



FINAL REPORT
Railroad Grade Crossing
Quiet Zone Assessment



January 13, 2017



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Railroad Grade Crossing Quiet Zone Assessment



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I. INTRODUCTION

Felsburg Holt and Ullevig (FHU) was contracted by Boulder County to complete a railroad grade crossing quiet zone assessment and recommend improvements at 7 highway-rail grade crossings located within the Boulder County, Colorado. This Railroad Grade Crossing Quiet Zone Assessment will review and evaluate these crossings of the BNSF Railway to determine possible improvements for quiet zone that satisfy the minimum Federal Railroad Administration (FRA) requirements to establish a railroad Quiet Zone, as stated in the *Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings*, as amended on August 17, 2006.

The analyses of the proposed improvements are addressed in the following sections within this report:

- Existing Conditions
- Quiet Zone Requirements
- Development of Quiet Zone Improvements
- Evaluation of Quiet Zone Concept Improvements
- Implementation Plan

The crossings that are the subject of this study are along the BNSF Railway corridor running generally north-south beginning at 83rd Street on the north end, and extending through Independence Road on the south end. This portion includes 7 crossings as follows:

- 83rd Street
- Main Street (2nd Avenue)
- Niwot Road
- Monarch Road
- 55th Street
- Jay Road
- Independence Road

It is noted that these crossings are within the corridor identified by the Regional Transportation District (RTD) as the Northwest Rail Corridor, and were evaluated as part of that effort. For information regarding the evaluation conducted by RTD, the reader is referenced to the RTD Northwest Rail Corridor Final Environmental Evaluation, May 2010.

It is also noted that 3 of the above listed crossings: 55th Street, Jay Road and Independence Road, are also being reviewed by the City of Boulder for quiet zone establishment.

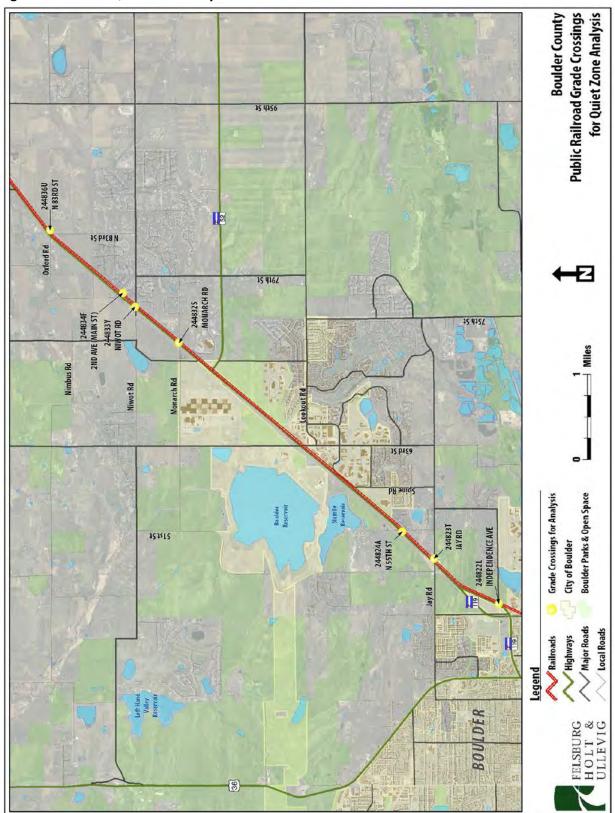
The County is seeking input regarding recommended improvements for these 7 crossings, and this report will identify logical groups of crossings for quiet zone establishment.

The study corridor, indicating the limits of the study area along with the 7 at-grade railroad crossings located within the study area, are shown in **Figure 1**.





Figure 1. Railroad Quiet Zone Study Area







II. EXISTING CONDITIONS

The BNSF runs as many as 9 thru trains per day and 9 thru trains at night along this track, with a maximum train speed of 49 MPH through the corridor. All of the crossings along this corridor have active railroad crossing warning devices, and all of the crossings have been upgraded to Constant Warning Time (CWT) circuitry, per the current U.S. DOT Crossing Inventory forms.

The U.S. DOT Crossing Inventory forms for each crossing can be found in Appendix A.

A. Data Collection

Base study information for this railroad corridor was obtained from the Federal Railroad Administration (FRA) Crossing Inventory database, which include current train movements, average train speed, crossing warning devices in place, crossing circuitry and documented incident reports. The County also provided traffic count information for each of the roadways crossing the BNSF Railway tracks.

B. Highway-Rail Grade Crossings

Table 1 summarizes the existing conditions present at each of the highway-railroad crossings within the study area, including crossing and equipment information. The highway-rail crossings are listed from north to south along the BNSF Line from North 83rd Street through Independence Road.

In addition to the roadway name, the Department of Transportation (DOT) identification number is provided, along with the type of circuitry identified in the FRA Crossing Inventory Reports, and whether or not the crossing is currently equipped with gates and railroad flashing lights.

Table 1. Existing Crossing Conditions

BNSF Crossings in Study	DOT # MP		Active Devices	Circuitry	ADT	
North 83rd Street	244836U	39.17	Gates/ Flashers	CWT	1,692	
Main St (2nd Avenue)	244834F	38.05	Gates/ Flashers	CWT	1,026	
Niwot Road	244833Y	37.86	Gates/ Flashers	CWT	6,926	
Monarch Road	244832S	37.20	Gates/ Flashers	CWT	709	
55th Street (north end)	244824A	33.77	Gates/ Flashers	CWT	249	
Jay Road	244823T	33.25	Gates / Flashers	CWT	12,833	
Independence Road	244822L	32.33	Gates/ Flashers	CWT	5,052	

The following pages summarize the existing conditions at each railroad crossing along with surrounding land use along this corridor.





83rd Street Crossing Summary US DOT Crossing #244836U BNSF Main Line

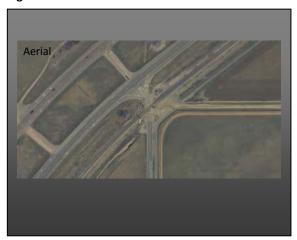
The 83rd Street crossing is equipped with mast mounted flashers, gates, cross bucks and bells. One set of tracks are crossed. The roadway is configured to provide two lanes of travel with a roadway width of approximately 22'. Each direction has narrow gravel shoulders. The roadway surface is paved with hot mix asphalt. The speed limit on 83rd Street is 35 MPH. The picture shown in **Figure 2** is the current aerial view of the existing roadway and railroad at the crossing. Existing, available crossing information is shown in **Table 2**.

This crossing is equipped with a minimum of one cross buck on each approach per MUTCD, and also has railroad pavement markings on the south approach.

Table 2. 83rd Street Crossing Information

Adjacent Land Use	Agricultural/Farming			
Minimum Distance to next crossing	1.1 miles			
Current Warning Protection	Signs, flashers, gates			
Train Detection	CWT circuitry			
Crossing Material	Timber			
Roadway classification/ADT	Rural/Local Road			
	/1,692 (2016)			
# of Lanes	2			
Exposure Factor = ADT x Trains per	18 x 1,692 = 30,456			
Day				
Total Train/Vehicle Accidents (5	0			
Years)				

Fig. 2. 83rd Street







Main Street (2nd Avenue) Crossing Summary US DOT Crossing #244834F

BNSF Main Line

The Main Street (2nd Avenue) crossing is equipped with flashers, gates, cross bucks and bells. One set of tracks are crossed. The roadway is configured to provide two lanes of travel with a roadway width of approximately 30'. Gravel shoulders exist along the outer edge of the roadway on both approaches. The roadway surface is paved with hot mix asphalt. Posted speed limit on Main Street is 25 MPH. The picture shown in **Figure 3** is the current aerial view of the existing roadway and railroad at the crossing. Existing, available crossing information is shown in **Table 3**.

This crossing is equipped with a minimum of one cross buck on each approach per MUTCD. It has no railroad pavement markings on either approach.

Table 3. Main Street (2nd Avenue) Crossing Information

Adjacent Land Use	Residential			
Minimum Distance to next crossing	0.19 miles			
Current Warning Protection	Signs, flashers and			
	gates			
Train Detection	CWT circuitry			
Crossing Material	Concrete			
Roadway classification/ADT	Rural/Local Road			
	/1,026 (2016)			
# of Lanes	2			
Exposure Factor = ADT x Trains per	18 x 1,026 = 18,468			
Day				
Total Train/Vehicle Accidents (5	0			
Years)				

Fig. 3. Main Street (2nd Avenue)







Niwot Road Crossing Summary US DOT Crossing #244833Y BNSF Main Line

The Niwot Road crossing is equipped with mast mounted flashers, gates, cross bucks and bells, with additional mast mounted flashers in the raised medians. One set of tracks are crossed. The roadway is configured to provide two lanes of travel with a raised median for a total roadway width of approximately 50'. Concrete curb, gutter and sidewalk exists along the north side of the roadway. A narrow gravel shoulder exists along the south side. The roadway surface is paved with hot mix asphalt. Posted speed limit on Niwot Road is 35 MPH. The picture shown in **Figure 4** is the current aerial view of the existing roadway and railroad at the crossing. Existing, available crossing information is shown in **Table 4**.

This crossing is equipped with a minimum of one cross buck on each approach per MUTCD. It has railroad pavement markings on the east approach.

Table 4. Niwot Road Crossing Information

Adjacent Land Use	Residential			
Minimum Distance to next crossing	0.19 miles			
Current Warning Protection	Signs, flashers and gates			
Train Detection	CWT circuitry			
Crossing Material	Concrete			
Roadway classification/ADT	Rural Major Collector/			
	6,926 (2016)			
# of Lanes	2			
Exposure Factor = ADT x Trains per	18 x 6,926 = 124,668			
Day				
Total Train/Vehicle Accidents (5	1			
Years)				

Fig. 4. Niwot Road







Monarch Road Crossing Summary US DOT Crossing #244832S BNSF Main Line

BNSF Wain Line

The Monarch Road crossing is equipped with signs, mast mounted flashers, cross bucks and bells. One set of tracks are crossed. The roadway is configured to provide two lanes of travel for a total paved roadway width of approximately 20'. Each direction has gravel shoulders along the outer edge of the roadway. The roadway surface is paved with hot mix asphalt. Posted speed limit on Monarch Road is 25 MPH. The picture shown in **Figure 5** is the current existing aerial view of the roadway and railroad at the crossing. Existing, available crossing information is shown in **Table 5**.

This crossing is equipped with a minimum of one cross buck on each approach per MUTCD. This crossing does not have railroad pavement markings on either approach.

Table 5. Monarch Road Crossing Information

Adjacent Land Use	Residential			
Minimum Distance to next crossing	0.52 miles			
Current Warning Protection	Signs, flashers and gates			
Train Detection	CWT circuitry			
Crossing Material	Concrete			
Roadway classification/ADT	Rural local/709 (2016)			
# of Lanes	2			
Exposure Factor = ADT x Trains per	18 x 709 = 12,762			
Day				
Total Train/Vehicle Accidents (5	0			
Years)				

Fig. 5. Monarch Road







55th Street Crossing Summary US DOT Crossing #244824A BNSF Main Line

The 55th Street crossing is equipped with mast mounted flashers, cross bucks and bells. One set of tracks are crossed on a skew to the roadway. The roadway is configured to provide two lanes of travel for a total paved width of approximately 20'. Each direction has gravel shoulders along the outer edge of the roadway. The roadway surface is paved with hot mix asphalt. Posted speed limit on 55th Street is 30 MPH. The picture shown in **Figure 6** is the current existing aerial view of the roadway and railroad at the crossing. Existing, available crossing information is shown in **Table 6**.

This crossing is equipped with a minimum of one cross buck on each approach per MUTCD. This crossing does not have railroad pavement markings on either approach.

Table 6. 55th Street Crossing Information

Adjacent Land Use	Residential
Minimum Distance to next crossing	0.45 miles
Current Warning Protection	Signs, flashers and gates
Train Detection	CWT circuitry
Crossing Material	Concrete
Roadway classification/ADT	Rural local/249 (2016)
# of Lanes	2
Exposure Factor = ADT x Trains per	18 x 249 = 4,482
Day	
Total Train/Vehicle Accidents (5	0
Years)	

Fig. 6. 55th Street







Jay Road Crossing Summary US DOT Crossing #244823T BNSF Main Line

The Jay Road crossing is equipped with mast mounted flashers, gates, cross bucks and bells. One set of tracks are crossed. The roadway is configured to provide three lanes of travel with two lanes in the westbound direction and one lane in the eastbound direction with a raised median for a total roadway width of approximately 53'. Each direction has 4' to 6' paved shoulders along the outer edge of the roadway. The roadway surface is paved with hot mix asphalt. Posted speed limit on Jay Road is 45 MPH. The picture shown in **Figure 7** is the current existing aerial view of the roadway and railroad at the crossing. Existing, available crossing information is shown in **Table 7**.

This crossing is equipped with a minimum of one cross buck on each approach per MUTCD, and has railroad pavement markings on the east approach.

Table 7. Jay Road Crossing Information

Adjacent Land Use	Agricultural/Farming			
Minimum Distance to next crossing	0.52 miles			
Current Warning Protection	Signs, flashers and gates			
Train Detection	CWT circuitry			
Crossing Material	Concrete			
Roadway classification/ADT	Rural Minor			
	Arterial/12,833 (2016)			
# of Lanes	3			
Exposure Factor = ADT x Trains per	18x 12,833 = 230,994			
Day				
Total Train/Vehicle Accidents (5	0			
Years)				

Figure 7. Jay Road







Independence Road Crossing Summary US DOT Crossing #244822L

BNSF Main Line

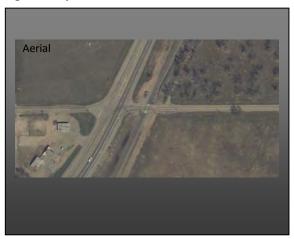
The Independence Road crossing is equipped with mast mounted flashers, gates, cross bucks and bells. One set of tracks are crossed. The roadway is configured to provide two lanes of travel with narrow paved shoulders for a total roadway width of approximately 24'. The roadway surface is paved with hot mix asphalt. Posted speed limit on Independence Road is 35 MPH in the vicinity of the tracks. The picture shown in **Figure 8** is the current existing aerial view of the roadway and railroad at the crossing. Existing, available crossing information is shown in **Table 8**.

This crossing is equipped with a minimum of one cross buck on each approach per MUTCD. This crossing does not have railroad pavement markings on either approach.

Table 8. Independence Road Crossing Information

Adjacent Land Use	Open Space/
	Commercial
Minimum Distance to next crossing	0.29 miles
Current Warning Protection	Signs, flashers and gates
Train Detection	CWT circuitry
Crossing Material	Concrete
Roadway classification/ADT	Urban Major
	Collector/5,052 (2016)
# of Lanes	2
Exposure Factor = ADT x Trains per	18 x 5,052 = 90,936
Day	
Total Train/Vehicle Accidents (5	0
Years)	

Fig. 8. Independence Road







III. QUIET ZONE REQUIREMENTS

Boulder County is interested in establishing a Quiet Zone along a portion of the BNSF Railway track corridor. This section of the report will identify the requirements necessary at the study crossings to satisfy the requirements for the establishment of a Quiet Zone.

This portion of the study is based on the criteria for the establishment of Quiet Zones as outlined in the *Final Rule on Use of Locomotive Horns at Highway-Rail Grade Crossings* (*Final Rule*), which was made effective on June 24, 2005 by the Federal Railroad Administration (FRA). The *Final Rule* was last amended on August 17, 2006. On December 18, 2003, the FRA published an interim final rule that required the locomotive horn to be sounded while trains approach and enter public highway-rail crossings. The interim final rule provided exceptions to the above requirement, which enabled local communities to improve quality of life by creating "Quiet Zones" where the locomotive horn would not need to be routinely sounded if highway-rail crossings met certain conditions. The *Final Rule* facilitates the development of these Quiet Zones, requiring the implementation of Supplemental Safety Measures (SSMs) or Alternative Safety Measures (ASMs), so as to maintain safety at highway-rail crossings where locomotive horns have been silenced.

A Quiet Zone is a section of rail line that contains one or more consecutive public crossings at which locomotive horns are not routinely sounded. The *Final Rule* contains guidelines and minimum requirements for the establishment of a Quiet Zone. For the purposes of this study, all potential crossings qualify in the New Quiet Zone category, as train horns are currently being sounded at the crossings, and the Quiet Zone would be established after the effective date of the *Final Rule*. These minimum requirements for a New Quiet Zone are as follows:

- 1. A New Quiet Zone must have a minimum length of ½ mile along the railroad right-of-way.
- 2. Each public highway-rail grade crossing within a New Quiet Zone must be equipped with active grade crossing warning devices. These devices are comprised of both flashing lights and gates which control traffic over the crossing, and must be equipped with constant warning time (CWT) circuitry, if reasonably practical, and power-out indicators. Any necessary upgrades to or installation of active grade crossing warning devices must be completed before the New Quiet Zone implementation date.
- 3. Each highway approach to every public and private highway-rail grade crossing within a New Quiet Zone shall be equipped with a Manual on Uniform Traffic Control Devices (MUTCD) compliant advanced warning sign that advises motorists that train horns are not sounded at the crossing.
- 4. Each public highway-rail grade crossing within a New Quiet Zone that is subjected to pedestrian traffic and is equipped with automatic bells shall retain those bells in working condition.
- 5. Each pedestrian grade crossing within a New Quiet Zone shall be equipped with an MUTCD compliant advanced warning sign that advises pedestrians that train horns are not sounded at the crossing.





A. Quiet Zone Alternatives

The public authority that is responsible for the safety and maintenance of the roadway that crosses the rail corridor is the only entity that can apply for the establishment of a Quiet Zone. Private companies, citizens, or neighborhood associations cannot create or apply for the establishment of a Quiet Zone independent of local roadway authorities.

The focus of this study is to determine if Supplemental Safety Measures (SSMs), or Wayside Horns should be used to fully compensate for the absence of the train horn.

The SSMs to be considered, as identified in the *Final Rule*, include the following:

- Temporary Closure (used with a nighttime-only quiet zone)
- Four-Quadrant Gate System
- Gates with Raised Medians or Channelization Devices
- Conversion to One-Way Street with Gates across the roadway
- Permanent Crossing Closure

SSMs are recognized measures that do not require further FRA review or approval prior to implementation. Use of SSM installations is the more efficient way to achieve Quiet Zone establishment.

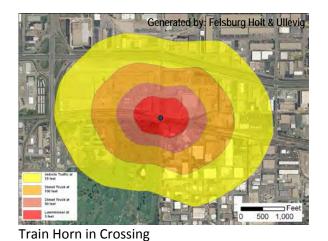
Alternative Safety Measures (ASMs) consist of improvements that fall outside the scope of SSMs, and may be proposed to FRA for consideration and approval. ASMs include Modified SSMs, Non-engineering ASMs, and Engineering ASMs. If used, the effectiveness rate of ASMs must be determined prior to FRA approval. It should also be noted that the implementation of several ASMs may be required in order to reduce the risk below the threshold for the silencing of train horns. For these reasons, this study does not include analysis of ASM installations on this rail corridor.

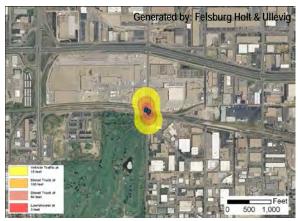
Wayside Horns are FRA approved devices that may be used in lieu of locomotive horns at individual or multiple highway-rail grade crossings, including those within Quiet Zones. The wayside horn is a stationary horn located at a highway-rail grade crossing, designed to provide audible warning to oncoming motorists of the approach of a train. As per the *Final Rule*, a highway-rail grade crossing with a wayside horn shall be considered in the same manner as a crossing treated with an SSM. A comparison of train horn and wayside horn noise footprints are depicted in **Figure 9**. A highway-rail crossing with a wayside horn installation is shown in **Figure 10**.





