

COMMISSIONERS
MIKE GLEASON - Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
KRISTIN K. MAYES
GARY PIERCE



0000087574

DAVID RABER
Director, Safety Division

ORIGINAL

RECEIVED ARIZONA CORPORATION COMMISSION

2008 AUG 11 P 3:38

Staff Memorandum

AZ CORP COMMISSION
DOCKET CONTROL

To: THE COMMISSION

DOCKET NO. RR-03639A-08-0311

From: Safety Division

Date: August 11, 2008

RE: IN THE MATTER OF THE APPLICATION OF THE MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION TO UPGRADE AN EXISTING CROSSING OF THE UNION PACIFIC RAILROAD AT SARIVAL AVENUE IN THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, AT AAR/DOT NO. 741-782-L.

Background

On June 19, 2008, the Maricopa County Department of Transportation ("MCDOT") 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 Sarival Avenue, in the City of Goodyear, Maricopa County, Arizona at AAR/DOT No. 741-782-L.

MCDOT's filing in this application requests approval for the Railroad to upgrade an existing crossing of the Union Pacific Railroad at Sarival Avenue. MCDOT is the controlling road authority for Sarival Avenue. Flashing lights and automatic gates were first put into service at this location by Commission Decision No. 50800 in 1980.

The following is a break down of the crossing in this application, including information about the crossing that was provided to Staff by MCDOT and the Railroad.

Geographical Information

This railroad crossing is located at Sarival Avenue just north of Maricopa County Highway 85 ("MC 85") in Goodyear, Arizona (estimated population of 56,000 as of 2007). Sarival Avenue runs on a north-south trajectory with the rail line traversing Sarival Avenue on an east-west angle. For a map of the area, see Appendix A of this staff report.

Arizona Corporation Commission
DOCKETED

AUG 11 2008

2200 NORTH CENTRAL AVENUE, SUITE #300, PHOENIX, ARIZONA 85004

www.azcc.gov

DOCKETED BY *MM*

Sarival Avenue

The "MC 85, Estrella Parkway to Cotton Lane Project" includes improvement of MC 85 to a six lane roadway and adding traffic signalization of the MC 85 and Sarival intersection. Currently, Sarival Avenue is a two lane road with no dedicated turn lanes. Improvements along Sarival Avenue include widening of the roadway to four lanes plus a dedicated left-hand turn lane at MC85 for southbound traffic on Sarival Ave. In addition, a 10.5 foot raised median will be installed across the Railroad right of way. The railroad crossing is located approximately 200 feet north of MC 85, and 2,400 feet south of West Elwood Street.

The Railroad will install new 12 inch LED flashing lights with automatic gates in the median and outside the roadway near the sidewalk, as well as a new concrete crossing surface. Additionally, there will be cantilevers with 12 inch LED flashing lights installed for both directions of traffic. These improvements will replace the existing incandescent flashing lights and gate mechanisms as well as the timber crossing surface. Constant warning time circuitry will also be installed as part of this crossing improvement project. A traffic preemption circuit will interconnect the constant warning time detection system of the Railroad, to the traffic signal controller to allow the intersection to clear prior to the arrival of a train. The proposed measures are consistent with safety measures employed at similar at-grade crossings in the state.

Traffic data for Sarival Avenue was provided by MCDOT's website, and was collected in 2006. The Average Daily Traffic (ADT) counts show 1,656 vpd. The Maricopa Association of Governments ("MAG") projects the ADT to be 6,099 vpd in 2030. Information taken from the *July 1998 MC Highway 85, State Route 85 at Oglesby to 75th Avenue Final Corridor Improvement Study, Section 3.2.2 Unsignalized Intersections*, states the intersection of MC 85 and Sarival Avenue operates at Level of Service (LOS) A in the existing condition utilizing the 1997 ADT's.

Traffic information obtained from the *July 2006 Access Control and Corridor Improvement Study, MC 85 75th Ave to Turner Rd, Section 3.3 Future Year Conditions and Level of Service*, indicates the intersection of MC 85 and Sarival Avenue will operate at a LOS B utilizing 2026 projected traffic data. This analysis assumed that MC 85 will be upgraded to a six lane roadway section.

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 Sarival Avenue is 45 MPH. Commission Rail Safety Section, as well as Federal Railroad Administration ("FRA") accident/incident records indicate no train/vehicle accidents on Sarival Avenue.

Regarding alternative routes from this crossing, to the west approximately one mile is Cotton Lane and to the east approximately one mile is Estrella Parkway. Both crossings are at-grade crossings.

The estimated cost of the railroad crossing improvements is \$575,057. MCDOT and the City of Goodyear are sharing the cost of the crossing improvements.

Train Data

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

Train Count: Average of 2-3 trains per day

Train Speed: 25 mph

Thru Freight/Switching Moves: There are thru train movements as well as switching movements at this crossing.

