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2009 FEB 24 A 8:01

Staff Memorandum
Arizona Corporation Commission

DOCKETED

AZ CORP COMMISSION

DOCKET NO. RR-03639A-08-0618

To: THE COMMISSION

FEB 24 2009

From: Safety Division

Date: February 23, 2009

DOCKETED BY

RE: IN THE MATTER OF THE APPLICATION OF THE TOWN OF SAHUARITA TO UPGRADE AN EXISTING CROSSING OF THE UNION PACIFIC RAILROAD AT LA CAÑADA DRIVE IN THE TOWN OF SAHUARITA, PIMA COUNTY, ARIZONA, AT DOT CROSSING NO. 742-159-T.

Background

On December 29, 2008 the Town of Sahuarita ("Town") filed with the Arizona Corporation Commission ("Commission") an application for approval for the Union Pacific Railroad ("Railroad") to upgrade an existing crossing at the Railroad's tracks at La Cañada Drive in the Town of Sahuarita, Pima County ("County"), Arizona, at Railroad M.P. 1005.61—Nogales Subdivision, DOT Crossing No. 742-159-T.

Commission records indicate that Commission Decision No. 44999 approved the installation of automatic devices at La Cañada Drive. This decision was on 2/27/1975.

On September 27, 2006, Staff, the Railroad, County, and the Town participated in diagnostic review of the proposed improvements at La Cañada Drive. All parties present were in agreement to the proposed improvements at the crossing. The following is an analysis of the crossing in this application, including information about the crossing that was provided to Staff by the Town.

Geographical Information

La Cañada Drive is located in Pima County within the town limits of Sahuarita. The Arizona Department of Commerce estimates the Town's population at 23,190 for the year 2008. As one of Arizona's fastest-growing communities, the Town of Sahuarita is the newest jurisdiction in Pima County, incorporated in 1994. Currently 30 square miles, Sahuarita is located just 15 minutes south of Tucson and approximately 40 minutes north of the Mexican border. Transportation access is convenient with Interstate 19, part of the CANAMEX Corridor, running from Tucson through Sahuarita to the Mexican border.

The rail line that runs through this crossing is known as the "Anamax Mine Spur" with access coming from the Nogales Subdivision main line. The spur line runs in an

east to west direction, with the main line running in a north to south direction from Tucson into Nogales. The general area surrounding the railroad crossing is a mix of residential and industrial businesses, with a large mining operation to the northwest of the crossing that is owned by Asarco Mining Company. (See Appendix "A")

La Cañada Drive

The existing crossing will require upgrading due to the Town's La Cañada Drive Phase III project. The existing 2-lane asphalt roadway will be widened to accommodate three 12-foot lanes, with six-foot paved shoulders, curbs, and sidewalks. There will be one lane in either direction and a continuous center left turn lane for either direction. The Town's proposed crossing upgrades include replacing the existing incandescent flashing lights, gate mechanisms, bells and detection circuitry, with the latest in industry standards to include: 12 inch LED flashing lights, sidelights, cantilevers with 12 inch LED flashing lights, automatic gates, bells, and constant warning time circuitry. A new concrete crossing surface will be added, along with replacing any impacted pavement markings. The proposed measures are consistent with safety measures employed at similar at-grade crossings in the state. The estimated cost of the proposed railroad crossing upgrade is \$535,919.

Traffic data for La Cañada Drive was provided to the Town by the Pima Association of Governments (PAG). The data provided showed the Average Daily Traffic (ADT) for 2006 to be 5,200 vpd. No future traffic projections were given. The current Level of Service ("LOS") for this two lane road is LOS A.

Note: The American Association of State Highway and Transportation Officials (AASHTO) Geometric Design of Highways and Streets, 2004, states that the Level of Service characterizes the operating conditions on a facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. This is a measure of roadway congestion ranging from LOS A--least congested--to LOS F--most congested. LOS is one of the most common terms used to describe how "good" or how "bad" traffic is projected to be.

The posted speed limit on La Cañada is 45 MPH. Commission Rail Safety Section records, as well as Federal Railroad Administration ("FRA") accident/incident records indicate one accident at this crossing with one injury. The accident occurred on 3/07/1975 as a result of an auto running into the side of a train. 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 north 1.02 miles is West Sahuarita Road, an at-grade crossing and to the south is Twin Buttes Road, .53 miles, also an at grade crossing.

Train Data

Data provided by the Town regarding train movements through this crossing are as follows:

Train Count: 1 train per day

Train Speed: 10 mph freight

Thru Freight/Switching Moves: All moves through this crossing are thru freight, serving the mine. This is not a passenger train route.

