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Staff Memorandum

To: THE COMMISSION DOCKET NO. RR-02635B-09-0075

From: Safety Division

Date: March 27, 2009

RE: IN THE MATTER OF THE APPLICATION OF THE CITY OF FLAGSTAFF TO MODIFY AN EXISTING CROSSINGS OF THE BNSF RAILWAY COMPANY AT STEVES BOULEVARD (DOT NO. 025-099-J) AND FANNING DRIVE (DOT NO.025-129-Y) IN THE CITY OF FLAGSTAFF, COCONINO COUNTY, ARIZONA.

Background

On February 19, 2009 the City of Flagstaff ("City") filed with the Arizona Corporation Commission ("Commission") an application for approval to modify two existing at-grade railroad crossings of the BNSF Railway Company ("BNSF") by installing additional warning devices in the form of wayside horns, as part of the City's attempt to mitigate locomotive horn noise. The two crossings are at Steves Boulevard; DOT No. 025-099-J, and Fanning Drive, DOT No. 025-129-Y, both located within the City, in Coconino County, Arizona. Originally, the City had intended on including these two crossings as part of a proposed Quiet Zone, which would require the City to choose between two improvement options: (1) the use of roadway medians or (2) the use of four quadrant gates. The option of installing roadway medians was not feasible due to the close proximity of Route 66 and Industrial Drive to these crossings. As for the four quadrant gates, the cost of installation and maintenance were the major deterrents to that option. Therefore, the City chose to pursue the wayside horn warning devices in an attempt to mitigate the horn noise at these crossings.

On May 2, 2006, Staff, the Railroad and the City participated in diagnostic review of the proposed improvements at these crossings. All parties present were in agreement to the proposed improvements at Steves Boulevard and Fanning Drive. The following is a break down of the two crossings in this application, including information about the crossings that was provided to Staff by the City.

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Geographical Information

Flagstaff, Arizona is located at the intersection of Interstate 17 and Interstate 40, and is the largest city in Northern Arizona. The City is also the regional center and county seat for Coconino County, the second largest county in the 48 contiguous states. The City of Flagstaff currently comprises of just over 64 square miles, nestled at the base of the San Francisco Peaks and surrounded by one of the largest pine forests on earth. Flagstaff drew its name from a very tall pine tree made into a flagpole in 1876 to celebrate our nation's centennial. At nearly 7,000 feet, Flagstaff is also one of the highest elevation cities in the United States. The City is a year-round Mecca for visitors and many Arizonans maintain second homes here.

Located on the east side of Flagstaff, Steves Boulevard and Fanning Drive have very similar characteristics. Both at-grade crossings connect Route 66 to Industrial Drive; two east-west roadways which parallel the railroad tracks. The distance between Route 66 and Industrial Drive is only 300 feet, which limits the options of improving the crossings. The railroad track location is approximately centered between the curb lines of the parallel roadways. **(See Appendix "A")**

Steves Boulevard

The existing crossing is being modified as part of the City's efforts to reduce locomotive horn noise. Steves Boulevard is a two lane through street, which runs in a north-south direction with right and left turning lanes at Route 66 and Industrial Drive. Currently, the warning devices consist of cantilevers, automatic gates, flashing lights and automatic bells. The proposed upgrades include: installation of wayside horns, new sidewalk construction which will conform to all ADA (Americans with Disabilities Act) requirements and the installation of "No Train Horn" signs. The "No Train Horn" signs indicate to the public that the locomotive horn is not routinely sounded at the crossing. The proposed measures are consistent with wayside horns employed at similar at-grade crossings across the country. The estimated cost of the proposed railroad crossing upgrade is $115,000.

Traffic data for Steves Boulevard was provided by the City. The most current data provided showed the Average Daily Traffic (ADT) to be 11,028 vehicles per day (vpd). No future traffic projections were provided by the City.

Commission Rail Safety Section records, as well as Federal Railroad Administration ("FRA") accident/incident records indicate one accident at this crossing. The accident occurred on 11/9/1985 as a result of an auto running through the downed crossing gate arm. No injuries or fatalities occurred in this accident. Records indicate the warning devices were reported to be working as intended at the time of the accident.

Alternative routes from this crossing are as follows; to the east .65 miles is Fanning Drive, an at-grade crossing, and to the west .54 miles, is 4th Street, a grade separated crossing.

Fanning Drive

The existing crossing is being modified as part of the City's efforts to reduce locomotive horn noise. Fanning Drive is a two lane through street, which runs in a north-south direction with right and left turning lanes onto Route 66 and Industrial Drive. Currently the warning devices consist of cantilevers, gates, flashing lights and bells. The proposed upgrades include: installation of wayside horns, new sidewalk construction which will conform to all ADA requirements and the installation of "No Train Horn" signs. The proposed measures are consistent with wayside horns employed at similar at-grade crossings across the country. The estimated cost of the proposed railroad crossing upgrade is $115,000.

