FREQUENTLY ASKED QUESTIONS

State Route 46 and New Road Roundabout

Q: The traffic signal is fine. Why not just add left turn arrows for all directions?

A: Traffic engineers use a scale referred to as Level of Service (LOS) to describe the efficiency of traffic flow on a roadway or intersection. LOS is typically defined by a letter grade (A-F), where LOS A and B are considered to be good; LOS C and D are considered to be acceptable, and LOS E and F are considered to be unacceptable. The LOS for the majority of movements at the intersection of State Route (SR) 46 and New Rd in both the morning and afternoon peaks are LOS B (good) and LOS C (acceptable). However, the purpose of the project is to improve safety. Adjusting the traffic signal timing may provide a minor improvement to the intersection's operational efficiency, but is expected to have little to no substantive impact on crash and injury reduction.

Based on the crash data analysis, left turn crashes account for 18% of the total crashes at the intersection, while nearly half (49%) are rear-end crashes, and another 11% are sideswipe/passing crashes. The highest contributing factor to crashes (42%) was 'followed too close/assured clear distance ahead'. Nine percent (9%) of crashes were caused by vehicles running the red light, and another 9% were caused by improper lane changes. These crash types indicate that finding sufficient gaps in traffic to turn left is not the only consideration. Additionally, queues from the signal may be unexpected to northbound motorists, as this is the first signal in approximately one-mile. The safety study recommendation to install a roundabout will address the pattern of left turn crashes, angle crashes caused by vehicles running the red light, sideswipe crashes associated with the westbound right turn movement, and is expected to reduce the occurrence of rear-end crashes. The Federal Highway Administration's *Crash Modification Factors Clearinghouse* provides expected crash reductions based upon similar intersections nationwide where a signalized intersection has been replaced with a multi-lane roundabout. Converting the signalized intersection to a roundabout is expected to reduce the occurrence of crashes that result in injury by 60-70%.

Q: Can a traffic light be installed at the intersection of N Beacon Drive and SR 46?

A: To justify a new signal, traffic conditions must meet certain standards, also known as "warrants". Signal warrants are based on an analysis of factors related to the existing operation and safety at an intersection. Signal warrants consider the potential to improve these conditions, taking into account factors such as traffic volumes, delay times, school crossings, and site conditions. Based on a review of the nine warrants that are relevant for the intersection of SR 46 and N Beacon Dr, the intersection does not meet any minimum threshold to recommend installation of a traffic signal. Installing a traffic signal where it is not warranted can increase the frequency of crashes, increase certain types of crashes such as rear-end collisions, and cause excessive travel delays by stopping the free-flow of traffic on the main road. Additionally, the intersection of N Beacon Dr is located less than 600-feet south of the signalized intersection with Willow Crest Dr/Notre Dame Ave, which does not meet ODOT's recommended signal spacing standards.

Q: Will installation of the roundabout make it harder for traffic from N Beacon Drive to get onto SR 46?

A: Converting the signalized intersection of SR 46 and New Road to a roundabout will influence traffic between New Rd and the intersection with N Beacon Drive. Roundabouts naturally provide a traffic calming effect as they are designed to physically reduce vehicle speeds. For example, traffic traveling northbound on SR 46 at 45 mph will reduce their speed to 20-25 mph as they enter and exit the roundabout, slower than under current conditions. Gaps in traffic will naturally occur as vehicles enter the roundabout at different times. This

contrasts with signalized intersections, which stop and release "platoons" of traffic when the signal turns green. While signals may produce longer gaps in traffic due to these platoons, roundabouts often produce more available gaps due to the varying entry and exit intervals, although the size of gap may not always be as large as those created by a signalized platoon.

Vehicles exiting N Beacon Dr to turn left onto SR 46 southbound will be able to continue this movement after construction of the roundabout. During peak hours when turning left from N Beacon Drive may be more difficult due to heavy traffic volume on SR 46, vehicles exiting N Beacon Dr can choose to turn right onto SR 46 northbound and use a traffic "loon" that will be added to the next adjacent intersection to the north at SR 46 and Notre Dame Ave/Willow Crest Dr. A loon is an area of added pavement provided to facilitate left turn or U-Turn movements. In this case, the loon is planned to be added to the southwest corner of SR 46 at Notre Dame Ave/Willow Crest Dr allowing northbound passenger vehicles to U-Turn at the traffic signal to continue south on SR 46. The loon is planned to be added in conjunction with a protected-permissive northbound left turn phase on SR 46 at Notre Dame Ave/Willow Crest Dr.

