

**City of Kingston/Town of Ulster Quiet Zone
And
City of Kingston Pedestrian Safety and Mobility Analysis**

Final Report

Ulster County Transportation Council



Submitted By

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Economics · Engineering · Service Planning

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City of Kingston/Town of Ulster Quiet Zone and City of Kingston Pedestrian Safety and Mobility Analysis

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City of Kingston/Town of Ulster Quiet Zone and City of Kingston Pedestrian Safety and Mobility Analysis

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City of Kingston/Town of Ulster Quiet Zone and City of Kingston Pedestrian Safety and Mobility Analysis

Executive Summary

Purpose

The purpose of this County of Ulster study is to (1) assess the feasibility and costs of implementing a Quiet Zone which includes twelve public grade crossings within the City of Kingston and Town of Ulster, and (2) perform a pedestrian safety and mobility analysis in the City of Kingston, with regard to six grade crossings. See map next page.

Quiet Zone Feasibility and Cost

The U.S. Department of Transportation (USDOT) Federal Railroad Administration (FRA) Final Rule, "Use of Locomotive Horns at Highway-Rail Grade Crossings", 49 CFR Parts 222 and 229, published April 27, 2005, in the Federal Register (hereafter, Final Rule), establishes the requirements for a Quiet Zone, where locomotive horns are not sounded.

Implementation of one or more of the following supplementary safety measures (SSMs), at each crossing, will allow a jurisdiction to create an authorized Quiet Zone:

- Temporary closure of crossing
- Four-quadrant gate system
- Gates with medians or channelization devices
- One way street with gates
- Permanent closure of crossing

The following table shows costs of SSMs.

Supplementary Safety Measure	Approximate Capital Cost
Temporary closure	\$1,000
Four-quadrant gates	\$270,000-\$360,000
Gates with medians/channelization	\$14,000-\$60,000
One way street with gate(s)	\$1,000
Permanent closure	\$5,000-\$10,000

Source: Various professional publications and RLBA estimates, modified for existing Ulster County conditions.

An additional maintenance cost would be associated with each alternative.

A Diagnostic Team, composed of local, state, federal and railroad stakeholders, was assembled to examine the crossings, discuss alternative SSMs, consider pedestrian

Insert Map

safety and mobility improvements, and prepare recommendations. The Diagnostic Team visited the twelve public grade crossings on October 18, 2005. Following is a summary of Diagnostic Team recommendations:

<u>Crossing</u>	<u>SSM</u>
Smith Avenue	Four-quadrant gates
Ten Broeck Avenue	Four-quadrant gates
Foxhall Avenue	Four-quadrant gates
Gage Street	Permanent closure
Cemetery Road	Permanent closure
Flatbush Avenue	Four-quadrant gates
Boices Lane	Four-quadrant gates
Old Neighborhood Road	Four-quadrant gates
Grant Avenue	One way street
Leggs Mill Road	Medians/channelization
Katrine Lane	Four-quadrant gates
Eastern Parkway	Four-quadrant gates

Source: Diagnostic Team

The approximate cost of implementing the Quiet Zone recommendations is \$2,500,000 (rounded), based upon the cost of four-quadrant gates, which are the significant-cost SSMs. Other costs are comparatively minor.

Currently the responsibility for the twelve crossings resides with City of Kingston, for City of Kingston Crossings, with Town of Ulster for its crossings, and with the County of Ulster for county roads (Boices Lane and Leggs Mill Road). These appear to be the appropriate lead agencies for implementation and maintenance of a Quiet Zone.

It is strongly recommended that there be overall coordination and direction of any implementation activities regarding establishment of a Quiet Zone.

Implementation of a new Quiet Zone involves the following steps:

- (1) Arrange for funding.
- (2) Meet qualifying conditions.
- (3) Petition State of New York with regard to crossings which are to be closed.
- (4) Update Grade Crossing Inventory forms.
- (5) Arrange for Diagnostic Team inspection if any new private or pedestrian crossings are created.
- (6) Issue Notice of Intent to railroad (CSX) and State of New York.
- (7) Resolve any comments received.
- (8) Install SSMs.
- (9) Publish Notice of Quiet Zone Establishment.

Pedestrian-Railroad Crossing Safety and Mobility Analysis

Between the Broadway Avenue underpass and the Ulster Avenue-Route 32 overpass, pedestrians have no convenient or safe alternative but to wait for passing or stopped trains.

Because of the close linkage between the Quiet Zone analysis and pedestrian safety and mobility analysis, the two subjects were examined concurrently. The Diagnostic Team addressed both in its October 18, 2005 inspection.

The following pedestrian safety and mobility measures were evaluated, separately or in combination:

- Closure (if the street crossing is to be closed)
- Grade separation (bridge over, or tunnel under the railroad)
- Wait stations
- Fencing
- Warning signs and gates
- Procedural, operational and educational measures; surveillance and enforcement

Following is a summary of pedestrian safety and mobility improvements and their approximate capital cost. Maintenance cost is expected to be minimal.

Pedestrian Safety and Mobility Improvement	Approximate Capital Cost
Closure of crossing	\$16,000 per 1,000 feet of fencing
Grade separation	\$500,000
Wait station	\$7,500 or less
Fencing	\$16,000 per 1,000 feet of fencing
Upgrade warning signs and markings	Nominal
Enforcement	Relatively low
Education	Relatively low

Source: RLBA estimates.

The following near-term pedestrian safety and mobility improvements were recommended by the Diagnostic Team.

Crossing	Pedestrian Improvement
Smith Avenue	Wait stations
Ten Broeck Avenue	Wait stations
Foxhall Avenue	Wait stations, sidewalks
Gage Street	Wait stations
Cemetery Road	Wait stations
Flatbush Avenue	Wait stations, sidewalks

Although not specified as a component of this study, the Diagnostic Team recommended pedestrian safety improvements at the following Town of Ulster locations:

Crossing	Pedestrian Improvement
Boices Lane	Wait stations, sidewalks
Leggs Mill Road	Wait station on east side of crossing

Implementation of all pedestrian safety and mobility measures may be effected irrespective of Quiet Zone decisions. Lead agencies should be the same as those for Quiet Zone implementation.

Total approximate cost of wait stations, at all recommended locations, is \$112,500. Lower-cost wait stations are likely, and a bulk purchase may improve pricing. Total cost of sidewalks for three crossings (Foxhall, Flatbush and Boices) would be about \$4,500.

Diagnostic Team discussions regarding potential long-term pedestrian safety and mobility improvements generally focused on overpasses (over CSX) and tunnels (under CSX).

Funding

Although federal and state funding is potentially available with regard to grade crossing safety and improvements, including those related to pedestrians, it is generally not available for implementation of Quiet Zones. On the other hand, the thousands of projects which received “earmarks” in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which became law in August 2005, include a number of grade crossing projects and at least one Quiet Zone. Grade crossing closures likely will be paid for by the railroad and the State.

Other than crossing closures, funding of SSMs likely will be a local responsibility, with the potential of assistance through earmarks in the next federal surface transportation authorization (expected in 2009).

Conclusions

Foxhall Avenue is a relatively high risk crossing. It would be prudent for the City of Kingston to examine this crossing for safety improvements, irrespective of the proposed Quiet Zone.

Given the history of trespasser fatalities, it would be prudent for the City of Kingston to work with the railroad and determine what actions may be taken to reduce or prevent trespassing.

With regard to the planned Quiet Zone, a Diagnostic Team visited twelve crossings in the City of Kingston and the Town of Ulster and made recommendations regarding

employment of SSMs. Because of the presence of street intersections within 60 feet of the grade crossing, at most of the crossings, the Diagnostic Team was obliged to recommend the most expensive SSM – four-quadrant gates – at eight of the 12 crossings. In the case of two crossings, Gage Street and Cemetery Road, the Diagnostic Team recommended permanent closure. Leggs Mills Road is amenable to low-cost medians, while Grant Avenue’s wide median allows the low-cost one-way-street-with-gates SSM.

It is the cost of four-quadrant gates which effectively drives the estimated capital cost of the planned Quiet Zone, about \$2.5 million.

There are options with regard to reducing project cost. For example, it has been suggested that a Wayside Horn (approximately \$70,000) be used in lieu of the more expensive four-quadrant gates (approximately \$315,000) at Boices Lane. The Wayside Horn is deemed equivalent to the locomotive horn and may be utilized within a Quiet Zone in place of a Supplementary Safety Measure. Diagnostic Team recommendations resulted from the best information available at the time. Changed conditions, or different decisions regarding the issues, can easily change the Diagnostic Team recommendations, and the local traffic control authority may do this. For example, if it is decided that closure of road/street intersections within 60 feet of a grade crossing is practicable, then instead of expensive four-quadrant gates (approximately \$315,000), two-quadrant gates with medians/channelization (\$14,000-\$60,000) would be a much less costly solution.

Recommended pedestrian safety and mobility improvements may be implemented irrespective of Quiet Zone implementation.

City of Kingston/Town of Ulster Quiet Zone and City of Kingston Pedestrian Safety and Mobility Analysis

Chapter 1

City of Kingston/Town of Ulster Quiet Zone

Requirement

Assess feasibility and costs of implementing a Quiet Zone which includes twelve public grade crossings within the City of Kingston and Town of Ulster. Collect appropriate data on the twelve crossings. Explore low-cost supplementary safety measures (SSMs), considering municipal criteria, maximum benefit and least cost. Prepare implementation plan.

Discussion

Definition of the Problem

The U.S. Department of Transportation (USDOT) Federal Railroad Administration (FRA) Final Rule, "Use of Locomotive Horns at Highway-Rail Grade Crossings", 49 CFR Parts 222 and 229, published April 27, 2005, in the Federal Register (hereafter, Final Rule), provides the requirements for establishment of Quiet Zones. Ulster County desires a Quiet Zone to encompass twelve public at-grade crossings on the CSX railroad line through the county:

<u>City of Kingston</u>	Smith Avenue Ten Broeck Avenue Foxhall Avenue Gage Street Cemetery Road Flatbush Avenue
<u>Town of Ulster</u>	Boices Lane Old Neighborhood Road Grant Avenue Leggs Mill Road Katrine Lane Eastern Parkway

The Final Rule provides specific requirements for establishment of new Quiet Zones, the following of which are pertinent to Ulster County, which has specified the use of SSMs:

- The Public Authority must provide a written Notice of Intent to the railroad and to state agencies, allowing a 60-day comment period.
- The Quiet Zone must be at least one-half mile in length, and each crossing must be identified with a U.S. DOT crossing inventory number and have a complete and accurate U.S. DOT Crossing Inventory Form.
- All public crossings must be equipped with flashing lights and gates, power out indicators, and constant warning time circuitry.
- Each highway approach must have an advance warning sign (in accordance with the Federal Highway Administration's *Manual on Uniform Traffic Control Devices*) that advises motorists that train horns are not sounded.
- SSMs must be installed at each crossing.

The "Public Authority" is the public entity responsible for traffic control and law enforcement at the public highway-rail grade crossing.¹ A public crossing, or "public highway-rail grade crossing", means a location where a public highway, road, or street, including associated sidewalks or pathways, crosses one or more railroad tracks at grade. If a public authority maintains the roadway on both sides of the crossing, the crossing is considered a public crossing.² (A private crossing is a crossing where a private roadway crosses one or more railroad tracks at grade and at which a public authority does not maintain the roadway on either side of the crossing.³) Constant warning time circuitry is a requirement which accounts for different train speeds and insures that highway motorists are not unduly delayed by premature activation of warning systems.

In order to understand and address the issues, data were collected on the twelve public grade crossings within the City of Kingston and the Town of Ulster.

Collision Prediction and Relative Hazard Information

FRA maintains an Accident Prediction System with regard to public grade crossings. Prediction figures, indicating the chance a collision will occur in one year, are available from the FRA website, <http://safetydata.fra>. Following are the figures:

¹ Final Rule, page 21855.

² Final Rule, page 21855.

³ USDOT FRA Interim Final Rule, "Use of Locomotive Horns at Highway-Rail Grade Crossings", 49 CFR Parts 222 and 229, published December 18, 2003, in the Federal Register, page 70624. The definition of private crossing was not change by the Final Rule.

	<u>Crossing</u>	<u>Prediction</u>
1	Flatbush Avenue	0.094
2	Ten Broeck Avenue	0.072
3	Gage Street	0.072
4	Cemetery Road	0.060
5	Boices Lane	0.048
6	Foxhall Avenue	0.039
7	Leggs Mill Road	0.036
8	Eastern Parkway	0.034
9	Smith Avenue	0.033
10	Katrine Lane	0.016
11	Old Neighborhood Road	0.010

Source: FRA Safety Website

Grant Avenue is unrated because FRA does not have the crossing inventory data for that crossing.

As explained on the website, the Web Accident Prediction System (WBAPS) data have limitations and are best used to indicate relative hazard among crossings. The prediction formula is based on basic data about a crossing's physical and operating characteristics, including volume of highway and railroad traffic, maximum timetable train speed, and physical characteristics of the crossing including traffic control devices, as well as accident history.

Another view of relative hazard is indicated in the USDOT FRA FORM FRA F 6180.57 Highway-Rail Grade Crossing Accident/Incident Reports, also available on the FRA safety website. A review of the reports available results in the following:

<u>Crossing</u>	<u>Accident History</u>
Foxhall Avenue	8 reports available, 1977-2003
Flatbush Avenue	5 reports, 1976-2005
Smith Avenue	3 reports, 1982-1990
Gage Street	2 reports, 1985 and 2000
Ten Broeck Avenue	1 report, 2002
Boices Lane	1 report, 1989

Source: FRA Safety Website

Other crossings show no report on the FRA safety website.

The Ulster County Traffic Safety Board provided the following data on railroad crossing and railroad-related incidents. It is important to understand that *none of the highway vehicle accidents involved trains*.

Foxhall Avenue: Three highway vehicle accidents, 1998, 2004 and 2005. Two are attributable to inattention or reckless behavior on the part of operators. The other accident's contributing factor is described as human error.

Flatbush Avenue: One accident, 1999. Contributing factor, alcohol.

Gage Street: One accident, 2000. Contributing factor, inattention.

Trespassers on Railroad Right of Way: There have been five pedestrians struck by trains while trespassing on the railroad right of way, four of which were fatalities. These incidents occurred between Smith and Ten Broeck (two incidents), between Foxhall and Flatbush (two incidents), and north of Flatbush. Specific dates are not available for these pedestrian incidents; however, all occurred since 1997.

One possible reason for the differences between the accident/incident reports posted on FRA's Safety Website and the collision history provided by the Ulster County Traffic Safety Board is that both sources probably are not complete and up-to-date. It is reported, for example, that because of a mistake certain Ulster County records are no longer in existence. The data shown above represents partial data for the years 1997-2002, and more complete data for 2002-2005.

The following conclusions are drawn from the above data.

Compared with the other grade crossings in this study, Foxhall Avenue is high risk. It would be prudent for City of Kingston to examine this crossing for safety improvements, irrespective of the proposed Quiet Zone.

The other crossings within the City of Kingston also appear to have a collision history greater than those in the Town of Ulster. One reason for this could be the greater number of highway vehicles using City of Kingston crossings. On the other hand, the crossing which experiences the greatest number of highway vehicles is Boices Lane (12,967 annual average daily traffic (AADT)). Foxhall is second with an AADT of 11,436.

Given the number of trespasser fatalities, it would be prudent for the City of Kingston to work with the railroad and determine what actions may be taken to prevent trespassing.

Annual Average Daily Traffic

Following are annual average daily traffic (AADT) figures for the 12 crossings, provided by Ulster County. The crossings in City of Kingston (first six listed in the following table) are data measured in 2003; crossings in Town of Ulster (last six listed) were measured in 2000. Data are not available for Grant Avenue and Eastern Parkway. These data provide a measure of crossing activity, and therefore of collision exposure.

<u>Crossing</u>	<u>AADT</u>
Smith Avenue	4,208
Ten Broeck Avenue	1,735
Foxhall Avenue	11,436
Gage Street	1,830
Cemetery Road	141
Flatbush Avenue	6,719
Boices Lane	12,967
Old Neighborhood Road	374
Grant Avenue	NA
Leggs Mill Road	5,363
Katrine Lane	462
Eastern Parkway	NA

Source: County of Ulster
 "NA" indicates that data are not available.

School Bus Traffic

Following are the number of daily school bus crossings at each location.

<u>Crossing</u>	<u>Daily School Bus Crossings</u>
Smith Avenue	50
Ten Broeck Avenue	6
Foxhall Avenue	75
Gage Street	8
Cemetery Road	0
Flatbush Avenue	200
Boices Lane	42
Old Neighborhood Road	0
Grant Avenue	12
Leggs Mill Road	40
Katrine Lane	4
Eastern Parkway	28

Source: Kingston City Schools

State, County and City Rules, Regulations or Criteria

A review of New York State laws and regulations was performed, utilizing the Federal Railroad Administration (FRA) publication, *Compilation of State Laws and Regulations Affecting Highway-Rail Grade Crossings*, dated October 16, 2002. The following are brief statements of some of the more pertinent issues, focused on subjects most relevant to this Ulster County study:

The Commissioner of Transportation has authority to eliminate highway-rail crossings; a railroad or municipality may petition the Commissioner for crossing closure.

New York law provides that a train cannot block a crossing for more than five minutes unless the railroad has no control or there is a safety issue.

New York municipalities have the responsibility to install and maintain warning devices, in conformance with MUTCD⁴, on each side of a crossing.

New York law requires the locomotive engineer to ring a bell or sound a whistle where crossing a road or street at grade except in cities.

In New York it is unlawful to drive through, around or under a crossing gate, and there are penalties for doing so. New York law authorizes use of photo or video enforcement.

A more detailed summary of pertinent state laws and regulations is at Appendix A.

Analysis of Alternatives

R.L. Banks & Associates, Inc., (RLBA) analyzed alternatives using the FRA Final Rule, results from the above discussions and RLBA's experience in grade crossing safety.

Appendix A of the Final Rule describes the SSMs which, if applied to each crossing, will allow a jurisdiction to have a Quiet Zone:

- Temporary closure of crossing
- Four-quadrant gate system
- Gates with medians or channelization devices
- One way street with gates
- Permanent closure of crossing

The following summary discussion of these five SSMs is based upon Appendix A of the Final Rule. For a complete discussion, see Appendix A (page 21901) of the Final Rule.

Temporary closure of crossing. This supplementary safety measure closes the crossing during designated quiet periods. It requires an effective closure system which prevents highway or street vehicles from entering the crossing during the designated periods. It must completely block street traffic on all approach lanes, and adjacent pedestrian crossings. Barricades and signs used for the closure must conform to standards in the USDOT Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD).

⁴ USDOT FHWA Manual on Uniform Traffic Control Devices for Streets and Highways

Each supplementary safety measure has been assigned an effectiveness rate by FRA. The effectiveness of temporary closure is 1.0, because the probability of collision with a train is zero during the period when the crossing is closed.

Daily activation and de-activation of the temporary closure system would be the responsibility of the public authority responsible for maintenance of the street or highway crossing the railroad tracks.

The temporary closure system must be equipped with a monitoring device with an indicator visible to the train crew, indicating whether the closure is deployed.

The cost of movable barriers and signs is estimated at \$1,000, and the annual labor cost of daily replacement and removal of barriers and signs would be about \$20,000. All costs presented in this study are estimates subject to refinement following final design. Engineering design of the SSM at each crossing location, based upon the specifics of that location, will result in improved cost estimates.

It must be recognized that the temporary closure SSM results in quiet only during the period of the closure, presumably at night. Locomotive horns would be sounded during the period the crossing is open, presumably daytime.

Four-quadrant gate system. Four-quadrant gates fully block highway traffic from entering a crossing when the gates are lowered; in other words, four-quadrant gates block also those drivers inclined to “beat the train” and illegally drive around two-quadrant gates. All lanes are blocked, in all directions. Four-quadrant gates must conform to MUTCD standards, constant warning time devices must activate the crossing warning systems (a requirement for every crossing with warning systems in the Quiet Zone), and the crossing warning systems must be equipped with power-out indicators.

