

**MINUTES****MILWAUKIE CITY COUNCIL WORK SESSION  
APRIL 5, 2005**

**Mayor Bernard** called the work session to order at 5:30 p.m. in the City Hall Council Chambers.

Council Present: Councilors Barnes, Collette, Loomis, and Stone.

Staff Present: City Manager Mike Swanson, Planning Director John Gessner, Finance Director Stewart Taylor, Engineering Director Paul Shirey, Operations Director Kelly Somers, and Operations Supervisor Streets Mike Clark.

**Advisory Board Interviews**

The Council interviewed the following persons for re-appointment to their advisory board positions: Ray Harris, Park and Recreation Board; Patty Wisner, Design and Landmarks Committee; Molly Hanthorn, Center/Community Advisory Board; Leslie Schockner and David Aschenbrenner, Budget Committee. Melissa Arne, a new applicant, was interviewed for a current vacancy on the Budget Committee.

**Railroad Crossing Quiet Zone**

**Mr. Shirey** was joined by Scott Hale, Civil Engineer with HDR, Inc., and Mike Webb, Railroad Signals Manager, to respond to technical questions. The Union Pacific mainline went through the middle of Milwaukie. It was 2.4 miles through the City with 4 at-grade crossings at which locomotive were required to sound their horns. The issue with the horn noise was a long-standing source of frustration. The map indicated the grade crossings, and the circles illustrated the ¼-mile distance at which the trains were required to sound their horns. There was a lot of residential housing within ¼-mile of the track. He guessed if the City did a noise study that the noise would probably be at decibel levels to bother people who were even further. The Federal Railroad Administration was considering rules in April.

**Mr. Webb** commented that the agency was very methodical.

**Mr. Shirey** continued that those were imminent, and Milwaukie could take advantage of these upcoming rules. The report went into detail on each crossing and its configuration relative to rights-of-way and identified a proposed quiet zone set of measures. Those were additional crossing dates, center medians to prevent, and electronics that controlled the gates as a backup in the event power was lost.

For the 4 grade crossings, it would cost from \$825,000 to \$965,000 total. He did not recommend this was what the City should do and was presenting information to the City Council and public. He would take this report to the Neighborhood Associations who wanted to hear about the study in more detail. He thought the

City might look at setting up a local improvement district (LID) to assess property owners within a certain noise corridor. Apparently that method was used successfully in Vancouver, Washington. People were so fed up with the noise that they were willing to make payments to implement the measures.

**Councilor Barnes** asked how many calls the City was getting.

**Mr. Swanson** replied, although he did not get a lot of calls, this was probably one of the top 3 or 4 issues he was questioned about by phone and at neighborhood meetings. That was probably due to the number of crossings and the continuity. Something was always sounding when a train went through.

**Councilor Barnes** asked what funding alternatives there were other than coming out of the City budget or forming an LID.

**Mr. Shirey** said those were the only options he identified because he did not know of any federal or railroad assistance programs.

**Mr. Swanson** added the proposed Federal Railroad Administration Rules specifically exempted the railroads from any contributions. It would be a local responsibility. The theory was that congress required the sounding of the whistles for safety. As long as there were no other safety provisions at the crossings, they did not require anything else. It somehow had to be on the local jurisdictions. If the City had flexibility, then it could finance it over 4 or 5 years. However, the City did not have the money, and he did not see any federal money available.

**Councilor Barnes** commented that she grew up in Cedarcrest. She still lived in that area, but she no longer heard it. It got to the point after living there for years that it was just part of the neighborhood. With that many phone calls, she understood the City needed to address the issue. The longer a person lived in this town the more they tuned it out. She had not heard any complaints about the noise from people who had lived there for a long time.

**Councilor Stone** asked how the City was measuring the need for this. She lived near the tracks and had done so for more than 20 years. She agreed that one did tune it out. Her concern was the need and how to measure it. Did a few complaints by a few citizens validate spending almost \$1 million? Her other concern was the LID in Vancouver. What were the demographics? The demographics in Milwaukie would probably not support funding these projects with LIDs.

**Mr. Webb** replied that the homes in Vancouver were more expensive and were along the Evergreen Hwy. Councilor Stone had made a very good point. Five years ago he retired from his Signal Manager's position with UP, and this was part of his district. The railroad had done a lot with its own dollars to lessen the cost impact. At Harmony, there was a new instrument house as well as one near Mike's Drive-In. The crossing at 37<sup>th</sup> Avenue and Oak still had the 12-inch lights, and he thought there was a good possibility for a partnership to defer some of the costs. In order to have a quiet zone, one had to have a least ½ mile. Milwaukie had two zones. The zone with the 3 crossings was the worst for noise. What

was the long-term projection for an overpass at Harmony Road? He used to push for that himself.

**Mayor Bernard** believed that would result in taking out 2 blocks from the neighborhood, so that was unlikely. He believed it was still in the County's Capital Improvement Plan (CIP).

**Mr. Webb** said if Milwaukie was really interested, the railroad was also. He could not say it would put any money toward it, but there were a lot of people who could figure out ways to do this so it would not be so costly. He would be willing to help. He had a personal interest because he used to attend church on Linwood Avenue. There was probably about \$180,000 of railroad money plus some state funds that were put into the adjacent traffic signals. It was not as if the City would have to start from scratch. If the Council was interested, he could get a more realistic idea of the cost. There would be a quiet zone conference in Southern California in April, so he would look at some of the new equipment that might be less costly. He could not say what the bottom line would be at this point. It was certainly an issue with a lot of communities. They did a 48-crossing zone in northeast Ohio. One set of double mains had 80 trains per day, and the other had 60. The person living in the center could hear over 6,200 whistle sounds per day.

**Mr. Swanson** said this was done because there were enough inquiries that staff needed to be able to tell Council and people what would need to be done and how much that would cost. In the past year he talked with a safety person at the railroad. He had concerns about safety even with the development of a quiet zone. Even with the regulations and the equipment that would be required to establish a quiet zone, he was still concerned about safety and preventing the potential for accidents to happen. The railroad was doing what it was required under federal regulations, and the City would be choosing to establish the quiet zones.

**Mr. Hale** said there were funding options if one look at the whole corridor as a safety improvement. He discussed the feasibility of closing one of the crossings and getting federal grants to upgrade the others.

**Mr. Webb** said the only choice of street closure might be 37<sup>th</sup> Avenue.

**Mayor Bernard** met with someone last week who was starting to raise money to solve some of these issues based on the need for freight mobility. They were trying to raise money to upgrade crossings.

**Mr. Webb** had volunteered for Metro's Transportation Committee, and like everyone else, it had limited funds.

**Councilor Collette** was going to meet with the Oregon Energy Trust to find out if there was a way for Milwaukie to reduce its street lighting budget and any other budgets with energy grants. They wanted to push upgrading traffic signals, and she would ask if there was a potential to upgrade railroad-crossing signals. They had a lot of money, and the Trust approached her about giving money to Milwaukie.

### Pavement Management Report

Mr. Shirey, Mr. Somers, and Mr. Clark were joined by Michael L. Rybka, President, EIS Inc. and Joel Conder, Senior Project Manager provided the staff report.

**Mr. Shirey** said the report done by the consultants to test and evaluate the conditions of the streets in Milwaukie provided a quantitative means to talk to people about the greatest needs in terms of preserving the street surface or doing things within a relatively short period of time to prevent the streets from becoming so deteriorated that they had to be rebuilt. He discussed spending money on the street system so that conditions did not continue to deteriorate.

**Mayor Bernard** said one of his greatest concerns was King Road, which was, next to Railroad Avenue, one of Milwaukie's worst streets.

