Right of Way
wreed 06/20/2023

Utilities
SBUSKIRK 06/23/2023

Utilities
E Pyles 06/30/2023

Planning and Programming
BCox 06/30/2023

Bridge Design
kakers 07/12/2023

Survey
farettke 07/13/2023

Mobility
whebble 07/14/2023

Bridge Design
ddibling 07/17/2023

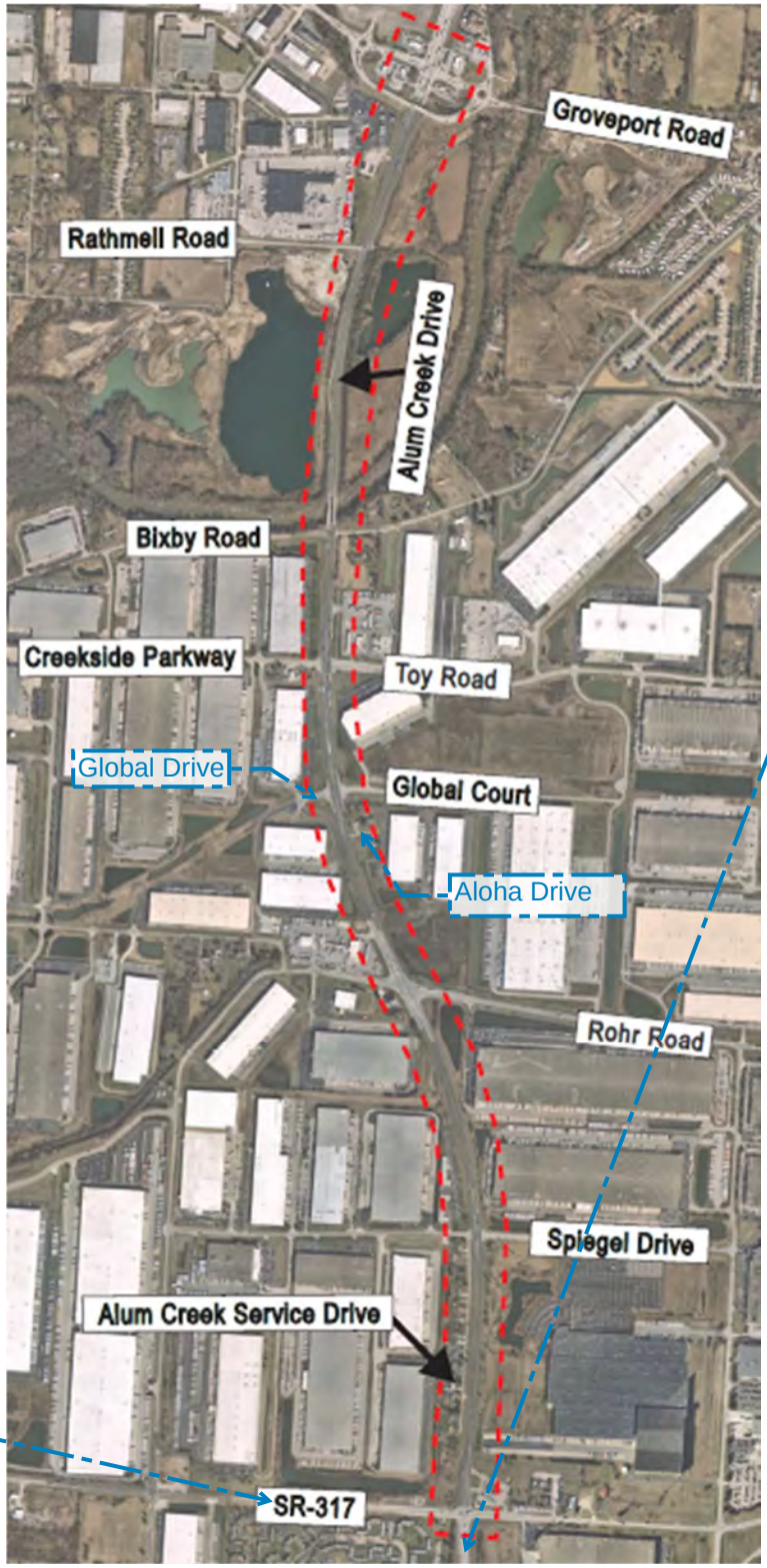
Chief Deputy
Brad Foster 08/25/2023

Highway Design
Matt Rehfus 08/30/2023

FRA-CR122-0.00 (PID 115792)
ALUM CREEK DRIVE

FEASIBILITY STUDY

Ultimately an ODOT question, but I don't see how this is 0.00. There is a segment of Alum Creek Drive south of SR-317 that is still within Franklin County. If it's already been programmed and too late to change, that's fine too



/ London-Groveport Road

June 14, 2023

Thanks for bookmarking the PDF, very helpful.

prepared by?

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Introduction

Project Background

Located on the south side of Columbus, Ohio, the Rickenbacker area has been the focus of public and private development for decades. As a critical intermodal asset that connects air, rail, and truck freight modes, Rickenbacker Global Logistics Park is one of the region's most important and valuable economic assets. The area is anchored by the Rickenbacker International Airport, a cargo-focused airport through which 300+ million pounds of domestic and international freight flows, and the Norfolk Southern Intermodal Terminal, a rail-to-truck facility with a 400,000-container annual capacity. Combined with the Foreign Trade Zone (#138), it is no surprise the area has grown into a globally competitive logistics hub with more than 75 million square feet of warehouse, industrial, and distribution facilities.

can you explain the reason for the range in truck percentage?

In recognition of this important asset, the Mid-Ohio Regional Planning Commission (MORPC) completed *The 2018 Rickenbacker Area Study* which presented a high-level comprehensive plan for the area, examining safety, freight routing, workplace mobility, economic development, employment forecasts, and quality of life. From a transportation perspective, the MORPC study recommended Alum Creek Drive widening from Groveport Road to SR-317. Currently, Alum Creek Drive (CR-122) is a four-lane divided Principal Arterial which functions as the main entrance to the Rickenbacker Global Logistics Park from I-270. As such, the existing Average Daily Traffic (ADT) in the corridor is a maximum 37,490 vehicles with 23-29% trucks. Cumulatively, traffic is expected to grow between 25-28% from 2022 to 2048. Roughly, this equates to an additional ~10,000 vehicles per day (including 2,500 more trucks) in the segment north of Rathmell Road.

remove maximum?

The segment north of Rathmell Rd is less than 1000' before you reach the existing 3-lane section. Consider explaining why 2.7 miles of corridor needs widened if the growth expected is only north of Rathmell, or otherwise rephrase this sentence.

Purpose and Need

The purpose of the FRA-CR122-0.00 project is to improve capacity and safety along the Alum Creek Drive corridor between London-Groveport Road (SR-317) and Groveport Road to serve vehicular, pedestrian, and bicycle traffic demand. Further, there is a need to improve operations at intersections along the corridor, given the high percentage of trucks serving the Rickenbacker Global Logistics Park.

include distance (2.7 miles)

Previous Studies

In addition to *The 2018 Rickenbacker Area Study* in which MORPC recommended the widening of Alum Creek Drive, the Franklin County Engineer previously completed a traffic analysis and a preliminary engineering study for a widening of Alum Creek Drive. A draft report was prepared by Stantec in July 2017 but not finalized (Appendix A). The preliminary engineering study analyzed potential typical sections for a six-lane facility, along with drainage considerations, bridge construction, and MOT for the corridor with the purpose of minimizing cost, right-of-way, and other factors.

Should we mention here that there is currently COTA fixed route bus service along this corridor with plans to possibly upgrade to BRT as part of the Southeast LinkUS initiative?

Agreed, transit should be addressed as one of the modes of transportation we need to accommodate.

Just curious as to why not / whether any other alternatives should have been evaluated. Not looking to go back on this but if there is a logical explanation of why we didn't look at, for example, localized intersection improvements only as an alternative, I think it should be detailed. Are there any other logical intermediate steps between No Build and 2.5 mile 6-lane divided highway?

Alternatives Considered

The following alternatives have been considered as part of the Alum Creek Drive Feasibility Study:

- **No Build** – This alternative would maintain the existing 4-lane divided facility without pedestrian/bicyclist accommodations.
- **Build Alternative** – This alternative includes widening Alum Creek Drive to a 6-lane facility, including the structures over Big Walnut Creek, as well as adding pedestrian/bicycle facilities and improvements to existing intersections along the corridor.

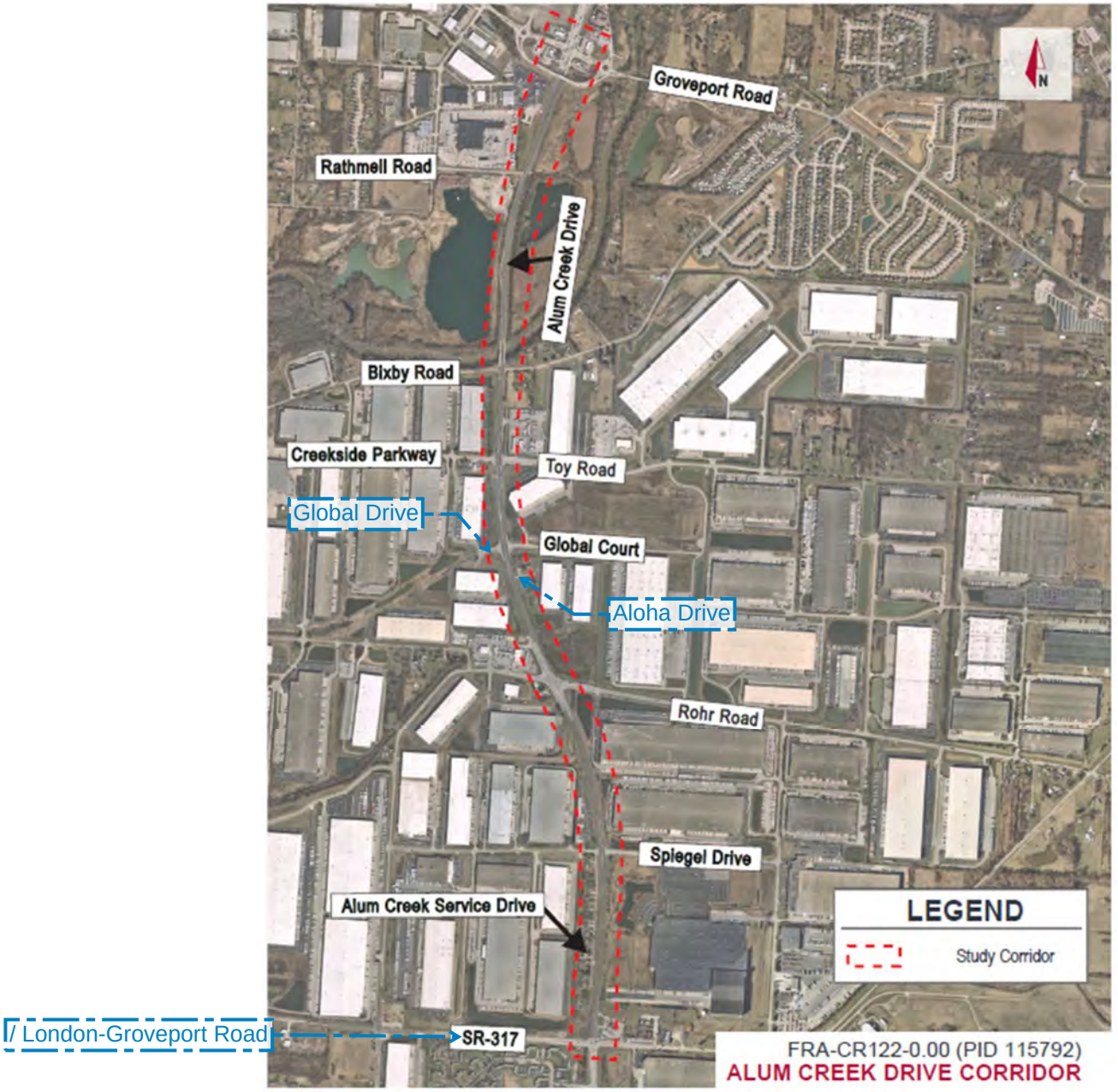


Figure 1: Alum Creek Drive Study Corridor

Please address these updates to the speed profile of the road in this paragraph in a resubmittal for record

See attached completed speed study and ODOT acceptance of 50mph design criteria.

Alum Creek Dr in Obetz is posted at 50. Unincorporated section is currently unposted 55 but Mobility is working on getting it reduced to 50

Obetz portion appears to be posted 50mph south of Rathmell and 45mph north of Rathmell

Roadway Assessment

hyphenate London-Groveport Road throughout, or otherwise reference consistently as SR-317

Functional Classification and Posted Speed

un-italicize for consistency

The subject of the feasibility study is the Alum Creek Drive corridor between Groveport Road and London-Groveport Road (SR-317). This 2.7-mile corridor includes 10 intersections, most of which are signalized (see below). Alum Creek Drive is currently the main entrance to the Rickenbacker Global Logistics Park from I-270. *Alum Creek Drive* is currently a four-lane divided Principal Arterial running north-south and provides two travel lanes in each direction. Alum Creek Drive is posted as 50 miles per hour. Pedestrian facilities are currently limited to the four quadrants of the Rohr Road intersection, north of Toy Road along the east side of Alum Creek Drive (700'), and north of London Groveport Road along the east side of Alum Creek Drive (175').

Groveport Road and Alum Creek Drive intersection is signal controlled and maintained by the City of Obetz.

Consider noting that there is an existing shared use path on the west side and existing sidewalk on the east side of Alum Creek Drive south of SR-317 to Rickenbacker Parkway, continuing south around the west side of Rickenbacker Airport and the Franklin/Pickaway County Line. Good connection is being proposed.

Groveport Road is currently a 2-lane urban minor arterial generally running east-west in the project vicinity and provides one travel lane in each direction. Groveport Road has a posted speed limit of 45 miles per hour. At the intersection with Alum Creek Drive, Groveport Road is restricted to right-turning movements with one eastbound right-turn lane and two westbound right-turn lanes. Sidewalks are present on Groveport Road at the intersection with Alum Creek Drive. Regionally, Groveport Road connects from Parsons Ave in Columbus, Ohio to Washington Street in Canal Winchester, Ohio.

Also existing pedestrian infrastructure to connect to at the Groveport Rd "crossbow"

Rathmell Road and Alum Creek Drive intersection is unsignalized and maintained by City of Obetz

Rathmell Road is currently a 2-lane urban minor collector generally running east-west in the project vicinity and provides one travel lane in each direction. Rathmell Road has a posted speed limit of 35 miles per hour. Sidewalks are not present on either side of Rathmell. Rathmell Road and Alum Creek Drive intersection is stop-controlled for Rathmell Road. There is an opening in the Alum Creek Drive median at this intersection and all traffic movements are currently allowed. Regionally, Rathmell Road connects from US-23 in Columbus, Ohio to Alum Creek Drive in Obetz, Ohio, though there are several 90-degree turns in Rathmell Road.

multiple low clearance bridges as well.

Address the east leg of Rathmell Rd is unimproved gravel road/drive. Basically a 3-legged intersection.

Bixby Road is currently a 2-lane urban local road generally running east-west in the project vicinity and provides one travel lane in each direction. Bixby Road has a posted speed limit of 35 miles per hour. At the intersection with Alum Creek Drive, Bixby Road is stop-controlled. The Alum Creek median is closed off with guardrail at this intersection, restricting movements to right-turns to and from both the east and west legs of Bixby Road. There is one right-turn lane in both the westbound and eastbound directions on Bixby Road at this intersection. Sidewalks are not present on either side of Bixby Road. To the west, Bixby Road connects to Rohr Road and to the east connects US-33 in Groveport, Ohio.

it is unposed 55 mph in the unincorporated sections.

Address Big Walnut Creek bridges north of Bixby Rd

which includes the intersection with ACD / area of study. Maintained by FCEO.

there are several 90° turns and low clearance bridges to the west as well. Draw similarity to Rathmell Rd

Creekside Parkway is currently a 3-lane urban local road generally running east-west in the project vicinity and provides one travel lane in each direction with a two-way left-turn lane in the middle. Creekside Parkway has a posted speed limit of 35 miles per hour. The Alum Creek Drive and Creekside Parkway intersection is signal controlled. At this intersection, Creekside Parkway provides two eastbound left-turn lanes. Sidewalks are not present on either side of Creekside Parkway. In the project vicinity, Creekside Parkway services industrial buildings in the Creekside Industrial Center and connects from Rohr Road to Alum Creek Drive. *Toy Road* forms the east leg of the Alum Creek Drive and Creekside Parkway intersection. Toy Road is an urban local road generally running east-west in the project vicinity. At the intersection with Alum Creek Drive, Toy Road includes a westbound left-turn lane, a westbound through lane, and two westbound right-turn lanes. Immediately east of Alum Creek Drive, Toy Road includes two

Creekside Parkway/Toy Road and Alum Creek Drive intersection is signal controlled and maintained by the Franklin County Engineer's Office.

Global Court/Global Drive and Alum Creek Drive intersection is signal controlled and maintained by the Franklin County Engineer's Office.

eastbound through lanes and one westbound through lane. Toy Road has a posted speed limit of 35 miles per hour. Sidewalks are present on both sides of Toy Road at the intersection with Alum Creek Drive. In the project vicinity, Toy Road connects Alum Creek Drive to Saltzgaber Road. Toy Road also services the CenterPoint Business Park and the Rickenbacker Global Logistics Park – Gateway Campus. East of the industrial area, Toy Road includes a cul-de-sac to prevent trucks from using the adjacent residential area.

It now dead ends before Saltzgaber. It connects to Centerpoint Pkwy.

eastbound

westbound

Global Court and *Global Drive* are urban local roads that intersect Alum Creek Drive at the same signalized intersection. Global Court is east of Alum Creek Drive and provides two westbound travel lanes and one travel lane eastbound. Global Drive is west of Alum Creek Drive and provides two eastbound travel lanes and one travel lane westbound. Both Global Court and Global Drive have a posted speed limit of 35 miles per hour. At the intersection with Alum Creek Drive, Global Court provides one westbound right-turn lane and Global Drive includes one eastbound left turn lane. The only sidewalk in the vicinity of the intersection is south of Global Drive.

one?

Please note what businesses / business parks Global Ct/Dr connect to Alum Creek Drive

Address the 2021 improvement to Rohr Rd intersection.

Aloha Drive is currently a 2-lane urban local road generally running east-west and provides one travel lane in each direction. Aloha Drive has an unposted speed limit (assumed 25 miles per hour). Sidewalks are not present on either side of Aloha Drive. In the project vicinity, Aloha Drive services three residences and dead ends approximately 300' east of Alum Creek Drive.

3 legged intersection. Unsignalized intersection maintained by Franklin County. Median is not blocked off, full access intersection. Draw similarity to Rathmell Rd

Consider addressing culvert CFN HAM012201 CULVERT_NUMBER - HAM-122-1.19 exists here, conveys Swisher Ditch under Alum Creek Drive

Rohr Road is currently an urban major collector generally running east-west with a posted speed limit of 45 miles per hour in the project vicinity. West of Alum Creek Drive, Rohr Road includes one through lane in both the east and westbound directions. The intersection of Alum Creek Drive and Rohr Road is signal controlled and provides two eastbound left-turn lanes, one westbound left-turn lane, and one westbound right-turn lane. East of Alum Creek Drive, Rohr Road includes two eastbound through lanes and one westbound through lane with a two-way left turn lane. Sidewalks are present on both sides of Rohr Road at the intersection with Alum Creek Drive. In the project vicinity, Rohr Road connects Lockbourne Road to College Street in Groveport, Ohio. Rohr Road also services several industrial facilities including the Opportunity Business Center at Rickenbacker.

and is maintained by the Franklin County Engineer's Office. The intersection..

Coca-Cola distribution center (1489 Development on Rohr Rd). Note the connection to Creekside Business Park, Shook Rd, and all the businesses on Shook Rd to the west also.

to the east

and Shook Rd to the west

Twin 42" x 30" elliptical pipes. bridge says no water through this anymore.

Spiegel Drive is currently a 3-lane urban local road generally running east-west with a posted speed limit of 35 miles per hour in the project vicinity. Spiegel Drive provides one travel lane in each direction and a center left turn lane. At the intersection with Alum Creek Drive, Spiegel Drive provides an eastbound left-turn lane, a westbound left-turn lane, and a westbound right-turn lane. The intersection of Alum Creek Drive and Spiegel Drive is signal controlled. Sidewalks are not present on either side of Spiegel Drive. In the project vicinity, Toy Road connects Shook Road to Port Road and services industrial facilities.

Spiegel Drive

to the west

to the east

Alum Creek Service Drive is currently a 2-lane urban local road situated parallel to Alum Creek Drive and provides one travel lane in each direction. Alum Creek Service Drive has an unposted speed limit (assumed 25 miles per hour). Sidewalks are not present on either side of the Alum Creek Service Drive. In the project vicinity, the Alum Creek Service Drive connects to Spiegel Drive to the north with a stop-controlled intersection. The Alum Creek Drive and Alum Creek Service Drive intersection is stop-controlled for Alum Creek Service Road. There is an opening in the Alum Creek Drive median at this intersection, and all traffic movements are currently allowed.

to the south

Is there any significance in drawing attention to how all of these side streets connect back to one another and put traffic back out onto Alum Creek Drive? Rathmell to Reese to Bixby Bixby to Rohr, Bixby to Groveport, Creekside Parkway to Rohr, Rohr to Shook to 317. Speigel to Shook. I'm no traffic engineer, maybe it's just a factor of how curved these roads are that they intersect one another and create loops more often than an adjacent North/South thoroughfare.

Address the number of residential parcels here (18?) similar to how we address the business connecting other streets.

Barb, do you think it would be useful for future funding applications to compile an exhibit/list of all the commercial warehouses/business as an exhibit to this study? They have been intermittently discussed but one central place could draw a lot of attention to the economic scale of this area.

and is maintained by the Franklin County Engineer's Office

London-Groveport Road (SR-317) is currently a 2-lane urban principal arterial generally running east-west in the project vicinity and provides one travel lane in each direction. SR-317 has a posted speed limit of 55 miles per hour. At the intersection with Alum Creek Drive, SR-317 widens to provide a left-turn and one right-turn lane in both the eastbound and westbound direction. The intersection of Alum Creek Drive and SR-317 is signal controlled. Sidewalks are not present on either side of SR-317. Regionally, SR-317 connects US-23 in Columbus, Ohio to US-62 in Gahanna, Ohio.

directions

and maintained by the Ohio Department of Transportation.

why 8 and not 5? We've been saying 5

Multimodal Connectivity

north of Toy Rd

Currently, very few active transportation facilities exist on Alum Creek Drive between Groveport Road and SR-317. These are essentially limited to sidewalks and ADA ramps at the intersections of London Groveport Road, Rohr Road, Global Drive/Court, Toy Road, as well as sidewalk along the Sheetz development. The build alternative would provide a 10' shared use path on the east side of Alum Creek Drive and (connecting to the shared use path south of SR-317) and a 8' sidewalk on the west side of Alum Creek Drive. In addition, the replacement structures would not preclude a future extension of a greenway trail along the Big Walnut Creek from Three Creeks Metro Park to Scioto Grove Metro Park.

Why the SUP on the East and Sidewalk on the West? Look at connection point at SR317. SUP is on the West and Sidewalk is on the East.

rephrase "would not preclude"...consider something like "will be sure to accommodate"

Road

COTA routes #22 and #24 service the Rickenbacker area, both of which terminate near the intersection of Alum Creek Drive and SR-317. The #22 follows Alum Creek Drive to Toy, to Gateway Ct. to Rohr Road to Port Road, to London-Groveport. The #24 follows South Hamilton Road to London-Groveport Road. Currently the only bus stops along Alum Creek Drive are located at Groveport Road and the intersection of London-Groveport Road.

Mention GREAT Workforce Transportation. Their coordination point is at the Marathon Station at 317 and Alum Creek

TRAFFIC ANALYSIS

Traffic Volumes

Court

Tuesday

Thursday

Traffic counts were taken August 16 and August 18, 2022 at all ten intersections in the Alum Creek Drive Corridor (Appendix B). In coordination with MORPC, the team received linear annual growth rates (Appendix C) for Alum Creek Drive by segment (Table 1). This information formed the basis for the traffic volume calculations for the nine intersections presented below (Table 2) and which were certified by ODOT (Appendix D).

the discrepancy between 10 and 9 here is noticeable. Missing Aloha?

Table 1: Linear Annual Growth Rates for Alum Creek Drive

Location	Linear Annual Growth Rate
Alum Creek Dr s/o Groveport Rd	1.00%
Alum Creek Dr s/o Rathmell Rd	1.00%
Alum Creek Dr s/o Bixby Rd	0.90%
Alum Creek Dr s/o Toy Rd	1.00%
Alum Creek Dr s/o Global Ct	0.90%
Alum Creek Dr s/o Rohr Rd	0.90%
Alum Creek Dr s/o Spiegel Dr	0.90%
Alum Creek Dr s/o Alum Creek Service Dr	0.90%
Alum Creek Dr s/o SR-317	1.10%

Can a paragraph be added about the truck volumes and making a comparison to national averages

Consider switching WEST on left and EAST on RIGHT so it reads consistent with map directions.

Can truck percentages be easily added to this table?

Table 2: Traffic Volumes Existing Year and Design Year for Study Intersections

Intersecting Roadway	East				West			
	2022	2048	Growth	Growth %	2022	2048	Growth	Growth %
Groveport Road	*11,820*	*15,460*	*3,640*	31%	*6,750*	*8,510*	*1,760*	26%
Rathmell Road					*2,540*	*3,210*	*670*	26%
Bixby Road	*480*	*660*	*180*	38%	*430*	*540*	*110*	26%
Toy Road	*8,500*	*10,320*	*1,820*	21%	*4,090*	*6,100*	*2,010*	49%
Global Drive/Court	*790*	*1,000*	*210*	27%	*790*	*980*	*190*	24%
Rohr Road	*9,200*	*11,770*	*2,570*	28%	*7,610*	*10,420*	*2,810*	37%
Spiegel Drive	*2,950*	*3,490*	*540*	18%	*4,060*	*4,960*	*900*	22%
Service Road					*150*	*210*	*60*	40%
SR-317	*9,150*	*11,360*	*2,210*	24%	*9,400*	*11,680*	*2,280*	24%
	South							
Alum Creek Dr. South	*12,890*	*16,710*	*3,820*	30%				

Aloha Dr?

Alum Creek Service Drive

Toy Rd is a dead end cul-de-sac completed in 2021. What is influencing even this 21% growth?

The west side of this intersection is Creekside Parkway. Please label accordingly.

Somewhat confused how a 40% growth is expected from the service road. Please check/elaborate in comment response.

and truck percentages?

Capacity Analysis

A capacity analysis was performed for the corridor with the projected traffic volumes as described above, using the Highway Capacity Software (Appendix E-G). The analysis was completed for the following four scenarios:

- No Build – Opening year 2028 AM/PM peaks
- No Build – Design year 2048 AM/PM peaks
- Build – Opening year 2028 AM/PM peaks
- Build – Design year 2048 AM/PM peaks

While the No Build condition (Table 3) reflects no improvements to the Alum Creek Drive corridor (4-lane facility), the Build scenario (Table 4) accounts for widening Alum Creek Drive to a 6-lane facility.

Table 3: Weekday No Build – Study Intersections Capacity Analysis

Alum Creek Drive	AM Peak Hour		PM Peak Hour	
Intersection	2028	2048	2028	2048
Groveport Road	C	C	C	E
Rathmell Road	-*	-*	-*	-*
Bixby Road	-	-*	-	-
Toy Road/Creekside Parkway	F	F	F	F
Global Drive/Court	B	C	E	F
Rohr Road	B	C	D	E
Spiegel Drive	C	C	C	D
SR-317	D	D	D	E

* Side street movement to exceed 100s delay

Aloha Rd

I don't fully understand why LOS is not reported on Rathmell and Bixby. Can this be explained more in the report? TYP

Just noting that these 9 highlighted conditions don't improve at all between no build and build.

Table 4: Weekday Build – Study Intersections Capacity Analysis

Alum Creek Drive	AM Peak Hour		PM Peak Hour	
Intersection	2028	2048	2028	2048
Groveport Road	C	C	C	C
Rathmell Road	-*	-*	-*	-*
Bixby Road	-	-	-	-
Toy Road/Creekside Parkway	B	C	C	C
Global Drive/Court	C	C	C	C
Rohr Road	B	C	C	D
Spiegel Drive	C	B	B	C
SR-317	D	D	C	D

*Side street movement to exceed 100s delay

Alum Creek Service Drive

Signal Warrant Analysis

The signal warrant analysis was completed for the Alum Creek Drive intersections using the collected traffic counts (Appendix H). This analysis indicates that the intersections of Rathmell Road, Bixby Road, and Global Court do not currently meet the volume-based warrants.

Does the word "currently" here mean 2028 opening day condition, or both 2028 and 2048 design year?

Rathmell Road

- Meets the 70% criteria for Warrant 2.
- Meets 2 of the required 4 periods for the 100% criteria of Warrant 2.
- With minimal growth this intersection would meet a signal warrant.
- Consideration should be given to either adding a signal at this location or making this a RIRO intersection.

26% growth by 2048 per Table 2, correct? Does this meet the threshold?

See attached Obetz Comment. Obetz does not support a RIRO at this intersection.

What is Stantec's recommendation?

Please specify which volumes we're talking about. 2028 or 2048

Bixby Road

- The volumes at this intersection do not meet signal warrant thresholds.
- This was expected, as this intersection is currently a RIRO.

Does modification of existing signals change if we widen inside vs outside?

Global Drive/Court

- The volumes at this intersection do not meet the signal warrant thresholds.

Do we know the history as to how/why a signal was installed here in the first place? Forecasted numbers with the warehouses exceeded the actual counted amount we completed with this study?

Will this be an issue for the federal funding?

may want to consider putting this on flash for certain hours of the day or night

- This is based on using the 70% thresholds, which is the standard for evaluating warrants at an existing signal.

(Bluestone Development)

- Two new warehouses totaling approximately 100 KSF have been constructed on the south side of Global Court; these facilities may not have been operational when counts were collected for this study.
- There is also a vacant parcel on the north side of Global Court; this parcel is planned for a 800 KSF logistics building, which will increase traffic on Global Court.
- This signal should be kept, as it will likely meet warrant thresholds shortly.

Barb, do we know where this pedestrian crash was? It wasn't the fatal Brad noted below, correct?

There was another pedestrian accident in May/June 2023

Safety

A review of safety data over the 5-year period 2017-2022 indicates there were 260 crashes in the corridor limits (Appendix I), including two (2) Fatalities, eight (8) Serious Injury crashes, and 101 Injury Related crashes.

- Both Fatal Crashes occurred at Rathmell and were either a left turn or angle type crash.
- The Serious Injury crashes (8) occurred at the following intersections:
  - Rathmell Road (2)
  - Speigel Drive (2), one of which was pedestrian injury
  - Rohr Road (2)
  - Bixby Road (1)
  - Toy Road/Creekside Pkwy (1)
- Rear End crashes in the corridor represent 31% (vs statewide average 9.1%)
- Sideswipe-Passing crashes in the corridor represent 23% (vs statewide average 3.9%)

had a fatal crash at Speigel Drive in late June of 2023. Contact FCEO Mobility Department for additional information.

As depicted in Figure 2, the distribution of crashes was the greatest at a few specific study intersections. Approximately two-thirds of the crashes occurred at three intersections Rohr Road (63), Rathmell Road (49), and Toy Road/Creekside Pkwy (49). It should be noted that there have been improvements to a couple of the intersections along the corridor within the past five years, which would likely improve the operation and safety at these intersections. The Bixby Road intersection was converted to a right-in/right-out intersection in 2019. The Rohr Road intersection was improved to include a second southbound left turn lane and widening of Rohr Road in 2020.

Toy Rd has a Sheetz go in, but not sure it actually changed much of the ACD/Toy/Creekside intersection, maybe added a WB LT lane.

Timing of the crashes reflects industrial travel patterns:

- Higher number of crashes during weekdays
- Increase during peak commute times
  - 6 AM – 38 (15%)
  - 3 PM – 23 (9%)
- Higher number of crashes in October (13%), November (10%), and December (15%)

The No Build option would maintain existing conditions at these intersections along the Alum Creek Drive Corridor. The Build option would not only add capacity to Alum Creek Drive but include safety improvements at intersections represented by high crash rates.

Please address how does safety improve if we widen inside vs outside?

Adding this comment to make sure we continue to focus on safety even as we increase capacity as we know that those are in direct conflict with each other.

With adding pedestrian facilities, it will only increase the amount of ped/bike traffic that is already along Alum Creek Dr. And will especially increase the amount of ped/bike traffic that will cross Alum Creek Dr. Crossing 6 lanes plus turn lanes is no small feat and increasing pedestrian safety at each signalized intersection is critical to call this project a success.

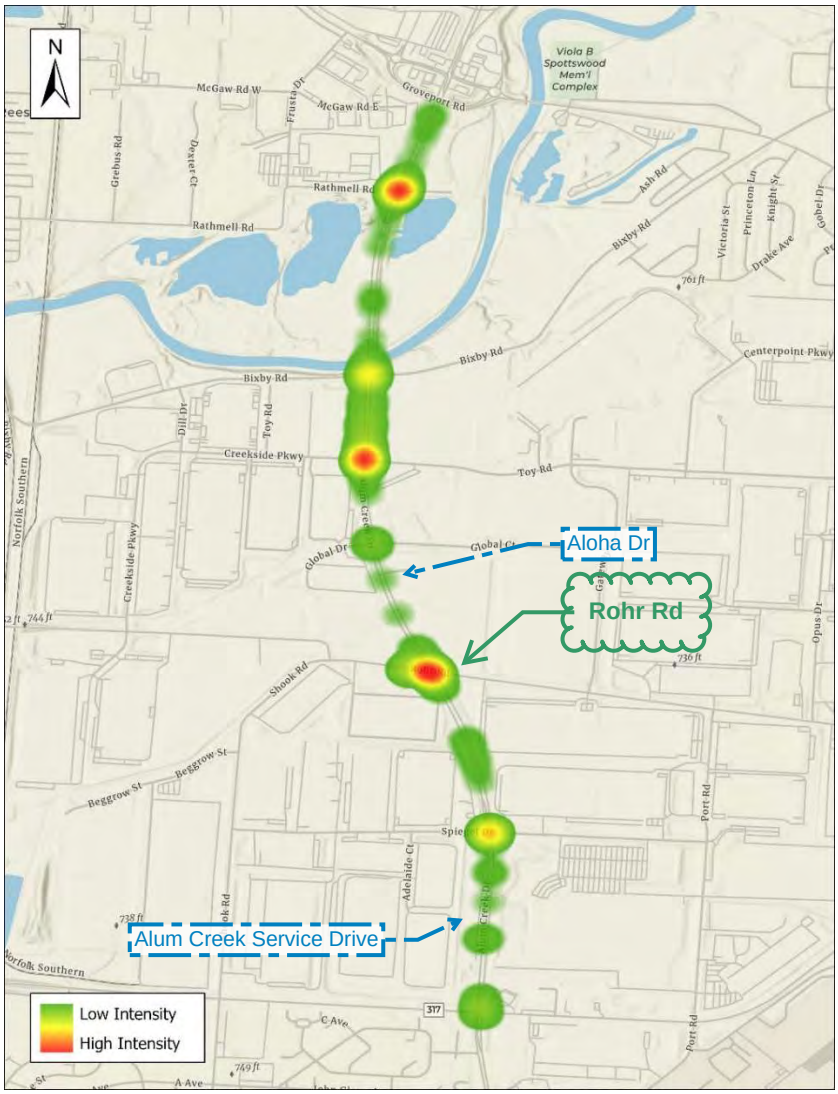


Figure 2: Heat Map Illustrating Density of Crashes in the Corridor

Structural Design

for the Bridges over Big Walnut Creek

state specific bridge names in header or body: FRA-CR122-1.86L & FRA-CR122-1.87R

Stantec performed a preliminary analysis of replacement structure types. This analysis suggests that the replacement structures will be on the same alignment and profile as the existing structures. The current 4-span arrangement will be replaced with 3-spans of either pre-stressed, pre-cast, concrete I-beams, or steel beams. Both options can achieve clearance from the 100-year flood elevation as well as eliminating one of the current piers in Big Walnut Creek. The new bridge would be slightly longer so that the abutments can be constructed behind the existing abutments to facilitate construction of pilings as well providing additional protection from erosion. The longer structure will also accommodate the potential future extension of the Big Walnut Trail under the bridge.

bridges

meaning 100-yr is below low chord? or roadway elev is clear?

should this analysis be included in this study / is it available? is a PE/feasibility study for this bridge included in the scope? Feas study in App A does not address these items

Structure Type Study eventually submitted on 08/25/23. Separate review session is open for this.

Please include reference to this separate structure type study in the body of the report. How does structure and phasing change if we widen inside vs outside?

if h&h was done, state in report if this is a no-rise condition, include pre/post water elevations

We need a lot more detail than this on MOT. Do we have exhibits with approximate dimensions of the phasing? bridge discussion, utilities? Which way are we widening first? How does MOT change if we widen inside vs outside? I know we scoped only one lane in NB direction but the 2017 study says we will maintain 2 lanes in both directions. Is that still possible? if not, what changed between the two?

Has this actually been vetted according to SCD requirements? Draft typical sections showing the phasing, pavement widths, work zone width, drop off condition/barrels vs PCB are typically provided. OK if these are all in Stage 1 plans but would like some more information in the study.

Maintenance of Traffic

The maintenance of traffic (MOT) plan for the improvements shall facilitate the safe movement of traffic through the work zone while providing adequate workspace for the contractor. Alum Creek Drive will not be completely closed during construction but shall maintain two southbound lanes and one northbound lane at all times. While this does limit outbound capacity on Alum Creek Drive, there are other logical secondary routes to I-270, particularly for trucks, and these routes will be shared with stakeholders and the public prior to construction. For example, west of Alum Creek Drive vehicles may use SR-317 west to US-23 north. East of Alum Creek Drive, vehicles may use SR-317 north to US-33 west. For the bridge construction and MOT, the Alum Creek Drive Corridor Preliminary Engineering Status Report (Appendix A) presented three bridge construction options that would provide for two southbound lanes and one northbound lane during all phases of construction. Therefore, bridge constructability will not preclude this MOT commitment.

a minimum of

No discussion or reference to which direction the lanes are being widened?

this report presents options for maintaining 2 lanes each direction, please advise

Right-of-Way Requirements

There are areas wider than this. I measure up to 210 just spot checking our GIS

should the estimate of needed ROW be included?

Existing right-of-way width in the corridor varies from 165' to 180' wide. The No-Build would maintain the existing configuration of two lanes in both directions and require no new right-of-way. The Build option adds a lane in each direction as well as shared-use path and sidewalk. Right-of-Way is tight at northern end, particularly between Rathmell Road and Big Walnut Creek where the quarry pits are situated adjacent to the existing rights-of-way. Because of these constraints, widening will be maximized to the inside (median). To the south, it is important to note that right-of-way has been donated over the years to Franklin County as the Global Logistics Park developed. Specifically, an additional 2.5+ acres of right-of-way/easement exists along Alum Creek Drive between Bixby Road and SR-317 (Table 5). As such, widening in this area of the corridor will take advantage of available land to the maximum extent possible.

meaning widening to the outside?

Love's is not easement, it was dropped in fee. Love's is also on the west side of Alum Creek Drive. Please check.

I measure 185'-210' ROW width in this area. Doesn't appear tight. This is more an issue of terrain than R/W, correct?

Table 5: Donated Right-of-Way in the Global Logistics Park

This should be longer, goes down to Love's. See Creekside Industrial Center development

Development	Side	Length (ft)	Width (ft)	Area (ac.)	Type
Gateway Campus (RGLP)	East	1,303	25	0.75	Right-of-way
Creekside Business Park Expansion	West	1,161	25	0.67	Right-of-way
Global Court Development	East	1,229	15	0.42	Easement
Love's	East	685	25	0.39	Easement
Sheetz	West	534	25	0.31	Right-of-way
Total		**4,912**		**2.54**	

Sheets at Toy is East side of ACD

Bluestone Development (South of Aloha, North of Rohr, East Side? I belive 10' was dropped in ROW and 15' addition was in easement.

Please address how do ROW impacts change if we widen inside vs outside?

Utility Issues and Coordination

The Alum Creek Drive corridor from Groveport Road to SR-317 contains multiple public and privately owned utilities, including water, natural gas, sanitary sewer, storm sewer, lighting, overhead power, underground electric, fiber optic, interconnect, and telecommunications. There is signal conduit and underground wiring present at the intersections of Creekside Parkway/Toy Road, Rohr Road, and London Groveport Road. Utilities occupy the greenspace on both the east and west sides of the corridor, and a major storm sewer trunk line runs down the median. Major relocation efforts and facility upgrades will be required to maintain service to residential and commercial properties along the corridor.

Spiegel?

Discuss the plan for Consultant Utility Coordination once an exhibit is put together with a preferred alignment.

Is the storm trunk line in good shape and provide enough capacity to leave it in place?

Are any believed to be within private easements? This will determine our relocation costs, if any.

Please address how do utility relocations change if we widen inside vs outside?

Drainage/BMP

The project will follow the drainage standards set forth within the ODOT L&D Volume 2 manual. Based on the preliminary calculations and proposed corridor footprint, the anticipated project earth disturbed area (EDA) is 45.0 acres. This identifies that BMP's would be required for this project and that water quality and quantity should be treated. However, LDV2 Section 1111.3 mentions that portions of a project which drain directly from ODOT right-of-way into a large river that has a drainage area greater than 100 square miles or is a fourth order stream or greater, are not required to address water quantity. ODOT TIMS application and USGS StreamStats station number 03229500, Big Walnut Creek at Rees, Ohio, notes that the contributing drainage area is 544 square miles and is a 4th order stream. Therefore, the designers intend to utilize enhanced bank width roadside ditches with vegetated biofilters to address water quality treatment.

only (?), as quantity treatment is not required.

Alum Creek Drive is not ODOT ROW. Consider revising language. FCEO does use ODOT standards.

double check this name

Preliminary calculations have determined that this project would require a treatment area of 9.80 acres. When surveying the corridor, the designers have noted that all surface runoff within the project EDA that sheet flows outside of ODOT right-of-way can be included as treatment credit. This takes place specifically north of Big Walnut Creek on the east side of the corridor.

"Runoff that sheet flows outside of R/W" ?

Please elaborate on this point in layman's terms.

So no detention, storage, etc is required? The only BMP will be vegetated bio filters in the roadside ditches? How does this change if we widen inside vs outside?

Environmental Studies

The project corridor bisects a heavily developed logistics park, surrounded by 75 million square feet of warehouse, industrial, and distribution facilities (Figure 1). For this feasibility study, the environmental analysis has been limited to research of existing data sources and a field review of the corridor. Known resources in the corridor include Big Walnut Creek, 18 residences older than 50 years, and several gas stations along the corridor. Based on this preliminary review and the fact that limited R/W will be required for the project, there are no known resources which would be expected to impact the comparison of Build vs No Build alternatives.

That said, the structure type study for the mainline bridge(s) calls for removal of two existing piers in Big Walnut Creek and new structures spanning Big Walnut Creek. Future environmental studies shall include Regulated Materials Review (RMR), Level 1 Ecological Survey Report (ESR), Cultural Resources study, and floodplain coordination. A noise analysis will also be required for the 18 adjacent residences along Alum Creek Service Drive as the build scenario will add capacity to Alum Creek Drive.

3 homes with 4 total residential parcels located on Aloha. How do environmental & residential impacts, noisewall need, change if we widen inside vs outside?

Aloha as well?

Stakeholder & Public Involvement

A public engagement plan has been created and uploaded to Environet. The plan defines a stakeholder group and outlines an approach to updating stakeholders on the status of the project moving forward. The plan also proposes holding a public open house meeting to gather input on the project from the public. Summaries of all meetings will be documented for the purposes of selecting a preferred alternative. An additional round of engagement is proposed prior to construction to inform the logistics community, as well as the public, about MOT during construction.

Is this included in the appendices? If so reference it. If not, please include.

Please provide an exhibit and typical sections with stationing showing the proposed build alternative. These are standard deliverables in a feasibility study. Update the old ones from the 2017 to bring them up to date with the recommendations of this study. I have seen updated typical sections, see attached. Not sure if these are up to date. There is no detail as to what this corridor will look like by reading these paragraphs, we need dimensions, side of SUP, side of Sidewalk widths of shoulders, etc.

Why does the availability of donated ROW along most of the southern section of the corridor preclude a widening to the inside? What are the advantages and challenges of widening to the inside that make the recommendation to widen outside, and need to acquire more ROW, a better option? How about utility relocation considerations between these options? Would we be experiencing far less relocations by widening inside vs outside on the southern half of the corridor? Will additional ROW need acquired to give the utilities room to relocate if the road is widening to the outside? Bike and ped impacts? How about the impacts to Alum Creek Service Drive, Aloha Dr residents by widening outside? Please detail more engineering reasoning for this recommendation. I don't engineering reasoning for this recommendation commensurate with the complexity of this project based on these two paragraphs.

Alternatives Analysis

The following summary provides a comparison of the alternatives considered.

No Build Alternative

The No Build alternative would leave the corridor as four lanes, two in each direction, and intersections would remain as they are. Two intersections would fail by 2028 while most of the intersections would fail by 2048 (Table 3). The No Build alternative would not improve safety in the corridor, which is marked by crashes well above the statewide average in various categories. Bike/pedestrian facilities would remain mostly non-existent along the corridor. Therefore, the No Build alternative is not consistent with MORPC's *The 2018 Rickenbacker Area Study* and does not meet the purpose and need.

Only 1 build alternative was considered? I thought we were going to be explained why we are widening to the inside vs outside in certain areas, and be presented a comparison of costs, ROW, utility, MOT, bridge, retaining wall, environmental, signal & capacity, residential, commercial, etc between the two. Typically there is an alternative comparison matrix presented to substantiate the recommended build alternative.

Build Alternative

The Build Alternative would widen Alum Creek Drive from four lanes to six lanes and include spot improvements to improve operations at intersections in the corridor. The Build alternative significantly improves traffic operations (Table 4) by adding a lane in each direction with spot improvements at intersections. Further, the Build alternative will significantly improve safety in the corridor, as 31% (81/260) of crashes are rear-end crashes and 23% (60/260) are sideswipe/passing crashes resulting from traffic congestion. In addition, a shared use path and a sidewalk would be added to opposite sides of Alum Creek Drive between Groveport and SR-317, which is identified as a "high-stress route" in MORPC's *The 2018 Rickenbacker Area Study*.

Why would it occur inside here vs south of here? No mention of the need for a retaining wall on both sides of ACD north of Big Walnut Creek in the study if we widened to the outside here.

Right-of-way impacts would be minimal in the northern portion of the corridor where most of the widening would occur to the inside. Conversely, widening would occur to the outside in the southern portion of the corridor given the availability of donated right-of-way from nearby developments over the years. The most noteworthy environmental resource in the corridor is Big Walnut Creek. While the bridges over the creek will be replaced/widened, existing piers in the Big Walnut Creek will be removed.

Please address whether no utility relocation costs are anticipated by the project due to all utilities being located within public R/W rather than private easement.

Planning Level Cost Estimates

Order of magnitude costs have been estimated from preliminary engineering of the build alternative and are included within Appendix J. Construction and right-of-way costs are presented in Table 6. Note, approximately 2.5 acres of right-of-way have been donated to Franklin County over the years, as Rickenbacker has continued to develop.

How many additional acres are needed? Where are these needed? Can an exhibit be should be shown that substantiates this estimate. How about ROW cost if we widened inside vs outside?

Table 6: Estimated Construction Costs

Alternative	Construction Cost	Right-of-Way Cost	Total Cost
No Build	$0	$0	$0
Build	$57,352,200	$1,220,000	$58,572,200

Conclusions

As a critical intermodal asset that connects air, rail, and truck freight modes, Rickenbacker Global Logistics Park is one of the region's most important and valuable economic assets. From a transportation perspective, MORPC's *The 2018 Rickenbacker Area Study* recommended Alum Creek Drive widening from Groveport Road to SR-317, and a preliminary engineering

study was previously completed on behalf of the Franklin County Engineer. This Feasibility Study builds upon that analysis and presents additional information as it relates to the Build and No Build scenarios. The preferred alternative recommended from this Feasibility Study is the Build alternative which includes widening Alum Creek Drive from four lanes to six lanes with improvements at intersections along the corridor. The alternative satisfies the purpose and need of the project by improving capacity and safety within the corridor. The Build alternative also provides for pedestrian and bikeway facilities along the corridor. The Build alternative is therefore recommended to be carried forward into the next design phase.

Typically with ODOT, we cannot present to the public until Prelim R/W is shown. Please expound on this suggestion/requirement. When will we need to present to the public based on PDP process?

Next Steps

This alternatives analysis will be presented to stakeholders and the public in upcoming meetings. Following the meetings and the comment period, the project team will officially select the Preferred Alternative. Once the Preferred Alternative is selected, the next phase of the PDP will include detailed design, agency coordination, and environmental clearance.

There was really only one build 'alternative' presented in this study.

There was little discussion on the alternative options for Rathmell (signal vs. RIRO). Shouldn't that be vetted during the feasibility study phase?

Agreed. FCEO feels RIRO would be preferred. It's an Obetz intersection and they do not support RIRO. Results based recommendations should be provided to influence the decision one way or another. Right now all the study says is "a signal is not warranted and we could consider RIRO".

We need an updated schedule with the next submittal. Understood FCEO comments on this feasibility study are late. Also include the STS submittal, and delineate public comment windows. Previous schedule is attached here for reference:

Concrete barrier if we widen inside vs shoulder width criteria if we widen outside? this has been an important discussion point and this report doesn't mention a word about it. Please also address the recent confirmation of reduced design speed to 50mph.

APPENDIX

A. 2017 Stantec Study Preliminary Engineering

Alum Creek Drive Corridor
Preliminary Engineering Status Report

DRAFT

July 2017

Prepared For

Prepared By

INTRODUCTION

The following status report documents the result of our initial preliminary engineering analysis. Thus far, the primary focus of this analysis has been potential typical sections and their impact on cost, right-of-way, and other factors. The findings include a comparison matrix to support the Engineer in determining how to proceed.

A second focus has been a preliminary analysis of the drainage conditions based on record plan and GIS data research to determine the approximate drainage-shed of the existing storm system under Alum Creek Drive.

TYPICAL SECTIONS

A range of typical section options were considered. These start with the most compliant to Volume 1 of the Ohio Department of Transportation's Location and Design Manual, and then include some deviations of which may *make sense* yet vary on their compliance of all conditions in Volume 1.

add page number

Exhibit 1 illustrates five options for the typical section. Options one, two, and four comply with all criteria—including 12-foot lane width, 10-foot paved median and right shoulders, and both the guardrail and barrier offsets, 12 and 10 feet respectively (L&D Vol. 1, Table 301-3). The third and fifth options satisfies all criteria except only four feet of the median shoulder would be paved with the remainder graded.

The variation of the median shoulder reflects a nuance in the L&D that does not require a median shoulder on undivided roadways, yet requires a full width shoulder when adding a fifth and sixth lane to a divided arterial or collector. While preferable from a safety standpoint, the additional width comes at a substantial cost.

Exhibit 2 includes a Typical Symmetric (Option 1 from Exhibit 1) as well as a Typical Asymmetric option. The asymmetric option is shown as a way to focus the take of right-of-way and impacts to grading to one side of Alum Creek Drive, something which may be advantageous north of Big Walnut Creek.

The typical sections do not show pedestrian or bicyclists facilities; however, MORPC mentions the addition of an Shared Use Path on the Metropolitan Transportation Plan and the MPO will likely require the inclusion of a path (or some other accommodation) as a condition of receiving Federal funding for the project. Accommodation may likely be best provided with some combination of sidepath and sidewalk.

BRIDGE RECONSTRUCTION AND MAINTEINANCE OF TRAFFIC

Three options are provided for how the bridges may be reconstructed over Big Walnut Creek. All options maintain two lanes of traffic in each direction through construction and include an optional multi-use path.

conflicts with statement on page 13 of feasibility study

- With Option 1 (Exhibit 3), the two bridges would be widened to the outside in the first phase of construction, followed by a second phase where traffic would be maintained

this phase would widen for a 2 lane bridge in each direction?

on the recently constructed bridge, allowing for the existing structure to be demolished and reconstructed.

- In Option 2 (Exhibit 4) Phase 1, the southbound lanes would be narrowed and an initial section of bridge would be constructed between the two structures. In Phase 2, southbound traffic would remain as maintained in Phase 1, and the northbound lanes would be moved over to be maintained on the recently constructed section of bridge, allowing construction of the northbound deck in one phase. The final Phase (3) of construction would conclude with replacing what remaining of the existing southbound bridge while traffic is maintained on the northbound bridge.
- Option 3 (Exhibit 5) Phase 1 consists of constructing two northbound lanes outside of the northbound bridge. Phase 2 maintains southbound traffic on what was the northbound bridge and northbound traffic gets maintained on the lanes added onto the northbound bridge. This allows for the southbound section of the bridge to be reconstructed in full. Phase 3 consists of shifting traffic to use the southbound section of bridge, allowing for the remaining section of the northbound bridge to be demolished and reconstructed.

Options 2 and 3 are very similar, except for where the first phase is constructed (inside vs outside), as well as how far the center of the two structures vary from the centerline.

COMPARISON EVALUATION AND MATRIX

A comparison of the typical sections and bridge reconstruction options is provided on Table 1.

DRAINAGE ANALYSIS

Preliminary analysis is underway on the Alum Creek Drive trunk storm sewer to identify the limits of its tributary area and consider initial alternatives for how to accommodate and treat additional flows resulting from road widening. This will be further developed once the condition of the existing sewer is established.

NEXT STEPS

Stantec would recommend a meeting to discuss the typical sections and determine which one should be advanced for Alum Creek Drive, of which may differ north and south of the bridge over Big Walnut Creek. Once a decision is made, a footprint and more accurate cost estimate can be developed. The same process will be required for the bridge, evaluating the provided structures and determining whether there is a preference for one or something different altogether.

Upon receipt of the storm sewer analysis, Stantec will provide a recommendation for how to proceed. Options include using the existing sewer, as well as constructing a new system, or a hybrid of the two. This is tentatively anticipated no later than October of 2017.

Is all of this still applicable? I don't see pedestrian considerations shown.

	Options	Median Treatment	Med. Sh. To CL Offset	Median Shoulder Width	Lane Width	Right Shoulder Width	Pavement Width Per Side (Lane + Shoulder)	Design Exceptions	Construction Phasing	Wedge Course	Anticipated Additional Right-of-Way Required	Planning Level Cost
Typical Sections	Option 1	Grass, 10'	5'	10' Paved	12'	10' Paved	56' (2x2 Lane MOT)	None	n/a	No	25' Each Side	~$26.2M Excludes Structure Cost
	Option 2	Concrete Barrier	2'	10' Paved	12'	10' Paved	56' (2x2 Lane MOT)	None	n/a	Yes	25' Each Side	~$27.3M Excludes Structure Cost
	Option 3	Cable Barrier	8'	4' Paved, 10' Graded	12'	10' Paved	50' (2x2 Lane MOT)	Median Shoulder Width/Material	n/a	Yes	25' Each Side	~$26.6M Excludes Structure Cost
	Option 4	Cable Barrier	2'	12' Paved	12'	10' Paved	58' (2x2 Lane MOT)	None	n/a	Yes	25' Each Side	~$27.1M Excludes Structure Cost
	Option 5	Grass, 10'	5'	4' Paved, 10' Graded	12'	10' Paved, 10' Graded	50' (2,2 Lane MOT)	Median Shoulder Width/Material	n/a	No	25' Each Side	~$24.3M Excludes Structure Cost
	Asymmetric Option	Concrete Barrier	NB: ~9.2', SB: ~2.9'	10' Paved	12'	10' Paved	56' (2x2 Lane MOT)	None	n/a	Yes	35' East Side Only	N/A
Bridge Sections	Option 1	Parapet	5'	10'	12'	10'	56' (2x2 Lane MOT)	None	2 phase	N/A	TBD	~$11.4M ($300/sf x 340 ft. x 112 ft.)
	Option 2	Barrier or Concrete Median	2'	10'	12'	10'	56' (2x2 Lane MOT)	None	3 phase	N/A	TBD	~$11.4M ($300/sf x 340 ft. x 112 ft.)
	Option 3	Barrier or Concrete Median	SB: 2' NB: 10'	10'	12'	10'	56' (2x2 Lane MOT)	None	3 phase	N/A	TBD	~$11.4M ($300/sf x 340 ft. x 112 ft.)

Is is not made clear which of these options, if any, are the recommended alternative for the final study. Create new typical sections consistent with the recommendations of the current study.

