

1.0 Project Background

Since Alum Creek Dam, Reservoir, and State Park were built in the 1970s, and Polaris Parkway and its interchange with I-71 were completed in the mid 1980s, Delaware County and County Road (CR) 10 (known also as South Old State Road) have both experienced a rapid increase in development and traffic congestion. Residential development in subdivisions that connect to CR-10 has been a major contributor to commuter peak hour congestion. Traffic loads on routes parallel to CR-10, such as US-23 and I-71, have also increased. With this increase in traffic and congestion, the number of crashes occurring along the corridor has also increased.

For this reason the Delaware County Engineer contracted with URS to perform a preliminary screening of corridor capacity and safety conditions in the spring/summer of 2010. The analysis examined traffic, crashes, and environmental issues along the CR-10 corridor from just south of Polaris Parkway (Wynstone Drive) to CR-10's intersection with US-36/SR-37. The results of the analysis show that a transportation need currently exists within a subset of the longer corridor, beginning at Wynstone Drive and extending to Abbey Knoll Drive.

CR-10 has experienced significant growth in vehicular traffic over the last ten years due to both residential and commercial development in the area. Numerous roadway improvements have been implemented by the County Engineer at various locations in an attempt to accommodate the increase in traffic. These improvements include intersection upgrades at East Powell Road, Orange Road, and Lewis Center Road. These isolated intersection improvements, however, have not been enough to keep up with traffic demands and have led to the need to study a larger corridor to determine the nature and location of all necessary improvements. In fact, all three intersections currently operate well into the level-of-service "F" range and will continue to get worse as traffic volumes are projected to increase substantially in the future. Detailed results of the intersection capacity analyses are included in Appendix A.

1.1 Purpose of the Proposed Action

The purpose of this project is to reduce crashes along CR-10, from Wynstone Drive to Abbey Knoll Drive, to maintain a safe and efficient transportation facility.

1.2 Need for the Proposed Action

The following need has been identified within the proposed project area:

- Safety.

1.2.1 Safety

Crash data for the years 2007, 2008, and 2009 was obtained for the facility as part of URS's corridor capacity and safety screening conducted in the spring/summer of 2010.

Between 2007 and 2009, a reported 226 crashes occurred between Wynstone Drive and Abbey Knoll Drive which is 2.1 miles long. With an ADT of just over 20,000 vehicles a day, the 226 crashes yield a crash rate of 5.16 crashes per million vehicle miles travelled (CPMVMT), more than double the statewide average for a 2-lane roadway segment in an urban area of 2.29. A large majority of crashes occurred under no adverse weather, under dry road conditions, in daylight and on straight/level road contours. Rear end crashes were the leading crash types followed by left turn and angle crashes. Failure to yield and following too closely combined for a large majority of the crash contributing factors. All of the above-mentioned factors are symptoms of an over-congested roadway with little or no access management techniques in place. Details of the crash analyses have been included in Appendix B.

It is noteworthy that a fire/emergency medical services (EMS) station is within the project corridor. Orange Township Fire Department Station 362 is located at 7307 CR-10, just northeast of the intersection of CR-10 and East Orange Road, and just south of the project northern terminus. Crashes that occur along this southern segment of CR-10 that block or slow traffic will have negative impacts on emergency response times from this station on emergency and fire runs to the south.

The results of the 2010 URS corridor capacity and safety screening show that a safety need currently exists within the subset of the corridor from Wynstone Drive and Abbey Knoll Drive.

1.3 Goals and Objectives

The following goals and objectives have been identified within the proposed project area:

- Mobility, Enhancement of Pedestrian and Bicycle Transportation, and Community Connectivity;
- Accommodation of Transit,
- Quality of Life.

1.3.1 Mobility, Enhancement of Pedestrian and Bicycle Transportation, and Community Connectivity

The Mid-Ohio Regional Planning Commission (MORPC) has mandated that this project will follow their newly-adopted “Complete Streets” Policy¹. Complete Streets are roadways designed to safely and comfortably accommodate all users, including, but not limited to motorists, cyclists, pedestrians, transit and school bus riders, people with disabilities, delivery and service personnel, freight haulers, and emergency responders. “All users” includes people of all ages and abilities. The purpose of MORPC’s Complete Streets is to reduce congestion and costs associated with a limited transportation system.