Schools and Bus Routes

The closest school is a charter elementary school (Great Expectations Academy), .95 miles south of the crossing at the intersection of La Cañada Drive and Camino Antigua. There are no public schools within 1 mile of this crossing. Sahuarita Unified School District campus (primary school, intermediate school, middle school, and high school) is located approximately 2 miles from the crossing at 350 W. Sahuarita Road. Six school buses cross at this crossing four times, each school day.

Hospitals

Staff inquired about hospitals in the area, the Town's response is as follows:

There are no hospitals in the vicinity of the crossing. Roadway use by emergency vehicles is typical of other areas/roads around Town.

Hazardous Materials

The Town gave the following response when asked about hazardous materials crossing this crossing:

There are no regular occurrences of hazardous material vehicles utilizing the La Cañada Drive crossing, to the Town's knowledge.

Zoning

Staff requested the Town provide information regarding the type of zoning in adjacent areas from the crossing. The following was their response:

Areas southwest and southeast of the crossing are already developed as low density residential with typical lot sizes greater than 1 acre. Northwest of the crossing, there is a large active mining operation owned by Asarco. Northeast of the crossing there is an active Pima County landfill and a proposed commercial development.

Spur Lines

The Town gave the following answer regarding spur lines located in the area:

There have not been any spur lines removed within the area over the last three years, to the Town's knowledge.

FHWA Guidelines Regarding Grade Separation

The Federal Highway Administration (FHWA) Railroad-Highway Grade Crossing Handbook (Revised Second Edition August 2007) provides nine criteria for determining whether highway-rail crossings should be considered for grade separation or otherwise eliminated across the railroad right of way. The Crossing Handbook indicates that grade separation or crossing elimination should be considered whenever one or more of the nine conditions are met. The nine criteria are applied to this crossing application as follows:

		La Cañada
The highway is a part of the designated Interstate Highway System	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The highway is otherwise designed to have full controlled access	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The posted highway speed equals or exceeds 70 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
AADT exceeds 100,000 in urban areas or 50,000 in rural areas	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Maximum authorized train speed exceeds 110 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
An average of 150 or more trains per day or 300 million gross tons/year	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	N/A
Crossing exposure (trains/day x AADT) exceeds 1M in urban or 250k in rural; or passenger train crossing exposure exceeds 800k in urban or 200k in rural	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	N/A
Expected accident frequency for active devices with gates, as calculated by the US DOT Accident Prediction Formula including five-year accident history, exceeds 0.5	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	N/A
Vehicle delay exceeds 40 vehicle hours per day	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No

N/A = Information was not available to perform these calculations. However, based on information currently available, Staff does not anticipate that these criteria will be met by 2030.

Vehicular Delays at Crossings

Based on the current single track configuration, the Town gave the following response about delay time for vehicles at the crossing in this application. The delay time is measured from the point that the warning devices are activated at the crossing to the time after the train has cleared the crossing and the warning devices are reset.

Vehicle Delay due to Train crossing is approximately 5 minutes per day. (5 minutes per train crossing, 1 times per day) Trains do not typically stop in the vicinity of the crossing and therefore Vehicle Delay due to Trains stopping on the track is approximately 0 minutes per day.

Current delays fall well below the FHWA recommended threshold of 40 delay hours per day.

Another commonly used measure outlined in the FHWA Guidelines; the so-called Crossing Exposure Index (which is simply the product of the number of trains per day multiplied by the number of vehicles crossing daily) is currently not met at this crossing. It should be noted that the criteria identified in the FHWA material are not mandates, but guidelines established by the Federal Highway Administration, which serve to alert those having jurisdiction that potential problems may arise.

Grade Separation

With regard to grade separating this crossing, the Town gave the following reasons for not grade separating this crossing:

Due to low train volumes, minimal daily vehicle delay, limited La Cañada Drive ROW, adjacent land access needs (including existing private driveways and existing intersection of El Toro Road) and high costs, a grade separated crossing has been eliminated from consideration. The required horizontal and vertical geometry required for grade separated crossing would limit existing vehicular access from La Cañada Drive and encroach into adjacent landfill and mining property north of the crossing as well as private residential properties south of the crossing.

Staff has utilized the FHWA Guidelines to determine the potential need for grade separation at this crossing. Based on existing conditions, the crossing in this application meets none of the nine criteria for consideration of grade separation.

Crossing Closure

The area surrounding this crossing is highly developed with both commercial and industrial businesses. To close this crossing would have a negative affect on many of the

local businesses. Therefore, Staff would not recommend closure of this crossing at this time.