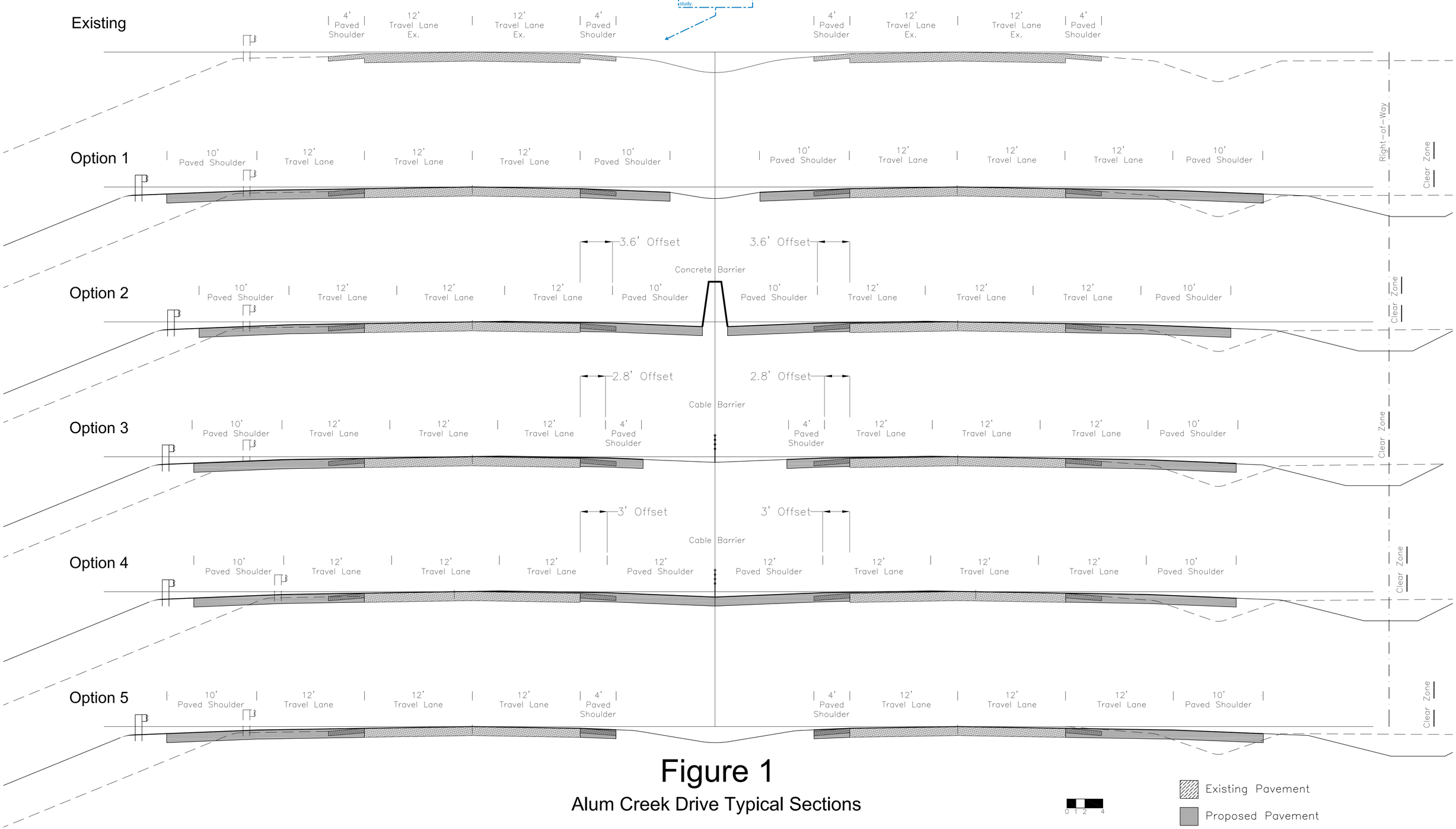


Figure 1

Alum Creek Drive Typical Sections

Existing - North of Big Walnut Creek

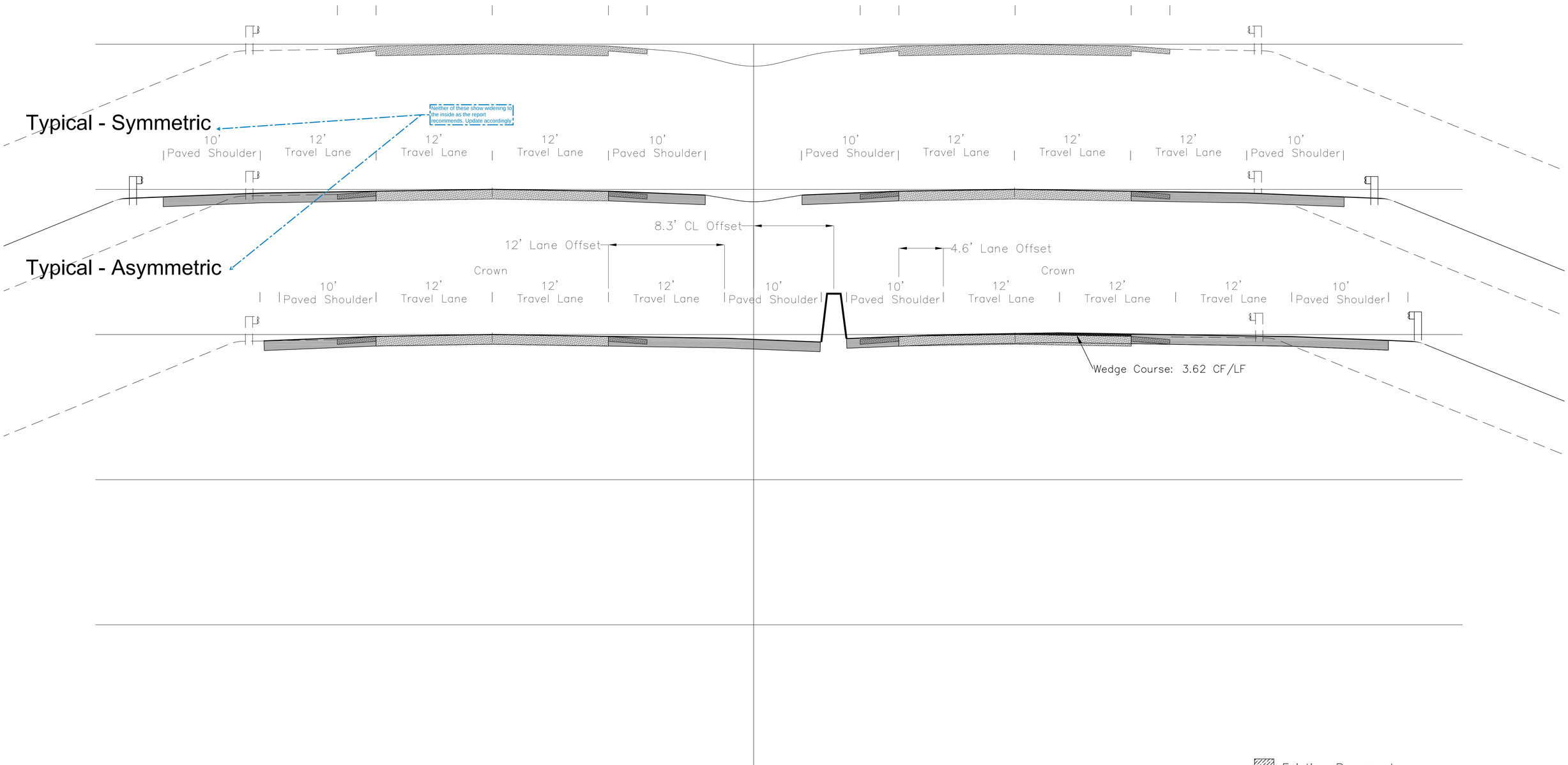


Figure 2

Alum Creek Drive Asymmetric Typical Sections

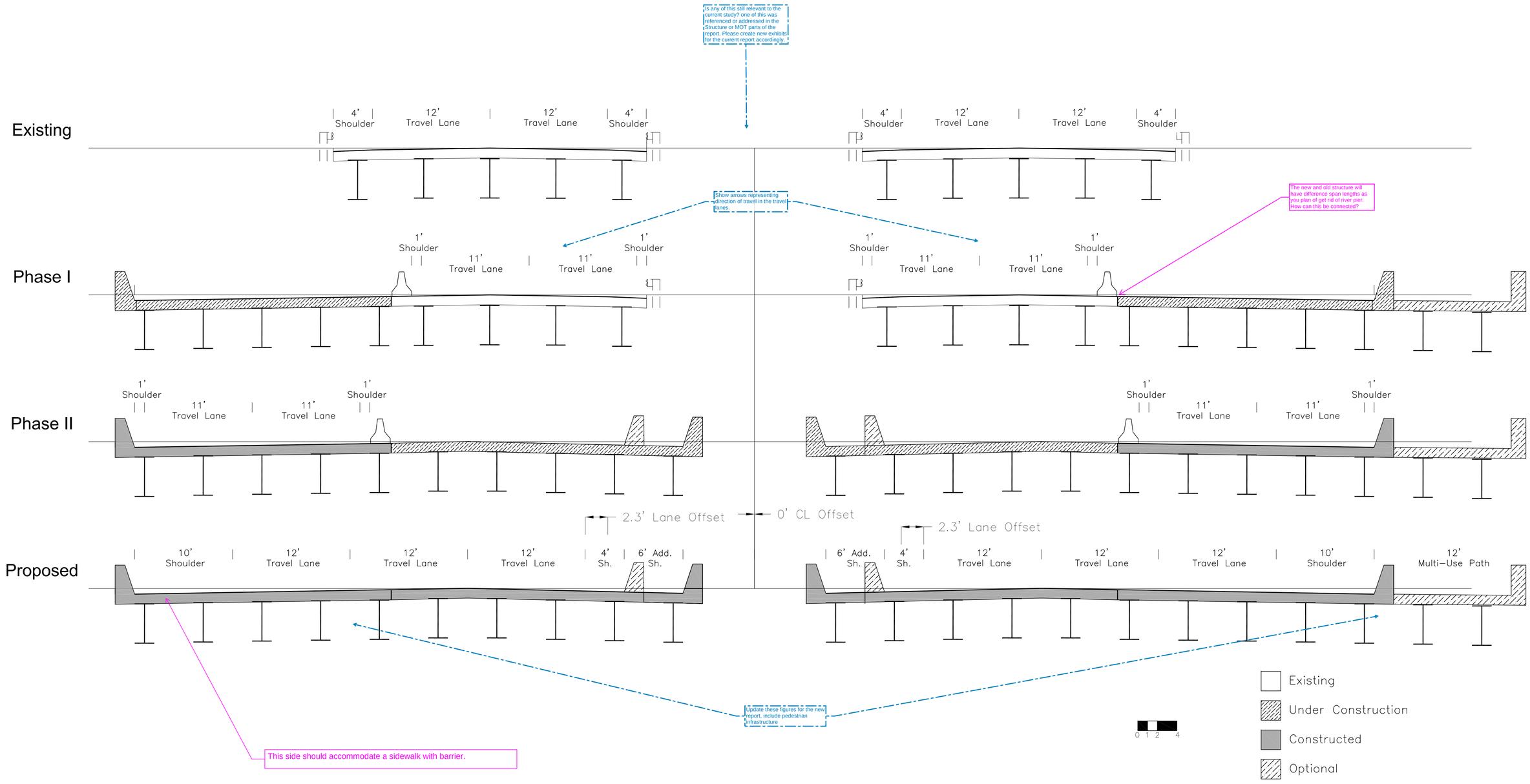


Figure 3

Alum Creek Drive - Big Walnut Creek Bridge Option 1

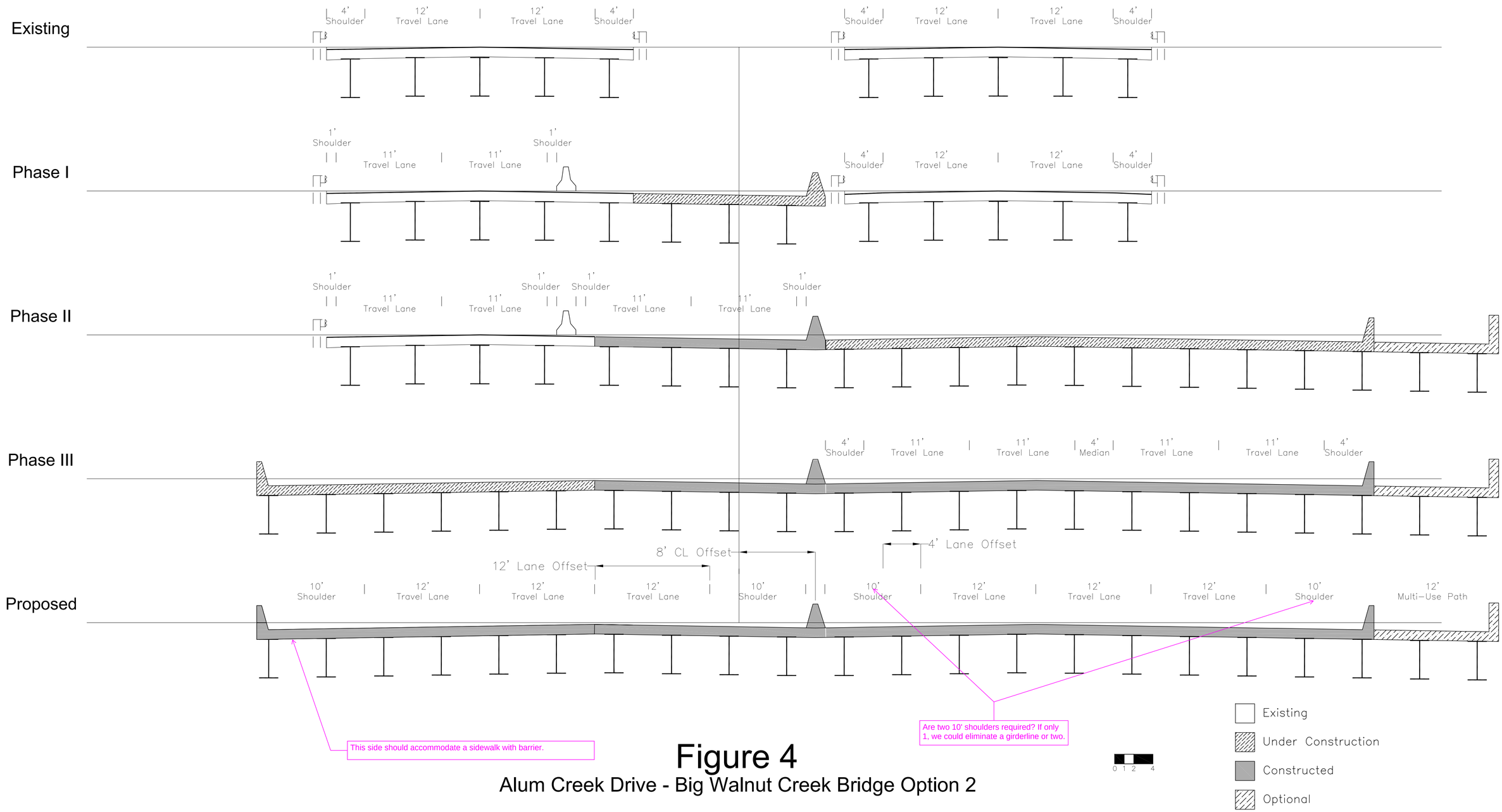


Figure 4

Alum Creek Drive - Big Walnut Creek Bridge Option 2

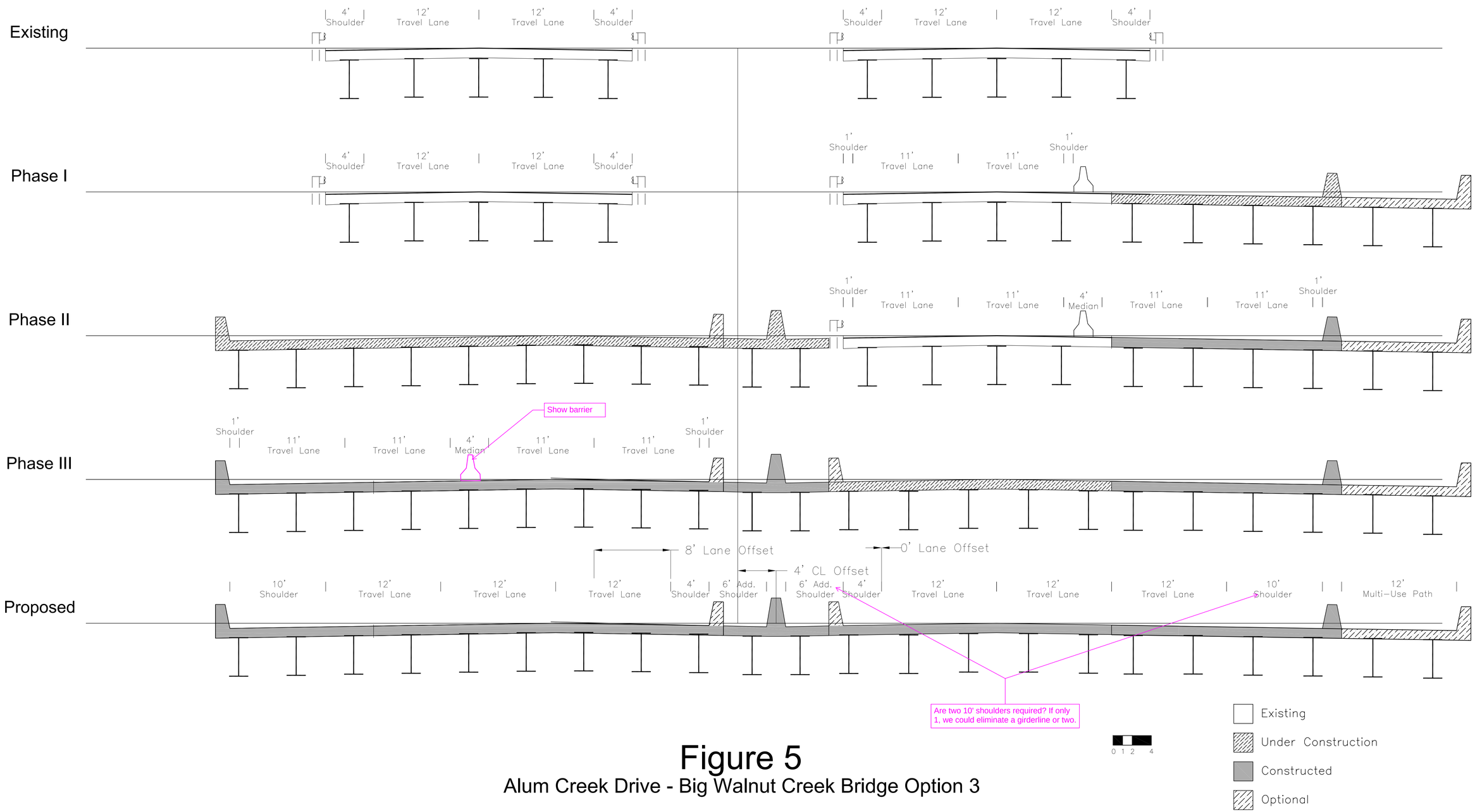


Figure 5

Alum Creek Drive - Big Walnut Creek Bridge Option 3

Alum Creek Drive - State Route 317 to Groveport Road

i know this is an old report, but ideally these should have the Option # labeled

CONSTRUCTION COSTS

Roadway	$	2,163,000	Signals	$	380,000
Erosion Control	$	595,000	Street Lighting	$	749,000
Drainage	$	4,433,000	Structures	$	-
Pavement	$	5,486,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	200,000
Traffic Control	$	52,000			
			Construction Item Subtotal (rounded)	$	14,058,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	2,811,600
Annual/Cumulative Inflation Rate	*3%*	*19%*	Inflation**	$	3,274,000
Year of Estimate/Construction	*2016*	*2022*	**Subtotal of Construction Costs**	**$**	**20,143,600**

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	235,000
Right-of-Way			$	1,211,000
Environmental	*3%*		$	605,000
Engineering	*14%*	*of Construction Subtotal*	$	2,821,000
Construction Observ., Services	*6%*	*of Construction Subtotal*	$	1,209,000
		Subtotal of Other Project Costs	**$**	**6,081,000**

ESTIMATED TOTAL PROJECT COST	**$**	**26,224,600**

Estimate prepared by Stantec Consulting Serivces 6/22/2017

These cost estimates were developed at a planning level of analysis and many factors, some of which could affect the total project cost, remain unknown at this time. This estimates provides our best judgment of project cost based on the level of analysis (planning leve) by design professionals familiar with the construction industry. Bid item costs are based, in part, on previous bids tabulated by ODOT's Estimator software, and will vary as the Stantec has no control over a contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Stantec cannot and does not guarantee that bids or prices will not vary from this estimate.

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

Item	Description	Quantity	Unit	Unit Cost	Total
	ROADWAY				
201	Clearing & Grubbing	-	Lump	$ 35,000.00	$ -
202	Walk Removed	-	SF	$ 1.50	$ -
203	Excavation	77,220.37	CY	$ 20.00	$ 1,544,407
203	Embankment	12,470.37	CY	$ 20.00	$ 249,407
	Cut and Reuse as Fill	-	CY	$ 18.00	$ -
	Place Excavated Materials as Embankment	-	CY	$ 15.00	$ -
204	Subgrade Compaction	92,089	SY	$ 4.00	$ 368,356
606	Cable Barrier	-	FT	$ 15.00	$ -
607	Fence, Misc.: Wood Fence (fall protection along path)	-	FT	$ 30.00	$ -
608	Concrete Walk, 4"	-	SF	$ 7.00	$ -
608	Concrete Walk, 8"	-	SF	$ 9.00	$ -
608	Curb Ramps	-	EA	$ 1,000.00	$ -
	Concrete Steps APP	-	SF	$ 150.00	$ -
	Brick Walk A.P.P.	-	SF	$ 23.00	$ -
609	Curb, Type 6	-	LF	$ 20.00	$ -
622	Concrete Barrier, Single Slope	-	FT	$ 80.00	$ -
622	Concrete Barrier End Section	-	EA	$ 3,000.00	$ -
	Subtotal				**$ 2,162,170**
	EROSION CONTROL				
207	Perimeter Filter Fabric Fence	25,900	FT	$ 3.00	$ 77,700
659	Water	467	M GAL	$ 100.00	$ 46,700
659	Topsoil	9,583	CY	$ 30.00	$ 287,489
659	Agricultural Lime	18	ACRE	$ 100.00	$ 1,784
659	Commercial Fertilizer	12	TON	$ 700.00	$ 8,162
659	Seeding & Mulching	86,333	SY	$ 2.00	$ 172,666
	Subtotal				**$ 594,501**
	DRAINAGE				
603	12" Conduit, Type B	-	FT	$ 60.00	$ -
603	15" Conduit, Type B	6,475.00	FT	$ 75.00	$ 485,625
603	18" Conduit, Type B	-	FT	$ 90.00	$ -
603	24" Conduit, Type B	-	FT	$ 105.00	$ -
604	60" Conduit, Type B	12,950.00	FT	$ 250.00	$ 3,237,500
601	Catch Basin No. 2-2B	86.33	EA	$ 1,120.00	$ 96,693
602	Catch Basin No. 3A	-	EA	$ 2,400.00	$ -
604	Manhole No. Type C	43.167	EA	$ 4,000.00	$ 172,667
605	4" Base Pipe Underdrain	51,800.00	FT	$ 8.50	$ 440,300
	Subtotal				**$ 4,432,785**
	PAVEMENT				
254	Pavement Planing, ~4"	69,067	SY	$ 2.75	$ 189,934
301	Asphalt Concrete Base	23,022	CY	$ 120.00	$ 2,762,668
304	Aggregate Base	15,348	CY	$ 55.00	$ 844,148
408	Prime Coat	-	Gal	$ 4.00	$ -
448	Asphalt Concrete Surface Course	6,715	CY	$ 160.00	$ 1,074,371
448	Asphalt Concrete Intermediate Course	3,837	CY	$ 160.00	$ 613,926
	Subtotal				**$ 5,485,048**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	WATER						
638	6" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	100.00	$	-
638	8" Ductile Iron Water Pipe and Fittings, Class 54	-	FT	$	125.00	$	-
638	16" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	200.00	$	-
638	6" Valve and Appurtenances	-	EA	$	600.00	$	-
638	Fire Hydrant	-	EA	$	2,500.00	$	-
638	Valve Box Adjusted to Grade	-	EA	$	300.00	$	-
638	Fire Hydrant Adjusted to Grade	-	EA	$	800.00	$	-
	Water Line to Irrigation	-	FT	$	20.00	$	-
	Water Service and Meter	-	Lump	$	3,000.00	$	-
816	3/4" Water Service Tap Relocated	-	EA	$	1,000.00	$	-
	Subtotal					**$**	**-**
	TRAFFIC CONTROL						
621	RPM	1,295	EA	$	25.00	$	32,375
630	Removal of Ground Mounted Sign and Disposal	-	EA	$	15.00	$	-
630	Removal of Ground Mounted Post Support and Disposal	-	EA	$	20.00	$	-
630	Sign, Flat Sheet	-	SF	$	20.00	$	-
631	Sign, Double faced, Street Name	-	EA	$	90.00	$	-
630	Ground Mounted Support, No. 3 Post	-	FT	$	15.00	$	-
630	Street Name Sign Support, No. 3 Post	-	FT	$	20.00	$	-
644	Center Line	-	MI	$	3,800.00	$	-
644	Edge Line	9.81	MI	$	2,000.00	$	19,621
644	Lane Line	9.81	MI				
644	Channelizing Line	-	FT	$	3.00	$	-
644	Transverse Line	-	FT	$	5.00	$	-
644	Stop Line	-	FT	$	15.00	$	-
644	Crosswalk Line	-	FT	$	12.00	$	-
644	Parking Stall Line	-	FT	$	1.50	$	-
644	Lane Arrow	-	EA	$	85.00	$	-
644	Word on Pavement	-	EA	$	100.00	$	-
	Markings Removal	-	LF	$	2.50	$	-
	RRFB	-	EA	$	15,000.00	$	-
	Subtotal					**$**	**51,996**
	LIGHTING						
625	Connector Kit, Type II	260	EA	$	60.00	$	15,600
625	Conventional Lighting Pole, APP, with foundation, installed	130	EA	$	3,300.00	$	429,000
625	Luminaire, Conventional, APP	130	EA	$	500.00	$	65,000
625	Parking Lot Lighting, with Luminaires	-	EA	$	7,000.00	$	-
625	Conduit and Wiring	8,840	LF	$	7.00	$	61,880
625	Trench	21,790		$	8.00	$	174,320
625	Power Service, A.P.P.	1	EA	$	3,000.00	$	3,000
625	Control Center	-	EA	$	3,000.00	$	-
625	High Voltage Test		Lump	$	6,000.00	$	-
	Misc.	-	Lump	$	15,000.00	$	-
	Subtotal					**$**	**748,800**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	SIGNALS						
	Signal (Full Replacement)		1	Lump	$ 250,000.00	$	250,000
	Signal (Minor Modifications)		3	Lump	$ 10,000.00	$	30,000
	Signal (Major Modifications)		1	Lump	$ 100,000.00	$	100,000
	TRENCH		-	FT	$ 5.75	$	-
	Pull Box		-	EA	$ 1,700.00	$	-
	Interconnect		-	EA	$ 45.00	$	-
		Subtotal				**$**	**380,000**
	STRUCTURES						
Spec	Culvert Extension		-	SF	$ 250.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	LANDSCAPING						
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	EA	$ -	$	-
			-	Lump	$ 50,000.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	MISCELLANEOUS						
614	Maintaining Traffic		-	Lump	$ 100,000.00	$	100,000
623	Construction Layout Stakes		-	Lump	$ 40,000.00	$	40,000
624	Mobilization		-	Lump	$ 60,000.00	$	60,000
		Subtotal				**$**	**200,000**
					Construction Total	**$**	**14,055,000**

Statements of Probable Construction and Right-of-Way Costs and Detailed Cost Estimates prepared by the Engineer represent his best judgment as a design professional familiar with the construction industry. It is recognized, however, that the Engineer has no control over the Contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Engineer cannot and does not guarantee that bids or prices will not vary from any Statement of Probable Construction Cost or other cost estimate prepared by him.

Alum Creek Drive - State Route 317 to Groveport Road

CONSTRUCTION COSTS

Roadway	$	2,575,000	Signals	$	380,000
Erosion Control	$	595,000	Street Lighting	$	481,000
Drainage	$	4,877,000	Structures	$	-
Pavement	$	5,486,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	200,000
Traffic Control	$	52,000			
			Construction Item Subtotal (rounded)	$	14,646,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	2,929,200
Annual/Cumulative Inflation Rate	*3%*	*19%*	Inflation**	$	3,411,000
Year of Estimate/Construction	*2016*	*2022*	**Subtotal of Construction Costs**	**$**	**20,986,200**

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	235,000
Right-of-Way			$	1,211,000
Environmental	*3%*		$	630,000
Engineering	*14%*	*of Construction Subtotal*	$	2,939,000
Construction Observ., Services	*6%*	*of Construction Subtotal*	$	1,260,000
		Subtotal of Other Project Costs	**$**	**6,275,000**

ESTIMATED TOTAL PROJECT COST	**$ 27,261,200**

Estimate prepared by Stantec Consulting Serivces 6/22/2017

These cost estimates were developed at a planning level of analysis and many factors, some of which could affect the total project cost, remain unknown at this time. This estimates provides our best judgment of project cost based on the level of analysis (planning leve) by design professionals familiar with the construction industry. Bid item costs are based, in part, on previous bids tabulated by ODOT's Estimator software, and will vary as the Stantec has no control over a contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Stantec cannot and does not guarantee that bids or prices will not vary from this estimate.

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

Item	Description	Quantity	Unit	Unit Cost	Total
	ROADWAY				
201	Clearing & Grubbing	-	Lump	$ 35,000.00	$ -
202	Walk Removed	-	SF	$ 1.50	$ -
203	Excavation	68,587.04	CY	$ 20.00	$ 1,371,741
203	Embankment	11,031.48	CY	$ 20.00	$ 220,630
	Cut and Reuse as Fill	-	CY	$ 18.00	$ -
	Place Excavated Materials as Embankment	-	CY	$ 15.00	$ -
204	Subgrade Compaction	92,089	SY	$ 4.00	$ 368,356
606	Cable Barrier	-	FT	$ 15.00	$ -
607	Fence, Misc.: Wood Fence (fall protection along path)	-	FT	$ 30.00	$ -
608	Concrete Walk, 4"	-	SF	$ 7.00	$ -
608	Concrete Walk, 8"	-	SF	$ 9.00	$ -
608	Curb Ramps	-	EA	$ 1,000.00	$ -
	Concrete Steps APP	-	SF	$ 150.00	$ -
	Brick Walk A.P.P.	-	SF	$ 23.00	$ -
609	Curb, Type 6	-	LF	$ 20.00	$ -
622	Concrete Barrier, Single Slope	7,300	FT	$ 80.00	$ 584,000
622	Concrete Barrier End Section	10	EA	$ 3,000.00	$ 30,000
	Subtotal				**$ 2,574,726**
	EROSION CONTROL				
207	Perimeter Filter Fabric Fence	25,900	FT	$ 3.00	$ 77,700
659	Water	467	M GAL	$ 100.00	$ 46,700
659	Topsoil	9,583	CY	$ 30.00	$ 287,489
659	Agricultural Lime	18	ACRE	$ 100.00	$ 1,784
659	Commercial Fertilizer	12	TON	$ 700.00	$ 8,162
659	Seeding & Mulching	86,333	SY	$ 2.00	$ 172,666
	Subtotal				**$ 594,501**
	DRAINAGE				
603	12" Conduit, Type B	-	FT	$ 60.00	$ -
603	15" Conduit, Type B	6,475.00	FT	$ 75.00	$ 485,625
603	18" Conduit, Type B	-	FT	$ 90.00	$ -
603	24" Conduit, Type B	-	FT	$ 105.00	$ -
604	60" Conduit, Type B	12,950.00	FT	$ 250.00	$ 3,237,500
601	Catch Basin No. 2-2B	86.33	EA	$ 1,120.00	$ 96,693
602	Catch Basin No. 3A	-	EA	$ 2,400.00	$ -
604	Manhole No. Type C	43.167	EA	$ 4,000.00	$ 172,667
605	4" Base Pipe Underdrain	51,800.00	FT	$ 8.50	$ 440,300
	Subtotal				**$ 4,432,785**
	PAVEMENT				
254	Pavement Planing	69,067	SY	$ 2.75	$ 189,934
301	Asphalt Concrete Base	23,022	CY	$ 120.00	$ 2,762,668
304	Aggregate Base	15,348	CY	$ 55.00	$ 844,148
408	Prime Coat	-	Gal	$ 4.00	$ -
448	Asphalt Concrete Surface Course	6,715	CY	$ 160.00	$ 1,074,371
448	Asphalt Concrete Intermediate Course	3,837	CY	$ 160.00	$ 613,926
	Subtotal				**$ 5,485,048**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	WATER						
638	6" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	100.00	$	-
638	8" Ductile Iron Water Pipe and Fittings, Class 54	-	FT	$	125.00	$	-
638	16" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	200.00	$	-
638	6" Valve and Appurtenances	-	EA	$	600.00	$	-
638	Fire Hydrant	-	EA	$	2,500.00	$	-
638	Valve Box Adjusted to Grade	-	EA	$	300.00	$	-
638	Fire Hydrant Adjusted to Grade	-	EA	$	800.00	$	-
	Water Line to Irrigation	-	FT	$	20.00	$	-
	Water Service and Meter	-	Lump	$	3,000.00	$	-
816	3/4" Water Service Tap Relocated	-	EA	$	1,000.00	$	-
	Subtotal					**$**	**-**
	TRAFFIC CONTROL						
621	RPM	1,295	EA	$	25.00	$	32,375
630	Removal of Ground Mounted Sign and Disposal	-	EA	$	15.00	$	-
630	Removal of Ground Mounted Post Support and Disposal	-	EA	$	20.00	$	-
630	Sign, Flat Sheet	-	SF	$	20.00	$	-
631	Sign, Double faced, Street Name	-	EA	$	90.00	$	-
630	Ground Mounted Support, No. 3 Post	-	FT	$	15.00	$	-
630	Street Name Sign Support, No. 3 Post	-	FT	$	20.00	$	-
644	Center Line	-	MI	$	3,800.00	$	-
644	Edge Line	9.81	MI	$	2,000.00	$	19,621
644	Lane Line	9.81	MI				
644	Channelizing Line	-	FT	$	3.00	$	-
644	Transverse Line	-	FT	$	5.00	$	-
644	Stop Line	-	FT	$	15.00	$	-
644	Crosswalk Line	-	FT	$	12.00	$	-
644	Parking Stall Line	-	FT	$	1.50	$	-
644	Lane Arrow	-	EA	$	85.00	$	-
644	Word on Pavement	-	EA	$	100.00	$	-
	Markings Removal	-	LF	$	2.50	$	-
	RRFB	-	EA	$	15,000.00	$	-
	Subtotal					**$**	**51,996**
	LIGHTING						
625	Connector Kit, Type II	130	EA	$	60.00	$	7,800
625	Low Mast Lighting Pole APP, with foundation, installed	65	EA	$	3,900.00	$	253,500
625	Luminaire, Low Mast APP	65	EA	$	700.00	$	45,500
625	Parking Lot Lighting, with Luminaires	-	EA	$	7,000.00	$	-
625	Conduit and Wiring	4,488	LF	$	7.00	$	31,416
625	Trench	17,438		$	8.00	$	139,504
625	Power Service, A.P.P.	1	EA	$	3,000.00	$	3,000
625	Control Center	-	EA	$	3,000.00	$	-
625	High Voltage Test		Lump	$	6,000.00	$	-
	Misc.	-	Lump	$	15,000.00	$	-
	Subtotal					**$**	**480,720**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	SIGNALS						
	Signal (Full Replacement)		1	Lump	$ 250,000.00	$	250,000
	Signal (Minor Modifications)		3	Lump	$ 10,000.00	$	30,000
	Signal (Major Modifications)		1	Lump	$ 100,000.00	$	100,000
	TRENCH		-	FT	$ 5.75	$	-
	Pull Box		-	EA	$ 1,700.00	$	-
	Interconnect		-	EA	$ 45.00	$	-
		Subtotal				**$**	**380,000**
	STRUCTURES						
Spec	Culvert Extension		-	SF	$ 250.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	LANDSCAPING						
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	EA	$ -	$	-
			-	Lump	$ 50,000.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	MISCELLANEOUS						
614	Maintaining Traffic		-	Lump	$ 100,000.00	$	100,000
623	Construction Layout Stakes		-	Lump	$ 40,000.00	$	40,000
624	Mobilization		-	Lump	$ 60,000.00	$	60,000
		Subtotal				**$**	**200,000**
					Construction Total	**$**	**14,200,000**

Statements of Probable Construction and Right-of-Way Costs and Detailed Cost Estimates prepared by the Engineer represent his best judgment as a design professional familiar with the construction industry. It is recognized, however, that the Engineer has no control over the Contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Engineer cannot and does not guarantee that bids or prices will not vary from any Statement of Probable Construction Cost or other cost estimate prepared by him.

Alum Creek Drive - State Route 317 to Groveport Road

CONSTRUCTION COSTS

Roadway	$	2,382,000	Signals	$	380,000
Erosion Control	$	595,000	Street Lighting	$	749,000
Drainage	$	4,433,000	Structures	$	-
Pavement	$	5,486,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	200,000
Traffic Control	$	52,000			
			Construction Item Subtotal (rounded)	$	14,277,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	2,855,400
Annual/Cumulative Inflation Rate	*3%*	*19%*	Inflation**	$	3,325,000
Year of Estimate/Construction	*2016*	*2022*	**Subtotal of Construction Costs**	**$**	**20,457,400**

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	235,000
Right-of-Way			$	1,211,000
Environmental	*3%*		$	614,000
Engineering	*14%*	*of Construction Subtotal*	$	2,865,000
Construction Observ., Services	*6%*	*of Construction Subtotal*	$	1,228,000
		Subtotal of Other Project Costs	**$**	**6,153,000**

ESTIMATED TOTAL PROJECT COST	**$ 26,610,400**

Estimate prepared by Stantec Consulting Serivces 6/22/2017

These cost estimates were developed at a planning level of analysis and many factors, some of which could affect the total project cost, remain unknown at this time. This estimates provides our best judgment of project cost based on the level of analysis (planning leve) by design professionals familiar with the construction industry. Bid item costs are based, in part, on previous bids tabulated by ODOT's Estimator software, and will vary as the Stantec has no control over a contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Stantec cannot and does not guarantee that bids or prices will not vary from this estimate.

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

Item	Description	Quantity	Unit	Unit Cost	Total
	ROADWAY				
201	Clearing & Grubbing	-	Lump	$ 35,000.00	$ -
202	Walk Removed	-	SF	$ 1.50	$ -
203	Excavation	77,220.37	CY	$ 20.00	$ 1,544,407
203	Embankment	12,470.37	CY	$ 20.00	$ 249,407
	Cut and Reuse as Fill	-	CY	$ 18.00	$ -
	Place Excavated Materials as Embankment	-	CY	$ 15.00	$ -
204	Subgrade Compaction	92,089	SY	$ 4.00	$ 368,356
606	Cable Barrier	-	FT	$ 15.00	$ -
607	Fence, Misc.: Wood Fence (fall protection along path)	-	FT	$ 30.00	$ -
608	Concrete Walk, 4"	-	SF	$ 7.00	$ -
608	Concrete Walk, 8"	-	SF	$ 9.00	$ -
608	Curb Ramps	-	EA	$ 1,000.00	$ -
	Concrete Steps APP	-	SF	$ 150.00	$ -
	Brick Walk A.P.P.	-	SF	$ 23.00	$ -
609	Curb, Type 6	-	LF	$ 20.00	$ -
IS	Cable Barrier	7,300	FT	$ 30.00	$ 219,000
	Subtotal				**$ 2,381,170**
	EROSION CONTROL				
207	Perimeter Filter Fabric Fence	25,900	FT	$ 3.00	$ 77,700
659	Water	467	M GAL	$ 100.00	$ 46,700
659	Topsoil	9,583	CY	$ 30.00	$ 287,489
659	Agricultural Lime	18	ACRE	$ 100.00	$ 1,784
659	Commercial Fertilizer	12	TON	$ 700.00	$ 8,162
659	Seeding & Mulching	86,333	SY	$ 2.00	$ 172,666
	Subtotal				**$ 594,501**
	DRAINAGE				
603	12" Conduit, Type B	-	FT	$ 60.00	$ -
603	15" Conduit, Type B	6,475.00	FT	$ 75.00	$ 485,625
603	18" Conduit, Type B	-	FT	$ 90.00	$ -
603	24" Conduit, Type B	-	FT	$ 105.00	$ -
604	60" Conduit, Type B	12,950.00	FT	$ 250.00	$ 3,237,500
601	Catch Basin No. 2-2B	86.33	EA	$ 1,120.00	$ 96,693
602	Catch Basin No. 3A	-	EA	$ 2,400.00	$ -
604	Manhole No. Type C	43.167	EA	$ 4,000.00	$ 172,667
605	4" Base Pipe Underdrain	51,800.00	FT	$ 8.50	$ 440,300
	Subtotal				**$ 4,432,785**
	PAVEMENT				
254	Pavement Planing, ~4"	69,067	SY	$ 2.75	$ 189,934
301	Asphalt Concrete Base	23,022	CY	$ 120.00	$ 2,762,668
304	Aggregate Base	15,348	CY	$ 55.00	$ 844,148
408	Prime Coat	-	Gal	$ 4.00	$ -
448	Asphalt Concrete Surface Course	6,715	CY	$ 160.00	$ 1,074,371
448	Asphalt Concrete Intermediate Course	3,837	CY	$ 160.00	$ 613,926
	Subtotal				**$ 5,485,048**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	WATER						
638	6" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	100.00	$	-
638	8" Ductile Iron Water Pipe and Fittings, Class 54	-	FT	$	125.00	$	-
638	16" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	200.00	$	-
638	6" Valve and Appurtenances	-	EA	$	600.00	$	-
638	Fire Hydrant	-	EA	$	2,500.00	$	-
638	Valve Box Adjusted to Grade	-	EA	$	300.00	$	-
638	Fire Hydrant Adjusted to Grade	-	EA	$	800.00	$	-
	Water Line to Irrigation	-	FT	$	20.00	$	-
	Water Service and Meter	-	Lump	$	3,000.00	$	-
816	3/4" Water Service Tap Relocated	-	EA	$	1,000.00	$	-
	Subtotal					**$**	**-**
	TRAFFIC CONTROL						
621	RPM	1,295	EA	$	25.00	$	32,375
630	Removal of Ground Mounted Sign and Disposal	-	EA	$	15.00	$	-
630	Removal of Ground Mounted Post Support and Disposal	-	EA	$	20.00	$	-
630	Sign, Flat Sheet	-	SF	$	20.00	$	-
631	Sign, Double faced, Street Name	-	EA	$	90.00	$	-
630	Ground Mounted Support, No. 3 Post	-	FT	$	15.00	$	-
630	Street Name Sign Support, No. 3 Post	-	FT	$	20.00	$	-
644	Center Line	-	MI	$	3,800.00	$	-
644	Edge Line	9.81	MI	$	2,000.00	$	19,621
644	Lane Line	9.81	MI				
644	Channelizing Line	-	FT	$	3.00	$	-
644	Transverse Line	-	FT	$	5.00	$	-
644	Stop Line	-	FT	$	15.00	$	-
644	Crosswalk Line	-	FT	$	12.00	$	-
644	Parking Stall Line	-	FT	$	1.50	$	-
644	Lane Arrow	-	EA	$	85.00	$	-
644	Word on Pavement	-	EA	$	100.00	$	-
	Markings Removal	-	LF	$	2.50	$	-
	RRFB	-	EA	$	15,000.00	$	-
	Subtotal					**$**	**51,996**
	LIGHTING						
625	Connector Kit, Type II	260	EA	$	60.00	$	15,600
625	Conventional Lighting Pole, APP, with foundation, installed	130	EA	$	3,300.00	$	429,000
625	Luminaire, Conventional, APP	130	EA	$	500.00	$	65,000
625	Parking Lot Lighting, with Luminaires	-	EA	$	7,000.00	$	-
625	Conduit and Wiring	8,840	LF	$	7.00	$	61,880
625	Trench	21,790		$	8.00	$	174,320
625	Power Service, A.P.P.	1	EA	$	3,000.00	$	3,000
625	Control Center	-	EA	$	3,000.00	$	-
625	High Voltage Test		Lump	$	6,000.00	$	-
	Misc.	-	Lump	$	15,000.00	$	-
	Subtotal					**$**	**748,800**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	SIGNALS						
	Signal (Full Replacement)		1	Lump	$ 250,000.00	$	250,000
	Signal (Minor Modifications)		3	Lump	$ 10,000.00	$	30,000
	Signal (Major Modifications)		1	Lump	$ 100,000.00	$	100,000
	TRENCH		-	FT	$ 5.75	$	-
	Pull Box		-	EA	$ 1,700.00	$	-
	Interconnect		-	EA	$ 45.00	$	-
		Subtotal				**$**	**380,000**
	SIGNALS						
	Signal		-	Lump	$ 250,000.00	$	-
	TRENCH		-	FT	$ 5.75	$	-
	Pull Box		-	EA	$ 1,700.00	$	-
	Interconnect		-	EA	$ 45.00	$	-
		Subtotal				**$**	**-**
	STRUCTURES						
Spec	Culvert Extension		-	SF	$ 250.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	LANDSCAPING						
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	EA	$ -	$	-
			-	Lump	$ 50,000.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	MISCELLANEOUS						
614	Maintaining Traffic		-	Lump	$ 100,000.00	$	100,000
623	Construction Layout Stakes		-	Lump	$ 40,000.00	$	40,000
624	Mobilization		-	Lump	$ 60,000.00	$	60,000
		Subtotal				**$**	**200,000**
					Construction Total	**$**	**14,274,000**

Statements of Probable Construction and Right-of-Way Costs and Detailed Cost Estimates prepared by the Engineer represent his best judgment as a design professional familiar with the construction industry. It is recognized, however, that the Engineer has no control over the Contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Engineer cannot and does not guarantee that bids or prices will not vary from any Statement of Probable Construction Cost or other cost estimate prepared by him.

Alum Creek Drive - State Route 317 to Groveport Road

CONSTRUCTION COSTS

Roadway	$	2,332,000	Signals	$	380,000
Erosion Control	$	595,000	Street Lighting	$	749,000
Drainage	$	4,433,000	Structures	$	-
Pavement	$	5,788,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	200,000
Traffic Control	$	52,000			
			Construction Item Subtotal (rounded)	$	14,529,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	2,905,800
Annual/Cumulative Inflation Rate	*3%*	*19%*	Inflation**	$	3,384,000
Year of Estimate/Construction	*2016*	*2022*	**Subtotal of Construction Costs**	**$**	**20,818,800**

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	235,000
Right-of-Way			$	1,211,000
Environmental	*3%*		$	625,000
Engineering	*14%*	*of Construction Subtotal*	$	2,915,000
Construction Observ., Services	*6%*	*of Construction Subtotal*	$	1,250,000
		Subtotal of Other Project Costs	**$**	**6,236,000**

ESTIMATED TOTAL PROJECT COST	**$ 27,054,800**

Estimate prepared by Stantec Consulting Serivces 6/22/2017

These cost estimates were developed at a planning level of analysis and many factors, some of which could affect the total project cost, remain unknown at this time. This estimates provides our best judgment of project cost based on the level of analysis (planning leve) by design professionals familiar with the construction industry. Bid item costs are based, in part, on previous bids tabulated by ODOT's Estimator software, and will vary as the Stantec has no control over a contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Stantec cannot and does not guarantee that bids or prices will not vary from this estimate.

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

Item	Description	Quantity	Unit	Unit Cost	Total
	ROADWAY				
201	Clearing & Grubbing	-	Lump	$ 35,000.00	$ -
202	Walk Removed	-	SF	$ 1.50	$ -
203	Excavation	69,066.67	CY	$ 20.00	$ 1,381,333
203	Embankment	11,511.11	CY	$ 20.00	$ 230,222
	Cut and Reuse as Fill	-	CY	$ 18.00	$ -
	Place Excavated Materials as Embankment	-	CY	$ 15.00	$ -
204	Subgrade Compaction	97,844	SY	$ 4.00	$ 391,378
606	Cable Barrier	7,300	FT	$ 15.00	$ 109,500
607	Fence, Misc.: Wood Fence (fall protection along path)	-	FT	$ 30.00	$ -
608	Concrete Walk, 4"	-	SF	$ 7.00	$ -
608	Concrete Walk, 8"	-	SF	$ 9.00	$ -
608	Curb Ramps	-	EA	$ 1,000.00	$ -
	Concrete Steps APP	-	SF	$ 150.00	$ -
	Brick Walk A.P.P.	-	SF	$ 23.00	$ -
609	Curb, Type 6	-	LF	$ 20.00	$ -
IS	Cable Barrier	7,300	FT	$ 30.00	$ 219,000
	Subtotal				**$ 2,331,433**
	EROSION CONTROL				
207	Perimeter Filter Fabric Fence	25,900	FT	$ 3.00	$ 77,700
659	Water	467	M GAL	$ 100.00	$ 46,700
659	Topsoil	9,583	CY	$ 30.00	$ 287,489
659	Agricultural Lime	18	ACRE	$ 100.00	$ 1,784
659	Commercial Fertilizer	12	TON	$ 700.00	$ 8,162
659	Seeding & Mulching	86,333	SY	$ 2.00	$ 172,666
	Subtotal				**$ 594,501**
	DRAINAGE				
603	12" Conduit, Type B	-	FT	$ 60.00	$ -
603	15" Conduit, Type B	6,475.00	FT	$ 75.00	$ 485,625
603	18" Conduit, Type B	-	FT	$ 90.00	$ -
603	24" Conduit, Type B	-	FT	$ 105.00	$ -
604	60" Conduit, Type B	12,950.00	FT	$ 250.00	$ 3,237,500
601	Catch Basin No. 2-2B	86.33	EA	$ 1,120.00	$ 96,693
602	Catch Basin No. 3A	-	EA	$ 2,400.00	$ -
604	Manhole No. Type C	43.167	EA	$ 4,000.00	$ 172,667
605	4" Base Pipe Underdrain	51,800.00	FT	$ 8.50	$ 440,300
	Subtotal				**$ 4,432,785**
	PAVEMENT				
254	Pavement Planing, ~4"	69,067	SY	$ 2.75	$ 189,934
301	Asphalt Concrete Base	24,461	CY	$ 120.00	$ 2,935,334
304	Aggregate Base	16,307	CY	$ 55.00	$ 896,908
408	Prime Coat	-	Gal	$ 4.00	$ -
448	Asphalt Concrete Surface Course	6,955	CY	$ 160.00	$ 1,112,741
448	Asphalt Concrete Intermediate Course	4,077	CY	$ 160.00	$ 652,298
	Subtotal				**$ 5,787,215**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	WATER						
638	6" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	100.00	$	-
638	8" Ductile Iron Water Pipe and Fittings, Class 54	-	FT	$	125.00	$	-
638	16" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	200.00	$	-
638	6" Valve and Appurtenances	-	EA	$	600.00	$	-
638	Fire Hydrant	-	EA	$	2,500.00	$	-
638	Valve Box Adjusted to Grade	-	EA	$	300.00	$	-
638	Fire Hydrant Adjusted to Grade	-	EA	$	800.00	$	-
	Water Line to Irrigation	-	FT	$	20.00	$	-
	Water Service and Meter	-	Lump	$	3,000.00	$	-
816	3/4" Water Service Tap Relocated	-	EA	$	1,000.00	$	-
	Subtotal					**$**	**-**
	TRAFFIC CONTROL						
621	RPM	1,295	EA	$	25.00	$	32,375
630	Removal of Ground Mounted Sign and Disposal	-	EA	$	15.00	$	-
630	Removal of Ground Mounted Post Support and Disposal	-	EA	$	20.00	$	-
630	Sign, Flat Sheet	-	SF	$	20.00	$	-
631	Sign, Double faced, Street Name	-	EA	$	90.00	$	-
630	Ground Mounted Support, No. 3 Post	-	FT	$	15.00	$	-
630	Street Name Sign Support, No. 3 Post	-	FT	$	20.00	$	-
644	Center Line	-	MI	$	3,800.00	$	-
644	Edge Line	9.81	MI	$	2,000.00	$	19,621
644	Lane Line	9.81	MI				
644	Channelizing Line	-	FT	$	3.00	$	-
644	Transverse Line	-	FT	$	5.00	$	-
644	Stop Line	-	FT	$	15.00	$	-
644	Crosswalk Line	-	FT	$	12.00	$	-
644	Parking Stall Line	-	FT	$	1.50	$	-
644	Lane Arrow	-	EA	$	85.00	$	-
644	Word on Pavement	-	EA	$	100.00	$	-
	Markings Removal	-	LF	$	2.50	$	-
	RRFB	-	EA	$	15,000.00	$	-
	Subtotal					**$**	**51,996**
	LIGHTING						
625	Connector Kit, Type II	260	EA	$	60.00	$	15,600
625	Conventional Lighting Pole APP, with foundation, installed	130	EA	$	3,300.00	$	429,000
625	Luminaire, Conventional, APP	130	EA	$	500.00	$	65,000
625	Parking Lot Lighting, with Luminaires	-	EA	$	7,000.00	$	-
625	Conduit and Wiring	8,840	LF	$	7.00	$	61,880
625	Trench	21,790		$	8.00	$	174,320
625	Power Service, A.P.P.	1	EA	$	3,000.00	$	3,000
625	Control Center	-	EA	$	3,000.00	$	-
625	High Voltage Test		Lump	$	6,000.00	$	-
	Misc.	-	Lump	$	15,000.00	$	-
	Subtotal					**$**	**748,800**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	SIGNALS						
	Signal (Full Replacement)		1	Lump	$ 250,000.00	$	250,000
	Signal (Minor Modifications)		3	Lump	$ 10,000.00	$	30,000
	Signal (Major Modifications)		1	Lump	$ 100,000.00	$	100,000
	TRENCH		-	FT	$ 5.75	$	-
	Pull Box		-	EA	$ 1,700.00	$	-
	Interconnect		-	EA	$ 45.00	$	-
		Subtotal				**$**	**380,000**
	STRUCTURES						
Spec	Culvert Extension		-	SF	$ 250.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	LANDSCAPING						
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	EA	$ -	$	-
			-	Lump	$ 50,000.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	MISCELLANEOUS						
614	Maintaining Traffic		-	Lump	$ 100,000.00	$	100,000
623	Construction Layout Stakes		-	Lump	$ 40,000.00	$	40,000
624	Mobilization		-	Lump	$ 60,000.00	$	60,000
		Subtotal				**$**	**200,000**
					Construction Total	**$**	**14,527,000**

Statements of Probable Construction and Right-of-Way Costs and Detailed Cost Estimates prepared by the Engineer represent his best judgment as a design professional familiar with the construction industry. It is recognized, however, that the Engineer has no control over the Contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Engineer cannot and does not guarantee that bids or prices will not vary from any Statement of Probable Construction Cost or other cost estimate prepared by him.

Alum Creek Drive - State Route 317 to Groveport Road

CONSTRUCTION COSTS

Roadway	$	1,998,000	Signals	$	380,000
Erosion Control	$	595,000	Street Lighting	$	749,000
Drainage	$	4,433,000	Structures	$	-
Pavement	$	4,579,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	200,000
Traffic Control	$	52,000			
			Construction Item Subtotal (rounded)	$	12,986,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	2,597,200
Annual/Cumulative Inflation Rate	*3%*	*19%*	Inflation**	$	3,024,000
Year of Estimate/Construction	*2016*	*2022*	**Subtotal of Construction Costs**	**$**	**18,607,200**

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	235,000
Right-of-Way			$	1,211,000
Environmental	*3%*		$	559,000
Engineering	*14%*	*of Construction Subtotal*	$	2,606,000
Construction Observ., Services	*6%*	*of Construction Subtotal*	$	1,117,000
		Subtotal of Other Project Costs	**$**	**5,728,000**

ESTIMATED TOTAL PROJECT COST	**$**	**24,335,200**

Estimate prepared by Stantec Consulting Serivces 6/22/2017

These cost estimates were developed at a planning level of analysis and many factors, some of which could affect the total project cost, remain unknown at this time. This estimates provides our best judgment of project cost based on the level of analysis (planning leve) by design professionals familiar with the construction industry. Bid item costs are based, in part, on previous bids tabulated by ODOT's Estimator software, and will vary as the Stantec has no control over a contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Stantec cannot and does not guarantee that bids or prices will not vary from this estimate.

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

Item	Description	Quantity	Unit	Unit Cost	Total
	ROADWAY				
201	Clearing & Grubbing	-	Lump	$ 35,000.00	$ -
202	Walk Removed	-	SF	$ 1.50	$ -
203	Excavation	74,822.22	CY	$ 20.00	$ 1,496,444
203	Embankment	10,072.22	CY	$ 20.00	$ 201,444
	Cut and Reuse as Fill	-	CY	$ 18.00	$ -
	Place Excavated Materials as Embankment	-	CY	$ 15.00	$ -
204	Subgrade Compaction	74,822	SY	$ 4.00	$ 299,289
606	Cable Barrier	-	FT	$ 15.00	$ -
607	Fence, Misc.: Wood Fence (fall protection along path)	-	FT	$ 30.00	$ -
608	Concrete Walk, 4"	-	SF	$ 7.00	$ -
608	Concrete Walk, 8"	-	SF	$ 9.00	$ -
608	Curb Ramps	-	EA	$ 1,000.00	$ -
	Concrete Steps APP	-	SF	$ 150.00	$ -
	Brick Walk A.P.P.	-	SF	$ 23.00	$ -
609	Curb, Type 6	-	LF	$ 20.00	$ -
622	Concrete Barrier, Single Slope	-	FT	$ 80.00	$ -
622	Concrete Barrier End Section	-	EA	$ 3,000.00	$ -
	Subtotal				**$ 1,997,178**
	EROSION CONTROL				
207	Perimeter Filter Fabric Fence	25,900	FT	$ 3.00	$ 77,700
659	Water	467	M GAL	$ 100.00	$ 46,700
659	Topsoil	9,583	CY	$ 30.00	$ 287,489
659	Agricultural Lime	18	ACRE	$ 100.00	$ 1,784
659	Commercial Fertilizer	12	TON	$ 700.00	$ 8,162
659	Seeding & Mulching	86,333	SY	$ 2.00	$ 172,666
	Subtotal				**$ 594,501**
	DRAINAGE				
603	12" Conduit, Type B	-	FT	$ 60.00	$ -
603	15" Conduit, Type B	6,475.00	FT	$ 75.00	$ 485,625
603	18" Conduit, Type B	-	FT	$ 90.00	$ -
603	24" Conduit, Type B	-	FT	$ 105.00	$ -
604	60" Conduit, Type B	12,950.00	FT	$ 250.00	$ 3,237,500
601	Catch Basin No. 2-2B	86.33	EA	$ 1,120.00	$ 96,693
602	Catch Basin No. 3A	-	EA	$ 2,400.00	$ -
604	Manhole No. Type C	43.167	EA	$ 4,000.00	$ 172,667
605	4" Base Pipe Underdrain	51,800.00	FT	$ 8.50	$ 440,300
	Subtotal				**$ 4,432,785**
	PAVEMENT				
254	Pavement Planing, ~4"	69,067	SY	$ 2.75	$ 189,934
301	Asphalt Concrete Base	18,706	CY	$ 120.00	$ 2,244,667
304	Aggregate Base	12,470	CY	$ 55.00	$ 685,871
408	Prime Coat	-	Gal	$ 4.00	$ -
448	Asphalt Concrete Surface Course	5,995	CY	$ 160.00	$ 959,261
448	Asphalt Concrete Intermediate Course	3,118	CY	$ 160.00	$ 498,816
	Subtotal				**$ 4,578,549**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	WATER						
638	6" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	100.00	$	-
638	8" Ductile Iron Water Pipe and Fittings, Class 54	-	FT	$	125.00	$	-
638	16" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	200.00	$	-
638	6" Valve and Appurtenances	-	EA	$	600.00	$	-
638	Fire Hydrant	-	EA	$	2,500.00	$	-
638	Valve Box Adjusted to Grade	-	EA	$	300.00	$	-
638	Fire Hydrant Adjusted to Grade	-	EA	$	800.00	$	-
	Water Line to Irrigation	-	FT	$	20.00	$	-
	Water Service and Meter	-	Lump	$	3,000.00	$	-
816	3/4" Water Service Tap Relocated	-	EA	$	1,000.00	$	-
	Subtotal					**$**	**-**
	TRAFFIC CONTROL						
621	RPM	1,295	EA	$	25.00	$	32,375
630	Removal of Ground Mounted Sign and Disposal	-	EA	$	15.00	$	-
630	Removal of Ground Mounted Post Support and Disposal	-	EA	$	20.00	$	-
630	Sign, Flat Sheet	-	SF	$	20.00	$	-
631	Sign, Double faced, Street Name	-	EA	$	90.00	$	-
630	Ground Mounted Support, No. 3 Post	-	FT	$	15.00	$	-
630	Street Name Sign Support, No. 3 Post	-	FT	$	20.00	$	-
644	Center Line	-	MI	$	3,800.00	$	-
644	Edge Line	9.81	MI	$	2,000.00	$	19,621
644	Lane Line	9.81	MI				
644	Channelizing Line	-	FT	$	3.00	$	-
644	Transverse Line	-	FT	$	5.00	$	-
644	Stop Line	-	FT	$	15.00	$	-
644	Crosswalk Line	-	FT	$	12.00	$	-
644	Parking Stall Line	-	FT	$	1.50	$	-
644	Lane Arrow	-	EA	$	85.00	$	-
644	Word on Pavement	-	EA	$	100.00	$	-
	Markings Removal	-	LF	$	2.50	$	-
	RRFB	-	EA	$	15,000.00	$	-
	Subtotal					**$**	**51,996**
	LIGHTING						
625	Connector Kit, Type II	260	EA	$	60.00	$	15,600
625	Conventional Lighting Pole APP, with foundation, installed	130	EA	$	3,300.00	$	429,000
625	Luminaire, Conventional, APP	130	EA	$	500.00	$	65,000
625	Parking Lot Lighting, with Luminaires	-	EA	$	7,000.00	$	-
625	Conduit and Wiring	8,840	LF	$	7.00	$	61,880
625	Trench	21,790		$	8.00	$	174,320
625	Power Service, A.P.P.	1	EA	$	3,000.00	$	3,000
625	Control Center	-	EA	$	3,000.00	$	-
625	High Voltage Test		Lump	$	6,000.00	$	-
	Misc.	-	Lump	$	15,000.00	$	-
	Subtotal					**$**	**748,800**

Alum Creek Drive - State Route 317 to Groveport Road

Detailed Construction Estimate

	SIGNALS						
	Signal (Full Replacement)		1	Lump	$ 250,000.00	$	250,000
	Signal (Minor Modifications)		3	Lump	$ 10,000.00	$	30,000
	Signal (Major Modifications)		1	Lump	$ 100,000.00	$	100,000
	TRENCH		-	FT	$ 5.75	$	-
	Pull Box		-	EA	$ 1,700.00	$	-
	Interconnect		-	EA	$ 45.00	$	-
		Subtotal				**$**	**380,000**
	STRUCTURES						
Spec	Culvert Extension		-	SF	$ 250.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	LANDSCAPING						
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	SF	$ -	$	-
			-	EA	$ -	$	-
			-	Lump	$ 50,000.00	$	-
			-	Lump	$ -	$	-
			-	Lump	$ -	$	-
		Subtotal				**$**	**-**
	MISCELLANEOUS						
614	Maintaining Traffic		-	Lump	$ 100,000.00	$	100,000
623	Construction Layout Stakes		-	Lump	$ 40,000.00	$	40,000
624	Mobilization		-	Lump	$ 60,000.00	$	60,000
		Subtotal				**$**	**200,000**
					Construction Total	**$**	**12,984,000**

Statements of Probable Construction and Right-of-Way Costs and Detailed Cost Estimates prepared by the Engineer represent his best judgment as a design professional familiar with the construction industry. It is recognized, however, that the Engineer has no control over the Contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Engineer cannot and does not guarantee that bids or prices will not vary from any Statement of Probable Construction Cost or other cost estimate prepared by him.

Alum Creek Drive Corridor

This is a nice deliverable, please update according to the recommendations of this study

Symmetric Alternative

Typical Section - Before and After, South of Big Walnut Creek **(Standard Section)**

Typical Section - Before and After, North of Big Walnut Creek **(Fill Section)**

Stantec

N

1 inch = 20 feet

Feet

0 10 20 40

Alum Creek Drive Corridor

Symmetric Alternative

Please update according to the recommendations of the current study. Please include hatching/shading to make it clear what features are being proposed, similar to the style of overlay done on the previous sheet.

This doesn't show pedestrian infrastructure. Update & include in new study

Stantec

N

1 inch = 100 feet

0 100 200 400 Feet

Alum Creek Drive Corridor

Symmetric Alternative

Stantec

N

1 inch = 100 feet

0 100 200 400 Feet

Alum Creek Drive Corridor

Symmetric Alternative

Stantec

N

1 inch = 100 feet

Feet

0 100 200 400

Alum Creek Drive Corridor

Symmetric Alternative

Stantec

N

1 inch = 100 feet

0 100 200 400 Feet

Alum Creek Drive Corridor

Symmetric Alternative

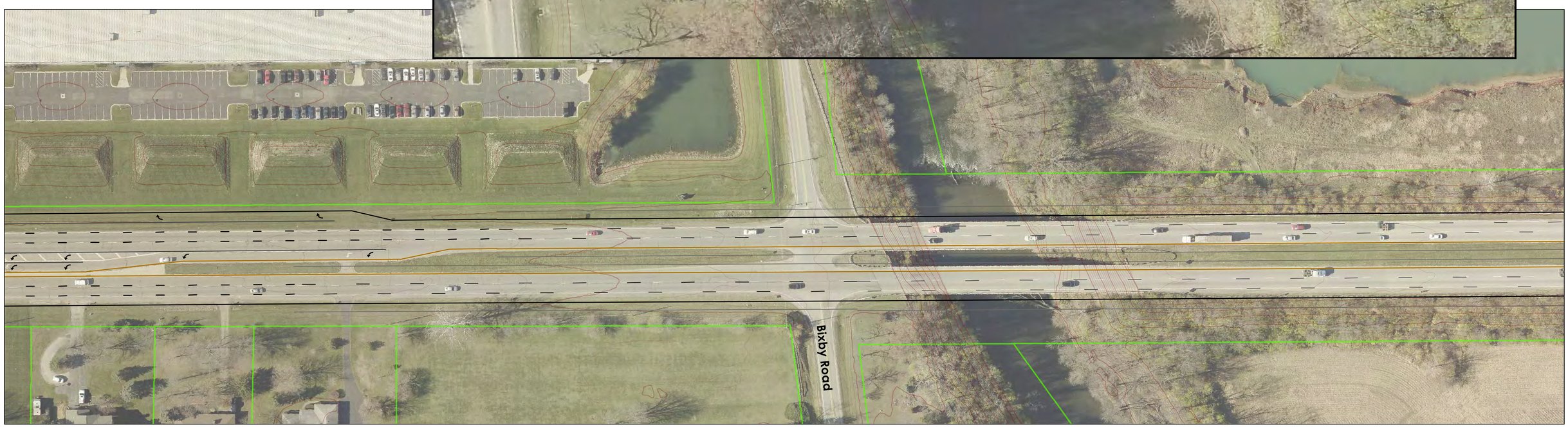
Stantec

1 inch = 100 feet

0 100 200 400 Feet

Alum Creek Drive Corridor

Symmetric Alternative — Bridge MOT over Big Walnut Creek



Stantec

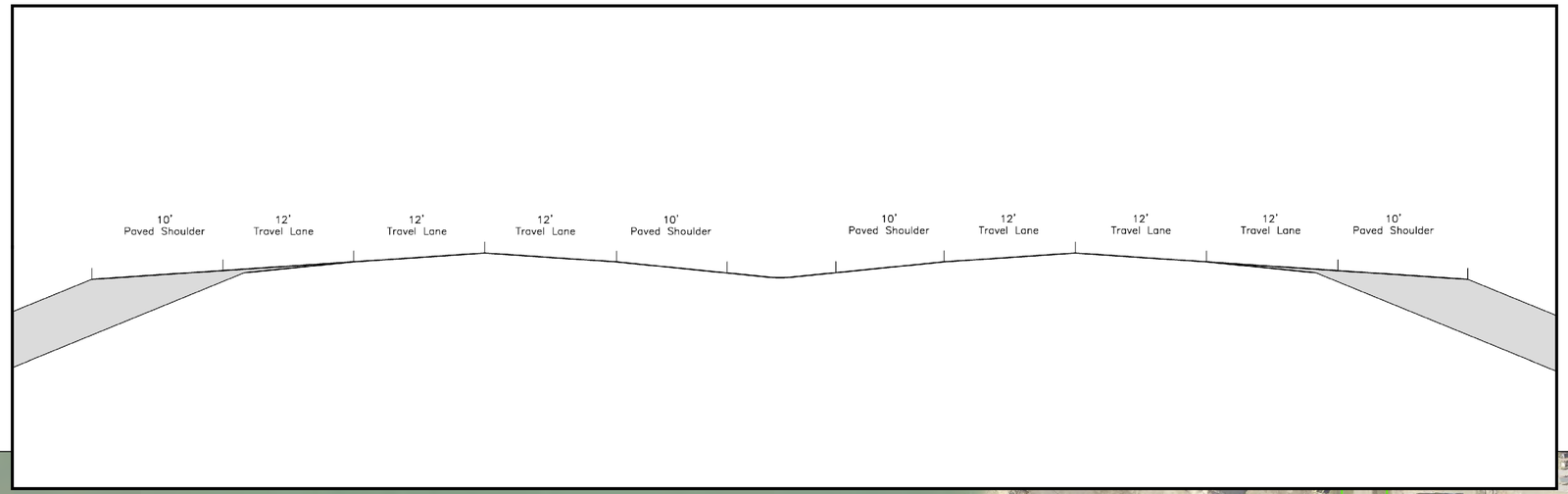
N

1 inch = 60 feet

0 35 70 140 Feet

Alum Creek Drive Corridor

Symmetric Alternative — Bixby to Rathmell Roads



Stantec

N

1 inch = 100 feet

0 55 110 220 Feet

Alum Creek Drive Corridor

Symmetric Alternative

Stantec

APPENDIX

B. Raw Traffic Counts

Alum Creek Drive and Groveport Road

3084 - Alum Creek Dr & Groveport Rd - TMC

Tue Aug 16, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978966, Location: 39.868051, -82.935142, Site Code: 3084

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Groveport Rd Eastbound						Groveport Rd Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-08-16 12:00AM	0	0	10	0	**10**	0	0	0	12	0	**12**	0	11	205	1	0	**217**	0	9	33	4	0	**46**	0	**285**
12:15AM	0	0	4	0	**4**	0	0	0	14	0	**14**	0	1	93	1	0	**95**	0	11	31	4	0	**46**	0	**159**
12:30AM	0	0	8	0	**8**	0	0	0	11	0	**11**	0	5	64	1	0	**70**	0	7	45	6	0	**58**	0	**147**
12:45AM	0	0	3	0	**3**	0	0	0	10	0	**10**	0	0	49	0	0	**49**	0	8	40	10	0	**58**	0	**120**
Hourly Total	0	0	25	0	**25**	0	0	0	47	0	**47**	0	17	411	3	0	**431**	0	35	149	24	0	**208**	0	**711**
1:00AM	0	0	2	0	**2**	0	0	0	19	0	**19**	0	3	65	1	0	**69**	0	7	33	8	0	**48**	0	**138**
1:15AM	0	0	2	0	**2**	0	0	0	5	0	**5**	0	2	69	0	0	**71**	0	4	39	6	1	**50**	0	**128**
1:30AM	0	0	6	0	**6**	0	0	0	5	0	**5**	0	1	36	0	0	**37**	0	5	35	3	0	**43**	0	**91**
1:45AM	0	0	2	0	**2**	0	0	0	6	0	**6**	0	3	33	2	0	**38**	0	7	44	6	0	**57**	0	**103**
Hourly Total	0	0	12	0	**12**	0	0	0	35	0	**35**	0	9	203	3	0	**215**	0	23	151	23	1	**198**	0	**460**
2:00AM	0	0	2	0	**2**	0	0	0	14	0	**14**	0	7	125	0	0	**132**	0	6	36	5	0	**47**	0	**195**
2:15AM	0	0	3	0	**3**	0	0	0	15	0	**15**	0	3	56	1	0	**60**	0	4	33	13	0	**50**	0	**128**
2:30AM	0	0	1	0	**1**	0	0	0	4	0	**4**	1	4	78	1	0	**83**	0	5	32	7	0	**44**	0	**132**
2:45AM	0	0	2	0	**2**	0	0	0	8	0	**8**	0	3	36	0	0	**39**	0	3	49	6	0	**58**	0	**107**
Hourly Total	0	0	8	0	**8**	0	0	0	41	0	**41**	1	17	295	2	0	**314**	0	18	150	31	0	**199**	0	**562**
3:00AM	0	0	7	0	**7**	0	0	0	18	0	**18**	0	2	42	0	0	**44**	0	6	53	4	0	**63**	0	**132**
3:15AM	0	0	5	0	**5**	0	0	0	13	0	**13**	0	3	53	1	0	**57**	0	5	70	9	0	**84**	0	**159**
3:30AM	0	0	5	0	**5**	0	0	0	15	0	**15**	0	7	162	2	0	**171**	0	7	90	8	1	**106**	0	**297**
3:45AM	0	0	4	0	**4**	0	0	0	28	0	**28**	0	8	78	1	0	**87**	0	2	100	8	0	**110**	0	**229**
Hourly Total	0	0	21	0	**21**	0	0	0	74	0	**74**	0	20	335	4	0	**359**	0	20	313	29	1	**363**	0	**817**
4:00AM	0	0	6	0	**6**	0	0	0	16	0	**16**	0	8	115	2	0	**125**	0	11	118	11	0	**140**	0	**287**
4:15AM	0	0	8	0	**8**	0	0	0	19	0	**19**	0	1	82	0	0	**83**	0	12	164	12	1	**189**	0	**299**
4:30AM	0	0	16	0	**16**	0	0	0	30	0	**30**	0	4	159	6	0	**169**	0	14	231	18	0	**263**	0	**478**
4:45AM	0	0	20	0	**20**	0	0	0	29	0	**29**	0	4	97	1	0	**102**	0	24	276	21	0	**321**	0	**472**
Hourly Total	0	0	50	0	**50**	0	0	0	94	0	**94**	0	17	453	9	0	**479**	0	61	789	62	1	**913**	0	**1536**
5:00AM	0	0	8	0	**8**	0	0	0	24	0	**24**	0	11	137	3	0	**151**	0	17	207	20	0	**244**	0	**427**
5:15AM	0	0	24	0	**24**	0	0	0	41	0	**41**	0	6	93	4	0	**103**	0	37	348	27	0	**412**	0	**580**
5:30AM	0	0	34	0	**34**	0	0	0	51	0	**51**	0	6	80	1	0	**87**	0	35	509	36	0	**580**	0	**752**
5:45AM	0	0	50	0	**50**	0	0	0	48	0	**48**	1	14	122	7	0	**143**	0	48	614	66	2	**730**	0	**971**
Hourly Total	0	0	116	0	**116**	0	0	0	164	0	**164**	1	37	432	15	0	**484**	0	137	1678	149	2	**1966**	0	**2730**
6:00AM	0	0	25	0	**25**	0	0	0	66	0	**66**	0	7	181	5	0	**193**	1	32	326	36	0	**394**	0	**678**
6:15AM	0	0	37	0	**37**	0	0	0	92	0	**92**	1	10	160	2	0	**172**	1	43	372	51	0	**466**	0	**767**
6:30AM	0	0	36	0	**36**	0	0	0	132	0	**132**	0	12	186	3	0	**201**	0	75	505	50	0	**630**	1	**999**
6:45AM	0	0	57	0	**57**	0	0	0	137	0	**137**	3	15	204	4	0	**223**	1	109	585	80	0	**774**	0	**1191**
Hourly Total	0	0	155	0	**155**	0	0	0	427	0	**427**	4	44	731	14	0	**789**	3	259	1788	217	0	**2264**	1	**3635**
7:00AM	0	0	23	0	**23**	2	0	0	164	0	**164**	1	17	194	3	0	**214**	2	72	261	54	0	**387**	0	**788**
7:15AM	0	0	28	0	**28**	0	0	0	141	0	**141**	4	19	206	6	0	**231**	2	60	369	59	0	**488**	0	**888**
7:30AM	0	0	35	0	**35**	0	0	0	178	0	**178**	0	18	213	7	0	**238**	0	66	404	73	0	**543**	0	**994**
7:45AM	0	0	40	0	**40**	0	0	0	150	0	**150**	0	20	164	5	0	**189**	0	65	484	86	0	**635**	0	**1014**
Hourly Total	0	0	126	0	**126**	2	0	0	633	0	**633**	5	74	777	21	0	**872**	4	263	1518	272	0	**2053**	0	**3684**
8:00AM	0	0	27	0	**27**	0	0	0	139	0	**139**	0	21	158	8	0	**187**	0	60	324	67	0	**451**	0	**804**
8:15AM	0	0	19	0	**19**	0	0	0	129	0	**129**	0	13	159	0	0	**172**	0	35	317	47	0	**399**	0	**719**
8:30AM	0	0	35	0	**35**	0	0	0	112	0	**112**	0	17	169	8	0	**194**	0	48	282	48	0	**378**	0	**719**
8:45AM	0	0	27	0	**27**	1	0	0	117	0	**117**	0	13	161	4	0	**178**	0	55	271	42	0	**368**	0	**690**
Hourly Total	0	0	108	0	**108**	1	0	0	497	0	**497**	0	64	647	20	0	**731**	0	198	1194	204	0	**1596**	0	**2932**
9:00AM	0	0	23	0	**23**	0	0	0	128	0	**128**	0	27	158	5	0	**190**	0	35	193	37	0	**265**	0	**606**
9:15AM	0	0	21	0	**21**	0	0	0	167	0	**167**	0	14	140	5	0	**159**	0	31	195	41	0	**267**	0	**614**
9:30AM	0	0	20	0	**20**	0	1	0	92	0	**93**	0	22	166	5	0	**193**	0	34	198	43	0	**275**	0	**581**
9:45AM	0	0	24	0	**24**	0	0	0	93	0	**93**	0	10	153	1	0	**164**	0	42	190	38	0	**270**	0	**551**
Hourly Total	0	0	88	0	**88**	0	1	0	480	0	**481**	0	73	617	16	0	**706**	0	142	776	159	0	**1077**	0	**2352**
10:00AM	0	0	21	0	**21**	0	0	0	95	0	**95**	0	24	141	2	0	**167**	0	26	147	38	0	**211**	0	**494**
10:15AM	0	0	24	0	**24**	0	0	0	101	0	**101**	0	17	150	8	0	**175**	0	44	148	47	0	**239**	0	**539**
10:30AM	0	0	28	0	**28**	0	0	0	91	0	**91**	0	18	160	4	0	**182**	0	35	157	46	0	**238**	0	**539**
10:45AM	0	0	26	0	**26**	0	0	0	73	0	**73**	0	19	157	12	1	**189**	0	40	182	55	0	**277**	0	**565**