¹ Mid-Ohio Regional Planning Commission (MORPC). 2010. MORPC Complete Streets Policy. http://www.morpc.org/transportation/complete_streets/completeStreets.asp

CR-10 currently has a few disconnected sections of pedestrian/bike path in the southern section of the project area. These disconnected paths are generally associated with specific residential developments. The Orange Township Parks, Trails & Greenways Master Plan (updated October, 2008) expressed the goal of providing a north/south connection through the center of the township by completing a trail along CR-10. The CR-10 corridor is shown as a proposed regional bikeway on MORPC's August 2007 Proposed Regional Bikeway Plan. This north-south bikeway would connect with proposed east-west regional bikeways such as those planned at Powell Road, Lewis Center Road, Cheshire Road, Berlin Station Road, and US36/SR37. It would also connect with a planned trail along Orange Road, which is shown as a "priority trail link" on the Orange Township Parks, Trails & Greenways Master Plan.

A dedicated trail along CR-10 that would improve bicycle and pedestrian safety, encourage bicycle traffic, and connect to other proposed trails is currently lacking. Connecting the growing residential subdivisions of southern Delaware County to the major employers and shopping districts in the Polaris vicinity is a project goal. A safe alternative is needed to bicycle travel on US-23, which currently does not have bicycle accommodations, making this roadway risky for bicycle travel. Connectivity is currently lacking of the subdivisions to Alum Creek State Park, Orange Township Hall Park (southwest and northeast of the intersection of South Old State Road and East Orange Road), and a small Berlin Township park just northwest of the intersection of Lackey Old State Road and Cheshire Road.

Pedestrian and bicycle improvements to CR-10 are consistent with various development plans, including the 2001 Delaware County Thoroughfare Plan, the Orange Township Comprehensive Land Use Plan (2010) and the Berlin Township Comprehensive Land Use Plan (1999, currently being updated). The proposed trail component is compatible with MORPC's August 2007 Proposed Regional Bikeway Plan as well as the October, 2008 Orange Township Parks, Trails & Greenways Master Plan.

1.3.2 Accommodation of Transit

Another aspect of MORPC's Complete Streets Policy is the accommodation of transit. This means that projects should involve the local transit agency in the design process to ensure that sufficient planning and design for access to transit vehicles and to transit facilities is provided. Two transit agencies currently service the general project area. The Central Ohio Transit Authority's (COTA) service is centered on Columbus and Franklin County. The Delaware Area Transit Agency (DATA) services Delaware County. The closest that one of COTA's routes comes to the project is the intersection of Polaris Parkway and Gemini Parkway, 0.4 miles to the east. DATA's Green Route crosses South Old State Road between stops at US-23/East Powell Road and Polaris Mall. DATA's demand response service, offered to residents of Delaware County, travels CR-10 when the need arises.

1.3.3 Quality of Life

Improved quality of life for corridor residents is envisioned by providing alternative means of access (bicycle, pedestrian, and transit) that could result from proposed improvements. It is also seen in the increased and more convenient access to nearby parks, shopping and employment. In addition, a safer, more free-flowing roadway will increase quality of life benefits for everyday motorists using the facility.

1.4 Summary

The purpose of this project is to improve safety along CR-10 by reducing the number of crashes resulting from roadway design, capacity, and geometric deficiencies, and to enhance transportation opportunities for pedestrian and bicycle traffic.

The roadway segment from Wynstone Drive and Abbey Knoll Drive has a history of traffic accidents with more than 226 crashes occurring over the past three years, yielding a crash rate of 5.16 CPMVMT, more than double the statewide average for a 2-lane roadway segment in an urban area of 2.29 CPMVMT. Traffic volumes along this segment of the corridor currently approach 20,000 vehicles per day and are expected to grow to nearly 30,000 vehicles per day by the year 2035.

Considering the projected increase in traffic and the associated crashes along the corridor, the project goals will focus on improving the following criteria:

- Safety,
- Mobility, Enhancement of Pedestrian and Bicycle Transportation, and Community Connectivity;
- Accommodation of Transit,
- Quality of Life.

1.5 Logical Termini/Independent Utility

The proposed CR-10 transportation improvements would begin at Wynstone Drive, 0.15 miles south of Polaris Parkway and terminate at Abbey Knoll Drive, 0.20 miles north of Orange Road, approximately 2.1 miles to the northeast. Approximately 600 feet on either side of CR-10 at Polaris Parkway (SR-750), East Powell Road, and East Orange Road are also included for intersection improvement purposes. The termini were chosen based on crash analysis data, which occurred within this 2.1-mile segment. This segment is seen to be an independent roadway section that has logical beginning and ending points and is a stand-alone project that is considered to be a reasonable expenditure of public funds even if no other sections of CR-10 are improved.