Gate timing should be established by a qualified traffic engineer based on site specific determinations, including consideration of the need for a timing of the delay in the descent of the exit gates, following descent of the entrance gates, to allow vehicles to clear the crossing. A determination should be made as to whether it is necessary to provide vehicle presence detectors to open or keep open the exit gates until all vehicles are clear of a crossing.

The effectiveness of a four-quadrant gate system is between 0.77 and 0.92, depending upon design. With vehicle presence detectors, effectiveness is 0.77. Without vehicle presence detectors, effectiveness is 0.82. Four-quadrant gates with traffic channelization of at least 60 feet, with or without presence detection, have an effectiveness of 0.92. The term “channelization” means a traffic separation system composed of a raised longitudinal median, or series of vertical tubular markers or panels, placed between opposing highway or street lanes and designed to prevent vehicles from crossing over into the opposing lane.

Considering the twelve crossings which are the subject of this study, a four-quadrant gate system would require installation of two additional gates with associated electronic devices, cabling and power. Estimated cost of adding two gates and circuitry is \$270,000 to \$360,000 per crossing⁵, and annual maintenance cost would be about \$4,500 (maintenance is funded by the railroad).

Gates with medians or channelization devices. Two-quadrant gates with medians or channelization devices will tend to prevent a vehicle driver from circumventing gates by driving around them. Non-traversable curbs or vertical markers or panels must extend at least 100 feet from a gate arm, or if there is an intersection within 100 feet of the gate, at least 60 feet. Intersections within 60 feet of a gate arm must be closed or relocated.

Effectiveness of gates with medians or channelization devices is 0.75. If non-traversable curbs are used, effectiveness rises to 0.80.

As in the case of other SSMs involving gates and flashing lights, crossing warning systems must be activated by constant warning time devices, and must be equipped with power-out indicators.

The cost of adding channelization, where two-quadrant gates already exist, would range between \$14,000 (mountable, or traversable) and \$60,000 (non-mountable barriers).⁶

Annual maintenance depends upon the design of the medians, or channelization devices. It is reported that motorists sometimes drive over median/channelization devices, and replacement would thus be required.

One way street with gate(s). The gate must be installed so that all approaching highway lanes are completely blocked. Effectiveness is 0.82.

The cost of adding gates to a one way street would be approximately half the cost of a complete four-quadrant gate system, or about \$270,000 to \$360,000. In the case of Grant Avenue, where this SSM may be appropriate, gates already exist; however, it would be appropriate to extend curbs and gates and there would be a modest cost associated with this, perhaps \$1,000.

⁵ There is a range in estimates regarding the cost of four-quadrant gates. "Stopping the 'Beat the Train Brigade' in its tracks", *Railway Age C&S Guide* 2000, page 19, states the figure at \$800,000 for a complete new system. "DOT Releases Proposed 'Whistle-Ban' Rule", News from the National Association of Railroad Passengers, February 2000, page 30, states that a four-quadrant gate system costs \$244,000 plus annual maintenance of \$2,500-\$5,000. The City of Fort Worth (Texas) Transportation and Public Works Department study, "Railroad Program Overview Including New Quiet Zone Establishment", May 2005, estimates a range of \$150,000 to \$500,000. These estimates are all for complete systems.

⁶ "The struggle to make the grade at crossings", *Progressive Railroading*, May 1999, page 30, says that a median barrier mountable curb (40-inch high reflective panels mounted on a 4 by 12-inch plastic curb) costs \$12,000 installed (200 feet: 100 feet on each side of the crossing). This figure has been updated for inflation. A non-mountable curb will cost considerably more. The Fort Worth study (see previous footnote) estimates \$15,000-\$30,000 for median barriers at a crossing.

Permanent closure. Permanent closure of a grade crossing, which must completely block access and be tamper resistant, has an effectiveness of 1.00. Depending upon specific site conditions, permanent closure would cost approximately \$5,000 to \$10,000. Annual maintenance cost is deemed negligible.

Grade separation is a similar option, with higher costs. Constructing a highway tunnel under the tracks, for example, may cost several million dollars, depending upon number of lanes and other specifics of the site. One rough estimate, made six years ago, is between \$1 million and \$1.5 million in rural areas, and between \$3 million and \$5 million (or higher) in urban areas.⁷

The following table provides a comparison of alternative SSMs, showing their relative effectiveness and cost. The costs recognize that existing warning systems are already in place (although these do not qualify as SSMs), and that the existing systems in many cases will become components of the new Quiet Zone SSMs.

Supplementary Safety Measure	Effectiveness	Approximate Capital Cost
Temporary closure	1.00	\$1,000
Four-quadrant gates	0.77-0.92	\$270,000-\$360,000
Gates with medians/channelization	0.75-0.80	\$14,000-\$60,000
One way street with gate(s)	0.82	\$1,000
Permanent closure	1.00	\$5,000-\$10,000

Sources: Effectiveness indexes: FRA Final Rule. Approximate capital cost: various professional publications and RLBA estimates, based upon existing Ulster County conditions.

It is apparent that closure, temporary or permanent, provides the highest effectiveness and the lowest installation or capital cost. A maintenance cost would be associated with each alternative. The railroad is expected to assume all maintenance costs with regard to train-activated crossing safety devices (four-quadrant gates, flashing lights, bells). Temporary closure will have a relatively insignificant initial, or capital, cost; however, RLBA has estimated the annual maintenance costs at about \$20,000 (to install and remove the barriers on a daily basis).

Based upon the foregoing analysis of alternatives, closures are recommended based upon providing the greatest benefit at least cost. Addition of medians or channelization appears to be the appropriate SSM at Grant Avenue, and gates with medians or channelization would be recommended at the remaining crossings, where practical (where distances between the grade crossing and nearby intersections allow) and four-quadrant gates are recommended where distances to intersections do not permit medians or channelization.

⁷ G. Rex Nichelson, Jr., Trans Tech Group Inc., "Procedure for the Provision of Grade Separation", presentation at Transportation Research Board Annual Meeting, January 10, 2000.

Wayside Horn. In accordance with Title 49 Code of Federal Regulations Section 222.59 (49 CFR 222.59), as presented in the Final Rule on Use of Locomotive Horns, a wayside horn may be used in lieu of a locomotive horn, and may be installed within a Quiet Zone. This is an option which Ulster County may wish to consider. Compared with the moving locomotive horn, use of the wayside horn will result in noise which is more localized because the warning noise emanates from a stationary horn located at the grade crossing. In accordance with Appendix E to Part 222 (page 21918 of the Final Rule), the crossing must be equipped with a constant warning time device, the horn system must include an indicator which notifies the locomotive engineer whether the horn is operating, the horn must sound at a minimum of 15 seconds prior to the train's arrival at the crossing, and the horn shall be directed toward approaching traffic. (Please see Section 222.59 of the Final Rule, page 21901, and Appendix E of Part 222, page 21918, for complete requirements.) A wayside horn system is expected to cost between \$60,000 and \$80,000.⁸ A follow-up query to the City of Fort Worth, Texas, determined that a wayside horn system, at one grade crossing, costs about \$70,000 installed. Maintenance of the wayside horn system is about \$800 per year per grade crossing.

Diagnostic Team Inspection

A Diagnostic Team was assembled to examine the crossings, discuss alternative SSMS, consider pedestrian safety and mobility improvements, and prepare recommendations. Strictly speaking, this was not a rigorous diagnostic study team inspection in accordance with guidelines presented in the U.S. DOT FHWA *Railroad-Highway Grade Crossing Handbook*. In the first place, the Final Rule does not require that the 12 crossings in Ulster County have a Diagnostic Team inspection in order to become a Quiet Zone. Also, all 12 crossings presently employ active warning devices, including flashing lights and gates. However, given Ulster County's concern with regard to pedestrian safety in particular, it was deemed prudent to utilize the diagnostic study team concept and to organize the same kind of experienced individuals from interested agencies and disciplines.

In coordination with Ulster County, R.L. Banks & Associates, Inc., (RLBA) invited appropriate officials to join the Diagnostic Team review, including city, county, state, federal and railroad officials. RLBA prepared and distributed "read-aheads", in advance of the on-site inspection, to Diagnostic Team members. The read-aheads explained the project, provided an inspection schedule, included U.S. DOT Crossing Inventory Forms (Form FRA F 6180.71), GIS mapping and photos showing each crossing to be inspected, and referred to the FRA Final Rule.

A copy of the Diagnostic Team read-ahead document, including un-corrected U.S. DOT Crossing Inventory Forms, GIS mapping and photos showing each crossing, is at Appendix B.

⁸ City of Fort Worth, Transportation and Public Works Department, "Railroad Program Overview Including New Quiet Zone Establishment", May 2005, page 2.

On October 18, 2005, the Diagnostic Team visited the twelve public at-grade highway-rail crossings (grade crossings) which are the subject of the Ulster County study.

Appendix C is a Summary of the Diagnostic Team Inspection, and it includes a listing of participants and a crossing-by-crossing discussion including observations and conclusions.

Following is a summary of Diagnostic Team recommendations:

Crossing	SSM
Smith Avenue	Four-quadrant gates
Ten Broeck Avenue	Four-quadrant gates
Foxhall Avenue	Four-quadrant gates
Gage Street	Permanent closure
Cemetery Road	Permanent closure
Flatbush Avenue	Four-quadrant gates
Boices Lane	Four-quadrant gates
Old Neighborhood Road	Four-quadrant gates
Grant Avenue	One way street
Leggs Mill Road	Medians/channelization
Katrine Lane	Four-quadrant gates
Eastern Parkway	Four-quadrant gates

Source: Diagnostic Team

The approximate cost of implementing the Quiet Zone recommendations is \$2,500,000 (rounded). Approximate capital costs from the table on page 9 have been multiplied by the number of applications. The large part of the cost is that for four-quadrant gates, \$315,000 multiplied by eight crossings, or \$2,520,000. By comparison, costs of SSMs at the other intersections are relatively insignificant. It is assumed that permanent closure costs will be assumed by the railroad and the State. Grant Avenue cost is anticipated to be minimal (merely extending the gates and curbs). Cost of medians at Leggs Mill Road is assumed to be near the low end of the range.

The question has arisen, why not lengthen existing pedestrian gates (four crossings in City of Kingston are so equipped) in order to provide a less expensive four-quadrant gate system. CSX has replied to this question as follows: Pedestrian stanchions, even though they look similar to street crossing gate stanchions, are not as strong and may have a lighter foundation. Even if they could be used, it would be a minimal savings, since most of the cost involves the installation of the new circuitry and bungalow for the four quadrant gates. The second set of gates must be timed (therefore changes in the electrical circuitry) to descend at a designated time after the original lane gates, to allow time for motor vehicles in the crossing to escape.

Annual maintenance costs to Ulster County are expected to be nominal, inasmuch as the railroad bears the responsibility for maintenance of crossing safety devices activated by the train, once those devices are installed. Four-quadrant gates (as well as flashing

lights and bells) fall in the category of train-activated devices. With regard to the medians recommended for installation at Leggs Mills Road, annual maintenance costs are expected to be small.

Prior to implementation, Ulster County should, in coordination with the City of Kingston and Town of Ulster, review the Summary of the Diagnostic Team Inspection, Appendix C, and determine whether assumptions made by the Diagnostic Team remain in effect. The three jurisdictions should perform a site by site review to determine whether the situation has changed. For example, the more expensive four-quadrant gate systems are recommended based upon the assumption that the significantly less expensive medians/channelization are not feasible, because of intersections close to the crossing. Situations may change over time. Also, the SSMs recommended by the Diagnostic Team assume that grade separation (likely to be considerable more expensive than four-quadrant gates) is not feasible at this time. This assumption may change over time.

Identification of Lead Agencies

In accordance with the Final Rule, a public authority must be responsible to initiate actions leading to creation of a Quiet Zone, with “public authority” defined as the public entity responsible for traffic control or law enforcement at the public highway-rail grade or pedestrian crossing.⁹ It is understood that responsibility for public safety and law enforcement, as well as improvements to these crossings and their maintenance, lies with the City of Kingston, for City of Kingston Crossings, with Town of Ulster for its crossings, and with the County of Ulster for county roads (Boices Lane and Leggs Mill Road). Thus these appear to be the appropriate lead agencies for implementation and maintenance.

It is strongly recommended that there be overall coordination and direction of any implementation activities regarding these crossings. The three political entities should work together in order to (1) determine whether any changes should be effected, regarding Diagnostic Team recommendations, (2) make a unified case for federal funding, (3) present a coordinated request to New York State Department of Transportation for support of the project, and (4) implement the Quiet Zone as one project rather than three. The three political entities will have considerably greater leverage by dealing as one entity with the railroad, the State and the federal government (Federal Railroad Administration). It appears that the Ulster County Transportation Council (UCTC) should assume responsibility for overall coordination and direction.

Implementation Plan

Following are the steps to implement a new Quiet Zone which utilizes SSMs.

⁹ Final Rule, page 21855.

(1) Funding. UCTC must arrange for funding. At each of the 12 grade crossings, the Diagnostic Team attempted to determine the least-cost SSM meeting Final Rule standards. All told, the Diagnostic team recommendations result in a cost of approximately \$2,500,000. It is necessary to begin the implementation plan by arranging for the necessary funding. In addition to the \$2,500,000, it may be necessary to perform design or other engineering studies. Alternatively, crossing hardware vendors may include design in an overall cost package.

(2) Qualifying Conditions. The public authority (County of Ulster, City of Kingston, Town of Ulster) must insure that crossings meet the qualifying conditions. (a) The minimum Quiet Zone length is one-half mile along the length of the railroad's right of way. The 12 Ulster County crossings extend over a distance of over two and a half miles; therefore this requirement is satisfied. (b) Each grade crossing must be equipped with active grade crossing warning devices comprising both flashing lights and gates which control traffic over the crossing and which conform to standards contained in MUTCD. This requirement has been met, as all 12 crossings are presently so equipped. (c) Advance warning signs, conforming to MUTCD standards, are required on each highway approach, advising motorists that train horns are not sounded at the crossing. (Obviously advance warning signs must not be exposed to motorists' view until all other steps in this implementation plan have been accomplished.) (d) Each grade crossing subjected to pedestrian traffic must be equipped with one or more automatic bells. Inasmuch as there is only one crossing without bells – Grant Avenue, which does not appear to be a pedestrian crossing – this requirement is met. A complete description of these four qualifying conditions is found in Section 222.35 of the Final Rule (page 21893).

(3) Closure of Crossings. The Diagnostic Team recommended two closures: Gage Street and Cemetery Road. If it is decided to effect these closures, then the County should petition the Commissioner of Transportation, State of New York, to authorize these closings. This is a formal action that must be accomplished in advance, allowing time for the Commissioner to act.

(4) Grade Crossing Inventory Forms. Prior to creation of a Quiet Zone, all USDOT Grade Crossing Inventory Information forms must be up-to-date at the Federal Railroad Administration. Ulster County should accomplish this through the New York State Department of Transportation (NYS DOT): Mr. Christian Scharl, ITS1 Intermodal Transportation Specialist, Grade Crossing Section, 50 Wolf Road POD 54, Albany NY 12232. The process may be started by providing to NYS DOT marked-up copies of the Grade Crossing Inventory Information forms. Appendix D contains marked-up copies with updated information.

(5) Private and Pedestrian Crossings. There were no private crossings or pedestrian crossings reported at the time of the October 18, 2005, Diagnostic Team inspection. If, however, the situation changes and there are to be any private or pedestrian crossings within the Quiet Zone, then a Diagnostic Team review of the private or pedestrian crossing is required, and the pedestrian crossing must be treated in accordance with the

team's recommendations. By "pedestrian crossing" is meant pedestrian only, not motor vehicles.

(6) Notice of Intent. The public authority (County of Ulster, and/or other appropriate public jurisdiction) must provide (by certified mail, return receipt requested) a written Notice of Intent to the railroad (CSX) that operates over the proposed Quiet Zone, the state agency responsible for highway and road safety and the state agency responsible for grade crossing safety. Within NYS DOT, copies of the Notice of Intent should be directed to Bruce Smith, P.E., Director; Traffic Engineering and Highway Safety Division; New York State Department of Transportation; 50 Wolf Road POD 42; Albany, NY 12232-0748, and to Edward Rosen; Director, Grade Crossing Section; New York State Department of Transportation; 50 Wolf Road POD 54; Albany NY 12232. The copy of the Notice of Intent for the railroad may be sent to Cliff Stayton, Director of Public Safety Awareness, CSX Transportation, CSXT General Office Building J205, Jacksonville, Florida 32202. The purpose of this Notice of Intent is to provide an opportunity for the railroad and state agencies to provide comments and recommendations to the public authority as it is planning the Quiet Zone. In accordance with the Final Rule, the railroad and state agencies will have 60 days to provide these comments to the public authority. The Quiet Zone cannot be created unless the Notice of Intent has been provided. See Final Rule, Section IV Required Notifications, B. Notice of Intent (page 21913 of Final Rule) for discussion of the Notice of Intent including a listing of the information which must be included in the Notice of Intent.

A draft Notice of Intent is at Appendix E.

(7) Resolution of Comments. Following the 60-day comment period, the public authority should resolve comments received from the railroad and from the state agencies.

(8) Installation of SSMs. Upon resolution of comments, the SSMs should be installed. This should be done in coordination with CSX.

(9) Notice of Quiet Zone Establishment. Once the necessary SSMs have been installed at each grade crossing, the requirements for public authority designation of a Quiet Zone have been met. It is now necessary that the public authority (County of Ulster, and/or other appropriate public authority) provide a written Notice of Quiet Zone Establishment. The purpose of this notice is to formally advise affected parties that a Quiet Zone is being established. This written notice is to be sent by certified mail, return receipt requested, to (a) all railroads operating over crossings in the Quiet Zone (in this case, CSX), (b) the highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the Quiet Zone (in this case, assuming Ulster County sends the notice, it would be sent to City of Kingston and Town of Ulster), (c) the landowner having control over any private crossings within the Quiet Zone (none were reported), (d) the state agency responsible for highway and road safety (Bruce Smith, P.E., Director; Traffic Engineering and Highway Safety Division; New York State Department of Transportation; 50 Wolf Road POD 42; Albany, NY

12232-0748), (e), the state agency responsible for grade crossing safety (Edward Rosen; Director, Grade Crossing Section; New York State Department of Transportation; 50 Wolf Road POD 54; Albany NY 12232), and (f) the Associate Administrator, Federal Railroad Administration, U.S. Department of Transportation, 400 7th Street, S.W., Washington D.C. 20590. See Final Rule, Section IV Required Notifications, E. Notice of Quiet Zone Establishment (page 21914 of Final Rule) for discussion of the Notice of Quiet Zone Establishment including a listing of the information which must be included in the Notice of Quiet Zone Establishment.

The above listing of implementation steps is extracted and summarized from several places in the Final Rule including: Section 222.43, page 21896, and Appendix C to Part 222 Guide To Establishing Quiet Zones, pages 21905-21917. For a comprehensive understanding of the steps required, one should read the Final Rule.

Conclusions

As stated above, compared with the other grade crossings in this study, Foxhall Avenue is high risk. It would be prudent for City of Kingston to examine this crossing for safety improvements, irrespective of the proposed Quiet Zone.

Also as stated above, given the number of trespasser fatalities, it would be prudent for the City of Kingston to work with the railroad and determine what actions may be taken to prevent trespassing.

With regard to the planned Quiet Zone, a Diagnostic Team visited 12 crossings in City of Kingston and Town of Ulster and made recommendations regarding the employment of Supplementary Safety Measures (SSMs). Because of the presence of street intersections within 60 feet of the grade crossing, the most expensive SSM – four-quadrant gates – is required at eight of the 12 crossings. In the case of two crossings, the Diagnostic Team recommends permanent closure. One crossing is amenable to low-cost medians, and Grant Avenue's wide median allows the low-cost one-way-street-with-gates SSM.