Leg	Groveport Rd						Groveport Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
Hourly Total	0	0	99	0	**99**	0	0	0	360	0	**360**	0	78	608	26	1	**713**	0	145	634	186	0	**965**	0	**2137**
11:00AM	0	0	35	0	**35**	0	0	0	96	0	**96**	0	34	201	12	0	**247**	0	47	178	46	0	**271**	0	**649**
11:15AM	0	0	40	0	**40**	0	0	0	115	0	**115**	0	32	158	15	0	**205**	0	49	175	51	0	**275**	0	**635**
11:30AM	0	0	47	0	**47**	0	0	0	91	0	**91**	0	27	194	13	0	**234**	0	42	178	49	0	**269**	0	**641**
11:45AM	0	0	50	0	**50**	0	0	0	89	0	**89**	1	34	168	14	0	**216**	1	48	184	46	0	**278**	0	**633**
Hourly Total	0	0	172	0	**172**	0	0	0	391	0	**391**	1	127	721	54	0	**902**	1	186	715	192	0	**1093**	0	**2558**
12:00PM	0	0	40	0	**40**	0	0	0	79	0	**79**	0	51	217	13	1	**282**	0	53	162	57	0	**272**	0	**673**
12:15PM	1	0	62	0	**63**	0	0	0	82	0	**82**	0	39	197	8	0	**244**	0	46	167	58	0	**271**	0	**660**
12:30PM	0	0	53	0	**53**	0	0	0	114	0	**114**	0	39	169	7	0	**215**	0	53	188	46	0	**287**	0	**669**
12:45PM	0	0	40	0	**40**	0	0	0	93	0	**93**	0	32	202	3	0	**237**	1	60	171	45	0	**276**	0	**646**
Hourly Total	1	0	195	0	**196**	0	0	0	368	0	**368**	0	161	785	31	1	**978**	1	212	688	206	0	**1106**	0	**2648**
1:00PM	0	0	28	0	**28**	0	0	0	100	0	**100**	0	40	220	5	0	**265**	0	42	198	52	0	**292**	0	**685**
1:15PM	0	0	47	0	**47**	0	0	0	77	0	**77**	0	21	195	11	0	**227**	0	46	227	53	0	**326**	0	**677**
1:30PM	0	0	39	0	**39**	0	0	0	117	0	**117**	0	26	242	3	0	**271**	0	41	282	45	1	**369**	0	**796**
1:45PM	0	0	36	0	**36**	0	0	0	90	0	**90**	0	18	213	4	0	**235**	0	52	290	58	0	**400**	0	**761**
Hourly Total	0	0	150	0	**150**	0	0	0	384	0	**384**	0	105	870	23	0	**998**	0	181	997	208	1	**1387**	0	**2919**
2:00PM	0	0	27	0	**27**	0	0	0	122	0	**122**	0	35	325	8	0	**368**	0	63	258	65	0	**386**	0	**903**
2:15PM	0	0	30	0	**30**	0	0	0	110	0	**110**	0	31	378	7	0	**416**	0	77	245	52	0	**374**	0	**930**
2:30PM	0	0	28	0	**28**	0	0	0	147	0	**147**	0	33	354	7	0	**394**	2	82	303	55	0	**440**	0	**1009**
2:45PM	0	0	42	0	**42**	0	0	0	115	0	**115**	0	39	430	9	1	**479**	1	77	301	69	0	**447**	0	**1083**
Hourly Total	0	0	127	0	**127**	0	0	0	494	0	**494**	0	138	1487	31	1	**1657**	3	299	1107	241	0	**1647**	0	**3925**
3:00PM	3	0	27	0	**30**	0	0	0	151	0	**151**	0	49	410	8	0	**467**	1	84	262	56	0	**402**	0	**1050**
3:15PM	0	0	52	0	**52**	0	0	0	170	0	**170**	0	31	334	10	0	**375**	2	117	285	45	0	**447**	0	**1044**
3:30PM	0	0	42	0	**42**	0	0	0	205	0	**205**	3	34	390	10	0	**434**	1	95	284	55	0	**434**	0	**1115**
3:45PM	0	0	37	0	**37**	0	0	0	172	0	**172**	1	26	455	6	0	**487**	1	106	301	62	0	**469**	0	**1165**
Hourly Total	3	0	158	0	**161**	0	0	0	698	0	**698**	4	140	1589	34	0	**1763**	5	402	1132	218	0	**1752**	0	**4374**
4:00PM	0	0	30	0	**30**	1	0	0	211	0	**211**	0	32	330	5	0	**367**	2	129	258	78	0	**465**	0	**1073**
4:15PM	0	0	33	0	**33**	0	0	0	196	0	**196**	0	23	372	9	0	**404**	1	104	295	85	0	**484**	0	**1117**
4:30PM	0	0	31	0	**31**	0	0	0	208	0	**208**	0	22	408	3	0	**433**	0	109	335	50	0	**494**	0	**1166**
4:45PM	0	0	42	0	**42**	0	0	0	140	0	**140**	1	26	428	6	0	**460**	0	112	302	63	0	**477**	1	**1119**
Hourly Total	0	0	136	0	**136**	1	0	0	755	0	**755**	1	103	1538	23	0	**1664**	3	454	1190	276	0	**1920**	1	**4475**
5:00PM	0	0	20	0	**20**	0	0	0	194	0	**194**	0	41	362	4	0	**407**	0	103	231	47	0	**381**	0	**1002**
5:15PM	0	0	29	0	**29**	1	0	0	153	0	**153**	0	24	346	7	0	**377**	0	153	241	51	0	**445**	0	**1004**
5:30PM	0	0	29	0	**29**	1	0	0	152	0	**152**	0	28	287	8	0	**323**	1	149	211	50	1	**411**	0	**915**
5:45PM	0	0	32	0	**32**	0	0	0	113	0	**113**	0	23	228	8	0	**259**	0	110	238	52	0	**400**	0	**804**
Hourly Total	0	0	110	0	**110**	2	0	0	612	0	**612**	0	116	1223	27	0	**1366**	1	515	921	200	1	**1637**	0	**3725**
6:00PM	0	0	22	0	**22**	3	0	0	131	0	**131**	1	21	242	3	0	**266**	1	80	175	39	0	**294**	0	**713**
6:15PM	0	0	26	0	**26**	0	0	0	107	0	**107**	0	15	186	2	0	**203**	1	82	197	35	0	**314**	0	**650**
6:30PM	0	0	18	0	**18**	0	0	0	90	0	**90**	0	11	195	8	0	**214**	0	69	156	31	0	**256**	0	**578**
6:45PM	0	0	18	0	**18**	0	0	0	95	0	**95**	2	12	157	8	0	**177**	0	60	138	29	0	**227**	0	**517**
Hourly Total	0	0	84	0	**84**	3	0	0	423	0	**423**	3	59	780	21	0	**860**	2	291	666	134	0	**1091**	0	**2458**
7:00PM	0	0	13	0	**13**	0	0	0	83	0	**83**	0	21	155	8	2	**186**	0	48	90	22	0	**160**	0	**442**
7:15PM	0	0	17	0	**17**	0	0	0	79	0	**79**	0	12	132	3	0	**147**	1	46	113	29	0	**188**	0	**431**
7:30PM	0	0	18	0	**18**	0	0	0	87	0	**87**	0	4	126	6	0	**136**	0	37	80	25	0	**142**	0	**383**
7:45PM	0	0	16	0	**16**	0	0	0	55	0	**55**	0	15	104	7	0	**126**	0	51	102	25	1	**179**	0	**376**
Hourly Total	0	0	64	0	**64**	0	0	0	304	0	**304**	0	52	517	24	2	**595**	1	182	385	101	1	**669**	0	**1632**
8:00PM	0	0	12	0	**12**	0	1	0	52	0	**53**	0	17	110	5	1	**133**	0	36	98	25	1	**160**	0	**358**
8:15PM	0	0	16	0	**16**	0	0	0	55	0	**55**	0	13	113	8	0	**134**	2	40	94	37	0	**171**	0	**376**
8:30PM	0	0	17	0	**17**	0	0	0	50	0	**50**	0	9	116	2	1	**128**	0	35	96	25	0	**156**	0	**351**
8:45PM	0	0	16	0	**16**	0	0	0	47	0	**47**	0	8	83	2	0	**93**	0	31	95	27	1	**154**	0	**310**
Hourly Total	0	0	61	0	**61**	0	1	0	204	0	**205**	0	47	422	17	2	**488**	2	142	383	114	2	**641**	0	**1395**
9:00PM	0	0	17	0	**17**	1	0	0	44	0	**44**	2	10	95	3	0	**108**	1	32	114	22	0	**168**	0	**337**
9:15PM	0	0	13	0	**13**	0	0	0	37	0	**37**	0	18	88	2	0	**108**	0	37	88	25	0	**150**	0	**308**
9:30PM	0	0	10	0	**10**	0	0	0	26	0	**26**	0	10	104	2	0	**116**	0	27	109	23	0	**159**	0	**311**
9:45PM	0	0	11	0	**11**	0	0	0	39	0	**39**	0	4	96	1	0	**101**	0	21	108	13	0	**142**	0	**293**
Hourly Total	0	0	51	0	**51**	1	0	0	146	0	**146**	2	42	383	8	0	**433**	1	117	419	83	0	**619**	0	**1249**
10:00PM	0	0	14	0	**14**	0	0	0	38	0	**38**	0	21	154	4	0	**179**	0	21	65	15	0	**101**	0	**332**
10:15PM	0	0	15	0	**15**	0	0	0	25	0	**25**	0	7	121	3	0	**131**	0	15	77	18	1	**111**	0	**282**
10:30PM	0	0	11	0	**11**	0	0	0	21	0	**21**	0	8	91	1	0	**100**	0	10	83	15	0	**108**	0	**240**
10:45PM	0	0	7	0	**7**	0	0	0	23	0	**23**	0	4	80	1	0	**85**	0	23	93	11	1	**128**	0	**243**

Leg	Groveport Rd						Groveport Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
Hourly Total	0	0	47	0	**47**	0	0	0	107	0	**107**	0	40	446	9	0	**495**	0	69	318	59	2	**448**	0	**1097**
11:00PM	0	0	13	0	**13**	0	0	0	22	0	**22**	0	7	147	1	0	**155**	0	18	56	3	0	**77**	0	**267**
11:15PM	0	0	6	0	**6**	0	0	0	17	0	**17**	0	6	104	3	0	**113**	0	16	62	8	0	**86**	0	**222**
11:30PM	0	0	6	0	**6**	0	0	0	30	0	**30**	0	12	240	5	0	**257**	0	12	52	13	0	**77**	0	**370**
11:45PM	0	0	8	0	**8**	0	0	0	20	0	**20**	0	13	165	0	0	**178**	0	10	46	7	0	**63**	0	**269**
Hourly Total	0	0	33	0	**33**	0	0	0	89	0	**89**	0	38	656	9	0	**703**	0	56	216	31	0	**303**	0	**1128**
Total	4	0	2196	0	**2200**	10	2	0	7827	0	**7829**	22	1618	16926	444	7	**18995**	27	4407	18277	3419	12	**26115**	2	**55139**
% Approach	0.2%	0%	99.8%	0%	**-**	-	0%	0%	100.0%	0%	**-**	-	8.5%	89.1%	2.3%	0%	**-**	-	16.9%	70.0%	13.1%	0%	**-**	-	**-**
% Total	0%	0%	4.0%	0%	**4.0%**	-	0%	0%	14.2%	0%	**14.2%**	-	2.9%	30.7%	0.8%	0%	**34.4%**	-	8.0%	33.1%	6.2%	0%	**47.4%**	-	**-**
Lights and Motorcycles	4	0	1796	0	**1800**	-	2	0	6872	0	**6874**	-	1326	12759	388	7	**14480**	-	4093	13935	2873	12	**20913**	-	44067
% Lights and Motorcycles	100%	0%	81.8%	0%	**81.8%**	-	100%	0%	87.8%	0%	**87.8%**	-	82.0%	75.4%	87.4%	100%	**76.2%**	-	92.9%	76.2%	84.0%	100%	**80.1%**	-	79.9%
Heavy	0	0	400	0	**400**	-	0	0	955	0	**955**	-	292	4167	56	0	**4515**	-	314	4342	546	0	**5202**	-	11072
% Heavy	0%	0%	18.2%	0%	**18.2%**	-	0%	0%	12.2%	0%	**12.2%**	-	18.0%	24.6%	12.6%	0%	**23.8%**	-	7.1%	23.8%	16.0%	0%	**19.9%**	-	20.1%
Pedestrians	-	-	-	-	-	10	-	-	-	-	-	22	-	-	-	-	-	27	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3084 - Alum Creek Dr & Groveport Rd - TMC

Tue Aug 16, 2022
AM Peak (6:30 AM - 7:30 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978966, Location: 39.868051, -82.935142, Site Code: 3084

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Groveport Rd						Groveport Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 6:30AM	0	0	36	0	**36**	0	0	0	132	0	**132**	0	12	186	3	0	**201**	0	75	505	50	0	**630**	1	**999**
6:45AM	0	0	57	0	**57**	0	0	0	137	0	**137**	3	15	204	4	0	**223**	1	109	585	80	0	**774**	0	**1191**
7:00AM	0	0	23	0	**23**	2	0	0	164	0	**164**	1	17	194	3	0	**214**	2	72	261	54	0	**387**	0	**788**
7:15AM	0	0	28	0	**28**	0	0	0	141	0	**141**	4	19	206	6	0	**231**	2	60	369	59	0	**488**	0	**888**
Total	0	0	144	0	**144**	2	0	0	574	0	**574**	8	63	790	16	0	**869**	5	316	1720	243	0	**2279**	1	**3866**
% Approach	0%	0%	100%	0%	**-**	-	0%	0%	100%	0%	**-**	-	7.2%	90.9%	1.8%	0%	**-**	-	13.9%	75.5%	10.7%	0%	**-**	-	**-**
% Total	0%	0%	3.7%	0%	**3.7%**	-	0%	0%	14.8%	0%	**14.8%**	-	1.6%	20.4%	0.4%	0%	**22.5%**	-	8.2%	44.5%	6.3%	0%	**58.9%**	-	**-**
PHF	-	-	0.632	-	**0.632**	-	-	-	0.875	-	**0.875**	-	0.829	0.959	0.667	-	**0.940**	-	0.725	0.735	0.759	-	**0.736**	-	0.812
Lights and Motorcycles	0	0	123	0	**123**	-	0	0	516	0	**516**	-	54	605	13	0	**672**	-	301	1515	222	0	**2038**	-	3349
% Lights and Motorcycles	0%	0%	85.4%	0%	**85.4%**	-	0%	0%	89.9%	0%	**89.9%**	-	85.7%	76.6%	81.3%	0%	**77.3%**	-	95.3%	88.1%	91.4%	0%	**89.4%**	-	86.6%
Heavy	0	0	21	0	**21**	-	0	0	58	0	**58**	-	9	185	3	0	**197**	-	15	205	21	0	**241**	-	517
% Heavy	0%	0%	14.6%	0%	**14.6%**	-	0%	0%	10.1%	0%	**10.1%**	-	14.3%	23.4%	18.8%	0%	**22.7%**	-	4.7%	11.9%	8.6%	0%	**10.6%**	-	13.4%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	5	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3084 - Alum Creek Dr & Groveport Rd - TMC

Tue Aug 16, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978966, Location: 39.868051, -82.935142, Site Code: 3084

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Groveport Rd						Groveport Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 1:00PM	0	0	28	0	**28**	0	0	0	100	0	**100**	0	40	220	5	0	**265**	0	42	198	52	0	**292**	0	**685**
1:15PM	0	0	47	0	**47**	0	0	0	77	0	**77**	0	21	195	11	0	**227**	0	46	227	53	0	**326**	0	**677**
1:30PM	0	0	39	0	**39**	0	0	0	117	0	**117**	0	26	242	3	0	**271**	0	41	282	45	1	**369**	0	**796**
1:45PM	0	0	36	0	**36**	0	0	0	90	0	**90**	0	18	213	4	0	**235**	0	52	290	58	0	**400**	0	**761**
Total	0	0	150	0	**150**	0	0	0	384	0	**384**	0	105	870	23	0	**998**	0	181	997	208	1	**1387**	0	**2919**
% Approach	0%	0%	100%	0%	**-**	-	0%	0%	100%	0%	**-**	-	10.5%	87.2%	2.3%	0%	**-**	-	13.0%	71.9%	15.0%	0.1%	**-**	-	**-**
% Total	0%	0%	5.1%	0%	**5.1%**	-	0%	0%	13.2%	0%	**13.2%**	-	3.6%	29.8%	0.8%	0%	**34.2%**	-	6.2%	34.2%	7.1%	0%	**47.5%**	-	**-**
PHF	-	-	0.798	-	**0.798**	-	-	-	0.821	-	**0.821**	-	0.656	0.899	0.523	-	**0.921**	-	0.870	0.859	0.897	0.250	**0.867**	-	0.917
Lights and Motorcycles	0	0	120	0	**120**	-	0	0	318	0	**318**	-	80	585	20	0	**685**	-	165	698	172	1	**1036**	-	2159
% Lights and Motorcycles	0%	0%	80.0%	0%	**80.0%**	-	0%	0%	82.8%	0%	**82.8%**	-	76.2%	67.2%	87.0%	0%	**68.6%**	-	91.2%	70.0%	82.7%	100%	**74.7%**	-	74.0%
Heavy	0	0	30	0	**30**	-	0	0	66	0	**66**	-	25	285	3	0	**313**	-	16	299	36	0	**351**	-	760
% Heavy	0%	0%	20.0%	0%	**20.0%**	-	0%	0%	17.2%	0%	**17.2%**	-	23.8%	32.8%	13.0%	0%	**31.4%**	-	8.8%	30.0%	17.3%	0%	**25.3%**	-	26.0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3084 - Alum Creek Dr & Groveport Rd - TMC

Tue Aug 16, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978966, Location: 39.868051, -82.935142, Site Code: 3084

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Groveport Rd						Groveport Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 3:45PM	0	0	37	0	**37**	0	0	0	172	0	**172**	1	26	455	6	0	**487**	1	106	301	62	0	**469**	0	**1165**
4:00PM	0	0	30	0	**30**	1	0	0	211	0	**211**	0	32	330	5	0	**367**	2	129	258	78	0	**465**	0	**1073**
4:15PM	0	0	33	0	**33**	0	0	0	196	0	**196**	0	23	372	9	0	**404**	1	104	295	85	0	**484**	0	**1117**
4:30PM	0	0	31	0	**31**	0	0	0	208	0	**208**	0	22	408	3	0	**433**	0	109	335	50	0	**494**	0	**1166**
Total	0	0	131	0	**131**	1	0	0	787	0	**787**	1	103	1565	23	0	**1691**	4	448	1189	275	0	**1912**	0	**4521**
% Approach	0%	0%	100%	0%	**-**	-	0%	0%	100%	0%	**-**	-	6.1%	92.5%	1.4%	0%	**-**	-	23.4%	62.2%	14.4%	0%	**-**	-	**-**
% Total	0%	0%	2.9%	0%	**2.9%**	-	0%	0%	17.4%	0%	**17.4%**	-	2.3%	34.6%	0.5%	0%	**37.4%**	-	9.9%	26.3%	6.1%	0%	**42.3%**	-	**-**
PHF	-	-	0.885	-	**0.885**	-	-	-	0.932	-	**0.932**	-	0.805	0.860	0.639	-	**0.868**	-	0.868	0.887	0.809	-	**0.968**	-	0.969
Lights and Motorcycles	0	0	112	0	**112**	-	0	0	738	0	**738**	-	81	1363	19	0	**1463**	-	431	897	236	0	**1564**	-	3877
% Lights and Motorcycles	0%	0%	85.5%	0%	**85.5%**	-	0%	0%	93.8%	0%	**93.8%**	-	78.6%	87.1%	82.6%	0%	**86.5%**	-	96.2%	75.4%	85.8%	0%	**81.8%**	-	85.8%
Heavy	0	0	19	0	**19**	-	0	0	49	0	**49**	-	22	202	4	0	**228**	-	17	292	39	0	**348**	-	644
% Heavy	0%	0%	14.5%	0%	**14.5%**	-	0%	0%	6.2%	0%	**6.2%**	-	21.4%	12.9%	17.4%	0%	**13.5%**	-	3.8%	24.6%	14.2%	0%	**18.2%**	-	14.2%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Alum Creek Drive and Rathmell Road

3077 - Alum Creek Dr & Rathmell Rd - TMC

Tue Aug 16, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978972, Location: 39.863333, -82.937215, Site Code: 3077

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Rathmell Rd					Alum Creek Dr					Alum Creek Dr					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-08-16 12:00AM	3	1	0	**4**	0	1	234	0	**235**	0	41	6	0	**47**	0	**286**
12:15AM	1	0	0	**1**	0	0	91	0	**91**	0	30	4	1	**35**	0	**127**
12:30AM	1	0	0	**1**	0	0	66	1	**67**	0	44	11	1	**56**	0	**124**
12:45AM	2	1	0	**3**	0	1	49	0	**50**	0	30	14	0	**44**	0	**97**
Hourly Total	7	2	0	**9**	0	2	440	1	**443**	0	145	35	2	**182**	0	**634**
1:00AM	2	1	0	**3**	0	1	66	0	**67**	0	29	3	0	**32**	0	**102**
1:15AM	2	0	0	**2**	0	2	62	0	**64**	0	31	9	2	**42**	0	**108**
1:30AM	1	0	0	**1**	0	2	36	0	**38**	0	30	10	0	**40**	0	**79**
1:45AM	1	0	0	**1**	0	3	37	0	**40**	0	25	21	0	**46**	0	**87**
Hourly Total	6	1	0	**7**	0	8	201	0	**209**	0	115	43	2	**160**	0	**376**
2:00AM	1	0	0	**1**	0	0	126	0	**126**	0	33	6	0	**39**	0	**166**
2:15AM	2	2	0	**4**	0	0	62	0	**62**	0	34	5	0	**39**	0	**105**
2:30AM	2	1	0	**3**	0	0	80	0	**80**	0	27	6	0	**33**	0	**116**
2:45AM	2	1	0	**3**	0	0	38	0	**38**	0	53	5	0	**58**	0	**99**
Hourly Total	7	4	0	**11**	0	0	306	0	**306**	0	147	22	0	**169**	0	**486**
3:00AM	3	2	0	**5**	0	0	38	0	**38**	0	55	5	0	**60**	0	**103**
3:15AM	1	0	0	**1**	0	0	57	0	**57**	0	78	4	0	**82**	0	**140**
3:30AM	2	2	0	**4**	0	1	184	0	**185**	0	95	2	0	**97**	0	**286**
3:45AM	7	1	0	**8**	0	1	73	0	**74**	0	106	3	0	**109**	0	**191**
Hourly Total	13	5	0	**18**	0	2	352	0	**354**	0	334	14	0	**348**	0	**720**
4:00AM	8	3	0	**11**	0	0	116	0	**116**	0	117	3	0	**120**	0	**247**
4:15AM	3	0	0	**3**	0	0	76	0	**76**	0	176	0	0	**176**	0	**255**
4:30AM	8	1	0	**9**	0	0	166	0	**166**	0	242	4	0	**246**	0	**421**
4:45AM	0	1	0	**1**	0	0	99	0	**99**	0	300	2	0	**302**	0	**402**
Hourly Total	19	5	0	**24**	0	0	457	0	**457**	0	835	9	0	**844**	0	**1325**
5:00AM	1	3	0	**4**	0	0	150	0	**150**	0	215	3	0	**218**	0	**372**
5:15AM	5	4	0	**9**	0	1	102	0	**103**	0	372	2	0	**374**	0	**486**
5:30AM	2	2	0	**4**	0	0	82	0	**82**	0	542	2	0	**544**	0	**630**
5:45AM	4	3	0	**7**	0	0	138	0	**138**	0	686	5	0	**691**	0	**836**
Hourly Total	12	12	0	**24**	0	1	472	0	**473**	0	1815	12	0	**1827**	0	**2324**
6:00AM	6	0	0	**6**	0	2	184	0	**186**	0	354	4	0	**358**	0	**550**
6:15AM	8	1	0	**9**	1	3	169	0	**172**	0	405	7	0	**412**	0	**593**
6:30AM	8	3	0	**11**	0	2	200	0	**202**	0	533	7	2	**542**	0	**755**
6:45AM	10	4	0	**14**	0	2	216	1	**219**	0	631	16	0	**647**	0	**880**
Hourly Total	32	8	0	**40**	1	9	769	1	**779**	0	1923	34	2	**1959**	0	**2778**
7:00AM	13	10	0	**23**	0	6	219	2	**227**	0	256	21	0	**277**	0	**527**
7:15AM	16	3	0	**19**	0	1	209	0	**210**	0	356	20	0	**376**	0	**605**
7:30AM	18	9	0	**27**	0	3	229	0	**232**	0	436	11	1	**448**	0	**707**
7:45AM	5	4	0	**9**	0	2	205	0	**207**	0	525	6	2	**533**	0	**749**
Hourly Total	52	26	0	**78**	0	12	862	2	**876**	0	1573	58	3	**1634**	0	**2588**
8:00AM	15	2	0	**17**	0	4	163	0	**167**	0	333	17	2	**352**	0	**536**
8:15AM	9	6	0	**15**	0	5	156	1	**162**	0	317	27	1	**345**	0	**522**
8:30AM	14	1	0	**15**	0	9	186	1	**196**	0	292	32	0	**324**	0	**535**
8:45AM	23	6	0	**29**	0	3	157	0	**160**	0	281	23	0	**304**	0	**493**
Hourly Total	61	15	0	**76**	0	21	662	2	**685**	0	1223	99	3	**1325**	0	**2086**
9:00AM	19	6	0	**25**	1	6	170	1	**177**	0	199	15	0	**214**	0	**416**
9:15AM	16	4	0	**20**	0	2	166	0	**168**	0	205	17	1	**223**	0	**411**
9:30AM	19	7	0	**26**	0	5	175	1	**181**	0	215	14	0	**229**	0	**436**
9:45AM	8	1	0	**9**	0	2	159	2	**163**	0	210	13	0	**223**	0	**395**
Hourly Total	62	18	0	**80**	1	15	670	4	**689**	0	829	59	1	**889**	0	**1658**
10:00AM	9	2	0	**11**	0	3	152	1	**156**	0	164	10	1	**175**	0	**342**
10:15AM	15	5	0	**20**	0	4	158	1	**163**	0	172	7	2	**181**	0	**364**
10:30AM	12	4	0	**16**	0	3	178	0	**181**	0	170	9	1	**180**	0	**377**
10:45AM	12	4	0	**16**	0	4	194	0	**198**	0	201	9	1	**211**	0	**425**

Leg	Rathmell Rd					Alum Creek Dr					Alum Creek Dr					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
Hourly Total	48	15	0	**63**	0	14	682	2	**698**	0	707	35	5	**747**	0	**1508**
11:00AM	11	2	0	**13**	0	3	221	1	**225**	0	215	7	3	**225**	0	**463**
11:15AM	5	2	0	**7**	0	6	191	1	**198**	0	215	14	4	**233**	0	**438**
11:30AM	11	5	0	**16**	0	1	218	1	**220**	0	218	20	1	**239**	0	**475**
11:45AM	6	3	0	**9**	0	6	209	0	**215**	0	214	18	1	**233**	0	**457**
Hourly Total	33	12	0	**45**	0	16	839	3	**858**	0	862	59	9	**930**	0	**1833**
12:00PM	8	5	0	**13**	0	1	270	0	**271**	0	189	16	2	**207**	0	**491**
12:15PM	9	3	0	**12**	0	5	227	0	**232**	0	219	14	5	**238**	0	**482**
12:30PM	9	3	0	**12**	0	3	206	0	**209**	0	226	19	3	**248**	0	**469**
12:45PM	19	5	0	**24**	0	10	226	0	**236**	0	203	14	1	**218**	0	**478**
Hourly Total	45	16	0	**61**	0	19	929	0	**948**	0	837	63	11	**911**	0	**1920**
1:00PM	12	2	0	**14**	0	1	236	0	**237**	0	231	11	2	**244**	0	**495**
1:15PM	16	6	0	**22**	0	1	201	0	**202**	0	267	14	2	**283**	0	**507**
1:30PM	8	2	0	**10**	0	5	245	1	**251**	0	313	10	1	**324**	0	**585**
1:45PM	11	6	0	**17**	0	5	212	0	**217**	0	325	18	0	**343**	0	**577**
Hourly Total	47	16	0	**63**	0	12	894	1	**907**	0	1136	53	5	**1194**	0	**2164**
2:00PM	7	5	0	**12**	0	3	372	1	**376**	0	281	10	0	**291**	0	**679**
2:15PM	9	3	0	**12**	0	2	414	0	**416**	0	264	14	1	**279**	0	**707**
2:30PM	7	5	0	**12**	0	2	471	1	**474**	0	317	16	1	**334**	0	**820**
2:45PM	7	5	0	**12**	0	5	427	1	**433**	0	332	24	0	**356**	0	**801**
Hourly Total	30	18	0	**48**	0	12	1684	3	**1699**	0	1194	64	2	**1260**	0	**3007**
3:00PM	10	3	0	**13**	0	5	485	1	**491**	0	274	14	1	**289**	0	**793**
3:15PM	14	6	0	**20**	0	4	393	1	**398**	0	312	14	0	**326**	0	**744**
3:30PM	8	3	0	**11**	0	3	454	0	**457**	0	302	29	0	**331**	0	**799**
3:45PM	6	8	0	**14**	0	2	435	0	**437**	0	318	20	2	**340**	0	**791**
Hourly Total	38	20	0	**58**	0	14	1767	2	**1783**	0	1206	77	3	**1286**	0	**3127**
4:00PM	10	5	0	**15**	0	13	426	0	**439**	0	266	28	0	**294**	0	**748**
4:15PM	3	3	0	**6**	0	5	373	2	**380**	0	297	36	1	**334**	0	**720**
4:30PM	7	11	0	**18**	0	6	473	1	**480**	0	316	45	2	**363**	0	**861**
4:45PM	8	4	0	**12**	0	8	439	1	**448**	0	305	36	0	**341**	0	**801**
Hourly Total	28	23	0	**51**	0	32	1711	4	**1747**	0	1184	145	3	**1332**	0	**3130**
5:00PM	9	5	0	**14**	0	5	485	1	**491**	0	251	22	0	**273**	0	**778**
5:15PM	13	6	0	**19**	0	2	341	0	**343**	0	253	30	2	**285**	0	**647**
5:30PM	16	6	0	**22**	0	5	345	0	**350**	0	237	19	1	**257**	0	**629**
5:45PM	11	5	0	**16**	0	8	257	0	**265**	0	245	32	3	**280**	0	**561**
Hourly Total	49	22	0	**71**	0	20	1428	1	**1449**	0	986	103	6	**1095**	0	**2615**
6:00PM	17	3	0	**20**	0	3	253	0	**256**	0	171	22	3	**196**	0	**472**
6:15PM	19	5	0	**24**	0	3	188	0	**191**	0	202	20	1	**223**	0	**438**
6:30PM	13	3	0	**16**	0	2	229	0	**231**	0	140	23	2	**165**	0	**412**
6:45PM	10	3	0	**13**	0	1	173	0	**174**	0	140	20	3	**163**	0	**350**
Hourly Total	59	14	0	**73**	0	9	843	0	**852**	0	653	85	9	**747**	0	**1672**
7:00PM	14	5	0	**19**	0	5	175	1	**181**	0	96	10	1	**107**	0	**307**
7:15PM	28	2	0	**30**	0	0	127	0	**127**	0	120	7	0	**127**	0	**284**
7:30PM	9	3	0	**12**	0	2	120	0	**122**	0	86	12	5	**103**	0	**237**
7:45PM	11	5	0	**16**	0	3	110	0	**113**	0	102	11	0	**113**	0	**242**
Hourly Total	62	15	0	**77**	0	10	532	1	**543**	0	404	40	6	**450**	0	**1070**
8:00PM	5	3	0	**8**	0	3	122	1	**126**	0	97	15	0	**112**	0	**246**
8:15PM	15	8	0	**23**	0	0	114	0	**114**	0	101	17	3	**121**	0	**258**
8:30PM	23	3	0	**26**	0	3	102	2	**107**	0	101	10	3	**114**	0	**247**
8:45PM	8	5	0	**13**	0	4	80	1	**85**	0	105	7	0	**112**	0	**210**
Hourly Total	51	19	0	**70**	0	10	418	4	**432**	0	404	49	6	**459**	0	**961**
9:00PM	12	4	0	**16**	0	3	104	1	**108**	0	117	13	1	**131**	0	**255**
9:15PM	17	6	0	**23**	0	1	96	0	**97**	0	87	9	0	**96**	0	**216**
9:30PM	9	6	0	**15**	0	6	102	0	**108**	0	111	10	2	**123**	0	**246**
9:45PM	12	7	0	**19**	0	2	91	1	**94**	0	113	7	1	**121**	0	**234**
Hourly Total	50	23	0	**73**	0	12	393	2	**407**	0	428	39	4	**471**	0	**951**
10:00PM	11	3	0	**14**	0	2	179	0	**181**	0	71	2	2	**75**	0	**270**
10:15PM	6	3	0	**9**	0	1	117	1	**119**	0	88	7	0	**95**	0	**223**
10:30PM	9	6	0	**15**	0	3	97	0	**100**	0	93	3	2	**98**	0	**213**
10:45PM	2	0	0	**2**	0	4	83	0	**87**	0	94	4	0	**98**	0	**187**

Leg	Rathmell Rd					Alum Creek Dr					Alum Creek Dr					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
Hourly Total	28	12	0	**40**	0	10	476	1	**487**	0	346	16	4	**366**	0	**893**
11:00PM	7	2	0	**9**	0	5	149	0	**154**	0	64	2	1	**67**	0	**230**
11:15PM	4	1	0	**5**	0	4	111	1	**116**	0	62	2	2	**66**	0	**187**
11:30PM	4	1	0	**5**	0	1	238	2	**241**	0	50	5	3	**58**	0	**304**
11:45PM	1	0	0	**1**	0	2	169	0	**171**	0	54	2	2	**58**	0	**230**
Hourly Total	16	4	0	**20**	0	12	667	3	**682**	0	230	11	8	**249**	0	**951**
Total	855	325	0	**1180**	2	272	18454	37	**18763**	0	19516	1224	94	**20834**	0	**40777**
% Approach	72.5%	27.5%	0%	**-**	-	1.4%	98.4%	0.2%	**-**	-	93.7%	5.9%	0.5%	**-**	-	-
% Total	2.1%	0.8%	0%	**2.9%**	-	0.7%	45.3%	0.1%	**46.0%**	-	47.9%	3.0%	0.2%	**51.1%**	-	-
Lights and Motorcycles	803	241	0	**1044**	-	208	13921	30	**14159**	-	14967	967	87	**16021**	-	31224
% Lights and Motorcycles	93.9%	74.2%	0%	**88.5%**	-	76.5%	75.4%	81.1%	**75.5%**	-	76.7%	79.0%	92.6%	**76.9%**	-	76.6%
Heavy	52	84	0	**136**	-	64	4533	7	**4604**	-	4549	257	7	**4813**	-	9553
% Heavy	6.1%	25.8%	0%	**11.5%**	-	23.5%	24.6%	18.9%	**24.5%**	-	23.3%	21.0%	7.4%	**23.1%**	-	23.4%
Pedestrians	-	-	-	-	2	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3077 - Alum Creek Dr & Rathmell Rd - TMC

Tue Aug 16, 2022
AM Peak (6 AM - 7 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978972, Location: 39.863333, -82.937215, Site Code: 3077

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Rathmell Rd Eastbound					Alum Creek Dr Northbound					Alum Creek Dr Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-08-16 6:00AM	6	0	0	**6**	0	2	184	0	**186**	0	354	4	0	**358**	0	**550**
6:15AM	8	1	0	**9**	1	3	169	0	**172**	0	405	7	0	**412**	0	**593**
6:30AM	8	3	0	**11**	0	2	200	0	**202**	0	533	7	2	**542**	0	**755**
6:45AM	10	4	0	**14**	0	2	216	1	**219**	0	631	16	0	**647**	0	**880**
Total	32	8	0	**40**	1	9	769	1	**779**	0	1923	34	2	**1959**	0	**2778**
% Approach	80.0%	20.0%	0%	**-**	-	1.2%	98.7%	0.1%	**-**	-	98.2%	1.7%	0.1%	**-**	-	**-**
% Total	1.2%	0.3%	0%	**1.4%**	-	0.3%	27.7%	0%	**28.0%**	-	69.2%	1.2%	0.1%	**70.5%**	-	**-**
PHF	0.800	0.500	-	**0.714**	-	0.750	0.890	0.250	**0.889**	-	0.762	0.531	0.250	**0.757**	-	0.789
Lights and Motorcycles	30	5	0	**35**	-	9	613	1	**623**	-	1764	26	2	**1792**	-	2450
% Lights and Motorcycles	93.8%	62.5%	0%	**87.5%**	-	100%	79.7%	100%	**80.0%**	-	91.7%	76.5%	100%	**91.5%**	-	88.2%
Heavy	2	3	0	**5**	-	0	156	0	**156**	-	159	8	0	**167**	-	328
% Heavy	6.3%	37.5%	0%	**12.5%**	-	0%	20.3%	0%	**20.0%**	-	8.3%	23.5%	0%	**8.5%**	-	11.8%
Pedestrians	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3077 - Alum Creek Dr & Rathmell Rd - TMC

Tue Aug 16, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978972, Location: 39.863333, -82.937215, Site Code: 3077

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Rathmell Rd					Alum Creek Dr					Alum Creek Dr					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-08-16 1:00PM	12	2	0	**14**	0	1	236	0	**237**	0	231	11	2	**244**	0	**495**
1:15PM	16	6	0	**22**	0	1	201	0	**202**	0	267	14	2	**283**	0	**507**
1:30PM	8	2	0	**10**	0	5	245	1	**251**	0	313	10	1	**324**	0	**585**
1:45PM	11	6	0	**17**	0	5	212	0	**217**	0	325	18	0	**343**	0	**577**
Total	47	16	0	**63**	0	12	894	1	**907**	0	1136	53	5	**1194**	0	**2164**
% Approach	74.6%	25.4%	0%	**-**	-	1.3%	98.6%	0.1%	**-**	-	95.1%	4.4%	0.4%	**-**	-	**-**
% Total	2.2%	0.7%	0%	**2.9%**	-	0.6%	41.3%	0%	**41.9%**	-	52.5%	2.4%	0.2%	**55.2%**	-	**-**
PHF	0.734	0.667	-	**0.716**	-	0.600	0.912	0.250	**0.903**	-	0.874	0.736	0.625	**0.870**	-	0.925
Lights and Motorcycles	46	14	0	**60**	-	9	613	1	**623**	-	809	36	4	**849**	-	1532
% Lights and Motorcycles	97.9%	87.5%	0%	**95.2%**	-	75.0%	68.6%	100%	**68.7%**	-	71.2%	67.9%	80.0%	**71.1%**	-	70.8%
Heavy	1	2	0	**3**	-	3	281	0	**284**	-	327	17	1	**345**	-	632
% Heavy	2.1%	12.5%	0%	**4.8%**	-	25.0%	31.4%	0%	**31.3%**	-	28.8%	32.1%	20.0%	**28.9%**	-	29.2%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3077 - Alum Creek Dr & Rathmell Rd - TMC

Tue Aug 16, 2022
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978972, Location: 39.863333, -82.937215, Site Code: 3077

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Rathmell Rd					Alum Creek Dr					Alum Creek Dr					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-08-16 4:15PM	3	3	0	**6**	0	5	373	2	**380**	0	297	36	1	**334**	0	**720**
4:30PM	7	11	0	**18**	0	6	473	1	**480**	0	316	45	2	**363**	0	**861**
4:45PM	8	4	0	**12**	0	8	439	1	**448**	0	305	36	0	**341**	0	**801**
5:00PM	9	5	0	**14**	0	5	485	1	**491**	0	251	22	0	**273**	0	**778**
Total	27	23	0	**50**	0	24	1770	5	**1799**	0	1169	139	3	**1311**	0	**3160**
% Approach	54.0%	46.0%	0%	**-**	-	1.3%	98.4%	0.3%	**-**	-	89.2%	10.6%	0.2%	**-**	-	**-**
% Total	0.9%	0.7%	0%	**1.6%**	-	0.8%	56.0%	0.2%	**56.9%**	-	37.0%	4.4%	0.1%	**41.5%**	-	**-**
PHF	0.750	0.523	-	**0.694**	-	0.750	0.912	0.625	**0.916**	-	0.925	0.772	0.375	**0.903**	-	0.918
Lights and Motorcycles	27	19	0	**46**	-	23	1528	3	**1554**	-	937	130	3	**1070**	-	2670
% Lights and Motorcycles	100%	82.6%	0%	**92.0%**	-	95.8%	86.3%	60.0%	**86.4%**	-	80.2%	93.5%	100%	**81.6%**	-	84.5%
Heavy	0	4	0	**4**	-	1	242	2	**245**	-	232	9	0	**241**	-	490
% Heavy	0%	17.4%	0%	**8.0%**	-	4.2%	13.7%	40.0%	**13.6%**	-	19.8%	6.5%	0%	**18.4%**	-	15.5%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Alum Creek Drive
and Bixby Road

2584 - Alum Creek Dr & Bixby Rd - TMC

Tue Aug 16, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978974, Location: 39.85583, -82.938441, Site Code: 2584

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Bixby Rd						Bixby Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 12:00AM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	225	5	0	**230**	0	0	36	0	0	**36**	0	**267**
12:15AM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	92	0	0	**92**	0	0	32	0	0	**32**	0	**125**
12:30AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	66	0	0	**66**	0	0	39	1	0	**40**	0	**106**
12:45AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	46	0	0	**46**	0	0	30	0	0	**30**	0	**76**
Hourly Total	0	0	0	0	**0**	0	0	0	2	0	**2**	0	0	429	5	0	**434**	0	0	137	1	0	**138**	0	**574**
1:00AM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	68	0	0	**68**	0	0	33	0	0	**33**	0	**102**
1:15AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	58	0	0	**58**	0	0	30	0	0	**30**	0	**88**
1:30AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	38	0	0	**38**	0	0	29	0	0	**29**	0	**67**
1:45AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	42	0	0	**42**	0	0	24	0	0	**24**	0	**66**
Hourly Total	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	206	0	0	**206**	0	0	116	0	0	**116**	0	**323**
2:00AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	133	2	0	**135**	0	0	34	0	0	**34**	0	**169**
2:15AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	62	1	0	**63**	0	0	36	0	0	**36**	0	**99**
2:30AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	80	1	0	**81**	0	0	23	1	0	**24**	0	**105**
2:45AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	40	0	0	**40**	0	0	50	0	0	**50**	0	**90**
Hourly Total	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	315	4	0	**319**	0	0	143	1	0	**144**	0	**463**
3:00AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	39	3	0	**42**	0	0	56	0	0	**56**	0	**98**
3:15AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	56	0	0	**56**	0	0	81	0	0	**81**	0	**137**
3:30AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	189	2	0	**191**	0	0	95	0	0	**95**	0	**286**
3:45AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	71	2	0	**73**	0	0	107	1	0	**108**	0	**181**
Hourly Total	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	355	7	0	**362**	0	0	339	1	0	**340**	0	**702**
4:00AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	118	1	0	**119**	0	0	116	0	0	**116**	0	**235**
4:15AM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	77	0	0	**77**	0	0	166	6	0	**172**	0	**250**
4:30AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	173	2	0	**175**	0	0	238	3	0	**241**	0	**416**
4:45AM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	101	1	0	**102**	0	0	305	4	0	**309**	0	**413**
Hourly Total	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	469	4	0	**473**	0	0	825	13	0	**838**	0	**1314**
5:00AM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	150	0	0	**150**	0	0	206	9	0	**215**	0	**366**
5:15AM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	107	1	0	**108**	0	0	355	18	0	**373**	0	**482**
5:30AM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	90	3	0	**93**	0	0	518	18	0	**536**	0	**630**
5:45AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	154	0	0	**154**	0	0	664	28	0	**692**	0	**846**
Hourly Total	0	0	3	0	**3**	0	0	0	0	0	**0**	0	0	501	4	0	**505**	0	0	1743	73	0	**1816**	0	**2324**
6:00AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	190	2	0	**192**	0	0	356	1	0	**357**	0	**549**
6:15AM	0	0	1	0	**1**	0	0	0	2	0	**2**	0	0	166	0	0	**166**	0	0	412	3	0	**415**	0	**584**
6:30AM	0	0	2	0	**2**	1	0	0	1	0	**1**	0	0	197	1	0	**198**	0	0	497	3	0	**500**	0	**701**
6:45AM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	232	4	0	**236**	0	0	669	5	0	**674**	0	**911**
Hourly Total	0	0	3	0	**3**	1	0	0	4	0	**4**	0	0	785	7	0	**792**	0	0	1934	12	0	**1946**	0	**2745**
7:00AM	0	0	2	0	**2**	0	0	0	3	0	**3**	0	0	215	1	0	**216**	0	0	284	7	0	**291**	0	**512**
7:15AM	0	0	1	0	**1**	0	0	0	3	0	**3**	0	0	210	3	0	**213**	0	0	353	4	0	**357**	0	**574**
7:30AM	0	0	0	0	**0**	0	0	0	2	0	**2**	0	0	230	3	0	**233**	0	0	413	6	0	**419**	0	**654**
7:45AM	0	0	4	0	**4**	0	0	0	6	0	**6**	0	0	202	0	0	**202**	0	0	518	7	0	**525**	0	**737**
Hourly Total	0	0	7	0	**7**	0	0	0	14	0	**14**	0	0	857	7	0	**864**	0	0	1568	24	0	**1592**	0	**2477**
8:00AM	0	0	1	0	**1**	0	0	0	2	0	**2**	0	0	168	5	0	**173**	0	0	382	6	0	**388**	0	**564**
8:15AM	0	0	3	0	**3**	2	0	0	1	0	**1**	0	0	163	2	0	**165**	0	0	323	1	0	**324**	0	**493**
8:30AM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	190	2	0	**192**	0	0	296	6	0	**302**	0	**495**
8:45AM	0	0	0	0	**0**	0	0	0	2	0	**2**	0	0	157	3	0	**160**	0	0	300	7	0	**307**	0	**469**
Hourly Total	0	0	5	0	**5**	2	0	0	5	0	**5**	0	0	678	12	0	**690**	0	0	1301	20	0	**1321**	0	**2021**
9:00AM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	183	2	0	**185**	0	0	219	4	0	**223**	0	**410**
9:15AM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	159	4	0	**163**	0	0	203	4	0	**207**	0	**372**
9:30AM	0	0	2	0	**2**	0	0	0	2	0	**2**	0	0	180	0	0	**180**	0	0	204	3	0	**207**	0	**391**
9:45AM	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	156	2	0	**158**	0	0	210	1	0	**211**	0	**372**
Hourly Total	0	0	6	0	**6**	0	0	0	5	0	**5**	0	0	678	8	0	**686**	0	0	836	12	0	**848**	0	**1545**
10:00AM	0	0	3	0	**3**	0	0	0	1	0	**1**	0	0	162	2	0	**164**	0	0	168	1	0	**169**	0	**337**
10:15AM	0	0	0	0	**0**	0	0	0	2	0	**2**	0	0	162	1	0	**163**	0	0	188	2	0	**190**	0	**355**
10:30AM	0	0	1	0	**1**	0	0	0	2	0	**2**	0	0	185	0	0	**185**	0	0	171	3	0	**174**	0	**362**
10:45AM	0	0	2	1	**3**	0	0	0	2	0	**2**	0	0	191	3	0	**194**	0	0	210	1	0	**211**	0	**410**

Leg	Bixby Rd						Bixby Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
Hourly Total	0	0	6	1	**7**	0	0	0	7	0	**7**	0	0	700	6	0	**706**	0	0	737	7	0	**744**	0	**1464**
11:00AM	0	0	4	0	**4**	0	0	0	1	0	**1**	0	0	246	4	0	**250**	0	0	206	4	0	**210**	0	**465**
11:15AM	0	0	3	0	**3**	0	0	0	1	0	**1**	0	0	205	6	0	**211**	0	0	214	1	0	**215**	0	**430**
11:30AM	0	0	3	0	**3**	0	0	0	2	0	**2**	0	0	222	2	0	**224**	0	0	234	4	0	**238**	0	**467**
11:45AM	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	226	7	0	**233**	0	0	224	3	0	**227**	0	**463**
Hourly Total	0	0	12	0	**12**	0	0	0	5	0	**5**	0	0	899	19	0	**918**	0	0	878	12	0	**890**	0	**1825**
12:00PM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	282	2	0	**284**	0	0	198	1	0	**199**	0	**484**
12:15PM	0	0	2	0	**2**	0	0	0	2	0	**2**	0	0	223	6	0	**229**	0	0	207	5	0	**212**	0	**445**
12:30PM	0	0	5	0	**5**	0	0	0	2	0	**2**	0	0	207	6	0	**213**	0	0	226	6	0	**232**	0	**452**
12:45PM	0	0	2	0	**2**	2	0	0	2	0	**2**	0	0	236	8	0	**244**	0	0	218	2	0	**220**	0	**468**
Hourly Total	0	0	10	0	**10**	2	0	0	6	0	**6**	0	0	948	22	0	**970**	0	0	849	14	0	**863**	0	**1849**
1:00PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	249	5	0	**254**	0	0	232	3	0	**235**	0	**489**
1:15PM	0	0	2	0	**2**	0	0	0	2	0	**2**	0	0	206	4	0	**210**	0	0	274	3	0	**277**	0	**491**
1:30PM	0	0	4	0	**4**	0	0	0	3	0	**3**	0	0	268	1	0	**269**	0	0	315	2	0	**317**	0	**593**
1:45PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	239	6	0	**245**	0	0	320	0	0	**320**	0	**567**
Hourly Total	0	0	7	0	**7**	0	0	0	6	0	**6**	0	0	962	16	0	**978**	0	0	1141	8	0	**1149**	0	**2140**
2:00PM	0	0	6	0	**6**	0	0	0	3	0	**3**	0	0	374	12	0	**386**	0	0	287	2	0	**289**	0	**684**
2:15PM	0	0	3	0	**3**	0	0	0	3	0	**3**	0	0	402	13	0	**415**	0	0	270	1	0	**271**	0	**692**
2:30PM	0	0	1	0	**1**	0	0	0	4	0	**4**	0	0	499	14	0	**513**	0	0	331	4	0	**335**	0	**853**
2:45PM	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	394	11	0	**405**	0	0	349	3	0	**352**	0	**760**
Hourly Total	0	0	12	0	**12**	0	0	0	11	0	**11**	0	0	1669	50	0	**1719**	0	0	1237	10	0	**1247**	0	**2989**
3:00PM	0	0	3	0	**3**	0	0	0	5	0	**5**	0	0	493	15	0	**508**	0	0	289	0	0	**289**	0	**805**
3:15PM	0	0	3	0	**3**	0	0	0	3	0	**3**	0	0	395	11	0	**406**	0	0	319	6	0	**325**	0	**737**
3:30PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	527	12	0	**539**	0	0	317	2	0	**319**	0	**858**
3:45PM	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	411	26	0	**437**	0	0	342	1	0	**343**	0	**783**
Hourly Total	0	0	8	0	**8**	0	0	0	9	0	**9**	0	0	1826	64	0	**1890**	0	0	1267	9	0	**1276**	0	**3183**
4:00PM	0	0	2	0	**2**	0	0	0	4	0	**4**	0	0	420	17	0	**437**	0	0	258	4	0	**262**	0	**705**
4:15PM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	334	14	0	**348**	0	0	299	2	0	**301**	0	**650**
4:30PM	0	0	6	0	**6**	0	0	0	1	0	**1**	0	0	517	22	0	**539**	0	0	345	1	0	**346**	0	**892**
4:45PM	0	0	3	0	**3**	0	0	0	2	0	**2**	0	0	419	7	0	**426**	0	0	309	4	0	**313**	0	**744**
Hourly Total	0	0	11	0	**11**	0	0	0	8	0	**8**	0	0	1690	60	0	**1750**	0	0	1211	11	0	**1222**	0	**2991**
5:00PM	0	0	1	0	**1**	0	0	0	4	0	**4**	0	0	491	14	0	**505**	0	0	247	8	0	**255**	0	**765**
5:15PM	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	315	7	0	**322**	0	0	252	9	0	**261**	0	**586**
5:30PM	0	0	4	0	**4**	0	0	0	2	0	**2**	0	0	345	5	0	**350**	0	0	211	25	0	**236**	0	**592**
5:45PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	264	6	0	**270**	0	0	227	33	0	**260**	0	**532**
Hourly Total	0	0	8	0	**8**	0	0	0	8	0	**8**	0	0	1415	32	0	**1447**	0	0	937	75	0	**1012**	0	**2475**
6:00PM	0	0	2	0	**2**	0	0	0	2	0	**2**	0	0	240	2	0	**242**	0	0	172	3	0	**175**	0	**421**
6:15PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	191	11	0	**202**	0	0	211	3	0	**214**	0	**418**
6:30PM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	217	1	0	**218**	0	0	149	2	0	**151**	0	**370**
6:45PM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	153	5	0	**158**	0	0	137	2	0	**139**	0	**298**
Hourly Total	0	0	4	0	**4**	0	0	0	4	0	**4**	0	0	801	19	0	**820**	0	0	669	10	0	**679**	0	**1507**
7:00PM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	180	1	0	**181**	0	0	106	3	0	**109**	0	**291**
7:15PM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	127	0	0	**127**	0	0	123	0	0	**123**	0	**251**
7:30PM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	116	0	0	**116**	0	0	90	0	0	**90**	0	**207**
7:45PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	115	1	0	**116**	0	0	106	1	0	**107**	0	**225**
Hourly Total	0	0	3	0	**3**	0	0	0	2	0	**2**	0	0	538	2	0	**540**	0	0	425	4	0	**429**	0	**974**
8:00PM	0	0	1	0	**1**	0	0	0	4	0	**4**	0	0	130	6	0	**136**	0	0	94	2	0	**96**	0	**237**
8:15PM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	121	4	0	**125**	0	0	114	0	0	**114**	0	**240**
8:30PM	0	0	1	0	**1**	0	0	0	3	0	**3**	0	0	100	1	0	**101**	0	0	109	3	0	**112**	0	**217**
8:45PM	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	82	1	0	**83**	0	0	110	2	0	**112**	0	**198**
Hourly Total	0	0	4	0	**4**	0	0	0	9	0	**9**	0	0	433	12	0	**445**	0	0	427	7	0	**434**	0	**892**
9:00PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	110	6	0	**116**	0	0	110	1	0	**111**	0	**227**
9:15PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	96	0	0	**96**	0	0	97	2	0	**99**	0	**197**
9:30PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	105	1	0	**106**	0	0	111	1	0	**112**	0	**220**
9:45PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	97	3	0	**100**	0	0	124	2	0	**126**	0	**228**
Hourly Total	0	0	3	0	**3**	0	0	0	3	0	**3**	0	0	408	10	0	**418**	0	0	442	6	0	**448**	0	**872**
10:00PM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	175	2	0	**177**	0	0	75	0	0	**75**	0	**253**
10:15PM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	116	2	0	**118**	0	0	94	0	0	**94**	0	**213**
10:30PM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	99	3	0	**102**	0	0	100	0	0	**100**	0	**203**
10:45PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	89	3	0	**92**	0	0	100	1	0	**101**	0	**193**

Leg	Bixby Rd						Bixby Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
Hourly Total	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	479	10	0	**489**	0	0	369	1	0	**370**	0	**862**
11:00PM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	146	1	0	**147**	0	0	67	0	0	**67**	0	**215**
11:15PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	116	4	0	**120**	0	0	67	0	0	**67**	0	**187**
11:30PM	0	0	0	0	**0**	1	0	0	1	0	**1**	0	0	239	3	0	**242**	0	0	56	0	0	**56**	0	**299**
11:45PM	0	0	1	0	**1**	0	0	0	0	0	**0**	0	0	169	0	0	**169**	0	0	50	1	0	**51**	0	**221**
Hourly Total	0	0	2	0	**2**	1	0	0	1	0	**1**	0	0	670	8	0	**678**	0	0	240	1	0	**241**	0	**922**
Total	0	0	119	1	**120**	6	0	0	111	0	**111**	0	0	18711	388	0	**19099**	0	0	19771	332	0	**20103**	0	**39433**
% Approach	0%	0%	99.2%	0.8%	**-**	-	0%	0%	100%	0%	**-**	-	0%	98.0%	2.0%	0%	**-**	-	0%	98.3%	1.7%	0%	**-**	-	**-**
% Total	0%	0%	0.3%	0%	**0.3%**	-	0%	0%	0.3%	0%	**0.3%**	-	0%	47.5%	1.0%	0%	**48.4%**	-	0%	50.1%	0.8%	0%	**51.0%**	-	**-**
Lights and Motorcycles	0	0	107	1	**108**	-	0	0	105	0	**105**	-	0	14045	374	0	**14419**	-	0	15124	297	0	**15421**	-	30053
% Lights and Motorcycles	0%	0%	89.9%	100%	**90.0%**	-	0%	0%	94.6%	0%	**94.6%**	-	0%	75.1%	96.4%	0%	**75.5%**	-	0%	76.5%	89.5%	0%	**76.7%**	-	76.2%
Heavy	0	0	12	0	**12**	-	0	0	6	0	**6**	-	0	4666	14	0	**4680**	-	0	4647	35	0	**4682**	-	9380
% Heavy	0%	0%	10.1%	0%	**10.0%**	-	0%	0%	5.4%	0%	**5.4%**	-	0%	24.9%	3.6%	0%	**24.5%**	-	0%	23.5%	10.5%	0%	**23.3%**	-	23.8%
Pedestrians	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2584 - Alum Creek Dr & Bixby Rd - TMC

Tue Aug 16, 2022
AM Peak (6 AM - 7 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978974, Location: 39.85583, -82.938441, Site Code: 2584

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Bixby Rd						Bixby Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 6:00AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	190	2	0	**192**	0	0	356	1	0	**357**	0	**549**
6:15AM	0	0	1	0	**1**	0	0	0	2	0	**2**	0	0	166	0	0	**166**	0	0	412	3	0	**415**	0	**584**
6:30AM	0	0	2	0	**2**	1	0	0	1	0	**1**	0	0	197	1	0	**198**	0	0	497	3	0	**500**	0	**701**
6:45AM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	232	4	0	**236**	0	0	669	5	0	**674**	0	**911**
Total	0	0	3	0	**3**	1	0	0	4	0	**4**	0	0	785	7	0	**792**	0	0	1934	12	0	**1946**	0	**2745**
% Approach	0%	0%	100%	0%	**-**	-	0%	0%	100%	0%	**-**	-	0%	99.1%	0.9%	0%	**-**	-	0%	99.4%	0.6%	0%	**-**	-	**-**
% Total	0%	0%	0.1%	0%	**0.1%**	-	0%	0%	0.1%	0%	**0.1%**	-	0%	28.6%	0.3%	0%	**28.9%**	-	0%	70.5%	0.4%	0%	**70.9%**	-	**-**
PHF	-	-	0.375	-	**0.375**	-	-	-	0.500	-	**0.500**	-	-	0.846	0.438	-	**0.839**	-	-	0.723	0.600	-	**0.722**	-	0.753
Lights and Motorcycles	0	0	3	0	**3**	-	0	0	4	0	**4**	-	0	627	6	0	**633**	-	0	1775	12	0	**1787**	-	2427
% Lights and Motorcycles	0%	0%	100%	0%	**100%**	-	0%	0%	100%	0%	**100%**	-	0%	79.9%	85.7%	0%	**79.9%**	-	0%	91.8%	100%	0%	**91.8%**	-	88.4%
Heavy	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	158	1	0	**159**	-	0	159	0	0	**159**	-	318
% Heavy	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	20.1%	14.3%	0%	**20.1%**	-	0%	8.2%	0%	0%	**8.2%**	-	11.6%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2584 - Alum Creek Dr & Bixby Rd - TMC

Tue Aug 16, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978974, Location: 39.85583, -82.938441, Site Code: 2584

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Bixby Rd						Bixby Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 1:00PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	249	5	0	**254**	0	0	232	3	0	**235**	0	**489**
1:15PM	0	0	2	0	**2**	0	0	0	2	0	**2**	0	0	206	4	0	**210**	0	0	274	3	0	**277**	0	**491**
1:30PM	0	0	4	0	**4**	0	0	0	3	0	**3**	0	0	268	1	0	**269**	0	0	315	2	0	**317**	0	**593**
1:45PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	0	239	6	0	**245**	0	0	320	0	0	**320**	0	**567**
Total	0	0	7	0	**7**	0	0	0	6	0	**6**	0	0	962	16	0	**978**	0	0	1141	8	0	**1149**	0	**2140**
% Approach	0%	0%	100%	0%	**-**	-	0%	0%	100%	0%	**-**	-	0%	98.4%	1.6%	0%	**-**	-	0%	99.3%	0.7%	0%	**-**	-	**-**
% Total	0%	0%	0.3%	0%	**0.3%**	-	0%	0%	0.3%	0%	**0.3%**	-	0%	45.0%	0.7%	0%	**45.7%**	-	0%	53.3%	0.4%	0%	**53.7%**	-	**-**
PHF	-	-	0.438	-	**0.438**	-	-	-	0.500	-	**0.500**	-	-	0.897	0.667	-	**0.909**	-	-	0.891	0.667	-	**0.898**	-	0.902
Lights and Motorcycles	0	0	6	0	**6**	-	0	0	6	0	**6**	-	0	653	16	0	**669**	-	0	819	6	0	**825**	-	1506
% Lights and Motorcycles	0%	0%	85.7%	0%	**85.7%**	-	0%	0%	100%	0%	**100%**	-	0%	67.9%	100%	0%	**68.4%**	-	0%	71.8%	75.0%	0%	**71.8%**	-	70.4%
Heavy	0	0	1	0	**1**	-	0	0	0	0	**0**	-	0	309	0	0	**309**	-	0	322	2	0	**324**	-	634
% Heavy	0%	0%	14.3%	0%	**14.3%**	-	0%	0%	0%	0%	**0%**	-	0%	32.1%	0%	0%	**31.6%**	-	0%	28.2%	25.0%	0%	**28.2%**	-	29.6%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2584 - Alum Creek Dr & Bixby Rd - TMC