**Mr. Somers** discussed the option of taking the blacktop off and mixing cement with the existing dirt that sets up like concrete. That saved a lot of money. The travel lanes on King Road were deteriorating, but the center lane was not. One idea was to not worry about the center lane, deal with the travel lanes, and then pave over the whole thing. That would probably save quite a bit of money. There were many ways to rebuild a street, but he was a true believer in the concrete treated base. The City was trying to reserve some money in the street budget next year.

**Mr. Rybka** said Milwaukie hired his firm in 2004 to assess the City streets. An inventory was developed by driving all the streets in the City, measuring it in terms of length and width and giving it some identifiers to know what the inventory was and what the street network was made up of. In the second phase, inspectors went out to evaluate each street in the City based on a set criteria on the types of pavement distresses and deficiencies. Those were rated on severity – low, medium, and high – as well as quantities. Once that information was gathered, there was a series of components to the pavement management system the City purchased which took it through the inventory piece and budget analysis modules. He called this the financial impact analysis. They compared what the City was currently spending, the predicted models, and several scenarios of how much it would cost for Milwaukie maintain its streets. It was important to remember that the rate of deterioration was constant and without intervention, the cost of providing desired service levels increased if adequate investments were not made.

Milwaukie had 70 miles of centerline miles and 138.6 miles of lane miles. This recognized that arterials and collectors often had multiple lanes. Those were the major roads. There were 4.6 miles of arterials, 12 miles of collectors, and 54 miles of residential roads. Based on the hierarchy, collectors were the main roads moving through town taking traffic from the neighborhoods to the major roads to the state routes.

A pavement management program was a method to effectively manage streets and a planning tool to aid in decision making for broad areas or individual streets.

One could look at the timing and scheduling based on the predicted models in the pavement management system. It had a pavement deterioration model. One could find out the condition in the future based on current predictive models and what the overall street condition would be if no maintenance were done. It was also a cost benefit analysis tool to determine the differences between spending money today or deferring and the effects of various treatments. The rating of the pavement condition index was the score of overall condition of the road. It began at '0' and went to '100.' Once one had the score identified, it also began placing streets into a decision tree matrix based on the range of the pavement conditions. Decisions could be made on the street conditions. The budget needs analysis was the first financial impact that was produced. At this point the inventory was developed, the condition assessment was done, and the decision tree was based on the City's cost of doing business. This provided a good snapshot of what it would cost the City to do street maintenance and rehabilitation. He often referred the budget needs analysis to the 'blank check theory.' Without any fiscal constraints, this was how much it would cost to bring up the street system to a given benchmark. The pavement management system strived to bring the streets up to a condition of 82. There were also budget scenarios or 'what if' analyses. Once there was a budget number, then various scenarios could be run to provide quantified answers based on funding. It demonstrated and quantified deficiencies for current and future allocation. Another component was the GASB 34 accounting reporting. The pavement management system provided information for compliance purposes.

When streets were in these conditions, there were no further options. Reconstruction could be from \$40 – \$150 per square yard based on the functional classification. Given the fact that all roads when overlaid began at 100%, in order to maintain the same level of service, the cost on a square yard basis continued to increase. The City had the opportunity to stretch dollars further with early intervention.

In 2004, the City's overall network condition was 67. 60% was good condition, 17% was satisfactory, 15% was fair, and 7% was poor. Mr. Rybka provided slides that gave examples of the various conditions. He noted that a city bus was equivalent to 7,000 cars making a single trip, so they had an adverse impact on streets over time. He offered a quotation, "Streets maintained in a good to excellent condition cost significantly less to maintain."

**Mr. Rybka** discussed the needs analysis which was originally based on a 6-year window. The City would need \$5.9 million to rehabilitate the streets with a current annual budget of about \$200,000. He provided a financial distribution based on the functional classes. A majority of the funding requirements were for those residential roads. If funding were not an issue, it would require \$8.5 million – \$850,000 annually – over a ten-year period to maintain the pavement condition index at that level. He discussed the streets that were not being addressed but should be based on the assessment. Although the City was spending \$200,000 annually, over a 10-year period the pavement index dropped to 55 and was

almost ready to drop into the fair category. The unmet needs were \$1.7 million. The cost of deferred maintenance was continuing to grow at an exponential rate.

One of the Budget Committee members had asked about the sliding scale and the potential plane crash. There was still time for adjustment after pondering the results and working with the engineering staff. It would be about \$450,000 per year to maintain the status quo with a 67 rating. If the City wanted to improve slightly, it would take \$600,000 to get to 76. He noted the ideal rating was 82 in the pavement management system. Mr. Rybka liked 76 because the City could still get by with low-cost maintenance alternatives without going into extensive overlays or dig-outs. It could get by with low cost alternatives such as seal coating and other inexpensive treatments. It may not be a perfect world, but could get maintenance done at a lower cost once it got to that point; however, that point was still a quantum leap.

**Mr. Rybka** added some recommendations to pursue additional funding. Other cities have been successful with local maintenance access fees. He discussed the Wilsonville model that was \$3 – \$5 for a residence. The city was able to give rebates once all of its maintenance needs were addressed. Other recommendations were to develop investment level funding packages, and develop a 3-year plan with measurable outcomes.

**Mayor Bernard** thought the solution was in street lighting.

**Councilor Collette** asked if the work on Lake Road would affect the charts in any significant way.

**Mr. Shirey** replied it would bring the number of lane miles up and increase to condition rating slightly if nothing else were done.

**Mr. Rybka** said it was a fraction of a larger pie. It would increase the overall condition slightly and would reduce the overall impact. He discussed the functional classifications. Arterials and collectors had a higher rating and were typically more expensive because they carried higher volumes of traffic because of curbs and sidewalks and pavement widths and structures.

**Councilor Collette** asked if the new transportation systems development charge (SDC) would help in any way.

**Mr. Shirey** replied that SDCs can only be used to provide for new capacity and cannot be used for pre-existing deficiency. The longer the City waits and conditions worsen, the greater the cost.

The group discussed the quality of the last King Road repairs.

**Mr. Somers** indicated it was a state overlay project that was very poorly done.

**Councilor Barnes** asked why the City did not complain about the quality of the project. Those were the calls that she got. People were tired of trying to drive on it and wanted to know when it was going to be fixed.

**Mr. Somers** said the contractor did what he was told to do.

**Councilor Barnes** suggested adding that to the list of things to call the State Representatives about.

**Mr. Shirey** said Lake Road between 21<sup>st</sup> and 38<sup>th</sup> Avenues would be rebuilt. It did not require that level of reconstruction from 38<sup>th</sup> Avenue to the east.

**Councilor Loomis** said the presentation was very helpful and was the first time it was broken down individually. People could use this information to make an educated decision. The biggest problem with roads was at one time the streets budget looked really flush, and the decision-makers decided to pay for street lighting out of that. It originally came out of the general fund. When a pot looked big, there was likely a need there, and eventually there would be consequences.

**Mayor Bernard** agreed at one time cities were really flush with gas tax money, and many used it to pay for street lighting. He thought the City needed to resolve that and get street lighting back into the general fund. He recommended that the City add street lighting to the PGE bills. That would be taxing the citizens and would be easier today to put \$.25 to \$.30 cents on each bills than taxing people in the future.

**Councilor Loomis** commented this made it easier to relay the message to the people who would be more willing to pay if they believed and trusted their local governments. People thought the City was just not spending the money it had to fix the streets.

**Councilor Stone** thought King Road was a fine example of why citizens mistrust how government spends money. That was a waste of time and money. She asked what the City could forecast in terms of getting grants or tap other sources of funding to do some of these needed projects.