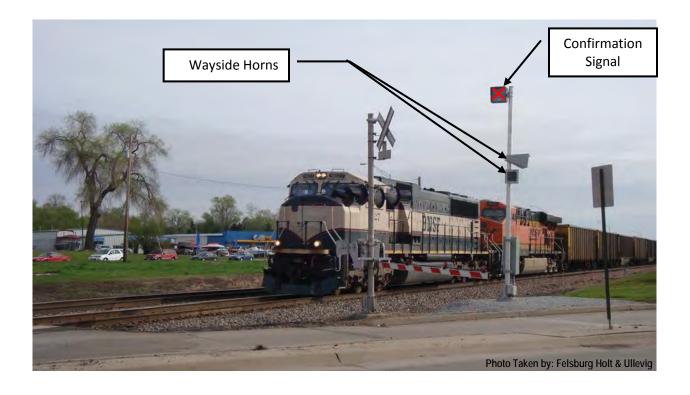
Figure 9. Comparison of Train Horn vs. Wayside Horn Noise Footprint





Automated Horn

Figure 10. Highway-Rail Crossing Equipped with Wayside Horns







B. Quiet Zone Establishment

Per the *Final Rule*, there are two different methods for establishing Quiet Zones; public authority designation and FRA approval. In the public authority designation method, an SSM is applied at every public grade crossing within the proposed Quiet Zone. In this method, the governmental entity establishing the Quiet Zone would be required to designate the perimeters of the Quiet Zone, install the SSMs, and comply with various notice and information requirements set forth in the rule.

The FRA approval method provides a governmental entity greater flexibility in using SSMs and ASMs to address problem crossings. This method allows FRA to consider Quiet Zones that do not have SSMs at every crossing, as long as implementation of the proposed SSMs and ASMs in the Quiet Zone as a whole would cause a reduction in risk to compensate for the absence of routine sounding of the locomotive horn. This process includes an application to the FRA for approval of the proposed improvements, and supporting calculations to show that the proposed treatment reduces the risk below the allowable nationwide threshold at the crossing.

In either method, a series of notices must be sent out to interested parties. These notices include the Notice of Intent to Create a Quiet Zone, and the Notice of Quiet Zone Establishment. Flowcharts depicting the procedure for the establishment of Quiet Zones as well as sample FRA forms can also be found in **Appendix B.**

C. Quiet Zone Improvements

Each highway-rail grade crossing within the study area of Boulder County was evaluated for the implementation of a Quiet Zone. It may be advantageous to divide the Quiet Zone into phases along the BNSF Line for implementation. In order to be compliant with the FRA Final Rule, all crossings in a Quiet Zone need to be contiguous. A Quiet Zone may be implemented in segments; however, to be included in the original Quiet Zone, each subsequent segment must be adjacent to a portion of the existing Quiet Zone. As a general recommendation, any roadway improvements to crossings within a potential Quiet Zone should be made compliant with Quiet Zone requirements.

The concept evaluation of Supplemental Safety Measures (SSMs) focused initially on the construction of raised medians on the roadway approaches to the crossing. Other than permanent or temporary closure, this is typically the most cost effective SSM for the establishment of a Quiet Zone. For those locations where the construction of raised medians caused roadway widening and/or the need for additional crossing surface material, consideration of channelizing devices is also shown. Where medians or channelizing devices are not practical or feasible, wayside horns were identified as an alternative solution. Where other options are either not feasible or not desired by the community, a 4-quadrant gate installation is a viable, but costlier, option.

In order to meet the requirements of a Quiet Zone, the installation of raised medians needs to meet several criteria. The median must extend 100' from the gate arm unless there is a driveway or intersection, in which case the median must extend at least 60' from the gate arm. The median should be at least 3' wide to provide for signing (4' is desirable), with a 6" barrier curb.





IV. **DEVELOPMENT OF QUIET ZONE CONCEPT IMPROVEMENTS**

A. **Development Procedure**

The development of the various concepts identified in this report started with a review of each crossing for its existing roadway and railroad features and equipment. As part of this evaluation, a desktop review was conducted to review existing conditions at each crossing. Conditions reviewed include presence/absence of existing railroad crossing warning devices, roadway and/or sidewalk pavement and widths, signing, striping, and general physical features.

All of the public crossings that are part of this evaluation can be treated with an SSM option. There are no locations where SSMs do not fit or unduly penalized operations.

The ability to treat all crossings with an SSM feature is advantageous to the County in that upon completion of installation or construction of the improvements, a Quiet Zone can be established by public authority designation, without application to or approval from the FRA. It should be noted that Modified SSMs are treated as Engineering ASMs by the FRA. Unlike the process for SSMs, where the local public authority can designate a quiet zone using the pre-approved measures, ASMs follow a separate procedure whereby an application is made to the FRA for consideration and approval before a Quiet Zone can be implemented.

Following is a brief description of each of the measures proposed for the public highway-railroad crossings along the study corridor in Boulder County:

Active Controls - For each crossing area certain basic active warning devices must be in place to establish a Quiet Zone. These include flashing lights and gates with cross bucks and constant warning circuitry to provide a consistent message to drivers on the through roadway, as shown in Figure 11.

Raised Medians- Raised medians are the lowest cost measure for preventing higher risk behavior of drivers going around the gate arms. Medians should be

used wherever possible. Medians can be 60 feet from the gate arm where a parallel street or commercial access intersects the approach roadway. Streets or accesses within 60 feet of the gate arm must be closed or relocated. The preferred length of the raised median is 100 feet from the gate arm. Raised medians must have 6" barrier curb, as shown in Figure 12.

Channelizing Devices- Where roadway width or close proximity adjacent development precludes roadway widening to allow for a raised median, channelizing devices are allowed. Channelizing devices are, by FRA



Figure 11. Active Controls



Figure 12. Raised Medians





definition, 'a traffic separation system made up of a raised longitudinal channelizer, with vertical panels or tubular delineators, that is placed between opposing highway lanes designed to alert or guide traffic around an obstacle or to direct traffic in a particular direction. "Tubular markers" and "vertical panels", as described in the MUTCD, are acceptable channelization devices for the purposes of this part.' Readily available prefabricated channelizing devices are available, as shown in **Figure 13**.

Wayside Horns- The wayside horns are considered a one for one replacement for the locomotive horn without application to FRA for approval. Wayside horns provide a sharp cut-off beyond the immediate approaches to the crossing thus reducing (86-98%) the distribution of noise near the railroad corridor within a community. These are shown where other SSMs are not deemed feasible and where residential land uses are not in proximity of the crossing. Wayside horns have a square megaphone shape, and are installed on separate posts on each approach to the highway-rail crossing, as shown in Figure 14.

4-Quadrant Gates- This installation includes a railroad gate on both the approach and exit sides of the tracks to prevent vehicles from either intentionally unintentionally entering the track area while a train is approaching. This configuration completely isolates the railroad corridor, and is characteristically the most expensive option. Typically, a mechanism is provided to detect trapped vehicles between the gates, such as vehicle detection loops within the pavement between the two sets of gates. Detection of a vehicle during approach of a train would trigger an exit gate to open, or remain upright, allowing the vehicle to exit the crossing. The need for vehicle detection is ultimately determined by the Colorado Public Utilities Commission. An installation of 4-quadrant gates is shown in Figure 15.

Closed Crossing- The safest and least costly treatment is to physically close a crossing whenever possible and



Figure 13. Channelizing Devices



Figure 14. Wayside Horns



Figure 15. 4-Quadrant Gates

where adequate alternate routes are available for circulation. These are generally proposed on cross streets having the lowest through traffic volumes and least continuity across the community. Where crossings can be consolidated and still provide adequate circulation and emergency access, closure should be considered.

Table 9 shows the concept level options considered for each crossing within the study area.





Table 9. Quiet Zone Concept Improvement Options								SSM Options			;
BNSF CROSSING	FRA DOT NO.	M.P.	DIST BTWN XINGS	RR CIRCUITRY (1)	GATES/ LIGHTS	ADT	Adjacent Land Use	Raised Medians	Channelizing Devices	4-Quadrant Gates	Wayside Horns
North 83rd Street	244836U	39.17	1.12	CWT	YES	1,692	Agricul.			Х	Х
Main St (2nd Avenue) ⁽²⁾	244834F	38.05	0.19	CWT	YES	1,026	Resid.	X	Х	Х	Х
Niwot Road ⁽²⁾	244833Y	37.86	0.19	CWT	YES	6,926	Resid.			Х	Х
Monarch Road	244832S	37.20	0.66	CWT	YES	709	Resid.			Х	X
North 55th Street	244824A	33.77	0.52	CWT	YES	249	Resid.	Х	Х	Х	Х
Jay Road	244823T	33.25	0.52	CWT	YES	12,833	Agricul.			Х	Х
Independence Road	244822L	32.33	0.29	CWT	YES	5,052	Comm./ Open	Х	Х	Х	Х

⁽¹⁾ Crossings have constant warning time circuitry required for Quiet Zone establishment. Note, if new railroad equipment is proposed, circuitry may require upgrade to be compatible.

B. Conditions for Additional Consideration

Two crossings have an egress on the downstream side of the crossing, which lead to the closely spaced Highway 119, which runs parallel to the BNSF Railway tracks. This is physically an 'access', and in both cases, is within 60 feet of the railroad gate arm. This condition exists at Niwot Road and Monarch Road. As part of this evaluation, discussion with FRA will be completed to determine if these access points preclude a Raised Median or Channelizing Device option, given that these are one-way access points away from the crossing. Further discussion will be provided in the final assessment report.

C. Concept Crossing Improvements

The following pages show one or more possible crossing improvement options for each public roadway-railroad crossing in the study area for Boulder County.



⁽²⁾ Crossings are within ¼ mile of each other; must be treated as a corridor for Quiet Zone establishment.

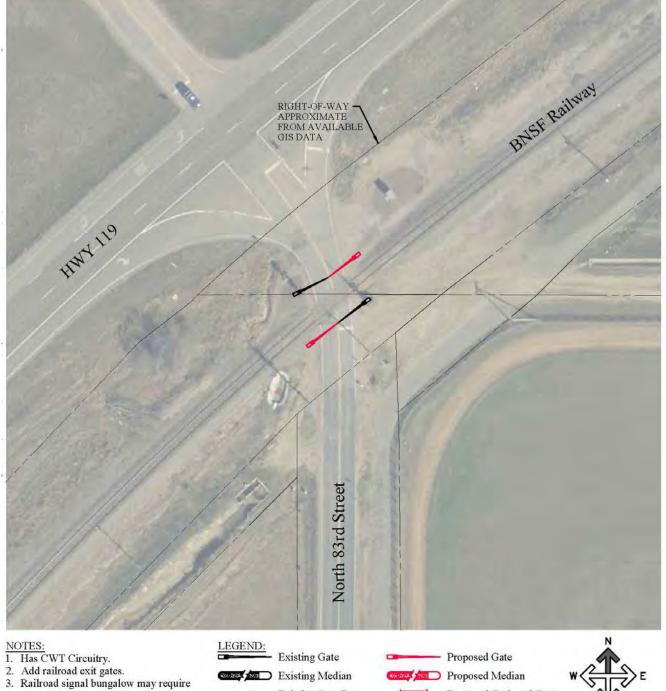




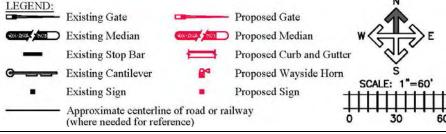
83rd Street US DOT #244836U Main Line

SSM: 4-Quadrant Gates (Option 1)

Concept Crossing Improvements



- Railroad signal bungalow may require upgrade to accommodate exit gate operation.
- 4. Add signing/striping per MUTCD.





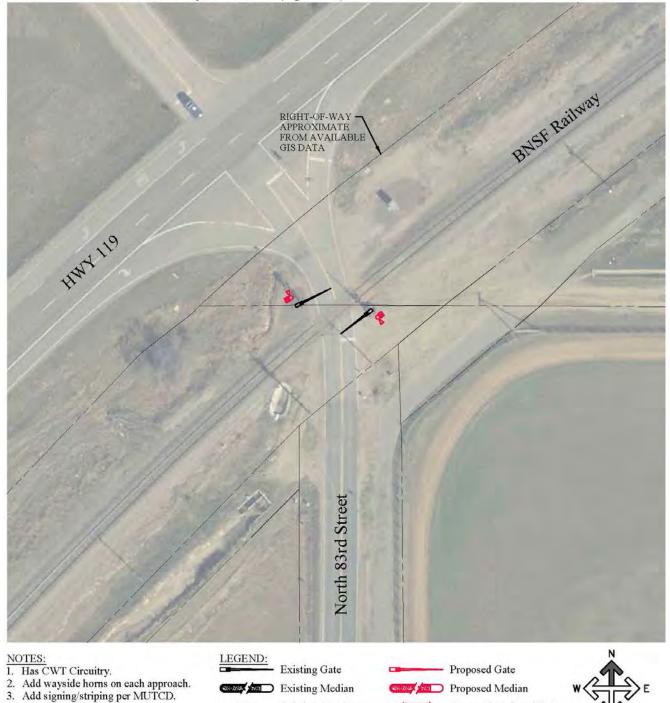




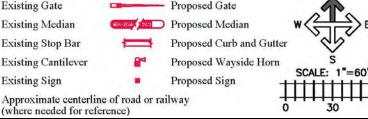
83rd Street US DOT #244836U Main Line

SSM: Wayside Horns (Option 2)

Concept Crossing Improvements











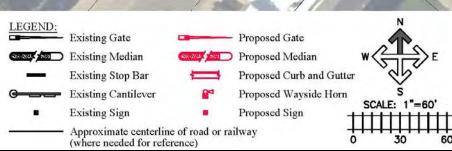


SSM: 4-Quadrant Gates (Option 1)

Concept Crossing Improvements



- 1. Has CWT Circuitry.
- 2. Add railroad exit gates.
- Railroad signal bungalow may require upgrade to accommodate exit gate operation.
- 4. Add signing/striping per MUTCD.
- Within ¼ mile of Niwot Road, so must be treated as a corridor.







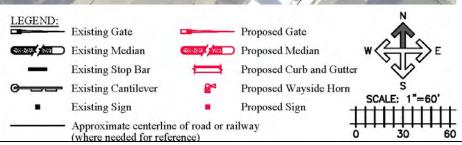


SSM: Wayside Horns (Option 2)

Concept Crossing Improvements



- 1. Has CWT Circuitry.
- 2. Add wayside horns on each approach.
- 3. Add signing/striping per MUTCD.
- 4. Within $\frac{1}{4}$ mile of Niwot Road, so must be treated as a corridor.



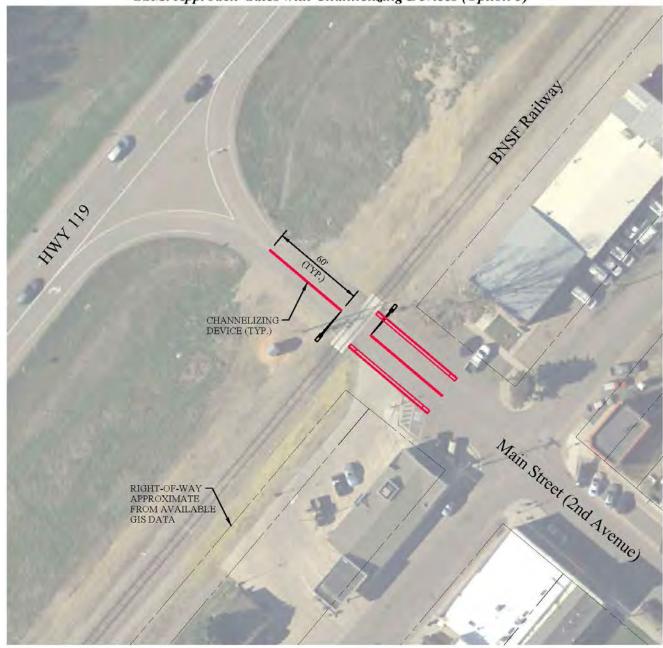




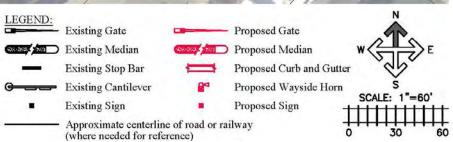


Concept Crossing Improvements

SSM: Approach Gates with Channelizing Devices (Option 3)



- 1. Has CWT Circuitry.
- Add outer curb & gutter to formalize closest access at 60 ft.
- Bank access/circulation/parking would need to be reconfigured.
- Parking north of main within 60 ft would need to be reconfigured or eliminated.
- Within ½ mile of Niwot Road, so must be treated as a corridor.



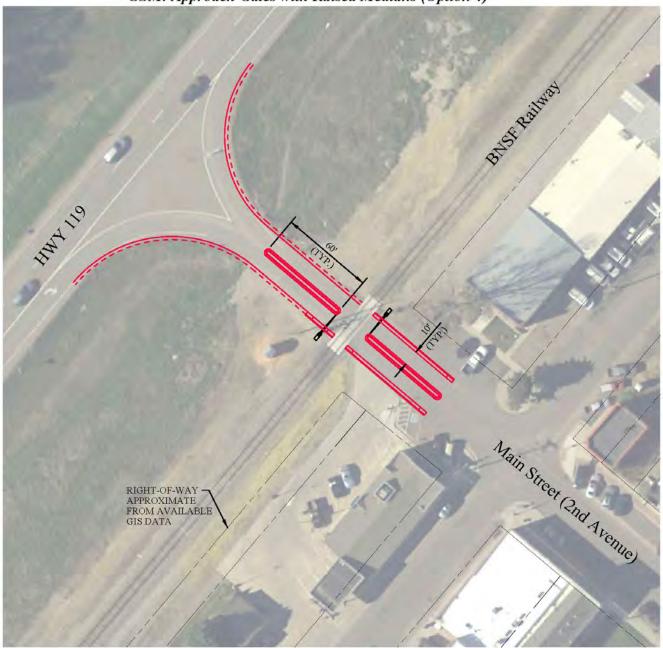




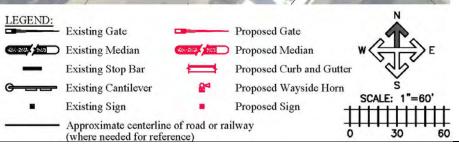


Concept Crossing Improvements

SSM: Approach Gates with Raised Medians (Option 4)



- 1. Has CWT Circuitry.
- East approach requires outer curb & gutter to formalize closest access at 60 ft.
- Bank access/circulation/parking would need to be reconfigured.
- Parking north of main within 60 ft would need to be reconfigured or eliminated.
- Within ¹/₄ mile of Niwot Road, so must be treated as a corridor.







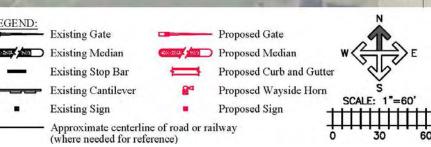


Niwot Road US DOT #244833Y Main Line **Concept Crossing Improvements**

SSM: 4-Quadrant Gates (Option 1)



- 1. Has CWT Circuitry.
- 2. Add railroad exit gates. Requires two (2) WB exit gates installed parallel to track for allowable gate length.
- 3. Railroad bungalow may require upgrade to accommodate exit gate operation.
- 4. Add signing/striping per MUTCD.
- Within ¹/₄ mile of Main Street, so must be treated as a corridor.









Niwot Road US DOT #244833Y

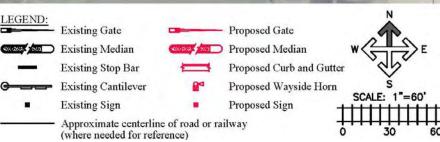
Main Line

SSM: Wayside Horns (Option 2)

Concept Crossing Improvements



- Has CWT Circuitry.
 Add wayside horns on each approach.
- Add signing/striping per MUTCD.
 Within ¼ mile of Main Street, so must be treated as a corridor.









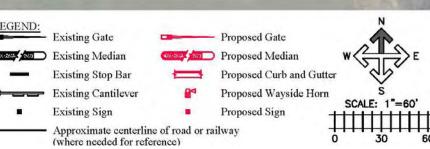
Monarch Road US DOT #244832S Main Line

Concept Crossing Improvements

SSM: 4-Quadrant Gates (Option 1)



- NOTES: 1. Has CWT Circuitry.
- 2. Add railroad exit gates.
- Stub channelizing devices required to close gap between gates in the down position due to skew.
- 4. Railroad signal bungalow may require upgrade to accommodate exit gate operation.
- 5. Add signing/striping per MUTCD.