It is the cost of four-quadrant gates which effectively establishes the estimated capital cost of the planned Quiet Zone, about \$2.5 million.

There are options with regard to reducing project cost. For example, it has been suggested that a Wayside Horn (approximately \$70,000) be used in lieu of the more expensive four-quadrant gates (approximately \$315,000) at Boices Lane. The Wayside Horn is deemed equivalent to the locomotive horn and may be utilized within a Quiet Zone in place of a Supplementary Safety Measure. Diagnostic Team recommendations resulted from the best information available at the time. Changed conditions, or different decisions regarding the issues, can easily change the Diagnostic Team recommendations, and the local traffic control authority may do this. For example, if it is decided that closure of road/street intersections within 60 feet of a grade crossing is practicable, then instead of expensive four-quadrant gates (approximately \$315,000),

two-quadrant gates with medians/channelization (\$14,000-\$60,000) would be a much less costly solution.

The recommended implementation plan is based upon existing conditions in Ulster County and provisions of the FRA Final Rule.

Chapter 2

City of Kingston Pedestrian-Railroad Crossing Safety and Mobility

Requirement

Perform pedestrian safety and mobility analysis in City of Kingston, with regard to six grade crossings, Flatbush Avenue through Smith Avenue. Recommend short- and long-term pedestrian safety and mobility solutions, with estimated costs. Identify linkages and overlaps with Task 1 (Chapter 1 covers the Task 1 portion of this study).

Discussion

Following are the six crossings to be evaluated.

<u>City of Kingston</u>	Smith Avenue
	Ten Broeck Avenue
	Foxhall Avenue
	Gage Street
	Cemetery Road
	Flatbush Avenue

Definition of the Problem

Pedestrian safety and mobility are a public concern in the City of Kingston; grade crossings are blocked by trains for extended periods of time. The CSX railroad corridor divides the City of Kingston nearly in half. Although there are some grade separations (grade separation meaning that the railroad is on one level, and the street on another, as in an overpass or underpass), all crossings are at the same grade, or level, between the Broadway Avenue underpass and the Ulster Avenue-Route 32 overpass. Along this two-mile distance, pedestrians have no convenient or safe alternative but to wait for passing or stopped trains. RLBA explored short- and long-term solutions including wait stations and pedestrian over- or under-passes.

The Task 2 (Chapter 2 covers the Task 2 portion of this study) field inspection was performed concurrently with that of Task 1 (Chapter 1) inasmuch as the same City of Kingston crossings are the subjects of both evaluations, and Diagnostic Team recommendations are pertinent to both tasks.

There is a linkage between Task 1 (Quiet Zone) and Task 2 (Pedestrian Safety and Mobility in City of Kingston) in that pedestrian safety and mobility issues were evaluated as a component of the Quiet Zone analysis and at the same time by the Diagnostic Team.

In defining the problem, RLBA was guided by County of Ulster and City of Kingston officials' input, by findings of the Diagnostic Team, input from NYSDOT and the railroad, and by several U.S. Department of Transportation, Federal Railroad Administration and Federal Highway Administration publications on the subject, including the *Railroad-Highway Grade Crossing Handbook – Second Edition, FHWA-TS-86-215*, "Compilation of State Laws and Regulations Affecting Highway-Rail Grade Crossings – Fourth Edition", "Highway-Rail Crossing Inventory Instructions and Procedures Manual", "Rail-Highway Crossing Resource Allocation Procedure, User's Guide, Third Edition", "Highway-Railroad Grade Crossings: A Guide To Crossing Consolidation and Closure", "U.S. Department of Transportation: Secretary's Action Plan: Highway-Rail Crossing Safety and Trespass Prevention", "Grade Crossing Safety Task Force Final Report: Accidents That Shouldn't Happen". In addition, RLBA was guided by the "New York State Railroad/Highway At-Grade Crossings Safety Program" posted on the NYSDOT website.

It is important to note that there are pedestrian gates (in addition to the longer gates which deter highway vehicles) at four crossings -- Smith Avenue, Ten Broeck Avenue, Foxhall Avenue and Gage Street. At the first three named intersections (Smith, Ten Broeck and Foxhall) there are two pedestrian gates at each crossing. At Gage Street there is but one pedestrian gate. The presence of these pedestrian gates provides an increased measure of pedestrian safety, as compared with the situation where there are no pedestrian gates.

Alternatives

The following pedestrian safety and mobility measures were examined, separately or in combination:

- Closure (if it is decided to close the street crossing)
- Grade separation (bridge over, or tunnel under the railroad)
- Wait stations
- Fencing
- Warning signs and gates
- Procedural, operational and educational measures; surveillance and enforcement

Closure. This alternative may be appropriate where the decision is made to close a grade crossing permanently. In order to prevent pedestrians from continuing to cross the railroad at the location of the closure, measures such as fencing, signs and enforcement may be necessary to ensure effectiveness.

The estimated cost of closure of a grade crossing is provided above in Chapter 1. Additional cost of fencing, if installed, will depend upon the height and length, and whether both sides of the railroad right of way are fenced. Chain link fence, six feet high, would cost about \$16,000 per 1,000 feet installed.

Grade separation. A wheel-chair-accessible pedestrian bridge over the railroad right of way, including mesh enclosure of the walkway to prevent the throwing of objects on trains or other vandalism, would cost on the order of \$500,000. A wheel-chair-accessible lighted tunnel under the railroad right of way would cost about the same. Depending upon local conditions, it may cost less, or it may cost more.

Wait stations. Wait stations may help those who must wait for a passing train at a grade crossing, in inclement weather. Cost is dependent upon materials, size and design. One model prefabricated aluminum, glass and acrylic 15 foot by 5 foot bus stop type shelter with windscreen and aluminum bench would cost approximately \$7,500 installed.¹⁰

Fencing. As suggested above under “Closure”, fencing may be utilized to restrict access. A six to eight foot high chain link fence is commonly used for this purpose. The approximate cost of fencing is stated above.

Upgrade warning signs and markings. Warning signs alert and remind pedestrians of the hazard. Warning signs represent a relatively low-cost tool, and are often used in combination with enforcement measures. It is important that signs and pavement markings “grab” the attention of pedestrians. Higher-quality materials may be used for pavement markings and signing. (MUTCD contains information on traffic control devices, including (Part VIII) those pertaining to railroad-highway grade crossings).

Procedural, Operational and Educational Measures; Surveillance and Enforcement. There are, in addition to the above-listed and described “hardware” solutions, some “software” or procedural, operational and educational measures which may be used in combination with the hardware alternatives. RLBA recommends that Ulster County consider all of the following software measures.

Experience has shown that visible, high-profile law-enforcement programs reduce highway traffic violations; programs targeting grade crossing violations are also effective. The FRA conducts outreach activities, and these include distribution of an educational video entitled “Roll Call” to law enforcement entities nationwide. Another FRA program resulted in publication of a brochure intended for the judicial community, “Partnering in Safety: Judicial Outreach”, and an Operation Lifesaver awareness video entitled, “It’s Your Call”. Funds may be available under 23 U.S. Code 402 (Section 402) to promote targeted public education and law-enforcement strategies. Photographic traffic law enforcement is yet another safety and prevention vehicle.¹¹

Operation Lifesaver, Inc., is a nationwide, non-profit public information program dedicated to reducing collisions, injuries and fatalities at highway-rail crossings. Ulster

¹⁰ Based upon a quote from Handi Hut Inc., Passaic NJ, updated for inflation, and estimated installation cost added.

¹¹ These law enforcement and judicial initiatives are found in “Secretary’s Action Plan: Secretary of Transportation: Highway-Rail Crossing Safety and Trespass Prevention”, June 2004, U.S. Department of Transportation, pages 13-14.

County may wish to take advantage of this program to enhance grade crossing safety education.

Following is a summary of the pedestrian safety and mobility improvements that may be considered and their approximate cost.

Pedestrian Safety and Mobility Improvement	Approximate Cost
Closure of crossing	\$16,000 per 1,000 feet of fencing
Grade separation	\$500,000
Wait station	\$7,500 or less
Fencing	\$16,000 per 1,000 feet of fencing
Upgrade warning signs and markings	Nominal
Enforcement	Relatively low
Education	Relatively low

Source: RLBA estimates.

The “closure of crossing” approximate cost assumes use of fencing. There are alternatives, for example large posts sunk in the ground, or other barriers, to prevent vehicles from proceeding. As stated earlier, the “grade separation” estimate is highly dependent upon local conditions and design.

Identification of Lead Agencies for Implementation and Maintenance

Similar to the case of Quiet Zone implementation and maintenance, the public entity responsible for pedestrian safety and law enforcement at grade crossings should be the lead agency for pedestrian safety and mobility improvement measures. As was the case with regard to vehicular traffic, it is understood that implementation, construction and maintenance responsibilities lie with the City of Kingston, for City of Kingston Crossings, and with the County of Ulster for county roads (Boices Lane and Leggs Mill Road). (Other than Boices Lane and Leggs Mills Road, which are county roads and thus County of Ulster responsibilities pedestrian safety and mobility were not considered major issues at Town of Ulster crossings.) Thus County of Ulster and City of Kingston appear to be the appropriate lead agencies for implementation and maintenance of pedestrian safety measures.

County-wide coordination of pedestrian safety improvements may be appropriate. As in the case of a Quiet Zone, the political entities can work together in order to (1) make a unified case for funding, (2) present a coordinated request for New York State Department of Transportation for support of the project, and (3) implement the pedestrian safety initiatives as one project. If this is done, it appears that the County of Ulster should assume responsibility for overall coordination and direction. On the other hand, the fact of their relatively low cost (excepting grade separations) and fact that they can be implemented irrespective of Quiet Zone decisions, suggest that the jurisdictions can pursue pedestrian safety improvements independently if desired.

Conclusions, Recommendations, Implementation

Following are the near-term pedestrian safety and mobility improvements recommended by the Diagnostic Team at each crossing in the City of Kingston.

Crossing	Pedestrian Improvement
Smith Avenue	Wait stations
Ten Broeck Avenue	Wait stations
Foxhall Avenue	Wait stations, sidewalks
Gage Street	Wait stations
Cemetery Road	Wait stations
Flatbush Avenue	Wait stations, sidewalks

In the case of Foxhall Avenue, the provision of wait stations and sidewalks assumes no immediate decision to grade separate this crossing. In the case of Gage Street and Cemetery Road, the provision of wait stations assumes either a decision to close the crossing to street traffic, or not to. (In either case, it would appear that pedestrian traffic will continue at those two locations, and appropriate crossing safety measures would be required.)

Although not specified as a component of this study, the Diagnostic Team recommended certain pedestrian safety improvements at the following Town of Ulster locations:

Crossing	Pedestrian Improvement
Boices Lane	Wait stations, sidewalks
Leggs Mill Road	Wait station on east side of crossing

Implementation of all pedestrian safety and mobility measures may be effected irrespective of Quiet Zone decisions. It is recommended that the implementing entity discuss funding with New York State Department of Transportation, inasmuch as it is possible that federal and state funding may be available (see Chapter 3, Funding Recommendations).

Multiplying the recommended number of wait stations by \$7,500, total approximate cost is \$112,500. It is quite likely that lower-cost wait stations are available, and that total price can be reduced by purchasing in quantity.

Three-foot wide concrete sidewalks would cost about \$11 per lineal foot installed. Assuming placement on only one side of the street, total cost would be approximately \$4,500 total for all three crossings (Foxhall, Flatbush and Boices). CSX would likely perform the work since the work would be on its right of way, and CSX may arrive at a different estimate.

The appropriate public authority to take the lead in this implementation would be the public authority which has jurisdiction over pedestrian safety at these crossings.

Long-term pedestrian safety and mobility improvements were discussed by the Diagnostic Team, and generally focused on overpasses (over the railroad) and tunnels (under the railroad). Overpasses and tunnels will be more costly compared with the near-term improvements recommended above.

Chapter 3

Funding

Discussion

Federal Funding

There is no federal "pot of money" available to fund quiet zone projects. The U.S. Department of Transportation (USDOT) Federal Railroad Administration (FRA) Interim Final Rule, "Use of Locomotive Horns at Highway-Rail Grade Crossings", 49 CFR Parts 222 and 229, published December 18, 2003, in the Federal Register (hereafter, Interim Final Rule), addresses the subject of funding and states that there is no federal funding specifically authorized for implementation of this rule. The Interim Final Rule acknowledges that there are several categories of federal transportation funding available that *may* be used by states and localities, but emphasizes that "it is unlikely that most improvements undertaken under this rule would withstand the priority ranking requirements for safety projects under Federal-aid highway programs".¹²

The Final Rule is silent with regard to funding for implementation of new Quiet Zones; however, with regard to private crossings, the Final Rule states that "It is ... expected that the public authority seeking to establish a quiet zone would assume responsibility for funding any necessary improvements, the private crossing owner would agree to the installation of any necessary improvements, and the railroad would assume practical responsibility for maintenance of any automated warning systems at the crossing."¹³ This perhaps suggests, with regard to public crossings, the expected division of responsibility between public authority and railroad.

For the more general subject of grade crossing safety, apart from Quiet Zones, recent-year federal funding has averaged approximately \$3 million per year per state, distributed under the Section 130 program.¹⁴ The current federal surface transportation authorization, "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users" (SAFETEA-LU), enacted August 10, 2005, raises the Section 130 program from \$155 million to \$220 million per year. The average per state, \$4.4 million, is still a relatively small amount when compared with the scope of grade crossing safety improvements desirable. In any event, some have taken the position that federal grade crossing safety funds should not be used in the implementation of Quiet Zones, and RLBA does not recommend that the County of Ulster anticipate any Section 130 money for Quiet Zone purposes. On the other hand, it would be quite appropriate to request Section 130 funding for pedestrian safety improvements.

¹² Interim Final Rule, page 70605.

¹³ Final Rule, page 21859.

¹⁴ "Section 130" is a reference to that portion of Section 23 U.S. Code which addresses rail-highway crossings.

The point here is that established federal funding sources may not be available for the implementation of Quiet Zones, but are available (in competition with other projects in other localities) for pedestrian safety purposes. Ulster County would have to compete for these funds with all other New York counties.

With regard to both types of project – Quiet Zones and pedestrian safety -- there is a very important federal funding potential: “earmarks”. SAFETEA-LU included earmarks (called “High Priority Projects”) for grade crossing projects, grade separations, grade crossing studies, improving railroad crossings, and constant warning time devices, in California, Colorado, Indiana, Michigan, Nebraska, New York, Oklahoma, Tennessee, Virginia and Wisconsin. SAFETEA-LU made \$1,000,000 available to Rockland County, New York, for a Grade Crossings Safety Study, and another \$1,400,000 for grade crossing safety improvements. The same law made \$1,000,000 available to the City of Smyrna, Georgia, *for a railroad quiet zone*, and another \$1,000,000 for a railroad pedestrian bridge. Saginaw, Michigan, was allocated \$1,000,000 for a railroad relocation.

If not resolved in some other way, RLBA strongly recommends that Ulster County utilize its New York delegation to the U.S. Congress to obtain earmarks in the next surface transportation authorization, expected in 2009. Clearly this can be the most direct route to federal funding of the project.

The County should recognize that, aside from earmarks, funding from outside the County is likely to be problematical. There is no benefit outside the locality with regard to Quiet Zones, and logic suggests that it will be Ulster County that ultimately must provide at least a portion of the resources to establish them. An important exception arises where the permanent closure SSM is selected. Railroads generally are willing to assist in funding the permanent closure of a grade crossing, and the State of New York also may be willing to assist in closures. Thus closing of crossings probably will come at no cost to the County of Ulster.

State Funding

With the exception of closing crossings, state funding should not be expected with regard to establishment of a Quiet Zone. On the other hand, the State may be willing to assist with funding of pedestrian safety and mobility improvements.

Local Funding

As is stated in the Interim Final Rule, most local governments have indicated that, due to budget constraints, Quiet Zone implementation would be difficult without federal funding.¹⁵ The Interim Final Rule provides some local government funding ideas. One city set up a special downtown taxing district to fund implementation. Another proposed

¹⁵ Interim Final Rule, page 70605.

a user fee, similar to that of airlines, assessed against both passenger and freight rail traffic.¹⁶

Conclusions

Grade crossing closures will likely be paid for by the railroad and the State. It is recommended that, in the event of a decision to close one or more crossings, the County of Ulster petition the Commissioner of Transportation to close the crossing(s), and apply to NYS DOT to fund the closure.

Other than crossing closure, implementation of SSMs likely will be a local responsibility, with the potential of funding assistance through earmarks in the next federal surface transportation authorization (expected in 2009).

The County of Ulster should apply to NYS DOT for Section 130 funding for pedestrian safety and mobility improvements. Local funding is the alternative, and/or may be required in addition to state and federal funding.

¹⁶ *Ibid.*

Chapter 4

Public Involvement

Requirement

Implement a public involvement strategy to address public concerns. Include two public information meetings, stakeholders meetings, and provide meeting minutes, agendas and outreach materials for the Ulster County Transportation Council (UCTC) internet project web site.

Public Information Meetings

Two public information meetings were conducted in order (1) to inform the public of this study and (2) to allow the public an opportunity to comment and make recommendations pertinent to the study. The first public information meeting was held on October 18 at 5:30 p.m. at the Kingston City Hall, Council Chambers, 420 Broadway, Kingston, New York. The second public information meeting was held at the same location on February 6, 2006, at 5:30 p.m.

At the public meetings, R.L. Banks & Associates, Inc., (RLBA) made presentations, answered questions, and received comments and recommendations from the public.

Stakeholder Meetings

Stakeholder meetings provide an opportunity for dialog in smaller groups, with more directed and targeted discussions. Stakeholder meetings assist in defining issues.

The Diagnostic Team, which performed an inspection of the twelve crossings on October 18, 2005, was in effect a meeting of very important stakeholders. This key group of stakeholders consisted of most or all of the local, state, railroad and federal officials who are interested in, and most knowledgeable of, the subject. Preliminary discussions with those local, state, railroad and federal officials invited to participate in the October 18 inspection took place before, during and after the Diagnostic Team inspection. For example, there were a number of phone conversations between RLBA and various Diagnostic Team participants in order to determine agreement with regard to the Team's recommendations.

Minutes, Agendas and Outreach Materials

RLBA prepared summaries of the two public meetings, and agendas and outreach materials for the public meetings and for the Diagnostic Team inspection. The summary of the October 18, 2005, public meeting is at Appendix F, and the summary of the February 6, 2006, public meeting is at Appendix G.

Following the Diagnostic Team inspection, RLBA circulated among all Diagnostic Team participants (and among other key stakeholders) a Summary of the Diagnostic Team Inspection, and obtained comments from Diagnostic Team participants. See Appendix C for the final Summary of the Diagnostic Team Inspection.

Conclusions

Public involvement was assured through public information meetings.

Key local, state and federal stakeholders, and the railroad, participated in the Diagnostic Team inspection of the twelve grade crossings, and in numerous phone conversations.

Appendix A

Summary of Pertinent New York State

Laws and Regulations

Appendix A

Summary of Pertinent New York State Laws and Regulations

In connection with the at-grade, highway-rail crossing study authorized by the County of Ulster, following is a summary of the Fourth Edition of the Federal Railroad Administration (FRA) publication *Compilation of State Laws and Regulations Affecting Highway-Rail Grade Crossings* dated October 16, 2002 with regard to the State of New York.