**Mr. Shirey** said it was difficult to forecast grants. The City spent a lot of time and energy getting the McLoughlin Boulevard and Lake Road grants. About every 6 years when the reauthorization of federal highway funds comes up, the City had a chance to get a project. Metropolitan Transposition Improvement Project (MTIP) funds were limited, and Milwaukie did receive \$450,000 this year for the downtown project. Predicting grant amounts was really difficult. Milwaukie needed a dedicated and constant flow of dollars to keep the pavement conditions from ongoing deterioration.

**Councilor Stone** said a lot of the breakdown of the City streets was due to TriMet busses. 32<sup>nd</sup> Avenue was reconstructed with gas tax dollars and cost just under \$1 million. Why was TriMet not held accountable for putting some money in for keeping City streets in good repair?

The group discussed TriMet's paying gas taxes and how those funds were apportioned.

**Councilor Stone** added that Milwaukie had a lot of busses traveling through the community and noted that routing on 32<sup>nd</sup> Avenue just increased.

**Mr. Shirey** said the City should make sure that busses stayed on arterials and collectors because they were built at a design standard to handle the weight.

**Councilor Stone** commented that 32<sup>nd</sup> Avenue had really held up, whereas King Road had not. It always concerned her when street cuts were made.

**Mr. Shirey** concluded that the City would continue to use the software it bought to periodically assess and update the condition of the streets. It had a lot of tools to portray the choices and tradeoffs to citizens if the Council wished to move to a new funding mechanism. He believed it was a great asset and hoped the City could find a way to increase the overall funding level to maintain the street system.

**Councilor Collette** heard over and over again about the condition of King Road, and it was a major concern of Milwaukie citizens.

**Councilor Loomis** suggested making this presentation to the Budget Committee next year.

**Mr. Rybka** observed there was not a lot of hope that the Legislature would address transportation issues. Local agencies – cities and counties – were solving the problems on their own volition.

**Mayor Bernard** adjourned the work session at 6:54 p.m.

*Pat DuVal*  
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Pat DuVal, Recorder

# AGENDA

## MILWAUKIE CITY COUNCIL WORK SESSION APRIL 5, 2005

### MILWAUKIE CITY HALL

Second Floor Conference Room  
10722 SE Main Street

### **WORK SESSION – 5:30 p.m.**

A light dinner will be served.

### Discussion Items:

	<u>Time</u>	<u>Topic</u>	<u>Presenter</u>
1.	5:30 p.m.	Advisory Board Interviews	
2.	6:00 p.m.	Railroad Crossing Quiet Zone	Paul Shirey
3.	6:20 p.m.	Pavement Management System Report and Budget Options	Paul Shirey Kelly Somers
4.	6:50 p.m.	Adjourn	

### Public Notice

- The Council may vote in work session on non-legislative issues.
- The time listed for each discussion item is approximate. The actual time at which each item is considered may change due to the length of time devoted to the preceding items.
- Executive Session: The Milwaukie City Council may go into Executive Session pursuant to ORS 192.660. All discussions are confidential and those present may disclose nothing from the Session. Representatives of the news media are allowed to attend Executive Sessions as provided by ORS 192.660(3) but must not disclose any information discussed. No Executive Session may be held for the purpose of taking any final action or making any final decision. Executive Sessions are closed to the public.
- For assistance/service per the Americans with Disabilities Act (ADA) please dial TDD (503) 786-7555.
- The Council requests that all pagers and cell phones be either set on silent mode or turned off during the meeting.

## **ADVISORY BOARD INTERVIEWS**

**Tuesday, April 5, 2005**

### **APPLICANT**

### **AREA OF INTEREST**

Ray Harris

Park & Recreation Board

Patty Wisner

Design & Landmarks Committee

Molly Hanthorn

Center/Community Advisory Board

Leslie Schockner

Budget Committee

David Aschenbrenner

Budget Committee

\* All applicants are seeking re-appointment to their positions.



**To: Mayor and City Council**

**Through: Mike Swanson, City Manager**

**From: Paul Shirey, Engineering Director**

**Subject: Quiet Zone Implementation Strategy**

**Date: March 21, 2005 for April 5, 2005 City Council Work Session Meeting**

### **Action Requested**

Consider options available to the City to invest in devices at railroad grade crossings to limit train horn noise.

### **Background**

The City of Milwaukie is bisected by the main line of the Union Pacific Railroad (formally referred to as the Valley Subdivision of the Union Pacific Railroad). Over twenty-five freight and passenger trains operate daily along this rail corridor. Within 2.4 miles, the railroad crosses four city streets, at grade, within the city limits.

Federal law requires that the train sound its horn at a one-quarter mile interval with two long blasts followed by one short and one long, represented as follows: "----- ----- -- -----". The horn noise from a railroad locomotive is intended to be very loud and as a result, homes within many miles hear the trains as they travel through Milwaukie. However, due to the close spacing of these crossings, horn noise is nearly continuous for the entire 2.4 miles through the City of Milwaukie. Residences near the north side and within a quarter mile of the three grade crossings (illustrated on the attached map) are particularly adversely affected by the rail horn noise.

The Federal Railroad Administration is considering publishing rules that would allow jurisdictions to install barriers at public at-grade crossings along with other safety devices that will substantially reduce the likelihood that a train engineer would have to

sound the train's horn at each grade crossing. The Engineering Department retained the services of HDR, Inc., a consulting company with experience in this area, to analyze the cost of physical improvements that would be installed at grade crossings to reduce or eliminate train horn noise in the city.

The attached study, dated November 1, 2004 assesses the needs of each of the four at-grade public crossings in the City of Milwaukie. It includes a cost estimate for installation of devices required under federal regulations and a conceptual drawing of the devices. Several alternatives are also analyzed. The cost to meet the federal requirements for a quiet, "whistle-free" railroad grade crossing ranges from \$200,000 to \$300,000 *per crossing*, or a total ranging from \$819,000 to \$955,000 for all four crossings. There are no known sources of financial assistance to jurisdictions for this purpose.

### **Concurrence**

Engineering worked on the study at the direction of the City Manager.

### **Fiscal Impact**

Cost of the study was \$4,000.