Tue Aug 16, 2022
PM Peak (3 PM - 4 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978974, Location: 39.85583, -82.938441, Site Code: 2584

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Bixby Rd						Bixby Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 3:00PM	0	0	3	0	**3**	0	0	0	5	0	**5**	0	0	493	15	0	**508**	0	0	289	0	0	**289**	0	**805**
3:15PM	0	0	3	0	**3**	0	0	0	3	0	**3**	0	0	395	11	0	**406**	0	0	319	6	0	**325**	0	**737**
3:30PM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	527	12	0	**539**	0	0	317	2	0	**319**	0	**858**
3:45PM	0	0	2	0	**2**	0	0	0	1	0	**1**	0	0	411	26	0	**437**	0	0	342	1	0	**343**	0	**783**
Total	0	0	8	0	**8**	0	0	0	9	0	**9**	0	0	1826	64	0	**1890**	0	0	1267	9	0	**1276**	0	**3183**
% Approach	0%	0%	100%	0%	**-**	-	0%	0%	100%	0%	**-**	-	0%	96.6%	3.4%	0%	**-**	-	0%	99.3%	0.7%	0%	**-**	-	**-**
% Total	0%	0%	0.3%	0%	**0.3%**	-	0%	0%	0.3%	0%	**0.3%**	-	0%	57.4%	2.0%	0%	**59.4%**	-	0%	39.8%	0.3%	0%	**40.1%**	-	**-**
PHF	-	-	0.667	-	**0.667**	-	-	-	0.450	-	**0.450**	-	-	0.866	0.615	-	**0.877**	-	-	0.926	0.375	-	**0.930**	-	0.927
Lights and Motorcycles	0	0	7	0	**7**	-	0	0	9	0	**9**	-	0	1548	63	0	**1611**	-	0	922	6	0	**928**	-	2555
% Lights and Motorcycles	0%	0%	87.5%	0%	**87.5%**	-	0%	0%	100%	0%	**100%**	-	0%	84.8%	98.4%	0%	**85.2%**	-	0%	72.8%	66.7%	0%	**72.7%**	-	80.3%
Heavy	0	0	1	0	**1**	-	0	0	0	0	**0**	-	0	278	1	0	**279**	-	0	345	3	0	**348**	-	628
% Heavy	0%	0%	12.5%	0%	**12.5%**	-	0%	0%	0%	0%	**0%**	-	0%	15.2%	1.6%	0%	**14.8%**	-	0%	27.2%	33.3%	0%	**27.3%**	-	19.7%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Alum Creek Drive and
Toy Road/Creekside Parkway

3076 - Alum Creek Dr & Toy Rd-Creekside Pkwy - TMC

Tue Aug 16, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978976, Location: 39.85241, -82.938601, Site Code: 3076

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Creekside Pkwy						Toy Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 12:00AM	37	3	0	0	**40**	0	5	4	29	0	**38**	0	2	146	6	0	**154**	0	6	32	1	0	**39**	0	**271**
12:15AM	14	1	0	0	**15**	0	4	0	9	0	**13**	0	1	60	4	0	**65**	0	10	21	1	0	**32**	0	**125**
12:30AM	13	1	1	0	**15**	0	5	0	9	0	**14**	0	0	39	5	0	**44**	0	8	31	2	0	**41**	0	**114**
12:45AM	5	0	0	0	**5**	0	4	1	11	0	**16**	0	0	24	4	0	**28**	0	4	26	0	0	**30**	0	**79**
Hourly Total	69	5	1	0	**75**	0	18	5	58	0	**81**	0	3	269	19	0	**291**	0	28	110	4	0	**142**	0	**589**
1:00AM	1	0	1	0	**2**	0	5	1	16	0	**22**	0	0	53	2	0	**55**	0	2	29	0	0	**31**	0	**110**
1:15AM	0	1	0	0	**1**	0	6	0	20	0	**26**	0	0	34	1	0	**35**	0	3	25	4	0	**32**	0	**94**
1:30AM	1	0	0	0	**1**	0	1	1	2	0	**4**	0	0	37	3	0	**40**	0	3	24	3	0	**30**	0	**75**
1:45AM	4	0	0	0	**4**	0	3	0	2	0	**5**	0	0	34	5	0	**39**	0	4	17	3	0	**24**	0	**72**
Hourly Total	6	1	1	0	**8**	0	15	2	40	0	**57**	0	0	158	11	0	**169**	0	12	95	10	0	**117**	0	**351**
2:00AM	54	3	0	0	**57**	0	3	0	10	0	**13**	0	0	66	11	0	**77**	0	4	29	1	0	**34**	0	**181**
2:15AM	8	1	0	0	**9**	0	4	2	3	0	**9**	0	0	39	3	0	**42**	0	5	26	5	0	**36**	0	**96**
2:30AM	5	0	0	0	**5**	0	4	2	5	0	**11**	0	0	71	5	0	**76**	0	2	21	2	0	**25**	0	**117**
2:45AM	2	0	0	0	**2**	0	4	0	4	0	**8**	0	0	28	1	0	**29**	0	12	38	2	0	**52**	0	**91**
Hourly Total	69	4	0	0	**73**	0	15	4	22	0	**41**	0	0	204	20	0	**224**	0	23	114	10	0	**147**	0	**485**
3:00AM	5	1	0	0	**6**	0	3	0	1	0	**4**	0	0	41	3	0	**44**	0	13	41	1	0	**55**	0	**109**
3:15AM	15	1	1	0	**17**	0	6	1	3	0	**10**	0	0	34	0	0	**34**	0	33	40	5	0	**78**	0	**139**
3:30AM	39	3	3	0	**45**	0	5	1	4	0	**10**	0	0	133	7	0	**140**	0	41	57	2	0	**100**	0	**295**
3:45AM	11	4	4	0	**19**	0	2	1	3	0	**6**	0	0	52	7	0	**59**	0	23	78	5	0	**106**	0	**190**
Hourly Total	70	9	8	0	**87**	0	16	3	11	0	**30**	0	0	260	17	0	**277**	0	110	216	13	0	**339**	0	**733**
4:00AM	23	2	2	0	**27**	0	3	2	4	0	**9**	0	0	87	11	0	**98**	0	38	68	9	0	**115**	0	**249**
4:15AM	11	8	1	0	**20**	0	7	0	9	0	**16**	1	3	46	13	0	**62**	1	64	90	18	1	**173**	0	**271**
4:30AM	58	5	5	0	**68**	0	8	1	25	0	**34**	0	1	82	15	0	**98**	1	49	158	37	0	**244**	0	**444**
4:45AM	14	2	3	0	**19**	0	8	2	10	0	**20**	0	2	65	7	0	**74**	0	51	197	49	0	**297**	0	**410**
Hourly Total	106	17	11	0	**134**	0	26	5	48	0	**79**	1	6	280	46	0	**332**	2	202	513	113	1	**829**	0	**1374**
5:00AM	4	2	1	0	**7**	0	4	2	39	0	**45**	0	6	91	12	0	**109**	0	51	140	21	0	**212**	0	**373**
5:15AM	9	2	2	0	**13**	0	12	2	16	0	**30**	0	9	69	10	0	**88**	1	64	249	40	0	**353**	0	**484**
5:30AM	6	11	4	0	**21**	0	8	2	11	0	**21**	0	7	74	12	0	**93**	5	91	352	66	1	**510**	0	**645**
5:45AM	9	6	5	0	**20**	0	10	7	15	0	**32**	0	14	112	18	0	**144**	2	102	425	124	0	**651**	0	**847**
Hourly Total	28	21	12	0	**61**	0	34	13	81	0	**128**	0	36	346	52	0	**434**	8	308	1166	251	1	**1726**	0	**2349**
6:00AM	17	4	3	0	**24**	0	13	0	14	0	**27**	0	4	141	11	0	**156**	2	56	248	68	0	**372**	0	**579**
6:15AM	16	4	3	0	**23**	0	11	3	13	0	**27**	1	4	128	12	0	**144**	4	75	277	64	2	**418**	0	**612**
6:30AM	12	5	4	0	**21**	0	9	3	19	0	**31**	0	6	161	23	0	**190**	1	101	344	57	0	**502**	0	**744**
6:45AM	7	16	3	0	**26**	0	17	6	21	0	**44**	0	5	172	28	0	**205**	4	124	426	77	0	**627**	0	**902**
Hourly Total	52	29	13	0	**94**	0	50	12	67	0	**129**	1	19	602	74	0	**695**	11	356	1295	266	2	**1919**	0	**2837**
7:00AM	8	5	2	0	**15**	0	6	0	19	0	**25**	0	5	186	21	0	**212**	1	84	196	31	0	**311**	0	**563**
7:15AM	10	2	2	0	**14**	0	9	1	15	0	**25**	0	5	150	19	0	**174**	2	61	259	36	0	**356**	0	**569**
7:30AM	10	4	0	0	**14**	0	13	3	14	0	**30**	0	3	184	21	0	**208**	3	65	313	55	0	**433**	0	**685**
7:45AM	13	4	4	0	**21**	0	12	3	17	0	**32**	0	5	154	17	0	**176**	3	68	381	68	0	**517**	0	**746**
Hourly Total	41	15	8	0	**64**	0	40	7	65	0	**112**	0	18	674	78	0	**770**	9	278	1149	190	0	**1617**	0	**2563**
8:00AM	8	1	4	0	**13**	0	11	5	13	0	**29**	0	2	139	15	0	**156**	2	62	227	45	2	**336**	0	**534**
8:15AM	21	0	0	0	**21**	0	13	4	15	0	**32**	0	2	100	14	0	**116**	1	50	242	36	0	**328**	0	**497**
8:30AM	9	3	2	0	**14**	0	12	4	24	0	**40**	1	2	142	21	0	**165**	0	69	197	29	0	**295**	0	**514**
8:45AM	14	1	1	0	**16**	0	18	3	21	0	**42**	1	1	112	12	0	**125**	3	53	192	22	0	**267**	0	**450**
Hourly Total	52	5	7	0	**64**	0	54	16	73	0	**143**	2	7	493	62	0	**562**	6	234	858	132	2	**1226**	0	**1995**
9:00AM	16	5	1	0	**22**	0	15	2	20	0	**37**	0	5	130	16	0	**151**	0	36	159	21	0	**216**	0	**426**
9:15AM	10	2	4	0	**16**	0	11	4	16	0	**31**	0	4	122	14	0	**140**	0	35	144	20	0	**199**	0	**386**
9:30AM	13	1	4	0	**18**	0	16	2	25	0	**43**	0	2	121	8	0	**131**	0	43	153	20	0	**216**	0	**408**
9:45AM	22	4	4	0	**30**	0	14	3	31	0	**48**	0	2	103	10	0	**115**	0	32	165	19	0	**216**	0	**409**
Hourly Total	61	12	13	0	**86**	0	56	11	92	0	**159**	0	13	476	48	0	**537**	0	146	621	80	0	**847**	0	**1629**
10:00AM	15	4	2	0	**21**	0	17	4	20	0	**41**	0	3	118	14	0	**135**	0	24	122	21	0	**167**	0	**364**
10:15AM	16	1	4	0	**21**	0	12	4	17	0	**33**	0	4	120	13	0	**137**	0	36	123	16	0	**175**	0	**366**
10:30AM	21	2	4	0	**27**	0	10	3	13	0	**26**	0	3	132	15	0	**150**	0	27	120	18	0	**165**	0	**368**
10:45AM	24	3	10	0	**37**	0	19	4	23	0	**46**	0	2	128	17	0	**147**	0	43	134	21	0	**198**	0	**428**

Leg	Creekside Pkwy						Toy Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
Hourly Total	76	10	20	0	**106**	0	58	15	73	0	**146**	0	12	498	59	0	**569**	0	130	499	76	0	**705**	0	**1526**
11:00AM	22	6	6	0	**34**	0	14	11	28	0	**53**	1	4	168	25	0	**197**	1	40	155	17	0	**212**	0	**496**
11:15AM	17	5	4	0	**26**	0	18	4	30	0	**52**	1	3	135	17	0	**155**	1	46	151	15	0	**212**	0	**445**
11:30AM	24	5	12	0	**41**	0	14	3	28	0	**45**	0	4	141	24	0	**169**	1	31	164	35	0	**230**	0	**485**
11:45AM	10	7	9	0	**26**	0	22	5	31	0	**58**	1	3	159	21	0	**183**	4	39	159	22	0	**220**	0	**487**
Hourly Total	73	23	31	0	**127**	0	68	23	117	0	**208**	3	14	603	87	0	**704**	7	156	629	89	0	**874**	0	**1913**
12:00PM	26	4	5	0	**35**	0	28	7	36	0	**71**	0	4	195	18	0	**217**	0	39	143	15	0	**197**	0	**520**
12:15PM	18	3	5	0	**26**	0	17	5	21	0	**43**	0	3	165	17	0	**185**	0	45	144	19	0	**208**	0	**462**
12:30PM	19	1	5	0	**25**	0	19	3	33	0	**55**	0	2	164	18	0	**184**	0	51	150	19	0	**220**	0	**484**
12:45PM	22	2	3	0	**27**	0	8	2	43	0	**53**	1	10	172	12	0	**194**	2	45	140	18	0	**203**	0	**477**
Hourly Total	85	10	18	0	**113**	0	72	17	133	0	**222**	1	19	696	65	0	**780**	2	180	577	71	0	**828**	0	**1943**
1:00PM	23	3	8	0	**34**	0	12	4	41	0	**57**	0	2	169	10	0	**181**	0	39	160	23	0	**222**	0	**494**
1:15PM	14	8	7	0	**29**	0	11	4	35	0	**50**	0	5	143	20	0	**168**	0	50	194	24	0	**268**	0	**515**
1:30PM	26	9	2	0	**37**	0	21	8	37	0	**66**	0	5	176	23	0	**204**	0	82	194	40	0	**316**	0	**623**
1:45PM	32	8	7	0	**47**	0	23	6	43	0	**72**	0	4	160	12	0	**176**	1	89	206	27	0	**322**	0	**617**
Hourly Total	95	28	24	0	**147**	0	67	22	156	0	**245**	0	16	648	65	0	**729**	1	260	754	114	0	**1128**	0	**2249**
2:00PM	85	11	12	0	**108**	0	15	7	86	0	**108**	1	3	223	9	0	**235**	3	77	175	24	0	**276**	0	**727**
2:15PM	39	5	9	0	**53**	0	11	3	81	0	**95**	0	4	247	17	0	**268**	0	82	176	28	0	**286**	0	**702**
2:30PM	88	5	5	0	**98**	0	10	7	132	0	**149**	0	5	274	12	0	**291**	3	39	251	32	1	**323**	0	**861**
2:45PM	31	5	3	0	**39**	0	20	4	74	0	**98**	0	1	243	15	0	**259**	2	33	254	55	1	**343**	0	**739**
Hourly Total	243	26	29	0	**298**	0	56	21	373	0	**450**	1	13	987	53	0	**1053**	8	231	856	139	2	**1228**	0	**3029**
3:00PM	73	2	8	0	**83**	0	16	7	116	0	**139**	1	3	286	25	0	**314**	1	44	190	47	0	**281**	0	**817**
3:15PM	38	6	9	0	**53**	0	22	6	43	0	**71**	0	1	278	24	0	**303**	2	40	225	57	1	**323**	0	**750**
3:30PM	92	7	9	0	**108**	0	32	7	118	0	**157**	0	2	311	8	0	**321**	1	34	225	23	0	**282**	0	**868**
3:45PM	75	7	6	0	**88**	0	20	9	43	0	**72**	0	21	276	19	0	**316**	3	38	255	22	1	**316**	0	**792**
Hourly Total	278	22	32	0	**332**	0	90	29	320	0	**439**	1	27	1151	76	0	**1254**	7	156	895	149	2	**1202**	0	**3227**
4:00PM	46	6	7	0	**59**	0	13	9	67	0	**89**	0	4	287	15	0	**306**	0	28	210	19	0	**257**	0	**711**
4:15PM	40	1	7	0	**48**	0	16	8	49	0	**73**	0	5	227	9	0	**241**	0	29	227	32	0	**288**	0	**650**
4:30PM	102	6	22	0	**130**	0	19	4	97	0	**120**	0	3	321	17	0	**341**	3	42	275	35	0	**352**	0	**943**
4:45PM	55	4	8	0	**67**	0	14	2	46	0	**62**	1	3	290	12	0	**305**	2	28	217	51	0	**296**	0	**730**
Hourly Total	243	17	44	0	**304**	0	62	23	259	0	**344**	1	15	1125	53	0	**1193**	5	127	929	137	0	**1193**	0	**3034**
5:00PM	92	3	8	0	**103**	0	21	4	73	0	**98**	2	8	311	18	0	**337**	3	27	188	21	0	**236**	0	**774**
5:15PM	29	6	6	0	**41**	0	12	7	46	0	**65**	0	0	203	18	0	**221**	1	46	177	24	1	**248**	0	**575**
5:30PM	27	2	6	0	**35**	0	17	8	67	0	**92**	0	5	214	18	0	**237**	1	38	165	5	0	**208**	0	**572**
5:45PM	20	2	4	0	**26**	0	19	10	46	0	**75**	0	0	171	14	0	**185**	0	39	170	12	1	**222**	0	**508**
Hourly Total	168	13	24	0	**205**	0	69	29	232	0	**330**	2	13	899	68	0	**980**	5	150	700	62	2	**914**	0	**2429**
6:00PM	20	3	5	0	**28**	0	17	1	34	0	**52**	1	2	180	13	0	**195**	2	36	126	9	1	**172**	0	**447**
6:15PM	15	1	0	0	**16**	0	7	5	29	0	**41**	0	3	126	12	0	**141**	0	50	146	12	0	**208**	0	**406**
6:30PM	22	4	7	0	**33**	0	9	2	28	0	**39**	0	2	138	5	0	**145**	3	18	125	3	0	**146**	0	**363**
6:45PM	16	1	3	0	**20**	0	12	2	13	0	**27**	0	2	126	9	0	**137**	0	24	110	6	0	**140**	0	**324**
Hourly Total	73	9	15	0	**97**	0	45	10	104	0	**159**	1	9	570	39	0	**618**	5	128	507	30	1	**666**	0	**1540**
7:00PM	18	3	1	0	**22**	0	13	4	26	0	**43**	0	4	117	11	0	**132**	2	18	80	6	2	**106**	0	**303**
7:15PM	9	1	3	0	**13**	0	7	5	15	0	**27**	0	1	94	8	0	**103**	0	22	94	7	0	**123**	0	**266**
7:30PM	11	3	4	0	**18**	0	10	3	8	0	**21**	0	1	89	12	0	**102**	0	11	68	11	0	**90**	0	**231**
7:45PM	9	3	1	0	**13**	0	4	2	11	0	**17**	0	1	84	7	0	**92**	0	18	83	7	0	**108**	0	**230**
Hourly Total	47	10	9	0	**66**	0	34	14	60	0	**108**	0	7	384	38	0	**429**	2	69	325	31	2	**427**	0	**1030**
8:00PM	8	1	1	0	**10**	0	11	4	13	0	**28**	0	1	108	5	0	**114**	0	9	77	10	0	**96**	0	**248**
8:15PM	11	1	1	0	**13**	0	10	2	11	0	**23**	0	0	96	9	0	**105**	0	18	89	6	0	**113**	0	**254**
8:30PM	10	1	2	0	**13**	0	18	1	11	0	**30**	0	2	72	5	0	**79**	0	19	76	13	0	**108**	0	**230**
8:45PM	11	2	3	0	**16**	0	2	0	4	0	**6**	0	1	55	10	0	**66**	0	16	87	5	1	**109**	0	**197**
Hourly Total	40	5	7	0	**52**	0	41	7	39	0	**87**	0	4	331	29	0	**364**	0	62	329	34	1	**426**	0	**929**
9:00PM	16	1	1	0	**18**	0	1	3	9	0	**13**	1	0	74	9	0	**83**	1	22	85	8	0	**115**	0	**229**
9:15PM	6	2	0	0	**8**	0	7	1	12	0	**20**	0	3	70	4	0	**77**	0	17	67	6	1	**91**	0	**196**
9:30PM	11	2	3	0	**16**	0	10	3	6	0	**19**	0	2	88	2	0	**92**	1	12	93	10	0	**115**	0	**242**
9:45PM	10	1	0	0	**11**	0	5	0	14	0	**19**	0	3	68	4	0	**75**	0	29	83	15	0	**127**	0	**232**
Hourly Total	43	6	4	0	**53**	0	23	7	41	0	**71**	1	8	300	19	0	**327**	2	80	328	39	1	**448**	0	**899**
10:00PM	32	1	2	0	**35**	0	7	1	17	0	**25**	2	1	115	6	0	**122**	2	15	48	7	1	**71**	0	**253**
10:15PM	14	2	4	0	**20**	0	4	3	4	0	**11**	0	0	78	8	0	**86**	0	13	67	7	1	**88**	0	**205**
10:30PM	15	1	4	0	**20**	0	10	3	8	0	**21**	0	1	70	5	0	**76**	0	27	69	4	0	**100**	0	**217**
10:45PM	5	1	1	0	**7**	0	2	1	17	0	**20**	0	0	55	5	0	**60**	0	26	71	2	0	**99**	0	**186**
Hourly Total	66	5	11	0	**82**	0	23	8	46	0	**77**	2	2	318	24	0	**344**	2	81	255	20	2	**358**	0	**861**
11:00PM	14	3	0	0	**17**	0	7	2	61	0	**70**	0	1	76	5	0	**82**	0	15	43	8	0	**66**	0	**235**

Leg	Creekside Pkwy						Toy Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
11:15PM	20	1	0	0	**21**	0	6	3	51	0	**60**	0	2	49	7	0	**58**	0	20	35	8	1	**64**	0	**203**
11:30PM	27	4	2	0	**33**	0	3	1	85	0	**89**	0	0	128	5	0	**133**	0	13	32	7	0	**52**	0	**307**
11:45PM	5	0	0	0	**5**	0	7	0	20	0	**27**	0	1	126	8	0	**135**	0	4	44	7	1	**56**	0	**223**
Hourly Total	66	8	2	0	**76**	0	23	6	217	0	**246**	0	4	379	25	0	**408**	0	52	154	30	2	**238**	0	**968**
Total	2150	310	344	0	**2804**	0	1055	309	2727	0	**4091**	17	265	12651	1127	0	**14043**	82	3559	13874	2090	21	**19544**	0	**40482**
% Approach	76.7%	11.1%	12.3%	0%	**-**	-	25.8%	7.6%	66.7%	0%	**-**	-	1.9%	90.1%	8.0%	0%	**-**	-	18.2%	71.0%	10.7%	0.1%	**-**	-	**-**
% Total	5.3%	0.8%	0.8%	0%	**6.9%**	-	2.6%	0.8%	6.7%	0%	**10.1%**	-	0.7%	31.3%	2.8%	0%	**34.7%**	-	8.8%	34.3%	5.2%	0.1%	**48.3%**	-	**-**
Lights and Motorcycles	1836	279	236	0	**2351**	-	751	270	2228	0	**3249**	-	196	9069	859	0	**10124**	-	2865	10351	1724	21	**14961**	-	30685
% Lights and Motorcycles	85.4%	90.0%	68.6%	0%	**83.8%**	-	71.2%	87.4%	81.7%	0%	**79.4%**	-	74.0%	71.7%	76.2%	0%	**72.1%**	-	80.5%	74.6%	82.5%	100%	**76.6%**	-	75.8%
Heavy	314	31	108	0	**453**	-	304	39	499	0	**842**	-	69	3582	268	0	**3919**	-	694	3523	366	0	**4583**	-	9797
% Heavy	14.6%	10.0%	31.4%	0%	**16.2%**	-	28.8%	12.6%	18.3%	0%	**20.6%**	-	26.0%	28.3%	23.8%	0%	**27.9%**	-	19.5%	25.4%	17.5%	0%	**23.4%**	-	24.2%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	17	-	-	-	-	-	82	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3076 - Alum Creek Dr & Toy Rd-Creekside Pkwy - TMC

Tue Aug 16, 2022
AM Peak (6 AM - 7 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978976, Location: 39.85241, -82.938601, Site Code: 3076

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Creekside Pkwy Eastbound						Toy Rd Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 6:00AM	17	4	3	0	**24**	0	13	0	14	0	**27**	0	4	141	11	0	**156**	2	56	248	68	0	**372**	0	**579**
6:15AM	16	4	3	0	**23**	0	11	3	13	0	**27**	1	4	128	12	0	**144**	4	75	277	64	2	**418**	0	**612**
6:30AM	12	5	4	0	**21**	0	9	3	19	0	**31**	0	6	161	23	0	**190**	1	101	344	57	0	**502**	0	**744**
6:45AM	7	16	3	0	**26**	0	17	6	21	0	**44**	0	5	172	28	0	**205**	4	124	426	77	0	**627**	0	**902**
Total	52	29	13	0	**94**	0	50	12	67	0	**129**	1	19	602	74	0	**695**	11	356	1295	266	2	**1919**	0	**2837**
% Approach	55.3%	30.9%	13.8%	0%	**-**	-	38.8%	9.3%	51.9%	0%	**-**	-	2.7%	86.6%	10.6%	0%	**-**	-	18.6%	67.5%	13.9%	0.1%	**-**	-	**-**
% Total	1.8%	1.0%	0.5%	0%	**3.3%**	-	1.8%	0.4%	2.4%	0%	**4.5%**	-	0.7%	21.2%	2.6%	0%	**24.5%**	-	12.5%	45.6%	9.4%	0.1%	**67.6%**	-	**-**
PHF	0.765	0.453	0.813	-	**0.904**	-	0.735	0.500	0.798	-	**0.733**	-	0.792	0.875	0.661	-	**0.848**	-	0.718	0.760	0.864	0.250	**0.765**	-	0.786
Lights and Motorcycles	41	28	9	0	**78**	-	36	12	52	0	**100**	-	17	478	66	0	**561**	-	331	1177	249	2	**1759**	-	2498
% Lights and Motorcycles	78.8%	96.6%	69.2%	0%	**83.0%**	-	72.0%	100%	77.6%	0%	**77.5%**	-	89.5%	79.4%	89.2%	0%	**80.7%**	-	93.0%	90.9%	93.6%	100%	**91.7%**	-	88.1%
Heavy	11	1	4	0	**16**	-	14	0	15	0	**29**	-	2	124	8	0	**134**	-	25	118	17	0	**160**	-	339
% Heavy	21.2%	3.4%	30.8%	0%	**17.0%**	-	28.0%	0%	22.4%	0%	**22.5%**	-	10.5%	20.6%	10.8%	0%	**19.3%**	-	7.0%	9.1%	6.4%	0%	**8.3%**	-	11.9%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	11	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3076 - Alum Creek Dr & Toy Rd-Creekside Pkwy - TMC

Tue Aug 16, 2022
Midday Peak (1 PM - 2 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978976, Location: 39.85241, -82.938601, Site Code: 3076

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Creekside Pkwy						Toy Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 1:00PM	23	3	8	0	**34**	0	12	4	41	0	**57**	0	2	169	10	0	**181**	0	39	160	23	0	**222**	0	**494**
1:15PM	14	8	7	0	**29**	0	11	4	35	0	**50**	0	5	143	20	0	**168**	0	50	194	24	0	**268**	0	**515**
1:30PM	26	9	2	0	**37**	0	21	8	37	0	**66**	0	5	176	23	0	**204**	0	82	194	40	0	**316**	0	**623**
1:45PM	32	8	7	0	**47**	0	23	6	43	0	**72**	0	4	160	12	0	**176**	1	89	206	27	0	**322**	0	**617**
Total	95	28	24	0	**147**	0	67	22	156	0	**245**	0	16	648	65	0	**729**	1	260	754	114	0	**1128**	0	**2249**
% Approach	64.6%	19.0%	16.3%	0%	**-**	-	27.3%	9.0%	63.7%	0%	**-**	-	2.2%	88.9%	8.9%	0%	**-**	-	23.0%	66.8%	10.1%	0%	**-**	-	**-**
% Total	4.2%	1.2%	1.1%	0%	**6.5%**	-	3.0%	1.0%	6.9%	0%	**10.9%**	-	0.7%	28.8%	2.9%	0%	**32.4%**	-	11.6%	33.5%	5.1%	0%	**50.2%**	-	**-**
PHF	0.742	0.778	0.750	-	**0.782**	-	0.728	0.688	0.907	-	**0.851**	-	0.800	0.920	0.707	-	**0.893**	-	0.730	0.915	0.713	-	**0.876**	-	0.902
Lights and Motorcycles	73	24	13	0	**110**	-	42	15	120	0	**177**	-	11	404	48	0	**463**	-	221	507	87	0	**815**	-	1565
% Lights and Motorcycles	76.8%	85.7%	54.2%	0%	**74.8%**	-	62.7%	68.2%	76.9%	0%	**72.2%**	-	68.8%	62.3%	73.8%	0%	**63.5%**	-	85.0%	67.2%	76.3%	0%	**72.3%**	-	69.6%
Heavy	22	4	11	0	**37**	-	25	7	36	0	**68**	-	5	244	17	0	**266**	-	39	247	27	0	**313**	-	684
% Heavy	23.2%	14.3%	45.8%	0%	**25.2%**	-	37.3%	31.8%	23.1%	0%	**27.8%**	-	31.3%	37.7%	26.2%	0%	**36.5%**	-	15.0%	32.8%	23.7%	0%	**27.7%**	-	30.4%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3076 - Alum Creek Dr & Toy Rd-Creekside Pkwy - TMC

Tue Aug 16, 2022
PM Peak (3 PM - 4 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978976, Location: 39.85241, -82.938601, Site Code: 3076

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Creekside Pkwy Eastbound						Toy Rd Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 3:00PM	73	2	8	0	**83**	0	16	7	116	0	**139**	1	3	286	25	0	**314**	1	44	190	47	0	**281**	0	**817**
3:15PM	38	6	9	0	**53**	0	22	6	43	0	**71**	0	1	278	24	0	**303**	2	40	225	57	1	**323**	0	**750**
3:30PM	92	7	9	0	**108**	0	32	7	118	0	**157**	0	2	311	8	0	**321**	1	34	225	23	0	**282**	0	**868**
3:45PM	75	7	6	0	**88**	0	20	9	43	0	**72**	0	21	276	19	0	**316**	3	38	255	22	1	**316**	0	**792**
Total	278	22	32	0	**332**	0	90	29	320	0	**439**	1	27	1151	76	0	**1254**	7	156	895	149	2	**1202**	0	**3227**
% Approach	83.7%	6.6%	9.6%	0%	**-**	-	20.5%	6.6%	72.9%	0%	**-**	-	2.2%	91.8%	6.1%	0%	**-**	-	13.0%	74.5%	12.4%	0.2%	**-**	-	**-**
% Total	8.6%	0.7%	1.0%	0%	**10.3%**	-	2.8%	0.9%	9.9%	0%	**13.6%**	-	0.8%	35.7%	2.4%	0%	**38.9%**	-	4.8%	27.7%	4.6%	0.1%	**37.2%**	-	**-**
PHF	0.755	0.786	0.889	-	**0.769**	-	0.703	0.806	0.678	-	**0.699**	-	0.321	0.925	0.760	-	**0.977**	-	0.886	0.877	0.654	0.500	**0.930**	-	0.929
Lights and Motorcycles	263	19	25	0	**307**	-	69	29	288	0	**386**	-	21	917	64	0	**1002**	-	116	631	125	2	**874**	-	2569
% Lights and Motorcycles	94.6%	86.4%	78.1%	0%	**92.5%**	-	76.7%	100%	90.0%	0%	**87.9%**	-	77.8%	79.7%	84.2%	0%	**79.9%**	-	74.4%	70.5%	83.9%	100%	**72.7%**	-	79.6%
Heavy	15	3	7	0	**25**	-	21	0	32	0	**53**	-	6	234	12	0	**252**	-	40	264	24	0	**328**	-	658
% Heavy	5.4%	13.6%	21.9%	0%	**7.5%**	-	23.3%	0%	10.0%	0%	**12.1%**	-	22.2%	20.3%	15.8%	0%	**20.1%**	-	25.6%	29.5%	16.1%	0%	**27.3%**	-	20.4%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Alum Creek Drive and
Global Court

7477 - Alum Creek Dr & Global Court - TMC

Thu Aug 18, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 979763, Location: 39.848853, -82.938237, Site Code: 7477

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Global Court Eastbound						Global Court Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-18 12:00AM	0	0	0	0	**0**	0	0	0	3	0	**3**	0	0	153	2	0	**155**	0	0	29	0	0	**29**	0	**187**
12:15AM	0	0	0	0	**0**	0	1	0	1	0	**2**	0	0	59	2	0	**61**	0	1	37	1	0	**39**	0	**102**
12:30AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	40	0	0	**40**	0	1	32	0	0	**33**	0	**73**
12:45AM	2	0	1	0	**3**	0	0	0	1	0	**1**	0	1	30	1	0	**32**	0	1	29	1	0	**31**	0	**67**
Hourly Total	2	0	1	0	**3**	0	1	0	5	0	**6**	0	1	282	5	0	**288**	0	3	127	2	0	**132**	0	**429**
1:00AM	1	0	0	0	**1**	0	0	0	3	0	**3**	0	0	65	1	0	**66**	0	1	32	0	0	**33**	0	**103**
1:15AM	1	0	0	0	**1**	0	2	0	2	0	**4**	0	1	31	0	0	**32**	0	2	24	0	0	**26**	0	**63**
1:30AM	0	0	0	0	**0**	0	0	0	2	0	**2**	0	0	33	0	0	**33**	0	0	30	0	0	**30**	0	**65**
1:45AM	0	0	0	0	**0**	0	0	0	0	0	**0**	0	1	37	0	0	**38**	0	2	33	0	0	**35**	0	**73**
Hourly Total	2	0	0	0	**2**	0	2	0	7	0	**9**	0	2	166	1	0	**169**	0	5	119	0	0	**124**	0	**304**
2:00AM	0	0	0	0	**0**	0	0	0	2	0	**2**	0	0	92	0	0	**92**	0	1	26	1	0	**28**	0	**122**
2:15AM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	34	1	0	**35**	0	0	37	0	0	**37**	0	**73**
2:30AM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	0	88	1	0	**89**	0	0	27	0	0	**27**	0	**117**
2:45AM	0	0	1	0	**1**	0	2	0	2	0	**4**	0	1	48	0	0	**49**	0	0	34	1	0	**35**	0	**89**
Hourly Total	0	0	1	0	**1**	0	2	0	6	0	**8**	0	1	262	2	0	**265**	0	1	124	2	0	**127**	0	**401**
3:00AM	3	0	0	0	**3**	0	0	0	0	0	**0**	0	0	36	0	1	**37**	0	0	34	0	0	**34**	0	**74**
3:15AM	4	0	1	0	**5**	0	0	0	0	0	**0**	0	1	28	0	0	**29**	0	1	44	2	0	**47**	0	**81**
3:30AM	0	0	2	0	**2**	0	1	0	1	0	**2**	0	1	149	1	0	**151**	0	1	69	0	0	**70**	0	**225**
3:45AM	0	0	0	0	**0**	0	2	0	1	0	**3**	0	0	67	0	0	**67**	0	3	76	2	0	**81**	0	**151**
Hourly Total	7	0	3	0	**10**	0	3	0	2	0	**5**	0	2	280	1	1	**284**	0	5	223	4	0	**232**	0	**531**
4:00AM	0	0	2	0	**2**	0	1	0	0	0	**1**	0	0	91	1	0	**92**	0	1	61	0	0	**62**	0	**157**
4:15AM	2	0	0	0	**2**	0	1	0	2	0	**3**	0	1	75	1	0	**77**	0	4	105	0	0	**109**	0	**191**
4:30AM	0	0	1	0	**1**	0	0	0	2	0	**2**	0	1	92	0	1	**94**	0	4	158	1	0	**163**	0	**260**
4:45AM	1	0	2	0	**3**	0	1	0	2	0	**3**	0	3	72	0	0	**75**	0	1	185	2	0	**188**	0	**269**
Hourly Total	3	0	5	0	**8**	0	3	0	6	0	**9**	0	5	330	2	1	**338**	0	10	509	3	0	**522**	0	**877**
5:00AM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	1	104	0	0	**105**	0	1	150	1	0	**152**	0	**258**
5:15AM	1	0	1	0	**2**	0	0	0	2	0	**2**	0	1	82	1	1	**85**	0	3	237	0	0	**240**	0	**329**
5:30AM	1	0	0	0	**1**	0	1	0	2	0	**3**	0	2	114	1	0	**117**	0	0	353	1	0	**354**	0	**475**
5:45AM	0	0	1	0	**1**	0	2	0	1	0	**3**	0	3	141	1	0	**145**	0	1	425	4	0	**430**	0	**579**
Hourly Total	2	0	2	0	**4**	0	3	0	6	0	**9**	0	7	441	3	1	**452**	0	5	1165	6	0	**1176**	0	**1641**
6:00AM	0	0	5	0	**5**	0	0	0	0	0	**0**	0	3	153	2	0	**158**	0	0	208	2	0	**210**	0	**373**
6:15AM	2	0	0	0	**2**	1	1	0	0	0	**1**	0	3	158	1	0	**162**	0	3	297	4	0	**304**	0	**469**
6:30AM	0	1	2	0	**3**	0	1	0	0	0	**1**	0	4	204	0	0	**208**	0	1	386	6	0	**393**	0	**605**
6:45AM	5	0	2	0	**7**	0	1	0	1	0	**2**	0	4	190	4	0	**198**	0	8	398	8	0	**414**	0	**621**
Hourly Total	7	1	9	0	**17**	1	3	0	1	0	**4**	0	14	705	7	0	**726**	0	12	1289	20	0	**1321**	0	**2068**
7:00AM	4	0	2	0	**6**	0	1	0	1	0	**2**	0	7	207	5	0	**219**	0	10	214	14	0	**238**	0	**465**
7:15AM	5	0	4	0	**9**	0	1	0	2	0	**3**	0	3	179	2	1	**185**	0	3	299	6	0	**308**	0	**505**
7:30AM	0	0	3	0	**3**	0	1	0	1	0	**2**	0	5	202	3	0	**210**	1	5	289	9	0	**303**	0	**518**
7:45AM	3	0	1	0	**4**	0	2	0	3	0	**5**	0	6	153	3	0	**162**	0	4	355	18	0	**377**	0	**548**
Hourly Total	12	0	10	0	**22**	0	5	0	7	0	**12**	0	21	741	13	1	**776**	1	22	1157	47	0	**1226**	0	**2036**
8:00AM	4	1	3	0	**8**	0	2	0	4	0	**6**	0	2	155	2	0	**159**	0	3	267	4	0	**274**	0	**447**
8:15AM	2	0	2	0	**4**	0	1	0	2	0	**3**	0	3	160	1	0	**164**	0	2	206	5	0	**213**	0	**384**
8:30AM	1	1	0	0	**2**	0	1	0	3	0	**4**	0	4	128	0	0	**132**	0	6	223	0	0	**229**	0	**367**
8:45AM	1	0	2	0	**3**	0	1	0	5	0	**6**	0	2	133	3	0	**138**	0	3	215	8	0	**226**	0	**373**
Hourly Total	8	2	7	0	**17**	0	5	0	14	0	**19**	0	11	576	6	0	**593**	0	14	911	17	0	**942**	0	**1571**
9:00AM	4	0	3	0	**7**	0	2	0	2	0	**4**	0	1	137	3	0	**141**	0	1	174	2	0	**177**	0	**329**
9:15AM	3	0	1	0	**4**	0	2	0	1	0	**3**	1	5	149	0	0	**154**	0	7	160	3	0	**170**	0	**331**
9:30AM	3	0	2	0	**5**	0	1	0	3	0	**4**	0	1	148	2	0	**151**	0	8	171	1	0	**180**	0	**340**
9:45AM	1	0	0	0	**1**	0	1	0	4	0	**5**	1	0	147	2	0	**149**	1	6	216	6	0	**228**	0	**383**
Hourly Total	11	0	6	0	**17**	0	6	0	10	0	**16**	2	7	581	7	0	**595**	1	22	721	12	0	**755**	0	**1383**
10:00AM	2	1	5	0	**8**	0	0	0	7	0	**7**	0	4	157	5	0	**166**	0	3	198	3	0	**204**	0	**385**
10:15AM	1	0	5	0	**6**	0	0	0	7	0	**7**	1	3	146	1	0	**150**	0	4	157	2	0	**163**	0	**326**
10:30AM	2	0	3	0	**5**	0	5	0	4	0	**9**	0	3	180	0	0	**183**	0	2	169	0	0	**171**	0	**368**
10:45AM	2	0	2	0	**4**	0	1	1	2	0	**4**	0	1	186	0	0	**187**	0	3	187	4	0	**194**	0	**389**
Hourly Total	7	1	15	0	**23**	0	6	1	20	0	**27**	1	11	669	6	0	**686**	0	12	711	9	0	**732**	0	**1468**

Leg	Global Court						Global Court						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
11:00AM	2	0	1	0	**3**	0	5	1	4	0	**10**	0	2	219	4	1	**226**	0	3	157	4	0	**164**	0	**403**
11:15AM	4	0	1	0	**5**	0	3	0	7	0	**10**	0	0	165	1	0	**166**	0	4	203	1	0	**208**	0	**389**
11:30AM	1	0	3	0	**4**	0	4	0	6	0	**10**	0	2	183	4	0	**189**	0	5	219	8	0	**232**	0	**435**
11:45AM	2	0	6	0	**8**	0	2	0	2	0	**4**	0	5	181	4	0	**190**	0	5	213	4	0	**222**	0	**424**
Hourly Total	9	0	11	0	**20**	0	14	1	19	0	**34**	0	9	748	13	1	**771**	0	17	792	17	0	**826**	0	**1651**
12:00PM	4	0	2	0	**6**	0	2	0	8	0	**10**	0	2	198	5	0	**205**	0	1	213	0	0	**214**	0	**435**
12:15PM	4	0	4	0	**8**	0	4	0	2	0	**6**	0	1	235	5	0	**241**	0	4	186	2	0	**192**	0	**447**
12:30PM	2	0	1	0	**3**	0	0	1	3	0	**4**	0	4	247	2	1	**254**	0	4	189	2	0	**195**	0	**456**
12:45PM	4	0	4	0	**8**	0	1	0	1	0	**2**	0	1	170	3	0	**174**	0	5	193	1	0	**199**	0	**383**
Hourly Total	14	0	11	0	**25**	0	7	1	14	0	**22**	0	8	850	15	1	**874**	0	14	781	5	0	**800**	0	**1721**
1:00PM	1	0	3	0	**4**	0	1	0	4	0	**5**	0	2	191	1	1	**195**	0	1	189	4	0	**194**	0	**398**
1:15PM	2	0	1	0	**3**	0	3	0	2	0	**5**	0	4	158	1	0	**163**	0	3	219	4	0	**226**	0	**397**
1:30PM	2	0	6	0	**8**	0	1	0	4	0	**5**	0	2	208	6	0	**216**	0	7	212	5	0	**224**	0	**453**
1:45PM	2	0	6	0	**8**	0	1	0	2	0	**3**	0	2	210	0	0	**212**	0	8	224	5	0	**237**	0	**460**
Hourly Total	7	0	16	0	**23**	0	6	0	12	0	**18**	0	10	767	8	1	**786**	0	19	844	18	0	**881**	0	**1708**
2:00PM	1	0	1	0	**2**	0	1	0	6	0	**7**	0	3	271	1	0	**275**	0	3	211	6	0	**220**	0	**504**
2:15PM	2	1	9	0	**12**	0	3	0	12	0	**15**	0	6	288	2	1	**297**	0	3	256	6	0	**265**	0	**589**
2:30PM	12	0	9	0	**21**	0	1	0	2	0	**3**	0	6	332	1	1	**340**	0	3	279	3	0	**285**	0	**649**
2:45PM	4	0	1	0	**5**	0	4	0	8	0	**12**	0	4	297	2	0	**303**	0	3	295	3	0	**301**	0	**621**
Hourly Total	19	1	20	0	**40**	0	9	0	28	0	**37**	0	19	1188	6	2	**1215**	0	12	1041	18	0	**1071**	0	**2363**
3:00PM	3	0	5	0	**8**	0	1	0	7	0	**8**	0	1	379	0	0	**380**	0	3	252	2	0	**257**	0	**653**
3:15PM	2	0	3	0	**5**	1	2	0	7	0	**9**	1	3	344	3	0	**350**	0	1	256	2	0	**259**	0	**623**
3:30PM	7	0	12	0	**19**	0	2	0	2	0	**4**	0	1	365	0	0	**366**	0	0	272	6	0	**278**	0	**667**
3:45PM	4	0	5	0	**9**	0	0	0	4	0	**4**	0	5	298	8	1	**312**	0	1	264	4	0	**269**	0	**594**
Hourly Total	16	0	25	0	**41**	1	5	0	20	0	**25**	1	10	1386	11	1	**1408**	0	5	1044	14	0	**1063**	0	**2537**
4:00PM	5	0	7	0	**12**	0	2	0	4	0	**6**	0	0	304	0	0	**304**	1	2	246	2	0	**250**	0	**572**
4:15PM	5	0	5	0	**10**	0	3	0	1	0	**4**	1	2	266	3	0	**271**	0	5	281	1	0	**287**	0	**572**
4:30PM	5	0	4	0	**9**	0	1	0	3	0	**4**	0	3	351	6	1	**361**	0	1	342	1	0	**344**	0	**718**
4:45PM	3	0	2	0	**5**	0	3	0	1	0	**4**	0	0	260	2	1	**263**	0	0	280	4	0	**284**	0	**556**
Hourly Total	18	0	18	0	**36**	0	9	0	9	0	**18**	1	5	1181	11	2	**1199**	1	8	1149	8	0	**1165**	0	**2418**
5:00PM	6	1	1	0	**8**	0	2	0	6	0	**8**	0	0	333	1	0	**334**	0	3	231	2	0	**236**	0	**586**
5:15PM	6	0	1	0	**7**	0	2	0	2	0	**4**	0	0	217	3	0	**220**	0	4	216	0	0	**220**	0	**451**
5:30PM	5	0	2	0	**7**	0	3	0	4	0	**7**	1	0	244	2	0	**246**	0	0	243	2	0	**245**	0	**505**
5:45PM	0	0	2	0	**2**	0	1	0	2	0	**3**	0	1	185	2	1	**189**	0	1	234	2	0	**237**	0	**431**
Hourly Total	17	1	6	0	**24**	0	8	0	14	0	**22**	1	1	979	8	1	**989**	0	8	924	6	0	**938**	0	**1973**
6:00PM	7	0	1	0	**8**	0	3	0	4	0	**7**	0	0	194	2	0	**196**	0	1	180	1	0	**182**	0	**393**
6:15PM	1	0	2	0	**3**	0	3	0	2	0	**5**	0	0	152	0	0	**152**	0	2	180	0	0	**182**	0	**342**
6:30PM	2	0	2	0	**4**	0	1	0	1	0	**2**	0	1	198	4	0	**203**	0	1	145	0	0	**146**	0	**355**
6:45PM	3	0	3	0	**6**	0	0	0	0	0	**0**	0	0	162	1	0	**163**	0	3	112	6	0	**121**	0	**290**
Hourly Total	13	0	8	0	**21**	0	7	0	7	0	**14**	0	1	706	7	0	**714**	0	7	617	7	0	**631**	0	**1380**
7:00PM	1	0	0	0	**1**	0	1	0	3	0	**4**	0	2	176	0	0	**178**	0	1	99	4	0	**104**	0	**287**
7:15PM	2	0	3	0	**5**	0	0	0	5	0	**5**	1	1	151	0	1	**153**	0	3	96	1	0	**100**	0	**263**
7:30PM	4	0	0	0	**4**	0	0	0	0	0	**0**	0	0	103	0	0	**103**	0	2	89	0	0	**91**	0	**198**
7:45PM	1	0	0	0	**1**	0	1	0	0	0	**1**	0	2	91	1	0	**94**	0	1	109	3	0	**113**	0	**209**
Hourly Total	8	0	3	0	**11**	0	2	0	8	0	**10**	1	5	521	1	1	**528**	0	7	393	8	0	**408**	0	**957**
8:00PM	3	0	1	0	**4**	0	0	0	2	0	**2**	0	0	106	1	0	**107**	0	0	86	1	0	**87**	0	**200**
8:15PM	0	0	0	0	**0**	0	0	0	1	0	**1**	0	1	84	1	0	**86**	0	2	101	1	0	**104**	0	**191**
8:30PM	3	0	0	0	**3**	0	1	0	1	0	**2**	0	1	91	2	0	**94**	0	2	82	1	0	**85**	0	**184**
8:45PM	0	0	2	0	**2**	0	2	0	3	0	**5**	0	3	77	2	1	**83**	0	1	73	0	0	**74**	0	**164**
Hourly Total	6	0	3	0	**9**	0	3	0	7	0	**10**	0	5	358	6	1	**370**	0	5	342	3	0	**350**	0	**739**
9:00PM	2	0	0	0	**2**	0	1	0	0	0	**1**	1	0	70	0	0	**70**	1	0	98	1	0	**99**	0	**172**
9:15PM	0	0	0	0	**0**	0	0	0	4	0	**4**	0	0	56	2	0	**58**	0	2	73	2	0	**77**	0	**139**
9:30PM	0	0	0	0	**0**	0	1	0	4	0	**5**	0	0	85	0	1	**86**	0	3	89	0	0	**92**	0	**183**
9:45PM	2	0	2	0	**4**	0	1	0	3	0	**4**	0	0	60	2	0	**62**	0	1	98	2	0	**101**	0	**171**
Hourly Total	4	0	2	0	**6**	0	3	0	11	0	**14**	1	0	271	4	1	**276**	1	6	358	5	0	**369**	0	**665**
10:00PM	1	0	0	0	**1**	0	2	0	2	0	**4**	0	0	119	3	0	**122**	0	1	64	0	0	**65**	0	**192**
10:15PM	0	0	1	0	**1**	0	1	0	1	0	**2**	0	1	93	2	0	**96**	0	1	84	1	0	**86**	0	**185**
10:30PM	0	0	0	0	**0**	0	5	0	2	0	**7**	0	1	95	0	0	**96**	0	1	69	1	0	**71**	0	**174**
10:45PM	1	0	0	0	**1**	0	0	0	0	0	**0**	0	0	66	2	0	**68**	0	1	79	0	0	**80**	0	**149**
Hourly Total	2	0	1	0	**3**	0	8	0	5	0	**13**	0	2	373	7	0	**382**	0	4	296	2	0	**302**	0	**700**
11:00PM	4	0	2	0	**6**	0	1	0	1	0	**2**	0	0	95	1	0	**96**	0	2	47	0	0	**49**	0	**153**
11:15PM	0	0	1	0	**1**	0	1	0	1	0	**2**	0	1	48	0	0	**49**	0	2	47	4	0	**53**	0	**105**

Leg	Global Court						Global Court						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
11:30PM	0	0	1	0	**1**	0	0	0	1	0	**1**	0	1	112	0	0	**113**	0	0	35	0	0	**35**	0	**150**
11:45PM	0	0	1	0	**1**	0	0	0	3	0	**3**	0	0	142	0	0	**142**	0	1	33	0	0	**34**	0	**180**
Hourly Total	4	0	5	0	**9**	0	2	0	6	0	**8**	0	2	397	1	0	**400**	0	5	162	4	0	**171**	0	**588**
Total	198	6	188	0	**392**	2	122	3	244	0	**369**	8	159	14758	151	16	**15084**	4	228	15799	237	0	**16264**	0	**32109**
% Approach	50.5%	1.5%	48.0%	0%	**-**	-	33.1%	0.8%	66.1%	0%	**-**	-	1.1%	97.8%	1.0%	0.1%	**-**	-	1.4%	97.1%	1.5%	0%	**-**	-	**-**
% Total	0.6%	0%	0.6%	0%	**1.2%**	-	0.4%	0%	0.8%	0%	**1.1%**	-	0.5%	46.0%	0.5%	0%	**47.0%**	-	0.7%	49.2%	0.7%	0%	**50.7%**	-	**-**
Lights and Motorcycles	118	5	98	0	**221**	-	43	1	72	0	**116**	-	85	11017	50	11	**11163**	-	91	11992	139	0	**12222**	-	23722
% Lights and Motorcycles	59.6%	83.3%	52.1%	0%	**56.4%**	-	35.2%	33.3%	29.5%	0%	**31.4%**	-	53.5%	74.7%	33.1%	68.8%	**74.0%**	-	39.9%	75.9%	58.6%	0%	**75.1%**	-	73.9%
Heavy	80	1	90	0	**171**	-	79	2	172	0	**253**	-	74	3741	101	5	**3921**	-	137	3807	98	0	**4042**	-	8387
% Heavy	40.4%	16.7%	47.9%	0%	**43.6%**	-	64.8%	66.7%	70.5%	0%	**68.6%**	-	46.5%	25.3%	66.9%	31.3%	**26.0%**	-	60.1%	24.1%	41.4%	0%	**24.9%**	-	26.1%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	4	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

7477 - Alum Creek Dr & Global Court - TMC

Thu Aug 18, 2022
AM Peak (6:30 AM - 7:30 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 979763, Location: 39.848853, -82.938237, Site Code: 7477

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Global Court						Global Court						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-18 6:30AM	0	1	2	0	**3**	0	1	0	0	0	**1**	0	4	204	0	0	**208**	0	1	386	6	0	**393**	0	**605**
6:45AM	5	0	2	0	**7**	0	1	0	1	0	**2**	0	4	190	4	0	**198**	0	8	398	8	0	**414**	0	**621**
7:00AM	4	0	2	0	**6**	0	1	0	1	0	**2**	0	7	207	5	0	**219**	0	10	214	14	0	**238**	0	**465**
7:15AM	5	0	4	0	**9**	0	1	0	2	0	**3**	0	3	179	2	1	**185**	0	3	299	6	0	**308**	0	**505**
Total	14	1	10	0	**25**	0	4	0	4	0	**8**	0	18	780	11	1	**810**	0	22	1297	34	0	**1353**	0	**2196**
% Approach	56.0%	4.0%	40.0%	0%	**-**	-	50.0%	0%	50.0%	0%	**-**	-	2.2%	96.3%	1.4%	0.1%	**-**	-	1.6%	95.9%	2.5%	0%	**-**	-	-
% Total	0.6%	0%	0.5%	0%	**1.1%**	-	0.2%	0%	0.2%	0%	**0.4%**	-	0.8%	35.5%	0.5%	0%	**36.9%**	-	1.0%	59.1%	1.5%	0%	**61.6%**	-	-
PHF	0.700	0.250	0.625	-	**0.694**	-	1.000	-	0.500	-	**0.667**	-	0.643	0.942	0.550	0.250	**0.925**	-	0.550	0.815	0.607	-	**0.817**	-	0.884
Lights and Motorcycles	3	1	2	0	**6**	-	2	0	1	0	**3**	-	11	646	6	1	**664**	-	19	1133	31	0	**1183**	-	1856
% Lights and Motorcycles	21.4%	100%	20.0%	0%	**24.0%**	-	50.0%	0%	25.0%	0%	**37.5%**	-	61.1%	82.8%	54.5%	100%	**82.0%**	-	86.4%	87.4%	91.2%	0%	**87.4%**	-	84.5%
Heavy	11	0	8	0	**19**	-	2	0	3	0	**5**	-	7	134	5	0	**146**	-	3	164	3	0	**170**	-	340
% Heavy	78.6%	0%	80.0%	0%	**76.0%**	-	50.0%	0%	75.0%	0%	**62.5%**	-	38.9%	17.2%	45.5%	0%	**18.0%**	-	13.6%	12.6%	8.8%	0%	**12.6%**	-	15.5%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

7477 - Alum Creek Dr & Global Court - TMC

Thu Aug 18, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 979763, Location: 39.848853, -82.938237, Site Code: 7477

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Global Court Eastbound						Global Court Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-18 11:45AM	2	0	6	0	**8**	0	2	0	2	0	**4**	0	5	181	4	0	**190**	0	5	213	4	0	**222**	0	**424**
12:00PM	4	0	2	0	**6**	0	2	0	8	0	**10**	0	2	198	5	0	**205**	0	1	213	0	0	**214**	0	**435**
12:15PM	4	0	4	0	**8**	0	4	0	2	0	**6**	0	1	235	5	0	**241**	0	4	186	2	0	**192**	0	**447**
12:30PM	2	0	1	0	**3**	0	0	1	3	0	**4**	0	4	247	2	1	**254**	0	4	189	2	0	**195**	0	**456**
Total	12	0	13	0	**25**	0	8	1	15	0	**24**	0	12	861	16	1	**890**	0	14	801	8	0	**823**	0	**1762**
% Approach	48.0%	0%	52.0%	0%	**-**	-	33.3%	4.2%	62.5%	0%	**-**	-	1.3%	96.7%	1.8%	0.1%	**-**	-	1.7%	97.3%	1.0%	0%	**-**	-	-
% Total	0.7%	0%	0.7%	0%	**1.4%**	-	0.5%	0.1%	0.9%	0%	**1.4%**	-	0.7%	48.9%	0.9%	0.1%	**50.5%**	-	0.8%	45.5%	0.5%	0%	**46.7%**	-	-
PHF	0.750	-	0.542	-	**0.781**	-	0.500	0.250	0.469	-	**0.600**	-	0.600	0.871	0.800	0.250	**0.876**	-	0.700	0.940	0.500	-	**0.927**	-	0.966
Lights and Motorcycles	7	0	5	0	**12**	-	6	0	8	0	**14**	-	7	598	9	1	**615**	-	10	540	4	0	**554**	-	1195
% Lights and Motorcycles	58.3%	0%	38.5%	0%	**48.0%**	-	75.0%	0%	53.3%	0%	**58.3%**	-	58.3%	69.5%	56.3%	100%	**69.1%**	-	71.4%	67.4%	50.0%	0%	**67.3%**	-	67.8%
Heavy	5	0	8	0	**13**	-	2	1	7	0	**10**	-	5	263	7	0	**275**	-	4	261	4	0	**269**	-	567
% Heavy	41.7%	0%	61.5%	0%	**52.0%**	-	25.0%	100%	46.7%	0%	**41.7%**	-	41.7%	30.5%	43.8%	0%	**30.9%**	-	28.6%	32.6%	50.0%	0%	**32.7%**	-	32.2%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

7477 - Alum Creek Dr & Global Court - TMC

Thu Aug 18, 2022
PM Peak (2:45 PM - 3:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 979763, Location: 39.848853, -82.938237, Site Code: 7477

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Global Court Eastbound						Global Court Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-18 2:45PM	4	0	1	0	**5**	0	4	0	8	0	**12**	0	4	297	2	0	**303**	0	3	295	3	0	**301**	0	**621**
3:00PM	3	0	5	0	**8**	0	1	0	7	0	**8**	0	1	379	0	0	**380**	0	3	252	2	0	**257**	0	**653**
3:15PM	2	0	3	0	**5**	1	2	0	7	0	**9**	1	3	344	3	0	**350**	0	1	256	2	0	**259**	0	**623**
3:30PM	7	0	12	0	**19**	0	2	0	2	0	**4**	0	1	365	0	0	**366**	0	0	272	6	0	**278**	0	**667**
Total	16	0	21	0	**37**	1	9	0	24	0	**33**	1	9	1385	5	0	**1399**	0	7	1075	13	0	**1095**	0	**2564**
% Approach	43.2%	0%	56.8%	0%	**-**	-	27.3%	0%	72.7%	0%	**-**	-	0.6%	99.0%	0.4%	0%	**-**	-	0.6%	98.2%	1.2%	0%	**-**	-	**-**
% Total	0.6%	0%	0.8%	0%	**1.4%**	-	0.4%	0%	0.9%	0%	**1.3%**	-	0.4%	54.0%	0.2%	0%	**54.6%**	-	0.3%	41.9%	0.5%	0%	**42.7%**	-	**-**
PHF	0.571	-	0.438	-	**0.487**	-	0.563	-	0.750	-	**0.688**	-	0.563	0.914	0.417	-	**0.920**	-	0.583	0.911	0.542	-	**0.909**	-	0.961
Lights and Motorcycles	13	0	17	0	**30**	-	5	0	13	0	**18**	-	8	1123	1	0	**1132**	-	4	801	6	0	**811**	-	1991
% Lights and Motorcycles	81.3%	0%	81.0%	0%	**81.1%**	-	55.6%	0%	54.2%	0%	**54.5%**	-	88.9%	81.1%	20.0%	0%	**80.9%**	-	57.1%	74.5%	46.2%	0%	**74.1%**	-	77.7%
Heavy	3	0	4	0	**7**	-	4	0	11	0	**15**	-	1	262	4	0	**267**	-	3	274	7	0	**284**	-	573
% Heavy	18.8%	0%	19.0%	0%	**18.9%**	-	44.4%	0%	45.8%	0%	**45.5%**	-	11.1%	18.9%	80.0%	0%	**19.1%**	-	42.9%	25.5%	53.8%	0%	**25.9%**	-	22.3%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Alum Creek Drive and
Rohr Road

2578 - Alum Creek Dr & Rohr Rd - TMC

Tue Aug 16, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978970, Location: 39.843947, -82.935968, Site Code: 2578

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Rohr Rd						Rohr Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-08-16 12:00AM	24	2	3	0	**29**	0	1	7	24	0	**32**	0	2	109	2	0	**113**	0	8	27	8	0	**43**	0	**217**
12:15AM	12	5	6	0	**23**	0	1	1	12	0	**14**	0	7	42	1	0	**50**	0	4	15	7	0	**26**	0	**113**
12:30AM	9	6	4	0	**19**	0	1	6	10	0	**17**	0	5	24	1	0	**30**	0	6	26	2	0	**34**	0	**100**
12:45AM	6	3	4	0	**13**	0	0	5	7	0	**12**	0	6	13	0	0	**19**	0	4	23	4	1	**32**	0	**76**
Hourly Total	51	16	17	0	**84**	0	3	19	53	0	**75**	0	20	188	4	0	**212**	0	22	91	21	1	**135**	0	**506**
1:00AM	10	5	6	0	**21**	0	1	6	11	0	**18**	0	4	27	4	0	**35**	0	5	27	6	0	**38**	0	**112**
1:15AM	3	4	2	0	**9**	0	1	3	4	0	**8**	0	5	24	0	0	**29**	0	6	12	8	0	**26**	0	**72**
1:30AM	7	2	5	0	**14**	0	1	3	10	0	**14**	0	3	19	0	0	**22**	0	3	20	4	1	**28**	0	**78**
1:45AM	4	0	3	0	**7**	0	0	2	4	0	**6**	0	3	28	0	0	**31**	0	5	9	3	0	**17**	0	**61**
Hourly Total	24	11	16	0	**51**	0	3	14	29	0	**46**	0	15	98	4	0	**117**	0	19	68	21	1	**109**	0	**323**
2:00AM	15	11	3	0	**29**	0	0	7	16	0	**23**	0	5	48	0	0	**53**	0	5	13	10	0	**28**	0	**133**
2:15AM	8	3	4	0	**15**	0	0	4	8	0	**12**	0	2	22	1	0	**25**	0	7	16	9	1	**33**	0	**85**
2:30AM	8	2	1	0	**11**	0	0	7	11	0	**18**	0	2	57	4	0	**63**	0	4	15	7	0	**26**	0	**118**
2:45AM	8	1	1	0	**10**	0	1	1	8	0	**10**	0	7	15	0	0	**22**	0	11	24	7	0	**42**	0	**84**
Hourly Total	39	17	9	0	**65**	0	1	19	43	0	**63**	0	16	142	5	0	**163**	0	27	68	33	1	**129**	0	**420**
3:00AM	8	7	3	0	**18**	0	0	2	18	0	**20**	0	2	18	0	0	**20**	0	2	36	7	0	**45**	0	**103**
3:15AM	8	0	3	0	**11**	0	0	3	6	0	**9**	0	0	21	3	0	**24**	0	10	26	5	0	**41**	0	**85**
3:30AM	12	1	4	0	**17**	0	0	6	16	0	**22**	0	5	122	10	0	**137**	0	18	42	10	0	**70**	0	**246**
3:45AM	6	2	5	0	**13**	0	1	4	10	0	**15**	0	1	32	6	0	**39**	0	21	54	9	0	**84**	0	**151**
Hourly Total	34	10	15	0	**59**	0	1	15	50	0	**66**	0	8	193	19	0	**220**	0	51	158	31	0	**240**	0	**585**
4:00AM	21	7	2	0	**30**	0	3	1	21	0	**25**	0	5	51	3	0	**59**	0	11	55	6	0	**72**	0	**186**
4:15AM	5	5	2	0	**12**	0	1	7	19	0	**27**	0	4	45	4	0	**53**	0	15	65	12	0	**92**	0	**184**
4:30AM	5	6	8	0	**19**	0	12	14	42	0	**68**	0	4	47	4	0	**55**	0	27	115	22	0	**164**	0	**306**
4:45AM	10	6	9	0	**25**	0	4	18	15	0	**37**	0	4	48	3	0	**55**	0	29	157	17	0	**203**	0	**320**
Hourly Total	41	24	21	0	**86**	0	20	40	97	0	**157**	0	17	191	14	0	**222**	0	82	392	57	0	**531**	0	**996**
5:00AM	7	10	7	0	**24**	0	7	15	30	0	**52**	0	7	71	4	0	**82**	0	35	74	22	0	**131**	0	**289**
5:15AM	11	9	6	0	**26**	0	8	14	25	0	**47**	0	8	57	5	0	**70**	0	65	134	35	0	**234**	0	**377**
5:30AM	13	17	8	0	**38**	0	7	21	26	0	**54**	0	7	60	8	0	**75**	0	89	232	52	0	**373**	0	**540**
5:45AM	19	28	12	0	**59**	0	11	23	48	0	**82**	0	9	91	10	0	**110**	0	109	285	58	0	**452**	0	**703**
Hourly Total	50	64	33	0	**147**	0	33	73	129	0	**235**	0	31	279	27	0	**337**	0	298	725	167	0	**1190**	0	**1909**
6:00AM	18	11	14	0	**43**	0	1	23	34	0	**58**	0	10	109	8	0	**127**	1	46	173	45	0	**264**	0	**492**
6:15AM	13	15	16	0	**44**	0	4	35	24	0	**63**	0	8	102	6	0	**116**	0	55	185	51	0	**291**	0	**514**
6:30AM	23	21	20	0	**64**	0	10	32	26	0	**68**	0	8	147	13	0	**168**	0	79	197	55	0	**331**	0	**631**
6:45AM	17	22	8	0	**47**	1	5	32	43	0	**80**	0	20	155	10	0	**185**	0	99	224	77	0	**400**	0	**712**
Hourly Total	71	69	58	0	**198**	1	20	122	127	0	**269**	0	46	513	37	0	**596**	1	279	779	228	0	**1286**	0	**2349**
7:00AM	28	11	12	0	**51**	0	3	29	52	0	**84**	0	7	118	9	0	**134**	0	61	141	36	0	**238**	0	**507**
7:15AM	28	17	17	0	**62**	0	9	26	25	0	**60**	0	8	139	7	0	**154**	0	47	169	31	0	**247**	0	**523**
7:30AM	24	10	12	0	**46**	0	4	23	35	0	**62**	0	8	154	5	0	**167**	0	52	173	53	0	**278**	0	**553**
7:45AM	16	11	17	0	**44**	0	4	27	39	0	**70**	0	10	117	5	0	**132**	0	91	224	66	0	**381**	0	**627**
Hourly Total	96	49	58	0	**203**	0	20	105	151	0	**276**	0	33	528	26	0	**587**	0	251	707	186	0	**1144**	0	**2210**
8:00AM	21	12	10	0	**43**	0	7	27	18	0	**52**	0	10	112	4	0	**126**	0	64	173	25	0	**262**	0	**483**
8:15AM	25	13	12	0	**50**	0	6	11	19	0	**36**	0	10	80	5	0	**95**	0	51	149	44	0	**244**	0	**425**
8:30AM	20	6	4	0	**30**	0	2	10	39	0	**51**	0	4	98	4	0	**106**	0	42	140	22	0	**204**	0	**391**
8:45AM	21	6	10	0	**37**	0	4	14	23	0	**41**	0	10	77	10	0	**97**	0	45	157	28	0	**230**	0	**405**
Hourly Total	87	37	36	0	**160**	0	19	62	99	0	**180**	0	34	367	23	0	**424**	0	202	619	119	0	**940**	0	**1704**
9:00AM	26	5	13	0	**44**	0	2	13	30	0	**45**	0	10	98	5	0	**113**	0	35	116	26	0	**177**	0	**379**
9:15AM	23	12	14	0	**49**	0	7	14	32	0	**53**	0	10	94	7	0	**111**	0	22	93	27	0	**142**	0	**355**
9:30AM	24	5	12	0	**41**	0	5	19	38	0	**62**	0	9	75	5	0	**89**	0	29	113	23	0	**165**	0	**357**
9:45AM	26	15	7	0	**48**	0	8	24	26	0	**58**	0	10	67	7	0	**84**	0	35	123	20	0	**178**	0	**368**
Hourly Total	99	37	46	0	**182**	0	22	70	126	0	**218**	0	39	334	24	0	**397**	0	121	445	96	0	**662**	0	**1459**
10:00AM	24	12	15	0	**51**	0	2	16	24	0	**42**	0	12	84	1	0	**97**	0	30	94	23	0	**147**	0	**337**
10:15AM	23	6	9	0	**38**	0	6	17	35	0	**58**	0	10	86	2	0	**98**	0	36	88	21	0	**145**	0	**339**
10:30AM	23	7	13	0	**43**	0	3	13	34	0	**50**	0	13	94	3	0	**110**	0	33	82	23	0	**138**	0	**341**
10:45AM	24	12	16	0	**52**	0	3	12	35	0	**50**	0	17	96	6	0	**119**	0	31	99	26	0	**156**	0	**377**
Hourly Total	94	37	53	0	**184**	0	14	58	128	0	**200**	0	52	360	12	0	**424**	0	130	363	93	0	**586**	0	**1394**
11:00AM	26	17	11	0	**54**	1	7	26	43	0	**76**	0	16	125	8	0	**149**	1	37	111	20	0	**168**	0	**447**