Chapter 1 – Crossing Consolidations and Closures

- Authority to order elimination of a highway-rail crossing lies with the Commissioner of Transportation;
- any railroad or municipality containing a crossing can petition Commissioner for crossing closure and
- Commissioner may hold public hearings on any crossing elimination petition after giving notice to all parties. After hearing, Commissioner will “determine whether it is in the public interest to require the elimination of the highway-rail grade crossing.” N.Y. Transp. Law Section 222 (McKinney 1999)

Chapter 2 – Crossing Treatment Procedures

- Commissioner of Transportation of New York is responsible to report to the Governor and appropriate legislature members by December 1st of each year the:
 - 1) completed grade crossing projects;
 - 2) crossing projects under construction;
 - 3) projects ordered to be completed, but not yet started and
 - 4) money spent or expected to be spent on those projects.
- A governing body of any municipality that has a highway-rail grade crossing can petition the Commissioner to begin crossing elimination procedures. After the procedure in Chapter 1, the Commissioner can order elimination of the crossing. The Commissioner’s order can include:
 - 1) alterations;
 - 2) location and method of crossing;
 - 3) character of structures and approaches;
 - 4) type and extent of payment;
 - 5) closing and discontinuance of the crossing;
 - 6) the divergence of traffic from an existing crossing to an existing or new crossing and
 - 7) “The Commissioner may also order a change in the location of a railroad.”
- A Mayor, City Manager and Common Council of a city or similar type individuals who have jurisdiction over a street, road, etc. may bring a petition in writing to the Commissioner stating the public interest requires rehabilitation, alteration,

change, closure or discontinuance of a crossing. After notice to the affected parties, Commissioner can order changes to be made. N.Y. Transp. Law Section 222 (McKinney 1999). See Section 223 concerning expenses for crossing elimination or improvements.

- When a crossing is in need of repair according to a responsible party (such as County Board of Supervisors, Town Superintendent of Highways, etc.), the Commissioner or the above may repair and maintain the crossing, charging the expense to the railroad, if after fifteen days notice in writing, the railroad neglects or refuses to make the repairs. N.Y. Highway. Law Section 51 (McKinney 1999)

Chapter 3 – Blocked Crossings

- A train cannot block a crossing for more than five consecutive minutes, except:
 - 1) where the railroad has no control or
 - 2) where the train cannot be moved without endangering the safety of passengers, public or freight.

Chapter 4 – Warning Devices – Passive

- Each municipality that has responsibility for maintaining highways where a crossing exists shall install and maintain an approach warning sign on each side of the crossing. If the agency does not comply, the Commissioner may force compliance.
- Design, location and manner of installation must be in agreement with the manual for a uniform system of traffic control devices adopted by DOT. N.Y. R.R. Law Section 53-a (McKinney 1999)
- Every Class 1 railroad is to install a reflectorized whistle sign as specified by the Commissioner on approach to a crossing. N.Y. R.R. Law Section 71-a (McKinney 1999)

Chapter 5 – Warning Devices – Train Borne (whole rule)

- “New York law requires a person acting as an engineer, driving a locomotive on any railway to ring the bell or sound the whistle at least 80 rods from any place where the railway crosses a traveled road or street at grade, except in cities; and to continue to ring the bell or sound the whistle at intervals until the entire train has completely crossed the road or street. N.Y. Railroad Law Section 53-b (McKinney 1999)”
- **“Penalty** – A violation of this section is a misdemeanor. N.Y. Railroad Law Section 53b (McKinney 1999)”

Chapter 6 – Warning Devices – Active

- New York has no requirement concerning active warning devices.

Chapter 7 – Slow, Low and Special Vehicles

- **Slow or Low Vehicles** – Persons operating slow or low vehicles must stop within 15 to 50 feet of the nearest rail before crossing a highway-rail crossing. After stopping, operator must listen and look both directions for an approaching

train or for signals indicating such and then proceed. Driver is prohibited from manually switching gears while crossing the tracks. N.Y. Veh. & Traf. Law Section 1171(a) (McKinney 1998)

- **Special Vehicles** – Same as slow or low vehicles. Examples of special vehicles include any bus carrying passengers, school bus or any vehicle carrying explosive substances or flammable materials. N.Y. Veh. & Traf. Law Section 1171(a) (McKinney 1998)
- **Exempt Vehicles** – Slow, low or special vehicles need not comply with stopping requirement where a police officer or traffic control signal directs traffic to proceed or at a grade crossing within a business or residential district. N.Y. Veh. & Traf. Law Section 171(b)-(c) (McKinney 1998)

Chapter 8 – Driver Action

- Motorists in New York are prohibited from driving through a highway-rail crossing without coming to a complete stop within 15 to 50 feet of the nearest rail when:
 - 1) warning of an approaching train is being given by visibly electrical or mechanical device.
 - 2) where a crossing gate is lowered or a flagman is giving a signal indicating an approaching train.
 - 3) when a train, within 1,500 feet of a crossing, is emitting an audible signal and because of its speed or closeness to the crossing, constitutes an immediate hazard.
 - 4) where a train is plainly visible and is in hazardous proximity to the crossing.
- “It is unlawful for motorists to drive through, around or under any crossing gate or barrier that is closed or is in the process of being opened or closed.” N.Y. Veh. & Traf. Law Section 1170(a)(b) (McKinney 1999)
- Penalty – Motorist convicted of a violation for driving through, around or under a closed crossing gate shall:
 - 1) First offense – fine not less than \$150 or more than \$250, imprisonment for not more than 30 days or both.
 - 2) Second offense – fine not less than \$300 or more than \$500, imprisonment for not more than 90 days or both (if within a period of eighteen months).
 - 3) Third offense – fine not less than \$600 or more than \$700, imprisonment for not more than 180 days or both (if within a period of eighteen months). N.Y. Veh. & Traf. Law Section 1170(b) (McKinney 1999)
- “It is unlawful in New York for a motorist to drive a vehicle to the left of the center of the roadway when approaching within one hundred feet of traversing any highway-rail crossing.” N.Y. Veh. & Traf. Law Section 1125 (McKinney 1999)
- New York law prohibits motorists from driving a vehicle at speeds greater than that which is reasonable under present conditions. Motorists are required to reduce speeds when approaching or crossing a highway-rail crossing. N.Y. Veh. & Traf. Law Section 1180 (McKinney 1999)
- “It is unlawful in New York to stop, stand or park a vehicle on any railroad track, except when it necessary to avoid conflict with other vehicles or when complying with the law or at the directions of police officer or traffic control device.” No

parking within 50 feet of a highway-rail crossing unless loading or unloading. N.Y. Veh. & Traf. Law Section 1202(1)(h)-(3) (McKinney 1999)

Chapter 9 – Trespassing

- “A railroad corporation in New York shall not be liable for any injury to a passenger while on the platform of a car, on in any baggage, wood or freight car, in violation of the printed regulation of the railroad, posted at the time” “No person other than those connected with or employed by the railroad shall walk upon on along the track”
- It is unlawful to ride, lead or drive any horse or other animal along right-of-way (ROW). Fine is \$10 and pay all damages sustained by the railroad. N.Y. Railroad Law Section 83 (McKinney 1999)
- New York law prohibits riding snowmobiles on the ROW except at approved crossings. Fine is \$100 for each separate offense. N.Y. Railroad Law Section 83-a (McKinney 1999)
- Any city with greater than 1 million people as well as Nassau and Suffolk counties can amend or adopt a law designating railroad or transit ROW as “no-trespass railroad zone providing posting of the zone is accomplished.” N.Y. Railroad Law Section 83-b (McKinney 1999)
- A person is guilty of criminal trespass in the third degree (a class B misdemeanor) when they knowingly enter a building or real property designated as a “no-trespass railroad zone.” N.Y. Penal Law Section 140.10 (1999)

Chapter 10 – Vandalism

- “A person shall be deemed guilty of unlawful propulsion of a missile at railroad train where he willfully with intent to cause person injury or property damage throws, shoots or propels a rock, stone, brick, or piece of iron, steel or other metal or any deadly or dangerous missile or fire bomb at any locomotive or car of a train which is occupied by a person or persons.” N.Y. Railroad Law Section 53-d (1999)
- “It is unlawful for any person to willfully with intent to disrupt, delay, or disturb service, places or causes to be placed, drop, or position an object or objects of any kind, on, under or upon the tracks which does or could cause physical damage to railroad equipment or property or physical injury to passengers or both. Unlawful interference with a railroad train is a Class D felony.” N.Y. Railroad Law Section 53-e (1999)

Chapter 11 – Private Crossings

- Commissioner has authority over new construction of private crossings and alterations of existing crossings. Any private crossing must be located on an existing intercity rail passenger service corridor. The Commissioner may prescribe for a new private crossing:
 - 1) the manner of the crossing (at-grade or grade separated);
 - 2) location;
 - 3) type of warning devices and
 - 4) the apportionment of responsibility for maintenance.

- Intercity rail passenger corridor is operated by *Amtrak*.
- Definition – “Private rail crossing shall mean a crossing which traverses a railroad track or tracks and may be used by the owner by the owner of the right-of-way, the owner’s invitees and others, including the public, but has not been declared or recognized as a public rail crossing by the Commissioner.” N.Y. R.R. Law Section 97 (McKinney 1999)

Chapter 12 – Vegetation Clearance

- New York has no applicable code section.

Chapter 13 – Photographic Monitoring and Enforcement

- Discussion concerning the use of photographs (videotapes, etc.) in conjunction with compliance with traffic-control signals and assignment of liability in the event of a violation. While this may be utilized for railroad crossing enforcement, no railroad illustrations are used in this chapter.

Appendix B

Diagnostic Team

Read-Ahead Document

October 5, 2005

Memo for: Diagnostic Team Invitees
From: Ken Withers, R.L. Banks & Associates, Inc.
Subject: **City of Kingston/Town of Ulster Quiet Zone and City of Kingston
Pedestrian Safety and Mobility Analysis**

This memo is to provide information to those invited to join a diagnostic team inspection of grade crossings on October 18 in connection with subject study. The inspection will be led by R.L. Banks & Associates, Inc., (RLBA).

Those who are attending the October 18 inspection should meet at 8:30 a.m. on the 3rd Floor (Ulster County Planning Board offices), Ulster County Building, 244 Fair Street, Kingston, New York. Those expected to participate in the inspection include:

Alan Adin	City Engineer, City of Kingston
Charlie Alonge	NYS Coordinator and Region 1 Rep, Life Saver, Inc.
LeRoi Armstead	Senior Transportation Analyst, NYSDOT Region 8
Joel Brink	Board Member, Town of Ulster
Randy Dickinson	Grade Crossing Manager, Federal Railroad Administration
Judy Falcon	Transportation Director, Kingston City Schools
Lou Frangella	Regional Coordinator Public Affairs & Safety, CSX Transp.
Richard Salzmann	Fire Chief, City of Kingston Fire Department
Charlie Schaller	Coordinator, UC Traffic Safety Board
Christian Scharl	NYSDOT
Bill Tobin	Principal Transportation Planner, UC Transportation Council
Ken Withers	R.L. Banks & Associates, Inc.
Gene Davis	R.L. Banks & Associates, Inc.
Bruce George	R.L. Banks & Associates, Inc.

Please bring your own transportation; we encourage you to form car pool groups so as to reduce the total numbers of vehicles traveling to each crossing, as parking space may be limited at some crossings.

Kick-off Meeting and travel to Smith Ave. crossing	8:30 AM – 9:00 AM
Inspect Smith Ave. crossing and travel to next crossing.	9:30 – 10:00
Inspect Ten Broeck Ave. crossing	10:00 – 10:30
Inspect Foxhall Ave. crossing	10:30 – 11:00
Inspect Gage St. crossing	11:00 – 11:30

Inspect Cemetery Rd. crossing	11:30 – 12:00 PM
Inspect Flatbush Ave. crossing	12:00 PM – 12:30 PM
Lunch (on your own)	12:30 – 1:30
Inspect Boices Ln. crossing	1:30 – 2:00
Inspect Old Neighborhood Rd. crossing	2:00 – 2:30
Inspect Grant Ave. crossing	2:30 – 3:00
Inspect Leggs Mill Rd. crossing	3:00 – 3:30
Inspect Katrine Ln. crossing	3:30 – 4:00
Inspect Eastern Pkwy. crossing	4:00 – 4:30

Inasmuch as there are two jurisdictions, attendance at the other jurisdiction's crossings is optional. Town of Ulster attendees may choose to meet the Diagnostic Team at the Boices Lane Crossing at 1:30 P.M. if they do not attend the morning inspections. Similarly, City of Kingston attendees may choose not to visit Town of Ulster Crossings in the afternoon.

In order to conserve the time of those invited to participate, this is an ambitious schedule. We therefore are sending you read-ahead packages which include for each crossing the U.S. DOT Crossing Inventory Form, a GIS map and digital photos. Please examine these as soon as possible and send to me any pertinent information you have regarding known issues at these crossings, and any recommendations. I would appreciate this information by October 13, so that RLBA may include it in its summary remarks at each crossing.

An area of emphasis in this inspection will be the pedestrian mobility and safety issues within City of Kingston (the first six crossings listed above). Also, we will look at existing crossing warning devices and discuss them in terms of necessary changes to conform to Quiet Zone requirements. Ulster County is considering supplementary safety measures (which include temporary or permanent closure, four quadrant gates, gates with medians or channelization devices, and one-way street with gates). For more information of Quiet Zone requirements, please see "Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule", published in the Federal Register on April 27, 2005, and available at:

<http://a257.g.akamaitech.net/7/257/2422/01jan20051800/edocket.access.gpo.gov/2005/pdf/05-8285.pdf>

or on the Federal Railroad Administration website: www.fra.dot.gov/us/content/1318

Again, please provide comments and recommendations no later than October 13 to Ken Withers (or Gene Davis in his absence) at RLBA (phone 202-296-6700 or e-mail kenwithers@rlbadc.com).

**City of Kingston/Town of Ulster Quiet Zone
And
City of Kingston Pedestrian Safety and Mobility Analysis**

**Read-Ahead
Table of Contents**

**Grade Crossing Information Data Sheets
October 5, 2005**

Grade Crossing Location	USDOT Inventory Crossing Number	Page
1. Smith Ave	507093B	1-5
2. Ten Broeck Ave	507092U	6-10
3. Foxhall Ave	507091M	11-15
4. Gage St.	507090F	16-20
5. Cemetery Rd.	507089L	21-26
6. Flatbush Ave.	507088E	27-32
7. Boices Ln.	507086R	33-38
8. Old Neighborhood Rd.	507085J	39-44
9. Grant Ave.	No USDOT inventory record	45-50
10. Leggs Mill Rd.	842689J	51-56
11. Katrine Ln.	842688C	57-62
12. Eastern Pkwy.	842687V	63-68

U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 507093B Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	ALBANY	State:	NY
Subdivision:	BUFFALO	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	In KINGSTON
Railroad Milepost:	0088.30	Street or Road Name:	SMITH AVE.
RailRoad I.D. No.:	141413	Highway Type & No.:	L
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2803
Crossing Owner:		Latitude:	41.9265370
ENS Sign Installed:		Longitude:	-74.0051880
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 30 to 35 mph	Maximum Time Table Speed:	35
Type and Number of Tracks: Main: 1 Other: 1	Specify: SIDING'S	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 507093B

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	Stop Lines and RR Xing Symbols	Other Signs:	0 Specify: 0

Train Activated Devices:

Gates:	2	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	STOP & PROTECT
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

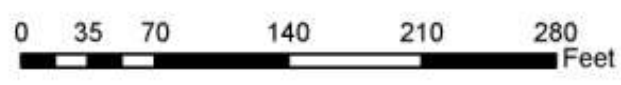
Type of Development:	Industrial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Asphalt	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Collector
Is Crossing on State Highway System:	No		
Annual Average Daily Traffic (AADT):	003179	AADT Year:	1989
Estimated Percent Trucks:	12	Avg. No of School Buses per Day:	0
Posted Highway Speed:	0		



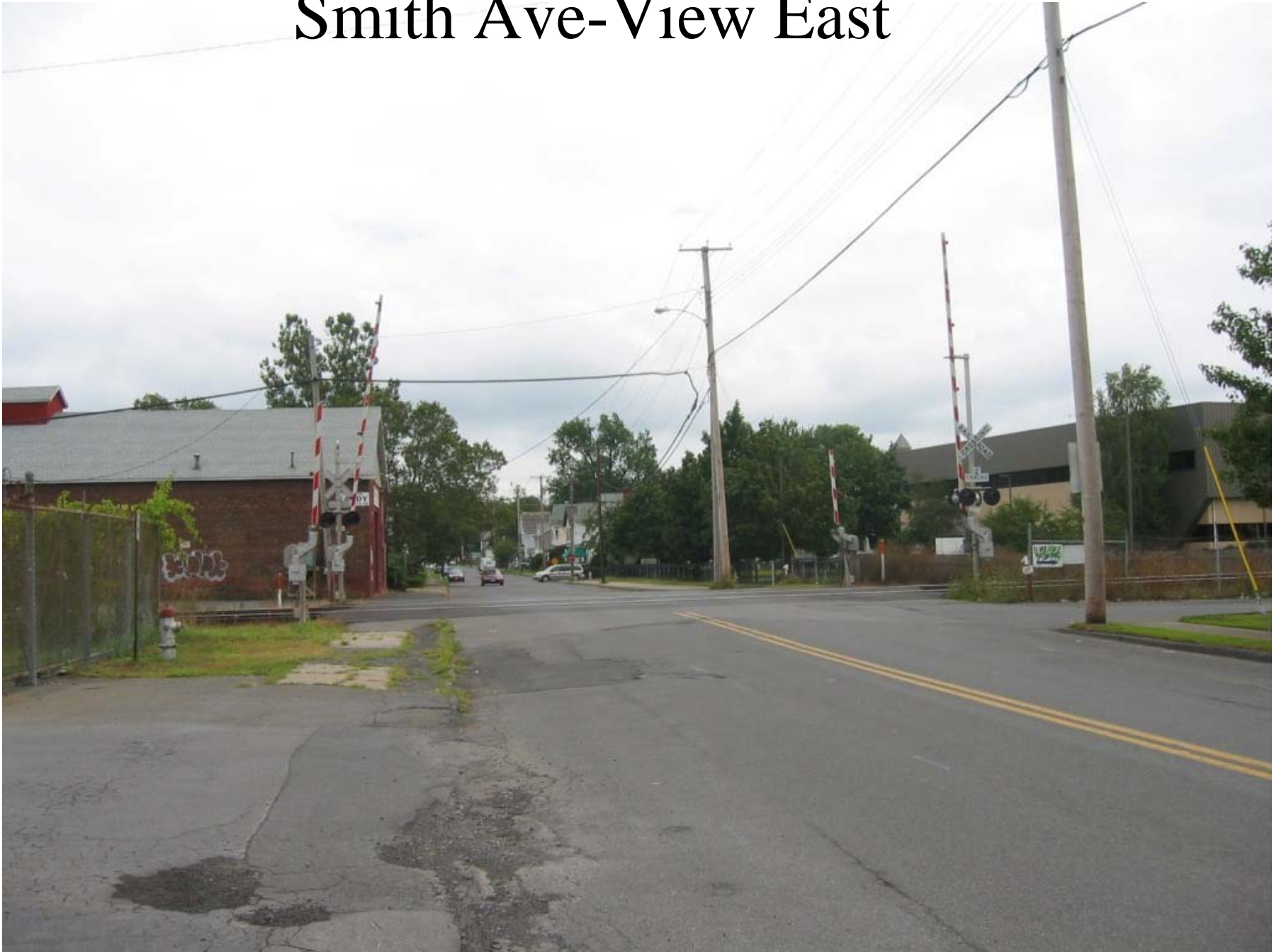
Railroad Crossing @ Smith Ave



Smith Ave-View West



Smith Ave-View East



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 507092U Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	ALBANY	State:	NY
Subdivision:	BUFFALO	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	In KINGSTON
Railroad Milepost:	0088.40	Street or Road Name:	TENBROECK AVE.
RailRoad I.D. No.:	141413	Highway Type & No.:	L
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2804
Crossing Owner:		Latitude:	41.9320640
ENS Sign Installed:		Longitude:	-73.9995190
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 30 to 35 mph	Maximum Time Table Speed:	35
Type and Number of Tracks: Main: 1 Other: 1	Specify: SIDING'S	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 507092U