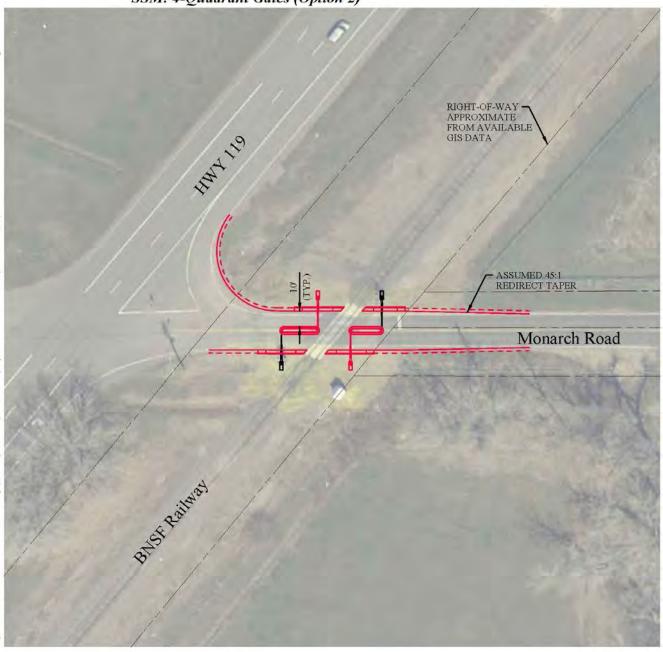




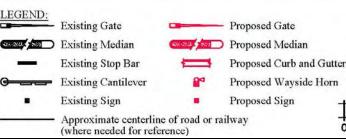
Monarch Road US DOT #244832S Main Line

SSM: 4-Quadrant Gates (Option 2)

Concept Crossing Improvements



- 1. Has CWT Circuitry.
- 2. Add railroad exit gates.
- Stub medians required to close gap between gates in the down position due to skew.
- Railroad signal bungalow may require upgrade to accommodate exit gate operation.
- 5. Add signing/striping per MUTCD.





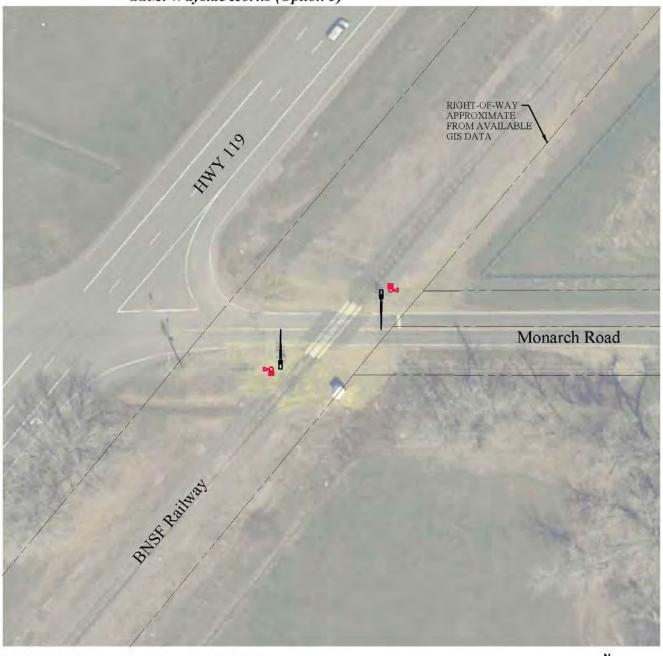




Monarch Road US DOT #244832S Main Line

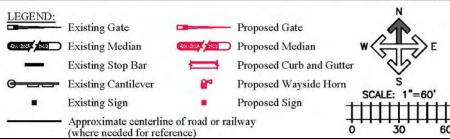
SSM: Wayside Horns (Option 3)

Concept Crossing Improvements



- NOTES:

 1. Has CWT Circuitry.
- Add wayside horns on each approach.
 Add signing/striping per MUTCD.







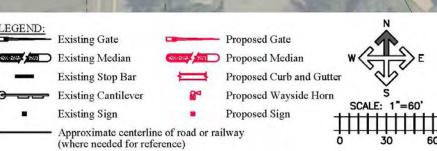


SSM: 4-Quadrant Gates (Option 1)

Concept Crossing Improvements



- NOTES: 1. Has CWT Circuitry.
- 2. Add railroad exit gates.
- 3. Place exit gates parallel to track to close gap between gates in down position (or place gates perpendicular to roadway with stub channelizing devices).
- 4. Railroad bungalow may require upgrade to accommodate exit gate operation.
- 5. Add signing/striping per MUTCD.









SSM: Wayside Horns (Option 2)

Concept Crossing Improvements



Existing Cantilever

Approximate centerline of road or railway (where needed for reference)

Existing Sign



Proposed Wayside Horn

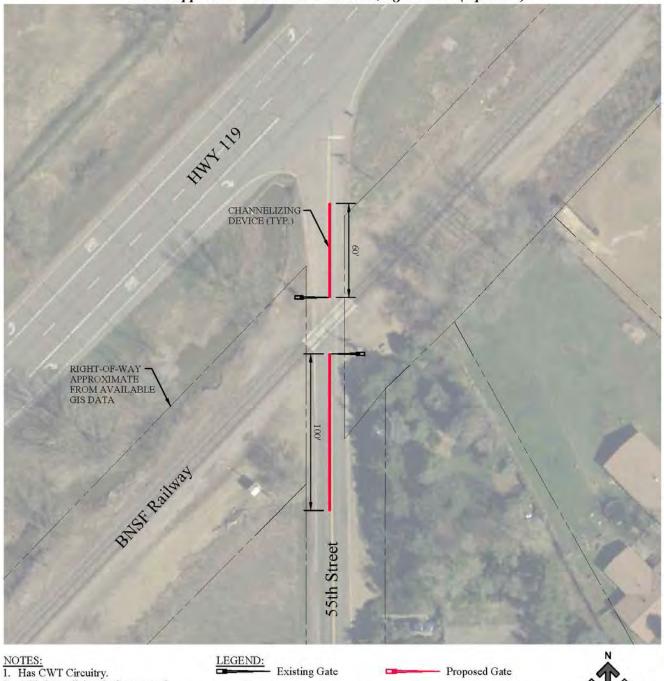
Proposed Sign



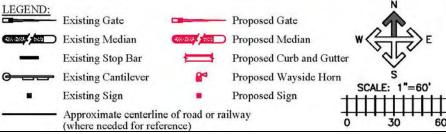


Concept Crossing Improvements

SSM: Approach Gates with Channelizing Devices (Option 3)



- 2. Add channelizing devices on each approach for length shown (measured from railroad gate).
- 3. Add signing/striping per MUTCD.



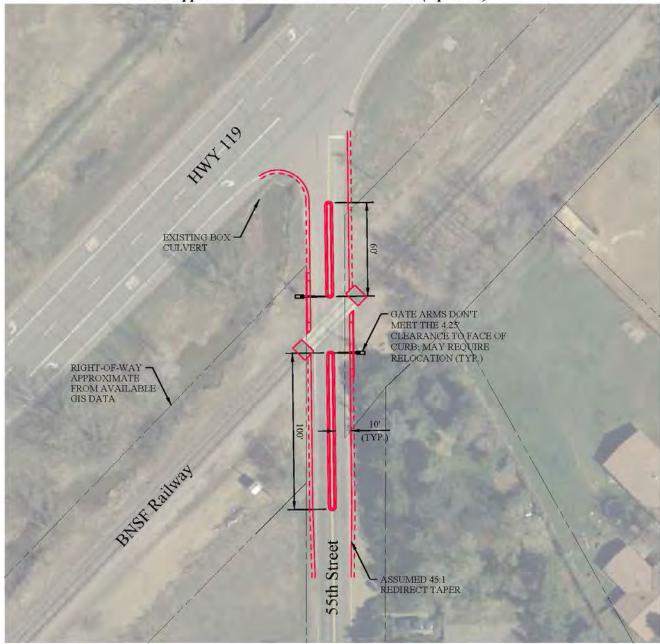




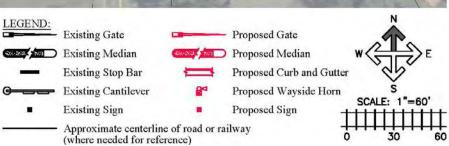


Concept Crossing Improvements

SSM: Approach Gates with Raised Medians (Option 4)



- 1. Has CWT Circuitry.
- Add medians on each approach for length shown (measured from railroad gate and along median front face of curb to face of curb).
- 3. Add signing/striping per MUTCD.
- Requires roadway widening and additional crossing material to accommodate median.



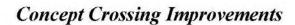






Jay Road US DOT #244823T Main Line

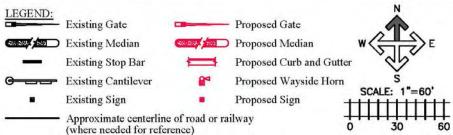
SSM: 4-Quadrant Gates (Option 1)





- NOTES:

 1. Has CWT Circuitry.
- 2. Add railroad exit gates. two (2) WB exit gates installed parallel to track for allowable gate length and to also close accel lane to HWY 119.
- 3. Railroad signal bungalow may require upgrade to accommodate exit gate operation.
- 4. Add signing/striping per MUTCD.









Jay Road US DOT #244823T Main Line

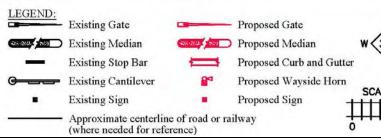
SSM: Wayside Horns (Option 2)

Concept Crossing Improvements



NOTES:

- 1. Has CWT Circuitry.
- 2. Add wayside horns on each approach.
- 3. Add signing/striping per MUTCD.









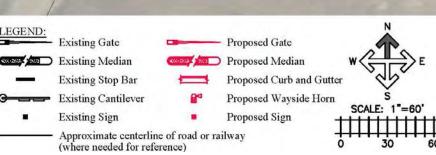
Concept Crossing Improvements

SSM: 4-Quadrant Gates (Option 1)



NOTES:

- 1. Has CWT Circuitry.
- Stub channelizing devices required to close gap between gates in the down position due to skew.
- Railroad signal bungalow may require upgrade to accomodate exit gate operation.
- 4. Add signing/striping per MUTCD.



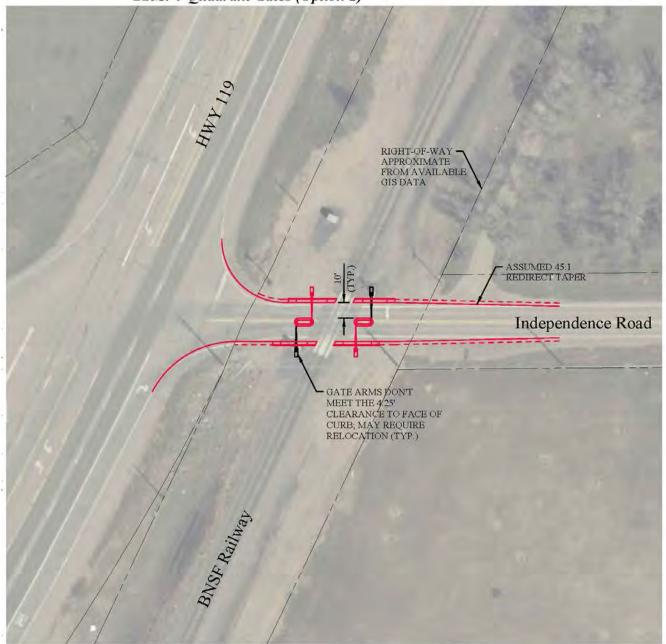






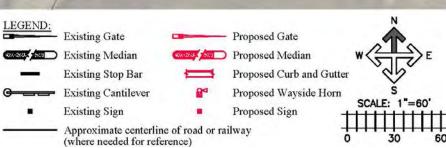
Concept Crossing Improvements

SSM: 4-Quadrant Gates (Option 2)



NOTES

- 1. Has CWT Circuitry.
- Stub medians required to close gap between gates in the down position due to skew.
- Railroad signal bungalow may require upgrade to accomodate exit gate operation.
- 4. Add signing/striping per MUTCD.



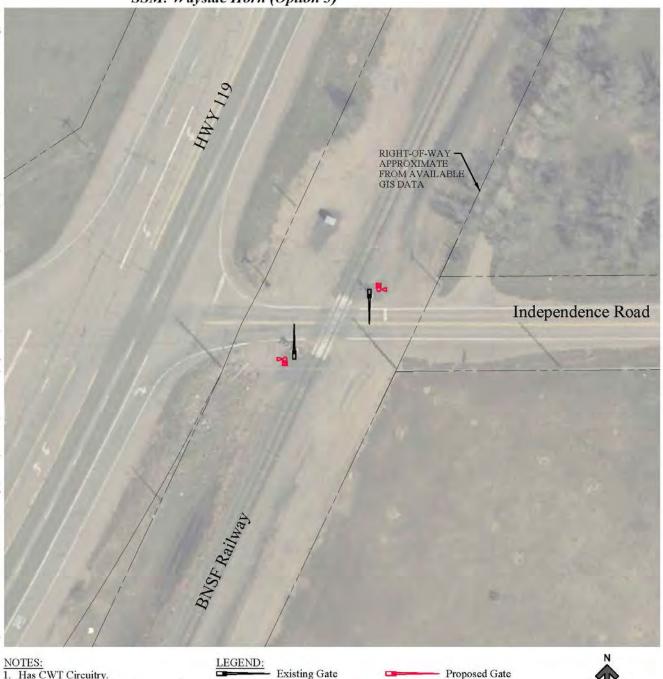






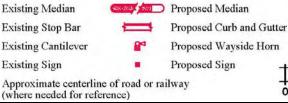
Concept Crossing Improvements

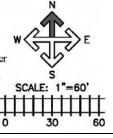
SSM: Wayside Horn (Option 3)



- 1. Has CWT Circuitry.
- 2. Add wayside horns on each approach.
- 3. Add signing/striping per MUTCD.







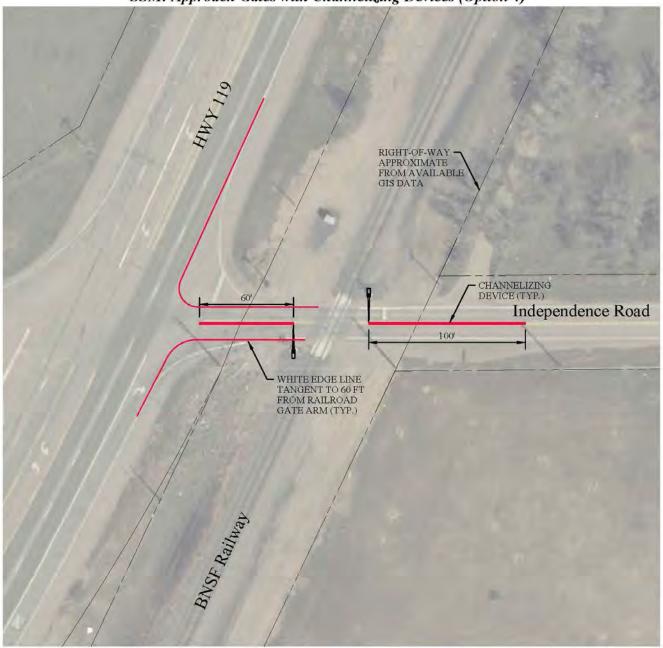






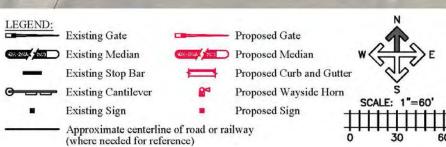
Concept Crossing Improvements

SSM: Approach Gates with Channelizing Devices (Option 4)



NOTES

- 1. Has CWT Circuitry.
- Add channelizing devices on each approach for length shown (measured from railroad gate).
- 3. White edge line west of crossing must be tangent for 60 ft from railroad gate arm.
- 4. Add signing/striping per MUTCD.









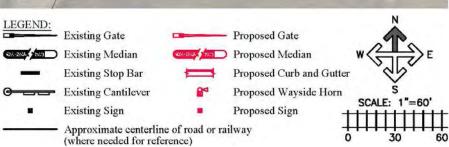
Concept Crossing Improvements

SSM: Approach Gates with Raised Medians (Option 5)



NOTES

- 1. Has CWT Circuitry.
- Add medians on each approach for length shown (measured from railroad gate along median face of curb to face of curb).
- 3. Add signing/striping per MUTCD.
- Requires roadway widening and additional crossing material to accommodate median.







V. Evaluation of Quiet Zone Concept Improvements

A. Safety Considerations

This segment of BNSF track runs parallel and to the east of Highway 119 between Boulder and Longmont, Colorado. The distance between the two corridors varies between 80 feet and 120 feet, measured from edge of pavement of Highway 119 to centerline of track of the BNSF Railway. The primary issue associated with this configuration for the crossing roadways, is the limited vehicle storage distance between the tracks and Hwy 119 for highway vehicles.

The majority of these roadways cross the railroad tracks on a skew, which creates a significant gap between railroad approach gates for drivers to attempt to circumvent the gates, when in the down position. This can be a safety concern when considering crossings for quiet zone establishment.

Traffic control along this corridor varies by roadway crossing. At the majority of crossings, there is a wide separation between the two directions of travel along Highway 119. This allows for vehicles entering the highway to wait for a gap in traffic, and maneuver crossing one direction of travel at a time. Niwot Road and Jay Road have existing traffic signals at their respective intersections with Highway 119. The remaining roadways are stop controlled at their respective intersections with Highway 119. At this time, none of the stop-controlled roadways are slated for traffic signals at Highway 119.

Current traffic counts were collected for each of the roadways to be evaluated as part of this study. To date, there are no concerns regarding queuing traffic backing up over the tracks along any roadway, due to limited vehicle storage between Highway 119 and the railroad tracks, and vehicles waiting for a gap in traffic along Hwy 119 to enter the highway.

B. Field Diagnostic Review

A field diagnostic review is being coordinated, and may be conducted prior to publication of the final assessment report. If conducted, a diagnostic team will meet onsite, to include staff from Boulder County, BNSF Railway, Federal Railroad Administration, Colorado Public Utilities Commission, City of Boulder (for crossings within the City's jurisdiction) and the Colorado Department of Transportation (due to proximity of Highway 119). The group will discuss existing conditions at each crossing, along with safety concerns, planned improvements (if any), and will review the concept level options presented for possible quiet zone establishment. BNSF staff will be asked to verify the type of circuitry at each crossing, to assist in identifying potential modifications or upgrades that may be needed for certain quiet zone treatment options.

Key results and recommendations of the Field Diagnostic Review, if held, will be included in the final version of the assessment report.

C. Noise Contour Diagram

A Noise Contour Diagram is being developed to show a generalized level of noise surrounding the BNSF corridor from North 83rd Street to Independence Road. Following development of the noise contours, County staff will utilize GIS to calculate the number of residential units within each noise contour range to reflect the approximate number of residences that may be affected by train horn noise in proximity to each crossing. The





crossings may be grouped into economically feasible projects and pursued as funding allows, and the noise contours and assessment of residents within the various sound levels, will assist the County in understanding the areas likely to be most affected.

The Noise Contour Diagram will be included in Appendix C of the final report.

D. Concept Costs

FHU generated an opinion of conceptual level construction costs for each Quiet Zone Improvement option. Roadway improvement costs are taken from current industry information for materials and utilize approximate percentages of construction items to estimate drainage, stormwater management, construction traffic control, mobilization, signing & striping, and contingencies. Costs for railroad elements are also taken from current, available industry information for materials and labor. It should be noted that these costs are conceptual in nature and conservative, and would be refined as the County proceeds into design of actual crossing improvements.

Concept costs for each crossing option are shown in **Table 10**.

Table 10. Opinion of Conceptual Costs

·			SS	M Option	ons			
CROSSING	STREET	M.P.	Raised Medians	Channelizing Devices	4-Quad Gates	Wayside Horns	Opinion of Construction Cost Rounded	Comments/Assumptions
244836U	North 83rd Street	39.17			Χ		\$432,000	CWT upgrade & new gates
						Χ	\$240,000	CWT upgrade & 2 horns
244834F	Main Street (2nd Avenue)	38.05			Χ		\$432,000	CWT upgrade & new gates
						Х	\$240,000	CWT upgrade & 2 horns
				Χ			\$120,000	2-60 ft channelizing devices
			Χ				\$144,000	60' medians; curb/gutter east approach
244833Y	Niwot Road	37.86			Χ		\$480,000	3 exit gates & CWT upgrade
						Χ	\$240,000	CWT upgrade & 2 horns
244832S	Monarch Road	37.20			Χ		\$456,000	CWT upgrade; 2 exit gates; stub channeliz.
					Х		\$516,000	CWT upgrade; 2 exit gates; stub medians
						Χ	\$240,000	CWT upgrade & 2 horns
244824A	North 55th Street	33.77			Χ		\$432,000	CWT upgrade & new gates
						Χ	\$240,000	CWT upgrade & 2 horns
				Χ			\$156,000	1-60 ft & 1-100 ft channelizing devices
			Χ				\$180,000	1-60 ft & 1-100 ft medians; some curb/gutter
244823T	Jay Road	33.25			Χ		\$480,000	3 exit gates & CWT upgrade
						Χ	\$240,000	CWT upgrade & 2 horns
244822L	Independence Road	32.33			Χ		\$492,000	CWT upgrade; 2 exit gates; stub channeliz.
					Χ		\$516,000	CWT upgrade; 2 exit gates; stub medians
						Χ	\$240,000	CWT upgrade & 2 horns
				Χ			\$156,000	1-60 ft & 1-100 ft channelizing devices
			Χ				\$216,000	1-60 ft & 1-100 ft medians; full curb/gutter





VI. IMPLEMENTATION PLAN

A. Funding and Oversight

State jurisdiction over railroad safety is extremely broad, however most areas have been preempted by the federal government. The Public Utilities Commission (PUC) of Colorado has primary jurisdiction over all public highway-rail crossings, including the opening and closing of at-grade crossings, upgrading of crossings, overpasses or underpasses, and the allocation of costs for grade separations, if requested. All economic jurisdiction over railroads that are part of the national railroad system come under the jurisdiction of the Surface Transportation Board.