Leg	Rohr Rd						Rohr Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
11:15AM	22	12	12	0	**46**	0	8	16	37	0	**61**	0	14	102	8	0	**124**	0	30	104	31	0	**165**	0	**396**
11:30AM	36	16	15	0	**67**	0	2	30	44	0	**76**	0	15	105	7	0	**127**	0	44	104	36	0	**184**	0	**454**
11:45AM	23	16	13	0	**52**	0	3	24	42	0	**69**	0	19	112	5	0	**136**	0	42	118	28	0	**188**	0	**445**
Hourly Total	107	61	51	0	**219**	1	20	96	166	0	**282**	0	64	444	28	0	**536**	1	153	437	115	0	**705**	0	**1742**
12:00PM	36	16	26	0	**78**	1	10	28	46	0	**84**	0	34	136	7	0	**177**	1	34	100	38	0	**172**	0	**511**
12:15PM	28	23	32	0	**83**	0	3	24	42	0	**69**	0	19	125	10	0	**154**	0	37	103	25	0	**165**	0	**471**
12:30PM	30	14	19	0	**63**	0	5	25	43	0	**73**	0	13	119	6	0	**138**	0	35	106	40	0	**181**	0	**455**
12:45PM	30	15	11	0	**56**	0	7	12	41	0	**60**	0	9	104	5	0	**118**	0	30	106	35	0	**171**	0	**405**
Hourly Total	124	68	88	0	**280**	1	25	89	172	0	**286**	0	75	484	28	0	**587**	1	136	415	138	0	**689**	0	**1842**
1:00PM	23	19	15	0	**57**	0	3	24	42	0	**69**	0	12	119	2	0	**133**	0	47	103	31	0	**181**	0	**440**
1:15PM	24	12	18	0	**54**	0	4	18	37	0	**59**	0	12	109	5	0	**126**	0	47	125	34	0	**206**	0	**445**
1:30PM	24	16	9	0	**49**	0	9	19	51	0	**79**	0	9	132	4	0	**145**	0	50	111	37	0	**198**	0	**471**
1:45PM	27	16	12	0	**55**	0	8	15	42	0	**65**	0	16	112	9	0	**137**	0	72	143	37	0	**252**	0	**509**
Hourly Total	98	63	54	0	**215**	0	24	76	172	0	**272**	0	49	472	20	0	**541**	0	216	482	139	0	**837**	0	**1865**
2:00PM	34	12	9	0	**55**	0	7	32	83	0	**122**	0	9	122	9	0	**140**	0	49	131	35	0	**215**	0	**532**
2:15PM	30	15	13	0	**58**	0	12	13	84	0	**109**	0	13	161	9	0	**183**	0	34	132	22	0	**188**	0	**538**
2:30PM	40	32	17	0	**89**	0	14	36	82	0	**132**	0	15	199	9	0	**223**	0	44	172	41	0	**257**	0	**701**
2:45PM	34	16	17	0	**67**	0	12	24	52	0	**88**	0	21	155	10	0	**186**	0	50	200	37	0	**287**	0	**628**
Hourly Total	138	75	56	0	**269**	0	45	105	301	0	**451**	0	58	637	37	0	**732**	0	177	635	135	0	**947**	0	**2399**
3:00PM	43	34	15	0	**92**	0	4	39	91	0	**134**	0	19	222	10	0	**251**	1	35	138	29	0	**202**	0	**679**
3:15PM	35	20	19	0	**74**	1	11	22	51	0	**84**	0	8	188	17	0	**213**	0	53	165	37	0	**255**	0	**626**
3:30PM	72	45	14	0	**131**	1	10	34	86	0	**130**	2	10	239	6	0	**255**	0	63	182	36	0	**281**	0	**797**
3:45PM	29	26	15	0	**70**	2	10	16	51	0	**77**	0	17	172	16	0	**205**	0	70	188	41	0	**299**	0	**651**
Hourly Total	179	125	63	0	**367**	4	35	111	279	0	**425**	2	54	821	49	0	**924**	1	221	673	143	0	**1037**	0	**2753**
4:00PM	32	28	17	0	**77**	0	14	36	77	0	**127**	0	11	179	4	0	**194**	0	54	158	33	0	**245**	0	**643**
4:15PM	28	17	10	0	**55**	0	18	27	54	0	**99**	0	7	164	7	0	**178**	0	42	169	30	0	**241**	0	**573**
4:30PM	51	39	12	0	**102**	0	6	30	79	0	**115**	0	13	252	6	0	**271**	0	70	179	32	0	**281**	0	**769**
4:45PM	40	10	15	0	**65**	0	16	23	46	0	**85**	1	4	203	7	0	**214**	0	65	180	27	0	**272**	0	**636**
Hourly Total	151	94	54	0	**299**	0	54	116	256	0	**426**	1	35	798	24	0	**857**	0	231	686	122	0	**1039**	0	**2621**
5:00PM	39	21	15	0	**75**	0	6	31	52	0	**89**	0	14	218	10	0	**242**	0	65	136	33	0	**234**	1	**640**
5:15PM	25	16	10	0	**51**	0	3	7	41	0	**51**	0	10	148	10	0	**168**	0	54	118	25	0	**197**	1	**467**
5:30PM	43	19	11	0	**73**	0	6	24	72	0	**102**	0	9	148	4	0	**161**	0	57	111	21	0	**189**	0	**525**
5:45PM	20	13	5	0	**38**	0	6	9	37	0	**52**	0	9	116	3	0	**128**	0	64	128	17	0	**209**	0	**427**
Hourly Total	127	69	41	0	**237**	0	21	71	202	0	**294**	0	42	630	27	0	**699**	0	240	493	96	0	**829**	2	**2059**
6:00PM	25	12	13	0	**50**	0	13	22	50	0	**85**	0	9	114	5	0	**128**	0	44	89	13	0	**146**	0	**409**
6:15PM	16	7	10	0	**33**	0	5	14	29	0	**48**	0	5	93	7	0	**105**	0	46	99	16	0	**161**	0	**347**
6:30PM	24	8	5	0	**37**	0	2	10	32	0	**44**	0	10	96	6	0	**112**	0	31	91	17	0	**139**	0	**332**
6:45PM	18	6	8	0	**32**	0	0	11	26	0	**37**	0	9	82	2	0	**93**	0	33	86	15	1	**135**	0	**297**
Hourly Total	83	33	36	0	**152**	0	20	57	137	0	**214**	0	33	385	20	0	**438**	0	154	365	61	1	**581**	0	**1385**
7:00PM	23	8	6	0	**37**	0	3	8	48	0	**59**	0	8	67	1	0	**76**	0	22	65	12	0	**99**	0	**271**
7:15PM	19	6	7	0	**32**	0	1	9	21	0	**31**	0	5	62	4	0	**71**	0	22	67	11	0	**100**	0	**234**
7:30PM	19	4	5	0	**28**	0	5	6	19	0	**30**	0	6	63	0	0	**69**	0	19	55	16	0	**90**	0	**217**
7:45PM	19	4	7	0	**30**	0	0	6	18	0	**24**	0	5	60	4	0	**69**	0	14	52	16	0	**82**	0	**205**
Hourly Total	80	22	25	0	**127**	0	9	29	106	0	**144**	0	24	252	9	0	**285**	0	77	239	55	0	**371**	0	**927**
8:00PM	20	6	11	0	**37**	0	1	6	15	0	**22**	0	6	73	0	0	**79**	0	12	57	11	0	**80**	2	**218**
8:15PM	13	6	4	0	**23**	0	1	5	18	0	**24**	0	6	69	1	0	**76**	0	19	76	9	0	**104**	0	**227**
8:30PM	14	9	6	0	**29**	0	0	8	22	0	**30**	0	6	46	3	0	**55**	0	13	52	14	0	**79**	2	**193**
8:45PM	20	5	7	0	**32**	0	1	9	12	0	**22**	0	3	47	1	0	**51**	0	16	61	15	0	**92**	0	**197**
Hourly Total	67	26	28	0	**121**	0	3	28	67	0	**98**	0	21	235	5	0	**261**	0	60	246	49	0	**355**	4	**835**
9:00PM	14	8	9	0	**31**	0	3	7	15	0	**25**	0	8	46	3	0	**57**	0	8	66	7	0	**81**	0	**194**
9:15PM	15	11	4	0	**30**	0	2	16	12	0	**30**	0	4	54	3	0	**61**	0	14	46	12	0	**72**	0	**193**
9:30PM	9	4	7	0	**20**	0	0	5	9	0	**14**	0	6	72	0	0	**78**	0	14	72	12	0	**98**	0	**210**
9:45PM	6	2	7	0	**15**	0	1	9	23	0	**33**	0	4	50	4	0	**58**	0	12	54	14	0	**80**	0	**186**
Hourly Total	44	25	27	0	**96**	0	6	37	59	0	**102**	0	22	222	10	0	**254**	0	48	238	45	0	**331**	0	**783**
10:00PM	25	8	6	0	**39**	0	3	12	40	0	**55**	0	3	56	1	0	**60**	0	9	47	6	0	**62**	0	**216**
10:15PM	15	16	2	0	**33**	0	0	9	30	0	**39**	0	4	40	1	0	**45**	0	14	47	13	0	**74**	0	**191**
10:30PM	11	2	8	0	**21**	0	2	6	19	0	**27**	0	1	45	0	0	**46**	0	15	54	15	0	**84**	0	**178**
10:45PM	9	5	7	1	**22**	0	0	3	14	0	**17**	0	3	41	3	0	**47**	0	15	53	15	0	**83**	0	**169**
Hourly Total	60	31	23	1	**115**	0	5	30	103	0	**138**	0	11	182	5	0	**198**	0	53	201	49	0	**303**	0	**754**
11:00PM	8	5	5	0	**18**	0	3	16	30	0	**49**	0	6	44	1	0	**51**	0	8	33	12	0	**53**	0	**171**
11:15PM	15	6	3	0	**24**	0	1	6	6	0	**13**	0	1	34	0	0	**35**	0	8	29	9	0	**46**	0	**118**
11:30PM	7	9	2	0	**18**	0	1	8	13	0	**22**	0	3	116	2	0	**121**	0	10	28	6	0	**44**	0	**205**
11:45PM	8	6	5	0	**19**	0	0	4	9	0	**13**	0	8	106	3	0	**117**	0	7	23	12	0	**42**	0	**191**

Leg Direction	Rohr Rd Eastbound						Rohr Rd Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
Hourly Total	38	26	15	0	**79**	0	5	34	58	0	**97**	0	18	300	6	0	**324**	0	33	113	39	0	**185**	0	**685**
Total	1982	1089	923	1	**3995**	7	428	1476	3110	0	**5014**	3	817	9055	463	0	**10335**	4	3281	9638	2238	4	**15161**	6	**34505**
% Approach	49.6%	27.3%	23.1%	0%	**-**	-	8.5%	29.4%	62.0%	0%	**-**	-	7.9%	87.6%	4.5%	0%	**-**	-	21.6%	63.6%	14.8%	0%	**-**	-	**-**
% Total	5.7%	3.2%	2.7%	0%	**11.6%**	-	1.2%	4.3%	9.0%	0%	**14.5%**	-	2.4%	26.2%	1.3%	0%	**30.0%**	-	9.5%	27.9%	6.5%	0%	**43.9%**	-	**-**
Lights and Motorcycles	1113	947	710	1	**2771**	-	340	1148	2148	0	**3636**	-	520	7019	334	0	**7873**	-	2272	7442	1517	1	**11232**	-	25512
% Lights and Motorcycles	56.2%	87.0%	76.9%	100%	**69.4%**	-	79.4%	77.8%	69.1%	0%	**72.5%**	-	63.6%	77.5%	72.1%	0%	**76.2%**	-	69.2%	77.2%	67.8%	25.0%	**74.1%**	-	73.9%
Heavy	869	142	213	0	**1224**	-	88	328	962	0	**1378**	-	297	2036	129	0	**2462**	-	1009	2196	721	3	**3929**	-	8993
% Heavy	43.8%	13.0%	23.1%	0%	**30.6%**	-	20.6%	22.2%	30.9%	0%	**27.5%**	-	36.4%	22.5%	27.9%	0%	**23.8%**	-	30.8%	22.8%	32.2%	75.0%	**25.9%**	-	26.1%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	6	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2578 - Alum Creek Dr & Rohr Rd - TMC

Tue Aug 16, 2022
AM Peak (6:30 AM - 7:30 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978970, Location: 39.843947, -82.935968, Site Code: 2578

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Rohr Rd						Rohr Rd						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 6:30AM	23	21	20	0	**64**	0	10	32	26	0	**68**	0	8	147	13	0	**168**	0	79	197	55	0	**331**	0	**631**
6:45AM	17	22	8	0	**47**	1	5	32	43	0	**80**	0	20	155	10	0	**185**	0	99	224	77	0	**400**	0	**712**
7:00AM	28	11	12	0	**51**	0	3	29	52	0	**84**	0	7	118	9	0	**134**	0	61	141	36	0	**238**	0	**507**
7:15AM	28	17	17	0	**62**	0	9	26	25	0	**60**	0	8	139	7	0	**154**	0	47	169	31	0	**247**	0	**523**
Total	96	71	57	0	**224**	1	27	119	146	0	**292**	0	43	559	39	0	**641**	0	286	731	199	0	**1216**	0	**2373**
% Approach	42.9%	31.7%	25.4%	0%	**-**	-	9.2%	40.8%	50.0%	0%	**-**	-	6.7%	87.2%	6.1%	0%	**-**	-	23.5%	60.1%	16.4%	0%	**-**	-	**-**
% Total	4.0%	3.0%	2.4%	0%	**9.4%**	-	1.1%	5.0%	6.2%	0%	**12.3%**	-	1.8%	23.6%	1.6%	0%	**27.0%**	-	12.1%	30.8%	8.4%	0%	**51.2%**	-	**-**
PHF	0.857	0.807	0.713	-	**0.875**	-	0.675	0.930	0.702	-	**0.869**	-	0.538	0.902	0.750	-	**0.866**	-	0.722	0.816	0.646	-	**0.760**	-	0.833
Lights and Motorcycles	53	61	49	0	**163**	-	26	108	111	0	**245**	-	29	469	32	0	**530**	-	249	640	168	0	**1057**	-	1995
% Lights and Motorcycles	55.2%	85.9%	86.0%	0%	**72.8%**	-	96.3%	90.8%	76.0%	0%	**83.9%**	-	67.4%	83.9%	82.1%	0%	**82.7%**	-	87.1%	87.6%	84.4%	0%	**86.9%**	-	84.1%
Heavy	43	10	8	0	**61**	-	1	11	35	0	**47**	-	14	90	7	0	**111**	-	37	91	31	0	**159**	-	378
% Heavy	44.8%	14.1%	14.0%	0%	**27.2%**	-	3.7%	9.2%	24.0%	0%	**16.1%**	-	32.6%	16.1%	17.9%	0%	**17.3%**	-	12.9%	12.4%	15.6%	0%	**13.1%**	-	15.9%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2578 - Alum Creek Dr & Rohr Rd - TMC

Tue Aug 16, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978970, Location: 39.843947, -82.935968, Site Code: 2578

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Rohr Rd Eastbound						Rohr Rd Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 11:45AM	23	16	13	0	**52**	0	3	24	42	0	**69**	0	19	112	5	0	**136**	0	42	118	28	0	**188**	0	**445**
12:00PM	36	16	26	0	**78**	1	10	28	46	0	**84**	0	34	136	7	0	**177**	1	34	100	38	0	**172**	0	**511**
12:15PM	28	23	32	0	**83**	0	3	24	42	0	**69**	0	19	125	10	0	**154**	0	37	103	25	0	**165**	0	**471**
12:30PM	30	14	19	0	**63**	0	5	25	43	0	**73**	0	13	119	6	0	**138**	0	35	106	40	0	**181**	0	**455**
Total	117	69	90	0	**276**	1	21	101	173	0	**295**	0	85	492	28	0	**605**	1	148	427	131	0	**706**	0	**1882**
% Approach	42.4%	25.0%	32.6%	0%	**-**	-	7.1%	34.2%	58.6%	0%	**-**	-	14.0%	81.3%	4.6%	0%	**-**	-	21.0%	60.5%	18.6%	0%	**-**	-	**-**
% Total	6.2%	3.7%	4.8%	0%	**14.7%**	-	1.1%	5.4%	9.2%	0%	**15.7%**	-	4.5%	26.1%	1.5%	0%	**32.1%**	-	7.9%	22.7%	7.0%	0%	**37.5%**	-	**-**
PHF	0.813	0.750	0.703	-	**0.831**	-	0.525	0.902	0.940	-	**0.878**	-	0.625	0.904	0.700	-	**0.855**	-	0.881	0.905	0.819	-	**0.939**	-	0.921
Lights and Motorcycles	69	57	71	0	**197**	-	17	72	98	0	**187**	-	62	326	16	0	**404**	-	72	269	82	0	**423**	-	1211
% Lights and Motorcycles	59.0%	82.6%	78.9%	0%	**71.4%**	-	81.0%	71.3%	56.6%	0%	**63.4%**	-	72.9%	66.3%	57.1%	0%	**66.8%**	-	48.6%	63.0%	62.6%	0%	**59.9%**	-	64.3%
Heavy	48	12	19	0	**79**	-	4	29	75	0	**108**	-	23	166	12	0	**201**	-	76	158	49	0	**283**	-	671
% Heavy	41.0%	17.4%	21.1%	0%	**28.6%**	-	19.0%	28.7%	43.4%	0%	**36.6%**	-	27.1%	33.7%	42.9%	0%	**33.2%**	-	51.4%	37.0%	37.4%	0%	**40.1%**	-	35.7%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2578 - Alum Creek Dr & Rohr Rd - TMC

Tue Aug 16, 2022
PM Peak (3 PM - 4 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978970, Location: 39.843947, -82.935968, Site Code: 2578

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Rohr Rd Eastbound						Rohr Rd Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 3:00PM	43	34	15	0	**92**	0	4	39	91	0	**134**	0	19	222	10	0	**251**	1	35	138	29	0	**202**	0	**679**
3:15PM	35	20	19	0	**74**	1	11	22	51	0	**84**	0	8	188	17	0	**213**	0	53	165	37	0	**255**	0	**626**
3:30PM	72	45	14	0	**131**	1	10	34	86	0	**130**	2	10	239	6	0	**255**	0	63	182	36	0	**281**	0	**797**
3:45PM	29	26	15	0	**70**	2	10	16	51	0	**77**	0	17	172	16	0	**205**	0	70	188	41	0	**299**	0	**651**
Total	179	125	63	0	**367**	4	35	111	279	0	**425**	2	54	821	49	0	**924**	1	221	673	143	0	**1037**	0	**2753**
% Approach	48.8%	34.1%	17.2%	0%	**-**	-	8.2%	26.1%	65.6%	0%	**-**	-	5.8%	88.9%	5.3%	0%	**-**	-	21.3%	64.9%	13.8%	0%	**-**	-	**-**
% Total	6.5%	4.5%	2.3%	0%	**13.3%**	-	1.3%	4.0%	10.1%	0%	**15.4%**	-	2.0%	29.8%	1.8%	0%	**33.6%**	-	8.0%	24.4%	5.2%	0%	**37.7%**	-	**-**
PHF	0.622	0.694	0.829	-	**0.700**	-	0.795	0.712	0.766	-	**0.793**	-	0.711	0.859	0.721	-	**0.906**	-	0.789	0.895	0.872	-	**0.867**	-	0.864
Lights and Motorcycles	126	112	47	0	**285**	-	28	90	217	0	**335**	-	32	678	38	0	**748**	-	152	506	95	0	**753**	-	2121
% Lights and Motorcycles	70.4%	89.6%	74.6%	0%	**77.7%**	-	80.0%	81.1%	77.8%	0%	**78.8%**	-	59.3%	82.6%	77.6%	0%	**81.0%**	-	68.8%	75.2%	66.4%	0%	**72.6%**	-	77.0%
Heavy	53	13	16	0	**82**	-	7	21	62	0	**90**	-	22	143	11	0	**176**	-	69	167	48	0	**284**	-	632
% Heavy	29.6%	10.4%	25.4%	0%	**22.3%**	-	20.0%	18.9%	22.2%	0%	**21.2%**	-	40.7%	17.4%	22.4%	0%	**19.0%**	-	31.2%	24.8%	33.6%	0%	**27.4%**	-	23.0%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Alum Creek Drive and
Spiegel Drive

3086 - Alum Creek Dr & Spiegel Dr - TMC

Tue Aug 16, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978975, Location: 39.837374, -82.933478, Site Code: 3086

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Spiegel Dr Eastbound						Spiegel Dr Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 12:00AM	46	7	15	0	**68**	0	1	0	7	0	**8**	0	1	60	0	0	**61**	0	1	27	2	0	**30**	0	**167**
12:15AM	6	0	1	0	**7**	0	0	0	3	0	**3**	0	2	37	0	0	**39**	0	2	18	3	0	**23**	0	**72**
12:30AM	6	0	0	0	**6**	0	0	0	5	0	**5**	0	2	20	0	0	**22**	0	3	24	2	0	**29**	0	**62**
12:45AM	0	0	1	0	**1**	0	0	0	2	0	**2**	0	1	16	0	0	**17**	0	3	21	4	0	**28**	0	**48**
Hourly Total	58	7	17	0	**82**	0	1	0	17	0	**18**	0	6	133	0	0	**139**	0	9	90	11	0	**110**	0	**349**
1:00AM	2	0	1	0	**3**	0	0	0	19	0	**19**	0	0	19	0	0	**19**	0	8	24	2	0	**34**	0	**75**
1:15AM	6	0	1	0	**7**	0	0	0	2	0	**2**	0	0	20	0	0	**20**	0	2	13	2	0	**17**	0	**46**
1:30AM	0	0	0	0	**0**	0	0	1	1	0	**2**	0	2	19	0	0	**21**	0	1	25	1	0	**27**	0	**50**
1:45AM	2	0	0	0	**2**	0	0	0	1	0	**1**	0	0	28	0	0	**28**	0	1	11	1	0	**13**	0	**44**
Hourly Total	10	0	2	0	**12**	0	0	1	23	0	**24**	0	2	86	0	0	**88**	0	12	73	6	0	**91**	0	**215**
2:00AM	3	0	1	0	**4**	0	0	0	4	0	**4**	0	1	44	0	0	**45**	0	3	9	3	0	**15**	0	**68**
2:15AM	10	0	3	0	**13**	0	0	0	2	0	**2**	0	1	16	0	0	**17**	0	1	19	1	0	**21**	0	**53**
2:30AM	51	5	4	0	**60**	0	0	0	0	0	**0**	0	0	12	0	0	**12**	0	0	13	3	0	**16**	0	**88**
2:45AM	3	1	1	0	**5**	0	0	0	3	0	**3**	0	1	12	0	0	**13**	0	1	24	0	0	**25**	0	**46**
Hourly Total	67	6	9	0	**82**	0	0	0	9	0	**9**	0	3	84	0	0	**87**	0	5	65	7	0	**77**	0	**255**
3:00AM	1	0	2	0	**3**	0	0	1	5	0	**6**	0	2	17	0	0	**19**	0	2	30	3	0	**35**	0	**63**
3:15AM	10	0	1	0	**11**	0	0	0	3	0	**3**	0	1	13	2	0	**16**	0	1	29	3	0	**33**	0	**63**
3:30AM	46	2	5	0	**53**	0	0	0	2	0	**2**	0	3	93	0	0	**96**	0	2	35	5	0	**42**	0	**193**
3:45AM	7	0	4	0	**11**	0	0	0	0	0	**0**	0	0	31	0	0	**31**	0	2	48	8	0	**58**	0	**100**
Hourly Total	64	2	12	0	**78**	0	0	1	10	0	**11**	0	6	154	2	0	**162**	0	7	142	19	0	**168**	0	**419**
4:00AM	3	0	0	0	**3**	0	0	0	0	0	**0**	0	3	53	0	0	**56**	0	4	48	7	0	**59**	0	**118**
4:15AM	4	0	0	0	**4**	0	0	0	0	0	**0**	0	3	47	1	0	**51**	0	7	39	19	0	**65**	0	**120**
4:30AM	6	1	0	0	**7**	0	0	0	0	0	**0**	0	10	50	0	0	**60**	0	19	70	42	0	**131**	0	**198**
4:45AM	9	1	0	0	**10**	0	0	3	0	0	**3**	0	12	37	2	0	**51**	0	46	64	69	0	**179**	0	**243**
Hourly Total	22	2	0	0	**24**	0	0	3	0	0	**3**	0	28	187	3	0	**218**	0	76	221	137	0	**434**	0	**679**
5:00AM	8	1	1	0	**10**	0	0	2	16	0	**18**	0	3	57	4	0	**64**	0	14	56	13	0	**83**	0	**175**
5:15AM	11	0	1	0	**12**	0	1	2	5	0	**8**	0	8	53	4	0	**65**	0	29	104	19	0	**152**	0	**237**
5:30AM	5	2	1	0	**8**	0	2	1	15	0	**18**	0	13	57	6	0	**76**	0	47	135	40	1	**223**	0	**325**
5:45AM	10	3	9	0	**22**	0	0	6	11	0	**17**	0	27	87	4	0	**118**	0	68	170	79	0	**317**	0	**474**
Hourly Total	34	6	12	0	**52**	0	3	11	47	0	**61**	0	51	254	18	0	**323**	0	158	465	151	1	**775**	0	**1211**
6:00AM	12	2	6	0	**20**	0	1	3	18	0	**22**	0	13	96	9	0	**118**	1	66	109	18	0	**193**	0	**353**
6:15AM	13	3	4	0	**20**	0	0	4	6	0	**10**	0	18	95	7	0	**120**	2	31	134	44	0	**209**	0	**359**
6:30AM	12	0	2	0	**14**	0	0	6	7	0	**13**	0	15	161	5	1	**182**	0	18	136	56	0	**210**	1	**419**
6:45AM	11	1	2	0	**14**	0	1	6	1	0	**8**	0	12	180	4	0	**196**	0	32	171	59	0	**262**	0	**480**
Hourly Total	48	6	14	0	**68**	0	2	19	32	0	**53**	0	58	532	25	1	**616**	3	147	550	177	0	**874**	1	**1611**
7:00AM	10	0	4	0	**14**	0	0	1	5	0	**6**	0	7	144	5	0	**156**	1	11	115	30	0	**156**	2	**332**
7:15AM	6	0	1	0	**7**	0	1	2	7	0	**10**	0	5	145	5	0	**155**	1	18	150	32	0	**200**	1	**372**
7:30AM	6	0	5	0	**11**	0	1	4	8	0	**13**	0	3	147	4	0	**154**	0	30	132	27	0	**189**	0	**367**
7:45AM	6	3	1	0	**10**	0	1	4	5	0	**10**	0	4	129	4	0	**137**	1	37	166	43	1	**247**	0	**404**
Hourly Total	28	3	11	0	**42**	0	3	11	25	0	**39**	0	19	565	18	0	**602**	3	96	563	132	1	**792**	3	**1475**
8:00AM	5	1	0	0	**6**	0	0	2	6	0	**8**	0	7	126	4	0	**137**	1	38	127	34	0	**199**	0	**350**
8:15AM	7	2	6	0	**15**	0	0	3	8	0	**11**	0	5	76	8	0	**89**	0	30	112	36	0	**178**	0	**293**
8:30AM	15	1	7	0	**23**	0	0	1	3	0	**4**	0	3	98	2	0	**103**	0	17	105	24	2	**148**	0	**278**
8:45AM	7	0	4	0	**11**	0	1	3	4	0	**8**	0	4	84	3	0	**91**	0	26	116	26	0	**168**	0	**278**
Hourly Total	34	4	17	0	**55**	0	1	9	21	0	**31**	0	19	384	17	0	**420**	1	111	460	120	2	**693**	0	**1199**
9:00AM	13	1	6	0	**20**	0	4	0	8	0	**12**	0	7	95	5	0	**107**	0	9	100	24	0	**133**	0	**272**
9:15AM	16	4	7	0	**27**	0	2	0	5	0	**7**	0	2	85	4	0	**91**	0	9	98	16	0	**123**	0	**248**
9:30AM	10	1	2	0	**13**	0	1	3	8	0	**12**	1	5	72	5	0	**82**	0	6	98	26	0	**130**	2	**237**
9:45AM	9	0	1	0	**10**	0	0	0	2	0	**2**	0	3	77	0	0	**80**	0	12	110	25	1	**148**	0	**240**
Hourly Total	48	6	16	0	**70**	0	7	3	23	0	**33**	1	17	329	14	0	**360**	0	36	406	91	1	**534**	2	**997**
10:00AM	9	3	7	0	**19**	0	0	0	2	0	**2**	0	6	87	3	0	**96**	0	10	97	9	0	**116**	0	**233**
10:15AM	15	1	0	0	**16**	0	2	0	0	0	**2**	0	3	79	2	0	**84**	0	8	75	11	0	**94**	0	**196**
10:30AM	19	2	1	0	**22**	0	0	0	2	0	**2**	0	2	86	7	0	**95**	0	10	84	13	0	**107**	1	**226**
10:45AM	14	0	3	0	**17**	0	2	2	5	0	**9**	0	2	106	3	0	**111**	0	8	99	11	0	**118**	0	**255**
Hourly Total	57	6	11	0	**74**	0	4	2	9	0	**15**	0	13	358	15	0	**386**	0	36	355	44	0	**435**	1	**910**
11:00AM	23	1	11	0	**35**	0	0	1	13	0	**14**	0	5	115	8	0	**128**	0	10	98	22	0	**130**	0	**307**

Leg	Spiegel Dr						Spiegel Dr						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
11:15AM	15	1	5	0	**21**	0	2	4	11	0	**17**	0	5	91	3	0	**99**	0	9	108	15	0	**132**	0	**269**
11:30AM	21	1	5	0	**27**	0	1	2	5	0	**8**	0	6	107	5	0	**118**	0	14	86	20	0	**120**	1	**273**
11:45AM	16	2	6	0	**24**	0	5	0	10	0	**15**	0	10	117	4	0	**131**	0	12	103	18	0	**133**	0	**303**
Hourly Total	75	5	27	0	**107**	0	8	7	39	0	**54**	0	26	430	20	0	**476**	0	45	395	75	0	**515**	1	**1152**
12:00PM	28	1	14	0	**43**	0	2	4	25	0	**31**	0	8	126	4	0	**138**	0	14	110	17	0	**141**	0	**353**
12:15PM	15	1	3	0	**19**	0	0	1	10	0	**11**	0	6	123	7	1	**137**	0	21	97	21	1	**140**	0	**307**
12:30PM	18	1	2	0	**21**	0	1	1	13	0	**15**	0	2	106	5	1	**114**	0	22	94	20	0	**136**	0	**286**
12:45PM	11	0	5	0	**16**	0	0	3	16	0	**19**	0	6	100	4	0	**110**	0	25	86	19	0	**130**	0	**275**
Hourly Total	72	3	24	0	**99**	0	3	9	64	0	**76**	0	22	455	20	2	**499**	0	82	387	77	1	**547**	0	**1221**
1:00PM	19	0	5	0	**24**	0	1	0	16	0	**17**	0	5	103	5	0	**113**	0	12	99	13	0	**124**	0	**278**
1:15PM	13	1	8	0	**22**	0	0	2	16	0	**18**	0	11	117	5	0	**133**	0	14	105	22	1	**142**	0	**315**
1:30PM	25	2	4	0	**31**	0	1	6	4	0	**11**	0	6	111	7	0	**124**	0	16	95	27	0	**138**	0	**304**
1:45PM	20	1	4	0	**25**	0	0	2	10	0	**12**	0	6	112	5	0	**123**	0	24	105	31	0	**160**	0	**320**
Hourly Total	77	4	21	0	**102**	0	2	10	46	0	**58**	0	28	443	22	0	**493**	0	66	404	93	1	**564**	0	**1217**
2:00PM	26	3	7	0	**36**	0	3	2	11	0	**16**	0	6	116	4	0	**126**	0	19	106	23	0	**148**	0	**326**
2:15PM	24	0	14	0	**38**	0	0	5	43	0	**48**	0	8	119	3	0	**130**	0	29	121	20	0	**170**	0	**386**
2:30PM	43	5	15	0	**63**	0	6	2	53	0	**61**	0	4	143	7	0	**154**	0	37	142	13	0	**192**	0	**470**
2:45PM	15	5	9	0	**29**	0	7	4	62	0	**73**	0	6	134	6	0	**146**	0	59	147	28	1	**235**	0	**483**
Hourly Total	108	13	45	0	**166**	0	16	13	169	0	**198**	0	24	512	20	0	**556**	0	144	516	84	1	**745**	0	**1665**
3:00PM	26	0	9	0	**35**	0	7	13	86	0	**106**	0	5	145	6	0	**156**	0	23	109	33	0	**165**	0	**462**
3:15PM	57	14	33	0	**104**	0	5	7	12	0	**24**	0	13	148	3	0	**164**	0	15	151	38	0	**204**	0	**496**
3:30PM	105	26	61	0	**192**	0	2	3	21	0	**26**	0	3	165	4	0	**172**	2	7	158	32	0	**197**	0	**587**
3:45PM	24	8	17	0	**49**	0	1	5	21	0	**27**	0	4	124	3	0	**131**	0	14	190	36	0	**240**	0	**447**
Hourly Total	212	48	120	0	**380**	0	15	28	140	0	**183**	0	25	582	16	0	**623**	2	59	608	139	0	**806**	0	**1992**
4:00PM	33	3	12	0	**48**	0	2	3	23	0	**28**	0	4	147	0	0	**151**	0	11	140	22	0	**173**	0	**400**
4:15PM	45	8	17	0	**70**	0	3	1	11	0	**15**	0	5	111	3	0	**119**	4	13	166	23	1	**203**	0	**407**
4:30PM	51	7	18	0	**76**	0	0	2	15	0	**17**	0	7	206	5	0	**218**	0	7	166	30	0	**203**	0	**514**
4:45PM	30	2	9	0	**41**	0	1	3	21	0	**25**	1	10	157	4	0	**171**	0	6	182	37	1	**226**	0	**463**
Hourly Total	159	20	56	0	**235**	0	6	9	70	0	**85**	1	26	621	12	0	**659**	4	37	654	112	2	**805**	0	**1784**
5:00PM	24	4	9	0	**37**	0	6	4	64	0	**74**	0	3	161	3	0	**167**	0	4	132	12	0	**148**	0	**426**
5:15PM	29	4	5	0	**38**	0	2	0	27	0	**29**	0	1	107	3	0	**111**	0	5	131	8	0	**144**	0	**322**
5:30PM	20	3	2	0	**25**	0	1	0	16	0	**17**	0	0	131	1	0	**132**	0	11	111	4	0	**126**	0	**300**
5:45PM	13	3	3	0	**19**	0	0	0	13	0	**13**	0	0	106	1	0	**107**	0	11	120	9	0	**140**	0	**279**
Hourly Total	86	14	19	0	**119**	0	9	4	120	0	**133**	0	4	505	8	0	**517**	0	31	494	33	0	**558**	0	**1327**
6:00PM	12	0	3	0	**15**	0	5	0	23	0	**28**	0	0	90	4	0	**94**	0	13	94	8	0	**115**	0	**252**
6:15PM	11	0	3	0	**14**	0	0	1	19	0	**20**	0	2	80	2	0	**84**	0	14	98	5	1	**118**	0	**236**
6:30PM	9	1	1	0	**11**	0	0	0	12	0	**12**	0	0	86	3	0	**89**	0	19	68	4	0	**91**	0	**203**
6:45PM	16	2	0	0	**18**	0	1	2	15	0	**18**	0	0	66	1	0	**67**	0	18	72	5	0	**95**	0	**198**
Hourly Total	48	3	7	0	**58**	0	6	3	69	0	**78**	0	2	322	10	0	**334**	0	64	332	22	1	**419**	0	**889**
7:00PM	7	0	2	0	**9**	0	0	0	15	0	**15**	0	3	61	1	0	**65**	0	4	71	4	0	**79**	0	**168**
7:15PM	6	0	1	0	**7**	0	0	0	10	0	**10**	0	6	54	0	0	**60**	0	10	65	1	1	**77**	0	**154**
7:30PM	6	0	2	0	**8**	0	0	1	10	0	**11**	0	1	49	2	0	**52**	0	4	54	6	0	**64**	0	**135**
7:45PM	6	0	2	0	**8**	0	0	1	8	0	**9**	0	1	46	1	0	**48**	0	3	51	5	0	**59**	0	**124**
Hourly Total	25	0	7	0	**32**	0	0	2	43	0	**45**	0	11	210	4	0	**225**	0	21	241	16	1	**279**	0	**581**
8:00PM	5	2	1	0	**8**	0	3	1	17	0	**21**	0	1	72	2	0	**75**	0	3	63	6	0	**72**	0	**176**
8:15PM	3	0	3	0	**6**	0	0	0	8	0	**8**	1	2	57	1	0	**60**	0	7	66	8	0	**81**	0	**155**
8:30PM	4	0	4	0	**8**	0	1	0	2	0	**3**	0	4	58	1	0	**63**	1	2	52	5	0	**59**	0	**133**
8:45PM	7	0	2	0	**9**	0	0	0	2	0	**2**	0	2	35	2	0	**39**	0	4	72	7	0	**83**	0	**133**
Hourly Total	19	2	10	0	**31**	0	4	1	29	0	**34**	1	9	222	6	0	**237**	1	16	253	26	0	**295**	0	**597**
9:00PM	14	2	3	0	**19**	0	1	0	11	0	**12**	0	3	38	2	0	**43**	0	5	68	4	0	**77**	0	**151**
9:15PM	7	0	3	0	**10**	0	1	0	4	0	**5**	0	4	47	4	0	**55**	0	7	35	10	0	**52**	0	**122**
9:30PM	10	1	3	0	**14**	0	1	1	11	0	**13**	0	3	60	1	1	**65**	1	6	58	17	0	**81**	0	**173**
9:45PM	10	1	3	0	**14**	0	1	0	8	0	**9**	0	6	39	0	0	**45**	0	5	43	15	0	**63**	0	**131**
Hourly Total	41	4	12	0	**57**	0	4	1	34	0	**39**	0	16	184	7	1	**208**	1	23	204	46	0	**273**	0	**577**
10:00PM	6	0	4	0	**10**	0	0	2	3	0	**5**	0	4	53	1	0	**58**	0	5	46	5	0	**56**	0	**129**
10:15PM	7	0	2	0	**9**	0	1	0	4	0	**5**	0	2	39	0	0	**41**	0	4	45	5	0	**54**	0	**109**
10:30PM	8	0	4	0	**12**	0	2	0	6	0	**8**	0	1	39	0	0	**40**	0	5	52	6	0	**63**	0	**123**
10:45PM	9	0	5	0	**14**	0	0	0	3	0	**3**	0	1	33	0	0	**34**	0	7	44	6	0	**57**	0	**108**
Hourly Total	30	0	15	0	**45**	0	3	2	16	0	**21**	0	8	164	1	0	**173**	0	21	187	22	0	**230**	0	**469**
11:00PM	6	0	1	0	**7**	0	1	0	6	0	**7**	0	2	36	0	0	**38**	0	3	33	4	0	**40**	0	**92**
11:15PM	2	1	2	0	**5**	0	1	0	0	0	**1**	0	1	31	1	0	**33**	0	6	28	4	0	**38**	0	**77**
11:30PM	6	0	0	0	**6**	0	0	0	14	0	**14**	0	0	100	1	0	**101**	0	4	21	4	0	**29**	0	**150**
11:45PM	2	0	0	0	**2**	0	1	1	59	0	**61**	0	0	52	1	0	**53**	0	2	27	2	0	**31**	0	**147**

Leg	Spiegel Dr						Spiegel Dr						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
Hourly Total	16	1	3	0	**20**	0	3	1	79	0	**83**	0	3	219	3	0	**225**	0	15	109	14	0	**138**	0	**466**
Total	1438	165	487	0	**2090**	0	100	150	1134	0	**1384**	3	426	7935	261	4	**8626**	15	1317	8174	1654	12	**11157**	8	**23257**
% Approach	68.8%	7.9%	23.3%	0%	**-**	-	7.2%	10.8%	81.9%	0%	**-**	-	4.9%	92.0%	3.0%	0%	**-**	-	11.8%	73.3%	14.8%	0.1%	**-**	-	**-**
% Total	6.2%	0.7%	2.1%	0%	**9.0%**	-	0.4%	0.6%	4.9%	0%	**6.0%**	-	1.8%	34.1%	1.1%	0%	**37.1%**	-	5.7%	35.1%	7.1%	0.1%	**48.0%**	-	**-**
Lights and Motorcycles	1138	147	391	0	**1676**	-	78	127	868	0	**1073**	-	365	6033	125	4	**6527**	-	1033	6244	1299	12	**8588**	-	17864
% Lights and Motorcycles	79.1%	89.1%	80.3%	0%	**80.2%**	-	78.0%	84.7%	76.5%	0%	**77.5%**	-	85.7%	76.0%	47.9%	100%	**75.7%**	-	78.4%	76.4%	78.5%	100%	**77.0%**	-	76.8%
Heavy	300	18	96	0	**414**	-	22	23	266	0	**311**	-	61	1902	136	0	**2099**	-	284	1930	355	0	**2569**	-	5393
% Heavy	20.9%	10.9%	19.7%	0%	**19.8%**	-	22.0%	15.3%	23.5%	0%	**22.5%**	-	14.3%	24.0%	52.1%	0%	**24.3%**	-	21.6%	23.6%	21.5%	0%	**23.0%**	-	23.2%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	15	-	-	-	-	-	8	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3086 - Alum Creek Dr & Spiegel Dr - TMC

Tue Aug 16, 2022
AM Peak (6 AM - 7 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978975, Location: 39.837374, -82.933478, Site Code: 3086

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Spiegel Dr						Spiegel Dr						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 6:00AM	12	2	6	0	**20**	0	1	3	18	0	**22**	0	13	96	9	0	**118**	1	66	109	18	0	**193**	0	**353**
6:15AM	13	3	4	0	**20**	0	0	4	6	0	**10**	0	18	95	7	0	**120**	2	31	134	44	0	**209**	0	**359**
6:30AM	12	0	2	0	**14**	0	0	6	7	0	**13**	0	15	161	5	1	**182**	0	18	136	56	0	**210**	1	**419**
6:45AM	11	1	2	0	**14**	0	1	6	1	0	**8**	0	12	180	4	0	**196**	0	32	171	59	0	**262**	0	**480**
Total	48	6	14	0	**68**	0	2	19	32	0	**53**	0	58	532	25	1	**616**	3	147	550	177	0	**874**	1	**1611**
% Approach	70.6%	8.8%	20.6%	0%	**-**	-	3.8%	35.8%	60.4%	0%	**-**	-	9.4%	86.4%	4.1%	0.2%	**-**	-	16.8%	62.9%	20.3%	0%	**-**	-	**-**
% Total	3.0%	0.4%	0.9%	0%	**4.2%**	-	0.1%	1.2%	2.0%	0%	**3.3%**	-	3.6%	33.0%	1.6%	0.1%	**38.2%**	-	9.1%	34.1%	11.0%	0%	**54.3%**	-	**-**
PHF	0.923	0.500	0.583	-	**0.850**	-	0.500	0.792	0.444	-	**0.602**	-	0.806	0.739	0.694	0.250	**0.786**	-	0.557	0.804	0.750	-	**0.834**	-	0.839
Lights and Motorcycles	44	6	12	0	**62**	-	2	19	30	0	**51**	-	58	448	18	1	**525**	-	140	487	169	0	**796**	-	1434
% Lights and Motorcycles	91.7%	100%	85.7%	0%	**91.2%**	-	100%	100%	93.8%	0%	**96.2%**	-	100%	84.2%	72.0%	100%	**85.2%**	-	95.2%	88.5%	95.5%	0%	**91.1%**	-	89.0%
Heavy	4	0	2	0	**6**	-	0	0	2	0	**2**	-	0	84	7	0	**91**	-	7	63	8	0	**78**	-	177
% Heavy	8.3%	0%	14.3%	0%	**8.8%**	-	0%	0%	6.3%	0%	**3.8%**	-	0%	15.8%	28.0%	0%	**14.8%**	-	4.8%	11.5%	4.5%	0%	**8.9%**	-	11.0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3086 - Alum Creek Dr & Spiegel Dr - TMC

Tue Aug 16, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978975, Location: 39.837374, -82.933478, Site Code: 3086

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Spiegel Dr Eastbound						Spiegel Dr Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 11:45AM	16	2	6	0	**24**	0	5	0	10	0	**15**	0	10	117	4	0	**131**	0	12	103	18	0	**133**	0	**303**
12:00PM	28	1	14	0	**43**	0	2	4	25	0	**31**	0	8	126	4	0	**138**	0	14	110	17	0	**141**	0	**353**
12:15PM	15	1	3	0	**19**	0	0	1	10	0	**11**	0	6	123	7	1	**137**	0	21	97	21	1	**140**	0	**307**
12:30PM	18	1	2	0	**21**	0	1	1	13	0	**15**	0	2	106	5	1	**114**	0	22	94	20	0	**136**	0	**286**
Total	77	5	25	0	**107**	0	8	6	58	0	**72**	0	26	472	20	2	**520**	0	69	404	76	1	**550**	0	**1249**
% Approach	72.0%	4.7%	23.4%	0%	**-**	-	11.1%	8.3%	80.6%	0%	**-**	-	5.0%	90.8%	3.8%	0.4%	**-**	-	12.5%	73.5%	13.8%	0.2%	**-**	-	-
% Total	6.2%	0.4%	2.0%	0%	**8.6%**	-	0.6%	0.5%	4.6%	0%	**5.8%**	-	2.1%	37.8%	1.6%	0.2%	**41.6%**	-	5.5%	32.3%	6.1%	0.1%	**44.0%**	-	-
PHF	0.688	0.625	0.446	-	**0.622**	-	0.400	0.375	0.580	-	**0.581**	-	0.650	0.937	0.714	0.500	**0.942**	-	0.784	0.918	0.905	0.250	**0.975**	-	0.885
Lights and Motorcycles	57	4	11	0	**72**	-	5	6	43	0	**54**	-	24	314	11	2	**351**	-	44	262	51	1	**358**	-	835
% Lights and Motorcycles	74.0%	80.0%	44.0%	0%	**67.3%**	-	62.5%	100%	74.1%	0%	**75.0%**	-	92.3%	66.5%	55.0%	100%	**67.5%**	-	63.8%	64.9%	67.1%	100%	**65.1%**	-	66.9%
Heavy	20	1	14	0	**35**	-	3	0	15	0	**18**	-	2	158	9	0	**169**	-	25	142	25	0	**192**	-	414
% Heavy	26.0%	20.0%	56.0%	0%	**32.7%**	-	37.5%	0%	25.9%	0%	**25.0%**	-	7.7%	33.5%	45.0%	0%	**32.5%**	-	36.2%	35.1%	32.9%	0%	**34.9%**	-	33.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3086 - Alum Creek Dr & Spiegel Dr - TMC

Tue Aug 16, 2022
PM Peak (2:45 PM - 3:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978975, Location: 39.837374, -82.933478, Site Code: 3086

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Spiegel Dr Eastbound						Spiegel Dr Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 2:45PM	15	5	9	0	**29**	0	7	4	62	0	**73**	0	6	134	6	0	**146**	0	59	147	28	1	**235**	0	**483**
3:00PM	26	0	9	0	**35**	0	7	13	86	0	**106**	0	5	145	6	0	**156**	0	23	109	33	0	**165**	0	**462**
3:15PM	57	14	33	0	**104**	0	5	7	12	0	**24**	0	13	148	3	0	**164**	0	15	151	38	0	**204**	0	**496**
3:30PM	105	26	61	0	**192**	0	2	3	21	0	**26**	0	3	165	4	0	**172**	2	7	158	32	0	**197**	0	**587**
Total	203	45	112	0	**360**	0	21	27	181	0	**229**	0	27	592	19	0	**638**	2	104	565	131	1	**801**	0	**2028**
% Approach	56.4%	12.5%	31.1%	0%	**-**	-	9.2%	11.8%	79.0%	0%	**-**	-	4.2%	92.8%	3.0%	0%	**-**	-	13.0%	70.5%	16.4%	0.1%	**-**	-	**-**
% Total	10.0%	2.2%	5.5%	0%	**17.8%**	-	1.0%	1.3%	8.9%	0%	**11.3%**	-	1.3%	29.2%	0.9%	0%	**31.5%**	-	5.1%	27.9%	6.5%	0%	**39.5%**	-	**-**
PHF	0.483	0.433	0.459	-	**0.469**	-	0.750	0.519	0.526	-	**0.540**	-	0.519	0.897	0.792	-	**0.927**	-	0.441	0.894	0.862	0.250	**0.852**	-	0.864
Lights and Motorcycles	185	44	106	0	**335**	-	20	23	167	0	**210**	-	17	450	5	0	**472**	-	82	429	105	1	**617**	-	1634
% Lights and Motorcycles	91.1%	97.8%	94.6%	0%	**93.1%**	-	95.2%	85.2%	92.3%	0%	**91.7%**	-	63.0%	76.0%	26.3%	0%	**74.0%**	-	78.8%	75.9%	80.2%	100%	**77.0%**	-	80.6%
Heavy	18	1	6	0	**25**	-	1	4	14	0	**19**	-	10	142	14	0	**166**	-	22	136	26	0	**184**	-	394
% Heavy	8.9%	2.2%	5.4%	0%	**6.9%**	-	4.8%	14.8%	7.7%	0%	**8.3%**	-	37.0%	24.0%	73.7%	0%	**26.0%**	-	21.2%	24.1%	19.8%	0%	**23.0%**	-	19.4%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Alum Creek Drive and
Alum Creek Service Drive

- Alum Creek Dr & Alum Creek Service Dr - TMC

Tue Aug 16, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978978, Location: 39.833138, -82.933783, Site Code: ####

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	Alum Creek Service Dr					Alum Creek Dr					Alum Creek Dr					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	Int
2022-08-16 12:00AM	0	0	0	**0**	0	0	61	0	**61**	0	38	0	0	**38**	0	**99**
12:15AM	0	0	0	**0**	0	0	39	0	**39**	0	20	0	0	**20**	0	**59**
12:30AM	0	0	0	**0**	0	0	22	0	**22**	0	22	0	0	**22**	0	**44**
12:45AM	0	0	0	**0**	0	0	16	0	**16**	0	23	0	0	**23**	0	**39**
Hourly Total	0	0	0	**0**	0	0	138	0	**138**	0	103	0	0	**103**	0	**241**
1:00AM	0	0	0	**0**	0	0	19	0	**19**	0	23	0	0	**23**	0	**42**
1:15AM	0	0	0	**0**	0	0	20	0	**20**	0	16	0	0	**16**	0	**36**
1:30AM	0	0	0	**0**	0	0	23	0	**23**	0	25	0	0	**25**	0	**48**
1:45AM	0	0	0	**0**	0	0	25	0	**25**	0	10	0	0	**10**	0	**35**
Hourly Total	0	0	0	**0**	0	0	87	0	**87**	0	74	0	0	**74**	0	**161**
2:00AM	0	0	0	**0**	0	0	43	0	**43**	0	11	0	0	**11**	0	**54**
2:15AM	0	0	0	**0**	0	0	17	0	**17**	0	21	0	0	**21**	0	**38**
2:30AM	0	0	0	**0**	0	0	12	0	**12**	0	18	0	0	**18**	0	**30**
2:45AM	0	0	0	**0**	0	0	15	0	**15**	0	25	0	0	**25**	0	**40**
Hourly Total	0	0	0	**0**	0	0	87	0	**87**	0	75	0	0	**75**	0	**162**
3:00AM	0	0	0	**0**	0	0	19	0	**19**	0	32	0	0	**32**	0	**51**
3:15AM	0	0	0	**0**	0	0	17	0	**17**	0	30	0	0	**30**	0	**47**
3:30AM	0	0	0	**0**	0	0	90	0	**90**	0	40	0	0	**40**	0	**130**
3:45AM	0	0	0	**0**	0	0	33	0	**33**	0	53	0	0	**53**	0	**86**
Hourly Total	0	0	0	**0**	0	0	159	0	**159**	0	155	0	0	**155**	0	**314**
4:00AM	0	0	0	**0**	0	0	52	0	**52**	0	50	0	0	**50**	0	**102**
4:15AM	0	0	0	**0**	0	0	47	0	**47**	0	41	0	0	**41**	0	**88**
4:30AM	0	0	0	**0**	0	0	58	0	**58**	0	70	0	0	**70**	0	**128**
4:45AM	0	0	0	**0**	0	0	57	0	**57**	0	67	0	0	**67**	0	**124**
Hourly Total	0	0	0	**0**	0	0	214	0	**214**	0	228	0	0	**228**	0	**442**
5:00AM	0	0	0	**0**	0	0	62	0	**62**	0	57	0	0	**57**	0	**119**
5:15AM	0	0	0	**0**	0	0	70	0	**70**	0	104	1	0	**105**	0	**175**
5:30AM	0	1	0	**1**	0	0	75	0	**75**	0	142	0	0	**142**	0	**218**
5:45AM	0	1	0	**1**	0	0	116	0	**116**	0	179	0	0	**179**	0	**296**
Hourly Total	0	2	0	**2**	0	0	323	0	**323**	0	482	1	0	**483**	0	**808**
6:00AM	1	1	0	**2**	0	0	121	0	**121**	0	116	0	0	**116**	0	**239**
6:15AM	0	0	0	**0**	0	0	122	0	**122**	0	132	0	0	**132**	0	**254**
6:30AM	2	0	0	**2**	0	0	188	0	**188**	0	144	0	0	**144**	0	**334**
6:45AM	0	1	0	**1**	0	0	186	0	**186**	0	173	0	0	**173**	0	**360**
Hourly Total	3	2	0	**5**	0	0	617	0	**617**	0	565	0	0	**565**	0	**1187**
7:00AM	2	0	0	**2**	0	0	153	0	**153**	0	118	0	0	**118**	0	**273**
7:15AM	0	0	0	**0**	0	1	149	1	**151**	0	146	0	0	**146**	0	**297**
7:30AM	3	0	0	**3**	0	0	152	0	**152**	0	143	0	0	**143**	0	**298**
7:45AM	1	0	0	**1**	0	0	140	0	**140**	0	174	1	0	**175**	0	**316**
Hourly Total	6	0	0	**6**	0	1	594	1	**596**	0	581	1	0	**582**	0	**1184**
8:00AM	0	1	0	**1**	0	1	136	2	**139**	0	129	0	0	**129**	0	**269**
8:15AM	1	0	0	**1**	0	1	85	0	**86**	0	115	0	0	**115**	0	**202**
8:30AM	1	0	0	**1**	0	0	99	0	**99**	0	112	0	0	**112**	0	**212**
8:45AM	0	2	0	**2**	0	0	95	0	**95**	0	117	1	0	**118**	0	**215**
Hourly Total	2	3	0	**5**	0	2	415	2	**419**	0	473	1	0	**474**	0	**898**
9:00AM	1	1	0	**2**	0	1	104	1	**106**	0	112	0	0	**112**	0	**220**
9:15AM	1	0	0	**1**	0	0	84	0	**84**	0	107	0	0	**107**	0	**192**
9:30AM	1	1	0	**2**	0	0	83	0	**83**	0	97	0	0	**97**	0	**182**
9:45AM	0	2	0	**2**	0	1	78	0	**79**	0	111	0	0	**111**	0	**192**
Hourly Total	3	4	0	**7**	0	2	349	1	**352**	0	427	0	0	**427**	0	**786**
10:00AM	0	2	0	**2**	0	1	94	0	**95**	0	95	0	1	**96**	0	**193**
10:15AM	0	0	0	**0**	0	0	88	0	**88**	0	82	1	1	**84**	0	**172**
10:30AM	0	1	0	**1**	0	0	95	0	**95**	0	86	0	1	**87**	0	**183**
10:45AM	1	0	0	**1**	0	0	101	0	**101**	0	100	0	0	**100**	0	**202**

Leg	Alum Creek Service Dr					Alum Creek Dr					Alum Creek Dr					
Direction	Eastbound					Northbound					Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
Hourly Total	1	3	0	**4**	0	1	378	0	**379**	0	363	1	3	**367**	0	**750**
11:00AM	0	0	0	**0**	0	2	123	0	**125**	0	110	0	0	**110**	0	**235**
11:15AM	0	0	0	**0**	0	1	105	0	**106**	0	106	1	0	**107**	0	**213**
11:30AM	2	0	0	**2**	0	0	117	0	**117**	0	101	1	0	**102**	0	**221**
11:45AM	1	0	0	**1**	0	0	135	1	**136**	0	115	0	0	**115**	0	**252**
Hourly Total	3	0	0	**3**	0	3	480	1	**484**	0	432	2	0	**434**	0	**921**
12:00PM	1	1	0	**2**	0	0	138	0	**138**	0	128	1	0	**129**	0	**269**
12:15PM	0	0	0	**0**	0	0	139	1	**140**	0	103	0	0	**103**	0	**243**
12:30PM	0	0	0	**0**	0	1	117	0	**118**	0	106	0	0	**106**	0	**224**
12:45PM	0	1	0	**1**	0	1	108	0	**109**	0	90	0	0	**90**	0	**200**
Hourly Total	1	2	0	**3**	0	2	502	1	**505**	0	427	1	0	**428**	0	**936**
1:00PM	0	0	0	**0**	0	0	113	0	**113**	0	99	0	0	**99**	0	**212**
1:15PM	0	0	0	**0**	0	0	140	1	**141**	0	118	1	0	**119**	0	**260**
1:30PM	0	1	0	**1**	0	0	124	0	**124**	0	97	0	0	**97**	0	**222**
1:45PM	1	0	0	**1**	0	0	118	0	**118**	0	109	1	0	**110**	0	**229**
Hourly Total	1	1	0	**2**	0	0	495	1	**496**	0	423	2	0	**425**	0	**923**
2:00PM	0	3	0	**3**	0	0	127	1	**128**	0	116	0	0	**116**	0	**247**
2:15PM	0	1	0	**1**	0	2	129	1	**132**	2	126	0	0	**126**	0	**259**
2:30PM	0	1	0	**1**	0	0	163	0	**163**	0	170	0	1	**171**	0	**335**
2:45PM	2	0	0	**2**	0	1	129	0	**130**	0	157	0	0	**157**	0	**289**
Hourly Total	2	5	0	**7**	0	3	548	2	**553**	2	569	0	1	**570**	0	**1130**
3:00PM	0	0	0	**0**	0	1	141	0	**142**	0	132	1	0	**133**	0	**275**
3:15PM	0	0	0	**0**	0	1	147	1	**149**	0	183	0	0	**183**	0	**332**
3:30PM	2	3	0	**5**	0	1	157	0	**158**	0	217	1	0	**218**	0	**381**
3:45PM	0	1	0	**1**	0	2	120	0	**122**	0	198	0	0	**198**	0	**321**
Hourly Total	2	4	0	**6**	0	5	565	1	**571**	0	730	2	0	**732**	0	**1309**
4:00PM	0	0	0	**0**	0	1	151	0	**152**	0	169	0	0	**169**	0	**321**
4:15PM	0	1	0	**1**	0	1	119	0	**120**	0	198	0	0	**198**	0	**319**
4:30PM	0	0	0	**0**	0	0	216	1	**217**	0	186	0	0	**186**	0	**403**
4:45PM	0	0	0	**0**	0	2	170	0	**172**	0	188	0	0	**188**	0	**360**
Hourly Total	0	1	0	**1**	0	4	656	1	**661**	0	741	0	0	**741**	0	**1403**
5:00PM	0	1	0	**1**	0	0	174	0	**174**	0	155	3	0	**158**	0	**333**
5:15PM	0	2	0	**2**	0	2	109	0	**111**	0	138	0	0	**138**	0	**251**
5:30PM	1	3	0	**4**	0	0	130	0	**130**	0	112	2	0	**114**	0	**248**
5:45PM	0	1	0	**1**	0	2	103	0	**105**	0	121	0	0	**121**	0	**227**
Hourly Total	1	7	0	**8**	0	4	516	0	**520**	0	526	5	0	**531**	0	**1059**
6:00PM	0	0	0	**0**	0	2	91	0	**93**	0	103	0	0	**103**	0	**196**
6:15PM	0	0	0	**0**	0	0	84	0	**84**	0	100	1	0	**101**	0	**185**
6:30PM	0	0	0	**0**	0	0	90	0	**90**	0	72	0	0	**72**	0	**162**
6:45PM	0	0	0	**0**	0	0	66	1	**67**	0	71	1	0	**72**	0	**139**
Hourly Total	0	0	0	**0**	0	2	331	1	**334**	0	346	2	0	**348**	0	**682**
7:00PM	0	1	0	**1**	0	0	66	0	**66**	0	72	0	0	**72**	0	**139**
7:15PM	0	1	0	**1**	0	0	60	0	**60**	0	66	0	0	**66**	0	**127**
7:30PM	0	0	0	**0**	0	2	55	0	**57**	0	60	0	0	**60**	0	**117**
7:45PM	0	0	0	**0**	0	0	49	0	**49**	0	52	0	0	**52**	0	**101**
Hourly Total	0	2	0	**2**	0	2	230	0	**232**	0	250	0	0	**250**	0	**484**
8:00PM	0	0	0	**0**	0	1	74	0	**75**	0	67	0	0	**67**	0	**142**
8:15PM	1	0	0	**1**	0	1	54	0	**55**	0	67	0	0	**67**	0	**123**
8:30PM	0	1	0	**1**	0	0	62	0	**62**	0	59	0	0	**59**	0	**122**
8:45PM	0	0	0	**0**	0	0	39	0	**39**	0	71	1	0	**72**	0	**111**
Hourly Total	1	1	0	**2**	0	2	229	0	**231**	0	264	1	0	**265**	0	**498**
9:00PM	0	0	0	**0**	0	0	43	1	**44**	0	71	0	0	**71**	0	**115**
9:15PM	0	1	0	**1**	0	1	54	0	**55**	0	42	0	0	**42**	0	**98**
9:30PM	0	1	0	**1**	0	0	67	0	**67**	0	63	0	0	**63**	0	**131**
9:45PM	0	0	0	**0**	0	0	40	0	**40**	0	48	0	0	**48**	0	**88**
Hourly Total	0	2	0	**2**	0	1	204	1	**206**	0	224	0	0	**224**	0	**432**
10:00PM	0	1	0	**1**	0	0	58	0	**58**	0	51	0	0	**51**	0	**110**
10:15PM	0	0	0	**0**	0	0	43	0	**43**	0	47	0	0	**47**	0	**90**
10:30PM	0	0	0	**0**	0	0	41	0	**41**	0	60	0	0	**60**	0	**101**
10:45PM	0	1	0	**1**	0	0	36	0	**36**	0	47	0	0	**47**	0	**84**

