SR-16 Interchange

Traffic Assessment

Existing Roadway Conditions

The Columbus Road (SR-16) study corridor includes the intersections at Granview Road/Kendal Drive, the SR-161 Eastbound Ramps, and the SR-161 Westbound Ramps/Weaver Drive. Columbus Road is a rural, two-lane undivided Principal Arterial / Major Collector with a posted speed limit of 45 mph. Under the existing conditions, both ramp intersections operate with side street stop control while the Granview Road/Kendal Drive intersection is currently signalized.

Existing Roadway Traffic Analysis

Highway Capacity Software (HCS) was used to analyze the Design Year (2048) peak hour traffic conditions under the existing roadway configuration with the goal of identifying what improvements may be needed to serve the future traffic demand. This would determine whether the existing traffic control and lane configuration would provide acceptable levels of service (LOS) for the 2048 Build volumes and if not, help identify what capacity improvements would be required to do so.

Design year certified traffic projections indicate that development in the area will have an impact to future volumes in this area but not to the extent observed along some of the other study corridors. The following are some of the key findings based on the capacity analysis results for the existing roadway configuration and traffic control:

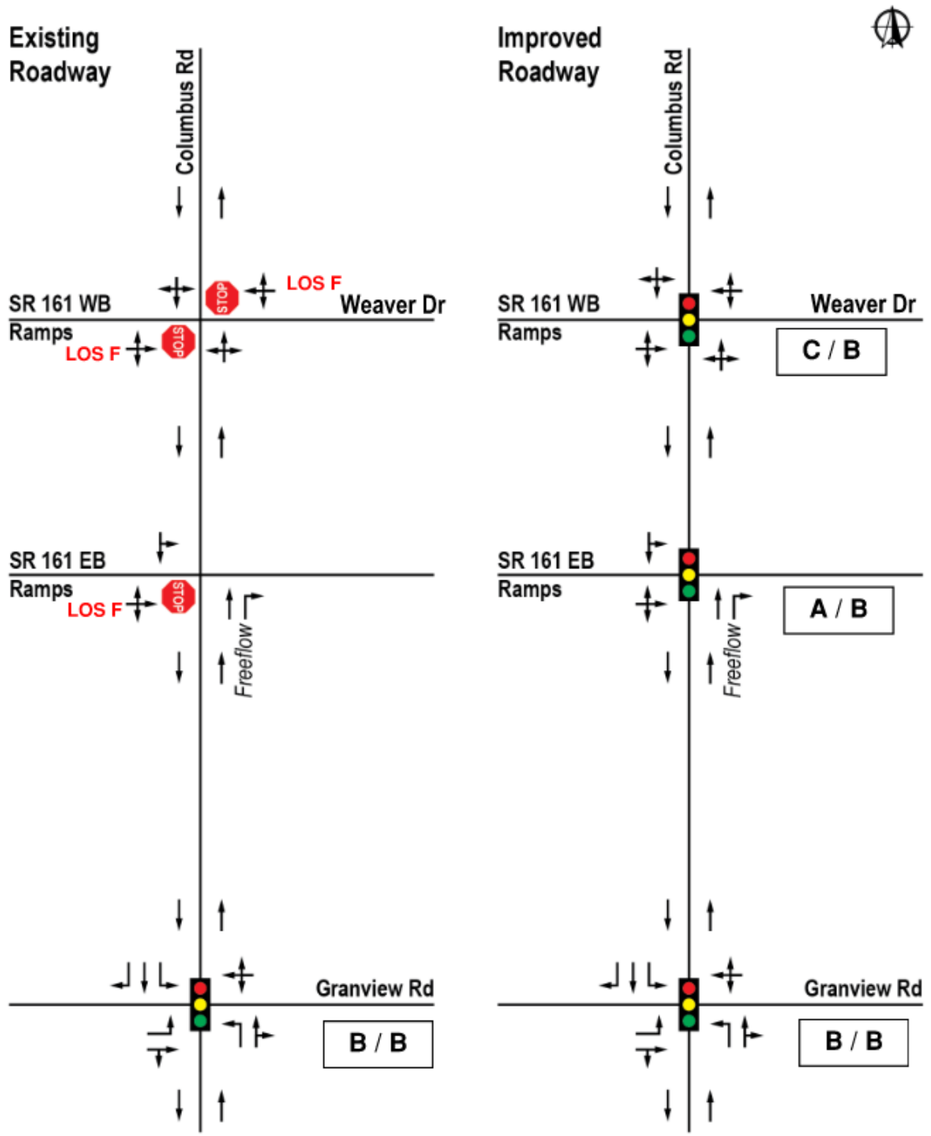
- The Granview Road/Kendal Drive intersection would be expected to continue operating at an acceptable LOS under its current signalized condition.
- The SR-161 Eastbound stop-controlled exit ramp would experience unacceptable LOS and delay of 95 seconds per vehicle during the PM peak hour.
- The SR-161 Westbound Ramps/Weave Drive intersection would experience unacceptable LOS with up to 75 seconds of delay during the AM peak hour and up to 100 seconds of delay during the PM peak hour for the stop-controlled approaches.