Typically, applications to the PUC are required for highway-railroad crossings if the roadway is being widened, if additional crossing elements (such as pedestrian walkways, bike trails, etc.) are being added to a crossing, or if there are operational changes on the part of the railroad. The following activities do not require a PUC application:

- 1. Replacement of the roadway crossing surface material (provided the surface is not being lengthened to widen the roadway)
- 2. Placement or replacement of approach signing or striping in accordance with MUTCD standards
- 3. Slight raising or lowering of the crossing to match approaches for smoothness

According to PUC regulations, costs for improvements to at-grade crossings are allocated to the road authority and railroad as follows:

- 1. Surfacing
 - a. Road Authority
 - i. Crossing material and maintenance
 - ii. Road approach material, labor and maintenance
 - b. Railroad
 - i. Labor to install crossing material
 - ii. Track, tie, ballast, subballast material, labor and maintenance
- 2. Signing, Striping and Signals
 - a. Road Authority
 - i. Approach warning signs and pavement striping in accordance with MUTCD
 - ii. Signal improvements if the road authority is the project proponent
 - b. Railroad
 - i. Crossing sign (cross bucks)

Federal and State Funding

The recent passing of the Fixing America's Surface Transportation (FAST) Act has provided more federal level funding availability for crossing improvements that could assist communities in working toward Quiet Zone compliance. Historically, none of the funding opportunities specifically indicated use for Quiet Zones. However, the more recent funding announcements provide several grant options that could include improvements that render crossings Quiet Zone compliant, as well as a grant program that specifically includes Quiet Zone projects. The following is a brief summary of some of the programs and funding available:





Colorado Section 130 Funds: The Federal Section 130 railroad/highway hazard elimination program (Section 130 Funding) is a source of federal funds available for crossing safety improvements. CDOT allocates the Federal Section 130 money for the State of Colorado for at-grade crossings and grade separated crossings.

CDOT now receives approximately \$5.0 million in funding from the Federal government each year for Section 130 crossings improvements. As a general rule, about half of the funding is budgeted for the additional of railroad flashing lights and gates at crossings. CDOT utilizes a hazard index analysis to prioritize crossings in need of safety improvements, and allocates funding to those crossings accordingly each year.

Activities eligible for the use of Section 130 safety funds are as follows:

- Crossing consolidations (including the funding of incentive payments up to \$15,000 on a 50-percent matching basis to local jurisdictions for crossing closures).
- Installation of grade separations at crossings or repair of existing grade separations.
- Signing.
- Pavement marking.
- Illumination.
- New highway-railroad grade crossing signals.
- Upgraded highway-railroad grade crossing signals or circuits.
- Improved crossing surfaces.
- Traffic signal interconnection/preemption.
- Sight distance or geometric improvements.
- Data improvements (up to 2 percent of apportionment).

Nationally Significant Freight and Highway Projects Funding: This is a competitive grant process through the USDOT. Grants must be at least \$25 million. Eligible applicants include states, MPOs over 200,000 in population, local governments, political subdivisions of a state or local government, tribal governments, public authority with a transportation function, and federal land management agencies jointly applying with a state. Eligible projects include highway freight projects, rail freight projects, and railway-highway grade crossings or grade separation projects. There are other stipulations to the government's allocation of this funding that can be reviewed on the USDOT website.

TIGER Grant Funding: Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant program provides funds for surface transportation projects that will have a significant impact on the Nation, a metropolitan area or a region. Within Colorado, the Town of Windsor was successful in their pursuit of TIGER V funds for Quiet Zone improvements to 13 at-grade crossings within the Town's limits. Since the program was established in 2009, the types of projects receiving TIGER Grant funds have become more diverse and the locations, more widespread. This funding is a viable option for funding Quiet Zone improvements.

Intercity Passenger Rail Funding: This new Grant Program is to assist in financing the cost of improving passenger and freight rail. This grant program specifically indicates that eligible projects include Positive Train Control (PTC), capital projects, highway-rail grade crossing projects, including Quiet Zones. Federal share is limited to 80%, giving preference to projects requesting 50% or less, and setting aside 25% for rural areas. Funding under this program is subject to annual appropriations. Although the County does not currently have passenger rail, current freight rail operations and planned commuter rail through the County may allow for pursuit of this funding if County funds can be allocated to support the non-subsidized portion.





Other Funds: Other potential funding sources include local General Fund, Sales Tax revenue, Special Districts, Tax Increment Financing (TIF) and Federal earmarks. It should be mentioned that any use of federal funding would trigger studies following the National Environmental Policy Act (NEPA). The cost to perform NEPA studies are not included in the estimates provided in this report.

B. Crossing Groups and Associated Costs

Many communities interested in Quiet Zone establishment prioritize and phase crossing improvements over a period of time to allow for budgeting, planning and design, and to spread the costs out, making the overall pursuit more affordable.

The Final Rule indicates a necessary length for a Quiet Zone of ½ mile. Therefore, ¼ mile is needed on each side of each crossing to meet this criterion. Where crossings are in closer proximity than ¼ mile, these crossings need to be addressed as a corridor, in order to render the series of crossings quiet.

One such corridor is the BNSF mainline crossings of Main Street (2nd Avenue) and Niwot Road. This reach has close proximity residential development to the east of the BNSF track, and these crossings are approximately 0.19 miles apart.

The County requested consideration of logical grouping of the crossings based on location, type of treatment and amount of existing crossing warning devices currently in place that contribute to Quiet Zone establishment. It should be noted that the grouping of crossings is not intended to represent a prioritization, but rather the names of the crossings that can or must be addressed at the same time, due to proximity or other issues. The logically grouped crossings are as follows:

<u>Group 1 Crossings</u> – Niwot Road and Main Street (2nd Avenue). Niwot Road and Main Street are required to be treated for quiet zone establishment concurrently due to their proximity within ¼ mile of each other.

The Main Street crossing currently has approach railroad gates, flashers, cross bucks and CWT circuitry, and is most easily established as a quiet zone crossing utilizing either Raised Medians or Channelizing Devices, as these options do not require upgrade to the railroad equipment, but rather only necessitate roadway approach improvements. The issue at this crossing is the access and parking, north and south of Main Street, that is currently available to the east of the tracks. This access/parking is within 60 feet of the approach railroad gate arm, and both accesses/parking locations would need to be closed/eliminated, or relocated. Closure of the access to the south into the bank, may have circulation issues for this location, and should be studied. If it is possible to push the south side vehicular access to a point 60 feet from the gate arm, parking could be reconfigured within the bank property to retain access from Main Street, and the current circulation pattern through the lot.

Niwot Road also currently has approach railroad gates, flashers, cross bucks and CWT circuitry. However, this location has the westbound egress from Niwot to northbound Hwy 119 that is within 60 feet of the approach gate arm. This eliminates the possibility of utilizing Raised Medians or Channelizing Devices as an SSM treatment. Further conversation with FRA may result in a Modified SSM option at this location, noting that any options other than standard SSM installations, require application to and approval from the FRA.



Railroad Grade Crossing Quiet Zone Assessment



Conservatively, the addition of exit gates for a 4-quadrant gate installation is the most viable treatment at this location for quiet zone establishment.

Group 2 Crossing – Monarch Road. Monarch Road is currently treated with approach railroad gates, flashers, cross bucks and CWT circuitry. While Monarch Road is not required to be treated concurrently with Niwot Road and Main Street, this crossing is located 0.65 miles south of the Niwot Road crossing, and is the next closest crossing to the Niwot Road-Main Street pair. This crossing should be considered for treatment in close succession to the Niwot Road-Main Street pair, because horn sounding by locomotives in the southbound direction, in advance of the Monarch Road crossing, is within the proximity of the residential neighborhoods east of the tracks. Silencing trains horns at Monarch Road, in conjunction with Niwot and Main Street, would effectively create a 2-mile segment of track with no routine sounding of train horns.

<u>Group 3 Crossings</u> – North 55th Street and Jay Road. While these two crossings are not required to be treated together, the ½ mile distance between them places them in close enough proximity that there is benefit in establishing both crossings as quiet zones in relatively close succession.

North 55th Street currently has active warning devices including approach railroad gates, flashers, cross bucks and CWT circuitry. The location of the track crossing is further from the intersection of North 55th Street with the diagonal Hwy 119, which allows for consideration of Raised Medians or Channelizing Devices at this crossing for quiet zone establishment. For installation of a standard 3-foot wide median, the concept layout on available aerials suggests additional crossing material at the railroad may be needed. This would need to be confirmed with site survey if this option is preferred by the County. Channelizing devices could be installed with no additional crossing material.

Jay Road is currently treated with approach railroad gates, flashers, cross bucks and CWT circuitry. This is one of the crossings that has the westbound egress from Jay Road to northbound Hwy 119 beginning immediately west of the railroad crossing, placing it within 60 feet of the approach gate arm. Further conversation is being conducted with FRA regarding the interpretation of this egress as an access. Conservatively, the addition of exit gates for a 4-quadrant gate installation is the most viable treatment at this location, to completely isolate the tracks in the event of an approaching train, and provide quiet zone compliance.

Group 4 Crossing – Independence Road. Independence Road is currently treated with approach railroad gates, flashers, cross bucks and CWT circuitry. This crossing is the furthest south in the study limits, and about 0.30 miles north of the next crossing to the south, which is within the city limits of Boulder. The next closest crossing to the north is Jay Road, which is approximately 1.0 mile north. Independence Road is configured such that Raised Medians or Channelizing Devices could be viable options but would necessitate some restriping of the roadway between the track corridor and Hwy 119. This restriping may not allow for adequate turn movements for some vehicles, and may need to be considered further, based on anticipated traffic. The 4-quadrant gate installation would require stub medians, or stub channelizing devices, to close the gap between approach and exit gates when in the down position, due to the crossing skew. This crossing would be beneficial to be pursued for quiet zone establishment in conjunction with the next two crossings to the south (outside the County's study area), as this group of crossings begin to pass through residential development.

<u>Group 5 Crossing</u> – North 83rd Street. North 83rd Street is currently treated with approach railroad gates, flashers, cross bucks and CWT circuitry. This crossing is in closer proximity to the diagonal Hwy 119, and is configured with ingress as well as egress turn lanes that merge with North 83rd Street within 30 feet of the





approach railroad gate. Because of this lane configuration, the SSM utilizing Raised Medians or Channelizing Devices is not viable at this crossing. Consideration was given to tightening the turn radii from Hwy 119 to pull the turn bays closer to the diagonal highway, however this adjustment may not be maneuverable for vehicles, particularly trucks turning to or from the highway. Further consideration can be given to this option, which would require coordination with the Colorado Department of Transportation. The closest adjacent crossing to North 83rd is 0.68 miles to the north, and outside the County's limits for this study. Niwot Road is the next adjacent crossing to the south, and is over 1.0 mile away. This crossing can be pursued independent of other crossings.

Table 11 shows the grouping of the crossings, along with notes regarding implementation, and approximate summarized concept costs for Groups 1 through 5.

Table 11. Crossing Groups and Associated Costs

GROUP	CROSSINGS/LOCATIONS	QUIET ZONE TREATMENT	Opinion of Constr Cost Per Site	Opinion of Constr Cost Total (Range)	Comments/Notes
	Main Street (2nd Avenue)	4-Quadrant Gates	\$432,000		
	, , ,	Wayside Horns	\$240,000	•	May req circuitry upgrade
		Gates/Chan.Dev.	\$120,000	\$410,000	Reqs adj. accesses closed/moved
1		Gates/Medians	\$144,000	to	Reqs adj. accesses closed/moved
	Niwot Road	4-Quadrant Gates	\$480,000	\$962,000	
		Wayside Horns	\$240,000		May req circuitry upgrade
	Contingencies	•	\$50,000	•	
	Monarch Road	4-Quadrant Gates	\$456,000		Reqs stub channelizing devices
2		4-Quadrant Gates	\$516,000	\$290,000	Reqs stub medians
2		Wayside Horns	\$240,000	to	May require circuitry upgrade
	Contingencies		\$50,000	\$566,000	
	North 55th Street	4-Quadrant Gates	\$432,000		
		Wayside Horns	\$240,000		May require circuitry upgrade
		Gates/Chan.Dev.	\$156,000	\$446,000	
3		Gates/Medians	\$180,000	to	May require add'l crossing material
	Jay Road	4-Quadrant Gates	\$480,000	\$962,000	
		Wayside Horns	\$240,000		May require circuitry upgrade
	Contingencies		\$50,000		
	Independence Road	4-Quadrant Gates	\$492,000		Reqs stub channelizing devices
		4-Quadrant Gates	\$516,000		Reqs stub medians
4		Wayside Horns	\$240,000	\$206,000	May require circuitry upgrade
4		Gates/Chan.Dev.	\$156,000	to	Reqs restriping/turn lane restriction
		Gates/Medians	\$216,000	\$566,000	Reqs restriping/turn lane restriction
	Contingencies		\$50,000		
	North 83rd Street	4-Quadrant Gates	\$432,000	\$290,000	
5		Wayside Horns	\$240,000	to	May require circuitry upgrade
	Contingencies		\$50,000	\$482,000	







APPENDIX A U.S. DOT CROSSING INVENTORY SUMMARY SHEETS



DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION OMB No. 2130-0017

Form. For private hip pedestrian station gr Parts I and II, and the	ghway-ra rade cros Submiss n Inform	ail grade crossi ssings), comple sion Information nation section.	ings, compete the Headon section. For chang	lete the Hea der, Parts I a For grade-sep es to existing	nder, Par and II, a parated g data, o	rts I and and the S highway complete	II, ar Submi 7-rail o	nd the Suission Info or pathwa Header,	ubmission Information formation section. Fo ay crossings (including Part I Items 1-3, and	n section. For private pathw g pedestrian sta d the Submission	oublic pathway ay grade crossin tion crossings), on Information s	plete the entire inventory grade crossings (including ngs, complete the Header, complete the Header, Part section, in addition to the denotes an optional field.
A. Revision Date		B. Reporting A	0 ,			•	•	ect only o	,			D. DOT Crossing
(<i>MM/DD/YYYY</i>) 03 / 04 / 2016		■ Railroad	☐ Tra	nnsit ⊠ Cl Data	hange in		New ssing	L	Closed	☐ No Train Traffic	☐ Quiet Zone Update	Inventory Number
<u> </u>	_	☐ State	□ Otl		e-Open		_		Change in Primary	☐ Admin. Correction	Zone Opuate	244836U
				Part I: Lo	ocatio				ion Informatio			
1. Primary Operating BNSF Railway Cor						2. State COLOF	RADO)		3. County BOULDER		
4. City / Municipality	1			eet/Road Nai	me & Bl	ock Nun	nber			6. Highway Ty	pe & No.	
□ In ■ Near NIWOT				et/Road Nam	 1е)			.I * (Bloc	k Number)	CR 25		
7. Do Other Railroad If Yes, Specify RR	s Operat	e a Separate T		-		lo		Oo Other Yes, Spe	Railroads Operate O	ver Your Track a	at Crossing?	Yes 🗷 No
9. Railroad Division of	r Regior	1	10. Railro	ad Subdivisio	on or Dis	strict	I	11. Bra	nch or Line Name		12. RR Milepos	
□ None POWD	ER RIVE	FR	□ None	FRONT I	RANGF	=		□ None	DEN UD-WEN	NDOVER		9.172 nn.nnn) (suffix)
13. Line Segment			rest RR Tim				RR (if	f applicab			g Owner (if app	, , , , ,
* 0476		Station LONGI	* MONT		1 🗷	N/A				□ N/A	BNSF	
17. Crossing Type		ssing Purpose		ssing Positio		0. Public			21. Type of Train			22. Average Passenger
™ Public	■ High	nway nway, Ped.	I At G □ RR U			<i>if Private</i> □ Yes	cros.	sing)	▼ Freight □ Intercity Passeng	☐ Transit		Train Count Per Day ☐ Less Than One Per Day
☐ Private		ion, Ped.	□ RR C			□ No			☐ Commuter	☐ Tourist		□ Number Per Day 0
23. Type of Land Use												
✓ Open Space24. Is there an Adjace	Farm Cross				ercial				☐ Institutional (A provided)	☐ Recreation	onal ⊔ RF	RYard
24. IS there all Aujac	siit Ci Oss	mig with a Jep	Jarate Huii	ibei:		23. Q	uict 2	Lone (11)	A provided)			
	Yes, Prov	vide Crossing N				I≝ No		24 Hr	•	go Excused	Date Establish	
26. HSR Corridor ID		27. Latit	tude in dec	imal degrees	i	ļ		·	e in decimal degrees		29. La	t/Long Source
	_ X N/A	(WGS84	std: nn.nı	nnnnn) 40.	.116145	50	(W	GS84 std:	-nnn.nnnnnnn) -105	5.1594590	☐ Act	ual 🗷 Estimated
30.A. Railroad Use	*								tate Use *			
30.B. Railroad Use	*								tate Use *			
30.C. Railroad Use	*							31.C. S	tate Use *			
30.D. Railroad Use	*							31.D. S	tate Use *			
32.A. Narrative (Rai	Iroad Us	e) *						32.B. N	larrative (State Use)	*		
33. Emergency Notifi	cation T	elephone No.	(posted)			•	ГеІерһ	hone No.)			tact (Telephone	? No.)
800-832-5452				817-35	52-1549					303-757-942	<u></u>	
	4 - 11				Part	II: Rail	Iroa	d Infor	mation			
1. Estimated Number 1.A. Total Day Thru T			ents otal Night 1	Chru Trains	1 C T	otal Swit	china	Trains	1.D. Total Transit	Trains	1.E. Check if Le	occ Than
(6 AM to 6 PM) 9	Tallis		to 6 AM)	iliu Italiis	0	otal Swit	ciiiig	, irailis	0	1141115	One Movemer How many trai	nt Per Day
2. Year of Train Coun	t Data (Y	YYY)		3. Speed of		-	_					
2013				3.A. Maximu					<u>ph)</u> From 1	to _49		
4. Type and Count of	Tracks			3.b. Typical	Speeu N	ange Ov	rei Ci	ossing (III	pil) Floili ·			
Main <u>1</u>	Siding 0	Y;	ard 0	Trans	sit <u>0</u>		Indu	ıstry 0				
5. Train Detection (M		,,										
Constant Warr 6. Is Track Signaled?		<u>∍ ⊔ Motion</u>	Detection	□AFO □		☐ DC vent Reco			None		7 R Remote	Health Monitoring
☐ Yes ■ No						Yes \square					☐ Yes [•