Staff Conclusions

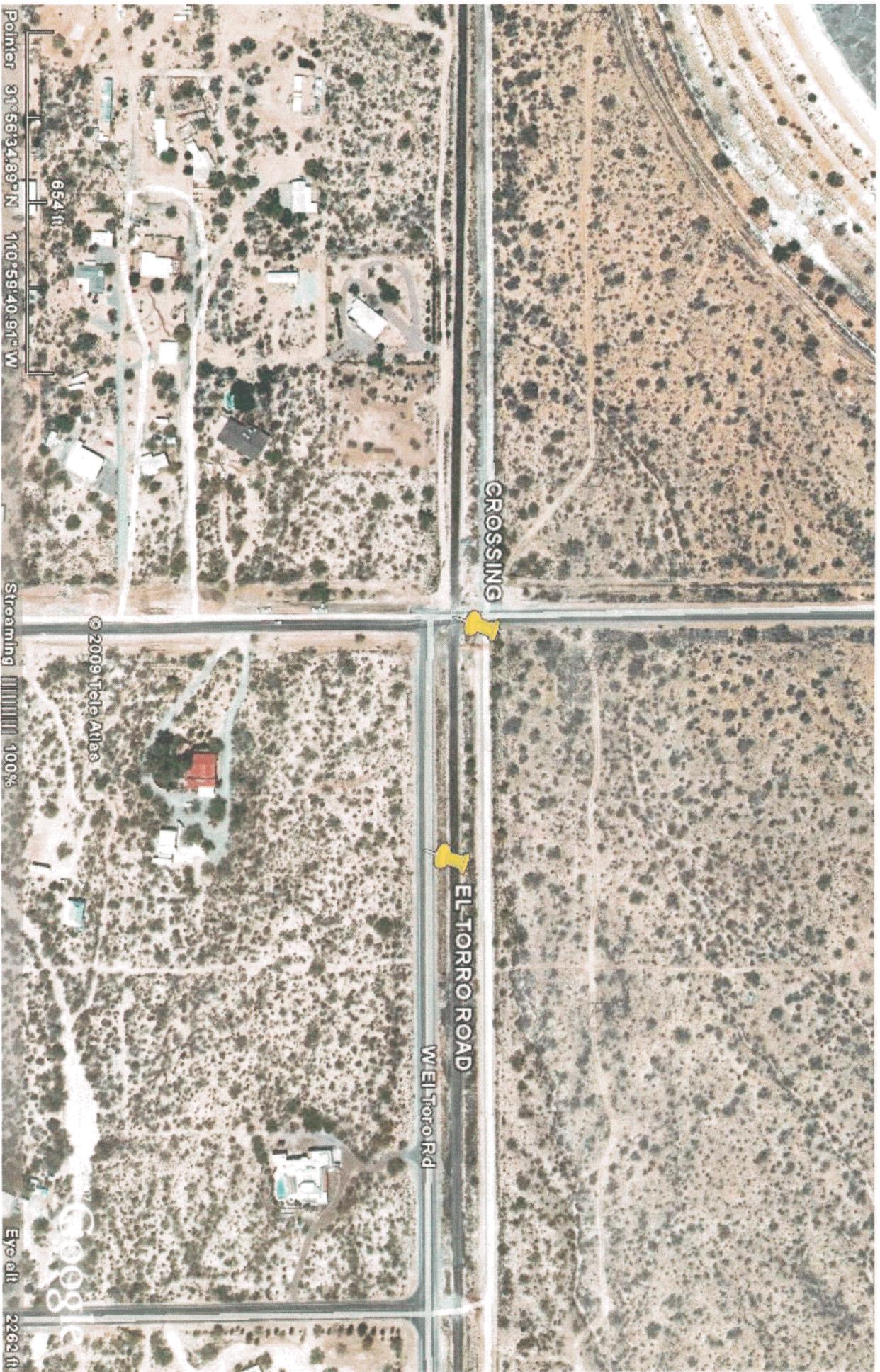
Having reviewed all applicable data, Staff generally supports the Town's application. Staff believes that the upgrades are in the public interest and are reasonable. Staff understands that the decision to grade separate is a complex one involving multiple parties, a number of years of time for planning and construction as well as substantial monetary resources. Having said that, Staff believes that the measures proposed by the Town are consistent with other similar at-grade crossings in the State and will provide for the public's safety. Therefore, Staff recommends approval of the Town's application.



Dave Raber



Brian H. Lehman



CROSSING

EL TORRO ROAD

W El Torro Rd

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Pointer 31°56'34.89" N 110°59'40.91" W

664 ft

Streaming 100%

Eye alt 2263 ft



SAHUARITA ROAD

W Sahuarita Rd



CROSSING

EL TORRO ROAD

TWIN BUTTES ROAD

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3839 ft

Pointier 31°56'48.52" N 110°59'39.33" W

Streaming 100%

Google

Eye alt 13283 ft