Q: N Beacon Dr is narrow at the intersection with SR 46, often requiring vehicles to back up to accommodate a bus or box truck turning onto N Beacon Dr. Can this be addressed as part of the project?

A: ODOT is committed to turning radius improvements on N Beacon Dr at SR 46 in accordance with design standards provided in the *ODOT Location & Design Manual, Volume 1*.

Q: Why can't ODOT add "service roads" that parallel SR 46 for local traffic? Why can't ODOT connect N Beacon Dr to Willow Crest Dr?

A: In many cases, service roads provide a benefit by reducing the number of access points along a major roadway (such as SR 46) and concentrating local traffic from adjacent businesses to a single access point. Service roads are often constructed to fulfill an identified purpose and need, to improve safety for example, by reducing the number of access points in an area with multiple, closely spaced, high-volume access points, or to reduce the severity and frequency of crashes on a segment of roadway. They may also be installed in areas where access to the major roadway is limited and adjacent development can only access the major roadway via a service road. There is currently no identified need for a service road on this section of SR 46. Furthermore, the construction of a service road would require the purchase of additional land for the proposed roadway, which would be costly, adversely impact adjacent homes and businesses, and require additional long-term maintenance by the local road authority.

Regarding a connection between N Beacon Dr and Willow Crest Dr, ODOT is responsible for Interstates, State, and U.S. routes. ODOT is not responsible for local routes. These are constructed and maintained by the city, village, county, or township, as applicable where the route is located. ODOT supports Local Public Agencies (LPAs) by managing contractual agreements with them, ensuring compliance with federal and state laws, and overseeing the administration of federal-aid projects initiated by LPAs.

Q: Why can't the speed limit be lowered instead? If drivers slow down, it would solve the problem.

A: In the establishment of legal and enforceable speed limits, all local and state agencies are bound by the requirements contained in the Ohio Revised Code (ORC). The ORC, along with the guidelines contained in the *Ohio Manual of Uniform Traffic Control Devices* (OMUTCD), provide a method to establish speeds that will be

acceptable and self-enforcing to the majority of reasonable motorists. A self-enforcing road is a roadway that is planned and designed to encourage drivers to select operating speeds that are in harmony with the posted speed. It is important that speed limits are considered reasonable by a majority of drivers. When the speed limit is set at a level that most drivers consider reasonable, the speed of vehicles is more uniform, resulting in a smoother flow of traffic.

Section 4511.21 of the ORC establishes the statutory speed limits for all roadway types and how those speed limits may be altered. Sometimes the statutory speed limits don't cover all of the different conditions that might make them higher (or lower) than desirable for the circumstances. Changes to statutory speed limits may occur based on the findings of a speed zone study. Speed zone studies consider many factors including, but not limited to, roadway characteristics (e.g., alignment and grade), development of the area, traffic volumes, crash data, and the speed vehicles are traveling. Speed data was collected at several locations on SR 46 and on New Rd as part of the 2023 Safety Study. This data was used to perform a preliminary screening of the existing speed limits and to determine if any change in speed limits would be appropriate. Based on the data collected, the existing speed limits on SR 46 and New Rd were found to be reasonable and appropriate.

Q: More crashes will occur at a roundabout due to those unfamiliar with their operation, or due to inexperienced drivers.

A: Nationwide, roundabouts are growing in popularity in all regions, including rural, suburban, and urban settings. They are constructed on local roadways and at state route intersections. They accommodate a variety of vehicle types including passenger vehicles, box trucks, semi-trucks, farm equipment, emergency vehicles, and school buses. Roundabouts are frequently constructed to solve an identified crash frequency or severity problem, to calm traffic, or to provide a traffic solution within a complex area (e.g., near railroad crossings, interstate ramp terminals near developed areas, etc.).