A. Revision Date (A 03/04/2016	MM/DD/YYYY)					PA	AGE 2			D. 244	Crossing Inve	ntory Nun	n ber (7 c	har.)	
		Part	: III: Hi	ighway o	r Path	way 1	Traffic (Control De	evice						
1. Are there	2. Types of Pa	ssive Traffic	Control D	Devices asso	ciated wi	ith the	Crossing								
Signs or Signals?	2.A. Crossbuck Assemblies (co	ount) (cou	•	gns <i>(R1-1)</i>	2.C. YIE (count)	_	ns (<i>R1-2</i>)	■ W10-1			□ W10-3	· · · · ·	w	/10-1	nt)
2.E. Low Ground Cl (W10-5)	0 earance Sign	2.F. Pavem	ent Mark	kings			2.G. Char	□ W10-2			☐ W10-4 2.H. EXEMP (R15-3)		2.I. ENS	Sigr	
☐ Yes (count)	■ Stop Lin	es	□Dynaı	mic Enve	elope	☐ All Ap		□Ме	edian	□ Yes		☐ Yes	eu	
□ No		RR Xing	•	□ None	9		□ One A		□ No		□ No		□ No		
2.J. Other MUTCD S	Signs	☐ Yes	X No				2.K. Priva Signs (if p	ite Crossing	2.L	L. LED En	hanced Signs	(List types)		
Specify Type Specify Type Specify Type		Count _ Count _ Count _					☐ Yes								
3. Types of Train A					snecify co	ount of	each dev	ice for all tha	t anni	lv)					
3.A. Gate Arms (count) Roadway 2 Pedestrian	3.B. Gate Conf		ier)	3.C. Cantile Structures Over Traffic	evered (o (count) c Lane	or Bridg 0	<i>ed)</i> Flashir □ In	ng Light candescent	3.E (cc	D. Mast Nount of m Incande	Mounted Flash nasts) 2 scent hts Included	hing Lights —— □ LED □ Side Include	Lights		. Total Count of shing Light Pairs
3.F. Installation Dat Active Warning Dev	vices: (MM/YYYY	′) Not Required				MM/Y	YYY)	J		Crossi	lighway Traffi ing s ⊠ No	c Signals C	ontrollin		3.I. Bells (count)
3.J. Non-Train Active Warning □ Flagging/Flagman □Manually Operated Signals □ Watchman □ Floodlighting □ None 3.K. Other Flashing Lights or Warning Devices Count 0 Specify type															
												Recording			
					rt IV: F	Physic		racteristic							
1. Traffic Lanes Cro		☐ Two-way	Traffic	2.	Is Road	way/Pa	athway	3. Does T	rack R		n a Street?	lights wi	thin app	rox. 5	ited? (Street 60 feet from
Number of Lanes		☐ Divided T		ed) Installa	tion Date		No No		□ Yes			nearest i			□ No
■ 1 Timber □ □ 8 Unconsolidate	2 Asphalt \square	3 Asphalt ar	nd Timbe	er 🗆 4 Co							r 🗆 7 Me		Lengui		
6. Intersecting Roa	dway within 500) feet?					7. Smalle	st Crossing A	ngle			8. Is Co	mmercia	l Pov	ver Available? *
¥ Yes □ No	If Yes, Approxim	nate Distance	(feet) <u>7</u>	5			□ 0° - 29	9° □ 30°	– 59°	X	60° - 90°		¥ Yes	5	□ No
				Part	V: Pub	olic H	ighway	Informat	ion						
☐ (02) Other	tate Highway Sy Nat Hwy Systen al AID, Not NHS		☐ (1) I ☐ (2) (tional Classif (X) Interstate Other Freew Other Princip	0) Rural ays and E	□ (1 □ Express	L) Urban (5) Major ways	Collector	S ₁	ystem? ☐ Yes	sing on State H ■ No Referencing S			Poste	vay Speed Limit MPH ed
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7. Annual Average Year 1994 AA	Daily Traffic <i>(AA</i> DT <u>001150</u>	ADT) 8. E 05	stimated	d Percent Tru		9. Reg □ Yes		d by School B Average Nu			0	_ 10. □ Y	_	ncy S ∃ No	ervices Route
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DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION OMB No. 2130-0017

Instructions for the i Form. For private hip pedestrian station gr Parts I and II, and the I, and the Submissio updated data fields. I	ighway-ra rade cros e Submiss on Inform	ail grade crossissings), complesion Information section.	sings, comp ete the Hea on section. . For chang	olete the Ho ader, Parts For grade-s ges to exist	eader, I and separa ing da	Parts I and II, and the Sated highway ata, complete	II, ai Submi r-rail o	ind the Sunission Info or pathwa Header,	ubmission Informatio ormation section. Fo ay crossings (includin Part I Items 1-3, an	on section. For por Private pathway pedestrian stand the Submission	public pathy yay grade creation crossin on Informati	way good ossing gs), co	rade cros gs, comple omplete the ection, in	sings (including ete the Header, he Header, Part
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(<i>MM/DD/YYYY</i>) 03 / 04 / 2016		■ Railroad	□ Tra		l Chang ata	9	lew ssing		Closed	☐ No Train Traffic	☐ Quiet Zone Upo		Invento	ory Number
		☐ State	□ Ot	_	l Re-Op	pen 🗆 D	_		☐ Change in Primary Operating RR	☐ Admin. Correction	20.12 2 12	uu	244834	F
				Part I:	Loca	tion and	Cla	ssificat	tion Informatio	n				
1. Primary Operating BNSF Railway Cor	mpany [l	d BNSF]				2. State COLOR		0		3. County BOULDER				
4. City / Municipality ☐ In	1			r <mark>eet/Road N</mark> JIN ST	Name 8	& Block Num	ıber	1		6. Highway Ty	pe & No.			
■ Near NIWOT				eet/Road No	ате)				k Number)	CR NW5				
7. Do Other Railroad If Yes, Specify RR	s Operat	e a Separate T	rack at Cro	ossing?	Yes	™ No		Do Other I f Yes, Spe	Railroads Operate O cify RR	ver Your Track a	at Crossing?	_ □ Y	es I No)
9. Railroad Division o	ŭ		10. Railro	oad Subdivi				11. Brai	nch or Line Name		12. RR Mil	epost 0038.		
Tronc	ER RIVI		□ None	FRON				☐ None			(prefix)	<u> </u>		(suffix)
13. Line Segment *		14. Nea Station	rest RR Tin *	netable		15. Parent R	₹R (ij	f applicab	le)	16. Crossin	ng Owner (if	applic	cable)	
0476		LONG	MONT			■ N/A				□ N/A	BNSF			
17. Crossing Type	18. Cro ■ High	ossing Purpose	19. Cro	ossing Posit	tion	20. Public			21. Type of Train Freight	☐ Transit	+		_	e Passenger nt Per Day
■ Public		hway hway, Ped.	□ RR U			☐ Yes	Cios	ising)	☐ Intercity Passeng		ι d Use Transit			an One Per Day
☐ Private		tion, Ped.	□ RR C	Over		□ No		[☐ Commuter	☐ Tourist	t/Other		Number	Per Day 0
23. Type of Land Use ☐ Open Space	3. Type of Land Use													
24. Is there an Adjac					Milerci				RA provided)	□ Kecreanc)nai L	<u> </u>	Yaru	
								_						
☐ Yes ■ No If	-	vide Crossing N		cimal degre		No		24 Hr	☐ Partial ☐ Chica: le in decimal degrees	go Excused	Date Esta		ed /Long Sou	1700
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30.A. Railroad Use	*							31.A. s	tate Use *					
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30.C. Railroad Use	*								tate Use *					
30.D. Railroad Use	*								itate Use *					
32.A. Narrative (Rai		<i>,</i>							larrative (State Use)					
33. Emergency Notifi 800-832-5452	ication T	elephone No.	(posted)		ailroad -352-1	d Contact (T	elepl	hone No.)		35. State Con 303-757-942		hone I	No.)	
000-002-0-02				017				11.6.		300-101-0-1	10			
4. Follows had November	- C Daile	Tirin Manage			Pa	art II: Rail	roa	d Infor	mation					
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(6 AM to 6 PM)	lanis		to 6 AM)	IIIIU IIumo	0		ייייו	3 1101113	0	Hailis	One Move	ement	Per Day	□ ek?
2. Year of Train Coun	t Data (Y	YYY)				in at Crossing	•		^			, -	F	<u> </u>
2013						Timetable Sp			9 <u></u> 1 <i>ph)</i> From 1	to 49				
4. Type and Count of	Tracks		1	J.D. 19pic	ai Jpc	Eu nange Cv	Ci Ci	Ussilig [,,,	<i>pnj</i> 110m	10	_			
	Siding 0		ard 0	Tra	ansit 0)	Indu	ustry 0						
5. Train Detection (M		,,	Dataction	□AFO [□ pt(⊓ ດ	ther □	None					
6. Is Track Signaled?			Detection	AFO [A. Event Reco			None		7.B. Ren	note H	lealth Mo	 nitoring
¥ Yes □ No						□ Yes □					☐ Ye			

A. Revision Date (A 03/04/2016	ЛМ/DD/YYYY)					PA	AGE 2			D. 244	Crossing Inve	ntory Nun	n ber (7 c	har.)	
		Part	: III: Hi	ighway o	r Path	way 1	Traffic (Control D	evic						
1. Are there	2. Types of Pa	ssive Traffic	Control D	Devices asso	ciated wi	ith the	Crossing								
Signs or Signals?	2.A. Crossbuck Assemblies (co	ount) (cou	•	gns <i>(R1-1)</i>	2.C. YIE (count)	_	ns (R1-2)	■ W10-1			□ W10-3	B	_ \ \	V10 -1	nt)
2.E. Low Ground Cl (W10-5)	earance Sign	2.F. Pavem	ent Mark	kings			2.G. Char Devices/	□ W10-2 nnelization			☐ W10-4 2.H. EXEMP (R15-3)		2.I. EN: Display	S Sigr	
☐ Yes (count)	■ Stop Lin	es	□Dyna	mic Enve	lope	•	proaches		⁄ledian	☐ Yes		☐ Yes	reu	
□ No		RR Xing	•	☐ None	9		☐ One A	• •	□N		□ No		□ No		
2.J. Other MUTCD S	Signs	☐ Yes	X No				2.K. Priva Signs (if)	ate Crossing	2	.L. LED En	hanced Signs	(List types)		
Specify Type Specify Type Specify Type		Count _ Count _ Count _					☐ Yes								
3. Types of Train A					specify co	ount of	each dev	ice for all the	at api	plv)					
3.A. Gate Arms (count) Roadway 2 Pedestrian	3.B. Gate Conf ☐ 2 Quad		ier)	3.C. Cantile Structures Over Traffi	evered (o (count) c Lane	or Bridg	<i>ed)</i> Flashir _ □ In	ng Light candescent	3 (d	.D. Mast I count of n Incande	Mounted Flash nasts) 2 scent hts Included	hing Lights —— □ LED □ Side Include	Lights		. Total Count of shing Light Pairs
3.F. Installation Dat	e of Current			i. Wayside H							lighway Traffi			ıg	3.I. Bells
Active Warning Dev	` ´ □	Not Required			alled on (MM/Y	YYY)	J			s ™ No				(count) 1
3.J. Non-Train Active Warning Flagging/Flagman Manually Operated Signals Watchman Floodlighting None															
												Recording			
☐ Yes ☐ No		arning Signs		Advance	13			Stop Line Di				☐ None		11030	ince Detection
				Pa	rt IV: P	Physic	cal Cha	racteristi	cs						
Traffic Lanes Cros Number of Lanes		☐ One-way ☐ Two-way ☐ Divided T	Traffic		Is Roady aved?	• •	athway		rack		n a Street?		thin app	rox. 5	ated? (Street 50 feet from
Crossing Surface				ed) Installa											LI NO
☐ 1 Timber ☐ ☐ 8 Unconsolidate	2 Asphalt \square	3 Asphalt ar	nd Timbe	er 🗷 4 Co							r 🗆 7 Me	tal			
6. Intersecting Roa	dway within 500) feet?					7. Smalle	est Crossing A	Angle			8. Is Co	mmercia	al Pov	ver Available? *
¥ Yes □ No	If Yes, Approxim	nate Distance	(feet) <u>7</u>	5			□ 0° - 29	9° □ 30°	° – 59)° 🗷	60° - 90°		■ Yes	S	□ No
				Part	V: Pub	olic H	ighway	Informat	tion	1					
	tate Highway Sy		☐ (1) I	Interstate	0) Rural	□ (1	L) Urban (5) Majoı	ng r Collector	:	System? □ Yes				Poste	vay Speed Limit MPH ed Statutory
• •	Nat Hwy Systen al AID, Not NHS	ii (ivns)		Other Freew Other Princip	•	•	•	Collector			Referencing S	ystem (LRS	Route II	D) *	
■ (08) Non-F		107)		Minor Arteria			(7) Local	-l. C-ll.		6. LRS Mil	epost *	140	F		
7. Annual Average Year 1989 AA	Daily Traffic (AA DT 000500	ADI) 8. E 05	stimated	d Percent Tru		9. Reg ☐ Yes		d by School E Average Nu			0	_ 10.	_	ncy S □ No	ervices Route
Submi	ission Inforr	mation - 7	his info	ormation is	s used f	for ad	ministra	itive purpo	ses	and is n	ot availabl	e on the	public	wel	site.
Submitted by				Organizat	ion						Phone		[Date	
Public reporting bu	rden for this info	ormation colle	ection is			30 mir	nutes per	response, inc	ludin	ng the tim		g instructi			g existing data
sources, gathering a agency may not cor displays a currently other aspect of this Washington, DC 20	and maintaining nduct or sponsor valid OMB cont collection, inclu	the data nee r, and a perso rol number.	ded and n is not r The valid	completing a required to, I OMB contro	and revie nor shall ol numbe	ewing the a perso er for in	he collecti on be subj formation	on of inform ect to a pena collection is	ation alty fo 2130	. Accordi or failure t 0-0017. S	ng to the Pape to comply with end comment	erwork Re h, a collect ts regardin	duction a tion of in g this bu	Act o form irden	f 1995, a federal ation unless it estimate or any

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION OMB No. 2130-0017

Instructions for the in Form. For private hig pedestrian station gr Parts I and II, and the I, and the Submission updated data fields. N	shway-ra ade cros Submiss n Inform	il grade cross sings), compl ion Informati ation section	sings, comp ete the Hea on section. . For chang	elete the He ader, Parts For grade-s es to existi	eader, I and I eparat ng dat	Parts I and I, and the Seed highway ta, complete	II, ai ubm -rail o	nd the Suission Infor pathwo Header,	ubmission Information ormation section. Fo ay crossings (includin Part I Items 1-3, an	on section. For or Private pathw ng pedestrian stand nd the Submission	public path yay grade cration crossir on Informat	way grossing	rade crossings, complete complete complete complete the ection, in acceptance control of the con	ngs (including e the Header, e Header, Part
A. Revision Date		B. Reporting	· ·			n for Update	•	· _	_ ′		_		D. DOT C	U
(<i>MM/DD/YYYY</i>) 03 / 04 / 2016		■ Railroad	☐ Tra	ansit L x Da	Change ta		lew ssing	L	Closed	☐ No Train Traffic	☐ Quiet Zone Up		Inventor	y Number
		☐ State	□ Ot		Re-Ope	en 🗆 D	-		Change in Primary	☐ Admin. Correction	20110 04	uute	244833Y	
				Part I:	Locat				ion Informatio	n				
1. Primary Operating BNSF Railway Con						2. State COLOR	RADO)		3. County BOULDER				_
4. City / Municipality				eet <mark>/Road N</mark> /OT RD	ame &	Block Num	ber	ı		6. Highway Ty	/pe & No.			
■ Near NIWOT				et/Road Na	me)			* (Bloc	k Number)	COUNTY				
7. Do Other Railroads If Yes, Specify RR	s Operat	e a Separate	Track at Cro	ossing?	Yes 🛚	X No		Oo Other f Yes, Spe	Railroads Operate O cify RR	ver Your Track	at Crossing?	? 🗆 Y	es 🗷 No	
9. Railroad Division o	r Region		10. Railro	ad Subdivis	ion or	District		11. Bra	nch or Line Name		12. RR Mi	lepost 0037.		
THORE	ER RIVE		☐ None	FRONT				□ None			(prefix)	•		(suffix)
13. Line Segment *		14. Nea	rest RR Tin	netable		15. Parent F	RR (ij	f applicab	ile)	16. Crossir	ng Owner (ij	f applic	cable)	
0476			MONT			■ N/A _				□ N/A	BNSF			
17. Crossing Type	18. Cro ■ High	ssing Purpose	19. Cro ■ At G	ssing Positi	ion	20. Public (if Private			21. Type of Train Freight	☐ Transi			2. Average rain Count	-
■ Public	_	way way, Ped.	□ RR U			☐ Yes	Cius	siriy)	☐ Intercity Passen		ປ Use Transi			One Per Day
☐ Private		on, Ped.	□ RR (Over		□ No			☐ Commuter	☐ Touris	t/Other		Number P	er Day 0
23. Type of Land Use ■ Open Space	☐ Farm	□ Res	sidential	☐ Com	mercia	. D.	ndus	trial	☐ Institutional	☐ Recreation	nnal	□ RR '	Vard	
24. Is there an Adjace					mereid				RA provided)	_ necreati	Silai		Turu	
□Vaa ™Na 161	/aa Dua.	.i.d Cuancium - 1				I No		12411-		F	Data Fat	مام:امام	- al	
☐ Yes ■ No If Y	res, Prov	ride Crossing I		imal degree		_ 🗀 NO			☐ Partial ☐ Chica le in decimal degrees	go Excused s	Date Est		Long Sourc	 :e
				. 4	0.1016	6600		_	_			_		
30.A. Railroad Use	_ IX N/A *	(WGS84	4 std: nn.n	nnnnnn) '	0.101	0000	(W		-nnn.nnnnnnn) -10 tate Use *	0.170000		□ Actu	al L x Es	timated
30.B. Railroad Use	*							31.B. S	tate Use *					
30.C. Railroad Use	*							31.C. S	tate Use *					
30.D. Railroad Use	*							31.D. S	tate Use *					
32.A. Narrative (Rai	lroad Use	e) *						32.B. N	larrative (State Use)	*				
33. Emergency Notifi 800-832-5452	cation Te	elephone No.	(posted)		ailroad 352-1	Contact (T	elepl	hone No.)		35. State Cor 303-757-942		hone I	Vo.)	
000-032-3432								.11.6.						
1. Estimated Number	of Daily	Train Mayom	onto		Pa	rt II: Rail	roa	a intor	mation					
1.A. Total Day Thru T				Thru Trains	1.0	C. Total Swit	ching	Trains	1.D. Total Transit	Trains	1.E. Checl	k if Les	s Than	
(6 AM to 6 PM) 9			to 6 AM)		0			,	0		One Move	ement		 ?
2. Year of Train Count	Data (Y	YYY)				at Crossing	,	// A						
2013						imetable Sp ed Range Ov			9 nph) From 1	to 49				
4. Type and Count of	Tracks			5.5. Typici	J pcc		J. UI	2001118 (II						
	Siding 0		ard 0	Tra	nsit 0		Indu	ustry 0						
5. Train Detection (M Constant Warr			Detection	□AFO □	☐ PTC	□ DC	□ 0 [.]	ther $ egin{array}{cccccccccccccccccccccccccccccccccccc$	None					
6. Is Track Signaled?	mig i IIIIE	i i iviolior	י הביהרווחנו	⊔AFU L		Event Reco			INOLIC		7.B. Ren	note H	lealth Moni	toring
☐ Yes 🗷 No						□ Yes □						es \square		J