Leg Direction	Alum Creek Service Dr Eastbound					Alum Creek Dr Northbound					Alum Creek Dr Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
Hourly Total	0	2	0	**2**	0	0	178	0	**178**	0	205	0	0	**205**	0	**385**
11:00PM	0	0	0	**0**	0	1	39	0	**40**	0	35	0	0	**35**	0	**75**
11:15PM	0	0	0	**0**	0	0	36	0	**36**	0	32	0	0	**32**	0	**68**
11:30PM	0	0	0	**0**	0	0	116	0	**116**	0	21	0	0	**21**	0	**137**
11:45PM	0	0	0	**0**	0	0	55	0	**55**	0	25	0	0	**25**	0	**80**
Hourly Total	0	0	0	**0**	0	1	246	0	**247**	0	113	0	0	**113**	0	**360**
Total	26	41	0	**67**	0	35	8541	13	**8589**	2	8776	19	4	**8799**	0	**17455**
% Approach	38.8%	61.2%	0%	**-**	-	0.4%	99.4%	0.2%	**-**	-	99.7%	0.2%	0%	**-**	-	-
% Total	0.1%	0.2%	0%	**0.4%**	-	0.2%	48.9%	0.1%	**49.2%**	-	50.3%	0.1%	0%	**50.4%**	-	-
Lights and Motorcycles	22	38	0	**60**	-	33	6479	13	**6525**	-	6731	19	3	**6753**	-	13338
% Lights and Motorcycles	84.6%	92.7%	0%	**89.6%**	-	94.3%	75.9%	100%	**76.0%**	-	76.7%	100%	75.0%	**76.7%**	-	76.4%
Heavy	4	3	0	**7**	-	2	2062	0	**2064**	-	2045	0	1	**2046**	-	4117
% Heavy	15.4%	7.3%	0%	**10.4%**	-	5.7%	24.1%	0%	**24.0%**	-	23.3%	0%	25.0%	**23.3%**	-	23.6%
Pedestrians	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

- Alum Creek Dr & Alum Creek Service Dr - TMC

Tue Aug 16, 2022
AM Peak (6:30 AM - 7:30 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978978, Location: 39.833138, -82.933783, Site Code: ####

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Alum Creek Service Dr Eastbound					Alum Creek Dr Northbound					Alum Creek Dr Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-08-16 6:30AM	2	0	0	**2**	0	0	188	0	**188**	0	144	0	0	**144**	0	**334**
6:45AM	0	1	0	**1**	0	0	186	0	**186**	0	173	0	0	**173**	0	**360**
7:00AM	2	0	0	**2**	0	0	153	0	**153**	0	118	0	0	**118**	0	**273**
7:15AM	0	0	0	**0**	0	1	149	1	**151**	0	146	0	0	**146**	0	**297**
Total	4	1	0	**5**	0	1	676	1	**678**	0	581	0	0	**581**	0	**1264**
% Approach	80.0%	20.0%	0%	**-**	-	0.1%	99.7%	0.1%	**-**	-	100%	0%	0%	**-**	-	**-**
% Total	0.3%	0.1%	0%	**0.4%**	-	0.1%	53.5%	0.1%	**53.6%**	-	46.0%	0%	0%	**46.0%**	-	**-**
PHF	0.500	0.250	-	**0.625**	-	0.250	0.899	0.250	**0.902**	-	0.840	-	-	**0.840**	-	0.878
Lights and Motorcycles	3	1	0	**4**	-	0	559	1	**560**	-	497	0	0	**497**	-	1061
% Lights and Motorcycles	75.0%	100%	0%	**80.0%**	-	0%	82.7%	100%	**82.6%**	-	85.5%	0%	0%	**85.5%**	-	83.9%
Heavy	1	0	0	**1**	-	1	117	0	**118**	-	84	0	0	**84**	-	203
% Heavy	25.0%	0%	0%	**20.0%**	-	100%	17.3%	0%	**17.4%**	-	14.5%	0%	0%	**14.5%**	-	16.1%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

- Alum Creek Dr & Alum Creek Service Dr - TMC

Tue Aug 16, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978978, Location: 39.833138, -82.933783, Site Code: ####

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Alum Creek Service Dr Eastbound					Alum Creek Dr Northbound					Alum Creek Dr Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-08-16 11:45AM	1	0	0	**1**	0	0	135	1	**136**	0	115	0	0	**115**	0	**252**
12:00PM	1	1	0	**2**	0	0	138	0	**138**	0	128	1	0	**129**	0	**269**
12:15PM	0	0	0	**0**	0	0	139	1	**140**	0	103	0	0	**103**	0	**243**
12:30PM	0	0	0	**0**	0	1	117	0	**118**	0	106	0	0	**106**	0	**224**
Total	2	1	0	**3**	0	1	529	2	**532**	0	452	1	0	**453**	0	**988**
% Approach	66.7%	33.3%	0%	**-**	-	0.2%	99.4%	0.4%	**-**	-	99.8%	0.2%	0%	**-**	-	**-**
% Total	0.2%	0.1%	0%	**0.3%**	-	0.1%	53.5%	0.2%	**53.8%**	-	45.7%	0.1%	0%	**45.9%**	-	**-**
PHF	0.500	0.250	**-**	**0.375**	-	0.250	0.951	0.500	**0.950**	-	0.883	0.250	**-**	**0.878**	-	0.918
Lights and Motorcycles	1	1	0	**2**	-	1	363	2	**366**	-	294	1	0	**295**	-	663
% Lights and Motorcycles	50.0%	100%	0%	**66.7%**	-	100%	68.6%	100%	**68.8%**	-	65.0%	100%	0%	**65.1%**	-	67.1%
Heavy	1	0	0	**1**	-	0	166	0	**166**	-	158	0	0	**158**	-	325
% Heavy	50.0%	0%	0%	**33.3%**	-	0%	31.4%	0%	**31.2%**	-	35.0%	0%	0%	**34.9%**	-	32.9%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

- Alum Creek Dr & Alum Creek Service Dr - TMC

Tue Aug 16, 2022
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978978, Location: 39.833138, -82.933783, Site Code: ####

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	Alum Creek Service Dr Eastbound					Alum Creek Dr Northbound					Alum Creek Dr Southbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-08-16 4:15PM	0	1	0	**1**	0	1	119	0	**120**	0	198	0	0	**198**	0	**319**
4:30PM	0	0	0	**0**	0	0	216	1	**217**	0	186	0	0	**186**	0	**403**
4:45PM	0	0	0	**0**	0	2	170	0	**172**	0	188	0	0	**188**	0	**360**
5:00PM	0	1	0	**1**	0	0	174	0	**174**	0	155	3	0	**158**	0	**333**
Total	0	2	0	**2**	0	3	679	1	**683**	0	727	3	0	**730**	0	**1415**
% Approach	0%	100%	0%	**-**	-	0.4%	99.4%	0.1%	**-**	-	99.6%	0.4%	0%	**-**	-	**-**
% Total	0%	0.1%	0%	**0.1%**	-	0.2%	48.0%	0.1%	**48.3%**	-	51.4%	0.2%	0%	**51.6%**	-	**-**
PHF	**-**	0.500	**-**	**0.500**	-	0.375	0.786	0.250	**0.787**	-	0.918	0.250	**-**	**0.922**	-	0.878
Lights and Motorcycles	0	2	0	**2**	-	3	560	1	**564**	-	614	3	0	**617**	-	1183
% Lights and Motorcycles	0%	100%	0%	**100%**	-	100%	82.5%	100%	**82.6%**	-	84.5%	100%	0%	**84.5%**	-	83.6%
Heavy	0	0	0	**0**	-	0	119	0	**119**	-	113	0	0	**113**	-	232
% Heavy	0%	0%	0%	**0%**	-	0%	17.5%	0%	**17.4%**	-	15.5%	0%	0%	**15.5%**	-	16.4%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Alum Creek Drive
and SR-317

2599 - Alum Creek Dr & SR 317 - TMC

Tue Aug 16, 2022
Full Length (12 AM-12 AM (+1))
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978981, Location: 39.830073, -82.933894, Site Code: 2599

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	SR 317 Eastbound						SR 317 Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 12:00AM	4	7	2	0	**13**	0	4	6	5	0	**15**	0	7	51	6	0	**64**	0	19	18	5	0	**42**	0	**134**
12:15AM	6	8	5	0	**19**	0	3	1	3	0	**7**	0	5	28	3	0	**36**	0	4	6	8	0	**18**	0	**80**
12:30AM	6	10	0	0	**16**	0	3	7	1	0	**11**	1	3	13	3	0	**19**	1	3	17	5	0	**25**	0	**71**
12:45AM	4	3	2	0	**9**	0	3	4	3	0	**10**	0	3	8	2	0	**13**	0	3	12	8	0	**23**	0	**55**
Hourly Total	20	28	9	0	**57**	0	13	18	12	0	**43**	1	18	100	14	0	**132**	1	29	53	26	0	**108**	0	**340**
1:00AM	4	5	4	0	**13**	0	1	4	3	0	**8**	0	2	12	4	0	**18**	0	1	12	10	0	**23**	0	**62**
1:15AM	5	2	4	0	**11**	0	1	5	3	0	**9**	0	0	12	0	0	**12**	0	2	11	3	0	**16**	0	**48**
1:30AM	12	4	2	0	**18**	0	5	5	3	0	**13**	0	2	11	1	0	**14**	0	1	10	15	0	**26**	0	**71**
1:45AM	12	9	4	0	**25**	0	0	4	4	0	**8**	0	2	9	1	0	**12**	0	1	4	5	0	**10**	0	**55**
Hourly Total	33	20	14	0	**67**	0	7	18	13	0	**38**	0	6	44	6	0	**56**	0	5	37	33	0	**75**	0	**236**
2:00AM	3	2	1	0	**6**	0	6	5	4	0	**15**	0	1	41	13	0	**55**	0	1	10	0	0	**11**	0	**87**
2:15AM	5	2	2	0	**9**	0	1	1	1	0	**3**	1	1	10	2	0	**13**	0	3	10	6	0	**19**	0	**44**
2:30AM	2	5	0	0	**7**	0	0	3	1	0	**4**	0	0	7	1	0	**8**	0	7	12	2	0	**21**	0	**40**
2:45AM	4	4	2	0	**10**	0	3	6	6	0	**15**	0	1	6	2	0	**9**	0	2	15	8	0	**25**	0	**59**
Hourly Total	14	13	5	0	**32**	0	10	15	12	0	**37**	1	3	64	18	0	**85**	0	13	47	16	0	**76**	0	**230**
3:00AM	3	3	0	0	**6**	0	4	7	4	0	**15**	0	3	11	3	0	**17**	0	1	14	15	0	**30**	0	**68**
3:15AM	4	6	5	0	**15**	0	10	6	4	0	**20**	0	4	10	0	0	**14**	0	1	8	23	0	**32**	0	**81**
3:30AM	18	10	5	0	**33**	0	10	10	1	0	**21**	0	6	79	27	0	**112**	0	4	12	21	0	**37**	0	**203**
3:45AM	17	9	5	0	**31**	0	10	9	1	0	**20**	0	4	18	4	0	**26**	0	2	34	19	0	**55**	0	**132**
Hourly Total	42	28	15	0	**85**	0	34	32	10	0	**76**	0	17	118	34	0	**169**	0	8	68	78	0	**154**	0	**484**
4:00AM	29	13	7	0	**49**	0	11	8	4	0	**23**	0	3	18	5	0	**26**	0	3	31	16	0	**50**	0	**148**
4:15AM	30	15	12	0	**57**	0	15	4	4	0	**23**	1	6	10	5	0	**21**	0	2	31	4	0	**37**	0	**138**
4:30AM	21	10	10	0	**41**	0	19	7	9	0	**35**	0	5	29	4	0	**38**	0	6	59	6	0	**71**	0	**185**
4:45AM	19	20	9	0	**48**	0	25	12	10	0	**47**	0	3	30	6	0	**39**	0	2	52	4	0	**58**	0	**192**
Hourly Total	99	58	38	0	**195**	0	70	31	27	0	**128**	1	17	87	20	0	**124**	0	13	173	30	0	**216**	0	**663**
5:00AM	11	10	4	0	**25**	0	9	11	5	0	**25**	0	6	51	13	0	**70**	0	2	56	5	0	**63**	0	**183**
5:15AM	15	18	18	0	**51**	0	36	11	6	0	**53**	0	7	45	9	0	**61**	0	9	79	15	0	**103**	0	**268**
5:30AM	19	19	15	0	**53**	0	62	30	5	0	**97**	1	12	52	9	0	**73**	1	7	117	21	0	**145**	0	**368**
5:45AM	12	27	30	0	**69**	0	70	30	12	0	**112**	1	16	96	8	0	**120**	0	15	134	26	0	**175**	0	**476**
Hourly Total	57	74	67	0	**198**	0	177	82	28	0	**287**	2	41	244	39	0	**324**	1	33	386	67	0	**486**	0	**1295**
6:00AM	15	22	28	0	**65**	0	36	20	7	0	**63**	0	21	86	15	0	**122**	0	12	98	16	0	**126**	1	**376**
6:15AM	20	17	26	0	**63**	0	37	29	12	0	**78**	1	15	91	11	0	**117**	1	11	103	14	2	**130**	1	**388**
6:30AM	49	8	18	0	**75**	0	36	26	11	0	**73**	1	13	113	8	0	**134**	0	10	76	14	0	**100**	0	**382**
6:45AM	24	33	28	0	**85**	0	49	27	2	0	**78**	0	23	140	23	0	**186**	0	16	138	15	0	**169**	0	**518**
Hourly Total	108	80	100	0	**288**	0	158	102	32	0	**292**	2	72	430	57	0	**559**	1	49	415	59	2	**525**	2	**1664**
7:00AM	26	28	31	0	**85**	0	29	22	8	0	**59**	2	20	120	15	0	**155**	0	18	91	11	0	**120**	0	**419**
7:15AM	21	38	34	0	**93**	0	35	25	7	0	**67**	2	25	127	13	0	**165**	3	12	120	11	0	**143**	1	**468**
7:30AM	14	34	21	0	**69**	0	36	22	10	0	**68**	1	31	126	17	0	**174**	1	8	118	17	0	**143**	0	**454**
7:45AM	20	31	31	0	**82**	0	36	30	11	0	**77**	0	12	101	20	0	**133**	0	19	126	22	1	**168**	0	**460**
Hourly Total	81	131	117	0	**329**	0	136	99	36	0	**271**	5	88	474	65	0	**627**	4	57	455	61	1	**574**	1	**1801**
8:00AM	33	31	26	0	**90**	0	36	23	12	0	**71**	1	13	80	16	0	**109**	1	18	90	24	0	**132**	0	**402**
8:15AM	13	18	16	0	**47**	0	27	24	13	0	**64**	0	18	67	13	0	**98**	0	11	89	15	0	**115**	0	**324**
8:30AM	24	29	24	0	**77**	0	29	13	4	0	**46**	1	23	75	13	0	**111**	0	9	66	19	0	**94**	0	**328**
8:45AM	17	24	16	0	**57**	0	18	18	8	0	**44**	0	20	71	18	0	**109**	0	24	77	24	0	**125**	0	**335**
Hourly Total	87	102	82	0	**271**	0	110	78	37	0	**225**	2	74	293	60	0	**427**	1	62	322	82	0	**466**	0	**1389**
9:00AM	14	20	16	0	**50**	0	26	22	14	0	**62**	0	17	75	9	0	**101**	0	26	85	15	1	**127**	0	**340**
9:15AM	13	17	12	0	**42**	0	17	31	11	0	**59**	0	15	60	10	0	**85**	0	15	69	15	1	**100**	0	**286**
9:30AM	18	16	11	0	**45**	0	11	31	7	0	**49**	0	14	56	16	0	**86**	0	18	68	20	0	**106**	0	**286**
9:45AM	12	30	17	0	**59**	0	24	33	10	0	**67**	0	15	57	17	0	**89**	0	15	69	23	0	**107**	0	**322**
Hourly Total	57	83	56	0	**196**	0	78	117	42	0	**237**	0	61	248	52	0	**361**	0	74	291	73	2	**440**	0	**1234**
10:00AM	16	16	26	0	**58**	0	30	29	9	0	**68**	0	14	68	16	0	**98**	0	17	60	22	0	**99**	0	**323**
10:15AM	15	18	13	0	**46**	0	17	15	9	0	**41**	1	16	67	16	0	**99**	0	6	62	15	0	**83**	0	**269**
10:30AM	24	31	20	0	**75**	0	22	22	14	0	**58**	0	20	51	13	0	**84**	0	9	59	24	0	**92**	0	**309**
10:45AM	19	19	18	0	**56**	0	18	23	9	0	**50**	0	29	76	20	0	**125**	0	10	62	26	0	**98**	0	**329**
Hourly Total	74	84	77	0	**235**	0	87	89	41	0	**217**	1	79	262	65	0	**406**	0	42	243	87	0	**372**	0	**1230**

Leg	SR 317						SR 317						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
11:00AM	29	25	30	0	**84**	0	29	23	13	0	**65**	1	16	89	23	0	**128**	0	12	66	25	0	**103**	0	**380**
11:15AM	15	23	29	0	**67**	0	38	26	10	0	**74**	0	19	90	21	0	**130**	0	21	70	14	0	**105**	0	**376**
11:30AM	20	23	21	0	**64**	0	41	19	10	0	**70**	1	23	83	25	0	**131**	0	15	65	16	1	**97**	1	**362**
11:45AM	21	18	25	0	**64**	0	30	35	13	0	**78**	0	18	92	21	0	**131**	0	16	89	15	0	**120**	0	**393**
Hourly Total	85	89	105	0	**279**	0	138	103	46	0	**287**	2	76	354	90	0	**520**	0	64	290	70	1	**425**	1	**1511**
12:00PM	19	22	28	0	**69**	0	40	31	15	0	**86**	0	23	100	40	0	**163**	0	21	83	22	0	**126**	0	**444**
12:15PM	20	19	17	0	**56**	0	52	31	10	0	**93**	0	22	102	18	0	**142**	0	12	80	12	2	**106**	0	**397**
12:30PM	21	15	20	0	**56**	1	47	27	17	0	**91**	0	12	83	19	0	**114**	0	10	67	22	0	**99**	2	**360**
12:45PM	18	19	28	0	**65**	0	41	32	15	0	**88**	0	15	71	23	0	**109**	0	13	70	13	0	**96**	0	**358**
Hourly Total	78	75	93	0	**246**	1	180	121	57	0	**358**	0	72	356	100	0	**528**	0	56	300	69	2	**427**	2	**1559**
1:00PM	15	11	19	0	**45**	0	33	33	7	0	**73**	0	23	95	26	0	**144**	1	10	66	17	1	**94**	0	**356**
1:15PM	23	36	36	0	**95**	0	34	24	11	0	**69**	2	20	83	18	0	**121**	0	16	75	31	0	**122**	2	**407**
1:30PM	18	22	24	0	**64**	0	20	27	8	0	**55**	0	28	98	16	0	**142**	0	11	57	31	0	**99**	0	**360**
1:45PM	15	21	26	0	**62**	0	40	44	4	0	**88**	3	21	97	22	0	**140**	1	15	79	10	0	**104**	2	**394**
Hourly Total	71	90	105	0	**266**	0	127	128	30	0	**285**	5	92	373	82	0	**547**	2	52	277	89	1	**419**	4	**1517**
2:00PM	30	35	29	0	**94**	0	29	45	10	0	**84**	5	24	87	16	0	**127**	1	20	83	19	0	**122**	0	**427**
2:15PM	28	28	30	0	**86**	0	48	29	15	0	**92**	1	31	84	20	0	**135**	1	21	95	19	0	**135**	1	**448**
2:30PM	15	34	27	0	**76**	0	51	43	9	0	**103**	0	48	129	33	0	**210**	1	19	113	28	0	**160**	2	**549**
2:45PM	19	32	34	0	**85**	0	37	43	12	0	**92**	0	39	94	34	0	**167**	0	12	114	32	0	**158**	0	**502**
Hourly Total	92	129	120	0	**341**	0	165	160	46	0	**371**	6	142	394	103	0	**639**	3	72	405	98	0	**575**	3	**1926**
3:00PM	23	50	38	0	**111**	0	38	42	16	0	**96**	1	48	125	41	0	**214**	0	17	85	26	0	**128**	0	**549**
3:15PM	24	47	18	0	**89**	0	37	37	14	0	**88**	0	44	122	26	0	**192**	0	32	115	26	0	**173**	0	**542**
3:30PM	14	36	25	0	**75**	0	38	42	13	0	**93**	2	61	136	47	0	**244**	0	54	141	28	0	**223**	0	**635**
3:45PM	19	41	28	0	**88**	0	44	44	8	0	**96**	1	36	98	40	0	**174**	1	17	143	32	0	**192**	0	**550**
Hourly Total	80	174	109	0	**363**	0	157	165	51	0	**373**	4	189	481	154	0	**824**	1	120	484	112	0	**716**	0	**2276**
4:00PM	16	33	32	0	**81**	0	36	43	9	0	**88**	1	52	124	34	0	**210**	0	14	131	23	0	**168**	0	**547**
4:15PM	13	44	30	0	**87**	0	53	32	10	0	**95**	3	30	101	19	0	**150**	1	25	128	28	0	**181**	0	**513**
4:30PM	16	46	30	0	**92**	0	46	41	10	0	**97**	2	47	195	37	0	**279**	2	25	136	26	0	**187**	1	**655**
4:45PM	25	36	27	0	**88**	0	53	32	17	0	**102**	0	52	118	25	0	**195**	0	25	132	26	0	**183**	0	**568**
Hourly Total	70	159	119	0	**348**	0	188	148	46	0	**382**	6	181	538	115	0	**834**	3	89	527	103	0	**719**	1	**2283**
5:00PM	25	37	14	0	**76**	0	51	58	16	0	**125**	0	32	121	29	0	**182**	0	15	111	29	1	**156**	0	**539**
5:15PM	17	47	30	0	**94**	0	38	40	13	0	**91**	1	23	76	36	0	**135**	1	14	97	25	0	**136**	0	**456**
5:30PM	21	32	27	0	**80**	0	36	34	21	0	**91**	1	21	92	25	0	**138**	1	17	94	7	0	**118**	0	**427**
5:45PM	17	27	22	0	**66**	0	40	27	6	0	**73**	2	22	81	18	0	**121**	1	9	88	21	0	**118**	0	**378**
Hourly Total	80	143	93	0	**316**	0	165	159	56	0	**380**	4	98	370	108	0	**576**	3	55	390	82	1	**528**	0	**1800**
6:00PM	16	33	17	0	**66**	0	29	33	6	0	**68**	0	14	68	25	0	**107**	0	8	72	23	1	**104**	0	**345**
6:15PM	17	28	25	0	**70**	0	32	37	8	0	**77**	2	16	57	17	0	**90**	2	8	56	41	0	**105**	0	**342**
6:30PM	22	23	19	0	**64**	0	22	24	8	0	**54**	5	18	57	16	0	**91**	2	17	43	15	0	**75**	0	**284**
6:45PM	15	30	18	0	**63**	0	33	24	6	0	**63**	0	10	39	13	0	**62**	0	13	57	4	0	**74**	0	**262**
Hourly Total	70	114	79	0	**263**	0	116	118	28	0	**262**	7	58	221	71	0	**350**	4	46	228	83	1	**358**	0	**1233**
7:00PM	16	26	16	0	**58**	0	27	19	7	0	**53**	0	7	44	15	0	**66**	0	13	44	13	0	**70**	0	**247**
7:15PM	11	19	26	0	**56**	0	33	18	9	0	**60**	0	9	44	19	0	**72**	0	6	59	6	0	**71**	0	**259**
7:30PM	10	33	21	0	**64**	0	24	12	8	0	**44**	1	5	37	12	0	**54**	0	9	39	10	0	**58**	0	**220**
7:45PM	10	21	16	0	**47**	0	19	20	2	0	**41**	0	12	38	12	0	**62**	0	6	40	7	0	**53**	0	**203**
Hourly Total	47	99	79	0	**225**	0	103	69	26	0	**198**	1	33	163	58	0	**254**	0	34	182	36	0	**252**	0	**929**
8:00PM	20	30	10	0	**60**	0	29	19	2	0	**50**	0	8	54	11	0	**73**	0	9	46	8	0	**63**	0	**246**
8:15PM	18	15	21	0	**54**	0	23	22	5	0	**50**	0	7	35	15	0	**57**	0	5	54	6	0	**65**	0	**226**
8:30PM	16	19	16	0	**51**	0	29	22	5	0	**56**	0	9	40	12	0	**61**	0	6	45	8	0	**59**	0	**227**
8:45PM	6	14	20	0	**40**	0	22	19	0	0	**41**	3	9	28	12	0	**49**	0	7	50	13	1	**71**	0	**201**
Hourly Total	60	78	67	0	**205**	0	103	82	12	0	**197**	3	33	157	50	0	**240**	0	27	195	35	1	**258**	0	**900**
9:00PM	6	16	8	0	**30**	0	22	14	5	0	**41**	0	8	36	16	0	**60**	0	8	53	12	0	**73**	0	**204**
9:15PM	4	5	9	0	**18**	0	30	10	11	0	**51**	1	15	43	7	0	**65**	1	8	32	8	0	**48**	0	**182**
9:30PM	5	6	15	0	**26**	0	17	8	8	0	**33**	1	11	50	13	0	**74**	1	12	38	11	0	**61**	0	**194**
9:45PM	4	7	9	0	**20**	0	23	4	8	0	**35**	0	4	31	11	0	**46**	0	5	38	12	0	**55**	0	**156**
Hourly Total	19	34	41	0	**94**	0	92	36	32	0	**160**	2	38	160	47	0	**245**	2	33	161	43	0	**237**	0	**736**
10:00PM	4	6	6	0	**16**	0	12	7	3	0	**22**	2	7	48	11	0	**66**	2	6	33	11	1	**51**	0	**155**
10:15PM	5	6	9	0	**20**	0	11	7	6	0	**24**	0	11	24	12	0	**47**	0	4	24	18	0	**46**	0	**137**
10:30PM	20	13	7	0	**40**	0	15	14	3	0	**32**	1	5	24	8	0	**37**	0	5	47	7	0	**59**	0	**168**
10:45PM	7	9	10	0	**26**	0	12	10	3	0	**25**	0	4	22	5	0	**31**	0	9	34	5	0	**48**	0	**130**
Hourly Total	36	34	32	0	**102**	0	50	38	15	0	**103**	3	27	118	36	0	**181**	2	24	138	41	1	**204**	0	**590**
11:00PM	7	12	6	0	**25**	0	16	8	1	0	**25**	0	5	33	7	0	**45**	0	4	24	9	0	**37**	0	**132**
11:15PM	2	5	5	0	**12**	0	9	10	4	0	**23**	2	6	28	6	0	**40**	0	5	19	9	0	**33**	0	**108**
11:30PM	9	11	2	0	**22**	0	5	6	3	0	**14**	0	15	112	25	0	**152**	0	1	18	3	0	**22**	0	**210**

Leg	SR 317						SR 317						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
11:45PM	10	7	3	0	**20**	0	7	4	4	0	**15**	0	5	41	5	0	**51**	0	3	22	0	0	**25**	0	**111**
Hourly Total	28	35	16	0	**79**	0	37	28	12	0	**77**	2	31	214	43	0	**288**	0	13	83	21	0	**117**	0	**561**
Total	1488	1954	1638	0	**5080**	1	2501	2036	747	0	**5284**	60	1546	6263	1487	0	**9296**	28	1070	6150	1494	13	**8727**	14	**28387**
% Approach	29.3%	38.5%	32.2%	0%	**-**	-	47.3%	38.5%	14.1%	0%	**-**	-	16.6%	67.4%	16.0%	0%	**-**	-	12.3%	70.5%	17.1%	0.1%	**-**	-	**-**
% Total	5.2%	6.9%	5.8%	0%	**17.9%**	-	8.8%	7.2%	2.6%	0%	**18.6%**	-	5.4%	22.1%	5.2%	0%	**32.7%**	-	3.8%	21.7%	5.3%	0%	**30.7%**	-	**-**
Lights and Motorcycles	1144	1666	1267	0	**4077**	-	2262	1747	447	0	**4456**	-	1215	4801	1345	0	**7361**	-	827	4761	1092	12	**6692**	-	22586
% Lights and Motorcycles	76.9%	85.3%	77.4%	0%	**80.3%**	-	90.4%	85.8%	59.8%	0%	**84.3%**	-	78.6%	76.7%	90.5%	0%	**79.2%**	-	77.3%	77.4%	73.1%	92.3%	**76.7%**	-	79.6%
Heavy	344	288	371	0	**1003**	-	239	289	300	0	**828**	-	331	1462	142	0	**1935**	-	243	1389	402	1	**2035**	-	5801
% Heavy	23.1%	14.7%	22.6%	0%	**19.7%**	-	9.6%	14.2%	40.2%	0%	**15.7%**	-	21.4%	23.3%	9.5%	0%	**20.8%**	-	22.7%	22.6%	26.9%	7.7%	**23.3%**	-	20.4%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	60	-	-	-	-	-	28	-	-	-	-	-	14	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2599 - Alum Creek Dr & SR 317 - TMC

Tue Aug 16, 2022
AM Peak (6:45 AM - 7:45 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978981, Location: 39.830073, -82.933894, Site Code: 2599

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	SR 317						SR 317						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 6:45AM	24	33	28	0	**85**	0	49	27	2	0	**78**	0	23	140	23	0	**186**	0	16	138	15	0	**169**	0	**518**
7:00AM	26	28	31	0	**85**	0	29	22	8	0	**59**	2	20	120	15	0	**155**	0	18	91	11	0	**120**	0	**419**
7:15AM	21	38	34	0	**93**	0	35	25	7	0	**67**	2	25	127	13	0	**165**	3	12	120	11	0	**143**	1	**468**
7:30AM	14	34	21	0	**69**	0	36	22	10	0	**68**	1	31	126	17	0	**174**	1	8	118	17	0	**143**	0	**454**
Total	85	133	114	0	**332**	0	149	96	27	0	**272**	5	99	513	68	0	**680**	4	54	467	54	0	**575**	1	**1859**
% Approach	25.6%	40.1%	34.3%	0%	**-**	-	54.8%	35.3%	9.9%	0%	**-**	-	14.6%	75.4%	10.0%	0%	**-**	-	9.4%	81.2%	9.4%	0%	**-**	-	**-**
% Total	4.6%	7.2%	6.1%	0%	**17.9%**	-	8.0%	5.2%	1.5%	0%	**14.6%**	-	5.3%	27.6%	3.7%	0%	**36.6%**	-	2.9%	25.1%	2.9%	0%	**30.9%**	-	**-**
PHF	0.817	0.875	0.838	-	**0.892**	-	0.760	0.889	0.675	-	**0.872**	-	0.798	0.916	0.739	-	**0.914**	-	0.750	0.846	0.794	-	**0.851**	-	0.897
Lights and Motorcycles	66	122	83	0	**271**	-	140	88	14	0	**242**	-	78	414	65	0	**557**	-	48	393	39	0	**480**	-	1550
% Lights and Motorcycles	77.6%	91.7%	72.8%	0%	**81.6%**	-	94.0%	91.7%	51.9%	0%	**89.0%**	-	78.8%	80.7%	95.6%	0%	**81.9%**	-	88.9%	84.2%	72.2%	0%	**83.5%**	-	83.4%
Heavy	19	11	31	0	**61**	-	9	8	13	0	**30**	-	21	99	3	0	**123**	-	6	74	15	0	**95**	-	309
% Heavy	22.4%	8.3%	27.2%	0%	**18.4%**	-	6.0%	8.3%	48.1%	0%	**11.0%**	-	21.2%	19.3%	4.4%	0%	**18.1%**	-	11.1%	15.8%	27.8%	0%	**16.5%**	-	16.6%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	4	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2599 - Alum Creek Dr & SR 317 - TMC

Tue Aug 16, 2022
Midday Peak (11:30 AM - 12:30 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978981, Location: 39.830073, -82.933894, Site Code: 2599

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg	SR 317						SR 317						Alum Creek Dr						Alum Creek Dr						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 11:30AM	20	23	21	0	**64**	0	41	19	10	0	**70**	1	23	83	25	0	**131**	0	15	65	16	1	**97**	1	**362**
11:45AM	21	18	25	0	**64**	0	30	35	13	0	**78**	0	18	92	21	0	**131**	0	16	89	15	0	**120**	0	**393**
12:00PM	19	22	28	0	**69**	0	40	31	15	0	**86**	0	23	100	40	0	**163**	0	21	83	22	0	**126**	0	**444**
12:15PM	20	19	17	0	**56**	0	52	31	10	0	**93**	0	22	102	18	0	**142**	0	12	80	12	2	**106**	0	**397**
Total	80	82	91	0	**253**	0	163	116	48	0	**327**	1	86	377	104	0	**567**	0	64	317	65	3	**449**	1	**1596**
% Approach	31.6%	32.4%	36.0%	0%	**-**	-	49.8%	35.5%	14.7%	0%	**-**	-	15.2%	66.5%	18.3%	0%	**-**	-	14.3%	70.6%	14.5%	0.7%	**-**	-	**-**
% Total	5.0%	5.1%	5.7%	0%	**15.9%**	-	10.2%	7.3%	3.0%	0%	**20.5%**	-	5.4%	23.6%	6.5%	0%	**35.5%**	-	4.0%	19.9%	4.1%	0.2%	**28.1%**	-	**-**
PHF	0.952	0.891	0.813	-	**0.917**	-	0.784	0.829	0.800	-	**0.879**	-	0.935	0.924	0.650	-	**0.870**	-	0.762	0.890	0.739	0.375	**0.891**	-	0.899
Lights and Motorcycles	55	59	54	0	**168**	-	142	104	27	0	**273**	-	55	251	97	0	**403**	-	46	201	43	3	**293**	-	1137
% Lights and Motorcycles	68.8%	72.0%	59.3%	0%	**66.4%**	-	87.1%	89.7%	56.3%	0%	**83.5%**	-	64.0%	66.6%	93.3%	0%	**71.1%**	-	71.9%	63.4%	66.2%	100%	**65.3%**	-	71.2%
Heavy	25	23	37	0	**85**	-	21	12	21	0	**54**	-	31	126	7	0	**164**	-	18	116	22	0	**156**	-	459
% Heavy	31.3%	28.0%	40.7%	0%	**33.6%**	-	12.9%	10.3%	43.8%	0%	**16.5%**	-	36.0%	33.4%	6.7%	0%	**28.9%**	-	28.1%	36.6%	33.8%	0%	**34.7%**	-	28.8%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2599 - Alum Creek Dr & SR 317 - TMC

Tue Aug 16, 2022
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 978981, Location: 39.830073, -82.933894, Site Code: 2599

Provided by: Smart Services, Inc.
88 W. Church Street, Newark, OH, 43055, US

Leg Direction	SR 317 Eastbound						SR 317 Westbound						Alum Creek Dr Northbound						Alum Creek Dr Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-08-16 4:00PM	16	33	32	0	**81**	0	36	43	9	0	**88**	1	52	124	34	0	**210**	0	14	131	23	0	**168**	0	**547**
4:15PM	13	44	30	0	**87**	0	53	32	10	0	**95**	3	30	101	19	0	**150**	1	25	128	28	0	**181**	0	**513**
4:30PM	16	46	30	0	**92**	0	46	41	10	0	**97**	2	47	195	37	0	**279**	2	25	136	26	0	**187**	1	**655**
4:45PM	25	36	27	0	**88**	0	53	32	17	0	**102**	0	52	118	25	0	**195**	0	25	132	26	0	**183**	0	**568**
Total	70	159	119	0	**348**	0	188	148	46	0	**382**	6	181	538	115	0	**834**	3	89	527	103	0	**719**	1	**2283**
% Approach	20.1%	45.7%	34.2%	0%	**-**	-	49.2%	38.7%	12.0%	0%	**-**	-	21.7%	64.5%	13.8%	0%	**-**	-	12.4%	73.3%	14.3%	0%	**-**	-	**-**
% Total	3.1%	7.0%	5.2%	0%	**15.2%**	-	8.2%	6.5%	2.0%	0%	**16.7%**	-	7.9%	23.6%	5.0%	0%	**36.5%**	-	3.9%	23.1%	4.5%	0%	**31.5%**	-	**-**
PHF	0.700	0.864	0.930	-	**0.946**	-	0.887	0.860	0.676	-	**0.936**	-	0.870	0.690	0.777	-	**0.747**	-	0.890	0.969	0.920	-	**0.961**	-	0.871
Lights and Motorcycles	60	144	107	0	**311**	-	174	130	35	0	**339**	-	161	453	104	0	**718**	-	70	426	82	0	**578**	-	1946
% Lights and Motorcycles	85.7%	90.6%	89.9%	0%	**89.4%**	-	92.6%	87.8%	76.1%	0%	**88.7%**	-	89.0%	84.2%	90.4%	0%	**86.1%**	-	78.7%	80.8%	79.6%	0%	**80.4%**	-	85.2%
Heavy	10	15	12	0	**37**	-	14	18	11	0	**43**	-	20	85	11	0	**116**	-	19	101	21	0	**141**	-	337
% Heavy	14.3%	9.4%	10.1%	0%	**10.6%**	-	7.4%	12.2%	23.9%	0%	**11.3%**	-	11.0%	15.8%	9.6%	0%	**13.9%**	-	21.3%	19.2%	20.4%	0%	**19.6%**	-	14.8%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

APPENDIX

C. MORPC Growth Rate Request

From: Morgan, Perry <Perry.Morgan@kimley-horn.com>
Sent: Friday, September 9, 2022 12:51 PM
To: Hwashik Jang <hjang@morpc.org>; Nick Gill <NGILL@morpc.org>
Cc: mrehfus@franklincountyengineer.org; Hagerty, Brian <Brian.Hagerty@stantec.com>; Schneider, Andrew <Andrew.Schneider@kimley-horn.com>; Wilson, Jessica <Jessica.Wilson@kimley-horn.com>
Subject: Alum Creek Drive Growth Rate Request (PID 115792)

> **Caution:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. When in doubt, contact the IT team

Hwashik and Nick –

Happy Friday!

Kimley-Horn is assisting Stantec and Franklin County with traffic study portion of the Alum Creek Drive Widening project (PID 115792).

This project is to include the addition of a 3rd lane in each direction on Alum Creek Drive from Groveport Road to London-Groveport Road (SR-317).

The attached documents are our formal request for MORPC to provide growth rates for the study intersections, as well as the traffic counts for each of the study intersections.

The count information is also summarized the AM and PM peak periods and ADTs in the attached exhibits.

If you have any questions, or need additional information, please let us know.

Thanks.

Perry.

Perry Morgan, P.E.
Kimley-Horn | 7965 N. High Street, Suite 200, Columbus, OH 43235
Direct: 614 472 8551 | Mobile: 614 582 7838 | www.kimley-horn.com

Celebrating 15 years as one of FORTUNE's 100 Best Companies to Work For

From: Hwashik Jang <hjang@morpc.org>
Sent: Thursday, September 22, 2022 2:23 PM
To: Morgan, Perry
Cc: mrehfus@franklincountyengineer.org; Hagerty, Brian; Schneider, Andrew; Wilson, Jessica; Nick Gill
Subject: RE: Alum Creek Drive Growth Rate Request (PID 115792)

Follow Up Flag: Follow up
Flag Status: Completed

Perry,

We have completed processing growth rates for your Alum Creek Dr traffic study intersections.

Please use linear annual growth rates as summarized below.

Location	**Linear Annual Growth Rate**
Groveport Rd e/o Alum Creek Dr	1.30%
Alum Creek Dr n/o Groveport Rd	1.00%
Groveport Rd w/o Alum Creek Dr	1.00%
Alum Creek Dr s/o Groveport Rd	1.00%
Alum Creek Dr n/o Rathmell Rd	1.00%
Rathmell Rd w/o Alum Creek Dr	1.00%
Alum Creek Dr s/o Rathmell Rd	1.00%
Bixby Rd e/o Alum Creek Dr	3.80%
Alum Creek Dr n/o Bixby Rd	1.00%
Bixby Rd w/o Alum Creek Dr	1.30%
Alum Creek Dr s/o Bixby Rd	0.90%
Toy Rd e/o Alum Creek Dr	0.70%
Alum Creek Dr n/o Toy Rd	0.90%
Creekside Pkwy w/o Alum Creek Dr	0.60%
Alum Creek Dr s/o Toy Rd	1.00%
Global Ct e/o Alum Creek Dr	1.00%
Alum Creek Dr n/o Global Ct	1.00%
Global Dr w/o Alum Creek Dr	0.90%
Alum Creek Dr s/o Global Ct	0.90%

Rohr Rd e/o Alum Creek Dr	1.00%
Alum Creek Dr n/o Rohr Rd	1.00%
Rohr Rd w/o Alum Creek Dr	1.70%
Alum Creek Dr s/o Rohr Rd	0.90%
Spiegel Dr e/o Alum Creek Dr	0.50%
Alum Creek Dr n/o Spiegel Dr	0.90%
Spiegel Dr w/o Alum Creek Dr	0.80%
Alum Creek Dr s/o Spiegel Dr	0.90%
Alum Creek Dr n/o Alum Creek Service Dr	0.90%
Alum Creek Dr s/o Alum Creek Service Dr	0.90%
SR 317 e/o Alum Creek Dr	0.90%
Alum Creek Dr n/o SR 317	0.90%
SR 317 w/o Alum Creek Dr	0.90%
Alum Creek Dr s/o SR 317	1.10%

Note: *The above rate was derived based on planning level analysis by using MORPC's regional travel demand model.*

If you have any questions, please let me know.

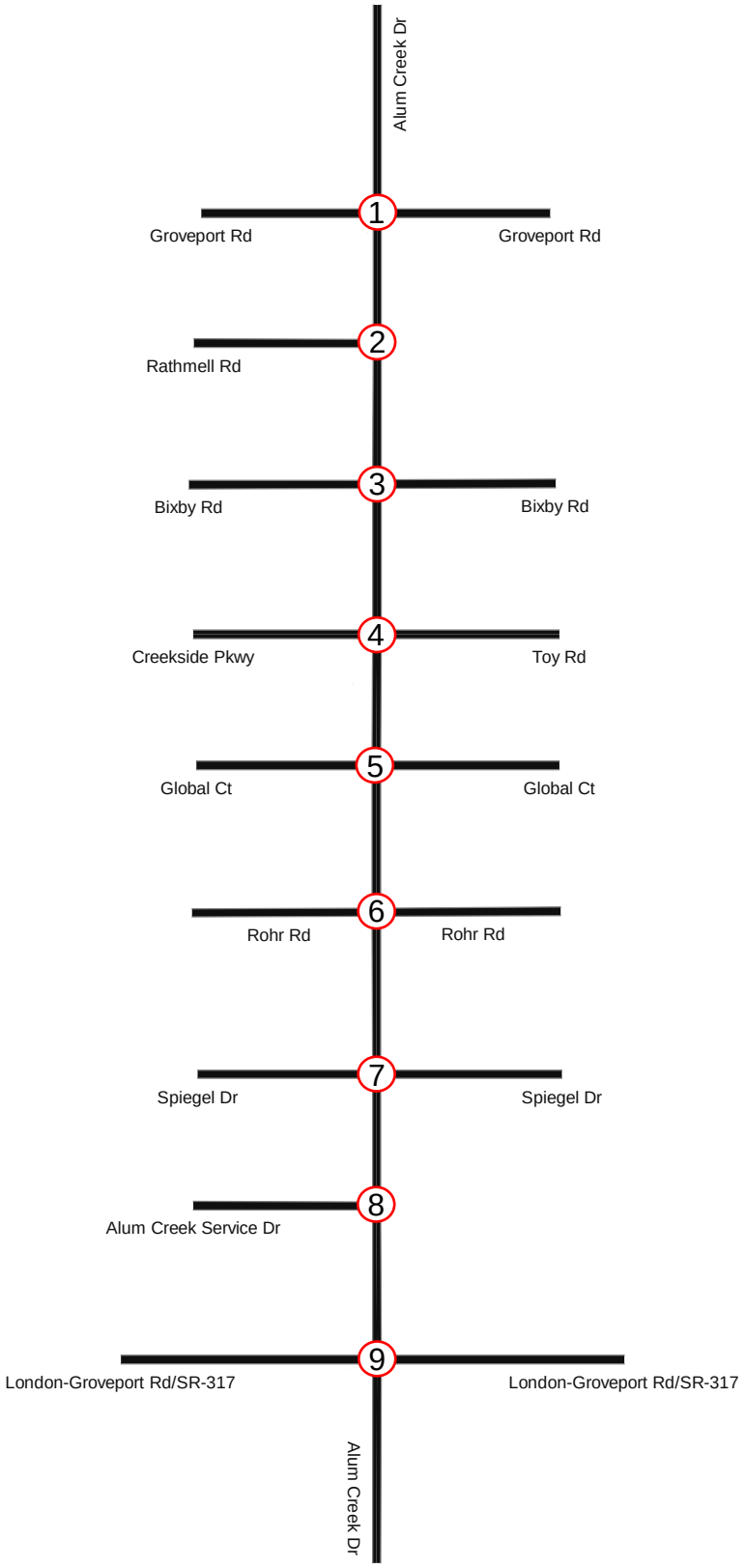
Thanks,

HWASHIK JANG
Senior Planner | **Mid-Ohio Regional Planning Commission**
T: 614.233.4145 | hjang@morpc.org
111 Liberty Street, Suite 100 | Columbus, OH 43215