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	Stop Lines and RR Xing Symbols	Other Signs:	0 Specify: 0

Train Activated Devices:

Gates:	4	4 Quad or Full Barrier:	
Mast Mounted FL:	4	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 0
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

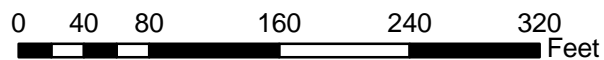
Type of Development:	Industrial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Rubber	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Collector
Is Crossing on State Highway System:	No	AADT Year:	1988
Annual Average Daily Traffic (AADT):	001307	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	10		
Posted Highway Speed:	0		



Railroad Crossing @ Ten Broeck Ave



Ten Broeck Ave-View East



Ten Broeck Ave-View South



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 507091M Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	ALBANY	State:	NY
Subdivision:	BUFFALO	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	In KINGSTON
Railroad Milepost:	0088.50	Street or Road Name:	FOXHALL RD
RailRoad I.D. No.:	141413	Highway Type & No.:	L
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2805
Crossing Owner:		Latitude:	41.9326670
ENS Sign Installed:		Longitude:	-73.9993290
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 30 to 35 mph	Maximum Time Table Speed:	35
Type and Number of Tracks: Main: 1 Other: 1	Specify: SIDING	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 507091M

Continued

Effective Begin-Date of Record: 04/05/01
Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	No Markings	Other Signs:	0 Specify: 0

Train Activated Devices:

Gates:	2	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

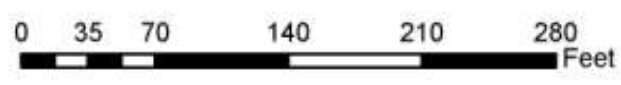
Type of Development:	Industrial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Asphalt	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Minor Arterial
Is Crossing on State Highway System:	No	AADT Year:	1988
Annual Average Daily Traffic (AADT):	007829	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	14		
Posted Highway Speed:	0		



Railroad Crossing @ Foxhall Ave



Foxhall Ave-View South



Foxhall Ave-View North



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 507090F Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	ALBANY	State:	NY
Subdivision:	BUFFALO	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	In KINGSTON
Railroad Milepost:	0088.60	Street or Road Name:	GAGE ST
RailRoad I.D. No.:	141413	Highway Type & No.:	L
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2806
Crossing Owner:		Latitude:	41.9341960
ENS Sign Installed:		Longitude:	-73.9990690
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 30 to 35 mph	Maximum Time Table Speed:	35
Type and Number of Tracks: Main: 1 Other: 1	Specify: SIDING'S	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 507090F

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	No Markings	Other Signs:	0 Specify: 0

Train Activated Devices:

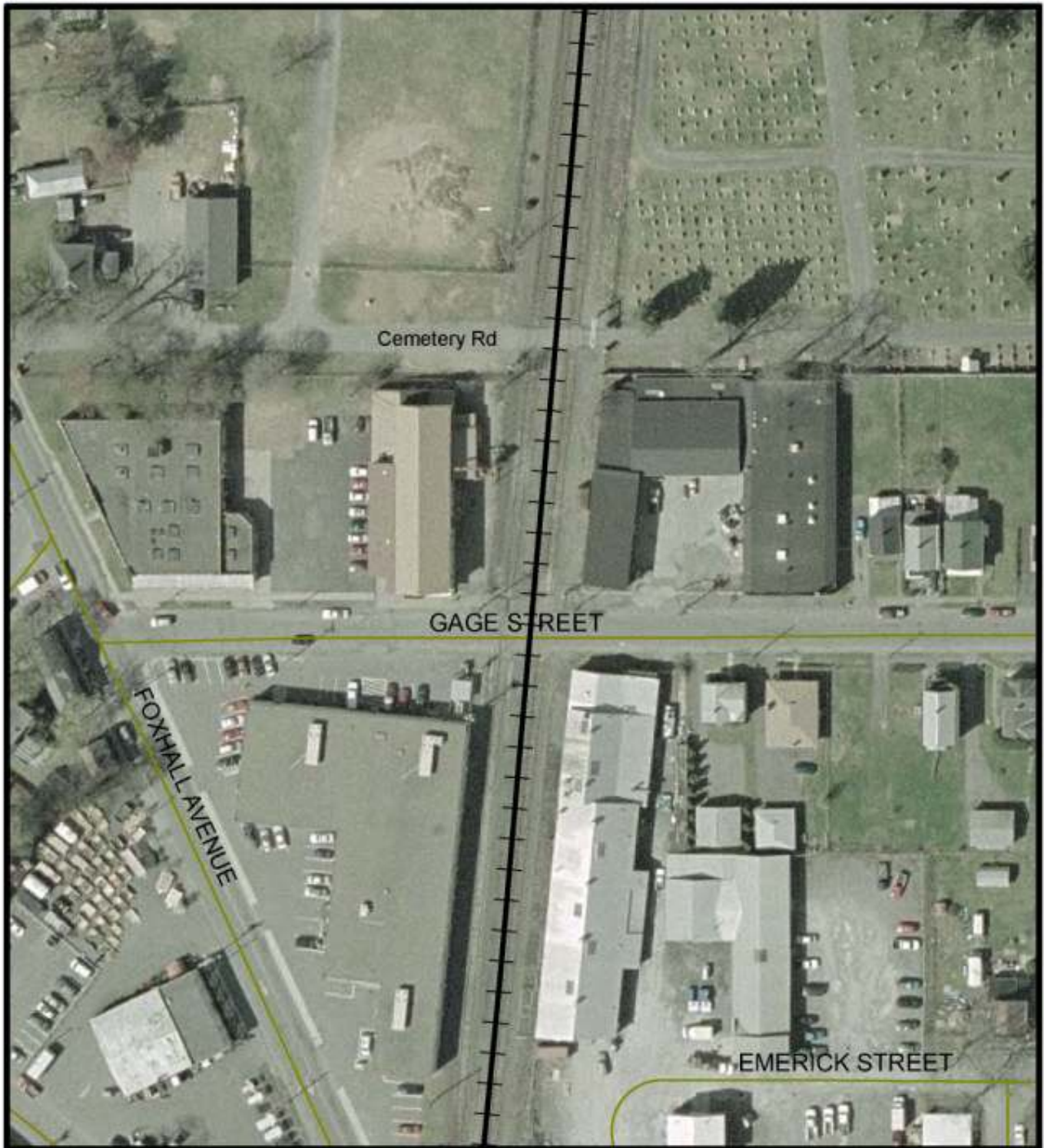
Gates:	1	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

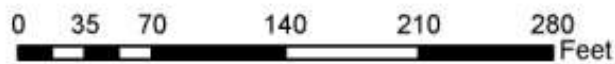
Type of Development:	Industrial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Asphalt	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Local
Is Crossing on State Highway System:	No	AADT Year:	1988
Annual Average Daily Traffic (AADT):	001302	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	10		
Posted Highway Speed:	0		



Railroad Crossings @ Gage St & Cemetery Rd



Gage St.-View West



Gage St.-View East



Appendix D

Grade Crossing Inventory Forms

Marked-Up to Show

Current Status

U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 10/3/2005

Crossing No.: 507089L Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	ALBANY	State:	NY
Subdivision:	BUFFALO	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	In KINGSTON
Railroad Milepost:	0088.70	Street or Road Name:	CEMETERY XING.
RailRoad I.D. No.:	141413	Highway Type & No.:	
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2807
Crossing Owner:		Latitude:	41.9363210
ENS Sign Installed:		Longitude:	-73.9988330
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 30 to 35 mph	Maximum Time Table Speed:	35
Type and Number of Tracks: Main: 1 Other: 1	Specify: SIDING'S	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 507089L

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	No Markings	Other Signs:	0 Specify: 0

Train Activated Devices:

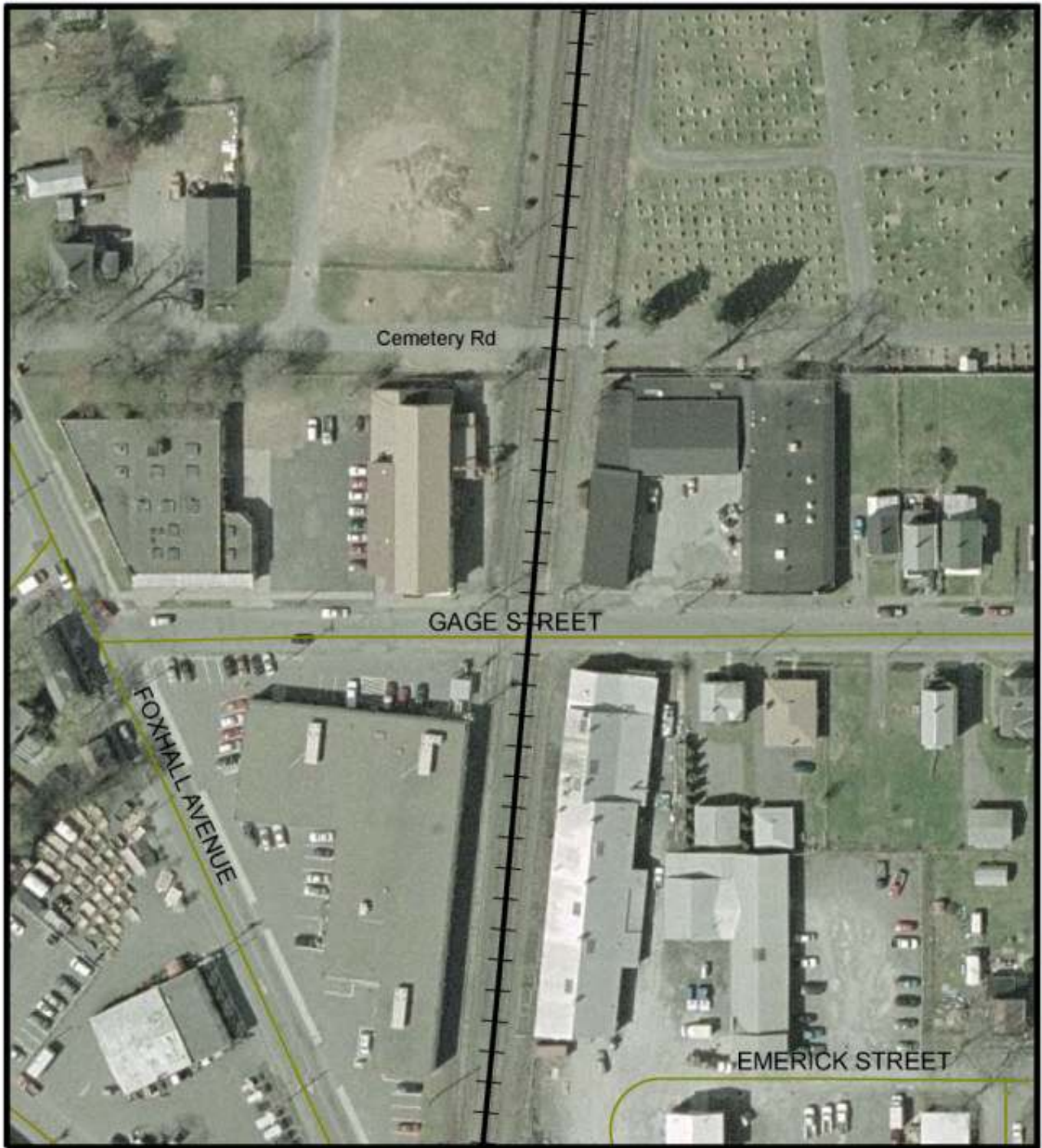
Gates:	0	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	2	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

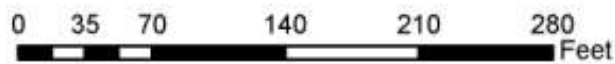
Type of Development:	Commercial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	1	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Timber	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Local
Is Crossing on State Highway System:	No	AADT Year:	1988
Annual Average Daily Traffic (AADT):	000326	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	10		
Posted Highway Speed:	0		



Railroad Crossings @ Gage St & Cemetery Rd



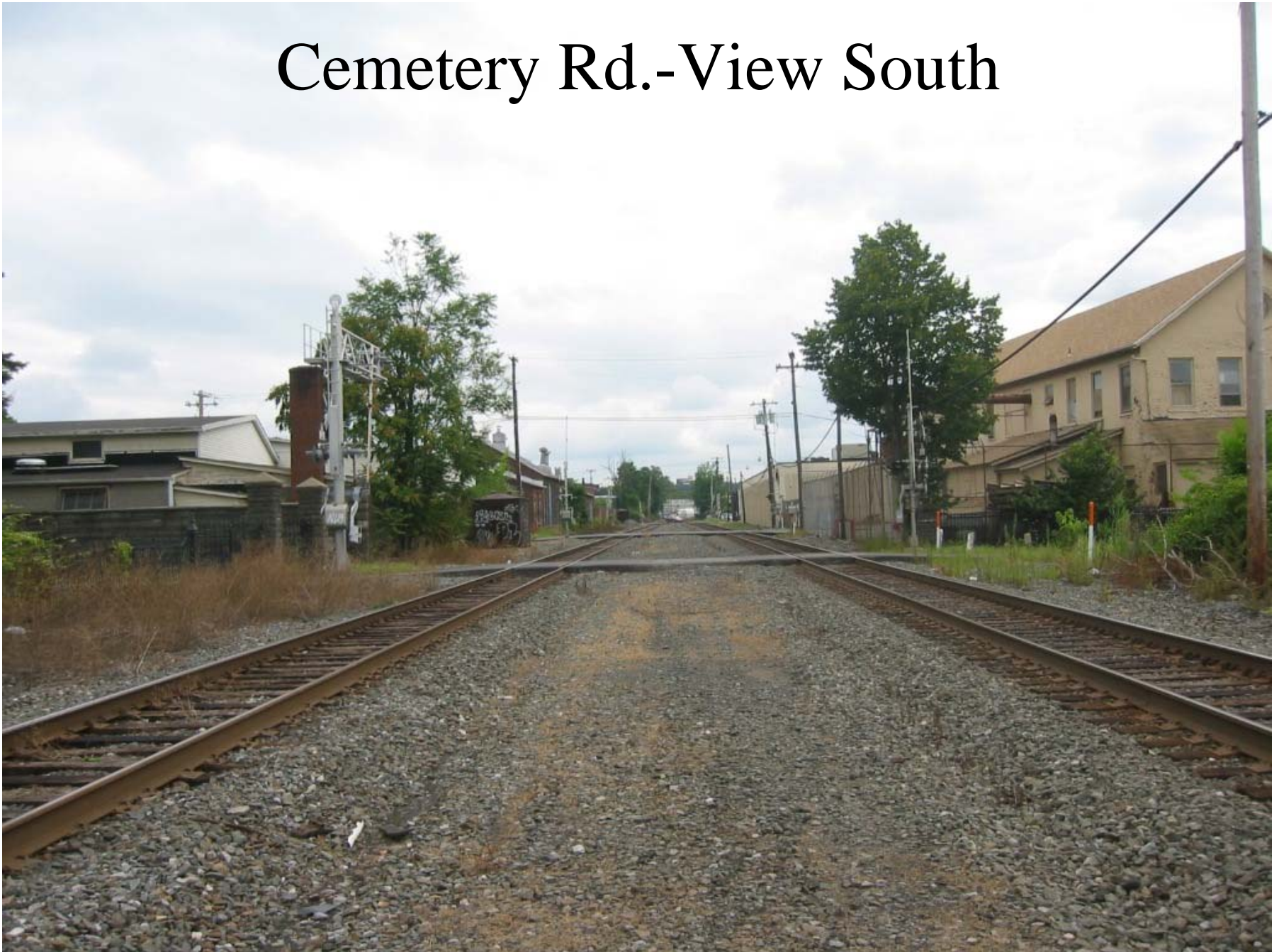
Cemetery Rd.-View East



Cemetery Rd.-View West



Cemetery Rd.-View South



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 507088E Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	ALBANY	State:	NY
Subdivision:	BUFFALO	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	In KINGSTON
Railroad Milepost:	0088.80	Street or Road Name:	FLATBUSH AVE.
RailRoad I.D. No.:	141413	Highway Type & No.:	ST-32
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2808
Crossing Owner:		Latitude:	41.9378550
ENS Sign Installed:		Longitude:	-73.9988780
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 30 to 35 mph	Maximum Time Table Speed:	35
Type and Number of Tracks: Main: 1 Other: 3	Specify: SIDING'S	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 507088E

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	Stop Lines and RR Xing Symbols	Other Signs:	0 Specify: 0

Train Activated Devices:

Gates:	1	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

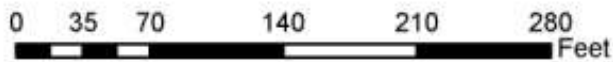
Type of Development:	Commercial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Rubber	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Minor Arterial
Is Crossing on State Highway System:	Yes	AADT Year:	1988
Annual Average Daily Traffic (AADT):	007989	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	14		
Posted Highway Speed:	0		



Railroad Crossing @ Flatbush Ave



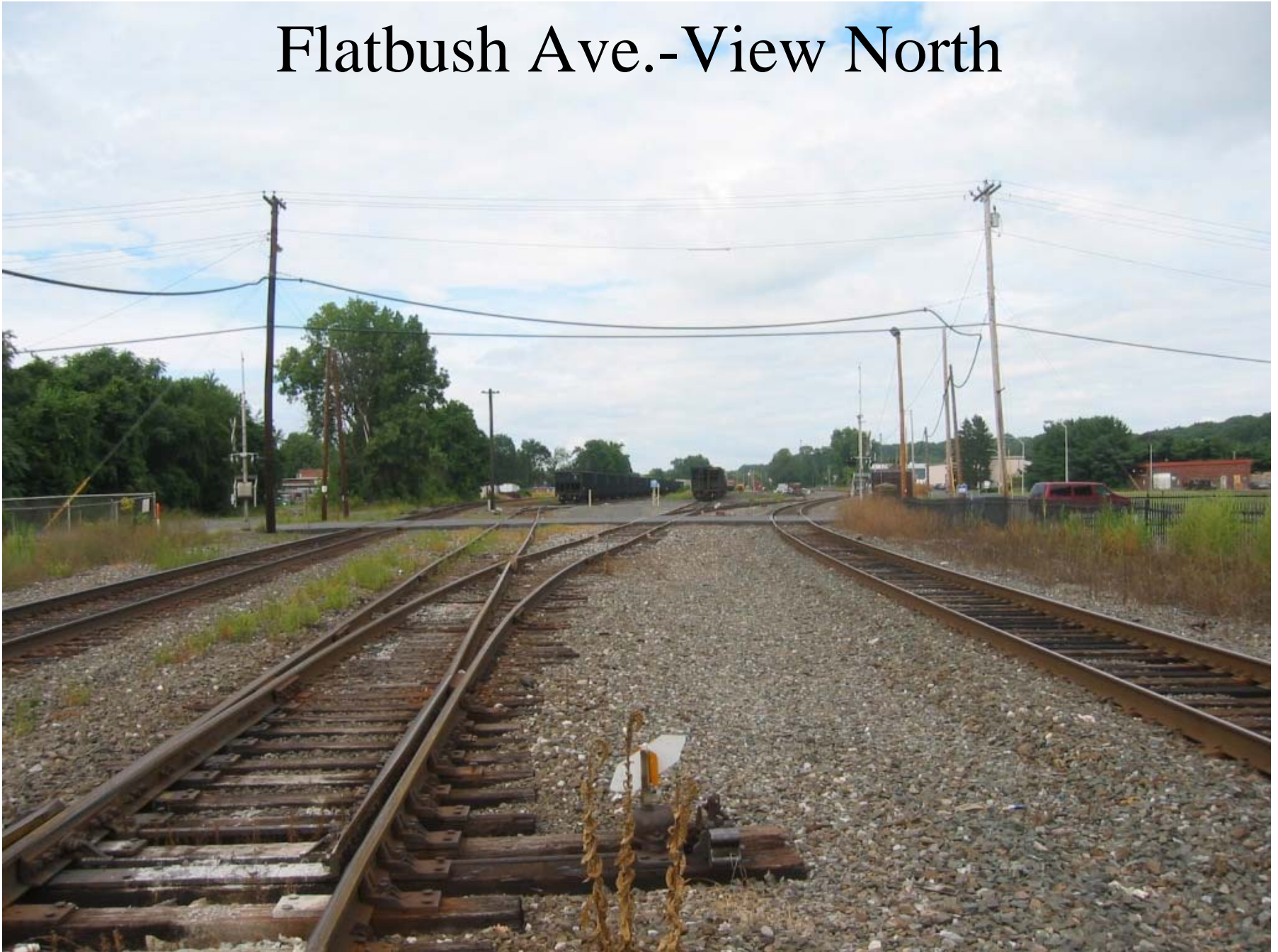
Flatbush Ave.-View East



Flatbush Ave.-View West



Flatbush Ave.-View North



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 507086R Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	ALBANY DIVISIO	State:	NY
Subdivision:	RIVER	County:	ULSTER
Branch or Line Name:	M.L.(NTL.JCT.&	City:	Near LAKE KATRINE
Railroad Milepost:	0090.50	Street or Road Name:	BOICE LANE
RailRoad I.D. No.:	QR	Highway Type & No.:	L
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2800C
Crossing Owner:		Latitude:	41.9607960
ENS Sign Installed:	Yes	Longitude:	-73.9940720
Passenger Service:		Lat/Long Source:	
Avg Passenger Trian Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 45 to 50 mph	Maximum Time Table Speed:	50
Type and Number of Tracks: Main: 1 Other: 0	Specify:	
Does Another RR Operate a Separate Track at Crossing?		No
Does Another RR Operate Over Your Track at Crossing?		No