A. Revision Date (N 03/04/2016	/M/DD/YYYY)					P	AGE 2			D . 244	Crossing Inve	ntory Nun	n ber (7 c	har.,	1
			Part III	: Highway	or Pat	hway	Traffic (Control De	vice	Info	rmation				
1. Are there	2. Types of Pa	ssive Tra	affic Cont	rol Devices a	sociated	with the	Crossing								
Signs or Signals?	2.A. Crossbuc			P Signs (R1-1		_	gns <i>(R1-2)</i>	2.D. Advan	ce Wa	rning S	igns (Check al			e cou	<i>int)</i> \square None
¥ Yes □ No	Assemblies (co	ount)	(count) 0		(cou	nt)		■ W10-1 _ □ W10-2 _			□ W10-3	}			11 12
2.E. Low Ground Cl (W10-5)	earance Sign	2.F. Pa	avement	Markings				nnelization Medians			2.H. EXEMP ¹ (R15-3)	T Sign	2.I. ENS	_	n (I-13)
☐ Yes (count)	☐ Sto	p Lines	□Dy	namic En	velope	-		□ Ме	dian	☐ Yes		☐ Yes	cu	
□ No			Xing Sym		one		☐ One A	•	□ Nor		□ No		□ No		
2.J. Other MUTCD S	Signs		′es 🗷 N	0			2.K. Priva Signs (if	ate Crossing	2.L.	LED Er	hanced Signs	(List types)		
Specify Type			ınt												
Specify Type Specify Type			ınt ınt				☐ Yes	□ No							
3. Types of Train A					a (snecifi	, count o	f each dev	ice for all that	annl	<i>(</i>)					
3.A. Gate Arms	3.B. Gate Con						ged) Flashi				Mounted Flas	hing Lights	<u> </u>	3.E	. Total Count of
(count)		_			es (count	•	_			•	nasts) 4			Fla	shing Light Pairs
Roadway 2	☐ 2 Quad ☐ 3 Quad	☐ Full Resista	(Barrier)	Over Tr	affic Lane	0		candescent		ncande	scent thts Included	☐ LED ☐ Side			
Pedestrian	☐ 4 Quad		lian Gate:	Not Ove	er Traffic I	_ane _0_	🗆 🗆 LI	ED		Dack Lig	ints included	Include	_	0	
3.F. Installation Dat	e of Current			3.G. Waysid	Horn					3.H. F	Highway Traffi	c Signals C	ontrollin	g	3.I. Bells
	Active Warning Devices: (MM/YYYY) /														
Not Required															
3.J. Non-Train Active Warning □ Flagging/Flagman □Manually Operated Signals □ Watchman □ Floodlighting □ None 3.K. Other Flashing Lights or Warning Devices Count 0 Specify type															
Intersection have	Intercon							☐ Yes ☐ I	No			(Check a			December 2
Traffic Signals?	☐ Not Ir ▼ For Tr			■ Simultan	eous			Storage Dista	nce *				-		Recording ence Detection
☐ Yes ☐ No	☐ For W	_		☐ Advance				Stop Line Dist				☐ None			
					Part IV	: Physi	ical Cha	racteristic	s						
1. Traffic Lanes Cros						adway/P	athway	3. Does Tr	ack Ru	ın Dow	n a Street?		_		ated? (Street
Number of Lanes	2	☐ Divid		С			□ No		☐ Yes		No	_			50 feet from □ No
5. Crossing Surface								/					Length *		
☐ 1 Timber ☐ ☐ 8 Unconsolidate							Concrete	and Rubber	□ 6	Rubbe	er ⊔ 7 Me	tal -			
6. Intersecting Roa	dway within 500) feet?					7. Smalle	est Crossing Ar	ngle			8. Is Co	mmercia	l Po	wer Available? *
¥ Yes □ No	If Yes, Approxin	nate Dist	ance <i>(fee</i>	_{t)} 75		_	□ 0° – 2	9° ⅓ 30°-	- 59°		60° - 90°		¥ Yes	6	□ No
				Pa	rt V: P	ublic H	lighway	Informati	ion						
1. Highway System			2.	Functional Cla				ng	3.	Is Cros	sing on State I	Highway	4. I	ligh	way Speed Limit
☐ (01) Interes	tata Iliaha C.						1) Urban	. Callantan		stem?	□ Na		1-	D = =+	MPH
	tate Highway Sy Nat Hwy Systen			(1) Interstate (2) Other Fre				r Collector		Yes	Referencing S	ustem (I R			ed 🗆 Statutory
	al AID, Not NHS	()		(3) Other Pri	•	erial 🗆	(6) Mino	r Collector				ystem (Lnc	noute n	<i>-</i>)	
■ (08) Non-F				(4) Minor Art			(7) Local			LRS Mi	lepost *	1	_		
7. Annual Average Year <u>1989</u> AA	Daily Traffic (AADDT 000820	ADT) 	8. Estin	nated Percent	Trucks _ %	9. Reg		d by School Bu Average Nui		per Day	0	_ 10. _ 1	_	ncy S No	Services Route
Submi	ssion Infori	matio	1 - This	informatio	n is use	d for ac	dministra	itive purpos	ses ai	nd is r	ot availabl	e on the	public	wel	bsite.
Submitted by				Organ							Phone			ate	
Public reporting bu															
sources, gathering a agency may not cor	_			-	-	_									
displays a currently	valid OMB cont	rol num	ber. The	valid OMB co	ntrol num	ber for i	nformation	collection is 2	2130-0	0017. S	end commen	ts regardin	g this bu	rder	estimate or any
other aspect of this Washington, DC 20		iding for	reducing	this burden t	o: Inform	nation Co	llection Of	ficer, Federal	Railro	ad Adm	inistration, 12	200 New Je	ersey Ave	e. SE	MS-25
vvasiiiigtoii, DC 20.	JJU.														

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION OMB No. 2130-0017

Form. For private his pedestrian station gr Parts I and II, and the	ghway-ra rade cros Submiss n Inform	ail grade cross ssings), complesion Information section.	ings, complete the Hear on section. I For change	, . lete the Head ider, Parts I a For grade-sep es to existing	der, Par and II, a parated g data, o	rts I and and the S highway complete	III, ai Submi y-rail o	nd the Suission Info or pathwa Header,	ubmission Information formation section. Fo ay crossings (includin Part I Items 1-3, an	on section. For private pathw g pedestrian stand d the Submission	public pathway ray grade crossin ation crossings), on Information	plete the entire inventory grade crossings (including ngs, complete the Header, complete the Header, Part section, in addition to the denotes an optional field.
A. Revision Date		B. Reporting	· .			•	•	lect only o	,			D. DOT Crossing
(<i>MM/DD/YYYY</i>) 03 / 04 / 2016		■ Railroad	☐ Tra	nnsit	nange in		lew ssing		Closed	☐ No Train Traffic	☐ Quiet Zone Update	Inventory Number
<u> </u>		☐ State	□ Oth		e-Open		_		Change in Primary	☐ Admin. Correction	zone opuate	244832S
				Part I: Lo	ocatio				ion Informatio			
1. Primary Operating BNSF Railway Cor					1	2. State COLOF				3. County BOULDER		
4. City / Municipality	,			eet/Road Nar NARCH ST	ne & Bl	ock Num	nber			6. Highway Ty	pe & No.	
□ In ■ Near NIWOT				et/Road Nam	 ie)			.l .l * (Bloc	 k Number)	CR 36		
7. Do Other Railroad If Yes, Specify RR	s Operat	e a Separate T		•		lo			Railroads Operate O	ver Your Track a	nt Crossing?	Yes 🗷 No
9. Railroad Division	r Region	1	10. Railro	ad Subdivisio	n or Dis	strict	ı	11. Bra	nch or Line Name		12. RR Milepo	
□ Naza POWD	ER RIVI	ER	□ Nana	FRONT F	RANGE	<u>-</u>		□ Name	DEN UD-WEN	NDOVER		7.200
□ None POWD 13. Line Segment			☐ None rest RR Tim				RR (it	☐ None f applicab			(prefix) (nnr ng Owner (if app	nn.nnn) (suffix) dicable)
0476		Station LONG	*			N/A	(7)		,	□ N/A	BNSF	,
17. Crossing Type	18. Crc	ossing Purpose	19. Cro	ssing Position	n 2	0. Public	c Acce	ess	21. Type of Train	· · · · ·		22. Average Passenger
■ Public	■ High	nway nway, Ped.	■ At G			if Private □ Yes	Cros	sing)	▼ Freight □ Intercity Passenger	☐ Transit	: I Use Transit	Train Count Per Day ☐ Less Than One Per Day
☐ Private		ion, Ped.	☐ RR U			⊒ res ⊒ No			☐ Commuter	ger 🗀 Shared		□ Number Per Day 0
23. Type of Land Use												
M Open Space	☐ Farm		idential	☐ Comm	ercial				☐ Institutional	☐ Recreation	nal 🗆 Ri	R Yard
24. Is there an Adjac	ent Cros	sing with a Sep	parate Num	berr		25. Q	uiet 2	zone (FR	?A provided)			
	Yes, Pro	vide Crossing N	lumber			ĭ≅ No	<u> </u>	24 Hr	☐ Partial ☐ Chicaş	go Excused	Date Establis	hed
26. HSR Corridor ID		27. Latit	tude in deci	imal degrees		ļ	28.	Longitud	e in decimal degrees	3	29. La	t/Long Source
	■ N/A	(WGS84	1 std: nn.nr	nnnnn) 40.	.094341	10	(W	GS84 std:	-nnn.nnnnnnn) -105	5.1836460	☐ Act	tual 🗷 Estimated
30.A. Railroad Use	*						,		tate Use *			
30.B. Railroad Use	*							31.B. S	tate Use *			
30.C. Railroad Use	*							31.C. S	tate Use *			
30.D. Railroad Use	*							31.D. S	tate Use *			
32.A. Narrative (Rai	Iroad Us	e) *						32.B. N	larrative (State Use)	*		
33. Emergency Notifi 800-832-5452	cation T	elephone No.	(posted)			•	ГеІерІ	hone No.)		35. State Con 303-757-942	tact (Telephone	? No.)
800-032-3432				817-35						303-131-942		
					Part	II: Rail	Iroa	d Intor	mation			
1. Estimated Number 1.A. Total Day Thru 1			ents Total Night T	hru Trains	1 C T	otal Swit	chine	Trains	1.D. Total Transit	Trains	1.E. Check if Le	 ess Than
(6 AM to 6 PM)	Tanis		to 6 AM)	ina manis	0	otal Swit	Cimie	, iruiiis	0	Trums	One Movemer How many tra	nt Per Day
2. Year of Train Coun	t Data (Y	YYY)		3. Speed of		-	_				· · · · · ·	
2013				3.A. Maximu					9 pph) From 1	to 49		
4. Type and Count of	Tracks			S.B. Typical	speeu n	ange Ov	rei Ci	USSIIIR (III	ipii) Floiii <u>·</u>		_	
	Siding 0	Y	ard 0	Trans	it <u>0</u>		Indu	ustry 0				
5. Train Detection (M		,,										
Constant Warr 6. Is Track Signaled?		e ⊔ Motion	Detection	□AFO □		☐ DC vent Reco			None		7 R Remote	Health Monitoring
☐ Yes ■ No						Yes 🗆					✓ Yes	•

A. Revision Date (NO) 03/04/2016	MM/DD/YYYY)				Р	AGE 2			D .	Crossing Inve 4832S	ntory Num	nber (7 cl	har.)	
		Par	t III: Highw	ay or Pa	thway	Traffic (Control De	evice						
1. Are there	2. Types of Pa	ssive Traffic	Control Device	s associated	with the	Crossing								
Signs or Signals?	2.A. Crossbuck	2.B	. STOP Signs (R	1-1) 2.C	. YIELD Sig	gns <i>(R1-2)</i>	2.D. Advar	nce Wa	rning S	igns (Check al	l that apply	y; include	cou	nt) 🗆 None
¥ Yes □ No	Assemblies (co	ount) (co 0	unt)	(co	unt)		■ W10-1				l			.1
2.E. Low Ground Cl	earance Sign	2.F. Paven	ent Markings	,			nnelization			2.H. EXEMP	T Sign	2.I. ENS	Sign	n (I-13)
(W10-5) □ Yes (count	1	TH Chan Lin		¬D:		Devices/		□ N4=	al: a.a	<i>(R15-3)</i> □ Yes		Displaye ☐ Yes	ed	
□ No	/	■ Stop Lir ■ RR Xing	Symbols [□Dynamic E □ None	nvelope	□ All Ap		☐ Med		□ No		□ No		
2.J. Other MUTCD S	Signs	☐ Yes	■ No				ate Crossing	2.L.	LED En	hanced Signs	(List types,)		
Specify Type		Count _				Signs (if)	orivate)							
Specify Type		Count _				☐ Yes	□ No							
Specify Type					_			Щ.						
3. Types of Train A 3.A. Gate Arms										\	h: 1:-b4-	1	2.5	Tatal Cause of
(count)	3.B. Gate Conf	iguration		Cantilevered ctures (coun		<i>gea)</i> Fiasnii	ng Light			Mounted Flasl nasts) 2	ning Lights			. Total Count of shing Light Pairs
. ,	☐ 2 Quad	☐ Full (Barı		Traffic Lan	,		candescent		ncande	,	 □ LED			5g <u>1.</u> g
Roadway 2	☐ 3 Quad	Resistance			•				Back Lig	hts Included	☐ Side	_	0	
Pedestrian	☐ 4 Quad	☐ Median (Gates Not	Over Traffic	Lane <u>0</u>	🗆 LE	:D				Include	ed .		
3.F. Installation Dat			3.G. Way	side Horn						lighway Traffi	c Signals Co	ontrolling	3	3.I. Bells
Active Warning Devices: (MM/YYYY)													. ,	
No No No la														
3.J. Non-Train Active Warning □ Flagging/Flagman □Manually Operated Signals □ Watchman □ Floodlighting □ None 3.K. Other Flashing Lights or Warning Devices Count 0 Specify type														
4.A. Does nearby H	wy 4.B. Hwy	Traffic Signa	4.C. Hwy	Traffic Signa	al Preemp	otion	5. Highway T	raffic F	re-Sign	nals	6. Highwa	ay Monit	orin	g Devices
Intersection have	Interconr						☐ Yes ☐	No			(Check al			
Traffic Signals?		terconnecte affic Signals	a	tangous			Storage Dista	nco *				-		Recording ence Detection
☐ Yes ☐ No		arning Signs	☐ Advar				Stop Line Dis		*		☐ None		1030	ince Detection
				Part IV	/: Physi	ical Cha	racteristic	S						
1. Traffic Lanes Cro	ssing Railroad	☐ One-way	Traffic	2. Is Ro	padway/P	athway	3. Does T	rack Ru	ın Dow	n a Street?				ated? (Street
Number of Lanes		☐ Two-way☐ Divided 1		Paved?		□ No	[□ Yes	X 1	No				50 feet from □ No
Number of Lanes 5. Crossing Surface 1. Timber	(on Main Track,	multiple typ	es allowed)	nstallation I	Date * <i>(M</i>	M/YYYY) _			_ Wid	No dth *		Length *		
☐ 1 Timber ☐ ☐ 8 Unconsolidate	Z Aspirart —	3 Aspirate a	id iiiibci 🗀	- Concici	:e	Concrete	and Rubber	□ 6	Rubbe	er 🗆 7 Me	tal -			
6. Intersecting Roa	dway within 500) feet?				7. Smalle	st Crossing A	ngle			8. Is Co	mmercial	Pov	ver Available? *
¥ Yes □ No	If Yes, Approxim	nate Distance	(feet) <u>75</u>		_	□ 0° – 2	9° ∡ 30°	– 59°		60° - 90°		¥ Yes		□ No
				Part V: F	ublic F	lighway	Informat	ion						
1. Highway System			2. Functional	Classification	on of Road	d at Crossir	ıg	3.	Is Cross	sing on State I	Highway	4. H	lighv	vay Speed Limit
						1) Urban		, ,	stem?	_		l <u></u> -		MPH
, ,	tate Highway Sy Nat Hwy Systen		☐ (1) Interst☐ (2) Other			(5) Majo	Collector			■ No	-1 (LDC			ed 🗆 Statutory
	al AID, Not NHS	1 (14113)	☐ (2) Other			•	Collector	5.	Linear	Referencing Sy	ystem (LRS	Route IL	"	
🗷 (08) Non-F			☐ (4) Minor	•	_	(7) Local		6.	LRS Mil	lepost *				
7. Annual Average Year <u>1989</u> AA	Daily Traffic <i>(AA</i> DT <u>000070</u>	<i>NDT)</i> 8. <u>00</u>	Estimated Perc	ent Trucks %	9. Reg □ Yes	, ,	d by School B Average Nu		oer Day	0	_ 10. □ Y	_	icy S No	ervices Route
Submi	ssion Inforr	nation - 7	his informa	tion is use	ed for ac	dministra	tive purpo	ses ai	nd is n	ot availabl	e on the	public	wel	osite.
Submitted by				ganization _						Phone			ate	
Public reporting bu														
sources, gathering a agency may not con	_		•	-	_									
displays a currently	•	-	•		-	-	-	-						
other aspect of this		ding for red	icing this burde	en to: Infori	mation Co	llection Of	ficer, Federal	Railro	ad Adm	inistration, 12	200 New Je	ersey Ave	. SE,	MS-25
Washington, DC 20	590.													

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION OMB No. 2130-0017

Form. For private hig pedestrian station gr Parts I and II, and the	ghway-rai ade cross Submissi n Informa	il grade crossi sings), comple ion Informatic ation section.	ings, complete the Healon section. I	, . lete the Head lder, Parts I a For grade-sep es to existing	der, Par and II, a parated g data, o	rts I and and the S highway complete	l II, ai Submi y-rail o	nd the Suission Info or pathwa Header,	ubmission Informatio ormation section. Fo ay crossings (includin Part I Items 1-3, an	on section. For por Private pathway pedestrian standard the Submission	oublic pathway ay grade crossi ition crossings), on Information	nplete the entire inventory grade crossings (including ngs, complete the Header, complete the Header, Part section, in addition to the denotes an optional field.
A. Revision Date		B. Reporting A	0 ,			•	•	lect only c	,		_	D. DOT Crossing
(<i>MM/DD/YYYY</i>) 03 / 04 / 2016		■ Railroad	☐ Tra	ınsit ⊠ Ch Data	hange in		New ssing		Closed	☐ No Train Traffic	☐ Quiet Zone Update	Inventory Number
		□ State	□ Oth		e-Open		Date Inge C		☐ Change in Primary	☐ Admin. Correction	Zone Opuate	244824A
				Part I: Lo	ocatio				tion Informatio			
1. Primary Operating BNSF Railway Cor						2. State COLOF		 Э		3. County BOULDER		
4. City / Municipality	,			eet/Road Nar 5TH ST	me & Bl	ock Nun	nber			6. Highway Ty	pe & No.	
□ In ■ Near BOULDE	ΕR			et/Road Nam	 ne)			 * (Bloc	k Number)	CR 43		
7. Do Other Railroad If Yes, Specify RR	s Operate	a Separate T		•		lo		Do Other If Yes, Spec	Railroads Operate O	ver Your Track a	at Crossing?	Yes 🗷 No
9. Railroad Division o	r Region		10. Railro	ad Subdivisio	n or Dis	strict		11. Bra	nch or Line Name		12. RR Milepo	
□ None POWD	ER RIVE	R	□ None	FRONT F	RANGE	Ξ		☐ None	□ DEN UD-WEN	NDOVER		33.770 nn.nnn) (suffix)
13. Line Segment			rest RR Tim				RR (ij	f applicab			g Owner (if app	/ 1 17 /
* 0476		Station BOULI	* DER		I	N/A				□ N/A	BNSF	
17. Crossing Type		ssing Purpose		ssing Positio		20. Public			21. Type of Train			22. Average Passenger
■ Public	■ High	way way, Ped.	I At G □ RR U			'if Private □ Yes	? Cros	ising)	▼ Freight □ Intercity Passenger	☐ Transit	: Use Transit	Train Count Per Day ☐ Less Than One Per Day
☐ Private	☐ Statio	• •	□ RR O			□ No			☐ Commuter	☐ Tourist		□ Number Per Day 0
23. Type of Land Use												
■ Open Space 24. Is there an Adjace	☐ Farm ent Cross				ercial				☐ Institutional RA provided)	☐ Recreation	onal ⊔ R	R Yard
•							•	(,			
☐ Yes ■ No If T	Yes, Provi	ide Crossing N		imal degrees		I ■ No	_	24 Hr	☐ Partial ☐ Chicaş le in decimal degrees	go Excused	Date Establis	shed at/Long Source
20. H3K COITIGOI ID		27. Latit	.uue III ueci	Ū		40		J	ū		29. L	aty Long Source
20 A. D. T	_ X N/A	(WGS84	std: nn.nr	nnnnn) 40.	.056471	10	(W		-nnn.nnnnnnn) -105	5.2255260	□ Ac	tual 🗷 Estimated
30.A. Railroad Use	•							31.A. S	itate Use *			
30.B. Railroad Use	*							31.B. S	tate Use *			
30.C. Railroad Use	*							31.C. S	tate Use *			
30.D. Railroad Use									itate Use *			
32.A. Narrative (Rai		,							larrative (State Use)	*		
33. Emergency Notifi 800-832-5452	cation Te	elephone No.	(posted)		I road Co 52-1549	•	ГеІерІ	hone No.)		35. State Con 303-757-942	tact (Telephon	e No.)
				017-30			l	-l 1£	mation			
1. Estimated Number	of Daily	Train Movemu	ents		Part	II: Kall	iroa	a infor	mation			
1.A. Total Day Thru T			otal Night T	hru Trains	1.C. T	otal Swit	tching	g Trains	1.D. Total Transit	Trains	1.E. Check if L	ess Than
(6 AM to 6 PM) 9		(6 PM 9	to 6 AM)		0				0		One Moveme How many tra	nt Per Day ains per week?
2. Year of Train Coun	t Data (YY	(YY)		3. Speed of		-	_		0			
2013				3.A. Maximu					9 nph) From 1	to 49		
4. Type and Count of	Tracks								<u></u>		_	
	Siding 0		ard 0	Trans	sit <u>0</u>		Indu	ustry 0				
5. Train Detection (M Constant Warr		,,	Datastian	□AFO □	DTC [□ DC		ther \square	None			
6. Is Track Signaled?		IVIOLIOII	Detection			vent Rec			None		7.B. Remote	e Health Monitoring
☐ Yes 🗷 No						Yes 🗆	No				☐ Yes	•