These results indicate that two of the study intersections along the Columbus Road (SR-16) corridor have insufficient capacity to accommodate the projected traffic volumes, and both lane usage and traffic control changes will need to be considered in order to mitigate the anticipated deficiencies.

Improved Roadway Conditions

HCS was then further utilized in accordance with the ODOT Analysis and Traffic Simulation (OATS) manual methodologies to evaluate these potential improvements. The lane configuration was assessed to determine the most efficient and economical way to achieve acceptable LOS at each intersection, see Figure 6 for the recommend lane use and traffic control.

Figure 6: SR-16 Traffic Signals Improvements



Improved Roadway Traffic Analysis
The analysis concluded that the existing lane configuration is sufficient and that only the installation of traffic signals at both ramp terminals would be needed to achieve acceptable LOS. The two new signals were analyzed as a coordinated system, while it was assumed that the existing traffic signal at Granview Road/Kendal Drive would remain uncoordinated given its location relative to the interchange. While the Granview Road/Kendal Drive intersection is just within the 3,200-feet threshold specified in the OATS manual, it is recommended to keep it uncoordinated given the limited need to platoon traffic along this particular corridor. Table 21 provides the HCS capacity analysis results including LOS and delay based on the lane configuration and traffic control shown in Figure 6**.**

Table 21: 2048 SR-16 HCS Intersection Summary AM/PM

INTERSECTION w/ SR-16	No Build 2048 AM		Build - Signal 2048 AM		No Build 2048 PM		Build - Signal 2048 PM	
	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
Grandview Rd	B	15.6	B	15.6	B	19.3	B	19.3
EB Ramps	-	-	A	8.6	-	-	B	10.1
WB Ramps	-	-	C	32.9	-	-	B	17.9

(-) TWSC

The proposed signalization would provide acceptable Levels-of-Service with all intersections operating at LOS C or better, no other widening or changes to the lane configuration would be recommended for the Columbus Road (SR-16) corridor.

Roadway Assessment

No pavement or lane configuration changes are necessary for Alternative 1.

Environmental Assessment

The proposed project will convert existing stop signs to traffic signals at the interchange. Reference Environmental Resources exhibits SR-161 Exhibit K, in Appendix N.

Aquatic Resources
The SR-16 interchange is located within the Licking Watershed (HUC 05040006). Per the Ohio EPA 401 Water Quality Certification for Nationwide Permits (NWP) map, the project is eligible for a NWP. Based on a review of the USGS StreamStats data, there is one (1) mapped stream, Salt Run, that flows through the interchange. Any impacts below the Ordinary High Water Mark (OHWM) of jurisdictional streams will be subject to regulation by the U.S. Army Corps of Engineers (USACE) and by the Ohio EPA.

The National Wetland Inventory (NWI) Wetlands Mapper was reviewed for the project area. According to available NWI data, One (1) mapped wetland feature is located within or directly adjacent to the project area. Impacts to jurisdictional wetlands are subject to regulation by the USACE and by the Ohio EPA. Impacts to non-jurisdictional (isolated) wetlands are subject to regulation by the Ohio EPA.

A thorough ecological field investigation will be needed to confirm the existence of and determine the locations of these features, and to identify any additional aquatic resources present within the project area.