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 507086R

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	2	Highway Stop Signs:	0
Advanced Warning:	No	Hump Crossing Sign:	
Pavement Markings:	No Markings	Other Signs:	0 Specify: 0

Train Activated Devices:

Gates:	1	4 Quad or Full Barrier:	
Mast Mounted FL:	3	Total Number FL Pairs:	0
Cantilevered FL (Over):	1	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	Simultaneous Preemption

Part IV: Physical Characteristics

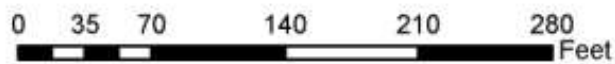
Type of Development:	Commercial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	4	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Asphalt and Flange	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Minor Arterial
Is Crossing on State Highway System:	No	AADT Year:	1989
Annual Average Daily Traffic (AADT):	009266	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	16		
Posted Highway Speed:	0		



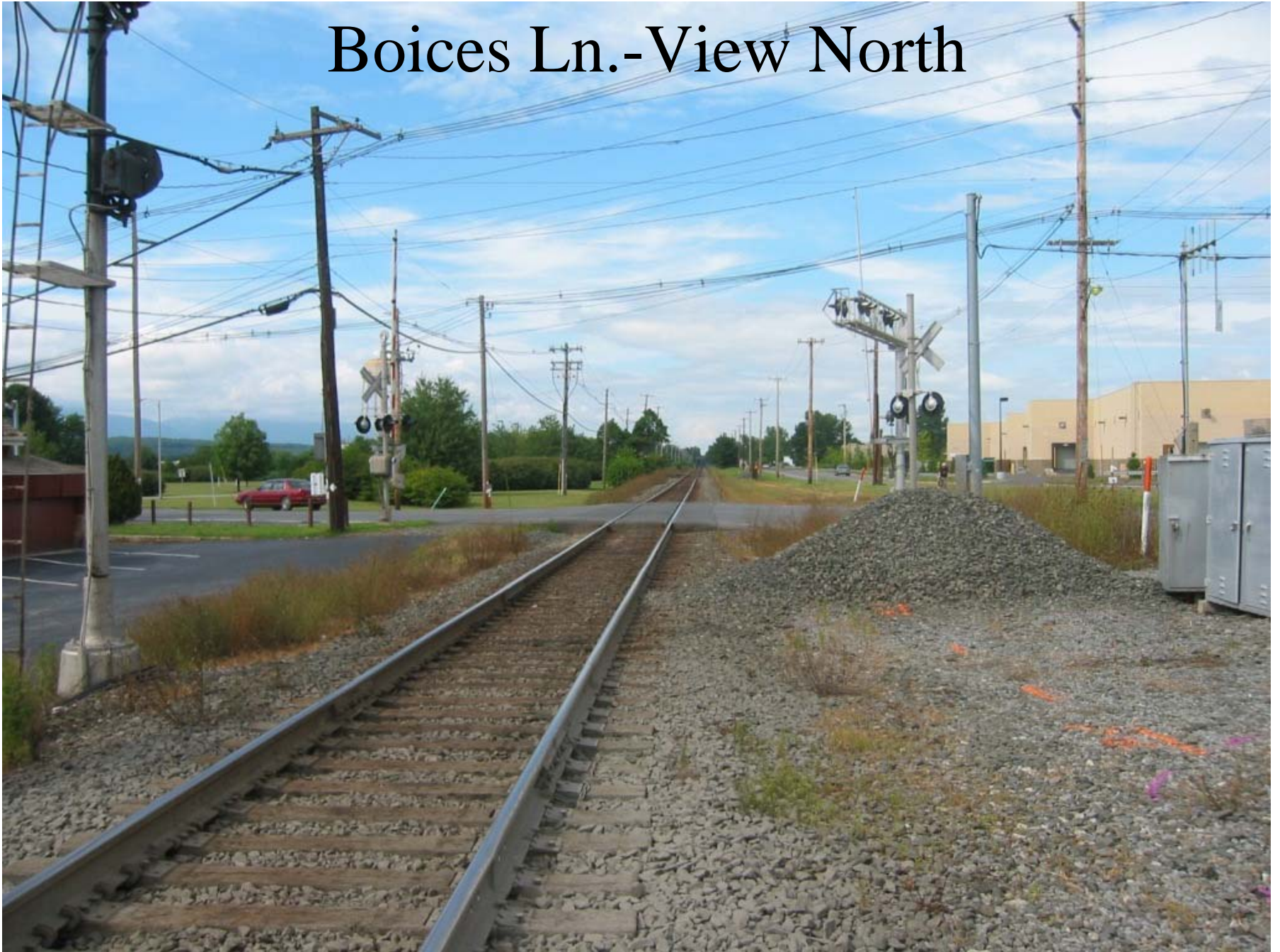
Railroad Crossing @ Boices La



Boices Ln.-View East



Boices Ln.-View North



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 507085J Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	ALBANY DIVISIO	State:	NY
Subdivision:	RIVER	County:	ULSTER
Branch or Line Name:	M.L.(NTL.JCT.&	City:	Near LAKE KATRINE
Railroad Milepost:	0091.20	Street or Road Name:	NEIGHBORHOOD RD.
RailRoad I.D. No.:	QR	Highway Type & No.:	L
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2809
Crossing Owner:		Latitude:	41.9706380
ENS Sign Installed:	Yes	Longitude:	-73.9938580
Passenger Service:		Lat/Long Source:	
Avg Passenger Trian Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 45 to 50 mph	Maximum Time Table Speed:	50
Type and Number of Tracks: Main: 1 Other: 0	Specify:	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 507085J

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	2	Highway Stop Signs:	0
Advanced Warning:	No	Hump Crossing Sign:	
Pavement Markings:	No Markings	Other Signs:	0 Specify: 0

Train Activated Devices:

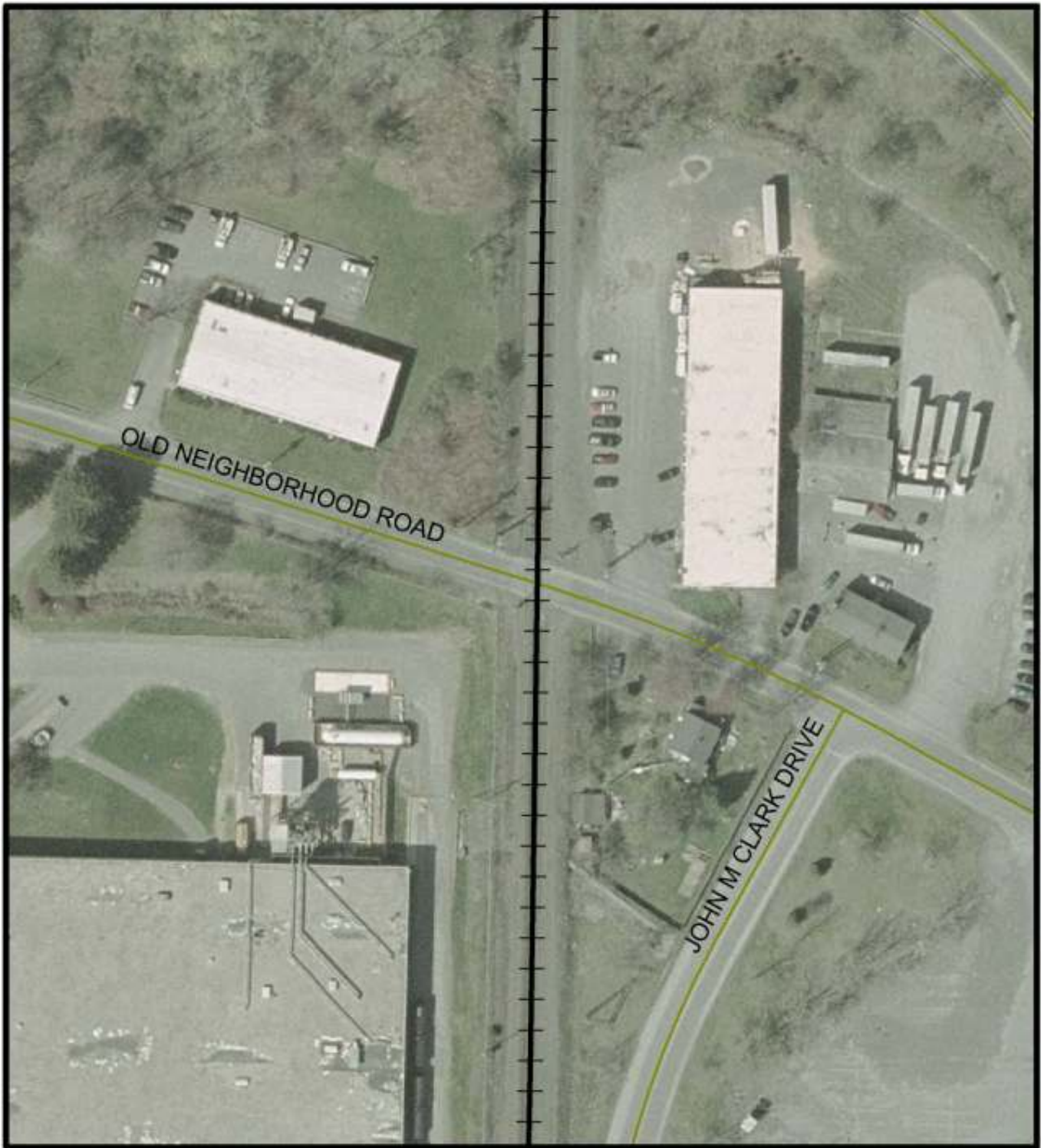
Gates:	2	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

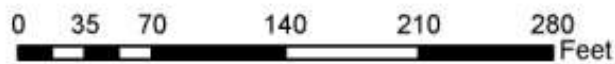
Type of Development:	Industrial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Asphalt and Flange	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Local
Is Crossing on State Highway System:	No	AADT Year:	1989
Annual Average Daily Traffic (AADT):	000142	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	10		
Posted Highway Speed:	0		



Railroad Crossing @ Old Neighborhood Rd



Old Neighborhood Rd.-View East



Old Neighborhood Rd. View West



Old Neighborhood Rd. View South

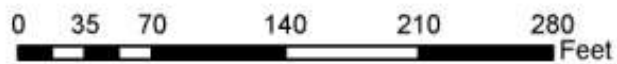


Grant Avenue

No U.S. DOT CROSSING INVENTORY FORM



Railroad Crossing @ Grant Ave



Grant Ave.-View East



Grant Ave.-View West



Grant Ave.-View Southwest



Grant Ave.-View South



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 842689J Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	NORTHEASTERN	State:	NY
Subdivision:	SOUTHERN TIER	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	Near KINGSTON
Railroad Milepost:	0092.34	Street or Road Name:	LEGG'S MILL RD.
Railroad I.D. No.:	141413	Highway Type & No.:	C-32
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2810
Crossing Owner:		Latitude:	41.9884950
ENS Sign Installed:		Longitude:	-73.9932940
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 45 to 50 mph	Maximum Time Table Speed:	50
Type and Number of Tracks: Main: 1 Other: 0	Specify:	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 842689J

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	2	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	No Markings	Other Signs:	2 Specify: STOP ON RE
			0

Train Activated Devices:

Gates:	2	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	6	Specify Other Flashing Lights:	ON GATES
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

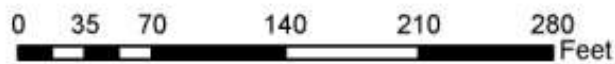
Type of Development:	Institutional	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Timber	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Urban Collector
Is Crossing on State Highway System:	No	AADT Year:	1989
Annual Average Daily Traffic (AADT):	004868	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	12		
Posted Highway Speed:	0		



Railroad Crossing @ Leggs Mills Rd





Leggs Mill Rd.-View East

Leggs Mill Rd.-View West



Leggs Mill Rd.-View North



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 842688C Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	NORTHEASTERN	State:	NY
Subdivision:	SOUTHERN TIER	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	Near KINGSTON
Railroad Milepost:	0092.60	Street or Road Name:	KATRINE LANE
RailRoad I.D. No.:	141413	Highway Type & No.:	L
Nearest RR Timetable Stn:	KINGSTON	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2810A
Crossing Owner:		Latitude:	41.9925420
ENS Sign Installed:		Longitude:	-73.9929430
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 45 to 50 mph	Maximum Time Table Speed:	50
Type and Number of Tracks: Main: 1 Other: 0	Specify:	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 842688C

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	No	Hump Crossing Sign:	
Pavement Markings:	No Markings	Other Signs:	0 Specify: 0

Train Activated Devices:

Gates:	2	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

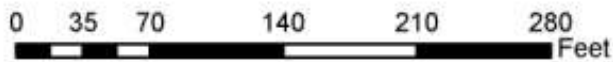
Type of Development:	Commercial	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	1	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Timber	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Rural Local
Is Crossing on State Highway System:	No	AADT Year:	1989
Annual Average Daily Traffic (AADT):	000255	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	10		
Posted Highway Speed:	0		



Railroad Crossing @ Katrine La



Katrine Ln.-View East



Katrine Ln.-View West



Katrine Ln.-View South



U.S. DOT - CROSSING INVENTORY INFORMATION AS OF 8/5/2005

Crossing No.: 842687V Update Reason: Changed Crossing Effective Begin-Date of Record: 04/05/01
 Railroad: CSX CSX Transportation [CSX] Current Record
 Initiating Agency Railroad Type and Position: Public At Grade

Part I Location and Classification of Crossing

Division:	NORTHEASTERN	State:	NY
Subdivision:	SOUTHERN TIER	County:	ULSTER
Branch or Line Name:	RIVER LINE	City:	Near KINGSTON
Railroad Milepost:	0093.32	Street or Road Name:	EASTERN PKWY
RailRoad I.D. No.:	141413	Highway Type & No.:	L
Nearest RR Timetable Stn:	MOUNT MARION	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	2810B
Crossing Owner:		Latitude:	42.0025290
ENS Sign Installed:		Longitude:	-73.9919050
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category:

Public Access:

Specify Signs:

Specify Signals:

ST/RR A

ST/RR B

ST/RR C

ST/RR D

Railroad Use:

State Use:

Narrative:

Emergency Contact: (800)232-0144

Railroad Contact:

State Contact:

Part II Railroad Information

Number of Daily Train Movements:	Less Than One Movement Per Day:	No
Total Trains: 56 Total Switching: 3	Day Thru: 24	
Typical Speed Range Over Crossing: From 45 to 50 mph	Maximum Time Table Speed:	50
Type and Number of Tracks: Main: 1 Other: 0	Specify:	
Does Another RR Operate a Separate Track at Crossing?	No	
Does Another RR Operate Over Your Track at Crossing?	No	

U.S. DOT - CROSSING INVENTORY INFORMATION

Crossing 842687V

Continued

Effective Begin-Date of Record: 04/05/01

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	No Markings	Other Signs:	2 Specify: STOP ON RE
			0

Train Activated Devices:

Gates:	0	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 1
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	DC/AFO
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

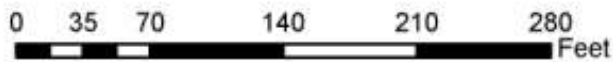
Type of Development:	Institutional	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes	If Other:	
Crossing Surface:	Timber	Is it Signalized?	
Nearby Intersecting Highway?	N/A	Is Crossing Illuminated?	
Does Track Run Down a Street?	No		
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Rural Local
Is Crossing on State Highway System:	No	AADT Year:	1989
Annual Average Daily Traffic (AADT):	000769	Avg. No of School Buses per Day:	0
Estimated Percent Trucks:	10		
Posted Highway Speed:	0		



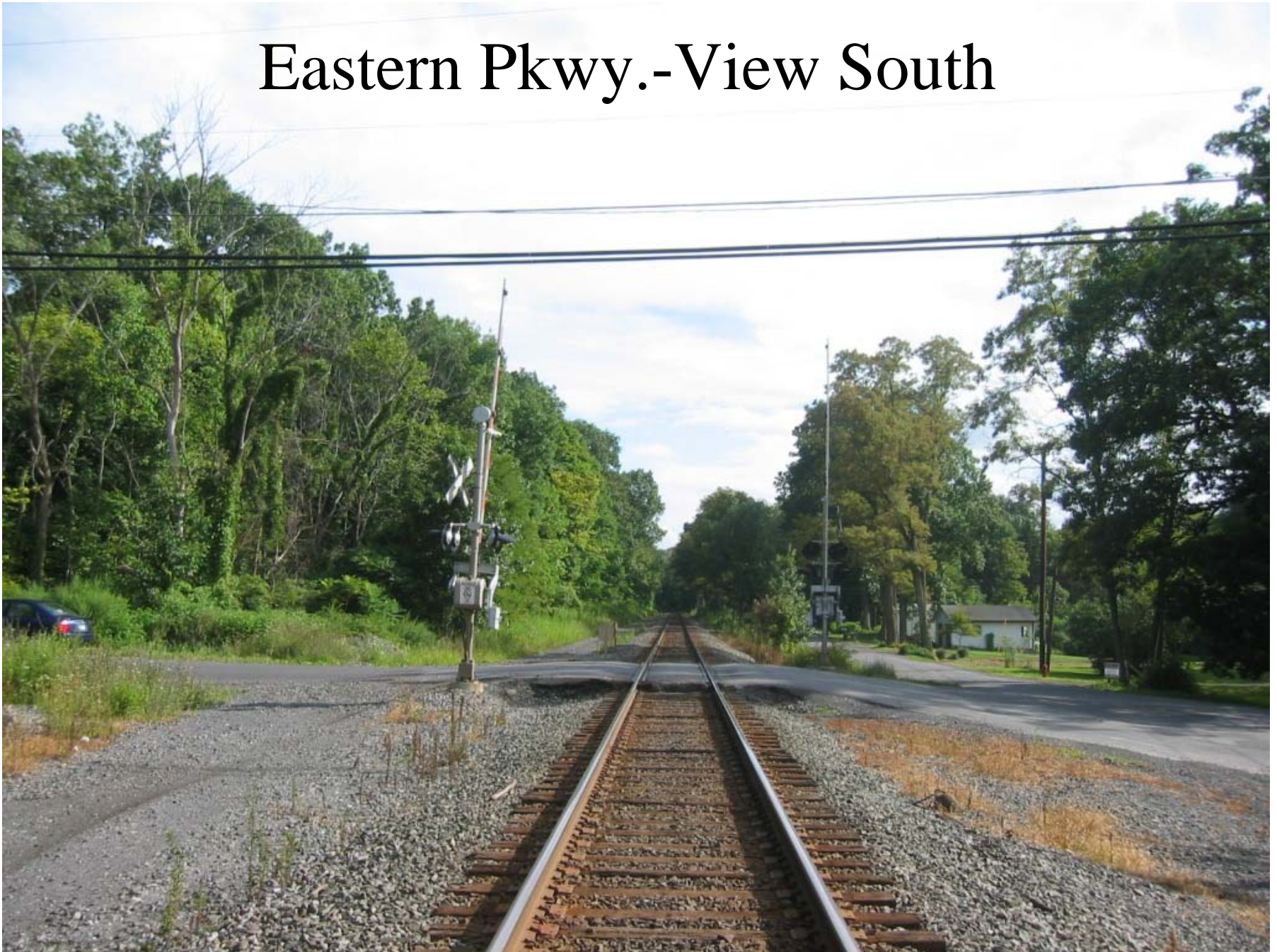
Railroad Crossing @ Eastern Pkwy



Eastern Pkwy.-View Southeast



Eastern Pkwy.-View South



Eastern Pkwy.-View North



Appendix C

Summary of Diagnostic Team

Inspection

Appendix C

Summary of Diagnostic Team Inspection

Organization and Preparation

In order to discuss alternative measures for implementation of a Quiet Zone, and to address pedestrian safety and mobility improvements within the City of Kingston, a team of experts was assembled, and on October 18, 2005, visited the twelve public at-grade highway-rail crossings (grade crossings) which are the subject of the Ulster County study.