A. Revision Date (A 03/04/2016	MM/DD/YYYY)				P.	AGE 2			D. 244	Crossing Inve 4824A	ntory Num	1ber (7 c	har.)	
		Par	t III: Highwa	y or Pat	hway	Traffic (Control De	evice						
1. Are there	2. Types of Pa	ssive Traffic	Control Devices	associated	with the	Crossing								
Signs or Signals?	2.A. Crossbuck	< 2.B	. STOP Signs (R1-	-1) 2.C.	YIELD Sig	ns (R1-2)	2.D. Advar	ice Wa	rning S	igns (Check al	l that apply	y; include	cou	nt) 🗆 None
x Yes □ No	Assemblies (co	ount) (co 0	unt)	(cou	int)		■ W10-1				l			.1
2.E. Low Ground Cl	earance Sign	2.F. Paven	ent Markings	•			nnelization			2.H. EXEMP	T Sign	2.I. ENS	_	n (I-13)
(W10-5) □ Yes (count	1	Chan Lin		D :		Devices/		□ N4=	d:	<i>(R15-3)</i> □ Yes		Display ☐ Yes	ed	
□ No	/	☐ Stop Lir ☐ RR Xing	Symbols 🗷	Dynamic En None	ivelope	□ All Ap □ One A		☐ Med		□ No		□ No		
2.J. Other MUTCD S	Signs	☐ Yes	X No			2.K. Priva Signs (if)	ate Crossing	2.L.	LED En	hanced Signs	(List types,)		
Specify Type		Count _				Signs (ij ļ	Jiivute)							
Specify Type		Count _				☐ Yes □	□ No							
Specify Type								<u>. </u>						
3. Types of Train A	3.B. Gate Conf			ing (specify antilevered				_		Mounted Flasl	hing Lights		2 [. Total Count of
(count)	3.B. Gate Com	ilguration		ures <i>(count</i>		<i>jeu)</i> Fiasiiii	ig Ligiit			nasts) 2	ning Lights			shing Light Pairs
. ,	☐ 2 Quad	☐ Full (Barı		raffic Lane	· _		candescent		ncande	,	□ LED			
Roadway 2	☐ 3 Quad	Resistance			0	_			Back Lig	hts Included	☐ Side	_	4	
Pedestrian	☐ 4 Quad	☐ Median (Gates Not O	ver Traffic I	Lane <u>U</u>		:D				Include	ed		
3.F. Installation Dat			3.G. Waysi	de Horn				•		lighway Traffi	c Signals Co	ontrollin	g	3.I. Bells
Active Warning Devices: (MM/YYYY) — Not Required Yes Installed on (MM/YYYY) Yes Installed on (MM/YYYY) Yes Installed on (MM/YYYY) 1														
No No No la														
3.J. Non-Train Active Warning □ Flagging/Flagman □ Manually Operated Signals □ Watchman □ Floodlighting □ None 3.K. Other Flashing Lights or Warning Devices Count 0 Specify type														
4.A. Does nearby H	wy 4.B. Hwy	Traffic Signa	4.C. Hwy T	raffic Signa	l Preemp	tion	5. Highway T	raffic F	re-Sigr	nals	6. Highwa	ay Monit	orin	g Devices
Intersection have	Interconr						□ Yes □	No			(Check al			
Traffic Signals?		nterconnecte raffic Signals	d □ Simulta	manus			Storage Dista	nco *				-		Recording ence Detection
☐ Yes ☐ No		arning Signs	☐ Advance				Stop Line Dis				☐ None		1030	ince Detection
				Part IV	: Physi	cal Cha	racteristic	S						
1. Traffic Lanes Cros	ssing Railroad	☐ One-way	Traffic	2. Is Ro	adway/P	athway	3. Does To	rack Ru	ın Dow	n a Street?				ated? (Street
Number of Lanes		☐ Two-way☐ Divided 1		Paved?	Yes l	□ No	[□ Yes	×	No				50 feet from □ No
Number of Lanes	(on Main Track,	, multiple typ	es allowed) In	stallation D	ate * <i>(M</i>	M/YYYY) _			_ Wid	No dth *		Length *		
☐ 1 Timber ☐ ☐ 8 Unconsolidate	2 Aspirate 🗆	5 Aspirate a	ila ililibei 🗀	+ Concict	e ⊔ 5 	Concrete	and Rubber	□ 6	Rubbe	er 🗆 7 Me	tal -			
6. Intersecting Roa	dway within 500) feet?				7. Smalle	st Crossing A	ngle			8. Is Co	mmercia	l Pov	ver Available? *
¥ Yes □ No	If Yes, Approxim	nate Distance	(feet) <u>75</u>		_	□ 0° − 25	9° ⅓ 30°	– 59°		60° - 90°		¥ Yes		□ No
			P	art V: P	ublic F	lighway	Informat	ion						
1. Highway System			2. Functional C	Classificatio	n of Road	d at Crossir	ıg	3.	Is Cross	sing on State I	Highway	4. F	ligh	vay Speed Limit
				■ (0) Ru				,	stem?	_		l <u></u> -		MPH
, ,	tate Highway Sy Nat Hwy Systen		☐ (1) Intersta☐ (2) Other F			(5) Majoi	Collector			■ No	-1 (LDC			ed 🗆 Statutory
	al AID, Not NHS	11 (14113)	☐ (2) Other P	•		•	Collector	5.	Linear	Referencing Sy	ystem (LRS	Koute IL	י (נ	
■ (08) Non-F	ederal Aid		☐ (4) Minor A	rterial		(7) Local			LRS Mi	lepost *				
7. Annual Average Year <u>1989</u> AA	Daily Traffic <i>(AF</i> DT 000200	ADT) 8. 05	Estimated Percer	nt Trucks %	9. Reg □ Yes	, ,	d by School B Average Nu		per Day	0	_ 10. □ Y	_	ncy S No	ervices Route
Submi	ssion Inform	mation - 7	his informati	on is use	d for ac	lministra	tive purpo	ses ai	nd is n	ot availabl	e on the	public	wel	osite.
Submitted by				nization						Phone			ate	
Public reporting bu														
sources, gathering a agency may not cor	_		•	_	_									
displays a currently		-	•		-	-	•	-						
other aspect of this		ıding for redı	icing this burder	to: Inform	nation Co	llection Of	ficer, Federal	Railro	ad Adm	inistration, 12	200 New Je	ersey Ave	. SE,	MS-25
Washington, DC 20	590.													

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION OMB No. 2130-0017

Instructions for the inform. For private his pedestrian station grants I and II, and the I, and the Submission updated data fields. I	ighway-ra rade cros e Submiss on Inform	ail grade cross ssings), comple sion Information nation section.	sings, comp ete the Hea on section. . For chang	olete the H ader, Parts For grade- ges to exist	leader, I and separa ting da	r, Parts I and III, and the S ated highway ata, complet	l II, a Subm y-rail e the	ind the Sunission Info or pathwa Header,	ubmission Information ormation section. Fo ay crossings (includin Part I Items 1-3, an	on section. For or Private pathway pedestrian standard the Submission	public pathy yay grade cro ation crossing on Informati	way grossing	rade cross gs, comple omplete the ection, in a	sings (including ete the Header, he Header, Part			
A. Revision Date		B. Reporting	· ·			on for Updat	•	′_	_ ′					Crossing			
(<i>MM/DD/YYYY</i>) 04 / 28 / 2016		■ Railroad	□ Tra		Chan ata	Ü	New ssing		Closed	☐ No Train Traffic	☐ Quiet Zone Upo		Invento	ory Number			
		☐ State	□ Ot		Re-O				Change in Primary	☐ Admin. Correction			244823	Т			
Part I: Location and Classification Information																	
1. Primary Operating BNSF Railway Cor	mpany [E	J BNSF]				2. State COLOF	RADO	0		3. County BOULDER							
4. City / Municipality ☐ In	/			r eet/Road N Y RD	Name	& Block Nun	nber	1		6. Highway Type & No.							
■ Near BOULD			(Stre	eet/Road N					k Number)	CR 44							
7. Do Other Railroad If Yes, Specify RR	s Operat	e a Separate T	rack at Cro	ossing?	Yes	™ No		Do Other I f Yes, Spe	Railroads Operate O cify RR	ver Your Track a	at Crossing?	□ Y	es I No	1			
9. Railroad Division o	or Region	<u> </u>	10. Railro	pad Subdivi	ision o	or District	<u> </u>	11. Brai	nch or Line Name		12. RR Mile	epost 0033.					
- None	ER RIVE		☐ None	FRON	TRA			□ None			(prefix)	<u> </u>		(suffix)			
13. Line Segment *		14. Nea Station	rest RR Tin *	netable		15. Parent l	RR (i)	f applicab	le)	16. Crossir	ng Owner (if	applic	cable)				
0476		DOLUBED.				■ N/A				□ N/A	BNSF						
17. Crossing Type		ossing Purpose		ossing Posit	tion	20. Public			21. Type of Train			22. Average Passenger Train Count Per Day					
■ Public	■ High □ Path	nway nway, Ped.	I At G □ RR U	(if Private ☐ Yes	? Cros	ising)	▼ Freight □ Intercity Passenger	☐ Transit ger ☐ Shared	t d Use Transit			n One Per Day					
☐ Private	l l	ion, Ped.	□ RR C			□ No			☐ Commuter	☐ Touris	Per Day 0						
23. Type of Land Use			امند مداما				مرزاد ۱۰۰	1		□ De avontio							
■ Open Space24. Is there an Adjac	☐ Farm cent Cross		sidential parate Nun	☐ Com	nmerc		Indus Juiet 2		☐ Institutional RA provided)	☐ Recreation	onal L	□ RR \	Yard				
24, 13 01010 0 0,	Cit Ci Ci	mig wien a a-r	Jaiute	ibci .				Lone (A provided,								
	-	vide Crossing N		* · · · · · · · · · · · · · · · · · · ·		No	■ No 24 Hr □ Partial □ Chicago Excused Date Established 28. Longitude in decimal degrees 29. Lat/Long Source										
26. HSR Corridor ID		Z/. Laui	tude in dec	J				J	e in decimal degrees		rce						
	_ X N/A	(WGS84	4 std: nn.n	nnnnnn) ²	40.05	10640	(W		-nnn.nnnnnnn) -105	5.2323240		Actu	al 🗷 E	Stimated			
30.A. Railroad Use	*						31.A. State Use *										
30.B. Railroad Use							31.B. State Use *										
30.C. Railroad Use	*							31.C. State Use *									
30.D. Railroad Use	*							31.D. State Use *									
32.A. Narrative (Rai	ilroad Use	e) *						32.B. N	larrative (State Use)	*							
33. Emergency Notifi 800-832-5452	ication Te	elephone No.	(posted)			ad Contact (7	ГеІері	hone No.)		35. State Contact (Telephone No.)							
000-032-3432				017	'-352- <i>'</i>					303-757-942							
4. Estimated Number	- 5 Daily	Teris Mayom	-1-		Pa	art II: Rai	iroa	d Infor	mation								
1. Estimated Number 1.A. Total Day Thru 1			ents Total Night	Thru Train	c 1	.C. Total Swit	tching	σ Trains	1.D. Total Transit	Trains	1.E. Check	ifles	s Than				
(6 AM to 6 PM)	Tunis		to 6 AM)	11110 110				5 11411.0	0	Hums	One Move	ement	Per Day	□ ek?			
2. Year of Train Coun	t Data (Y	YYY)				in at Crossing	_										
2013						Timetable Sp ed Range Ov			9 nph) From 1	to 49							
4. Type and Count of	Tracks			J.D. 19pic	Jai Jpc	eu nange o	/E1 C1	0331116 (111	<i>pn</i> / 110111	to	_						
	Siding 0		ard <u>0</u>	Tra	ansit <u>(</u>	0	Indi	ustry 0									
5. Train Detection (M		,,	Dotaction	□AFO	□ DT (C DC	□ 0	N+hor □	None								
6. Is Track Signaled?		: L IVIOLIOII	Detection	AIO		A. Event Rec			None		7.B. Rem	note H	lealth Mor	 nitoring			
☐ Yes ☑ No ☐ Yes ☐ N							No				☐ Yes ☐ No						

A. Revision Date (A 04/28/2016	MM/DD/YYYY)					P	AGE 2			D . 244	Crossing Inve	ntory Nun	n ber (7 c	har.)			
		Part	: III: Hi	ghway o	r Path	way [·]	Traffic (Control D	evi								
1. Are there	2. Types of Pa	ssive Traffic (Control D	Devices asso	ciated w	ith the	Crossing										
Signs or Signals?	2.A. Crossbuck Assemblies (co	gns <i>(R1-1)</i>	2.C. YII	_	ns <i>(R1-2)</i>	■ W10-1		te Warning Signs (Check all that apply; include count)					.1				
2.E. Low Ground Cl	0 earance Sign	0 2.F. Pavem	ent Mark	kings				2.G. Channelization 2.I				☐ W10-4 ☐ W10-1 2.H. EXEMPT Sign					
(W10-5) ☐ Yes (count)	■ Stop Line		•	mic Enve	elope	• •			(R15-3) ☐ Yes			Displayed ☐ Yes				
□ No		RR Xing	•	☐ None	2		□ One A	• •		None	□ No	□ No					
2.J. Other MUTCD S Specify Type		☐ Yes Count _					2.K. Priva Signs (if)	ate Crossing private)	2	2.L. LED Enhanced Signs (List types)							
Specify Type Specify Type		Count _ Count _		_			☐ Yes	□ No									
3. Types of Train A	ctivated Warnin	g Devices at	he Grad	e Crossing (s	specify c	ount o	f each dev	ice for all the	at ap	pply)							
3.A. Gate Arms (count)	3.B. Gate Conf	figuration Full (Barri	er)	3.C. Cantile Structures Over Traffic	(count)	or Bridg O	,	ng Light candescent	(B.D. Mast I' count of I' Incande			. Total Count of shing Light Pairs				
Roadway 3 Pedestrian	☐ 3 Quad ☐ 4 Quad	Resistance Median G	,	Not Over T			_			□ Back Lig		D de Lights ded					
3.F. Installation Dat Active Warning Dev									3.I. Bells (count) 2								
3.J. Non-Train Active Warning □ S.K. Other Flashing Lights or Warning Devices □ Flagging/Flagman □ Manually Operated Signals □ Watchman □ Floodlighting □ None □ Specify type □ Specify t																	
4.A. Does nearby H Intersection have Traffic Signals?	wy 4.B. Hwy Interconr □ Not In ▼ For Tr	. Hwy Traffic Simultaneou	☐ Yes ☐ N					Jo (Check ☐ Yes			vay Monitoring Devices Ill that apply) Photo/Video Recording Vehicle Presence Detection						
☐ Yes ☐ No	☐ For W	arning Signs		Advance				Stop Line Di	istan	ce *		☐ None					
				Pa	rt IV: I	Physi	cal Cha	racteristi	cs								
Traffic Lanes Cros Number of Lanes		2. Is Roadway/Pathway Paved? ■ Yes □ No □					Run Dow	lights wi	ossing Illuminated? (Street rithin approx. 50 feet from rail) Yes No								
5. Crossing Surface 1 Timber 8 Unconsolidate	2 Asphalt \square	3 Asphalt ar	d Timbe	r 🗷 4 Co							dth * r □ 7 Me		Length *	-			
6. Intersecting Roa		7. Smallest Crossing A					9		8. Is Co	mmercia	l Pov	ver Available? *					
☐ Yes 🗷 No	If Yes, Approxim	nate Distance	(feet) <u>0</u>		□ 0° - 29° ■ 30° - 59						59° 🗆 60° - 90°				¥ Yes □ No		
				Part	V: Pul	blic H	ighway	Informa	tior	า							
	tate Highway Sy		☐ (1) I	∡ (nterstate	(0) Rural	:) 🗆 (: 	d at Crossing 1) Urban 1 (5) Major Collector			System? □ Yes				Poste	vay Speed Limit MPH ed Statutory		
☐ (03) Feder	Nat Hwy Systen al AID, Not NHS	1 (NHS)	☐ (3) C	Other Freewa Other Princip	oal Arteri	ial 🗆	(6) Mino	Collector		5. Linear Referencing System (LRS Route ID) * 6. LRS Milepost *							
✓ (08) Non-F7. Annual AverageYear 1998 AA		ADT) 8. E 05		Minor Arteria I Percent Tru	ıcks			d by School I Average N	Buses	s?	·	10. □ Y	_	ncy S	ervices Route		
Submi	ssion Inforr	mation - T	his info	rmation is	s used j	for ad						e on the	public	wel	osite.		
Submitted by				Organizat	ion						Phono		-)a+^			
Submitted by Public reporting but	rden for this info	rmation coll	oction is	Organizat		30 m:	nutes por	reconnect in	داريط:	ng tho tim	Phone	a instructi		ate	a evictina deta		
sources, gathering a agency may not cor displays a currently other aspect of this Washington, DC 20	and maintaining nduct or sponsor valid OMB cont collection, inclu	the data nee r, and a perso rol number.	ded and on the second in the s	completing a equired to, i OMB contro	and revie nor shall ol numbe	ewing t I a perso er for ir	he collecti on be subj nformation	on of inform ect to a pena collection is	atior alty fo 213	n. Accordi or failure t 0-0017. S	ng to the Papo to comply with end comment	erwork Red h, a collect ts regardin	duction A ion of in g this bu	Act o form irden	f 1995, a federal ation unless it estimate or any		

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION OMB No. 2130-0017

Form. For private high pedestrian station graph Parts I and II, and the State of th	hway-rail gr ide crossing Submission Informatio	rade crossi s), comple Informatio n section.	ngs, comp te the Hea n section. I For chang	lete the He der, Parts I For grade-se es to existir	ader, P and II, eparate ng data	arts I and and the S d highway , complet	II, a Subm /-rail o	nd the Suission Information The pathward or pathward	ubmission Information formation section. For ay crossings (including Part I Items 1-3, ar	on section. For private pathwing pedestrian stand	public pathway ray grade cross ation crossings) on Information	nplete the entire inventory grade crossings (including ings, complete the Header, complete the Header, Part section, in addition to the denotes an optional field.				
A. Revision Date	B. R	Reporting A	gency	C. F	Reason	for Updat	e (Sei	lect only o	one)			D. DOT Crossing				
(<i>MM/DD/YYYY</i>) 03 / 04 / 2016	™ F	Railroad	☐ Tra		Change		lew		Closed	☐ No Train	☐ Quiet	Inventory Number				
03) 04) 2010	—	itate	□ Otł	□ Other □ Re-Ope			ssing Date Inge C	Change in Primary		Traffic ☐ Admin. Correction	Zone Update	244822L				
				Part I: L	ocati				ion Information							
1. Primary Operating BNSF Railway Com	2. State COLORADO					3. County BOULDER										
4. City / Municipality				et/Road Na EPENDEN			nber			6. Highway Ty	pe & No.					
In BOULDE BOULDE	R							. * (Bloc	k Number)	Not Yet Rep	orted by State)				
 Near BOULDER (Street/Road Na 7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes, Specify RR 						No			Railroads Operate C	Over Your Track	at Crossing?	Yes 🗷 No				
9. Railroad Division or	r Region		10. Railro	ad Subdivisi	ion or E	District		11. Bra	nch or Line Name		12. RR Milepo	ost				
50115	Ü			FDONT		.=			DEN 11D W.E	NDOVED	1_003	32.329				
	R RIVER	14 Non	□ None	FRONT				□ None			17 7 7 1 1	nn.nnn) (suffix)				
13. Line Segment *		Station	rest RR Tim *	letable	1:	5. Parent I	KK (I)	аррисав	ie)	16. Crossir	ig Owner (if ap	Owner (if applicable)				
0476		BOULE	DER		_ [x	N/A				_ □ N/A	BNSF					
17. Crossing Type	18. Crossin			ssing Positio	on	20. Public			21. Type of Train	□ T uo no ii	_	22. Average Passenger				
■ Public		,				(if Private ☐ Yes	cros	sing)	▼ Freight □ Intercity Passen	☐ Transit	: I Use Transit	Train Count Per Day ☐ Less Than One Per Day				
☐ Private	☐ Station,		□ RR C			□ No			☐ Commuter	0	☐ Tourist/Other ☐ Number Per D					
23. Type of Land Use Spen Space	□ Farm	☐ Resi	dontial	☐ Comr	morcial		Indus	trial	☐ Institutional	☐ Recreation	nal 🗆 🗈	RR Yard				
24. Is there an Adjace					Herciai				A provided)	L Necreation	niai 🗀 i	in Tatu				
							_									
☐ Yes ☑ No If Y 26. HSR Corridor ID	es, Provide			imal degree		I ▲ No			☐ Partial ☐ Chica e in decimal degree	igo Excused	Date Establi	shedat/Long Source				
20. HSK COITIGOI ID		27. Latit	uue III uec	J		000	20.	Longituu	ŭ		25. Laty Long Source					
	■ N/A	(WGS84	std: nn.nr	nnnnn) 40	0.0401	200	(W		-111111.1111111111111111111111111111111	5.2418330	D.2418330 □ Actual ■ Estimated					
30.A. Railroad Use *								31.A. S	tate Use *							
30.B. Railroad Use *						31.B. State Use *										
30.C. Railroad Use *						31.C. State Use *										
30.D. Railroad Use *								31.D. State Use *								
32.A. Narrative (Raili									larrative (State Use)							
33. Emergency Notifice 800-832-5452	ation Telep	hone No. ((posted)		ilroad (352-15	C ontact (7 49	ГеІері	hone No.)		35. State Cor 303-757-942	i tact (Telephori 25	ne No.)				
000 002 0 .02								d lofe,	mation							
1. Estimated Number	of Daily Trai	n Moyomo	ntc		Par	t II: Kali	iroa	a inior	mation							
1.A. Total Day Thru Tr			otal Night 1	hru Trains	1.C.	Total Swit	ching	Trains	1.D. Total Transit	t Trains	1.E. Check if I	ess Than				
(6 AM to 6 PM) 9			to 6 AM)		0				0		One Movement Per Day How many trains per week?					
2. Year of Train Count	Data (YYYY))		3. Speed o		•	_	((.) At		<u></u>						
2013				3.A. Maxim					9 ph) From 1	to _49						
4. Type and Count of T	Tracks			J.D. Typica	Speed	u.ige Ot		555111B (III			_					
	iding 0		ard 0	Tran	nsit 0		Indu	ustry 0								
5. Train Detection (Ma			Date] DTC				Nama							
Constant Warni 6. Is Track Signaled?	ing i ime L	iviotion	Detection	□AFO □		☐ DC Event Rec		ther \square	none		7.B. Remote	e Health Monitoring				
☐ Yes ☑ No						Yes \square					☐ Yes ☐ No					