Floodplains
A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) was conducted. Portions of the project are located within FEMA designated Special Flood Hazard Areas (SFHA), including the 500-year and 100-year floodplain and the floodway. Impacts in these areas will require coordination with the local floodplain administrator. Additional hydraulic studies and a determination of floodplain impacts, including determinations of floodplain permitting requirements, will be conducted during the Preliminary Engineering Phase of the project.

Threatened and Endangered Species
According to the United States Fish and Wildlife Service (USFWS), no portion of the proposed project is located within a bat buffer, a bald eagle buffer, or within an eastern massasauga range polygon. The USFWS Information for Planning and Consultation (IPaC) website was reviewed (February 2025) and the following species are listed for the project area:

- *Myotis sodalis* (Indiana bat) – Endangered

Additionally, the bald eagle (*Haliaeetus leucocephalus*) is also protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The project may require impacts to wooded habitat for both federal and state listed bat species. A more detailed review for Threatened and Endangered species habitat and bald eagle habitat will be conducted as part of the future ecological investigation. There are no streams in the project area that have a drainage area greater than 5 square miles. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat.

Based on a search of the ODNR Natural Heritage Database, there is a record for the state-listed potentially threatened Three-birds Orchid (*Triphora trianthophoros*) less than 0.5 mile southwest of the SR-16 interchange. The habitat for this species includes mature deciduous forest. Impacts to mature forest may require a species survey and relocation during the bloom period in August. ODNR had no additional records for rare or endangered species or other significant features within the project area or within a one-mile radius of the project area.

Cultural Resources
The project area was studied extensively as part of the original roadway construction of SR-161 on the current alignment. Based on a review of the State Historic Preservation Office's (SHPO) GIS website, there

are no sites listed on or determined to be eligible for listing on the National Register of Historic Places (NRHP) located in or near the SR-16 interchange. Should the project require additional right-of-way, additional evaluation of historic/architectural and/or archaeological sites may be required during the NEPA clearance phase of the project.

Regulated Materials
Per a review of the Ohio Regulated Properties Search (ORPS) website, there are two (2) records for regulated materials adjacent to the project area. There is a Resource Conservation and Recovery Act (RCRA) record for a Conditionally Exempt Small Quantity Generator (CESQG) located north of the SR-16 interchange, at the location of an abandoned gas station. There are no other records associated with this property. There is one (1) record for a Leaking Underground Storage Tank (LUST) located within SR-161 right-of-way east of the interchange. The current status for the listing is Disproved. Neither location will be impacted by the proposed improvements. Based on a review of Google Aerial imagery, all parcels that may be impacted by the project represent "exempt" land use categories. The adjacent former gas station property represents a "high risk" land use.

Section 4(f)/Section 6(f) Resources
The property to the southeast of the interchange is part of the Spring Valley Nature Preserve, managed by the Granville Recreation District. Impacts to this property, both directly and indirectly through temporary occupancy or access restrictions, are not and will require coordination under Section 4(f) of the Department of Transportation Act of 1966. There are no known publicly and privately-owned historic sites present in or adjacent to the SR-16 interchange. Based on a review of the Land and Water Conservation Fund projects map available from the Trust for Public Land, there are no Section 6(f) properties currently located in or immediately adjacent to the SR-16 interchange.

Air Quality
All of Ohio is now in attainment for carbon monoxide (CO). Therefore, the project is considered exempt from a project level conformity analysis for CO. Licking County is not located within a PM 2.5 nonattainment or maintenance area, thus, no further PM 2.5 analysis is required. There are sensitive land uses within 500-feet of the SR-16 interchange and the project overall proposes to add capacity within 500-feet of sensitive land uses. Therefore, a Qualitative MSAT analysis will be required, following ODOT's and FHWA's processes. As ozone is handled at the regional level, the project must be listed in the 2024-2027 Statewide Transportation Improvement Program (STIP) for ozone to be addressed. A request should be made to place the project on the STIP to ensure it is included in the latest regional conformity analysis. The NEPA decision document cannot be signed until the project is in an approved STIP.