A central purpose of this inspection was to take advantage of the specific knowledge of federal, state, local and railroad officials with regard to potential hazards at the individual crossings, and to solicit from these officials their recommendations concerning safety and mobility improvements.

The inspection team included the following individuals¹:

Alan Adin	City Engineer, City of Kingston
LeRoi Armstead	Senior Transportation Analyst, NYSDOT Region 8
Joel B. Brink	Councilman, Town of Ulster
Officer Creagan	Ulster Police Department
Wayne Deyo	Trainmaster, River Line, CSX Transportation
Randy Dickinson	Grade Crossing Manager, Federal Railroad Administration
Judy Falcon	Transportation Director, Kingston City Schools
Lou Frangella	Regional Coordinator Public Affairs & Safety, CSX Transp.
Donald Pecora	Lieutenant, Ulster County Sheriff Road Patrol
B.M. Reavy	Officer, Ulster Police Department
Richard Salzmann	Fire Chief, City of Kingston Fire Department
P. Charles Schaller	Traffic Safety Coordinator, Ulster Co. Traffic Safety Board
Donald "Mac" Tinnie, Jr.	Town of Ulster Highway Superintendent
Bill Tobin	Principal Transportation Planner, UC Transportation Council
Rick Wolff	Ethan Allen Bus Company (schoolbus contract operator)
Ken Withers	R.L. Banks & Associates, Inc.
Gene Davis	R.L. Banks & Associates, Inc.
Bruce George	R.L. Banks & Associates, Inc.

The consultant, R.L. Banks & Associates, Inc., (RLBA) assembled available data and inspected the twelve crossings in advance, once on August 15, 2005, and again on October 17, 2005. Ulster County and RLBA invited officials to participate in the diagnostic

¹ Not all participants remained with the diagnostic team to visit all crossings. For example, some joined the team only for the City of Kingston crossings, and some, only for the Town of Ulster crossings.

team inspection, and RLBA prepared “read-aheads” and sent them in advance to the invited team members. The read-aheads included:

- Brief description of project and inspection plan
- List of crossings
- GIS mapping of each crossing
- USDOT Crossing Inventory Information forms
- Photos showing perspectives of each crossing

Three RLBA professionals visited the twelve crossings on October 17, 2005, took data required to update the U.S. Department of Transportation (USDOT) Crossing Inventory Information forms (which must be submitted to the Federal Railroad Administration (FRA) by the State and the railroad before a Quiet Zone can be implemented), and evaluated alternative improvements with regard to each crossing.

Diagnostic Team Inspection

The diagnostic team assembled at the Ulster County Planning Board offices at 8:30 a.m. on October 18, 2005, received a short briefing, and then inspected the twelve crossings. Including lunch, the inspection continued until about 4 p.m.

Strictly speaking, this was not a diagnostic study in the sense of a rigorous and complete evaluation of each crossing in accordance with all of the requirements spelled out in the USDOT Federal Highway Administration (FHWA) *Railroad-Highway Grade Crossing Handbook*. Such was neither required nor necessary. Rather, it was an opportunity to discuss and reach consensus, among a group of experts, with regard to the safety issues at each crossing, the relative appropriateness of various alternative Quiet Zone Supplementary Safety Measures (SSMs) at each crossing, and safety and mobility improvements where pedestrians cross the railroad tracks.

Supplementary Safety Measures

Briefly, one of the following SSMs is required at each crossing within a Quiet Zone:

- Temporary closure of crossing
- Four-quadrant gate system
- Medians or channelization devices with (two-quadrant) gates
- One way street with gate(s)
- Permanent closure of crossing

Permanent closure of the crossing resolves the safety issue, at any given site, and the traffic issue may be resolved if it is feasible to “grade separate” the crossing, that is, construct a bridge over it or tunnel under it. Grade separations, however, are expensive (in the millions of dollars to grade separate in an urban setting) and therefore are used only where priorities dictate. Where traffic volume is relatively modest and where nearby crossing alternatives are available, crossing closure should be a consideration. Temporary

closure results in a Quiet Zone during those periods when a crossing is closed, for example, at night, but requires placement of warning signs and barriers, as well as their removal when a crossing is opened. Thus this SSM is labor intensive.

Four-quadrant gates are relatively expensive (estimated at about \$300,000 in the case of Ulster County crossings where flashing lights and two-quadrant gates are currently installed), but are required where closing is not an option and where medians and channelization devices, or a one-way street, are not practical.

Raised medians and other devices to “channel” the traffic, so that a motorist is discouraged from driving around closed two-quadrant gates, are a relatively low-cost alternative (about \$14,000 to \$50,000 per crossing, depending upon local conditions and design), and may be used if the absence of intersections adjacent to a crossing allows their use. 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, at least 60 feet from the gate arm. Appendix A to Code of Federal Regulations Part 222, Approved Supplementary Safety Measures (see Final Rule²), describes all of the FRA requirements with regard to two-quadrant gates with medians or channelization devices, as well as other SSMs.

One-way streets (gate on the oncoming traffic side) are a relatively low-cost option where this is practicable.

General Observations

Some general observations are in order. During RLBA pre-inspections and the diagnostic team inspection, CSX train activity and the functioning of existing gates, flashing lights and other safety and warning devices were observed. A significant observation is that there were a number of trespassers within the CSX right of way, some walking over the tracks between established street crossings and others using the right of way as a footpath or as an all-terrain vehicle (ATV) route. It would be highly appropriate for railroad, state and local officials to cooperate in programs to eliminate this unsafe practice. Also, as the FRA member of the diagnostic team pointed out, trespass prevention is closely associated with important Homeland Security concerns.

During the pre-inspection by RLBA staff, a local businessman at one crossing asked what was going on and complained vehemently of the train horn noise. It was later noted by a member of the diagnostic team that train noise constitutes an adverse economic impact with regard to business locations adjacent to or near the railroad corridor. It was stated that at least one building close to the corridor remains unoccupied because of train noise.

Another observation of the diagnostic team was that street traffic signs associated with the grade crossings are ignored in some cases. For example, vehicles were observed at some crossings making turns which are prohibited and unsafe at those specific crossings.

² Federal Railroad Administration (FRA) Final Rule, “Use of Locomotive Horns at Highway-Rail Grade Crossings”, published April 27, 2005, in the Federal Register.

With regard to both the trespass and illegal vehicle turn issues, education and enforcement programs would be most appropriate.

This diagnostic team summary report was sent to each participant for comment, and this "Summary of Diagnostic Team Inspection" represent a consensus.

Crossing by Crossing Discussion

Following is a crossing-by-crossing summary of issues discussed, SSMs considered, as well as pedestrian safety and mobility improvements also considered.

Smith Avenue (USDOT Inventory Crossing Number 507093B)

Observations:

The latest recorded annual average daily traffic (AADT) on Smith Avenue across the railroad right of way is 4,208 vehicles. Smith Avenue crossing has about 50 school bus crossings per day making it one of the more heavily-used school bus routes.

An advance warning sign (please see section 8B-3 of the USDOT Federal Highway Administration *Manual on Uniform Traffic Control Devices* (MUTCD)) exists on Smith Avenue west of the crossing but is missing on the east side.

Pavement markings are missing; there are no stop lines or railroad crossing symbols painted on the pavement (please see section 8B-4 of MUTCD).

With regard to accident history, members of the diagnostic team stated that, at this and other crossings, most collisions occur not at the crossing itself but behind the crossing on the street approaches, where impatient motorists are struck by other highway vehicles as they attempt to pull out of line and turn around.

This is one of the more heavily-trafficked pedestrian routes. Trespassers were observed crossing the railroad tracks between Smith and Ten Broeck Avenues.

Conclusions:

Advance warning signs are needed on all approaches to the Smith Avenue crossing, including the east side and on a road parallel to the railroad.

Pavement markings -- stop lines and railroad crossing markings -- are needed on the street approaches.

It was suggested that train-activated signs be installed a block ahead of the crossing, so that when a train enters the crossing, these signs would be activated to indicate to motorists that the crossing ahead is blocked. If these signs can be

installed at appropriate locations, they could provide motorists the option of taking an alternative route.

Because of the proximity of street intersections to the Smith Avenue crossing, intersections providing access to the Post Office and other busy locations, four-quadrant gates would be the appropriate supplementary safety measure (SSM).

It would be appropriate to install pedestrian wait stations on either side of the railroad corridor in order to assist pedestrians who must wait for stopped or slow-moving trains.

Ten Broeck Avenue (Crossing Number 507092U)

Observations:

Annual average daily traffic (AADT) on Ten Broeck Avenue across the railroad right of way is 1,735.

An advance warning sign is in place on the west side of the crossing but is missing on the east side.

There are no pavement markings at this crossing.

Judy Falcon and Rick Wolff made the observation, at this and other crossings, that school bus drivers have visibility problems at some crossings, that is, the drivers have difficulty looking down the railroad right of way to determine whether a train is approaching, because there are obstacles in the right of way. At the Ten Broeck crossing, equipment shelters on the right of way constitute such an obstruction. There are ten school bus crossings per day at this location.

Conclusions:

An advance warning sign is needed on the east side approach.

Pavement markings -- stop lines and railroad crossing markings -- are needed on the street approaches.

Four-quadrant gates appear to be the appropriate SSM at Ten Broeck Avenue because of intersections and side streets adjacent or very close to the railroad right of way.

It was recommended that pedestrian wait stations be installed on each side of this crossing.

Foxhall Avenue (Crossing Number 507091M)

Observations:

Foxhall Avenue, the second-highest-use grade crossing of the 12 studied, has an annual average daily traffic (AADT) of 11,436 vehicles, based upon data from a year 2003 traffic count. Foxhall Avenue has 75 school bus crossings per day.

Because five streets provide motor vehicle access to this crossing, five advance warning signs would be appropriate. Only one exists, on the east side, on Foxhall Avenue. Some pavement markings exist on the west approach but none are visible on the east side of the crossing.

Fire Chief Salzman stated that, from an emergency vehicle standpoint, this is the most important crossing. Grade separation (motor vehicle bridge over, or tunnel under) would allow use of Foxhall Avenue regardless of railroad traffic, and is the best solution if cost is not a consideration. Grade separation also would enhance pedestrian safety and mobility. Of all solutions, however, grade separation is the most expensive, normally costing well over a million dollars, particularly in an urban setting. Grade separation at this crossing has been considered and while obtainable, would be quite costly due to the close proximity of the intersecting roads (some of which would most likely need closure if grade separation were to be pursued) as well as nearby obstructions.

Collisions between automobiles (and other highway vehicles) have occurred when motorists have attempted to get out of the line of vehicles waiting for a slow-moving or stopped train.

This is a crossing where local authorities report, and the Diagnostic Team observed, that some motorists make unsafe turns despite the presence of signs prohibiting same (for example, turning right from Cornell Street onto Foxhall Avenue).

Foxhall Avenue is one of the "busiest" pedestrian crossings.

Pedestrians must step over the tracks on the north side of crossing, or walk in the street, in order to make the crossing, where vehicle traffic may be crossing simultaneously.

Conclusions:

Advance warning signs are needed on four of the five street approaches.

Pavement markings -- stop lines and railroad crossing markings -- are needed on all street approaches.

Because intersections and side streets are located adjacent to this crossing, four-quadrant gates are recommended as the SSM at Foxhall Avenue, assuming that grade separation is deemed too expensive or otherwise not feasible.

The existing pavement on the crossing should be widened sufficiently to provide pedestrian sidewalks. As it is, pedestrians must step over the tracks or walk in the street in order to make the crossing.

Pedestrian wait stations are recommended, one on each side of the railroad right of way, assuming that grade separation is not feasible.

An enforcement program should target this crossing to prevent unsafe turns from or onto the crossing.

Gage Street (Crossing Number 507090F)

Observations:

This is a relatively low use crossing, with mostly residential traffic. AADT is 1,830 vehicles. There are eight school bus crossings per day at this location.

A filter business is located on both sides of the crossing, and the Diagnostic Team observed employees moving between those business facilities.

There are no advance warning signs and no pavement markings.

There are side streets in close proximity to the crossing, suggesting that four-quadrant gates would be the required SSM if the crossing is to remain open.

Conclusions:

Advance warning signs are needed on both approaches.

Pavement markings are needed on both approaches.

Because of the relatively low volume of crossing traffic on Gage Street, the proximity of other crossings to the north and south (Flatbush Avenue to the north and Foxhall Avenue to the south), and the relatively high cost of four-quadrant gates, consideration should be given to closing this crossing. If the crossing is closed to motor vehicles, it may be appropriate to create a pedestrian crossing, in consideration of the business facilities.

If the crossing remains open, four-quadrant gates would be the required SSM.

If the crossing remains open, pedestrian wait stations should be considered.

Cemetery Road (Crossing Number 507089L)

Observations:

AADT is 141, the lowest of the 12 crossings inspected.

School buses do not use this crossing.

There are no advance warning signs and no pavement markings.

Pedestrians use this crossing. There are 80 new units of housing near Flatbush Avenue on the east side of the railroad right of way and there are businesses and stores on the west side of the railroad. Pedestrians use Cemetery Road in addition to Flatbush Avenue.

Conclusions:

Advance warning signs and pavement markings are needed.

The small volume of traffic suggests that this crossing should be closed. Other access to St. Mary's Cemetery is available, along Flatbush Avenue.

If this crossing is to remain open, then a relatively low-cost SSM would be appropriate, given the relatively low traffic volume.

Other alternatives discussed include turning Cemetery Road into a private crossing (it is now classified as a public crossing, as are all the crossings which are the subject of this study). Like public crossings, private crossings are also subject to the Federal Railroad Administration (FRA) Final Rule, "Use of Locomotive Horns at Highway-Rail Grade Crossings", published April 27, 2005, in the Federal Register, but private crossings do not necessarily require SSMs in order to be included in a Quiet Zone. (A public crossing, or "public highway-rail grade crossing" means a location where a public highway, road, or street, including associated sidewalks or pathways, crosses one or more railroad tracks at grade. If a public authority maintains the roadway on both sides of the crossing, the crossing is considered a public crossing.³ A private crossing is a crossing where a private roadway crosses one or more railroad tracks at grade and at which a public authority does not maintain the roadway on either side of the crossing.⁴) The Final Rule requires diagnostic team review of any private crossing or pedestrian crossing to be included in a Quiet Zone. It is possible that the existing safety measures at Cemetery Road, with some minor additions (e.g., signs complying with MUTCD standards, warning that no locomotive horn will be sounded), would qualify it as acceptable for inclusion

³ Final Rule, page 21855.

⁴ Interim Final Rule, page 70624. The definition of private crossing did not change in the Final Rule.

in a Quiet Zone as a private crossing.⁵ It is understood that changing the status would require a New York State administrative hearing.

Another alternative discussed was closing the Cemetery Road crossing to vehicles and making it a pedestrian crossing only.

If this crossing is not closed, it may be appropriate to consider installation of pedestrian wait stations.

The diagnostic team consensus appeared to be that this crossing should be closed.

Flatbush Avenue (Crossing Number 507088E)

Observations:

Annual average daily traffic (AADT) on Flatbush Avenue across the railroad right of way is 6,719. Among the 12 crossings inspected, Flatbush Avenue has the third highest street traffic volume and it also has the highest number of school bus crossings, at 200 per day.

There are no advance warning signs and no pavement markings.

This is described by one local traffic authority as “a tough street” and the scene of “a lot of crashes” resulting from impatient motorists who attempt to get out of the line of vehicles waiting for a stopped or slow-moving train, possibly attempting to perform some yard operation, since the yard is located directly north of the crossing.

There is a highway intersection in the northeast quadrant of this crossing.

Because of the 80 new housing units east of the crossing, there is considerable pedestrian activity at this crossing. This was said to be the “busiest” pedestrian crossing in the corridor. Pedestrians trespassing on the railroad right of way have been struck by trains both to the north and to the south of Flatbush Avenue.

Pedestrians are forced to step across the tracks or walk on Flatbush Avenue because there is no sidewalk.

Conclusions:

Advance warning signs and pavement markings should be installed.

It is also recommended that sidewalks be constructed across the railroad right of way.

⁵ For a complete statement of FRA requirements with regard to private crossings within Quiet Zones, see the Final Rule, in particular Section 222.25.

Considering the intersection proximate to this crossing (northeast quadrant), four-quadrant gates are the recommended SSM.

Alternatively, if feasible, grade separation (bridge over or tunnel under the railroad right of way) may be considered. Grade separation would resolve motorist issues and would also improve pedestrian safety and mobility.

Unless the crossing is grade-separated, pedestrian wait stations are recommended.

Education and enforcement measures should be considered in order to discourage trespassing on the railroad right of way.

Boices Lane (Crossing Number 507086R)

Observations:

With an AADT of 12,967, the Boices Lane crossing has the highest traffic volume of the 12 crossings considered in this study. Because it has a high traffic volume, this crossing also has the highest highway vehicle waiting times when trains block the crossing.

School buses cross the Boices Lane rail crossing about 25 times per day. It was noted at this crossing that vehicles (school buses in particular were mentioned) can be stopped on the tracks, for example westbound on Boices Lane, waiting for the traffic light to change at Morton Boulevard.

Despite the high traffic volume, Boices Lane has – relative to other crossings in this study – a relatively low accident history (one collision in 1989 according to available records). This is probably because, as Officer Reavy of the Ulster Police Department pointed out, the collisions that occur are not with trains, but are collisions between highway vehicles when motorists attempt to get out of line, when they are stopped waiting for a train to clear the crossing. Thus the collisions are not at the crossing itself but on Boices Lane ahead of the crossing.

There is an advance warning sign on the west approach to this crossing but not on the east approach.

There are no pavement markings.

Officer Reavy noted that pedestrians use this crossing.

