that a strong emphasis on closing closures must be continued. Notably, the American Association of State Highway and Transportation Officials (AASHTO) is on record as a supporter of highway-rail crossing closures and consolidations as well as a statement from DOT endorsing such a program.

For the past decade, DOT, through the FRA, has worked towards this goal of a 25 percent reduction in rail/highway at-grade crossings. Closing redundant and particularly hazardous crossings frees resources to address safety at the remaining highway-rail crossings, reduces hazards to trains associated with disturbance of the track structure by large motor vehicles, and permits road authorities and railroads to focus maintenance resources on crossing surfaces at the remaining locations. Very often crossings can be closed with no other adjustments to the road network. In other cases short extensions of access roads are required. The Department remains confident that many additional highway-rail grade crossings, public and private, can be eliminated without detriment to local mobility; and completing this effort is necessary to ensure the ability of freight and passenger railroads to play a constructive role in the National transportation system.

During the development of this Action Plan, there has been much discussion about the need to provide a strong endorsement of the practice of crossing closures and consolidations where appropriate, and to provide a strong mission statement supporting this approach at the Federal level. A number of partners urged that a stronger Federal endorsement of crossing consolidation will assist States in obtaining success with these projects at the local level. The Department unequivocally supports continued efforts to consolidate grade crossings and make more effective use of scarce public safety resources. The Department will also continue to advocate flexibility in Federal-Aid highway programs for crossing closure projects.

From the Secretary of Transportation's Action Plan
June 2004

STREET CLOSURES

Permanent closures can be among the less expensive crossing safety upgrades, but will result in difficulties with local access, increased out of direction travel and increased traffic and congestion on alternative routes. In addition the railroad is very concerned about pedestrian trespass. Barricades, fencing, pavement removal and curb work could all be part of any crossing closure. The following table lists the street classification and Average Daily Traffic (ADT) for the10 crossings considered for a Quiet Zone.

RAILROAD CROSSING	STREET CLASSIFICATION	ADT #	ADT RANK
HIGH	Major Collector	4200	1
WASHINGTON	Major Collector	3800	2
PEARL	Major Collector	2800	3
VAN BUREN	Neighborhood Collector	2400	4
LAWRENCE	Local	2000	5
JEFFERSON	Major Collector	1600	6
LINCOLN	Local	1500	7
MONROE	Local	1500	8
MADISON	Local	1200	9
8TH/HILYARD	Local	250	10

Any street closure will be permanent. Community and business acceptance or support for widespread crossing closure could be difficult to obtain. The ODOT rail section has described the six crossings in six blocks area (Monroe, Madison, Jefferson, Washington, Lawrence and Lincoln) as "having redundant" crossings and believes several of these crossings should be closed.

Van Buren, Jefferson, Washington, Pearl and High are collector streets and theoretically are more important to the street network and more difficult to close than local streets. While it is classified as a local street, the 8th and Hilyard crossing is identified in the Downtown Vision as a major connection between downtown and the river and should not considered for closure. 8th and Hilyard and Van Buren are the boundaries of the zone and serve the widest area. Lawrence, even thought classified as a local street, has higher average traffic volume than Jefferson, classified as a Major Collector. Monroe Street is the route of the proposed bike blvd and

provides a direct route to the 4-J service center. Grainmillers, operating the grain elevators between Jefferson and Madison, have expressed interest in the closure of Madison. The concept of closing several crossings has been discussed at Whittaker Area neighborhood meetings.

Based on the area served, street classification and traffic volume, Van Buren, 8th at Hilyard and High Streets are the most critical crossings to keep open. Pearl would have the next highest value.

Of the six clustered crossings Madison and Lincoln are the most likely candidates for closure. Jefferson, in spite of being classified as a collector, is the next most likely candidate for full closure.

ATTACHMENT D

ALTERNATIVES

Crossing	Options	A	B	C	D	E	F	G
Van Buren	G, M	Median	Median	Median	Median		Median	Median
Monroe	G, C							
Madison	G, C	Close						Close
Jefferson	G, O-W	One-way			One-way	One-way	One-way	One-way
Washington	G, O-W	One-way	Quad-gates	One-way	One-way	One-way	One-way	One-way
Lawrence	G, M, C	Median	Median	Median	Median	Median		Median
Lincoln	G, C	Close						Close
Pearl	G							
High	G		Quad-gates	Quad-gates	Quad-gates	Quad-gates	Quad-gates	Quad-gates
8th and Hilyard	G							
Risk Index		13011	12499	12393	11070	12595	12528	8026
Estimated Cost		$300,000	$1,040,000	$650,000	$740,000	$720,000	$720,000	$800,000

Current FRA Risk Index with horns approximately = 13252

All Risk Index numbers are approximate and subject to change.