Noise
Potential Noise Sensitive Areas (NSA) were identified through a review of existing aerial mapping. The ODOT *Flowchart for When a Noise Analysis is Needed* (ODOT, 11/23/2012) was consulted to determine whether a noise analysis would be required for the project. As the overall proposed project includes the increase the number of through traffic lanes along SR-161, potential noise impacts will need to be assessed for the entire project area during the NEPA clearance phase of the project, regardless of the preferred alternative. A Noise Analysis will be conducted following ODOT's processes and procedures.

Farmlands
The SR-16 interchange project area is located within a census designated urbanized area. Land within an urbanized area or committed to urban development or water storage is not subject to the Farmland Protection Policy Act (FPPA).

Water Wells and Drinking Water Resources
There are no domestic water wells located within the proposed SR-16 interchange project area. The northwest portion of the SR-16 interchange is within a Ground Water Drinking Water Source Protection Area for the Village of Granville Community System. Impacts in this area may require coordination with the local public water system and plan notes. There are no Sole Source Aquifers in Licking County.

Community Impacts
The SR-16 interchange provides direct access for the Village of Granville and Granville Township to SR-161. Given the anticipated increase in traffic resulting from ongoing development in the area, residents living near the SR-37 interchange may benefit from the proposed improvements under each alternative, which will reduce delay times for motorists, resulting in shorter queues and less engine idling at the interchange. Community impacts will be assessed as part of the NEPA process.

Right-of-Way Requirements
There are no right-of-way encroachments or temporary easements needed for the work in Alternative 1.

Utility Impacts
No existing utilities are anticipated to be impacted. An existing fiber optic line crosses the westbound ramps and existing gas and water lines cross Weaver Drive to the east near the intersection. A catch basin southwest of the intersection collects water in the system from the north and outlets in the wooded area to the east. Signal poles and conduit are to be placed to avoid conflicts.

Safety Assessment
Most of the trips along the Columbus Road (SR-16) corridor travel from Northbound Columbus Road to SR-161 Eastbound and from SR-161 Westbound to Columbus Road Southbound. The existing TWSC ramp terminals were determined to be insufficient for the increased traffic volumes. The traffic control coupled with the increased volumes will result in an elevated potential for crashes and more aggressive driving behaviors as motorists become impatient and accept smaller gaps in traffic. This corridor however has lower traffic volumes and the installation of signals without changes to the existing lane configuration should provide adequate improvements to traffic flow and thus safety.

The installation of a new signal is expected to reduce crashes by assigning right of way to drivers and dedicating protected time for side street movements. Signals can reduce angle crashes compared TWSC intersections by eliminating the need for left turning vehicles to find gaps in mainline traffic. Installing a proposed signal can also increase the number of rear end crashes, but overall, installing a signal at an

existing TWSC intersection is expected to reduce the total crashes. There is a net benefit to installing a traffic signal on this corridor, especially when considering the projected delays under the existing stop-control condition.

Multimodal Assessment

The Central Ohio Workforce Transit Plan denotes SR-16 as a short-term recommended route to connect Newark and Granville to Pataskala, Etna, and Reynoldsburg via bus. The implementation of traffic signals at the SR-37 interchange with SR-16 would be beneficial to these bus routes for the safety of turning movements instead of the existing stop conditions with cross traffic not stopping.

Lighting Impacts

Outside of mainline SR-161, interchange lighting at SR-16 is not expected to be impacted.

Costs

A construction cost estimate was prepared for Alternative 1. Incidentals were expressed as percentages of total construction cost due to limited detailed information. The cost estimate was inflated to 2030 for the anticipated construction mid-point date. An additional 30% contingency was applied to the construction cost based on the planning level of design. Table 22 shows the construction cost for the alternatives and Appendix M shows itemized costs.

Table 22: SR-16 Alternatives Cost

Alternative	Description	Construction Costs (in 2030 Dollars)	Right-of-way Costs
1	Signals	$820,950	$0
2	No-Build	$0	$0

Table 27: Comparison Matrix – SR-16 Interchange

Evaluation Criteria	Alternative 1 Traffic Signals	Alternative 2 No-Build
Traffic Assessment		
Roadway Assessment		
Environmental Assessment		
Right-of-Way Requirements		
Utility Impacts		
Safety Assessment		
Multimodal Assessment		
Lighting Impacts		
Construction Cost (2030 dollars)	$820,950	$0