Schools and Bus Routes

Information about schools and school buses in the area was provided by MCDOT. There are ten schools near the Sarival Avenue crossing. The Sarival Avenue crossing is in the Avondale Elementary School District No. 44 and Agua Fria Union High School District. The following are the schools in the districts:

High Schools:

- ✓ Agua Fria Union High School, 750 East Riley Drive, Avondale 85323
- ✓ Estrella High School, 5100 N. Central Ave, Avondale, 85323

Elementary Schools:

- ✓ Centerra Mirage School , 15151 W Centerra Dr. South Goodyear, AZ 85338
- ✓ Desert Star School , 2131 South 157th Avenue Goodyear, AZ
- ✓ Desert Thunder School , 16750 W. Garfield Goodyear, AZ 85338
- ✓ Lattie Coor School , 1406 N. Central Avenue Avondale, AZ 85323
- ✓ Michael Anderson School, 45 S. 3rd Ave, Avondale, AZ 85323
- ✓ Wildflower School, 325 S. Wildflower Drive, Goodyear AZ 85338

- ✓ Copper trails School, 16875 West Canyon Trails Blvd, Goodyear, AZ 85338
- ✓ Eliseo C. Felix School, 540 La Pasada Goodyear, AZ 85338

Per a phone conversation with Lynn Rumble (Avondale Elementary School District Transportation Supervisor), there is one school bus that crosses this intersection twice daily. On August 8, 2008, Staff verified with Ms. Rumble that the bus trip information is correct. Additionally, she stated the Railroad is conscious about the length of time the Sarival crossing is blocked during their switching operations. Ms. Rumble said there is no issue with the Railroad excessively blocking this crossing.

Hazardous Materials

Staff asked MCDOT if they knew of any hazardous material traffic across this crossing, and this was their answer:

We are unable to provide specific traffic counts for vehicle carrying hazardous materials. Based on information from the Maricopa County Department of Transportation, there are no restrictions on vehicles carrying hazardous materials on this roadway. Sarival Avenue is not registered in the National Hazardous Material Route Registry.

Hospitals

The main hospital in the area is West Valley Hospital located at 13677 W. McDowell Road, Goodyear, Arizona 85395, which is approximately 7.5 miles away from the intersection. Per a phone conversation with hospital personnel, MCDOT was advised that the emergency service vehicles select their route based on the shortest distance to their destination.

Zoning

MCDOT gave the following response as to how the surrounding areas from this crossing are zoned:

The parcels north of the railroad crossing is identified as City Code Zone I-2 - General Industrial Park, and the parcels to the south of the tracks are identified as City Zone Code PAD- Planned Area Development, which are intended to accommodate and promote residential and non residential developments. The area to the south of the tracks is currently farm land but residential developments are anticipated.

Spur Lines

MCDOT was unable to obtain any information about spur lines in this area from the railroad.

Grade Separation

With regard to grade separating Sarival Avenue, MCDOT gave the following response:

No studies were performed to evaluate if an overpass was required. With the proposed improvements to the intersection of MC 85 and Sarival Avenue and the close proximity of the railroad crossing from the proposed intersection (approximately 200-ft north of MC 85) the location of the at-grade crossing remains unchanged. A grade separation would have the following undesirable consequences:

- *Access to existing businesses along Sarival Avenue would be severed for approximately 2,300-ft north of the railroad tracks.*
- *Access to existing farm fields along MC 85 would be severed for approximately 4,600-ft along MC 85 (2,300-ft east and west of Sarival Avenue).*
- *There are several existing utilities in Sarival Avenue that cannot support 30-ft of additional embankment needed for a grade-separated crossing.*
- *There is insufficient right-of-way to accommodate 30-ft high embankment slopes along Sarival Avenue and MC 85.*

MCDOT's initial calculations yield a cost of \$20,000,000 to construct a grade separated crossing. The following are included in the cost for a bridge over the UPRR tracks;

- *The cost for retaining walls along the east and west legs of MC 85 and the north leg of Sarival Avenue in order to retain slopes within the existing right of way.*
- *The cost for new right of way along the south leg of Sarival Avenue as the County does not have any existing right of way along the south leg of Sarival Avenue.*
- *The cost to reconstruct Sarival Avenue as needed due to the bridge construction.*

FHWA GUIDELINES

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:

		Sarival Ave.
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	NO
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	NO
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 ¹	NO
	Crossing meets the criteria by 2030	Unknown
Vehicle delay exceeds 40 vehicle hours per day	Crossing Currently meets the criteria	NO
	Crossing meets the criteria by 2030	NO

¹ The Accident Prediction Formula predicts the accident frequency for this crossing to be 0.008717.

Vehicular Delays at Crossings

Based on the current single track configuration, MCDOT 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.*

- 1) *Traffic blocking delay per train is 282 seconds for a train passing the crossing (0.42 veh-hr per train).*

- 2) *Traffic blocking delay per train is 635 seconds for a train stopped at the crossing (2.15 veh-hr per train).*

Crossing Closures

Given the amount of growth in the area, and the projected future ADT, Staff would not recommend a closure of Sarival Avenue at this time.

Staff Conclusions

Having reviewed all applicable data, Staff supports MCDOT's application. Staff believes that the upgrades are in the public interest and are reasonable. Therefore, Staff recommends approval of this application.



Dave Raber
Director
Safety Division



Brian H. Lehman
Railroad Supervisor
Safety Division



Pointer 33°24'15.19" N 112°24'32.01" W elev 907 ft

5124 ft

Image © 2008 DigitalGlobe
© 2008 Europa Technologies
© 2008 Tele Atlas

Streaming 100%

© 2007
Google

Eye alt 18604 ft