### **Work Load Impacts**

None

### **Alternatives**

1. Direct staff to take actions to further explore implementation of quiet zones.
2. Take no action.

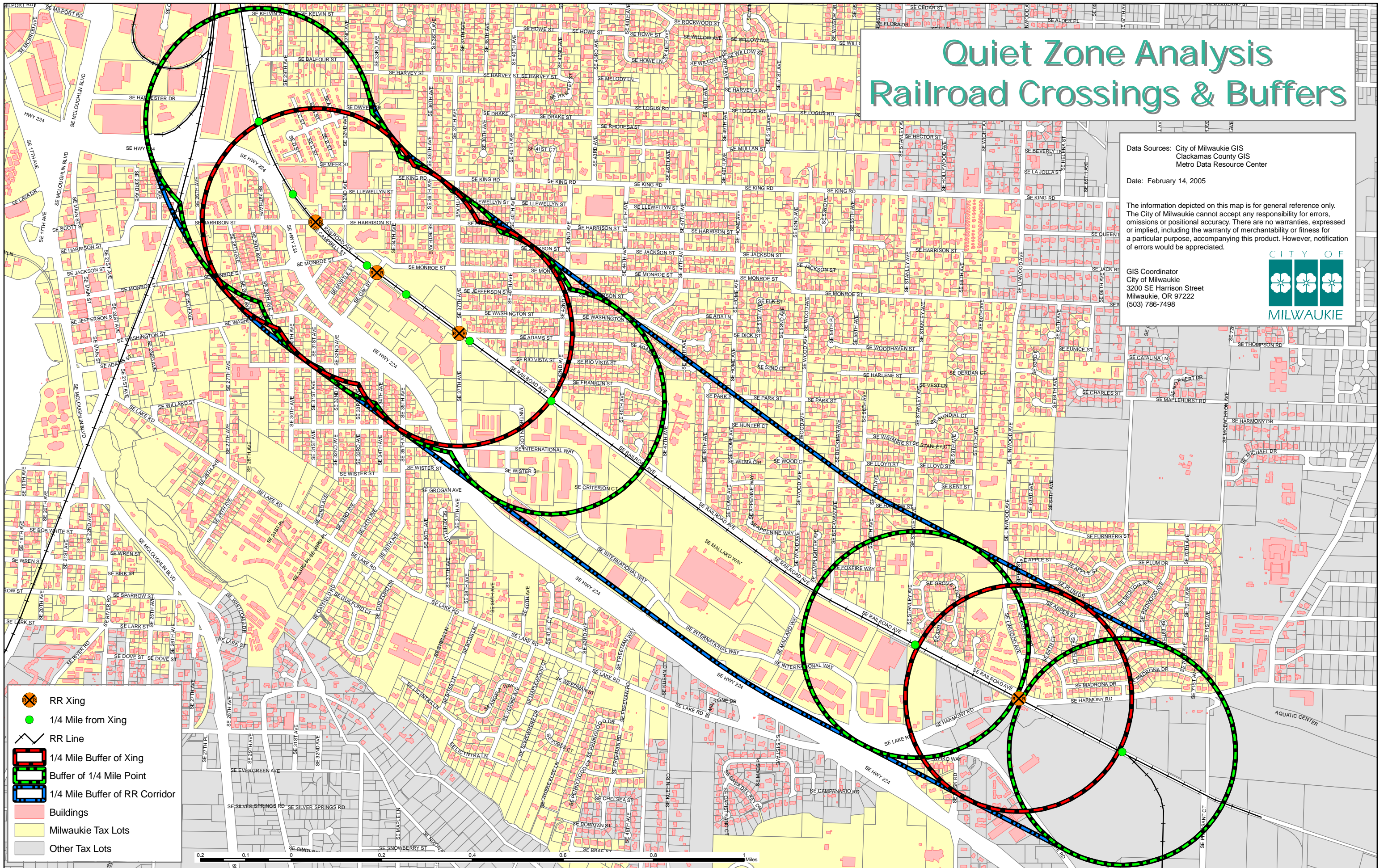
# Quiet Zone Analysis Railroad Crossings & Buffers










Data Sources: City of Milwaukie GIS  
Clackamas County GIS  
Metro Data Resource Center

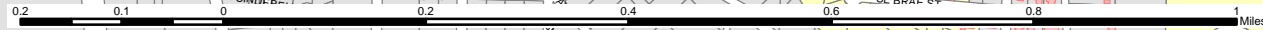
Date: February 14, 2005

The information depicted on this map is for general reference only. The City of Milwaukie cannot accept any responsibility for errors, omissions or positional accuracy. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product. However, notification of errors would be appreciated.

GIS Coordinator  
City of Milwaukie  
3200 SE Harrison Street  
Milwaukie, OR 97222  
(503) 786-7498



-  RR Xing
-  1/4 Mile from Xing
-  RR Line
-  1/4 Mile Buffer of Xing
-  Buffer of 1/4 Mile Point
-  1/4 Mile Buffer of RR Corridor
-  Buildings
-  Milwaukie Tax Lots
-  Other Tax Lots



November 1, 2004

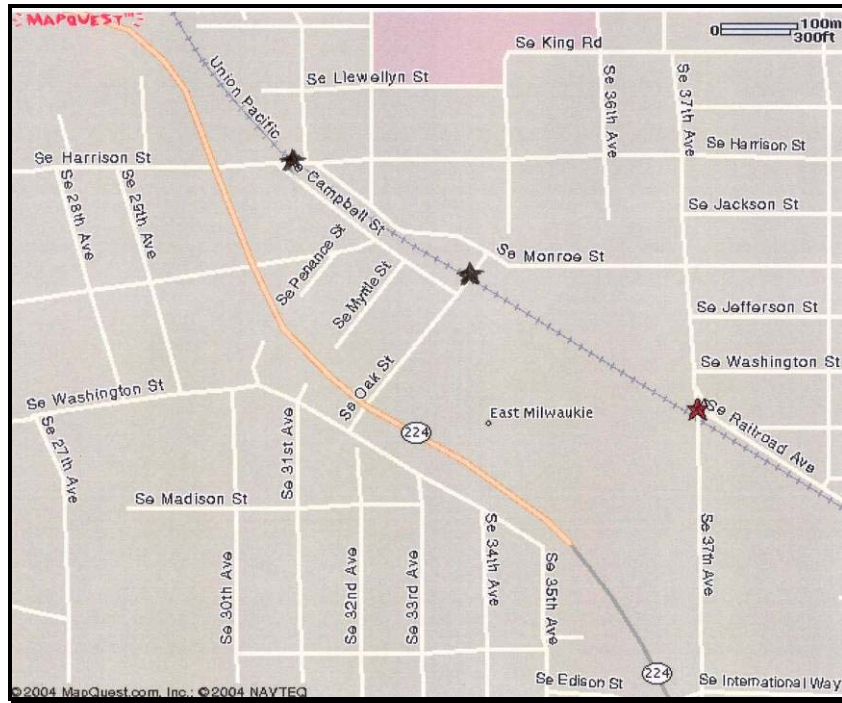
**To: Paul Shirey, City of Milwaukie**

**From: Bill Burgel, HDR, Inc.**

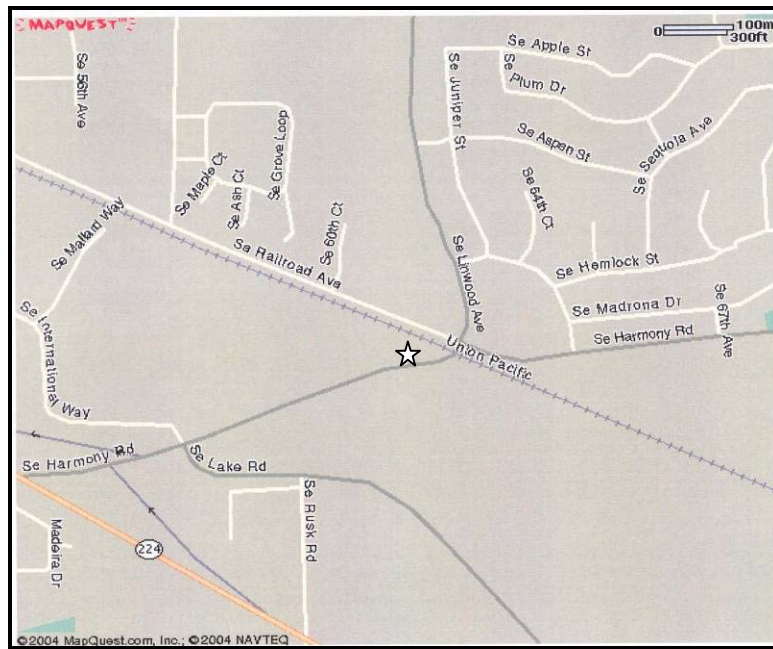
**Subject: Development of a Quiet Zone Implementation Strategy between SE Harmony and SE Harrison along the UPRR Valley Subdivision**

The Federal Railroad Administration has recently published a proposal for final rulemaking (49 CFR Parts 222 and 229) that allow communities to address train horn noise issues in localities where citizens have complained about the noise. These guidelines, slated to be approved by December 18, 2004, or soon after, attempt to decrease the likelihood that a train engineer would have to sound the train's horn at each public at-grade crossing by installing barriers that physically prevent motorists from entering an at-grade crossing. These engineered improvements, known as Supplemental Safety Measures (SSM), include either the installation of: (1) four quad gates, (2) raised median barrier, (3) full-gates on one way paired couplets, or (4) temporary or permanent closure. Alternative Safety Measures (ASM) also provide an enhanced measure of safety. A combination of more than one SSMs would be considered an ASM. For instance, a full gate on one side of the crossing combined with a median barrier on the other side is a hybrid SSM and would be reviewed as an ASM. ASMs require an added level of inspection and review before a quiet zone can be initiated. In addition, the FRA is contemplating the replacement of a train horn on the locomotive with a stationary horn located at each crossing affected. This provision would constitute its own category and would not be listed as either an SSM or an ASM.