Traffic data for Fanning Drive was provided by the City. The most current data provided showed the ADT to be 8,101 vpd. No future traffic projections were provided.

Commission Rail Safety Section records, as well as FRA accident/incident records indicate four accidents at this crossing with one injury. The first accident occurred on 8/21/1988 as a result of an auto running through the downed crossing gate. The second occurred on 9/29/2001 as a result of an auto stopping on the railroad tracks. The third accident occurred on 2/6/2003, also as a result of an auto stopping on the railroad tracks. A fourth accident occurred on 10/23/2006, when a tractor trailer did not clear the crossing and was struck by a train, resulting in one injury. Records indicate the warning devices were reported to be working as intended in all four accidents.

Alternative routes from this crossing are as follows; to the east .61 miles is Country Club Road, a grade separated crossing, and to the west is Steves Boulevard, .65 miles, an at grade crossing.

Train Data

Data provided by the City regarding train movements through these crossings are as follows:

Train Count: 93 trains per day on two main tracks
Train Speed: 55 mph freight and passenger
Thru Freight/Switching Moves: There are thru freight moves as well as switching moves through these crossings. This is an Amtrak passenger route.

Wayside Horns

Both of these crossings involve the installation of wayside horns. Wayside horns are an innovative railroad signaling device that significantly improves safety for motorists and pedestrians and dramatically reduces the amount of noise pollution created

by train horns along rail corridors in populated areas. Wayside horns are a stationary horn system activated by the railroad-highway grade crossing warning system. Wayside horns are mounted at the crossing, rather than on the locomotive, to deliver a longer, louder, more consistent audible warning to motorists and pedestrians while eliminating noise pollution in neighborhoods for more than 1/2 mile along the rail corridor.

The wayside horn sounds like a train horn because the tone modules in the horns were digitally recorded from an actual locomotive horn. After receiving the signal from the railroad's track circuit warning system, the horn mimics the train horn warning by cycling through the standard railroad whistle pattern until the train reaches the crossing. Once the train has entered the crossing, the wayside horn is silenced. A confirmation signal notifies the locomotive engineer that the wayside horn is functioning properly. When the locomotive engineer sees that the confirmation signal is flashing, he will not be required to sound his horn unless he detects an unsafe condition at the grade crossing. Coordination with the railroad operating company is essential since the wayside horn is directly connected to the railroad's crossing signal-warning system. The railroad operating company must issue instructions to their train crews regarding the sounding or non-sounding of the train's horn. The implementation of wayside horns at rail crossings does not establish a quiet zone. Currently, there are no rail crossings in Arizona that have wayside horns.

Wayside horns have been classified by the FHWA as a traffic control device for inclusion in the Manual on Uniform Traffic Control Devices (MUTCD). Under CFR Part 222.59 (a) (1), wayside horns may be used in lieu of a locomotive horn at any highway-rail grade crossing equipped with an active warning system consisting of, at a minimum, flashing lights and gates.

Creation of a Quiet Zone

Within the City's application, the City explained that a "quiet zone" will be created at Beaver Street, San Francisco Street and Enterprise Avenue, but that no changes will be made to the warning devices, roadway configuration, or pavement markings that would require Commission approval.

A quiet zone is a railroad grade crossing at which trains are prohibited from sounding their horns in order to decrease the noise level for nearby residential communities. The train horns can be silenced only when other safety measures compensate for the absence of the horns. The Federal Railroad Administration (FRA) train horn rule 49 CFR Parts 222 and 229, provides localities nationwide with the opportunity to establish quiet zones. The federal rule pre-empts all applicable state laws, regarding the sounding of locomotive horns at highway-rail grade crossings. To qualify, communities wishing to establish quiet zones must equip proposed grade crossings with adequate safety measures to overcome the decrease in safety created by silencing the train horns. The additional safety measures must be constructed at the community's own expense and must meet federal specifications. The federal rule also contains language which for the first time restricts the volume of train horns.

Staff Conclusions

Having reviewed all applicable data, Staff generally supports the City's application. By installing wayside horns, and the "No Train Horn" signs at Steves Blvd. and Fanning Drive, Staff believes these modifications will provide adequate warning to the public of the approach of a train. Having said that, Staff believes that the measures proposed by the City will provide for the public's safety. Therefore, Staff recommends approval of the City's application.

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Copy of the foregoing mailed
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