Conclusions:

Advance warning signs are needed on the Boices Lane east approach and on the other roads (Morton Boulevard, John M. Clark Drive) approaching the crossing.

Pavement markings are needed.

Considering the possibility that vehicles (including school buses) can be stopped on the tracks and hit by a train, additional measures to prevent stopping on the tracks may warrant consideration.

At the least, "DO NOT STOP ON TRACKS" signs should be posted on both Boices Lane approaches.

Driver training for school bus drivers should emphasize that no vehicle be driven onto railroad tracks unless there is sufficient space on the opposite side of the tracks for the vehicle to clear not only the tracks but also the far-side gate(s) and stop line.

Because of the adjacent intersection of John M. Clark Drive and, opposite that, a parking lot entrance, four-quadrant gates are recommended as the SSM at this crossing.

It was recommended that sidewalks be installed so that pedestrians are not required to step across the tracks or walk on heavily-trafficked Boices Lane.

Pedestrian wait stations should be considered.

Old Neighborhood Road (Crossing Number 507085J)

Observations:

The AADT on this dead-end street, 374 vehicles, is the second lowest of the 12 crossings inspected.

There is an advance warning sign on the western approach to this crossing but not on the eastern approach.

There are no pavement markings.

No pedestrian issues were noted at this location.

Old Neighborhood Road is a dead-end road with three or four businesses west of the tracks.

A private road belonging to TechCity passes within a very few yards of the end of Old Neighborhood Road, suggesting the possibility of a connection there and closure of the railroad crossing.

Enterprise Drive runs north-south about 200 yards west of the point at which Old Neighborhood Road reaches a dead end. This also opens the possibility of another connection, and closure of the railroad crossing.

Conclusions:

An advance warning sign should be installed on the eastern approach.

Pavement markings are needed.

With regard to SSMS, one consideration discussed by the diagnostic team was closure of the crossing in conjunction with connecting the western end of Old Neighborhood Road with a nearby private road (near TechCity), or with Enterprise Drive further to the west, if this is practicable. There was some concern about the TechCity alternative, given that there are three or four businesses located on Old Neighborhood Road, and in this alternative they would be using TechCity's private road.

Another possibility, again if an agreement could be made with TechCity to connect Old Neighborhood Road to its private road, would be to turn Old Neighborhood Road into a one-lane road.

Medians or channelization were considered but the presence of a business adjacent to and on the east side of the crossing (northeast quadrant), and the requirement for large (semi-trailer) truck access adjacent to the crossing, may make this alternative impractical.

Four-quadrant gates are recommended if no lower cost solution is feasible.

Grant Avenue (Crossing Number 914899A)

Observations:

AADT volumes are not available.

School bus crossings were estimated to be about eight per day.

There are advance warning signs east and west of this crossing on Grant Avenue, but not on Seremma Court.

There are no pavement markings.

There is no USDOT Crossing Inventory Form available for this crossing even though a crossing identification number, 914899A, is posted at the crossing.

Grant Avenue is a divided road with existing median, approximately twelve feet wide, and with six-inch high curbs.

It was noted that, about 100 feet on either side of the crossing, there are paved cuts through the median. These allow motorists to turn and proceed in the opposite direction on the other one-way traffic lane. This provides an alternative to the motorist who chooses not to wait for a train to clear the crossing.

Conclusions:

An advance warning sign should be installed on Seremma Court.

Pavement markings should be installed.

Ulster County should ask New York State Department of Transportation to submit the appropriate USDOT Crossing Inventory Form information to FRA. (It is necessary that all crossings within a Quiet Zone have up-to-date Crossing Inventory Forms on file at the Federal Railroad Administration prior to establishment of a Quiet Zone.)

The appropriate and most cost-effective SSM at this crossing appears to be the one-way with gates alternative. Existing gates would need to be extended six feet, and the median curbs adjacent to the gates need to be extended in the direction of traffic flow a distance of six feet, in order to discourage motorists from driving around the gates.

Leggs Mill Road (Crossing Number 842689J)

Observations:

AADT at this crossing is 5,363.

There are about 30 school bus crossings per day.

There is an advance warning sign on the west approach only.

Pavement markings are quite faded.

There is a visibility issue facing bus drivers at this crossing. It is difficult for eastbound bus drivers approaching the crossing to see down the railroad right of way to determine whether a train is approaching, because of the presence of a building in the northwest quadrant.

Officer Reavy stated that pedestrians use this crossing. On the west side there is a convenient roof overhang, on the northwest quadrant building, which is used in inclement weather by pedestrians.

Conclusions:

An advance warning sign should be posted on the east approach.

New pavement markings should be applied.

Medians or channelization are the recommended SSM at this crossing. It appears that this is possible, in that a 60-foot median would still allow a local business in the southwest quadrant to access its parking lot. If this turns out to be impractical, then four-quadrant gates would be required.

It was recommended that a pedestrian wait station be installed on the east side.

Katrine Lane (Crossing Number 842688C)

Observations:

Katrine Lane is a dead-end street and has a relatively low AADT, 462.

Advance warning signs are posted at both approaches.

There are no pavement markings.

There are four school bus crossings per day. It was stated that most children walk to 9W over the crossing to catch the bus and that only special needs children travel over the crossing in buses.

The crossing width is insufficient for two lanes. Town of Ulster Highway Superintendent Mac Tinnie stated that 26 feet is the requirement for two lanes (two-way traffic).

Conclusions:

Pavement markings are needed.

The possibility of medians or channelization was discussed; however the width of crossing is insufficient for two lanes. The cost of widening the roadway to 26 feet, over a distance of 100 feet on either side of the railroad, would be approximately the same as the cost of installing four-quadrant gates. The intersection of a road adjacent to the rail crossing, which road gives access to a gravel parking area for adjacent house trailers and another home further north, probably would have to be

re-configured to use medians. This also would be problematic, because of cost and requirement to obtain agreement of property owner.

Four-quadrant gates are recommended at this crossing.

Eastern Parkway (Crossing Number 842687V)

Observations:

AADT figures are not available.

School bus crossings were estimated at about 30 per day.

Two advance warning signs are in place on Glenerie Boulevard but there is none on the Eastern Parkway approach.

There are no pavement markings.

It was stated that there are no big pedestrian issues at this crossing.

Conclusions:

The recommended SSM is four-quadrant gates. (The “T” intersection of Eastern Parkway with Glenerie Boulevard, immediately west of the crossing, makes impractical the alternatives of medians/channelization and a one-way street.)

General Recommendations

Irrespective of any action taken with regard to establishment of a Quiet Zone, it is recommended that the appropriate authorities consider education and enforcement measures to discourage trespassing of pedestrians on the railroad right of way.

It is also recommended that pavement markings (stop lines and railroad crossing symbols) be applied to all crossing pavements in accordance with the USDOT Federal Highway Administration *Manual on Uniform Traffic Control Devices* (MUTCD), section 8B-4, and that advance warning signs be placed where they are missing (section 8B-3 of MUTCD).

Summary Quiet Zone Recommendations

In summary, and assuming that the other alternatives discussed above are not feasible, following are the diagnostic team’s recommendations regarding SSMs.

<u>Crossing</u>	<u>SSM</u>
Smith Avenue	Four-quadrant gates
Ten Broeck Avenue	Four-quadrant gates
Foxhall Avenue	Four-quadrant gates
Gage Street	Permanent closure
Cemetery Road	Permanent closure
Flatbush Avenue	Four-quadrant gates
Boices Lane	Four-quadrant gates
Old Neighborhood Road	Four-quadrant gates
Grant Avenue	One way street
Leggs Mill Road	Medians/channelization
Katrine Lane	Four-quadrant gates
Eastern Parkway	Four-quadrant gates

Appendix D

Grade Crossing Inventory Forms

Marked-Up to Show

Current Status

Appendix E

Draft Notice of Intent

Appendix E

Draft Notice of Intent

Following is a draft Notice of Intent. The basis for this draft is Appendix C to Part 222, Guide to Establishment of Quiet Zones; Section IV, Required Notifications; B. Notice of Intent; of the U.S. Department of Transportation (USDOT) Federal Railroad Administration (FRA) Final Rule, "Use of Locomotive Horns at Highway-Rail Grade Crossings", 49 CFR Parts 222 and 229, published April 27, 2005, in the Federal Register (see page 21913 of Final Rule).

County of Ulster
310 Flatbush Avenue
Kingston, New York 12401

Addressees:

Cliff Stayton, Director of Public Safety Awareness, CSX Transportation, CSXT General Office Building J205, Jacksonville, Florida 32202

Bruce Smith, P.E., Director; Traffic Engineering and Highway Safety Division; 50 Wolf Road POD 42; Albany, NY 12232-0748

Edward Rosen; Director, Grade Crossing Section; New York State Department of Transportation; 50 Wolf Road POD 54; Albany NY 12232

Subject: Letter of Intent to Establish a Quiet Zone

Dear _____:

This Letter of Intent provides notice that Ulster County, New York, plans to create a Quiet Zone in accordance with the U.S. Department of Transportation (USDOT) Federal Railroad Administration (FRA) Final Rule, "Use of Locomotive Horns at Highway-Rail Grade Crossings", 49 CFR Parts 222 and 229, published April 27, 2005, in the Federal Register. This letter is to describe our plan and allow you 60 days to provide information and comments to Ulster County.

Identification of Planned Quiet Zone

Following is a list of each public highway-rail grade crossing, identified by both the U.S. DOT Crossing Inventory Number and the street or highway name.

Grade Crossing Location	USDOT Inventory Crossing Number
1. Smith Avenue	507093B
2. Ten Broeck Avenue	507092U
3. Foxhall Avenue	507091M
4. Gage Street	507090F
5. Cemetery Road	507089L
6. Flatbush Avenue	507088E
7. Boices Lane	507086R
8. Old Neighborhood Road	507085J
9. Grant Avenue	914899A
10. Leggs Mill Road	842689J
11. Katrine Lane	842688C
12. Eastern Parkway	842687V

There are no private highway-rail grade crossings, and no pedestrian-only crossings within the proposed quiet zone.

Time Period within Which Restrictions Would Be in Effect

Ulster County plans a 24 hours a day Quiet Zone.

Brief Explanation of Plans

Ulster County plans to provide Supplementary Safety Measures (SSMs) at each of the 12 crossings, as follows:

Crossing	SSM
Smith Avenue	Four-quadrant gates
Ten Broeck Avenue	Four-quadrant gates
Foxhall Avenue	Four-quadrant gates
Gage Street	Permanent closure
Cemetery Road	Permanent closure
Flatbush Avenue	Four-quadrant gates
Boices Lane	Four-quadrant gates
Old Neighborhood Road	Four-quadrant gates
Grant Avenue	One way street
Leggs Mill Road	Medians/channelization
Katrine Lane	Four-quadrant gates
Eastern Parkway	Four-quadrant gates

Ulster County plans to effect these SSMs in coordination with CSX and NYS DOT.

Point of Contact

Ulster County's point of contact is:

(name)
(title)
(address)
(phone)

Parties Receiving this Notice of Intent

Following are the names and addresses of parties receiving this Notice of Intent:

Cliff Stayton, Director of Public Safety Awareness, CSX Transportation, CSXT
General Office Building J205, Jacksonville, Florida 32202

Bruce Smith, P.E., Director; Traffic Engineering and Highway Safety Division; 50
Wolf Road POD 42; Albany, NY 12232-0748

Edward Rosen; Director, Grade Crossing Section; New York State Department of
Transportation; 50 Wolf Road POD 54; Albany NY 12232

Sincerely,

Ulster County

Appendix F

Summary of Public Meeting on

October 18, 2005

Appendix F

Summary of October 18, 2005, Public Meeting

Bill Tobin, AICP, Principal Transportation Planner, Ulster County Planning Board, introduced the subject and explained the purpose of this public meeting. Mr. Tobin invited members of the public and other participants to introduce themselves.

Ken Withers, R.L. Banks & Associates, Inc., (RLBA), described the consultant's job in this study, explained what is required to implement a Quiet Zone, discussed the pedestrian safety and mobility aspects of the study, and asked for comments, questions and recommendations. Withers stated that a report will be submitted in two months, and that another public meeting is tentatively scheduled for January 2006.

About 30 persons attended the meeting. In addition to members of the public, Mayor of Kingston James Sottile, Town of Ulster Councilman Joel Brink, and CSX Resident Vice President for Public Affairs Maurice O'Connell were in attendance.

The meeting began at 5:30 p.m. on October 18, 2005, and lasted approximately an hour and a half, with most of this time taken up by questions, comments and discussion.

The first public comment was a statement that a locomotive horn had sounded for a full five minutes without let-up, just a little over an hour before this meeting, between 4:15 and 4:20 p.m. Both Mayor Sottile and CSX Vice President O'Connell responded. O'Connell promised to investigate.

Mayor Sottile noted that locomotive horns are an on-going nuisance but that all concerned parties are working together and that the problem will be resolved. He said he is committed to establishment of a Quiet Zone.

One attendee asked whether a Quiet Zone may be established between 9 p.m. and 6 a.m., or if strobe lights can be used in lieu of horns. Withers replied that strobe lights are not an option, but that night time only Quiet Zones are one of the options allowed by the Federal Railroad Administration.

Another questioner asked why the locomotive horn is so loud. O'Connell replied that the Federal Railroad Administration requires that horn volume be no less than 96 and no more than 110 decibels (dB (A)).

O'Connell mentioned that CSX plans nine additional sidings along the CSX River Line, and stated that construction of these sidings will improve the situation in City of Kingston and Ulster County. Dennis Doyle, Director of Planning, Ulster County, asked whether the counties where the sidings will be added will be notified. O'Connell said that two of the sidings are planned for Fort Montgomery and West Park.

In response to a question about the option of building overpasses to relieve the problem, Withers replied that grade separations (bridge over or tunnel under) are the best solutions but also the most expensive.

A member of the public asked what has happened since two years ago, when this horn noise issue was discussed. Mayor Sottile responded that the City has talked to CSX, the Final Rule has been published and a consultant has been hired. He also reported that Fire Chief Salzmann will be installing surveillance cameras along the railroad right of way, as a way of determining immediately which crossings are blocked by trains.

Someone asked why the train doesn't have a "counter", to indicate the number of cars in the train, so that the motorist would know whether to wait. O'Connell indicated that Homeland Security is averse to providing exact counts. Withers said that a member of the diagnostic team had suggested train-activated signs, placed at intersections in advance of a crossing, to indicate to motorists whether a rail crossing is blocked. Tobin said the Transportation Council has approved a study.

One questioner asked whether there is a timer on the train to stop the horn. O'Connell stated that there are two types of locomotive horn, the manually-controlled horn and the automatic button. O'Connell also said that, because of the requirements (1) to begin sounding the horn at least 15, but no more than 20 seconds before the crossing, (2) that there be two long, one short, and an additional long blast, and (3) that the horn continue sounding until the lead car or locomotive passes through any given crossing, and given the proximity of crossings, one to another, in the City of Kingston, and the possibility that trains are moving slowly through this area, all of this may explain why the locomotive horn is sometimes sounded for interminably long periods.

Another person said that two years ago, the City was looking at six crossings in Kingston, and now we're looking at 12 crossings. The person asked whether we are moving along. Withers said that 12 crossings will not require significant additional study time, compared with six. Mayor Sottile stated that the City of Kingston would be responsible for the costs associated with the crossings within its borders and the Town of Ulster would be responsible for their crossing upgrade costs.

Another comment was that some locomotive engineers are polite and others "really bear down on the horn". A follow-up question was, "What can I do if the horn is too loud?" Withers mentioned the earlier statement of O'Connell that the Federal Railroad Administration requires that locomotive horn volume be between 96 and 110 decibels (dB (A)). Another question was, "What is the penalty if a locomotive engineer sounds a horn in a Quiet Zone?" With regard to the last question, Withers responded that he did not know. Mr. O'Connell stated that upon request, if a Quiet Zone is implemented, CSX would investigate each separate incident as presented because locomotive engineers will always have the right (and obligation) to sound the horn to attempt to avoid pending vehicle collisions or to warn trespassers to get off its tracks.

One attendee stated that she had to wait an hour and a half in the snow last winter because a train blocked a crossing. She suggested a pedestrian overpass.

One person asked why the dispatcher allows trains to block crossings. Another asked about gates closing prior to seeing or hearing a train. With regard to the latter, Withers said that constant warning time devices are installed so that gates do not descend prematurely.

Another question was on the feasibility of wayside horns. Withers explained that these have been investigated, but are not included among the supplementary safety measures approved by the Federal Railroad Administration for establishment of a Quiet Zone. [Note for the record: *This answer was not correct.* In accordance with Title 49 Code of Federal Regulations Section 222.59 (49 CFR 222.59), as presented in the Final Rule on Use of Locomotive Horns, a wayside horn may be used in lieu of a locomotive horn, and may be installed within a Quiet Zone.]

Someone asked, "Where's the money coming from to establish a Quiet Zone?" Mayor Sottile responded that he is committed to finding funding. He indicated that some crossings may be closed.

One questioner asked if the Quiet Zone could be established one crossing at a time, as funds are available. The Mayor replied that he would try to do them all at once.

One attendee stated that there may have been a greater attendance if the public meeting were scheduled at a more convenient time.

Appendix G

Summary of Public Meeting on

February 6, 2006

Appendix G

Summary of February 6, 2006, Public Meeting

Dennis Doyle, Director, and Bill Tobin, Principal Transportation Planner, Ulster County Planning Board (UCPB) and Ulster County Transportation Council (UCTC), introduced the subject (the "City of Kingston/Town of Ulster Quiet Zone and City of Kingston Pedestrian Safety and Mobility Analysis" study) and explained the purpose of the public meeting.

Ken Withers, R.L. Banks & Associates, Inc., (RLBA), described the conduct of the study, and its conclusions and recommendations.

23 persons attended the meeting. In addition to members of the public, City Council Member Rich Cahill, New York State Department of Transportation representative LeRoi Armstead, and CSX representative Lou Frangella were in attendance.

The meeting began at 5:30 p.m. and lasted approximately an hour and a half. Most of this time was given to questions, comments and discussion.

City Council Member Rich Cahill expressed concern regarding the recommendation to close Gage Street. There is a business located on both sides of the tracks, and as an absolute minimum a pedestrian crossing would be required, according to Cahill. It was also indicated that closure of Gage Street would result in an access problem for trucks associated with the business.

One attendee expressed the opinion that \$2.5 million should not be spent on a Quiet Zone. Rather, he said, it should go to more pressing needs, such as sewer system repair.

Another attendee suggested that an agreement should be struck with the railroad that locomotive horns be sounded for shorter periods of time. In reply it was pointed out that there are minimum requirements regarding when the horn warning must begin (15-20 seconds prior to locomotive's arrival at the crossing), and with regard to loudness.

Wayside horns were discussed. A wayside horn may replace any Supplementary Safety Measure recommended in the study.

The position of the horn on the locomotive, and direction of the sound, were discussed.

It was stated by one attendee that the Town of Ulster is not as committed to establishing a Quiet Zone as is the City of Kingston. Other attendees said that locomotive horns activated in the City of Kingston can be heard in the Town of Ulster, and vice versa.

Regarding the Cemetery Road crossing, it was stated that there should be at least a pedestrian crossing at this location, because of the number of pedestrians. Someone suggested that night closure of the Cemetery Road crossing would not be a problem.

The question was asked, "Does anyone say there should be no Quiet Zone? Three hands went up.

Asked for comments regarding wait stations, there was little response. One person said there should be pedestrian bridges over the tracks.

Lou Frangella, CSX Regional Coordinator, responded to a number of questions.

One attendee suggested that the rules could change after Ulster County invests in the necessary Quiet Zone improvements, and that Ulster County could be left having expended funds and having no Quiet Zone.

LeRoi Armstead responded to a question regarding the potential changes in traffic flow which may occur following closing of a crossing.

Doyle said that UCTC will consider this study, probably in its March meeting.



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