However, to silence horn noise for a community that is adjacent to the railroad, all nearby at-grade public crossings must be mitigated using one or more of the SSM's appropriate for the individual site. The purpose of this report is threefold: (1) to discuss the characteristics of four at-grade rail highway crossings along the UPRR Valley Subdivision within the City of Milwaukie between SE Harrison and SE Harmony, (2) determine the appropriate type of SSM or ASM suitable for the crossing in order to achieve Quiet Zone designation, and (3) develop a conceptual level cost estimate for the implementation of the SSM's at each crossing included in this corridor. These findings will be discussed in subsequent meetings with City of Milwaukie staff.



Map 1 At-Grade Crossings near the City of Milwaukee's Central Business District

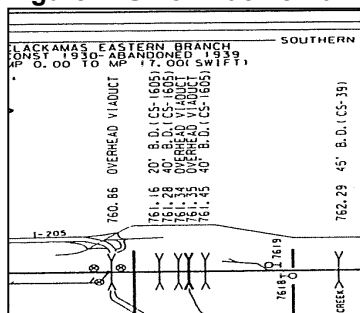


Map 2 At-grade crossing at SE Harmony Road

## Background

UPRR operates over 25 freight trains and Amtrak operates six passenger trains daily along this corridor. Passenger train speeds are 55/60 MPH and freight 40 MPH. Public at-grade crossings are located at MP 764.20 (SE Harrison Street), MP 764.05 (SE Oak Street), MP 763.95 (SE 37<sup>th</sup> Avenue), and MP 762.30 (SE Harmony Road). Passenger train speed changes from 55 to 60 MPH at SE Oak Street for southbound passenger trains.

**Figure 1 Union Pacific Railroad Track Chart of the Milwaukie area**



Train engineers are required to sound their horn one quarter mile in advance of the crossing. This suggests that the actual corridor to be analyzed for inclusion in a quiet zone begins at MP 764.45 (just west of SE Harrison) and extends to MP 762.05 (just east of SE Harmony) with a short 1.05 mile break between SE 37<sup>th</sup> Avenue and SE Harmony Road where no horn is sounded. However, in reality, the spacing of these crossings effectively creates nearly continuous train horn noise for the entire 2.40 mile distance. Residences are

scattered along the UPRR mainline. However, residences are clustered near the north side of the tracks at SE 37<sup>th</sup> and at SE Harmony. Except in the SW quadrant of SE Oak and the UPRR mainline, few if any residences are located south of the mainline. This study will focus on determining what might be needed to implement a quiet zone at the four public crossings listed above.

## Funding Philosophy

Paramount in the design of the SSM's for each site is that the design must be safe, reduce confusion for motorists and truckers alike, and be easy and relatively reasonable (cost-wise) to maintain. Depending on the design ultimately chosen by a diagnostic team composed of the road authority, FRA delegate, and the railroad, minimum design features that will be required by UPRR include: (1) flashers and gates, (2) Constant Warning Time Devices (CWTD), (3) an advance warning sign along the highway stating that the trains do not sound their horn at the crossing, (4) loop detection (if applicable), (5) a power-out indicators and (6) a requirement that the road authority establish a planning effort to eliminate some of the crossings in question. To more clearly define some of the terms above, concerning #2; the Constant Time Warning Devices act as motion sensors and activate the flashers and gates twenty seconds before the arrival of a train at the crossing to be protected regardless of the speed of the train. In other words, whether a train is operating at 60 MPH or slowing to enter the yard north of SE Harrison is only proceeding at 15 MPH, the sensors within the CTWD determine when the train will enter the crossing at a time no later than the time required by state regulations (20 seconds). Concerning #4, in a quad-gate scenario, the loop detection system is a magnetic loop installed in the roadway that keeps the furthest gate in the raised position until all vehicular traffic is clear of the area between the gates. This eliminates the likelihood that a gate will come down on a motorist who is clear of the tracks but has not yet cleared the vicinity of the highway/rail crossing. A power-out indicator (item #5) simply notifies the locomotive engineer that the commercial power

has been disrupted to the crossing gate area and that the engineer must be extra vigilant while proceeding through the crossing.

In addition to the capital costs of the physical installations, UPRR has indicated that they would seek on-going operating and maintenance (O&M) costs of appliances intended to meet the requirements of quiet zone designation over and above the base O&M costs of the active warning devices. In other words, depending on the existing arrangement of who is covering the costs to maintain the flashers and gates at each at-grade road crossing, it is UPRR's position that the cost over and above this existing arrangement that will be necessary to maintain the flashers and gates needed for the quiet zone will be the responsibility of the municipality requesting the quiet zone. Typically, these costs are in the neighborhood of \$3500 per crossing per year. For the four crossings in question, the cost might be approximately \$14,000 each year.

### Crossing Inspection

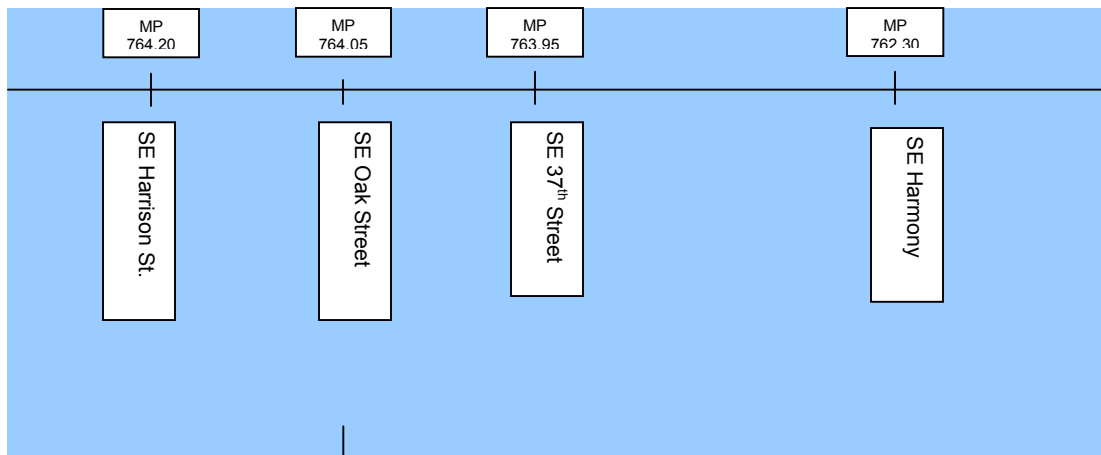
On Friday, July 16, 2004, an informal inspection team composed of UPRR and the City of Milwaukie's consultant, HDR Engineering, inspected the four listed crossings.

Representing UPRR: John Trumbull (Manager, Public Works)

Representing the City of Milwaukie (HDR Engineering): Bill Burgel, HDR's Manager of Rail Operations and Mike Webb, former UPRR Signal Manager, now HDR Signal Manager.

### City of Milwaukie SE Railroad Avenue Quiet Zone Corridor

The diagram below depicts the approximate spacing of the analyzed crossings.