Studies have found roundabouts are generally unpopular by the public prior to construction, or in areas where most drivers are unfamiliar with their operation. However, as motorists become more familiar with the roundabout operation and start to see the benefits, including improved operational efficiencies, reductions in severe crashes, and traffic calming due to slower vehicle speeds, they often grow in popularity. Locally in northeast Ohio, ODOT has experienced operational and safety success at our roundabouts.

Two single-lane roundabouts have been installed by ODOT near K-12 schools in Medina County (SR 94 & Granger Rd in the Highland Local School District, and SR 57/SR 252/Speith Rd in the Buckeye Local School District). These roundabouts safely accommodate daily traffic to the schools, including buses and student drivers, and also accommodate a variety of sporting events with non-local traffic frequenting the area. Two multi-lane roundabouts have been installed by ODOT on SR 619 in Stark County near the Hartville Marketplace and Flea Market, which receives between 750,000 and 1 million visitors annually. During Memorial Day, 4th of July, and Labor Day weekends, the Marketplace often receives over 30,000 customers and the roundabouts installed on SR 619 safely and efficiently accommodate these traffic volumes, with both local and non-local visitors alike.

Q: Why not use the funding received to fix other roads instead?

A: The intersection of SR 46 and New Rd appeared on the annual ODOT Highway Safety Improvement Program (HSIP) list. Each year, ODOT studies intersections across the state that are identified on the HSIP with a history of fatal or injury-type crashes, or with a potential for crash reduction. The program compares intersections

or sections of roadway based upon similar characteristics, such as average daily traffic volume, roadway widths, shoulder widths, geometrics, etc., to identify how an intersection is performing compared to similar intersections statewide. As the intersection of SR 46 and New Rd was identified on this list, the project is eligible for safety funding, which is intended to be used to prevent serious injuries and traffic deaths on Ohio roads.

Q: An interchange at SR 11 and Kirk Road would reduce "through" traffic and "fix" the problem.

A: ODOT performed a preliminary screening of the need elements for an interchange at SR 11 and Kirk Rd, including project justification, required additional studies, possible timeframes, expected property impacts, and potential costs. Several components were examined as part of this assessment:

- **Traffic Volumes -** Average Daily Traffic (ADT) volumes on State Route 46 were examined through count data collected every three years. According to data collected on SR 46 both north and south of New Rd, ADTs have generally been decreasing since the early 2000s.
- **Interchange Spacing -** Based on *ODOT's Location and Design Manual (L&D V1, Sect. 502.3)*, the minimum spacing for a suburban interchange is 4 miles. Kirk Rd is 2.15 miles south of the Mahoning Avenue interchange and does not meet ODOT's minimum interchange spacing requirements.
- **Required Studies -** Additional studies would be required to evaluate the purpose and need for a new interchange, including an Interchange Justification Study (IJS) approved by the Federal Highway Administration. Studies at local roadways and intersections would also be needed to identify impacts of rerouted traffic volumes to the new interchange.
    - Capacity analyses would be needed to show the local roads are unable to handle the predicted traffic demands, supporting the need for the interchange.
    - Depending on intersection study outcomes, additional roadway or intersection traffic control improvements may be needed on surrounding local corridors and at intersections due to the rerouted traffic volumes. Roundabouts would be considered a viable intersection control alternative at these local intersections.
    - The Kirk Road corridor would likely require widening for turn lanes at the ramp intersections which could require replacement of the existing 2-lane bridge overpass.
    - Documentation showing the proposed interchange is consistent with local and regional land use and transportation plans would be required.
- **Property Impacts -** Based on an evaluation of two common interchange types (a diamond interchange or a partial cloverleaf interchange), at least 20 residences would need to be relocated to construct an interchange at Kirk Road and SR 11.

To accommodate the required studies, interchange costs and funding applications, property impacts and relocations, design and construction, it would take an estimated 15-25 years to construct an interchange at SR 11 and Kirk Road. Millions of dollars in funding would also need to be secured for this major transportation project. Based on this preliminary screening, it was determined that the addition of an interchange at SR 11 and Kirk Road is neither justified nor recommended at this time.