APPENDIX

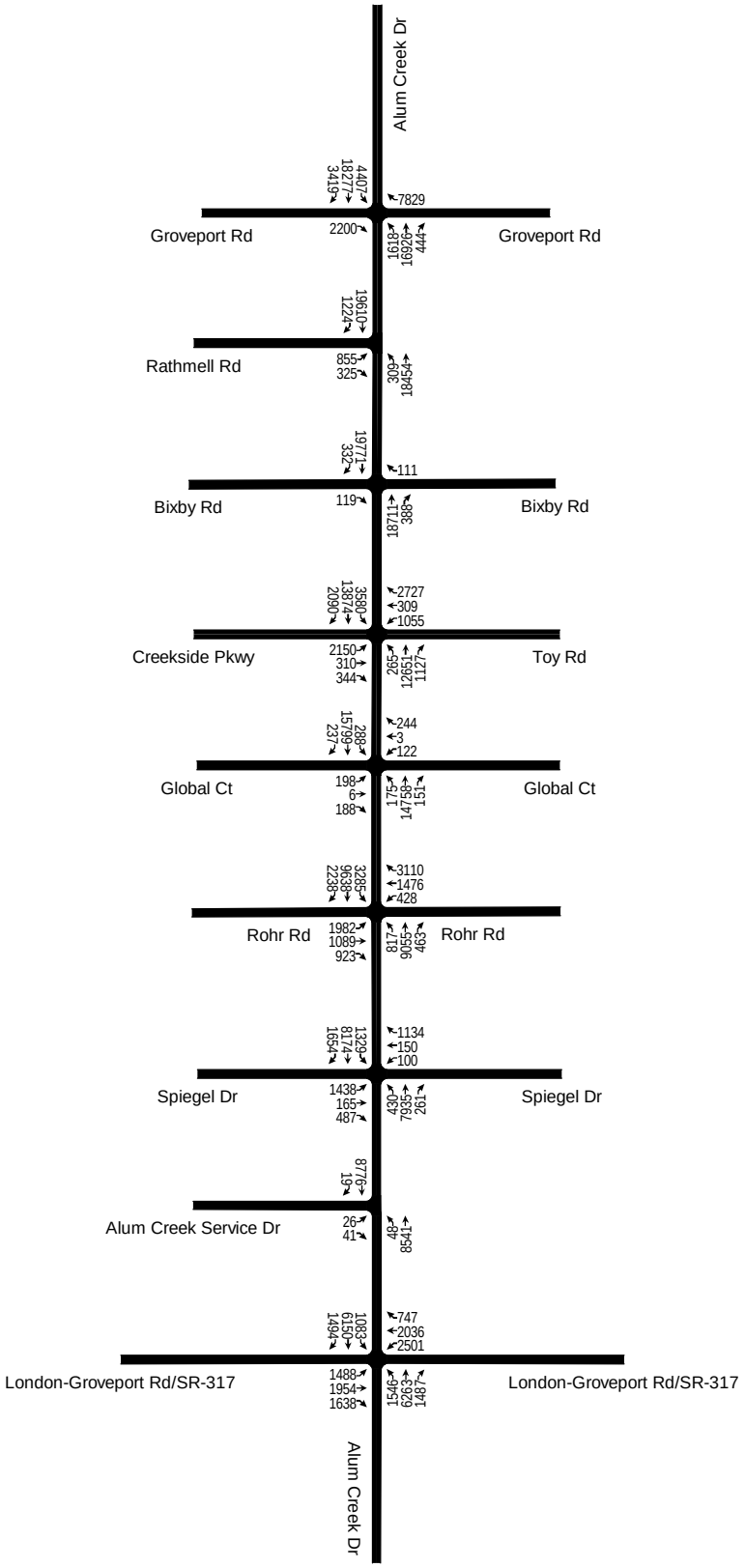
D. Certified Traffic Volumes

Exhibit 1: Project Study Location



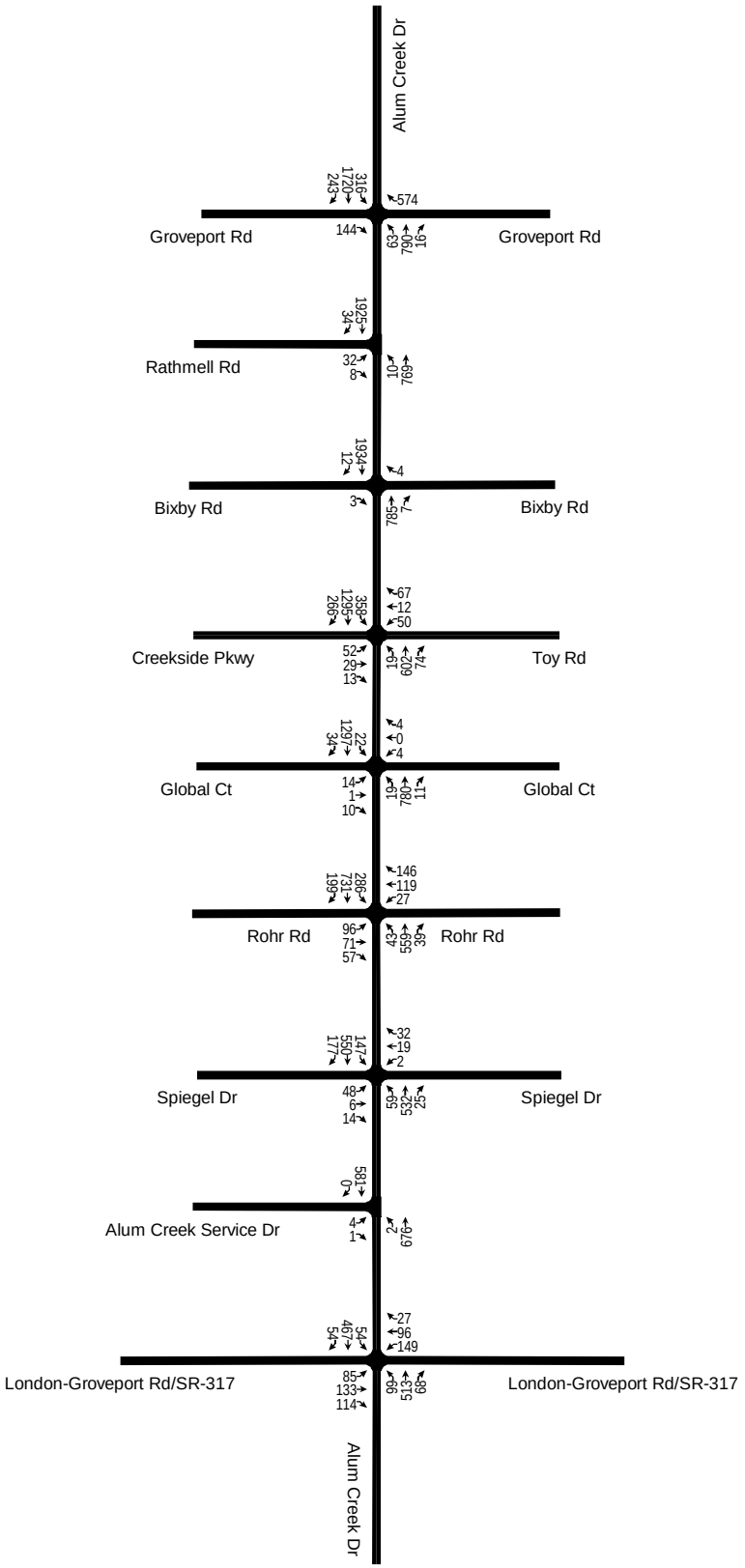
Alum Creek Drive

Exhibit 2: Weekday 2022 Existing Counts



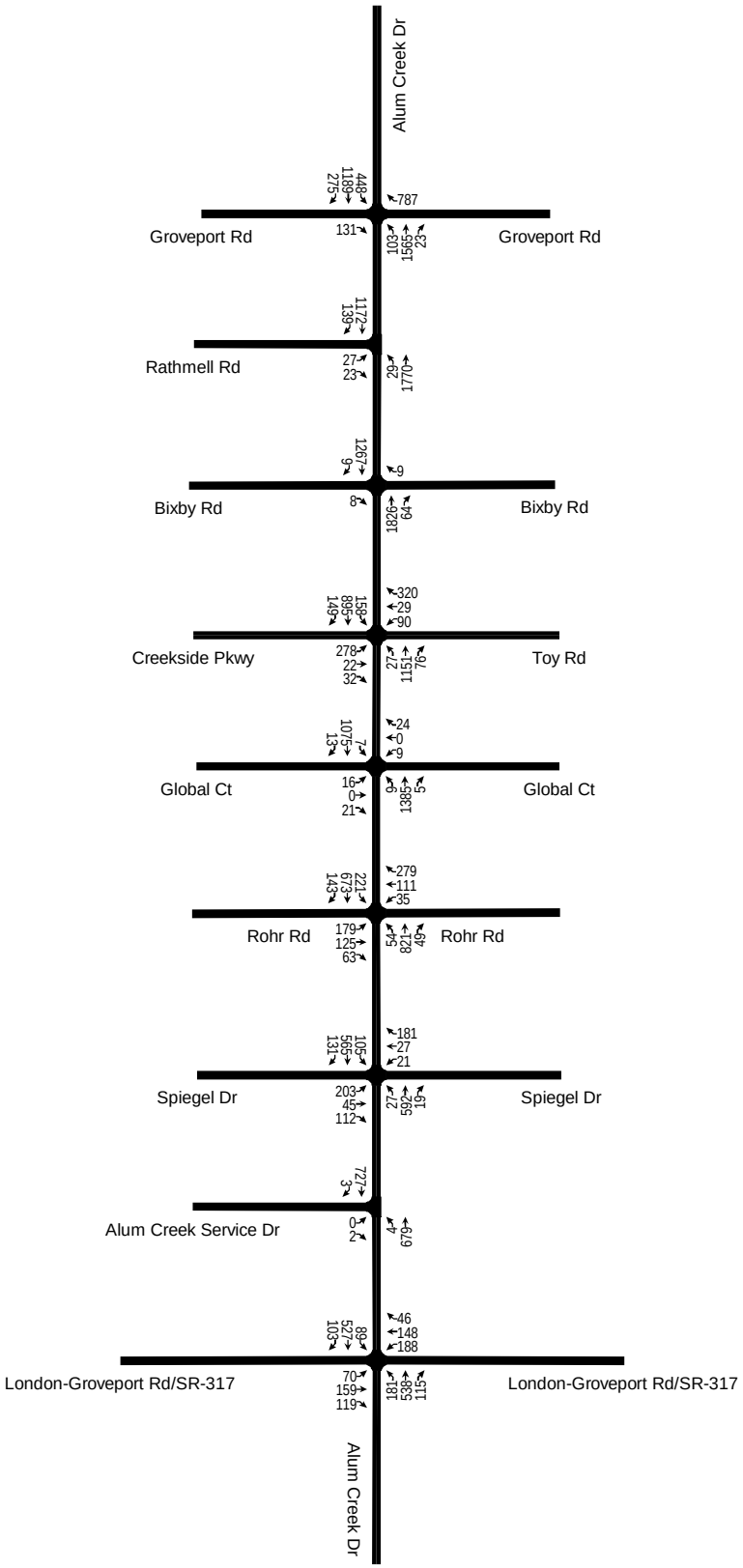
Alum Creek Drive

Exhibit 3: AM Peak Hour 2022 Existing Counts



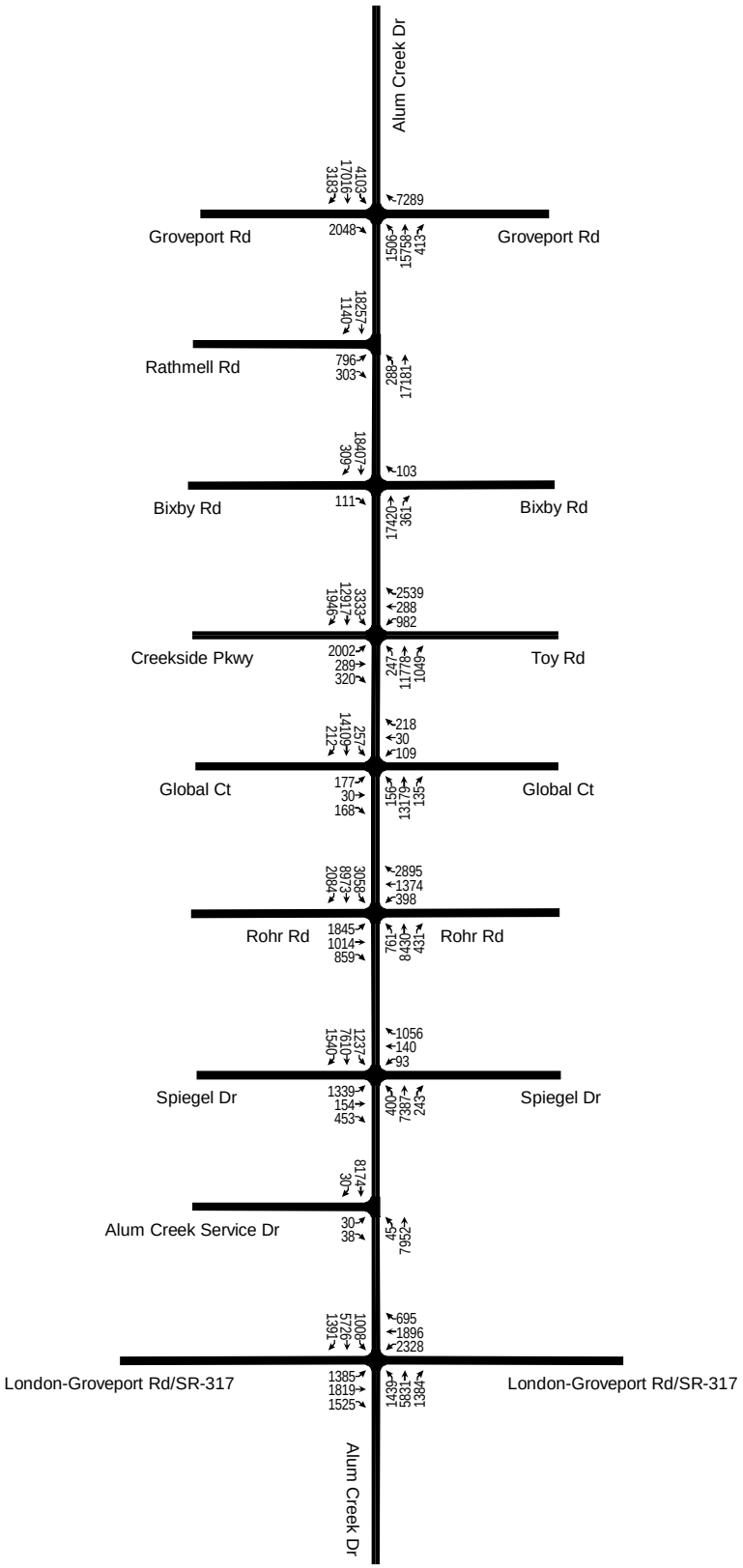
Alum Creek Drive

Exhibit 4: PM Peak Hour 2022 Existing Counts



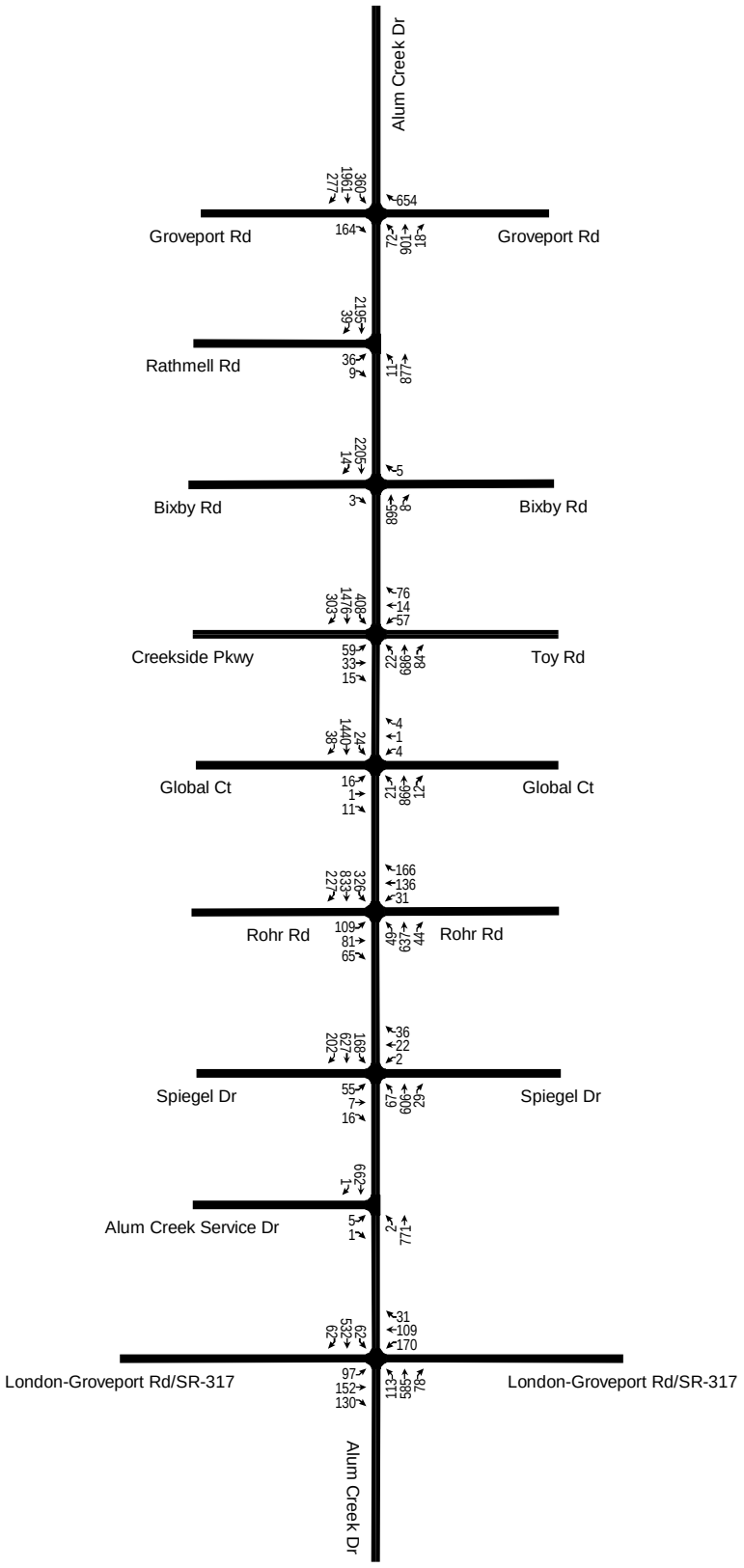
Alum Creek Drive

Exhibit 5: Weekday 2022 Adjusted Volumes



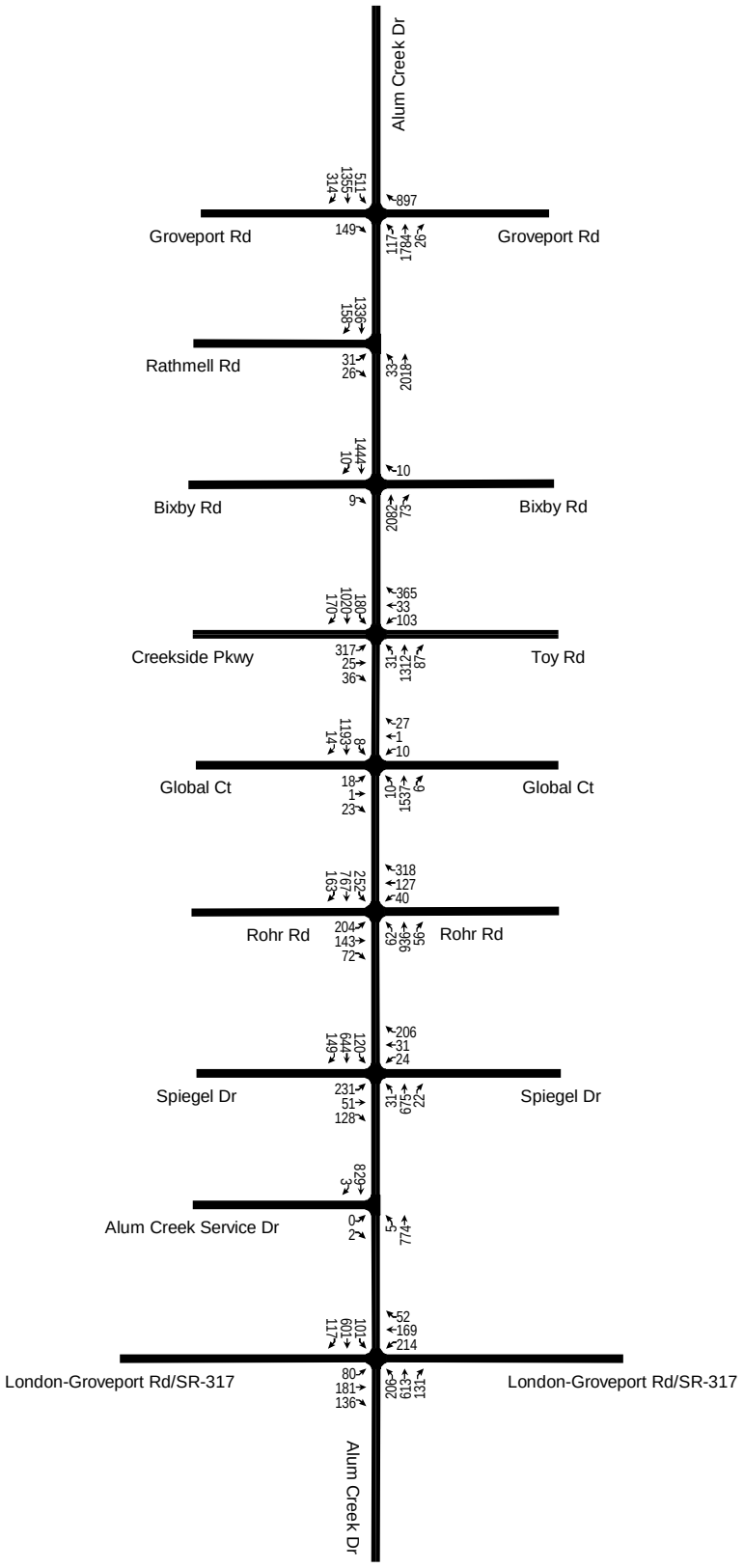
Alum Creek Drive

Exhibit 6: AM Peak Hour 2022 Adjusted Volumes



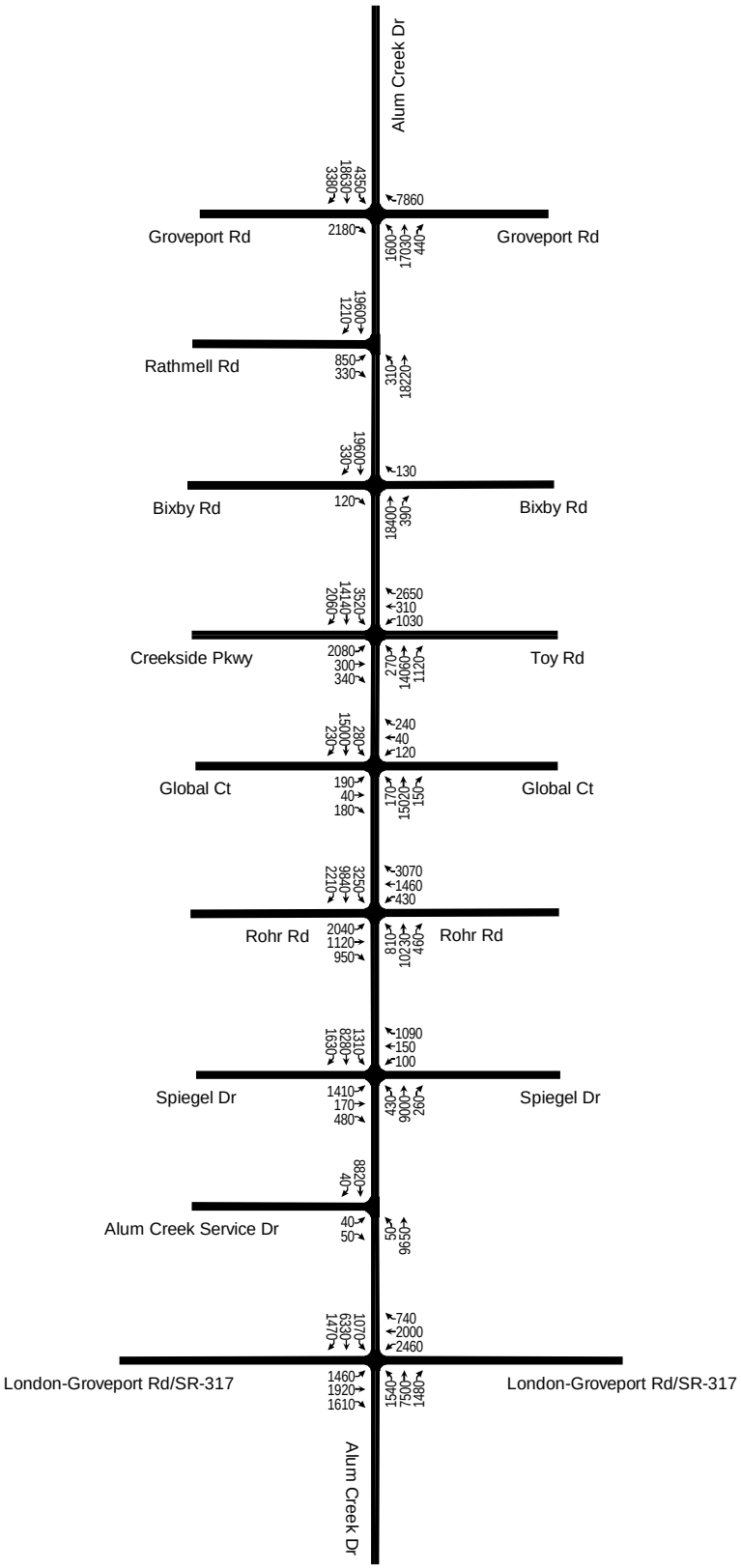
Alum Creek Drive

Exhibit 7: PM Peak Hour 2022 Adjusted Volumes



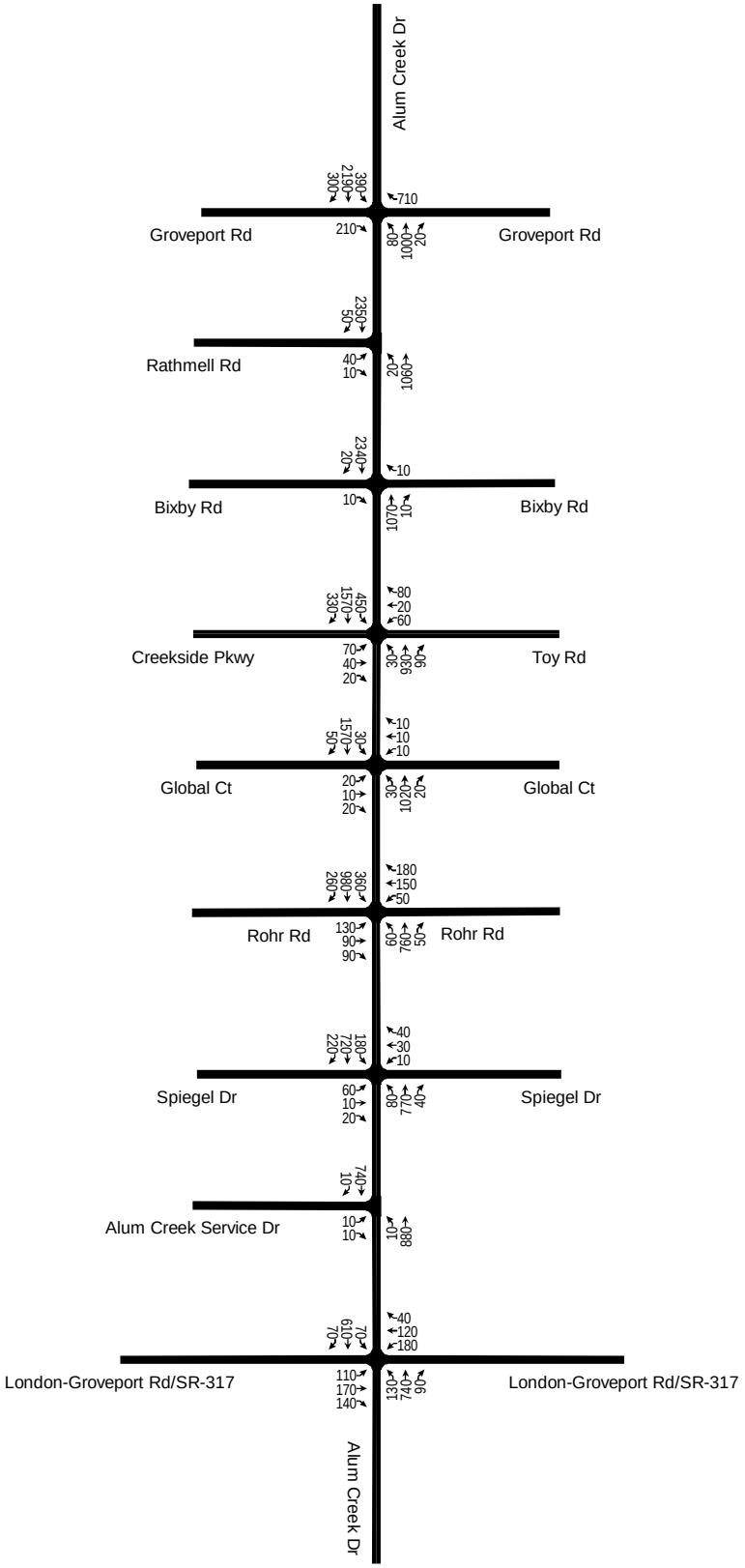
Alum Creek Drive

Exhibit 8: Daily 2028 Projections



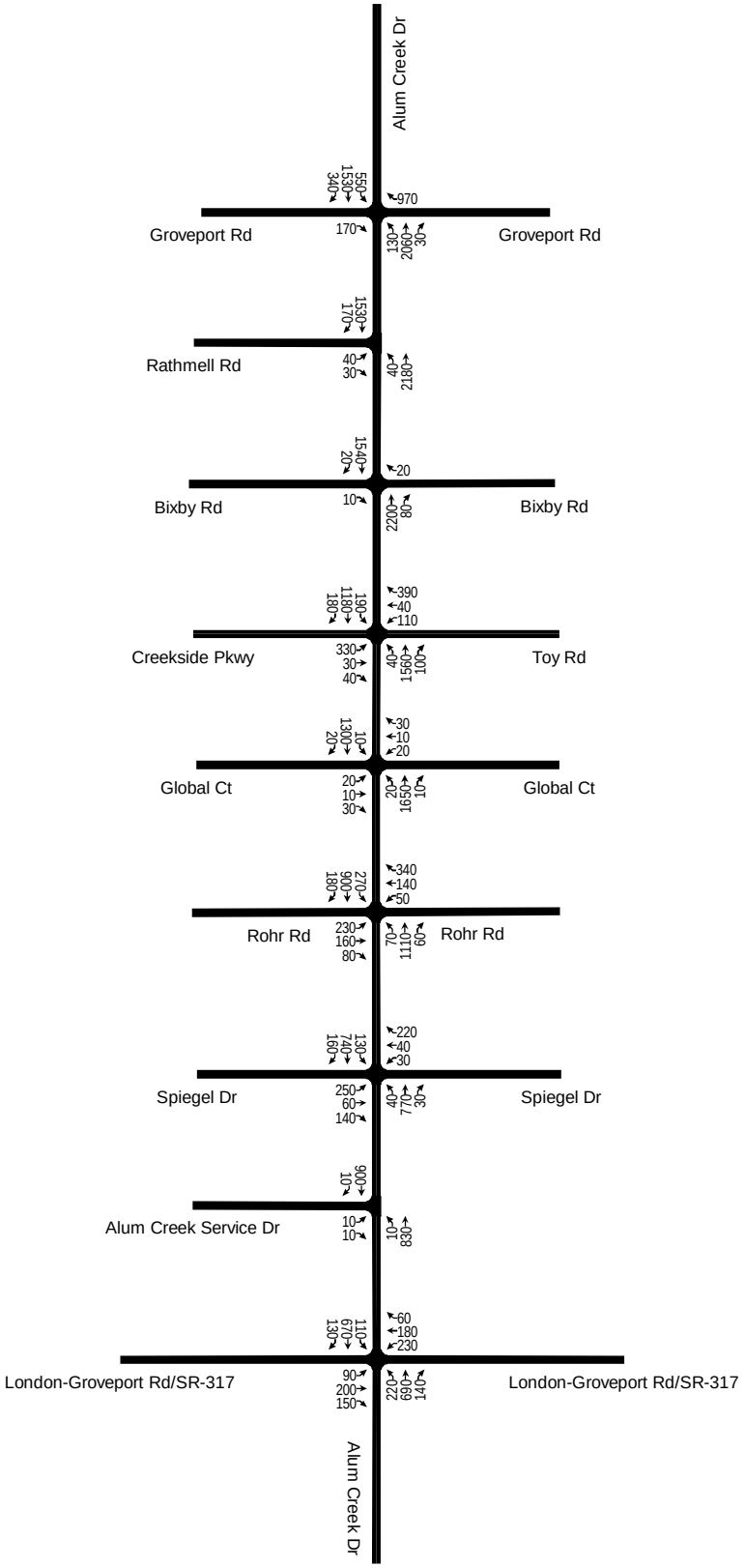
Alum Creek Drive

Exhibit 9: AM Peak Hour 2028 Projections



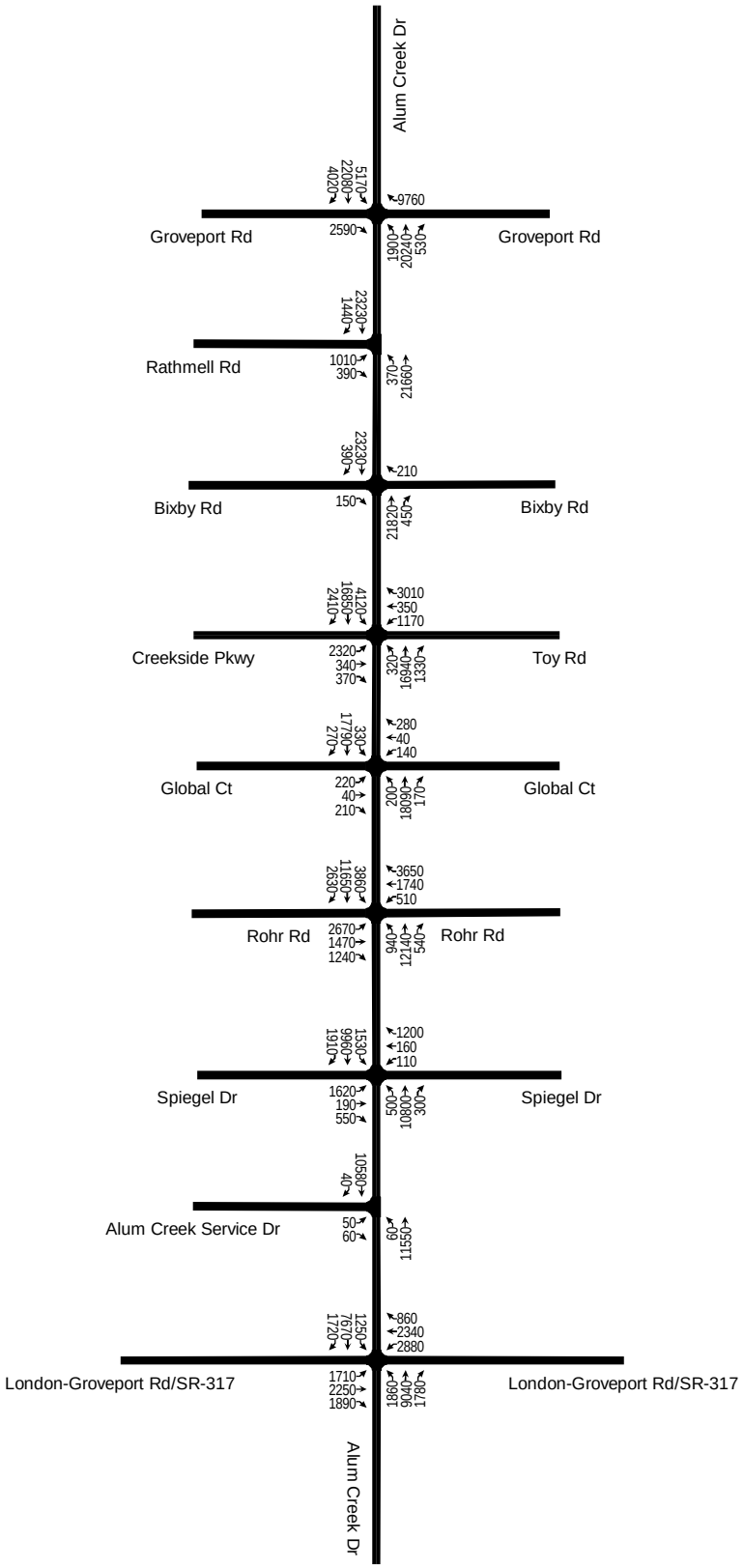
Alum Creek Drive

Exhibit 10: PM Peak Hour 2028 Projections



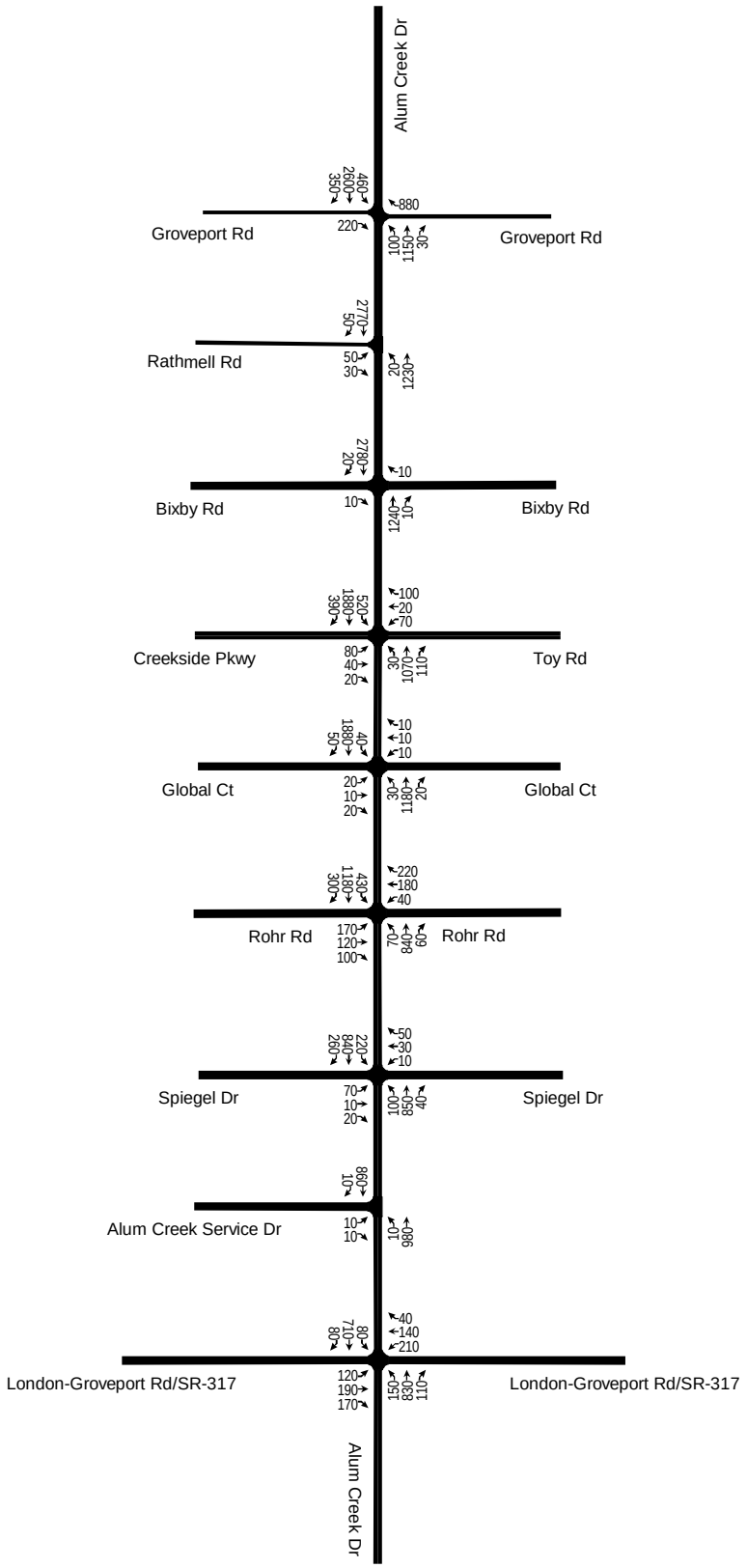
Alum Creek Drive

Exhibit 11: Daily 2048 Projections



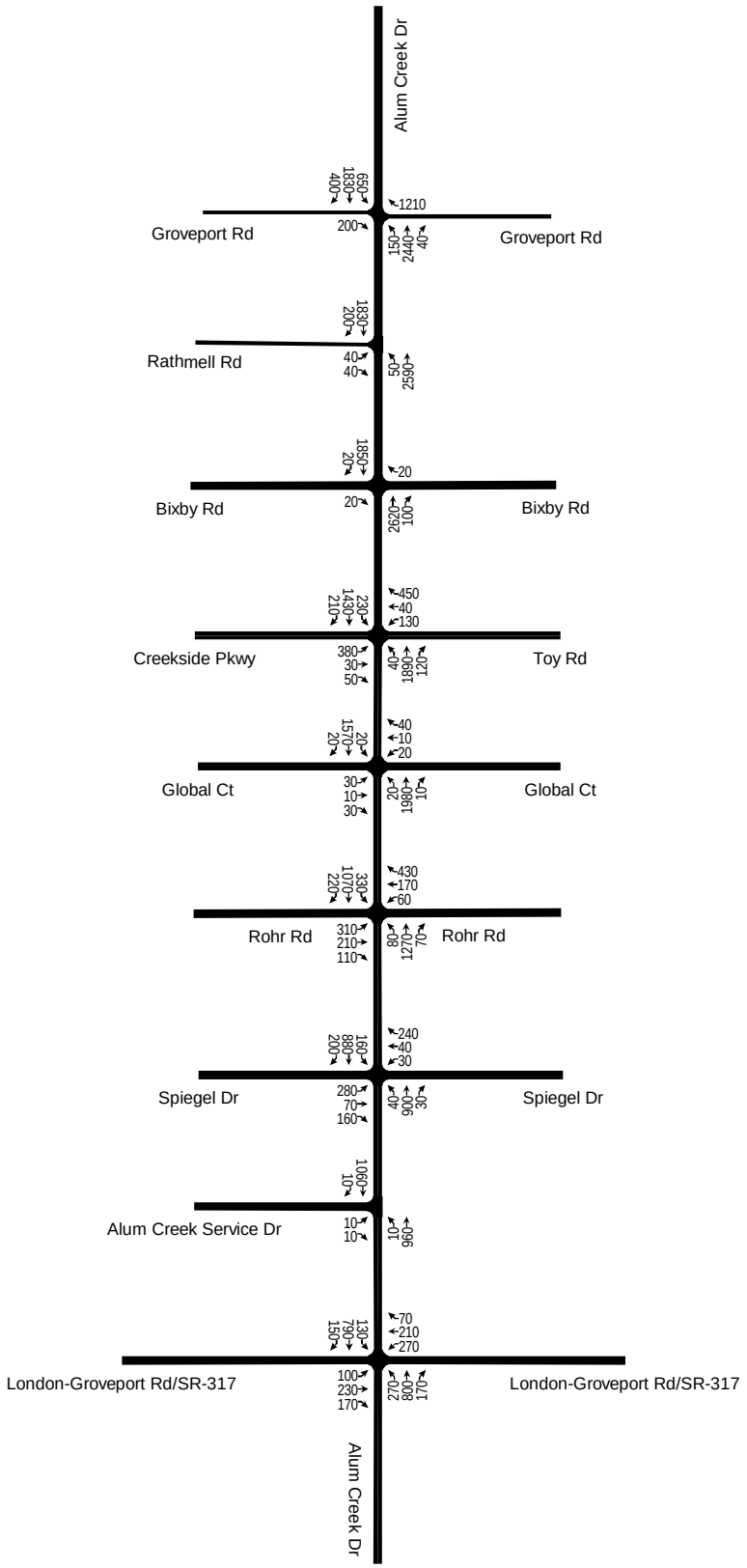
Alum Creek Drive

Exhibit 12: AM Peak Hour 2048 Projections



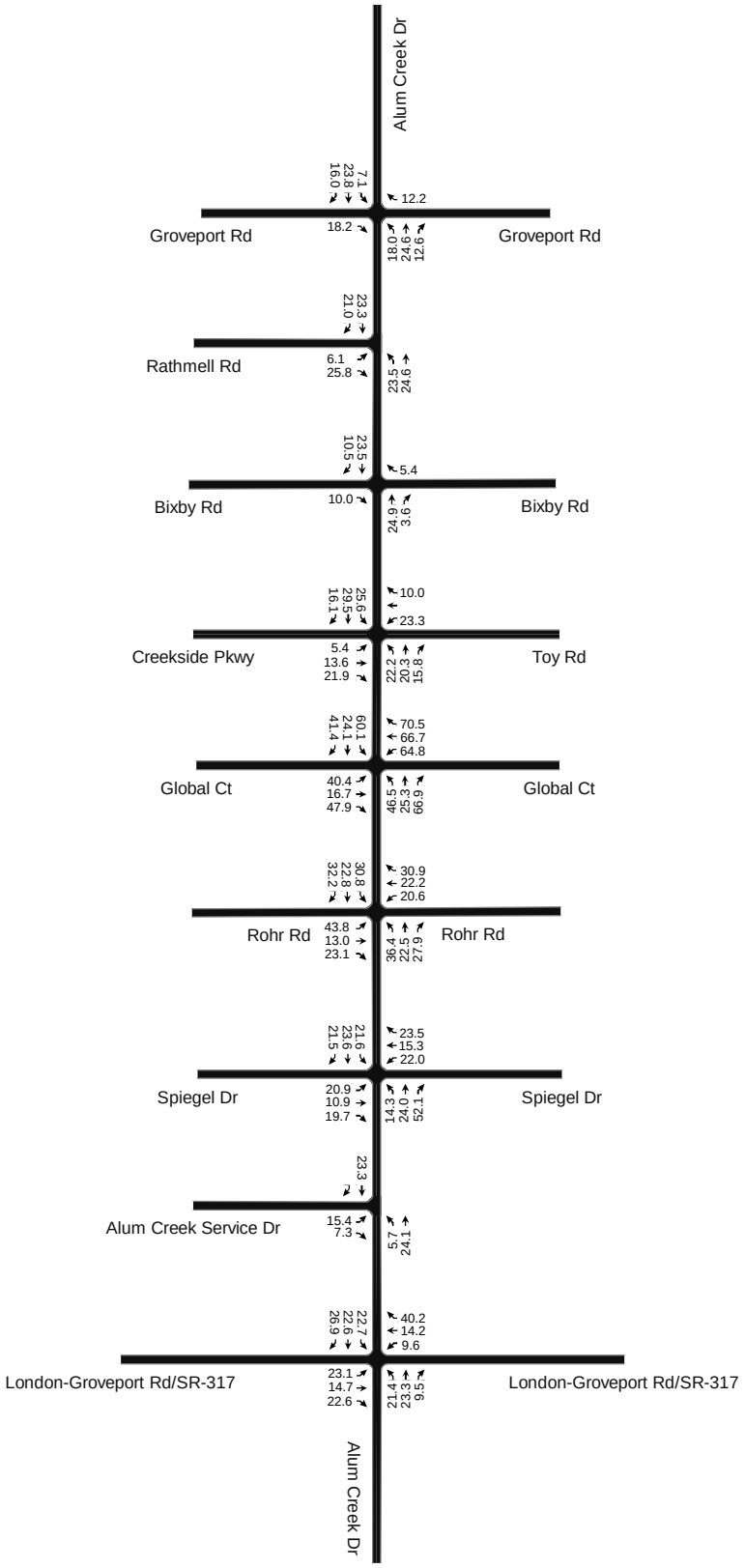
Alum Creek Drive

Exhibit 13: PM Peak Hour 2048 Projections



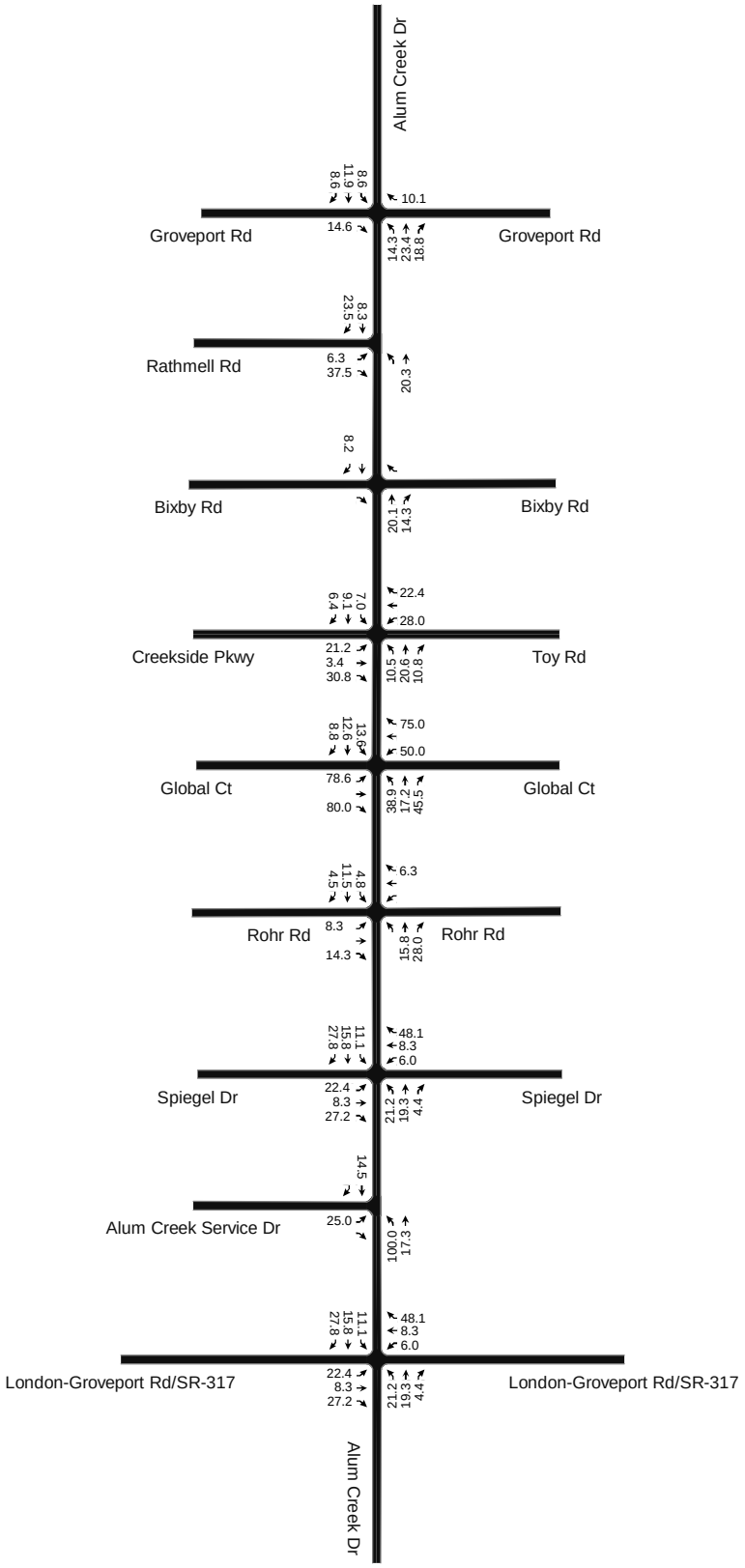
Alum Creek Drive

Exhibit 14: Weekday ADT Heavy Vehicle Percentages



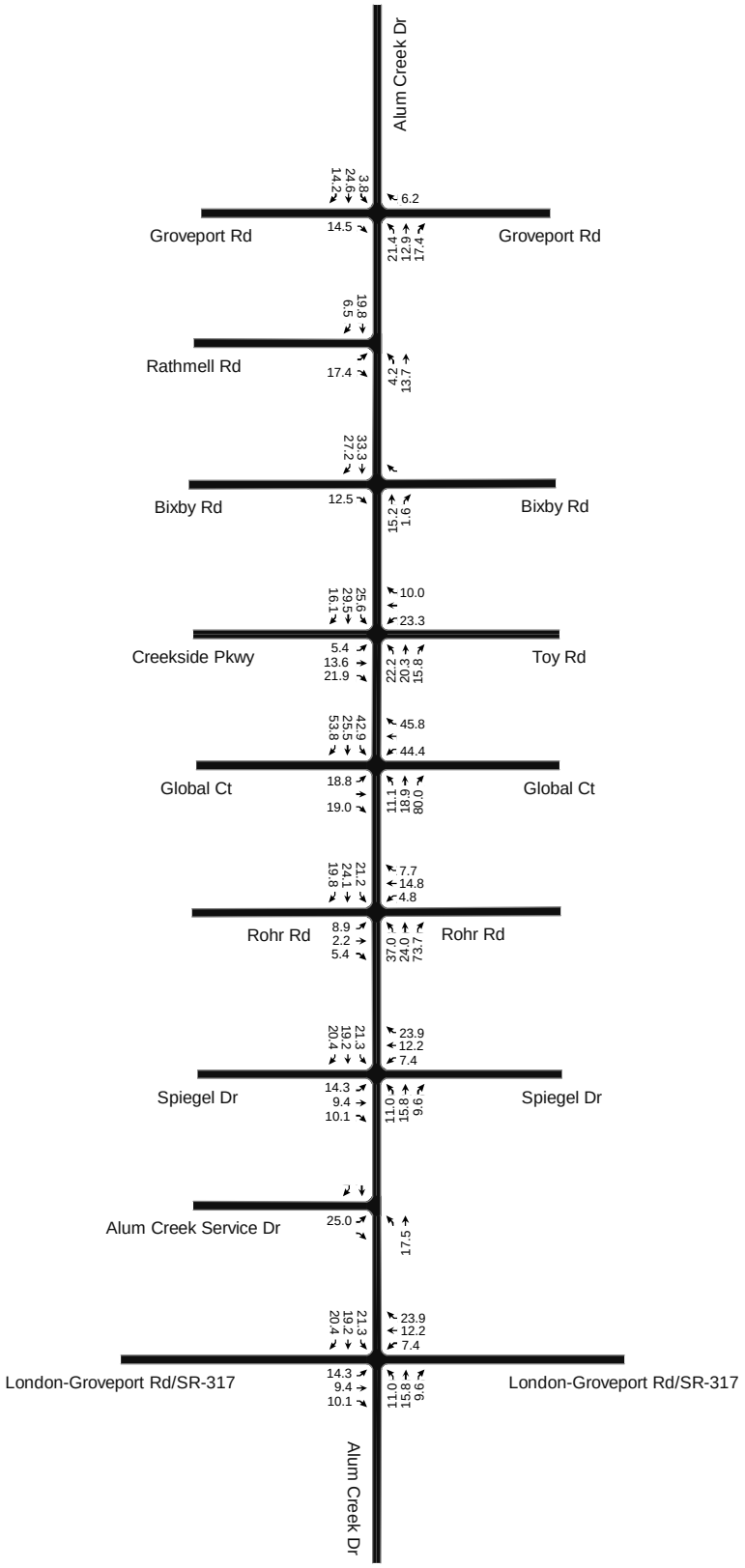
Alum Creek Drive

Exhibit 15: AM Peak Hour Heavy Vehicle Percentages



Alum Creek Drive

Exhibit 16: PM Peak Hour Heavy Vehicle Percentages



Alum Creek Drive

APPENDIX

E. Expanded Capacity Analysis Tables

2028 Weekday AM Peak Hour- Study Intersections Capacity Analysis

Int #1	2028 AM No-Build (Signal, 110s)			Int #1	2028 AM Build (Signal, 110s)		
Alum Creek Drive & Groveport Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Groveport Road	Delay (s/veh)	LOS	v/c
EBR	59.4	E	0.79	EBR	64.2	E	0.84
EB Approach	59.4	E	0.79	EB Approach	64.2	E	0.84
WBR	37.2	D	0.84	WBR	38.6	D	0.88
WB Approach	37.2	D	0.84	WB Approach	38.6	D	0.88
NBL	57.9	E	0.39	NBL	39.9	D	0.43
NBT	24.7	C	0.57	NBT	17.4	B	0.56
NBR	13.3	B	0.02	NBR	11.8	B	0.02
NB Approach	26.9	C	0.57	NB Approach	19.0	B	0.56
SBL	34.7	C	0.76	SBL	35.8	D	0.50
SBT	11.7	B	0.79	SBT	10.3	B	0.79
SBR	5.6	A	0.25	SBR	4.9	A	0.25
SB Approach	14.1	B	0.79	SB Approach	13.2	B	0.79
Intersection	22.3	C	-	Intersection	20.4	C	-
Int #2	2028 AM No-Build (TWSC)			Int #2	2028 AM Build (TWSC)		
Alum Creek Drive & Rathmell Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Rathmell Road	Delay (s/veh)	LOS	v/c
EBL	-	-	-	EBL	-	-	-
EBT	-	-	-	EBT	-	-	-
EBR	-	-	-	EBR	-	-	-
EB Approach	-	-	-	EB Approach	-	-	-
NBL	71.3	F	0.32	NBL	375.4	F	0.96
NBT	-	-	-	NBT	-	-	-
NB Approach	71.3	F	0.32	NB Approach	375.4	F	0.96
SBT	-	-	-	SBT	-	-	-
SBR	-	-	-	SBR	-	-	-
SB Approach	-	-	-	SB Approach	-	-	-
Intersection	-	-	-	Intersection	-	-	-
Int #3	2028 AM No-Build (TWSC)			Int #3	2028 AM Build (TWSC)		
Alum Creek Drive & Bixby Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Bixby Road	Delay (s/veh)	LOS	v/c
EBR	47.4	E	0.14	EBR	55.8	F	0.16
EB Approach	47.4	E	0.14	EB Approach	55.8	F	0.16
WBR	15.1	C	0.04	WBR	16.9	C	0.04
WB Approach	15.1	C	0.04	WB Approach	16.9	C	0.04
NBT	-	-	-	NBT	-	-	-
NBR	-	-	-	NBR	-	-	-
NB Approach	-	-	-	NB Approach	-	-	-
SBT	-	-	-	SBT	-	-	-
SBR	-	-	-	SBR	-	-	-
SB Approach	-	-	-	SB Approach	-	-	-
Intersection	-	-	-	Intersection	-	-	-

Parkway

Int #4	2028 AM No-Build (Signal, 110s)			Int #4	2028 AM Build (Signal, 110s)		
Alum Creek Drive & Creekside Preserve/ Toy Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Creekside Preserve/ Toy Road	Delay (s/veh)	LOS	v/c
EBL	50.3	D	0.46	EBL	48.1	D	0.36
EBT	29.8	C	0.17	EBT	44.4	D	0.38
EBR	-	-	-	EBR	-	-	-
EB Approach	40.8	D	0.46	EB Approach	46.4	D	0.38
WBL	25.0	C	0.19	WBL	38.3	D	0.31
WBT	28.8	C	0.06	WBT	43.5	D	0.14
WBR	19.4	B	0.10	WBR	18.8	B	0.10
WB Approach	22.7	C	0.19	WB Approach	29.2	C	0.31
NBL	28.4	C	0.21	NBL	24.1	C	0.16
NBT	44.4	F	1.03	NBT	11.9	B	0.78
NBR	11.2	B	0.22	NBR	7.5	A	0.24
NB Approach	41.1	D	1.03	NB Approach	11.9	B	0.78
SBL	184.7	F	1.27	SBL	32.2	C	0.56
SBT	216.8	F	1.40	SBT	19.5	B	0.73
SBR	23.7	C	0.57	SBR	10.9	B	0.43
SB Approach	183.5	F	1.40	SB Approach	20.7	C	0.73
Intersection	133.5	F	-	Intersection	19.7	B	-
Int #5	2028 AM No-Build (Signal, 110s)			Int #5	2028 AM Build (Signal, 110s)		
Alum Creek Drive & Global Court	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Global Court	Delay (s/veh)	LOS	v/c
EBL	30.0	C	0.10	EBL	30.0	C	0.10
EBT	27.5	C	0.16	EBT	27.5	C	0.16
EBR	-	-	-	EBR	-	-	-
EB Approach	28.5	C	0.16	EB Approach	28.5	C	0.16
WBL	-	-	-	WBL	-	-	-
WBT	26.7	C	0.08	WBT	26.7	C	0.08
WBR	21.1	C	0.04	WBR	21.1	C	0.04
WB Approach	24.8	C	0.08	WB Approach	24.8	C	0.08
NBL	15.4	B	0.13	NBL	18.3	B	0.16
NBT	37.5	D	0.77	NBT	26.9	C	0.52
NBR	37.8	D	0.77	NBR	28.3	C	0.52
NB Approach	37.0	D	0.77	NB Approach	27.1	C	0.52
SBL	51.5	D	0.12	SBL	44.5	D	0.17
SBT	5.0	A	0.91	SBT	15.3	B	0.84
SBR	5.0	A	0.91	SBR	18.5	B	0.84
SB Approach	5.8	A	0.91	SB Approach	16.9	B	0.84
Intersection	20.0	B		Intersection	20.8	C	-

Int #6	2028 AM No-Build (Signal, 110s)			Int #6	2028 AM Build (Signal, 110s)		
Alum Creek Drive & Rohr Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Rohr Road	Delay (s/veh)	LOS	v/c
EBL	43.7	D	0.41	EBL	43.7	D	0.41
EBT	56.4	E	0.80	EBT	56.4	E	0.80
EBR	-	-	-	EBR	-	-	-
EB Approach	51.1	D	0.80	EB Approach	51.1	D	0.80
WBL	32.4	C	0.24	WBL	32.4	C	0.24
WBT	48.9	D	0.68	WBT	48.9	D	0.68
WBR	42.0	D	0.66	WBR	42.0	D	0.66
WB Approach	43.5	D	0.68	WB Approach	43.5	D	0.68
NBL	15.6	B	0.21	NBL	15.7	B	0.24
NBT	5.1	A	0.57	NBT	4.5	A	0.40
NBR	0.0	A	-	NBR	0.0	A	-
NB Approach	5.6	A	0.57	NB Approach	5.0	A	0.40
SBL	11.9	B	0.40	SBL	12.9	B	0.52
SBT	16.7	B	0.58	SBT	18.0	B	0.55
SBR	0.0	A	-	SBR	0.0	A	-
SB Approach	12.9	B	0.58	SB Approach	13.9	B	0.55
Intersection	19.3	B	-	Intersection	18.8	B	-
Int #7	2028 AM No-Build (Signal, 110s)			Int #7	2028 AM Build (Signal, 110s)		
Alum Creek Drive & Spiegel Drive	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Spiegel Drive	Delay (s/veh)	LOS	v/c
EBL	17.7	B	0.11	EBL	17.7	B	0.11
EBT	16.4	B	0.05	EBT	16.4	B	0.05
EBR	-	-	-	EBR	-	-	-
EB Approach	17.3	B	0.11	EB Approach	17.3	B	0.11
WBL	16.9	B	0.02	WBL	16.9	B	0.02
WBT	16.4	B	0.04	WBT	16.4	B	0.04
WBR	16.6	B	0.07	WBR	16.6	B	0.07
WB Approach	16.5	B	0.07	WB Approach	16.5	B	0.07
NBL	20.3	C	0.38	NBL	19.2	B	0.32
NBT	24.4	C	0.80	NBT	17.1	B	0.54
NBR	24.3	C	0.81	NBR	17.9	B	0.54
NB Approach	24.0	C	0.81	NB Approach	17.6	B	0.54
SBL	36.2	D	0.73	SBL	38.5	D	0.67
SBT	33.3	C	0.81	SBT	23.0	C	0.62
SBR	31.8	C	0.81	SBR	24.0	C	0.63
SB Approach	33.2	C	0.81	SB Approach	25.7	C	0.67
Intersection	27.7	C	-	Intersection	21.9	C	-

Int #8	2028 AM No-Build (Signal, 110s)			Int #8	2028 AM Build (Signal, 110s)		
Alum Creek Drive & SR-317	Delay (s/veh)	LOS	v/c	Alum Creek Drive & SR-317	Delay (s/veh)	LOS	v/c
EBL	24.1	C	0.29	EBL	24.1	C	0.29
EBT	30.3	C	0.38	EBT	30.3	C	0.38
EBR	24.6	C	0.30	EBR	24.6	C	0.30
EB Approach	26.8	C	0.38	EB Approach	26.8	C	0.38
WBL	28.0	C	0.51	WBL	28.0	C	0.51
WBT	29.0	C	0.25	WBT	29.0	C	0.25
WBR	22.4	C	0.08	WBR	22.4	C	0.08
WB Approach	27.7	C	0.51	WB Approach	27.7	C	0.51
NBL	32.5	C	0.63	NBL	46.5	D	0.78
NBT	55.1	E	0.93	NBT	55.1	E	0.93
NBR	25.7	C	0.20	NBR	25.7	C	0.20
NB Approach	49.2	D	0.93	NB Approach	51.2	D	0.93
SBL	30.8	C	0.38	SBL	31.4	C	0.49
SBT	51.2	D	0.66	SBT	59.3	E	0.85
SBR	34.6	C	0.14	SBR	35.4	D	0.18
SB Approach	47.7	D	0.66	SB Approach	54.5	D	0.85
Intersection	41.8	D	-	Intersection	45.2	D	-

2028 Weekday PM Peak Hour- Study Intersections Capacity Analysis

Int #1	2028 PM No-Build (Signal, 110s)			Int #1	2028 PM Build (Signal, 110s)		
Alum Creek Drive & Groveport Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Groveport Road	Delay (s/veh)	LOS	v/c
EBR	49.1	D	0.58	EBR	49.1	D	0.58
EB Approach	49.1	D	0.58	EB Approach	49.1	D	0.58
WBR	52.0	D	0.96	WBR	52.0	D	0.96
WB Approach	52.0	D	0.96	WB Approach	52.0	D	0.96
NBL	58.6	E	0.64	NBL	60.8	E	0.64
NBT	36.6	D	0.95	NBT	37.8	D	0.95
NBR	13.6	B	0.02	NBR	13.6	B	0.02
NB Approach	37.6	D	0.95	NB Approach	38.8	D	0.95
SBL	62.2	E	0.97	SBL	62.2	E	0.97
SBT	5.3	A	0.48	SBT	5.3	A	0.48
SBR	4.4	A	0.26	SBR	4.4	A	0.26
SB Approach	18.1	B	0.97	SB Approach	18.1	B	0.97
Intersection	32.2	C	-	Intersection	32.7	C	-
Int #2	2028 PM No-Build (TWSC)			Int #2	2028 PM Build (TWSC)		
Alum Creek Drive & Rathmell Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Rathmell Road	Delay (s/veh)	LOS	v/c
EBL	-	-	-	EBL	-	-	-
EBT	2234.8	F	4.88	EBT	452.7	F	1.54
EBR	-	-	-	EBR	-	-	-
EB Approach	2234.8	F	4.88	EB Approach	452.7	F	1.54
NBL	20.3	C	0.16	NBL	46.0	E	0.33
NBT	-	-	-	NBT	-	-	-
NB Approach	20.3	C	0.16	NB Approach	46.0	E	0.33
SBT	-	-	-	SBT	-	-	-
SBR	-	-	-	SBR	-	-	-
SB Approach	-	-	-	SB Approach	-	-	-
Intersection	-	-	-	Intersection	-	-	-

Int #3	2028 PM No-Build (TWSC)			Int #3	2028 PM Build (TWSC)		
Alum Creek Drive & Bixby Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Bixby Road	Delay (s/veh)	LOS	v/c
EBR	18.0	C	0.04	EBR	24.2	C	0.06
EB Approach	18.0	C	0.04	EB Approach	24.2	C	0.06
WBR	28.7	D	0.12	WBR	47.6	E	0.23
WB Approach	28.7	D	0.12	WB Approach	47.6	E	0.23
NBT	-	-	-	NBT	-	-	-
NBR	-	-	-	NBR	-	-	-
NB Approach	-	-	-	NB Approach	-	-	-
SBT	-	-	-	SBT	-	-	-
SBR	-	-	-	SBR	-	-	-
SB Approach	-	-	-	SB Approach	-	-	-
Intersection	-	-	-	Intersection	-	-	-
Int #4	2028 PM No-Build (Signal, 110s)			Int #4	2028 PM Build (Signal, 110s)		
Alum Creek Drive & Creekside Preserve/ Toy Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Creekside Preserve/ Toy Road	Delay (s/veh)	LOS	v/c
EBL	382.8	F	1.69	EBL	45.5	D	0.66
EBT	29.7	C	0.17	EBT	37.0	D	0.23
EBR	-	-	-	EBR	-	-	-
EB Approach	321.0	F	1.69	EB Approach	44.0	D	0.66
WBL	25.6	C	0.26	WBL	39.9	D	0.37
WBT	29.0	C	0.09	WBT	44.9	D	0.23
WBR	22.2	C	0.39	WBR	10.8	D	0.68
WB Approach	23.4	C	0.39	WB Approach	18.4	D	0.68
NBL	28.3	C	0.23	NBL	18.4	B	0.18
NBT	207.4	F	1.40	NBT	27.4	C	0.97
NBR	17.1	B	0.20	NBR	11.3	B	0.20
NB Approach	192.0	F	1.40	NB Approach	26.2	C	0.97
SBL	45.1	D	0.54	SBL	21.9	C	0.41
SBT	76.4	F	1.06	SBT	22.2	C	0.63
SBR	18.8	B	0.32	SBR	18.1	B	0.31
SB Approach	65.8	E	1.06	SB Approach	21.7	C	0.63
Intersection	132.5	F	-	Intersection	28.1	C	-

Int #5	2028 PM No-Build (Signal, 110s)			Int #5	2028 PM Build (Signal, 110s)		
Alum Creek Drive & Global Court	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Global Court	Delay (s/veh)	LOS	v/c
EBL	29.0	C	0.05	EBL	29.0	C	0.05
EBT	26.8	C	0.09	EBT	26.8	C	0.09
EBR	-	-	-	EBR	-	-	-
EB Approach	27.5	C	0.09	EB Approach	27.5	C	0.09
WBL	-	-	-	WBL	-	-	-
WBT	27.2	C	0.09	WBT	27.2	C	0.09
WBR	21.5	C	0.08	WBR	21.5	C	0.08
WB Approach	24.3	C	0.09	WB Approach	24.3	C	0.09
NBL	18.0	B	0.09	NBL	13.3	B	0.08
NBT	129.0	F	1.19	NBT	42.3	D	0.83
NBR	130.0	F	1.19	NBR	45.2	D	0.83
NB Approach	128.0	F	1.19	NB Approach	42.9	D	0.83
SBL	51.2	D	0.05	SBL	51.2	D	0.05
SBT	10.2	B	0.92	SBT	8.4	A	0.65
SBR	10.1	B	0.93	SBR	10.0	A	0.65
SB Approach	10.5	B	0.93	SB Approach	9.2	A	0.65
Intersection	76.4	E	-	Intersection	28.4	C	-
Int #6	2028 PM No-Build (Signal, 110s)			Int #6	2028 PM Build (Signal, 110s)		
Alum Creek Drive & Rohr Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Rohr Road	Delay (s/veh)	LOS	v/c
EBL	48.8	D	0.67	EBL	43.3	D	0.61
EBT	39.5	F	0.95	EBT	51.8	D	0.88
EBR	-	-	-	EBR	-	-	-
EB Approach	66.4	E	0.95	EB Approach	47.6	D	0.88
WBL	32.9	C	0.27	WBL	37.7	D	0.33
WBT	47.1	D	0.64	WBT	60.0	E	0.76
WBR	181.0	F	1.26	WBR	80.0	E	0.98
WB Approach	131.7	F	1.26	WB Approach	70.7	E	0.98
NBL	16.9	B	0.27	NBL	18.7	B	0.23
NBT	24.0	C	0.87	NBT	23.0	C	0.74
NBR	0.0	A	-	NBR	0.0	A	-
NB Approach	22.5	C	0.87	NB Approach	21.6	C	0.74
SBL	21.1	C	0.65	SBL	13.3	B	0.38
SBT	17.5	B	0.67	SBT	21.8	C	0.46
SBR	0.0	A	-	SBR	0.0	A	-
SB Approach	15.9	B	0.67	SB Approach	17.2	B	0.46
Intersection	43.3	D	-	Intersection	31.1	C	-

Int #7	2028 PM No-Build (Signal, 110s)			Int #7	2028 PM Build (Signal, 110s)		
Alum Creek Drive & Spiegel Drive	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Spiegel Drive	Delay (s/veh)	LOS	v/c
EBL	21.9	C	0.45	EBL	21.9	C	0.45
EBT	18.9	B	0.32	EBT	18.9	B	0.32
EBR	-	-	-	EBR	-	-	-
EB Approach	20.6	C	0.45	EB Approach	20.6	C	0.45
WBL	22.7	C	0.08	WBL	22.7	C	0.08
WBT	16.5	B	0.06	WBT	16.5	B	0.06
WBR	19.4	B	0.37	WBR	19.4	B	0.37
WB Approach	19.4	B	0.37	WB Approach	19.4	B	0.37
NBL	21.0	C	0.24	NBL	23.7	C	0.18
NBT	34.9	C	0.89	NBT	14.0	B	0.59
NBR	35.0	C	0.89	NBR	15.3	B	0.59
NB Approach	34.3	C	0.89	NB Approach	14.9	B	0.59
SBL	36.0	D	0.71	SBL	25.2	C	0.51
SBT	48.3	D	0.95	SBT	22.4	B	0.66
SBR	47.9	D	0.95	SBR	23.5	C	0.66
SB Approach	46.6	D	0.95	SB Approach	23.1	C	0.66
Intersection	34.6	C	-	Intersection	19.6	B	-
Int #8	2028 PM No-Build (Signal, 110s)			Int #8	2028 PM Build (Signal, 110s)		
Alum Creek Drive & SR-317	Delay (s/veh)	LOS	v/c	Alum Creek Drive & SR-317	Delay (s/veh)	LOS	v/c
EBL	23.9	C	0.26	EBL	27.0	C	0.29
EBT	30.8	C	0.42	EBT	39.3	D	0.59
EBR	24.6	C	0.31	EBR	26.3	C	0.34
EB Approach	27.3	C	0.42	EB Approach	32.3	C	0.59
WBL	35.7	D	0.68	WBL	40.7	D	0.76
WBT	30.3	C	0.38	WBT	37.1	D	0.50
WBR	22.8	C	0.12	WBR	28.4	C	0.15
WB Approach	32.0	C	0.68	WB Approach	37.7	D	0.76
NBL	172.3	F	1.22	NBL	43.3	D	0.82
NBT	45.6	D	0.83	NBT	39.2	D	0.77
NBR	27.3	C	0.31	NBR	21.5	C	0.26
NB Approach	69.7	E	1.22	NB Approach	37.7	D	
SBL	32.3	C	0.60	SBL	31.8	C	0.54
SBT	53.7	D	0.82	SBT	32.4	C	0.88
SBR	36.9	D	0.29	SBR	10.4	B	0.28
SB Approach	48.7	D	0.82	SB Approach	29.2	C	0.88
Intersection	50.4	D	-	Intersection	34.2	C	-

2048 Weekday AM Peak Hour- Study Intersections Capacity Analysis

Int #1	2048 AM No-Build (Signal, 110s)			Int #1	2048 AM Build (Signal, 110s)		
Alum Creek Drive & Groveport Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Groveport Road	Delay (s/veh)	LOS	v/c
EBR	85.7	F	0.92	EBR	45.6	D	0.39
EB Approach	85.7	F	0.92	EB Approach	45.6	D	0.39
WBR	40.4	D	0.92	WBR	44.4	D	0.86
WB Approach	40.4	D	0.92	WB Approach	44.4	D	0.86
NBL	57.2	E	0.54	NBL	61.2	E	0.66
NBT	33.6	C	0.75	NBT	17.4	B	0.58
NBR	179.0	F	0.03	NBR	9.7	A	0.03
NB Approach	38.9	D	0.75	NB Approach	20.6	C	0.66
SBL	30.8	C	0.78	SBL	32.2	C	0.57
SBT	16.8	B	0.95	SBT	12.7	B	0.89
SBR	5.4	A	0.30	SBR	4.3	A	0.30
SB Approach	17.5	B	0.92	SB Approach	14.5	B	0.89
Intersection	28.3	C	-	Intersection	21.6	C	-
Int #2	2048 AM No-Build (TWSC)			Int #2	2048 AM Build (TWSC)		
Alum Creek Drive & Rathmell Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Rathmell Road	Delay (s/veh)	LOS	v/c
EBL	-	-	-	EBL	-	-	-
EBT				EBT	-	-	-
EBR	-	-	-	EBR	-	-	-
EB Approach	-	-	-	EB Approach	-	-	-
NBL	157.4	F	0.56	NBL	1029.1	F	1.94
NBT	-	-	-	NBT	-	-	-
NB Approach	157.4	F	0.56	NB Approach	1029.1	F	1.94
SBT	-	-	-	SBT	-	-	-
SBR	-	-	-	SBR	-	-	-
SB Approach	-	-	-	SB Approach	-	-	-
Intersection	-	-	-	Intersection	-	-	-

Int #3	2048 AM No-Build (TWSC)			Int #3	2048 AM Build (TWSC)		
Alum Creek Drive & Bixby Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Bixby Road	Delay (s/veh)	LOS	v/c
EBR	79.1	F	0.22	EBR	75.4	F	0.20
EB Approach	79.1	F	0.22	EB Approach	75.4	F	0.20
WBR	17.1	C	0.04	WBR	18.1	C	0.04
WB Approach	17.1	C	0.04	WB Approach	18.1	C	0.04
NBT	-	-	-	NBT	-	-	-
NBR	-	-	-	NBR	-	-	-
NB Approach	-	-	-	NB Approach	-	-	-
SBT	-	-	-	SBT	-	-	-
SBR	-	-	-	SBR	-	-	-
SB Approach	-	-	-	SB Approach	-	-	-
Intersection	-	-	-	Intersection	-	-	-
Int #4	2048 AM No-Build (Signal, 110s)			Int #4	2048 AM Build (Signal, 110s)		
Alum Creek Drive & Creekside Preserve/ Toy Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Creekside Preserve/ Toy Road	Delay (s/veh)	LOS	v/c
EBL	51.1	D	0.52	EBL	51.1	D	0.52
EBT	29.8	C	0.17	EBT	49.7	D	0.53
EBR	-	-	-	EBR	-	-	-
EB Approach	42.0	D	0.52	EB Approach	50.5	D	0.53
WBL	25.3	C	0.22	WBL	42.6	D	0.57
WBT	28.8	C	0.06	WBT	46.3	D	0.18
WBR	19.6	B	0.13	WBR	22.8	C	0.45
WB Approach	22.7	C	0.22	WB Approach	32.6	C	0.47
NBL	28.4	C	0.21	NBL	21.0	C	0.17
NBT	98.9	F	1.16	NBT	10.7	B	0.73
NBR	14.8	B	0.27	NBR	6.0	A	0.21
NB Approach	89.5	F	1.16	NB Approach	10.6	B	0.73
SBL	268.7	F	1.47	SBL	37.6	D	0.71
SBT	340.1	F	1.68	SBT	19.9	B	0.82
SBR	27.0	C	0.68	SBR	15.4	B	0.55
SB Approach	283.0	F	1.68	SB Approach	22.6	C	0.82
Intersection	213.5	F	-	Intersection	20.9	C	-

Int #5	2048 AM No-Build (Signal, 110s)			Int #5	2048 AM Build (Signal, 110s)		
Alum Creek Drive & Global Court	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Global Court	Delay (s/veh)	LOS	v/c
EBL	30.0	C	0.10	EBL	30.8	C	0.10
EBT	27.5	C	0.16	EBT	28.2	C	0.16
EBR	-	-	-	EBR	-	-	-
EB Approach	28.5	C	0.16	EB Approach	29.2	C	0.16
WBL	-	-	-	WBL	-	-	-
WBT	26.7	C	0.08	WBT	27.4	C	0.08
WBR	21.1	C	0.04	WBR	21.7	C	0.04
WB Approach	24.8	C	0.08	WB Approach	25.5	C	0.08
NBL	16.4	B	0.14	NBL	25.3	C	0.19
NBT	42.8	D	0.88	NBT	24.1	C	0.59
NBR	43.1	D	0.88	NBR	25.2	C	0.59
NB Approach	42.3	D	0.88	NB Approach	24.5	C	0.59
SBL	51.5	D	0.14	SBL	44.7	D	0.22
SBT	5.9	A	0.92	SBT	25.7	C	0.97
SBR	5.9	A	0.92	SBR	33.0	C	0.98
SB Approach	6.8	A	0.92	SB Approach	28.5	C	0.98
Intersection	23.8	C	-	Intersection	27.0	C	-
Int #6	2048 AM No-Build (Signal, 110s)			Int #6	2048 AM Build (Signal, 110s)		
Alum Creek Drive & Rohr Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Rohr Road	Delay (s/veh)	LOS	v/c
EBL	45.2	D	0.54	EBL	41.8	D	0.45
EBT	89.4	F	0.97	EBT	39.5	D	0.69
EBR	-	-	-	EBR	-	-	-
EB Approach	70.1	E	0.97	EB Approach	40.5	D	0.69
WBL	32.6	C	0.22	WBL	18.8	B	0.11
WBT	60.3	E	0.81	WBT	32.3	C	0.45
WBR	52.4	D	0.81	WBR	25.6	C	0.49
WB Approach	53.9	D	0.81	WB Approach	27.7	C	0.49
NBL	15.9	B	0.24	NBL	31.3	C	0.47
NBT	5.4	A	0.62	NBT	26.5	C	0.72
NBR	0.0	A	-	NBR	0.0	A	-
NB Approach	5.9	A	0.62	NB Approach	25.2	C	0.72
SBL	12.1	B	0.42	SBL	33.7	C	0.93
SBT	16.7	B	0.59	SBT	23.8	C	0.98
SBR	0.0	A	-	SBR	0.0	A	-
SB Approach	13.0	B	0.59	SB Approach	22.3	C	0.98
Intersection	24.5	C	-	Intersection	25.5	C	-

Int #7	2048 AM No-Build (Signal, 110s)			Int #7	2048 AM Build (Signal, 110s)		
Alum Creek Drive & Spiegel Drive	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Spiegel Drive	Delay (s/veh)	LOS	v/c
EBL	17.9	B	0.13	EBL	17.9	B	0.13
EBT	16.4	B	0.05	EBT	16.4	B	0.05
EBR	-	-	-	EBR	-	-	-
EB Approach	17.4	B	0.13	EB Approach	17.4	B	0.13
WBL	16.9	B	0.02	WBL	16.9	B	0.02
WBT	16.4	B	0.04	WBT	16.4	B	0.04
WBR	16.7	B	0.08	WBR	16.7	B	0.08
WB Approach	16.6	B	0.08	WB Approach	16.6	B	0.08
NBL	21.7	C	0.46	NBL	25.6	C	0.49
NBT	21.3	C	0.86	NBT	11.7	B	0.59
NBR	21.2	C	0.86	NBR	12.3	B	0.59
NB Approach	21.3	C	0.86	NB Approach	13.3	B	0.59
SBL	45.3	D	0.81	SBL	48.6	D	0.94
SBT	33.5	C	0.82	SBT	14.1	B	0.83
SBR	31.9	C	0.82	SBR	13.0	B	0.83
SB Approach	34.8	C	0.82	SB Approach	19.6	B	0.94
Intersection	27.1	C	-	Intersection	17.1	B	-
Int #8	2048 AM No-Build (Signal, 110s)			Int #8	2048 AM Build (Signal, 110s)		
Alum Creek Drive & SR-317	Delay (s/veh)	LOS	v/c	Alum Creek Drive & SR-317	Delay (s/veh)	LOS	v/c
EBL	24.4	C	0.33	EBL	30.2	C	0.36
EBT	30.8	C	0.43	EBT	61.9	E	0.82
EBR	25.3	C	0.37	EBR	35.2	D	0.52
EB Approach	27.3	C	0.43	EB Approach	44.5	D	0.82
WBL	32.5	C	0.62	WBL	42.8	D	0.74
WBT	29.4	C	0.30	WBT	52.5	D	0.68
WBR	22.4	C	0.08	WBR	33.2	C	0.13
WB Approach	30.4	C	0.62	WB Approach	45.3	D	0.74
NBL	41.4	D	0.73	NBL	32.7	C	0.69
NBT	80.1	F	1.04	NBT	50.8	D	0.92
NBR	26.4	C	0.25	NBR	18.1	B	0.19
NB Approach	69.3	E	1.04	NB Approach	45.0	D	0.92
SBL	30.8	C	0.39	SBL	28.1	C	0.42
SBT	51.3	D	0.67	SBT	51.8	D	0.88
SBR	34.5	C	0.14	SBR	20.4	C	0.15
SB Approach	47.9	D	0.67	SB Approach	46.7	D	0.88
Intersection	50.4	D	-	Intersection	45.6	D	-