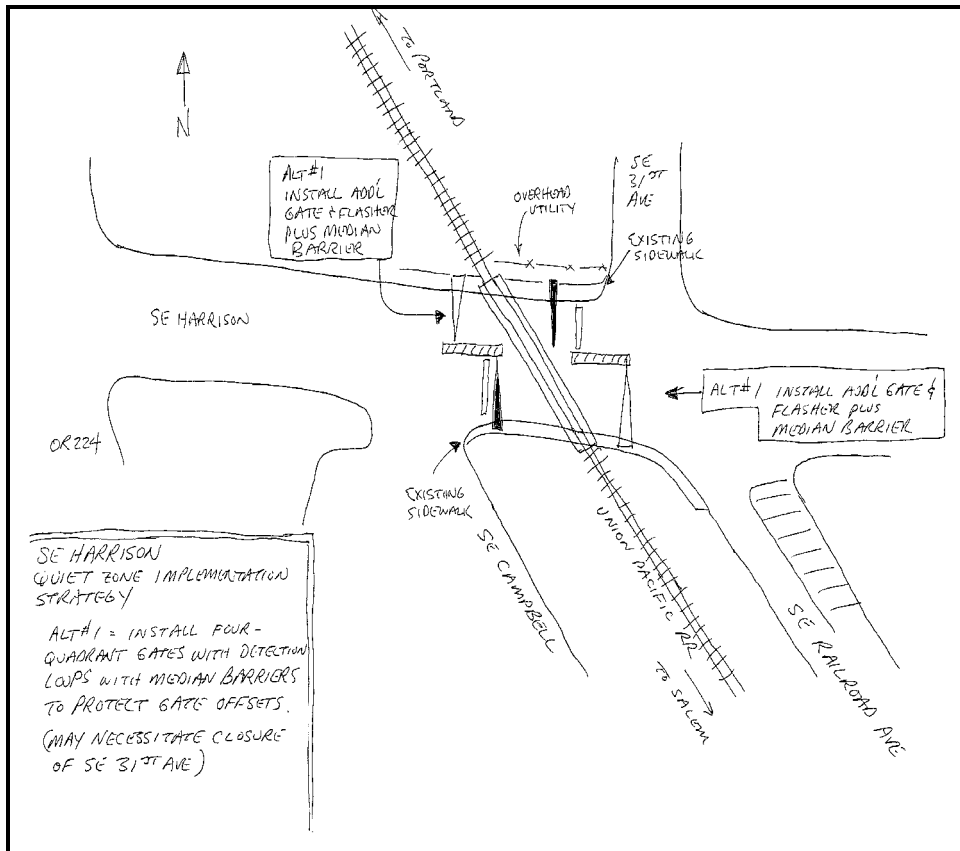
### **SE Harrison Street**

Located just east of the intersection of OR 224 and SE Harrison, the UPRR mainline crosses SE Harrison Street at a 45<sup>o</sup> angle near SE 31<sup>st</sup> Avenue (see Photo 1.0 and Sketch 1.0). The geometry at this at-grade crossing complicates a quiet zone implementation strategy. The crossing is located at the west end of a sweeping railroad curve. The inspection team developed one potential solution with a caveat that a grade separation be considered at this location to eliminate the at-grade crossing.

1. Install four quad gates with detection loops. The oblique angle coupled with the proximity of SE 31<sup>st</sup> Avenue, SE Railroad Avenue, SE Campbell Street plus the stipulation that the gates protect the lane of traffic at a 90 degree angle creates a gap between the ends of the gates when the gates are in the “down” position. Installing a short section of raised median barrier would eliminate the potential of vehicles driving around the ends of the gates. However, the proximity of SE 31<sup>st</sup> Avenue will preclude all turning movements from SE Harrison to SE 31<sup>st</sup> Avenue except for right in/right out turning movements. Other turning movements potentially affected by the quiet zone median barriers to and from SE Railroad and SE Campbell are already prohibited by existing signage. Sidewalks across the UPRR mainline are in fair condition and may require an active warning device to alert pedestrians of an approaching train in the event trains no longer are required to sound their horn.
2. Given the proximity of OR 224, an undercrossing of SE Harrison under the UPRR mainline should be considered.



Photo 1 SE Harrison



Sketch 1 SE Harrison Street

## **SE Oak Street**

Located just east of the City of Milwaukie's Public Service Building and at the east of the long sweeping curve, SE Oak Street crosses the Union Pacific mainline at a 90° angle. Photo 2.0 and Sketch 2.0 display existing conditions. Sidewalks in poor-to-fair condition composed of asphalt cross the tracks on each end of the crossing. These sidewalks may require an active warning device to alert pedestrians of an approaching train in the event trains no longer are required to sound their horn. During the inspection, it was noted that several pathways have developed across the UPRR mainline in the vicinity of City Hall. The study team recommends that decorative but substantial fencing be installed between SE Oak and SE Harrison along the UPRR right-of-way to minimize the tendency of the public to trespass across the UPRR mainline.

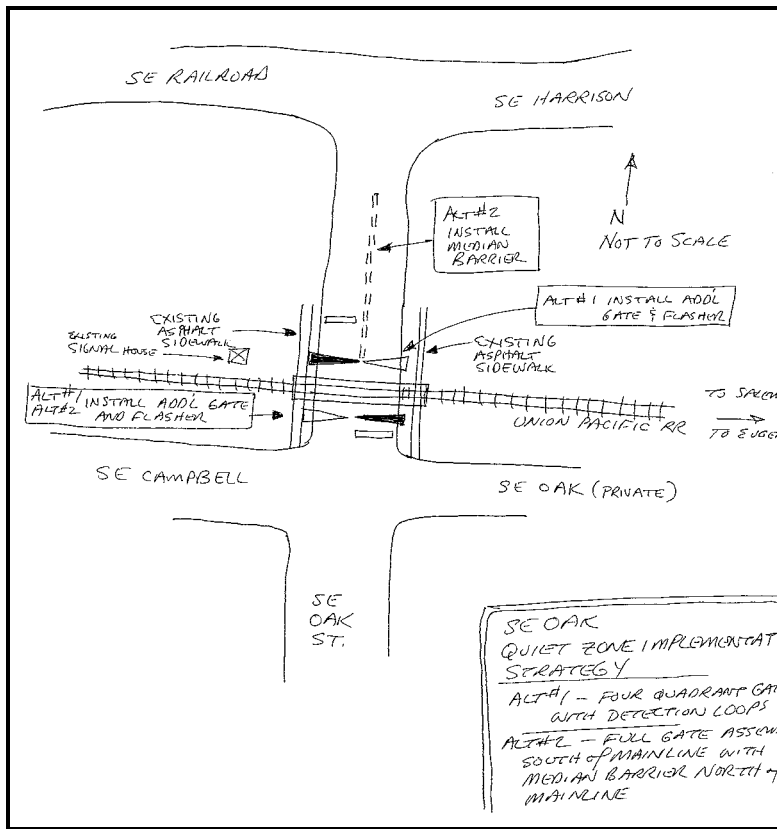
The inspection team tentatively agreed on several potential alternatives:

1. Installation of four quad gates with detection loops. There appeared to be sufficient room to install a four-quad gate arrangement that would qualify as an SSM.
2. Install a raised median that would extend 100' north of the mainline combined with a full-width gate and flasher assembly south of the mainline.
3. Closure of crossing with emergency access only.

It is likely that the entire existing flasher and gate assembly would require replacement if additional circuitry is added to the existing facility. Further evaluation of these three alternatives is warranted as all appeared to offer a viable solution.