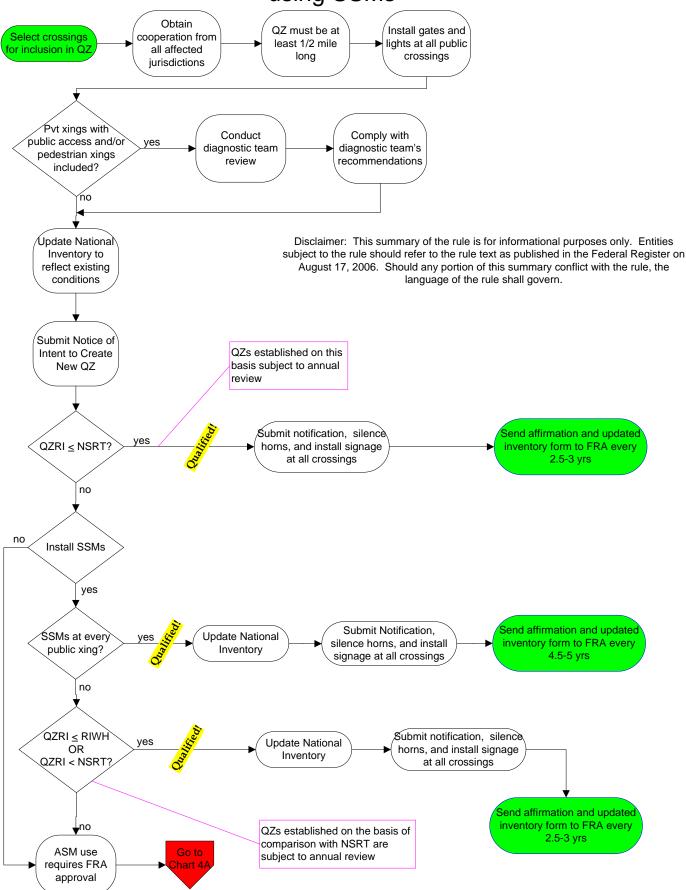
A. Revision Date (N 03/04/2016	ЛМ/DD/YYYY)					P	AGE 2			D . 244	Crossing Inve 4822L	ntory Nun	n ber (7 c	har.,			
			Part III	: Highway	or Pat	hway	Traffic (Control De	vice	Info	rmation						
1. Are there	2. Types of Pa	ssive Tra	affic Con	trol Devices as	sociated	with the	Crossing										
Signs or Signals?	2.A. Crossbuck			OP Signs (R1-1,							e Warning Signs (Check all that apply; include count)						
¥ Yes □ No	Assemblies (co	ount)	(count)		(cou			W10-3									
2.E. Low Ground Cl (W10-5)	earance Sign	2.F. Pa	avement	Markings	2.G. Channelization Devices/Medians						2.H. EXEMP' (R15-3)	2.I. ENS Sign (I-13) Displayed					
☐ Yes (count)		p Lines		namic En	velope	-		□ Me	dian	☐ Yes	☐ Yes	☐ Yes				
□ No			Xing Sym		one		☐ One A	• •	□ Nor		□ No		□ No				
2.J. Other MUTCD S	Signs		′es I N	lo			2.K. Priva Signs (if	ate Crossing	2.L. LED Enhanced Signs (List types)								
Specify Type			ınt														
Specify Type Specify Type			ınt ınt				☐ Yes	□ No									
3. Types of Train A					a (snecifi	, count o	f each dev	ice for all that	annh	,)							
3.A. Gate Arms	3.B. Gate Conf						<i>ged)</i> Flashii				Mounted Flas	hing Lights	i	3.E	. Total Count of		
(count)		_			es (count	•	_			•	nasts) 2			Fla	shing Light Pairs		
Roadway 2	☐ 2 Quad ☐ 3 Quad	☐ Full Resista	(Barrier)	Over Tra	ver Traffic Lane 0						scent thts Included	☐ LED					
Pedestrian	☐ 4 Quad		lian Gate	s Not Ove	er Traffic Lane 0					DACK LIE	ints included	☐ Side Lights Included		0			
3.F. Installation Dat	e of Current			3.G. Wayside	Horn					3.H. F	Highway Traffi	c Signals C	ontrollin	g	3.I. Bells		
Active Warning Dev		•		☐ Yes Ir	istalled o	n ///////	(VVV)	/		Cross	0				(count)		
/	⊔	Not Req	uired	□ No	istalica o	11 (141141) 1	,	_/	_	⊔ Ye:	s 🗷 No				1		
3.J. Non-Train Activ ☐ Flagging/Flagma	•	perated	Signals	☐ Watchman	☐ Flood	lighting	□ None			Other	Flashing Light S		U				
4.A. Does nearby H	wy 4.B. Hwy	Traffic S	ignal	4.C. Hwy Tra	ffic Signa	l Preemp	tion	5. Highway Tr	affic F	re-Sigr	nals	6. Highw	ay Monit	torin	g Devices		
Intersection have	Interconr			☐ Yes ☐ I							(Check all that apply)						
Traffic Signals?	☐ Not In☐ For Tr			☐ Simultane	eous Storage Distar							☐ Yes - Photo/Video Recording☐ Yes - Vehicle Presence Detection					
☐ Yes ☐ No	☐ For W	_		☐ Advance				Stop Line Dist				☐ None					
				ا	Part IV	: Physi	cal Cha	racteristic	S								
1. Traffic Lanes Cros						adway/P	athway	3. Does Tr	ack Ru	ın Dow	n a Street?		_		ated? (Street		
Number of Lanes	2	☐ Divid		c			□ No		Yes	X	No	_			50 feet from □ No		
5. Crossing Surface										_ Wi	dth *		Length *	-			
☐ 1 Timber ☐ ☐ 8 Unconsolidate						e ⊔ 5 	Concrete	and Rubber	□ 6	Rubbe	er ⊔ 7 Me	tal -					
6. Intersecting Roadway within 500 feet?						7. Smallest Crossing A						8. Is Co	mmercia	l Po	wer Available? *		
\blacksquare Yes \Box No If Yes, Approximate Distance (feet) 75 \Box 0° − 29° \Box 30° − 59° \blacksquare 60° - 90° \blacksquare Yes \Box							□ No										
Part V: Public Highway Information																	
1. Highway System			2.	Functional Cla	ssificatio	n of Road	at Crossir	ng	3.	Is Cros	sing on State I	Highway	4. H	ligh	way Speed Limit		
□ (04) · ·							1) Urban			stem?	- ·		 -		MPH		
	tate Highway Sy Nat Hwy Systen			(1) Interstate (2) Other Fre			. ,	r Collector	☐ Yes ☑ No ☐ Posted ☐ Statuto 5. Linear Referencing System (LRS Route ID) *						ed 🗆 Statutory		
	al AID, Not NHS	(11113)		(3) Other Prin	•	•	•	r Collector				ysteili (Lh.	Noute II	<i>)</i>			
■ (08) Non-F				(4) Minor Art			(7) Local			LRS Mi	lepost *						
7. Annual Average Year <u>1994</u> AA	Daily Traffic (AAD) DT 002100	ADT) 	8. Estin	nated Percent	Trucks _ [%]	9. Reg ☐ Yes		d by School Bu Average Nur		oer Day	0	_ 10. _ 1	_	ncy S No	Services Route		
Submi	ission Inforr	matio	1 - This	informatio	ı is used	d for ac	dministra	itive purpos	es ai	nd is r	not availabl	e on the	public	wel	bsite.		
Submitted by				Organi							Phone			ate			
Public reporting bu																	
sources, gathering a agency may not cor	_			•	-	_											
displays a currently	•	-		•			-	•									
other aspect of this		iding for	reducing	this burden t	o: Inform	nation Co	llection Of	ficer, Federal	Railro	ad Adm	ninistration, 12	200 New Je	ersey Ave	e. SE	MS-25		
Washington, DC 20	39U.																



APPENDIX B QUIET ZONE SUMMARY FLOWCHART



Chart 3 - Creating a New Quiet Zone or New Partial Quiet Zone using SSMs



Notice of Intent to Create a Quiet Zone¹

Who should submit this notice

A public authority seeking to create a New Quiet Zone or a New Partial Quiet Zone should submit notice of its intent.

Parties to be notified

Before a public authority establishes a quiet zone either through public authority designation or through FRA approval, it must provide written notice to several parties. These parties include the following:

All railroads operating over the public highway-rail grade crossings
within the quiet zone,

- ☐ The State agency responsible for highway and road safety, and
- ☐ The State agency responsible for grade crossing safety.

All notices must be provided by certified mail, return receipt requested.

Deadlines

A party may submit information or comments to the public authority during the 60-day period after the date on which the Notice of Intent was mailed. This 60-day comment period may terminate early, if the public authority obtains from each party either written comments or written statements that the parties do not have any comments.

¹ The information collection submission for the final rule has been approved by the OMB. The OMB control number is 2130-0560.

Notification contents

The notice must unambiguously state which crossings will be contained within the quiet zone. Each public, pedestrian, and private crossing must be identified by both the U.S. DOT National Highway-Rail Grade Crossing Inventory number and the street or highway name.
The notice must indicate the time period during which train horn restrictions would be imposed (i.e. 24 hours or from 10 pm to 7 am)
The notice must contain a brief explanation of the tentative plans for implementing improvements within the quiet zone.
The notice must clearly indicate the name, title, and contact information for the person who will act as point of contact during the development process.
All notifications must contain list of the names and addresses of each

Notice of Quiet Zone Establishment¹

Who should submit this notice

A public authority wishing to establish a New Quiet Zone, a New Partial Quiet Zone, a Pre-Rule Quiet Zone, or a Pre-Rule Partial Quiet Zone must submit a notice of Quiet Zone Establishment.

Parties to be notified ((§222.43(a)(4))

The public authority must provide written notice to several parties. These parties include the following:

All railroads operating over the public highway-rail grade crossing within the quiet zone,
The highway or traffic control authority, or the law enforcement authority with jurisdiction over motor vehicle traffic at the quiet zone crossings,
Landowners with control over any private crossings within the quiet zone,
The State agency responsible for highway and road safety,
The State agency responsible for grade crossing safety, and
The FRA Associate Administrator.

All notices must be provided by certified mail, return receipt requested.

Deadlines

Notice of the establishment of a Quiet Zone should be mailed no later than 21 days before the date on which train horns are scheduled to cease sounding. For New Quiet Zones and New Partial Quiet Zones, the Notice of Quiet Zone Establishment can not be served earlier than 60 days after the Notice of Intent was mailed, unless the Notice of Quiet Zone Establishment contains a written statement affirming that

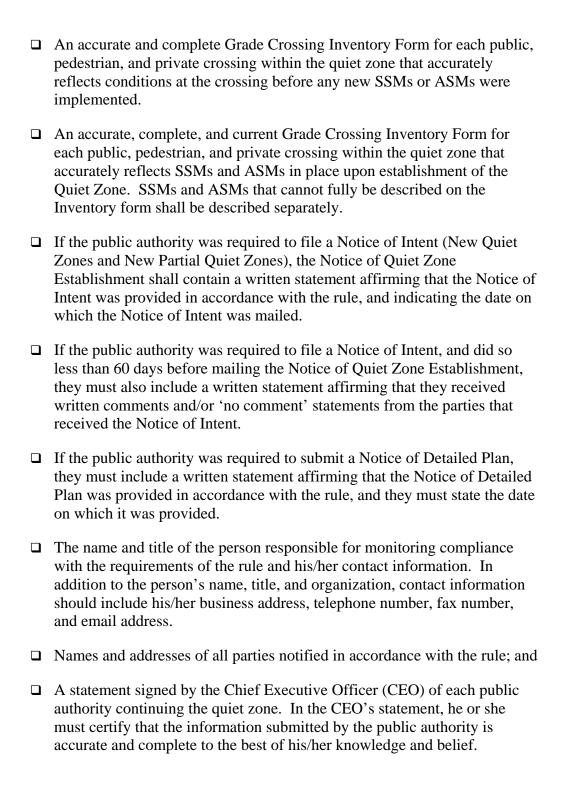
¹ The information collection submission for the final rule has been approved by the OMB. The OMB control number is 2130-0560.

written comments and/or 'no comment' statements have been received from each party that received the Notice of Intent. For Pre-Rule Quiet Zones that qualified for automatic approval, the Notice of Quiet Zone Establishment should be mailed out before December 24, 2005.

Notification contents (§222.43(e))

- ☐ The notice must unambiguously state which crossings are contained within the quiet zone. All public, pedestrian, and private crossings must be identified by both the U.S. DOT National Highway-Rail Grade Crossing Inventory Number, and by street or highway name.
- ☐ The notification must clearly cite the regulatory provision that provides the basis for establishing the Quiet Zone:
 - § 222.39(a)(1), implementation of SSMs at every public crossing in the New Quiet Zone or New Partial Quiet Zone;
 - §222.39(a)(2)(i), the QZRI is at or below the NSRT without installation of any SSMs at the New Quiet Zone or New Partial Quiet Zone;
 - §222.39(a)(2)(ii), SSMs were implemented at some crossings in the New Quiet Zone or New Partial Quiet Zone to bring the QZRI to a level at or below the NSRT;
 - §222.39(a)(3), SSMs were implemented at some crossings in the New Quiet Zone or New Partial Quiet Zone to bring the QZRI to a level at or below the RIWH; or
 - §222.39(b), public authority application to the FRA for a New Quiet Zone or New Partial Quiet Zone.
 - § 222.41(a)(i) Pre-Rule Quiet Zones that qualify for automatic approval because every crossing is equipped with an SSM,
 - § 222.41(a)(ii) Pre-Rule Quiet Zones that qualify for automatic approval because QZRI ≤ NSRT,
 - § 222.41(a)(iii) Pre-Rule Quiet Zones that qualify for automatic approval because NSRT < QZRI < 2* NSRT, and there have been no relevant collisions within the 5 years preceding April 27th, 2005.

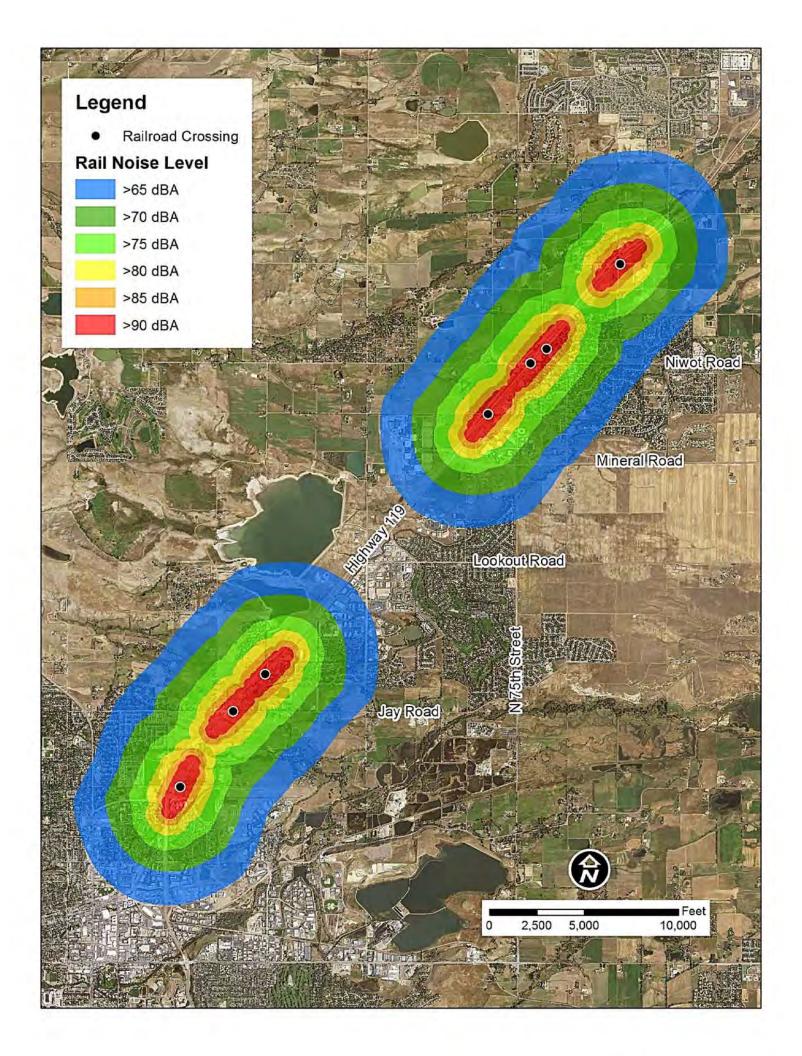
- § 222.41(b)(i) Pre-Rule Partial Quiet Zones that qualify for automatic approval because every crossing is equipped with an SSM,
- § 222.41(b)(ii) Pre-Rule Partial Quiet Zones that qualify for automatic approval because QZRI ≤ NSRT,
- § 222.41(b)(iii) Pre-Rule Partial Quiet Zones that qualify for automatic approval because NSRT < QZRI < 2* NSRT, and there have been no relevant collisions within the 5 years preceding April 27th, 2005.
- § 222.41(c) Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that do not qualify for automatic approval
- § 222.41(d) Pre-Rule Partial Quiet Zones that will be converted to 24-hour New Ouiet Zones
- § 222.42(a) Intermediate Quiet Zones or Intermediate Partial Quiet Zones
- § 222.42(b) Intermediate Partial Quiet Zones that will be converted to 24-hour New Quiet Zones.
- ☐ If the notice contains a reference to §222.39(a)(2)(i), 222.39(a)(2)(ii), 222.39(a)(3), 222.41(a)(2), 222.41(a)(3), 222.41(b)(2), or 222.41(b)(3), that is, any time a determination of QZRI is used to justify establishment of a quiet zone, the notification must include a copy of the FRA Quiet Zone Calculator web page that contains the data on which the public authority is relying.
- ☐ If the notice contains a reference to §222.39(b), the notice must include a copy of the FRA's notification of approval.
- ☐ If a diagnostic team is required under §222.25 (private crossings) or §222.27 (pedestrian crossings), the notice must include a statement affirming that the State agency responsible for grade crossing safety and all affected railroads were provided an opportunity to participate in the diagnostic team review. The notice must also include a list of the diagnostic team's recommendations.
- ☐ The notice must contain a statement indicating the time period during which horn restrictions will be observed.





APPENDIX C NOISE CONTOUR DIAGRAM





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