Photo 2 SE Oak



Sketch 2 SE Oak

## **SE 37<sup>th</sup> Avenue**

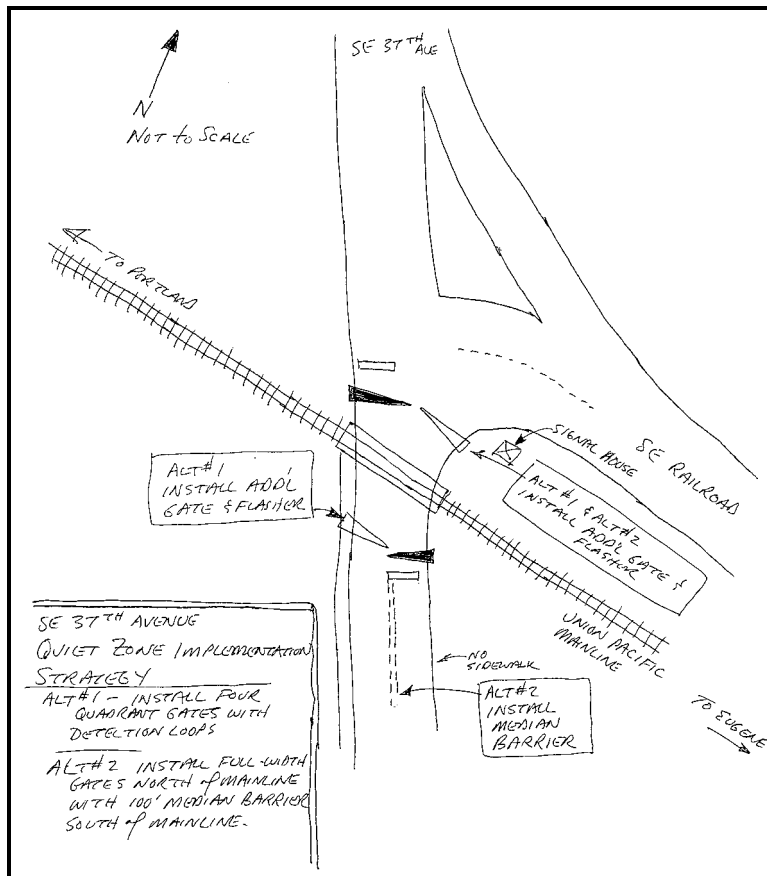
The team inspected site conditions at the intersection of SE 37<sup>th</sup> Avenue and the UPRR mainline (see Photo 3.0 and Sketch 3.0) and recommended potential implementation strategies that would allow the designation of a quiet zone. SE 37<sup>th</sup> crosses the UPRR mainline at approximately 45 degrees. SE Railroad Avenue connects with SE 37<sup>th</sup> just north of the mainline. As listed in Sketch 3.0, two solutions were readily apparent to the team. It appeared that the less costly solution involved a “hybrid” combining full gates and flashers north of the tracks with a 100’ raised median to the south. Because this constituted a combination of two recognized SSM’s, the arrangement qualified as an ASM subjecting this arrangement to an increased level of scrutiny by the FRA. There appeared to be sufficient room to install a four-quad gate arrangement (Alternative #1) that would qualify as an SSM. Although more expensive, this solution could be installed without FRA oversight. It is likely that the entire existing flasher and gate assembly would require replacement if additional circuitry is added to the existing facility. It may be necessary to relocate the signal house from the NE quadrant to the SE quadrant to slightly improve sight distances. A concrete sidewalk along the west side of SE 37<sup>th</sup> south of the tracks stops at the railroad. A diagnostic inspection of the crossing will likely recommend that the crossing panels be extended to accommodate a sidewalk along the west side of SE 37<sup>th</sup>.

Further evaluation of these three alternatives is warranted as all appeared to offer a viable solution. To summarize, the three “solutions” to be considered are:

1. Installation of four quad gates with detection loops. There appeared to be sufficient room to install a four-quad gate arrangement that would qualify as an SSM.
2. Install a raised median that would extend 100’ south of the mainline combined with a full-width gate and flasher assembly north of the mainline.
3. Closure of crossing with emergency access only.



Photo 3 SE 37th Street



Sketch 3 SE 37th

## **SE Harmony Road**

Approximately one mile east of SE 37<sup>th</sup>, the team inspected SE Harmony Road. Photo 4.0 and Sketch 4.0 depict site conditions. The inspection team agreed on three potential approaches to eliminate train horn noise at this location. It appeared that the less costly solution involved a “hybrid” combining full gates and flashers north of the tracks with a 100’ raised median to the south. However, because of highway geometry, the median would curve slightly. This could compromise the ability of trucks to safely negotiate left-hand turning movements from SE Harrison onto SE Railroad as well as right hand turning movements from SE Railroad onto SE Harrison. Combining a median barrier with a partial full-width gate assembly constitutes a blend of two recognized SSM’s, this arrangement qualifies as an ASM subjecting this arrangement to an increased level of scrutiny by the FRA. There appeared to be sufficient room to install a four-quad gate arrangement (Alternative #1) that would qualify this crossing as meeting SSM requirements. Although more expensive, this solution could be installed without FRA oversight. For these reasons, and because of the turning restrictions created by the curved median barrier, the four-quad option with detection loops appeared to be the only satisfactory solution. A concrete sidewalk in good condition crossed the track west of the crossing. The sidewalk may require an active warning device to alert pedestrians of an approaching train in the event trains no longer are required to sound their horn.

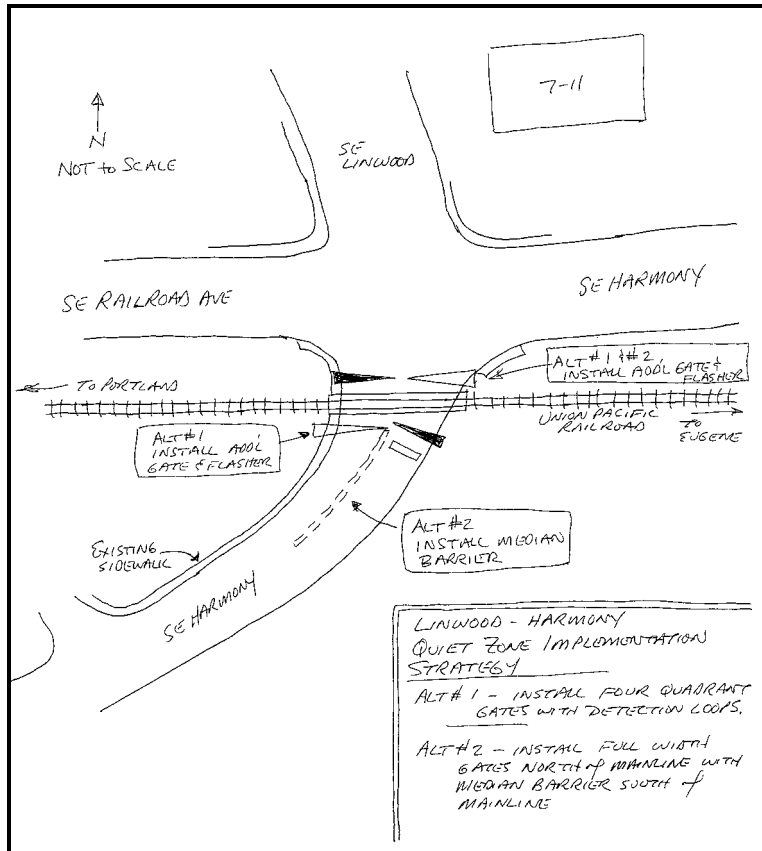
To summarize, the three “solutions” to be considered are:

1. Four quad gates with detection loops. There appeared to be sufficient room to install a four-quad gate arrangement that would qualify as an SSM.
2. A raised median that would extend 100’ south of the mainline. Because of highway geometry, the median would be slightly curved.
3. Closure of crossing by constructing a grade separation. This solution has been previously considered by Clackamas County officials.

Further evaluation of these three alternatives is warranted. However, the financial outlay for an improved at-grade crossing appeared to counter the overall benefit constructing a grade separation at this location.



Photo 4 SE Harmony



Sketch 4 SE Harmony

**Estimated Costs:**

**SE Harrison**

<b>Crossing</b>	<b>Element</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Estimated Cost</b>
SE Harrison	Quad gate	2	\$55K	\$110K
	Relocate overhead wire	LS	\$5K	\$5K
	Median	60 LF	\$100/LF	\$6K
	Sidewalk (active warning device)	2	\$40K	\$80K
	Signage	LS	\$1K	\$1K
	<b>Subtotal</b>			<b>\$202K</b>

**SE Oak Alternative #1**

<b>Crossing</b>	<b>Element</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Estimated Cost</b>
SE Oak	Quad gate	2	\$55K	\$110K
	Rehab existing gates	2	\$55K	\$110K
	Sidewalk (active warning device)	2	\$40K	\$80K
	Signage	LS	\$1K	\$1K
	<b>Subtotal</b>			<b>\$301K</b>

**SE Oak Alternative #2**

<b>Crossing</b>	<b>Element</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Estimated Cost</b>
SE Oak	Quad gate	1	\$55K	\$55K
	Rehab existing gates	2	\$55K	\$110K
	Median	100 LF	\$100/LF	\$10K
	Sidewalk (active warning device)	2	\$40K	\$80K
	Signage	LS	\$1K	\$1K
	<b>Subtotal</b>			<b>\$256K</b>

**SE 37<sup>th</sup> Alternative #1**

<b>Crossing</b>	<b>Element</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Estimated Cost</b>
SE 37 <sup>th</sup>	Quad gate	2	\$55K	\$110K
	Rehab existing	2	\$55K	\$110K
	Sidewalk (active warning device)	2	\$40K	\$80K
	Signage	LS	\$1K	\$1K
	<b>Subtotal</b>			<b>\$301K</b>

**SE 37<sup>th</sup> Alternative #2**

<b>Crossing</b>	<b>Element</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Estimated Cost</b>
SE 37 <sup>th</sup>	Quad gate	1	\$55K	\$55K
	Rehab gates	2	\$55K	\$110K
	Median	100 LF	\$100/LF	\$10K
	Sidewalk (active warning device)	2	\$40K	\$80K
	Signage	LS	\$1K	\$1K
	<b>Subtotal</b>			<b>\$256K</b>

**SE Harmony Alternative #1**

<b>Crossing</b>	<b>Element</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Estimated Cost</b>
SE 37 <sup>th</sup>	Quad gate	2	\$55K	\$110K
	Sidewalk (active warning device)	1	\$40K	\$40K
	Signage	LS	\$1K	\$1K
<b>Subtotal</b>				<b>\$151K</b>

**SE Harmony Alternative #2**

<b>Crossing</b>	<b>Element</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Estimated Cost</b>
SE Oak	Quad gate	1	\$54K	\$54K
	Median	100 LF	\$100/LF	\$10K
	Sidewalk (active warning device)	1	\$40K	\$40K
	Signage	LS	\$1K	\$1K
<b>Subtotal</b>				<b>\$105K</b>

**COST ESTIMATE SUMMARIES**

	<b>Alt #1's</b>	<b>Alt #2's</b>
SE Harrison	\$202K	\$202K
SE Oak	\$301K	\$256K
SE 37 <sup>th</sup>	\$301K	\$256K
SE Harmony	\$151K	\$105K
<b>Totals</b>	<b>\$955K</b>	<b>\$819K</b>

### **Recommendations:**

Our recommendation would be to seek funding initially for the SE 37<sup>th</sup> and SE Oak then once the benefits are understood, and then seek funding for SE Harrison, then SE Harmony. The rationale behind this thinking is that the SE 37<sup>th</sup> and SE Oak have the greatest number of "receptors" near the crossing. Also, the railroad has indicated that they would like to see grade separations constructed at SE Harrison and at SE Harmony. Certainly, installing the hardware necessary for a quiet zone is much less expensive (as opposed to constructing a grade separation), but the funds if gathered for a quiet zone could ultimately be used to help fund a grade separation should the community and the railroad elect to go this route.

Pertaining to the regulatory process to be followed in order to implement a quiet zone, the first step would be to perform an inventory of the crossings to be considered in order to update the FRA inventory. Once the updated data has been obtained, FRA's "Quiet Zone Calculator" can be run for the proposed QZ to determine the Quiet Zone Risk Index. Once this has been done, it can be determined if Supplemental Safety Measures will be required at any or all of the crossings within the Quiet Zone. If the SSMs are required, an engineering study must be performed to determine which would be appropriate from both an engineering and financial perspective at each crossing. Once the SSMs have been implemented at the appropriate crossings, appropriate notifications must be provided to various agencies and the railroads indicating, among other things, the date on which the sounding of locomotive horns is to cease. This date can be no sooner than 21 days from the date that the notifications are provided. There is no application or fee, nor is there a deadline that must be met, except for pre-rule quiet zones. For pre-rule Quiet Zones, in order for the locomotive horns to remain silent, authorities must state an intention to meet certain requirements within 5 years of the effective date of the rule (or 8 years if state agency assistance is provided.) Notification of intent to continue the pre-rule Quiet Zone must be filed by the date the rules become effective.



**To:** Mayor, City Council

**Through:** Mike Swanson, City Manager

**From:** Paul Shirey, Director of Engineering  
F. Kelly Somers, Director of Public Works Operations

**Subject:** Pavement Management System Report and Budget Options

**Date:** March 17, 2005 for the April 5, 2005 Work Session

### **Action Requested**

Consider options for various street-funding and maintenance levels based on the Pavement Management System analysis. Direct staff to pursue options to adequately fund the street improvements needed to reach our objective.

### **Background**

In June of 2004 the City of Milwaukie contracted with Engineering Information Services, Inc. of Salem, Oregon to provide pavement management technical services for the City of Milwaukie. The scope of the effort includes conducting a visual pavement assessment of each City Street and calculating the impact of various funding levels on the pavement conditions of the street network.

Our consultant used a software program developed by the Metropolitan Transportation Commission (MTC), called the Pavement Management Program (PMP) to do the evaluation. The program develops a maintenance strategy to improve the overall condition of the streets.

The program uses a numerical value to describe the condition of each street. Using a 0 to 100 scale, with 100 being the most favorable and 0 being least favorable. Currently, the City's average rating is 67. This program strives to develop a

maintenance strategy that will improve the overall condition of the streets to the mid 80's and then maintain it at that level.

This pavement management report is intended to assist the City of Milwaukie with identifying street maintenance priorities. The City's street network replacement values, currently estimated at \$65 million, represents a significant asset for the City to manage. This asset valuation assumes replacement of the entire street network at today's dollars.

Our consultant will present several different maintenance options along with the financial impact for Council consideration. This system is a valuable tool that will assist the City in prioritizing funding for street improvements and help the community understand the level of investment needed for the city street network.

### **Concurrence**

Operations, the Street Division, and Engineering have worked together to manage the study up to this point.

### **Fiscal Impact**

The cost of the Pavement management budget options report was \$15,500 and was included in the 2003-04 Street Fund budget. The study at this point has not resulted in any fiscal impact to the City. The fiscal impacts are identified for each of the options presented.

### **Work Load Impacts**

Staff workload has been minimal to this point, once an option is selected and funding is provided it will require engineering staff time to design and administer the projects.

### **Alternatives**

1. Choose a street funding and maintenance option
2. Suggest an alternative approach
3. Do nothing