2048 Weekday PM Peak Hour- Study Intersections Capacity Analysis

Int #1	2048 PM No-Build (Signal, 110s)			Int #1	2048 PM Build (Signal, 110s)		
Alum Creek Drive & Groveport Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Groveport Road	Delay (s/veh)	LOS	v/c
EBR	52.4	D	0.68	EBR	41.7	D	0.15
EB Approach	52.4	D	0.68	EB Approach	41.7	D	0.15
WBR	132.4	F	1.20	WBR	53.1	D	0.95
WB Approach	132.4	F	1.20	WB Approach	53.1	D	0.95
NBL	55.8	E	0.67	NBL	45.6	D	0.71
NBT	90.2	F	1.13	NBT	48.1	D	1.03
NBR	27.9	C	0.03	NBR	11.1	B	0.03
NB Approach	87.2	F	1.13	NB Approach	47.4	D	1.03
SBL	115.8	F	1.14	SBL	32.5	C	0.67
SBT	7.0	A	0.59	SBT	6.5	A	0.58
SBR	5.3	A	0.32	SBR	5.0	A	0.31
SB Approach	31.3	C	1.14	SB Approach	12.2	B	0.67
Intersection	70.8	E	-	Intersection	33.6	C	-
Int #2	2048 PM No-Build (TWSC)			Int #2	2048 PM Build (TWSC)		
Alum Creek Drive & Rathmell Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Rathmell Road	Delay (s/veh)	LOS	v/c
EBL	-	-	-	EBL	-	-	-
EBT	6354.5	F	12.77	EBT	1259.2	F	3.14
EBR	-	-	-	EBR	-	-	-
EB Approach	6354.5	F	12.77	EB Approach	1259.2	F	3.14
NBL	30.0	D	0.27	NBL	106.3	F	0.65
NBT	-	-	-	NBT	-	-	-
NB Approach	30.0	D	0.27	NB Approach	106.3	F	0.65
SBT	-	-	-	SBT	-	-	-
SBR	-	-	-	SBR	-	-	-
SB Approach	-	-	-	SB Approach	-	-	-
Intersection	-	-	-	Intersection	-	-	-
Int #3	2048 PM No-Build (TWSC)			Int #3	2048 PM Build (TWSC)		
Alum Creek Drive & Bixby Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Bixby Road	Delay (s/veh)	LOS	v/c
EBR	23.1	C	0.10	EBR	31.9	D	0.16
EB Approach	23.1	C	0.10	EB Approach	31.9	D	0.16
WBR	42.3	E	0.18	WBR	85.1	F	0.36
WB Approach	42.3	E	0.18	WB Approach	85.1	F	0.36
NBT	-	-	-	NBT	-	-	-
NBR	-	-	-	NBR	-	-	-
NB Approach	-	-	-	NB Approach	-	-	-
SBT	-	-	-	SBT	-	-	-
SBR	-	-	-	SBR	-	-	-
SB Approach	-	-	-	SB Approach	-	-	-
Intersection	-	-	-	Intersection	-	-	-

Int #4	2048 PM No-Build (Signal, 110s)			Int #4	2048 PM Build (Signal, 110s)		
Alum Creek Drive & Creekside Preserve/ Toy Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Creekside Preserve/ Toy Road	Delay (s/veh)	LOS	v/c
EBL	495.4	F	1.95	EBL	71.4	E	0.90
EBT	30.0	C	0.19	EBT	51.9	D	0.51
EBR	-	-	-	EBR	-	-	-
EB Approach	414.5	F	1.95	EB Approach	68.0	E	0.90
WBL	26.1	C	0.32	WBL	54.0	D	0.64
WBT	29.0	C	0.09	WBT	50.0	D	0.25
WBR	22.9	C	0.45	WBR	63.1	E	0.90
WB Approach	24.0	C	0.45	WB Approach	60.4	E	0.90
NBL	28.2	C	0.19	NBL	18.4	B	0.18
NBT	220.0	F	1.43	NBT	27.5	C	1.00
NBR	17.2	B	0.20	NBR	3.4	A	0.16
NB Approach	204.4	F	1.43	NB Approach	25.9	C	1.00
SBL	48.2	D	0.65	SBL	68.1	E	0.82
SBT	167.8	F	1.29	SBT	24.3	C	0.72
SBR	19.7	B	0.37	SBR	9.3	A	0.27
SB Approach	136.5	F	1.29	SB Approach	28.0	C	0.82
Intersection	172.3	F	-	Intersection	34.6	C	-
Int #5	2048 PM No-Build (Signal, 110s)			Int #5	2048 PM Build (Signal, 110s)		
Alum Creek Drive & Global Court	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Global Court	Delay (s/veh)	LOS	v/c
EBL	29.3	C	0.08	EBL	44.2	D	0.15
EBT	26.8	C	0.09	EBT	40.3	D	0.19
EBR	-	-	-	EBR	-	-	-
EB Approach	27.9	C	0.09	EB Approach	42.0	D	0.19
WBL	-	-	-	WBL	-	-	-
WBT	27.2	C	0.09	WBT	41.2	D	0.16
WBR	21.7	C	0.11	WBR	30.9	C	0.15
WB Approach	24.1	C	0.11	WB Approach	35.3	D	0.16
NBL	19.7	B	0.10	NBL	6.2	A	0.08
NBT	198.6	F	1.35	NBT	30.8	C	0.80
NBR	199.7	F	1.36	NBR	31.7	C	0.80
NB Approach	197.4	F	1.36	NB Approach	30.9	C	0.80
SBL	51.3	D	0.09	SBL	48.7	D	0.07
SBT	10.4	B	0.94	SBT	6.3	A	0.60
SBR	10.3	B	0.94	SBR	7.1	A	0.60
SB Approach	10.9	B	0.94	SB Approach	7.1	A	0.60
Intersection	119.1	F	-	Intersection	21.3	C	-

Int #6	2048 PM No-Build (Signal, 110s)			Int #6	2048 PM Build (Signal, 110s)		
Alum Creek Drive & Rohr Road	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Rohr Road	Delay (s/veh)	LOS	v/c
EBL	70.5	E	0.91	EBL	73.1	E	0.93
EBT	190.8	F	1.27	EBT	43.8	D	0.82
EBR	-	-	-	EBR	-	-	-
EB Approach	131.6	F	1.27	EB Approach	58.2	E	0.93
WBL	33.2	C	0.32	WBL	25.8	C	0.27
WBT	56.7	E	0.77	WBT	32.8	C	0.44
WBR	322.0	F	1.59	WBR	72.2	E	0.99
WB Approach	227.4	F	1.59	WB Approach	57.8	E	0.99
NBL	17.2	B	0.31	NBL	23.4	C	0.39
NBT	31.8	C	0.97	NBT	57.3	E	0.99
NBR	0.0	A	-	NBR	0.0	A	-
NB Approach	29.4	C	0.97	NB Approach	52.5	D	0.99
SBL	26.8	C	0.82	SBL	37.7	D	0.85
SBT	17.2	B	0.68	SBT	50.6	D	0.76
SBR	0.0	A	-	SBR	0.0	A	-
SB Approach	16.8	B	0.82	SB Approach	41.1	D	0.85
Intersection	76.0	E	-	Intersection	50.2	D	-
Int #7	2048 PM No-Build (Signal, 110s)			Int #7	2048 PM Build (Signal, 110s)		
Alum Creek Drive & Spiegel Drive	Delay (s/veh)	LOS	v/c	Alum Creek Drive & Spiegel Drive	Delay (s/veh)	LOS	v/c
EBL	22.8	C	0.50	EBL	54.7	D	0.83
EBT	19.4	B	0.36	EBT	37.4	D	0.62
EBR	-	-	-	EBR	-	-	-
EB Approach	21.2	C	0.50	EB Approach	46.9	D	0.83
WBL	24.0	C	0.08	WBL	44.0	D	0.18
WBT	16.5	B	0.06	WBT	30.2	C	0.10
WBR	19.8	B	0.40	WBR	40.1	D	0.69
WB Approach	19.8	B	0.40	WB Approach	39.2	D	0.69
NBL	23.0	C	0.26	NBL	16.2	B	0.17
NBT	60.1	F	1.06	NBT	4.9	A	0.50
NBR	60.1	F	1.06	NBR	5.7	A	0.50
NB Approach	58.5	E	1.06	NB Approach	5.6	A	0.50
SBL	57.7	E	0.89	SBL	11.4	B	0.41
SBT	52.2	D	0.97	SBT	34.7	C	0.50
SBR	51.7	D	0.97	SBR	38.6	D	0.50
SB Approach	52.7	D	0.97	SB Approach	32.7	C	0.50
Intersection	45.1	D	-	Intersection	27.0	C	-

Int #8	2048 PM No-Build (Signal, 110s)			Int #8	2048 PM Build (Signal, 110s)		
Alum Creek Drive & SR-317	Delay (s/veh)	LOS	v/c	Alum Creek Drive & SR-317	Delay (s/veh)	LOS	v/c
EBL	24.6	C	0.32	EBL	30.6	C	0.36
EBT	31.7	C	0.50	EBT	45.8	D	0.72
EBR	25.2	C	0.36	EBR	25.9	C	0.37
EB Approach	28.1	C	0.50	EB Approach	36.0	D	0.72
WBL	61.7	E	0.90	WBL	60.4	E	0.91
WBT	31.2	C	0.46	WBT	35.9	D	0.54
WBR	23.0	C	0.15	WBR	27.2	C	0.17
WB Approach	45.2	D	0.90	WB Approach	46.8	D	0.91
NBL	330.6	F	1.61	NBL	57.4	E	0.93
NBT	68.9	E	1.00	NBT	32.5	C	0.60
NBR	28.8	C	0.39	NBR	20.2	C	0.30
NB Approach	120.4	F	1.61	NB Approach	36.3	D	0.93
SBL	36.8	D	0.72	SBL	36.6	D	0.62
SBT	54.7	D	0.85	SBT	47.5	D	0.83
SBR	37.0	D	0.29	SBR	30.5	C	0.38
SB Approach	50.0	D	0.85	SB Approach	43.8	D	0.83
Intersection	73.3	E	-	Intersection	40.3	D	-

APPENDIX

F. Synchro Analysis Capacity Reports

HCM Signalized Intersection Capacity Analysis
14: Alum Creek & Groveport Rd

04/18/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	210	0	0	710	80	1000	20	390	2190	300
Future Volume (vph)	0	0	210	0	0	710	80	1000	20	390	2190	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor			1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.86			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)			1429			2584	1467	4217	1313	1626	4673	1455
Flt Permitted			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)			1429			2584	1467	4217	1313	1626	4673	1455
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	0	0	259	0	0	877	99	1235	25	481	2704	370
RTOR Reduction (vph)	0	0	65	0	0	31	0	0	12	0	0	101
Lane Group Flow (vph)	0	0	194	0	0	846	99	1235	13	481	2704	269
Heavy Vehicles (%)	15%	15%	15%	10%	10%	10%	23%	23%	23%	11%	11%	11%
Turn Type			Perm			Perm	Prot	NA	Prot	Prot	NA	Prot
Protected Phases							5	2	2	1	6	6
Permitted Phases			5			1						
Actuated Green, G (s)			18.9			42.7	18.9	56.3	56.3	42.7	80.1	80.1
Effective Green, g (s)			18.9			42.7	18.9	56.3	56.3	42.7	80.1	80.1
Actuated g/C Ratio			0.17			0.39	0.17	0.51	0.51	0.39	0.73	0.73
Clearance Time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)			3.0			3.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)			245			1003	252	2158	672	631	3402	1059
v/s Ratio Prot							0.07	0.29	0.01	0.30	c0.58	0.19
v/s Ratio Perm			0.14			c0.33						
v/c Ratio			0.79			0.84	0.39	0.57	0.02	0.76	0.79	0.25
Uniform Delay, d1			43.6			30.6	40.5	18.5	13.2	29.2	9.6	5.0
Progression Factor			1.00			1.00	1.41	1.28	1.00	1.00	1.00	1.00
Incremental Delay, d2			15.8			6.6	0.9	1.0	0.0	5.4	2.0	0.6
Delay (s)			59.4			37.2	57.9	24.7	13.3	34.7	11.7	5.6
Level of Service			E			D	E	C	B	C	B	A
Approach Delay (s)		59.4			37.2			26.9			14.1	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
14: Alum Creek & Groveport Rd

04/18/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	170	0	0	970	130	2060	30	550	1530	340
Future Volume (vph)	0	0	170	0	0	970	130	2060	30	550	1530	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor			1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.86			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)			1429			2682	1583	4550	1417	1530	4396	1369
Flt Permitted			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)			1429			2682	1583	4550	1417	1530	4396	1369
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	181	0	0	1032	138	2191	32	585	1628	362
RTOR Reduction (vph)	0	0	68	0	0	15	0	0	16	0	0	85
Lane Group Flow (vph)	0	0	113	0	0	1017	138	2191	16	585	1628	277
Heavy Vehicles (%)	15%	15%	15%	6%	6%	6%	14%	14%	14%	18%	18%	18%
Turn Type			Perm			Perm	Prot	NA	Prot	Prot	NA	Prot
Protected Phases							5	2	2	1	6	6
Permitted Phases			5			1						
Actuated Green, G (s)			14.9			43.3	14.9	55.7	55.7	43.3	84.1	84.1
Effective Green, g (s)			14.9			43.3	14.9	55.7	55.7	43.3	84.1	84.1
Actuated g/C Ratio			0.14			0.39	0.14	0.51	0.51	0.39	0.76	0.76
Clearance Time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)			3.0			3.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)			193			1055	214	2303	717	602	3360	1046
v/s Ratio Prot							0.09	c0.48	0.01	c0.38	0.37	0.20
v/s Ratio Perm			0.08			0.38						
v/c Ratio			0.58			0.96	0.64	0.95	0.02	0.97	0.48	0.26
Uniform Delay, d1			44.6			32.6	45.0	25.9	13.6	32.7	4.8	3.8
Progression Factor			1.00			1.00	1.21	1.13	1.00	1.00	1.00	1.00
Incremental Delay, d2			4.4			19.4	4.3	7.4	0.0	29.5	0.5	0.6
Delay (s)			49.1			52.0	58.6	36.6	13.6	62.2	5.3	4.4
Level of Service			D			D	E	D	B	E	A	A
Approach Delay (s)		49.1			52.0			37.6			18.1	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
14: Alum Creek & Groveport Rd

04/18/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	220	0	0	880	100	1150	30	460	2600	350
Future Volume (vph)	0	0	220	0	0	880	100	1150	30	460	2600	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor			1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.86			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)			1429			2584	1467	4217	1313	1626	4673	1455
Flt Permitted			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)			1429			2584	1467	4217	1313	1626	4673	1455
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	0	0	272	0	0	1086	123	1420	37	568	3210	432
RTOR Reduction (vph)	0	0	67	0	0	14	0	0	20	0	0	103
Lane Group Flow (vph)	0	0	205	0	0	1072	123	1420	17	568	3210	329
Heavy Vehicles (%)	15%	15%	15%	10%	10%	10%	23%	23%	23%	11%	11%	11%
Turn Type			Perm			Perm	Prot	NA	Prot	Prot	NA	Prot
Protected Phases							5	2	2	1	6	6
Permitted Phases			5			1						
Actuated Green, G (s)			17.1			49.5	17.1	49.5	49.5	49.5	81.9	81.9
Effective Green, g (s)			17.1			49.5	17.1	49.5	49.5	49.5	81.9	81.9
Actuated g/C Ratio			0.16			0.45	0.16	0.45	0.45	0.45	0.74	0.74
Clearance Time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)			3.0			3.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)			222			1162	228	1897	590	731	3479	1083
v/s Ratio Prot							0.08	0.34	0.01	0.35	c0.69	0.23
v/s Ratio Perm			0.14			c0.41						
v/c Ratio			0.92			0.92	0.54	0.75	0.03	0.78	0.92	0.30
Uniform Delay, d1			45.8			28.5	42.8	25.1	16.9	25.6	11.5	4.6
Progression Factor			1.00			1.00	1.29	1.25	10.62	1.00	1.00	1.00
Incremental Delay, d2			39.9			12.0	2.0	2.3	0.1	5.2	5.4	0.7
Delay (s)			85.7			40.4	57.2	33.6	179.0	30.8	16.8	5.4
Level of Service			F			D	E	C	F	C	B	A
Approach Delay (s)		85.7			40.4			38.9			17.5	
Approach LOS		F			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
14: Alum Creek & Groveport Rd

04/18/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	200	0	0	1210	150	2430	40	650	1830	400
Future Volume (vph)	0	0	200	0	0	1210	150	2430	40	650	1830	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor			1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.86			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)			1429			2682	1583	4550	1417	1530	4396	1369
Flt Permitted			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)			1429			2682	1583	4550	1417	1530	4396	1369
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	213	0	0	1287	160	2585	43	691	1947	426
RTOR Reduction (vph)	0	0	67	0	0	15	0	0	21	0	0	102
Lane Group Flow (vph)	0	0	146	0	0	1272	160	2585	22	691	1947	324
Heavy Vehicles (%)	15%	15%	15%	6%	6%	6%	14%	14%	14%	18%	18%	18%
Turn Type			Perm			Perm	Prot	NA	Prot	Prot	NA	Prot
Protected Phases							5	2	2	1	6	6
Permitted Phases			5			1						
Actuated Green, G (s)			16.6			43.5	16.6	55.5	55.5	43.5	82.4	82.4
Effective Green, g (s)			16.6			43.5	16.6	55.5	55.5	43.5	82.4	82.4
Actuated g/C Ratio			0.15			0.40	0.15	0.50	0.50	0.40	0.75	0.75
Clearance Time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)			3.0			3.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)			215			1060	238	2295	714	605	3293	1025
v/s Ratio Prot							0.10	c0.57	0.02	0.45	0.44	0.24
v/s Ratio Perm			0.10			c0.47						
v/c Ratio			0.68			1.20	0.67	1.13	0.03	1.14	0.59	0.32
Uniform Delay, d1			44.2			33.2	44.1	27.2	13.7	33.2	6.2	4.5
Progression Factor			1.00			1.00	1.18	1.11	2.03	1.00	1.00	1.00
Incremental Delay, d2			8.2			99.2	3.5	60.0	0.0	82.5	0.8	0.8
Delay (s)			52.4			132.4	55.8	90.2	27.9	115.8	7.0	5.3
Level of Service			D			F	E	F	C	F	A	A
Approach Delay (s)		52.4			132.4			87.2			31.3	
Approach LOS		D			F			F			C	

Intersection Summary			
HCM 2000 Control Delay	70.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
14: Alum Creek & Groveport Rd

04/17/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	210	0	0	710	80	1000	20	390	2190	300
Future Volume (vph)	0	0	210	0	0	710	80	1000	20	390	2190	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor			1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.86			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)			1429			2584	1467	4217	1313	1626	4673	1455
Flt Permitted			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)			1429			2584	1467	4217	1313	1626	4673	1455
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	0	0	259	0	0	877	99	1235	25	481	2704	370
RTOR Reduction (vph)	0	0	73	0	0	40	0	0	12	0	0	98
Lane Group Flow (vph)	0	0	186	0	0	837	99	1235	13	481	2704	272
Heavy Vehicles (%)	15%	15%	15%	10%	10%	10%	23%	23%	23%	11%	11%	11%
Turn Type			Perm			Perm	Prot	NA	Prot	Prot	NA	Prot
Protected Phases							5	2	2	1	6	6
Permitted Phases			5			1						
Actuated Green, G (s)			15.8			37.4	15.8	52.6	52.6	37.4	74.2	74.2
Effective Green, g (s)			15.8			37.4	15.8	52.6	52.6	37.4	74.2	74.2
Actuated g/C Ratio			0.16			0.37	0.16	0.52	0.52	0.37	0.73	0.73
Clearance Time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)			3.0			3.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)			223			956	229	2196	683	602	3433	1068
v/s Ratio Prot							0.07	0.29	0.01	0.30	c0.58	0.19
v/s Ratio Perm			0.13			c0.32						
v/c Ratio			0.84			0.88	0.43	0.56	0.02	0.80	0.79	0.25
Uniform Delay, d1			41.3			29.6	38.5	16.4	11.7	28.4	8.4	4.4
Progression Factor			1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2			22.9			9.0	1.3	1.0	0.1	7.3	1.9	0.6
Delay (s)			64.2			38.6	39.9	17.4	11.8	35.8	10.3	4.9
Level of Service			E			D	D	B	B	D	B	A
Approach Delay (s)		64.2			38.6			19.0			13.2	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
14: Alum Creek & Groveport Rd

04/17/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	170	0	0	970	130	2060	30	550	1530	340
Future Volume (vph)	0	0	170	0	0	970	130	2060	30	550	1530	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor			1.00			0.88	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.86			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)			1429			2682	1583	4550	1417	1530	4396	1369
Flt Permitted			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)			1429			2682	1583	4550	1417	1530	4396	1369
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	181	0	0	1032	138	2191	32	585	1628	362
RTOR Reduction (vph)	0	0	68	0	0	15	0	0	16	0	0	85
Lane Group Flow (vph)	0	0	113	0	0	1017	138	2191	16	585	1628	277
Heavy Vehicles (%)	15%	15%	15%	6%	6%	6%	14%	14%	14%	18%	18%	18%
Turn Type			Perm			Perm	Prot	NA	Prot	Prot	NA	Prot
Protected Phases							5	2	2	1	6	6
Permitted Phases			5			1						
Actuated Green, G (s)			14.9			43.3	14.9	55.7	55.7	43.3	84.1	84.1
Effective Green, g (s)			14.9			43.3	14.9	55.7	55.7	43.3	84.1	84.1
Actuated g/C Ratio			0.14			0.39	0.14	0.51	0.51	0.39	0.76	0.76
Clearance Time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)			3.0			3.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)			193			1055	214	2303	717	602	3360	1046
v/s Ratio Prot							0.09	c0.48	0.01	c0.38	0.37	0.20
v/s Ratio Perm			0.08			0.38						
v/c Ratio			0.58			0.96	0.64	0.95	0.02	0.97	0.48	0.26
Uniform Delay, d1			44.6			32.6	45.0	25.9	13.6	32.7	4.8	3.8
Progression Factor			1.00			1.00	1.25	1.17	1.00	1.00	1.00	1.00
Incremental Delay, d2			4.4			19.4	4.4	7.5	0.0	29.5	0.5	0.6
Delay (s)			49.1			52.0	60.8	37.8	13.6	62.2	5.3	4.4
Level of Service			D			D	E	D	B	E	A	A
Approach Delay (s)		49.1			52.0			38.8			18.1	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
14: Alum Creek & Groveport Rd

04/17/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	220	0	0	880	100	1150	30	460	2600	350
Future Volume (vph)	0	0	220	0	0	880	100	1150	30	460	2600	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor			1.00			0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frt			0.86			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)			1429			2584	1467	4217	1313	3155	4673	1455
Flt Permitted			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)			1429			2584	1467	4217	1313	3155	4673	1455
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	0	0	272	0	0	1086	123	1420	37	568	3210	432
RTOR Reduction (vph)	0	0	202	0	0	385	0	0	15	0	0	98
Lane Group Flow (vph)	0	0	70	0	0	701	123	1420	22	568	3210	334
Heavy Vehicles (%)	15%	15%	15%	10%	10%	10%	23%	23%	23%	11%	11%	11%
Turn Type			Perm			Perm	Prot	NA	Prot	Prot	NA	Prot
Protected Phases							5	2	2	1	6	6
Permitted Phases			5			1						
Actuated Green, G (s)			13.9			34.7	13.9	64.3	64.3	34.7	85.1	85.1
Effective Green, g (s)			13.9			34.7	13.9	64.3	64.3	34.7	85.1	85.1
Actuated g/C Ratio			0.13			0.32	0.13	0.58	0.58	0.32	0.77	0.77
Clearance Time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)			3.0			3.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)			180			815	185	2465	767	995	3615	1125
v/s Ratio Prot							0.08	0.34	0.02	0.18	c0.69	0.23
v/s Ratio Perm			0.05			c0.27						
v/c Ratio			0.39			0.86	0.66	0.58	0.03	0.57	0.89	0.30
Uniform Delay, d1			44.2			35.4	45.8	14.3	9.7	31.4	9.0	3.7
Progression Factor			1.00			1.00	1.16	1.15	1.00	1.00	1.00	1.00
Incremental Delay, d2			1.4			9.0	8.0	0.9	0.1	0.8	3.7	0.7
Delay (s)			45.6			44.4	61.2	17.4	9.7	32.2	12.7	4.3
Level of Service			D			D	E	B	A	C	B	A
Approach Delay (s)		45.6			44.4			20.6			14.5	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
14: Alum Creek & Groveport Rd

04/17/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	200	0	0	1210	150	2440	40	650	1830	400
Future Volume (vph)	0	0	200	0	0	1210	150	2440	40	650	1830	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lane Util. Factor			1.00			0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frt			0.86			0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)			1429			2682	1583	4550	1417	2968	4396	1369
Flt Permitted			1.00			1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)			1429			2682	1583	4550	1417	2968	4396	1369
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	213	0	0	1287	160	2596	43	691	1947	426
RTOR Reduction (vph)	0	0	183	0	0	409	0	0	19	0	0	103
Lane Group Flow (vph)	0	0	30	0	0	878	160	2596	24	691	1947	323
Heavy Vehicles (%)	15%	15%	15%	6%	6%	6%	14%	14%	14%	18%	18%	18%
Turn Type			Perm			Perm	Prot	NA	Prot	Prot	NA	Prot
Protected Phases							5	2	2	1	6	6
Permitted Phases			5			1						
Actuated Green, G (s)			15.6			38.0	15.6	61.0	61.0	38.0	83.4	83.4
Effective Green, g (s)			15.6			38.0	15.6	61.0	61.0	38.0	83.4	83.4
Actuated g/C Ratio			0.14			0.35	0.14	0.55	0.55	0.35	0.76	0.76
Clearance Time (s)			5.5			5.5	5.5	5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)			3.0			3.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)			202			926	224	2523	785	1025	3332	1037
v/s Ratio Prot							0.10	c0.57	0.02	0.23	0.44	0.24
v/s Ratio Perm			0.02			c0.33						
v/c Ratio			0.15			0.95	0.71	1.03	0.03	0.67	0.58	0.31
Uniform Delay, d1			41.4			35.0	45.1	24.5	11.1	30.7	5.8	4.2
Progression Factor			1.00			1.00	0.90	1.13	1.00	1.00	1.00	1.00
Incremental Delay, d2			0.3			18.1	4.9	20.4	0.0	1.8	0.8	0.8
Delay (s)			41.7			53.1	45.6	48.1	11.1	32.5	6.5	5.0
Level of Service			D			D	D	D	B	C	A	A
Approach Delay (s)		41.7			53.1			47.4			12.2	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX

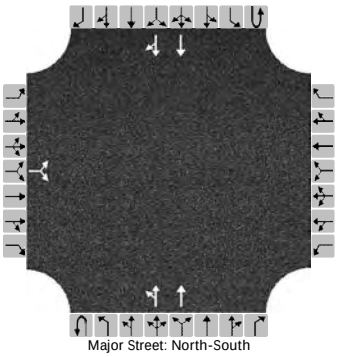
G. HCS-7 Analysis Capacity Reports

HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Rathmell
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Rathmell Road
Analysis Year	2022	North/South Street	Alum Creek Drive
Time Analyzed	AM Adjusted	Peak Hour Factor	0.79
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	2	0	0	0	2	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		40		10						20	1060				2350	50
Percent Heavy Vehicles (%)		13		13						20						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		7.06		7.16						4.50						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.63		3.43						2.40						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			63							25						
Capacity, c (veh/h)										78						
v/c Ratio										0.32						
95% Queue Length, Q_{95} (veh)										1.2						
Control Delay (s/veh)										71.3						
Level of Service (LOS)										F						
Approach Delay (s/veh)									1.3							
Approach LOS																

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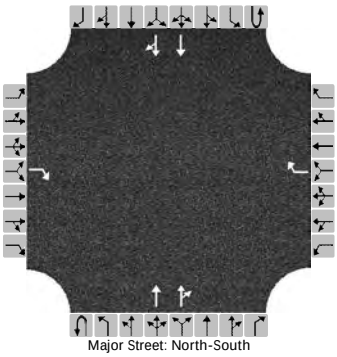
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Bixby
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Bixby Road
Analysis Year	2028	North/South Street	Alum Creek Drive
Time Analyzed	AM Projections	Peak Hour Factor	0.75
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	0	2	0	0	0	2	0
Configuration				R				R			T	TR			T	TR
Volume (veh/h)				10				10			1070	10			2340	20
Percent Heavy Vehicles (%)				3				3								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				6.9				6.9								
Critical Headway (sec)				6.96				6.96								
Base Follow-Up Headway (sec)				3.3				3.3								
Follow-Up Headway (sec)				3.33				3.33								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				13				13								
Capacity, c (veh/h)				98				368								
v/c Ratio				0.14				0.04								
95% Queue Length, Q_{95} (veh)				0.5				0.1								
Control Delay (s/veh)				47.4				15.1								
Level of Service (LOS)				E				C								
Approach Delay (s/veh)	47.4				15.1											
Approach LOS	E				C											

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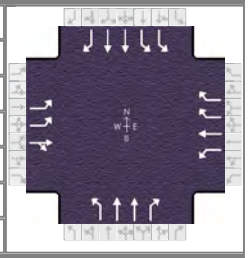
HCS7 Signalized Intersection Results Summary

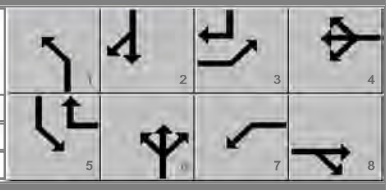
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.79
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Creekside Parkway/ Toy…	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	40	20	60	20	80	30	930	90	450	1570	330

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	5.0	37.0	7.0	31.1	0.0
Yellow	3.0	4.0	5.0	3.0	3.6	0.0
Red	0.0	0.0	1.0	1.0	2.3	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	11.0	37.0	11.0	37.0	10.0	43.0	19.0	52.0
Change Period, ($Y+R_c$), s	4.0	5.9	4.0	5.9	3.0	6.0	4.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s	5.1	6.1	5.9	4.9	3.6		17.0	
Green Extension Time (g_e), s	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	0.38		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	89	76		76	25	101	34	1064	103	570	1987	418
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1524	1555		1485	1559	1169	1541	1541	1372	1647	1696	1510
Queue Service Time (g_s), s	3.1	4.1		3.9	1.3	2.9	1.6	37.0	2.7	15.0	46.0	21.8
Cycle Queue Clearance Time (g_c), s	3.1	4.1		3.9	1.3	2.9	1.6	37.0	2.7	15.0	46.0	21.8
Green Ratio (*g/C*)	0.06	0.28		0.35	0.28	0.42	0.40	0.34	0.34	0.14	0.42	0.48
Capacity (*c*), veh/h	194	440		411	441	980	164	1036	461	449	1418	727
Volume-to-Capacity Ratio (*X*)	0.457	0.173		0.185	0.057	0.103	0.210	1.027	0.223	1.268	1.401	0.574
Back of Queue (*Q*), ft/ln (50 th percentile)	33.5	42.8		40.1	14.4	22.9	15.6	242.9	22.6	382.6	1415	199.1
Back of Queue (*Q*), veh/ln (50 th percentile)	1.2	1.5		1.4	0.5	0.8	0.5	8.4	0.8	14.4	53.2	7.5
Queue Storage Ratio (*RQ*) (50 th percentile)	0.14	0.00		0.32	0.00	0.08	0.03	0.00	0.06	0.85	0.00	0.33
Uniform Delay (d_1), s/veh	49.7	29.7		24.9	28.8	19.4	28.3	16.1	10.5	47.5	32.0	20.4
Incremental Delay (d_2), s/veh	0.6	0.1		0.1	0.0	0.0	0.1	28.3	0.6	137.2	184.8	3.3
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	50.3	29.8		25.0	28.8	19.4	28.4	44.4	11.2	184.7	216.8	23.7
Level of Service (LOS)	D	C		C	C	B	C	F	B	F	F	C
Approach Delay, s/veh / LOS	40.8	D		22.7	C		41.1	D		183.5	F	
Intersection Delay, s/veh / LOS	133.5						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.59	C	2.44	B	2.11	B
Bicycle LOS Score / LOS	0.76	A	0.82	A	1.58	B	2.94	C

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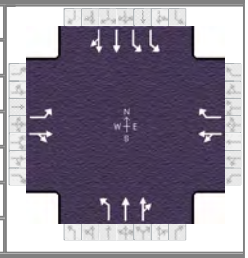
HCS7 Signalized Intersection Results Summary

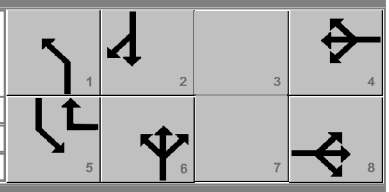
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.88
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Global Court	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	10	20	10	10	10	30	1020	20	30	1570	50

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	12	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	8.0	1.0	52.0	34.4	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		7.0	1.1	4.0	2.0	4.0
Phase Duration, s		39.0		39.0	12.0	58.0	13.0	59.0
Change Period, ($Y+R_c$), s		4.6		4.6	4.0	6.0	5.0	6.0
Max Allow Headway (*MAH*), s		4.1		4.1	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		9.2		6.0	3.2		3.0	
Green Extension Time (g_e), s		0.2		0.3	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.02		0.01	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	23	34			23	11	34	597	593	28	749	743
Adjusted Saturation Flow Rate (*s*), veh/h/ln	580	691			781	819	1555	1633	1622	1579	1707	1689
Queue Service Time (g_s), s	3.2	3.9			0.1	1.0	1.2	36.2	36.3	1.0	23.3	23.3
Cycle Queue Clearance Time (g_c), s	7.2	3.9			4.0	1.0	1.2	36.2	36.3	1.0	23.3	23.3
Green Ratio (*g/C*)	0.31	0.31			0.31	0.39	0.55	0.47	0.47	0.07	0.48	0.48
Capacity (*c*), veh/h	226	216			293	316	256	772	767	230	823	814
Volume-to-Capacity Ratio (*X*)	0.101	0.158			0.077	0.036	0.134	0.774	0.774	0.120	0.910	0.913
Back of Queue (*Q*), ft/ln (50 th percentile)	18.2	26.1			15.8	6.8	10.5	441.1	385	10.1	50.9	45
Back of Queue (*Q*), veh/ln (50 th percentile)	0.5	0.6			0.4	0.2	0.4	15.4	15.4	0.4	1.8	1.8
Queue Storage Ratio (*RQ*) (50 th percentile)	0.06	0.00			0.00	0.02	0.04	0.00	0.00	0.03	0.00	0.00
Uniform Delay (d_1), s/veh	30.0	27.3			26.6	21.1	15.4	31.5	31.7	51.5	3.1	3.0
Incremental Delay (d_2), s/veh	0.1	0.1			0.0	0.0	0.1	6.0	6.1	0.0	1.9	2.0
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	30.0	27.5			26.7	21.1	15.4	37.5	37.8	51.5	5.0	5.0
Level of Service (LOS)	C	C			C	C	B	D	D	D	A	A
Approach Delay, s/veh / LOS	28.5	C		24.8	C		37.0	D		5.8	A	
Intersection Delay, s/veh / LOS	20.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.29	B	2.44	B	2.10	B	1.91	B
Bicycle LOS Score / LOS	0.58	A	0.54	A	1.49	A	2.03	B

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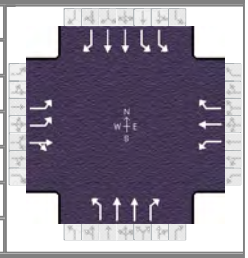
HCS7 Signalized Intersection Results Summary

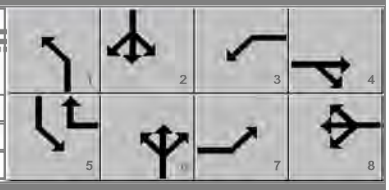
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.83
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Rohr Road	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	130	90	90	50	150	180	60	760	50	360	980	260

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	48	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	52.0	11.0	1.0	17.7
Yellow	3.0	0.0	5.0	3.0	3.0	4.3
Red	0.0	0.0	1.0	0.0	0.0	1.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	18.0	27.0	14.0	23.0	10.0	58.0	11.0	59.0
Change Period, ($Y+R_c$), s	3.0	5.3	3.0	5.3	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	7.7	18.5	5.2	17.3	4.3		8.2	
Green Extension Time (g_e), s	0.2	0.5	0.0	0.1	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.00	1.00	0.02	1.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	157	217		60	181	217	67	851	56	333	907	241
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1387	1376		1584	1663	1409	1570	1569		1579	1625	
Queue Service Time (g_s), s	5.7	16.5		3.2	11.3	15.3	2.3	7.5		6.2	19.5	
Cycle Queue Clearance Time (g_c), s	5.7	16.5		3.2	11.3	15.3	2.3	7.5		6.2	19.5	
Green Ratio (*g/C*)	0.14	0.20		0.26	0.16	0.23	0.54	0.47		0.55	0.48	
Capacity (*c*), veh/h	378	271		254	268	329	321	1483		839	1566	
Volume-to-Capacity Ratio (*X*)	0.414	0.799		0.237	0.675	0.659	0.210	0.574		0.397	0.579	
Back of Queue (*Q*), ft/ln (50 th percentile)	59.2	200.4		34.6	140.1	156.5	23.6	46		49.2	175.6	
Back of Queue (*Q*), veh/ln (50 th percentile)	1.9	6.6		1.2	5.0	5.5	0.8	1.6		1.8	6.4	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.20	0.00		0.07	0.00	0.31	0.06	0.00		0.10	0.00	
Uniform Delay (d_1), s/veh	43.5	42.1		32.2	43.4	38.2	15.5	4.1		11.8	16.2	
Incremental Delay (d_2), s/veh	0.3	14.3		0.2	5.4	3.8	0.1	1.0		0.0	0.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	43.7	56.4		32.4	48.9	42.0	15.6	5.1	0.0	11.9	16.7	0.0
Level of Service (LOS)	D	E		C	D	D	B	A	A	B	B	A
Approach Delay, s/veh / LOS	51.1	D		43.5	D		5.6	A		12.9	B	
Intersection Delay, s/veh / LOS	19.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.60	C	2.27	B	2.10	B
Bicycle LOS Score / LOS	1.10	A	1.24	A	1.35	A	2.08	B

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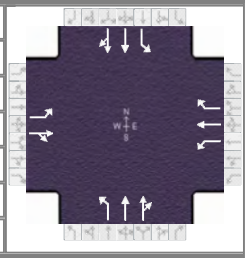
HCS7 Signalized Intersection Results Summary

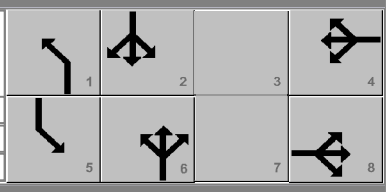
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.84
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Spiegel Drive	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	60	10	20	10	30	40	80	770	40	180	720	220

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	27	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	36.0	50.6	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.8	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		5.0	1.1	4.0	1.1	4.0
Phase Duration, s		56.0		56.0	12.0	43.0	11.0	42.0
Change Period, ($Y+R_c$), s		5.4		5.4	4.2	6.0	4.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		6.7		3.9	5.7		9.0	
Green Extension Time (g_e), s		0.4		0.4	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	71	36		12	36	48	89	454	446	173	470	432
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1296	1577		1351	1841	1560	1598	1678	1648	1682	1767	1624
Queue Service Time (g_s), s	3.5	1.4		0.5	1.2	1.9	3.7	22.7	22.6	7.0	24.4	23.7
Cycle Queue Clearance Time (g_c), s	4.7	1.4		1.9	1.2	1.9	3.7	22.7	22.6	7.0	24.4	23.7
Green Ratio (*g/C*)	0.46	0.46		0.46	0.46	0.46	0.40	0.34	0.34	0.39	0.33	0.33
Capacity (*c*), veh/h	648	726		670	847	718	237	564	554	238	578	531
Volume-to-Capacity Ratio (*X*)	0.110	0.049		0.018	0.042	0.066	0.375	0.804	0.805	0.726	0.813	0.813
Back of Queue (*Q*), ft/ln (50 th percentile)	27.9	13.2		4.3	12.6	17	31.5	168.5	164.9	91.7	226.1	192.2
Back of Queue (*Q*), veh/ln (50 th percentile)	1.0	0.5		0.2	0.5	0.7	1.1	6.0	5.9	3.4	8.4	7.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.09	0.00		0.01	0.00	0.03	0.09	0.00	0.00	0.20	0.00	0.00
Uniform Delay (d_1), s/veh	17.7	16.4		16.9	16.4	16.5	20.1	18.4	18.3	28.9	23.8	21.4
Incremental Delay (d_2), s/veh	0.0	0.0		0.0	0.0	0.0	0.2	5.9	6.0	7.4	9.6	10.3
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	17.7	16.4		16.9	16.4	16.6	20.3	24.4	24.3	36.2	33.3	31.8
Level of Service (LOS)	B	B		B	B	B	C	C	C	D	C	C
Approach Delay, s/veh / LOS	17.3	B		16.5	B		24.0	C		33.2	C	
Intersection Delay, s/veh / LOS	27.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.27	B	2.27	B	2.12	B	1.93	B
Bicycle LOS Score / LOS	0.66	A	0.64	A	1.36	A	1.59	B

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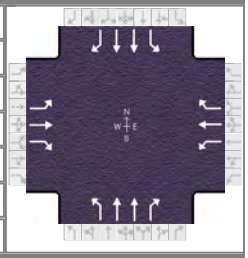
HCS7 Signalized Intersection Results Summary

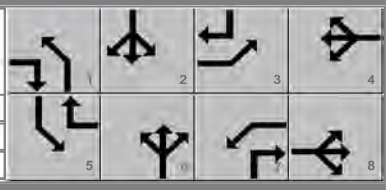
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.90
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	London-Groveport Road	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110	170	140	180	120	40	130	740	90	70	610	70

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.5	31.4	7.5	33.4	0.0	0.0
Yellow	4.7	5.6	4.7	5.6	0.0	0.0
Red	3.8	1.0	3.8	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	16.0	40.0	16.0	40.0	16.0	38.0	16.0	38.0
Change Period, ($Y+R_c$), s	8.5	6.6	8.5	6.6	8.5	6.6	8.5	6.6
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	7.9	12.0	9.5	8.4	9.3		5.3	
Green Extension Time (g_e), s	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	122	189	156	200	133	44	144	822	100	68	591	68
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1555	1633	1384	1654	1737	1472	1555	1555	1384	1570	1569	1397
Queue Service Time (g_s), s	5.9	10.0	8.7	7.5	6.4	2.2	7.3	28.3	5.5	3.3	20.7	4.8
Cycle Queue Clearance Time (g_c), s	5.9	10.0	8.7	7.5	6.4	2.2	7.3	28.3	5.5	3.3	20.7	4.8
Green Ratio (*g/C*)	0.37	0.30	0.37	0.37	0.30	0.37	0.35	0.29	0.35	0.35	0.29	0.35
Capacity (*c*), veh/h	421	496	515	394	527	547	229	888	489	179	896	494
Volume-to-Capacity Ratio (*X*)	0.290	0.381	0.302	0.508	0.253	0.081	0.631	0.926	0.204	0.380	0.660	0.137
Back of Queue (*Q*), ft/ln (50 th percentile)	61.3	111.8	81.1	29.8	71.8	20.1	83.3	359	54.9	55	262.3	70.9
Back of Queue (*Q*), veh/ln (50 th percentile)	2.1	3.9	2.8	1.1	2.6	0.7	2.9	12.6	1.9	1.9	9.2	2.5
Queue Storage Ratio (*RQ*) (50 th percentile)	0.12	0.00	0.16	0.06	0.00	0.04	0.14	0.00	0.15	0.11	0.00	0.18
Uniform Delay (d_1), s/veh	23.9	30.2	24.5	27.5	28.9	22.4	28.2	38.2	24.8	30.5	49.1	34.2
Incremental Delay (d_2), s/veh	0.1	0.2	0.1	0.4	0.1	0.0	4.2	16.9	0.9	0.3	2.1	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	24.1	30.3	24.6	28.0	29.0	22.4	32.5	55.1	25.7	30.8	51.2	34.6
Level of Service (LOS)	C	C	C	C	C	C	C	E	C	C	D	C
Approach Delay, s/veh / LOS	26.8	C		27.7	C		49.2	D		47.7	D	
Intersection Delay, s/veh / LOS	41.8						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.44	B	2.12	B	2.12	B
Bicycle LOS Score / LOS	1.26	A	1.11	A	1.37	A	1.18	A

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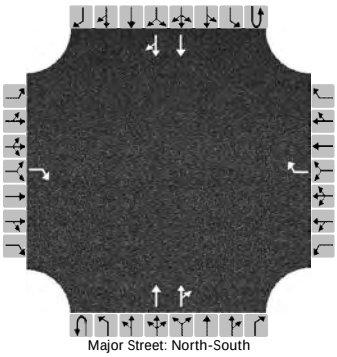
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Bixby
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Bixby Road
Analysis Year	2028	North/South Street	Alum Creek Drive
Time Analyzed	PM Projections	Peak Hour Factor	0.93
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	0	2	0	0	0	2	0
Configuration				R				R			T	TR			T	TR
Volume (veh/h)				10				20			2200	80			1540	20
Percent Heavy Vehicles (%)				13				0								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				6.9				6.9								
Critical Headway (sec)				7.16				6.90								
Base Follow-Up Headway (sec)				3.3				3.3								
Follow-Up Headway (sec)				3.43				3.30								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				11				22								
Capacity, c (veh/h)				287				173								
v/c Ratio				0.04				0.12								
95% Queue Length, Q_{95} (veh)				0.1				0.4								
Control Delay (s/veh)				18.0				28.7								
Level of Service (LOS)				C				D								
Approach Delay (s/veh)	18.0				28.7											
Approach LOS	C				D											

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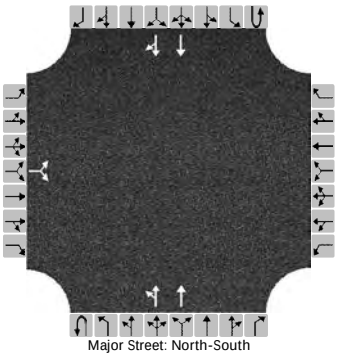
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Rathmell
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Rathmell Road
Analysis Year	2028	North/South Street	Alum Creek Drive
Time Analyzed	PM Projections	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	2	0	0	0	2	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		40		30						40	2180				1530	170
Percent Heavy Vehicles (%)		8		8						14						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.96		7.06						4.38						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.58		3.38						2.34						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			76							43						
Capacity, c (veh/h)			16							279						
v/c Ratio			4.88							0.16						
95% Queue Length, Q_{95} (veh)			10.3							0.5						
Control Delay (s/veh)			2234.8							20.3						
Level of Service (LOS)			F							C						
Approach Delay (s/veh)	2234.8								0.4							
Approach LOS	F															

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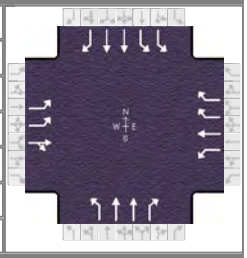
HCS7 Signalized Intersection Results Summary

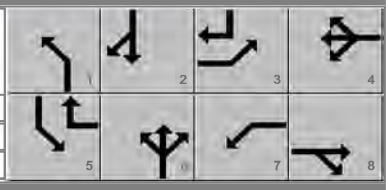
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.93
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Creekside Parkway/ Toy…	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	330	30	40	110	40	390	40	1560	100	190	1180	180

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	5.0	37.0	7.0	31.1	0.0
Yellow	3.0	4.0	5.0	3.0	3.6	0.0
Red	0.0	0.0	1.0	1.0	2.3	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	11.0	37.0	11.0	37.0	10.0	43.0	19.0	52.0
Change Period, ($Y+R_c$), s	4.0	5.9	4.0	5.9	3.0	6.0	4.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.3	3.1	3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s	9.0	5.9	7.6	14.4	3.7		9.6	
Green Extension Time (g_e), s	0.0	1.4	0.0	1.3	0.0	0.0	0.2	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	0.50		0.04	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	355	75		118	43	419	37	1442	92	204	1269	194
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1647	1615		1640	1722	1292	1527	1527	1359	1387	1428	1271
Queue Service Time (g_s), s	7.0	3.9		5.6	2.0	12.4	1.7	37.0	3.7	7.6	46.0	10.2
Cycle Queue Clearance Time (g_c), s	7.0	3.9		5.6	2.0	12.4	1.7	37.0	3.7	7.6	46.0	10.2
Green Ratio (*g/C*)	0.06	0.28		0.35	0.28	0.42	0.40	0.34	0.34	0.14	0.42	0.48
Capacity (*c*), veh/h	210	457		450	487	1083	163	1027	457	378	1194	612
Volume-to-Capacity Ratio (*X*)	1.692	0.165		0.263	0.088	0.387	0.227	1.404	0.202	0.540	1.062	0.316
Back of Queue (*Q*), ft/ln (50 th percentile)	332.5	39.7		59.2	22.8	100.7	16.8	996.6	29.9	76.3	653.3	89
Back of Queue (*Q*), veh/ln (50 th percentile)	12.5	1.5		2.2	0.8	3.7	0.6	34.4	1.0	2.5	21.5	2.9
Queue Storage Ratio (*RQ*) (50 th percentile)	1.42	0.00		0.47	0.00	0.37	0.03	0.00	0.08	0.17	0.00	0.15
Uniform Delay (d_1), s/veh	51.5	29.7		25.5	29.0	22.2	28.3	25.0	17.0	44.3	32.0	17.4
Incremental Delay (d_2), s/veh	331.3	0.1		0.1	0.0	0.1	0.0	182.4	0.1	0.9	44.4	1.4
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	382.8	29.7		25.6	29.0	22.2	28.3	207.4	17.1	45.1	76.4	18.8
Level of Service (LOS)	F	C		C	C	C	C	F	B	D	F	B
Approach Delay, s/veh / LOS	321.0	F		23.4	C		192.0	F		65.8	E	
Intersection Delay, s/veh / LOS	132.5						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.59	C	2.44	B	2.11	B
Bicycle LOS Score / LOS	1.20	A	1.45	A	2.00	B	1.86	B

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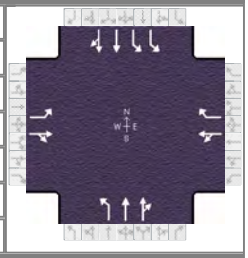
HCS7 Signalized Intersection Results Summary

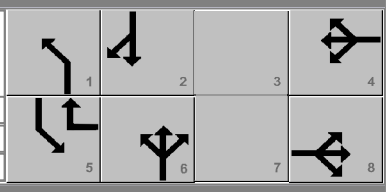
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.96
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Global Court	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	10	30	20	10	30	20	1650	10	10	1300	20

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	12	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	8.0	1.0	52.0	34.4	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		7.0	1.1	4.0	2.0	4.0
Phase Duration, s		39.0		39.0	12.0	58.0	13.0	59.0
Change Period, ($Y+R_c$), s		4.6		4.6	4.0	6.0	5.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		6.9		5.6	2.8		2.4	
Green Extension Time (g_e), s		0.2		0.2	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.01		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	21	42			31	31	22	908	907	10	674	671
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1215	1426			948	1032	1541	1618	1615	1401	1515	1506
Queue Service Time (g_s), s	1.4	2.3			1.3	2.1	0.8	52.0	52.0	0.4	32.5	32.4
Cycle Queue Clearance Time (g_c), s	4.9	2.3			3.6	2.1	0.8	52.0	52.0	0.4	32.5	32.4
Green Ratio (*g/C*)	0.31	0.31			0.31	0.39	0.55	0.47	0.47	0.07	0.48	0.48
Capacity (*c*), veh/h	406	446			351	398	237	765	763	204	730	726
Volume-to-Capacity Ratio (*X*)	0.051	0.093			0.089	0.079	0.092	1.187	1.189	0.050	0.924	0.925
Back of Queue (*Q*), ft/ln (50 th percentile)	11.6	22.3			20.1	17.4	6.7	1130.8	984.3	4.1	95	77.6
Back of Queue (*Q*), veh/ln (50 th percentile)	0.4	0.8			0.6	0.5	0.2	39.3	39.4	0.1	3.1	3.1
Queue Storage Ratio (*RQ*) (50 th percentile)	0.04	0.00			0.00	0.06	0.02	0.00	0.00	0.01	0.00	0.00
Uniform Delay (d_1), s/veh	29.0	26.8			27.2	21.4	18.0	38.5	38.6	51.2	5.9	5.8
Incremental Delay (d_2), s/veh	0.0	0.0			0.0	0.0	0.0	88.0	88.8	0.0	4.3	4.4
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	29.0	26.8			27.2	21.5	18.0	126.5	127.4	51.2	10.2	10.1
Level of Service (LOS)	C	C			C	C	B	F	F	D	B	B
Approach Delay, s/veh / LOS	27.5	C		24.3	C		125.6	F		10.5	B	
Intersection Delay, s/veh / LOS	74.8						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.29	B	2.44	B	2.10	B	1.91	B
Bicycle LOS Score / LOS	0.59	A	0.59	A	1.93	B	1.63	B

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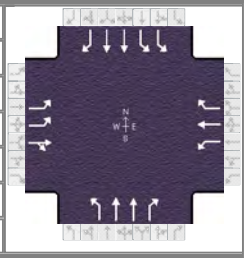
HCS7 Signalized Intersection Results Summary

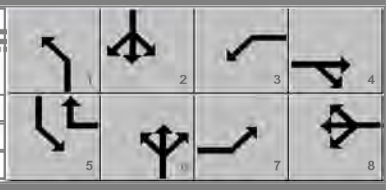
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.86
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Rohr Road	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	230	160	80	50	140	340	70	1110	60	270	900	180

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	48	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	52.0	11.0	1.0	17.7
Yellow	3.0	0.0	5.0	3.0	3.0	4.3
Red	0.0	0.0	1.0	0.0	0.0	1.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	18.0	27.0	14.0	23.0	10.0	58.0	11.0	59.0
Change Period, ($Y+R_c$), s	3.0	5.3	3.0	5.3	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	11.6	22.4	5.2	19.7	4.8		7.8	
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.77	1.00	0.02	1.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	267	279		58	163	395	79	1255	68	275	918	184
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1456	1485		1513	1589	1346	1541	1541		1387	1428	
Queue Service Time (g_s), s	9.6	20.4		3.2	10.5	17.7	2.8	37.3		5.8	24.0	
Cycle Queue Clearance Time (g_c), s	9.6	20.4		3.2	10.5	17.7	2.8	37.3		5.8	24.0	
Green Ratio (*g/C*)	0.14	0.20		0.26	0.16	0.23	0.54	0.47		0.55	0.48	
Capacity (*c*), veh/h	397	293		217	256	315	293	1457		428	1376	
Volume-to-Capacity Ratio (*X*)	0.674	0.953		0.268	0.637	1.257	0.270	0.862		0.644	0.667	
Back of Queue (*Q*), ft/ln (50 th percentile)	106.6	310.9		34.7	127.5	597.5	28.4	341.6		46.2	206.4	
Back of Queue (*Q*), veh/ln (50 th percentile)	3.6	10.6		1.2	4.4	20.5	1.0	11.9		1.5	6.8	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.36	0.00		0.07	0.00	1.19	0.07	0.00		0.10	0.00	
Uniform Delay (d_1), s/veh	45.2	43.6		32.7	43.1	42.2	16.8	19.3		20.1	16.6	
Incremental Delay (d_2), s/veh	3.7	39.5		0.2	4.0	138.9	0.1	4.7		0.9	0.9	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	48.8	83.2		32.9	47.1	181.0	16.9	24.0	0.0	20.9	17.5	0.0
Level of Service (LOS)	D	F		C	D	F	B	C	A	C	B	A
Approach Delay, s/veh / LOS	66.4	E		131.7	F		22.4	C		15.9	B	
Intersection Delay, s/veh / LOS	43.3						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.60	C	2.27	B	2.10	B
Bicycle LOS Score / LOS	1.39	A	1.50	B	1.68	B	1.78	B

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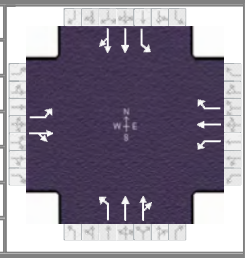
HCS7 Signalized Intersection Results Summary

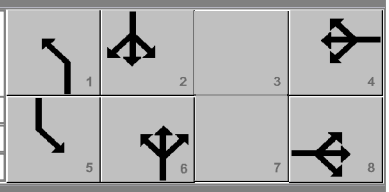
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.86
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Spiegel Drive	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	250	60	140	30	40	220	40	770	30	130	740	160

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	27	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	36.0	50.6	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.8	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		5.0	1.1	4.0	1.1	4.0
Phase Duration, s		56.0		56.0	12.0	43.0	11.0	42.0
Change Period, ($Y+R_c$), s		5.4		5.4	4.2	6.0	4.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		21.1		14.4	3.8		8.6	
Green Extension Time (g_e), s		1.9		1.9	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.15		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	291	233		35	47	256	44	447	441	135	482	452
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1305	1595		1093	1781	1510	1443	1515	1494	1485	1559	1462
Queue Service Time (g_s), s	17.5	10.1		2.3	1.6	12.1	1.8	28.0	28.0	6.6	32.2	32.0
Cycle Queue Clearance Time (g_c), s	19.1	10.1		12.4	1.6	12.1	1.8	28.0	28.0	6.6	32.2	32.0
Green Ratio (*g/C*)	0.46	0.46		0.46	0.46	0.46	0.40	0.34	0.34	0.39	0.33	0.33
Capacity (*c*), veh/h	647	734		468	819	694	185	509	503	193	510	479
Volume-to-Capacity Ratio (*X*)	0.449	0.317		0.075	0.057	0.368	0.241	0.878	0.878	0.699	0.945	0.945
Back of Queue (*Q*), ft/ln (50 th percentile)	137.3	96.7		15.6	17	110.3	16.2	232.7	212.3	77.5	335.9	272.7
Back of Queue (*Q*), veh/ln (50 th percentile)	5.2	3.7		0.6	0.6	4.1	0.5	7.7	7.6	2.6	11.3	10.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.46	0.00		0.03	0.00	0.18	0.05	0.00	0.00	0.17	0.00	0.00
Uniform Delay (d_1), s/veh	21.8	18.8		22.7	16.5	19.3	20.6	21.9	21.8	28.8	26.3	24.9
Incremental Delay (d_2), s/veh	0.2	0.1		0.0	0.0	0.1	0.2	12.8	13.0	6.4	22.0	23.0
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	21.9	18.9		22.7	16.5	19.4	20.8	34.7	34.8	35.2	48.3	47.9
Level of Service (LOS)	C	B		C	B	B	C	C	C	D	D	D
Approach Delay, s/veh / LOS	20.6	C		19.4	B		34.1	C		46.5	D	
Intersection Delay, s/veh / LOS	34.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.27	B	2.27	B	2.12	B	1.93	B
Bicycle LOS Score / LOS	1.35	A	1.04	A	1.29	A	1.48	A

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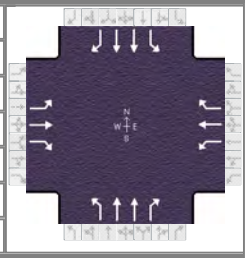
HCS7 Signalized Intersection Results Summary

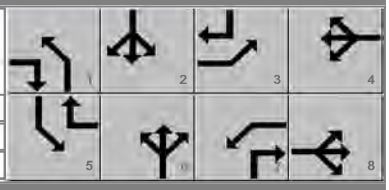
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.90
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	London-Groveport Road	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	200	150	230	180	60	220	690	140	110	670	130

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.5	31.4	7.5	33.4	0.0	0.0
Yellow	4.7	5.6	4.7	5.6	0.0	0.0
Red	3.8	1.0	3.8	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	16.0	40.0	16.0	40.0	16.0	38.0	16.0	38.0
Change Period, ($Y+R_c$), s	8.5	6.6	8.5	6.6	8.5	6.6	8.5	6.6
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	6.4	13.2	9.5	12.0	9.5		7.8	
Green Extension Time (g_e), s	0.0	1.2	0.0	1.2	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	100	222	167	256	200	67	244	767	156	117	711	138
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1654	1737	1472	1654	1737	1472	1612	1611	1434	1527	1527	1359
Queue Service Time (g_s), s	4.4	11.2	8.8	7.5	10.0	3.3	7.5	24.5	8.6	5.8	25.4	10.0
Cycle Queue Clearance Time (g_c), s	4.4	11.2	8.8	7.5	10.0	3.3	7.5	24.5	8.6	5.8	25.4	10.0
Green Ratio (*g/C*)	0.37	0.30	0.37	0.37	0.30	0.37	0.35	0.29	0.35	0.35	0.29	0.35
Capacity (*c*), veh/h	392	527	547	375	527	547	200	920	507	196	872	481
Volume-to-Capacity Ratio (*X*)	0.255	0.421	0.305	0.681	0.379	0.122	1.224	0.833	0.307	0.595	0.816	0.287
Back of Queue (*Q*), ft/ln (50 th percentile)	46.8	126.9	82.6	87.8	112.5	30.7	211.1	293.1	86.7	76	321.7	145.1
Back of Queue (*Q*), veh/ln (50 th percentile)	1.7	4.7	3.0	3.2	4.1	1.1	7.6	10.5	3.1	2.6	11.1	5.0
Queue Storage Ratio (*RQ*) (50 th percentile)	0.09	0.00	0.17	0.17	0.00	0.06	0.35	0.00	0.23	0.15	0.00	0.36
Uniform Delay (d_1), s/veh	23.8	30.6	24.5	31.6	30.1	22.7	35.4	36.8	25.8	30.6	49.5	36.2
Incremental Delay (d_2), s/veh	0.1	0.2	0.1	4.1	0.2	0.0	136.9	8.8	1.6	1.7	4.2	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	23.9	30.8	24.6	35.7	30.3	22.8	172.3	45.6	27.3	32.3	53.7	36.9
Level of Service (LOS)	C	C	C	D	C	C	F	D	C	C	D	D
Approach Delay, s/veh / LOS	27.3	C		32.0	C		69.7	E		48.7	D	
Intersection Delay, s/veh / LOS	50.4						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.44	B	2.12	B	2.12	B
Bicycle LOS Score / LOS	1.29	A	1.35	A	1.45	A	1.32	A

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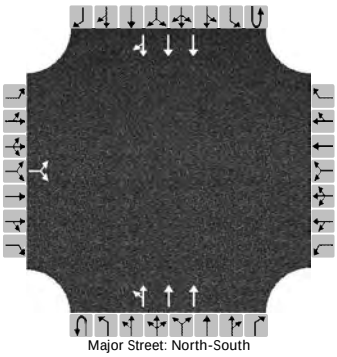
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Rathmell
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Rathmell Road
Analysis Year	2028	North/South Street	Alum Creek Drive
Time Analyzed	AM Projections	Peak Hour Factor	0.79
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	3	0	0	0	3	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		40		10						20	1060				2350	50
Percent Heavy Vehicles (%)		13		13						20						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4		7.1						5.3						
Critical Headway (sec)		5.96		7.36						5.70						
Base Follow-Up Headway (sec)		3.8		3.9						3.1						
Follow-Up Headway (sec)		3.93		4.03						3.30						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			63							25						
Capacity, c (veh/h)										26						
v/c Ratio										0.96						
95% Queue Length, Q_{95} (veh)										3.0						
Control Delay (s/veh)										375.4						
Level of Service (LOS)										F						
Approach Delay (s/veh)									7.0							
Approach LOS																

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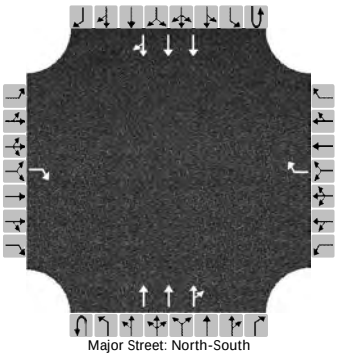
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Bixby
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Bixby Road
Analysis Year	2028	North/South Street	Alum Creek Drive
Time Analyzed	AM Projections	Peak Hour Factor	0.75
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	0	3	0	0	0	3	0
Configuration				R				R			T	TR			T	TR
Volume (veh/h)				10				10			1070	10			2340	20
Percent Heavy Vehicles (%)				3				3								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				7.1				7.1								
Critical Headway (sec)				7.16				7.16								
Base Follow-Up Headway (sec)				3.9				3.9								
Follow-Up Headway (sec)				3.93				3.93								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				13				13								
Capacity, c (veh/h)				84				316								
v/c Ratio				0.16				0.04								
95% Queue Length, Q_{95} (veh)				0.5				0.1								
Control Delay (s/veh)				55.8				16.9								
Level of Service (LOS)				F				C								
Approach Delay (s/veh)	55.8				16.9											
Approach LOS	F				C											

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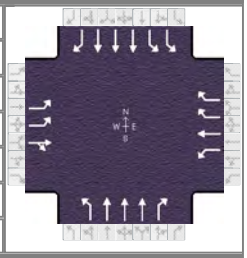
HCS7 Signalized Intersection Results Summary

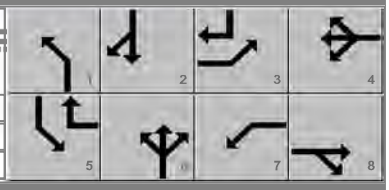
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.79
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Creekside Parkway/ Toy…	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections Mitigations				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	40	20	60	20	80	30	930	90	450	1570	330

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	24.0	34.0	8.0	1.0	13.1
Yellow	3.0	4.0	5.0	3.0	0.0	3.6
Red	0.0	0.0	1.0	1.0	0.0	2.3



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	13.0	20.0	12.0	19.0	10.0	40.0	38.0	68.0
Change Period, ($Y+R_c$), s	4.0	5.9	4.0	5.9	3.0	6.0	4.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s	5.0	6.9	6.8	4.8	3.6		17.9	
Green Extension Time (g_e), s	0.0	0.2	0.0	0.3	0.0	0.0	1.2	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.26	0.02	1.00	0.01	0.43		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	89	76		76	25	101	34	1064	103	570	1987	418
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1524	1555		1485	1559	1169	1541	1470	1372	1647	1618	1510
Queue Service Time (g_s), s	3.0	4.9		4.8	1.6	2.8	1.6	13.3	1.7	15.9	33.3	14.9
Cycle Queue Clearance Time (g_c), s	3.0	4.9		4.8	1.6	2.8	1.6	13.3	1.7	15.9	33.3	14.9
Green Ratio (*g/C*)	0.08	0.13		0.19	0.12	0.43	0.37	0.31	0.31	0.31	0.56	0.65
Capacity (*c*), veh/h	249	199		245	186	1001	209	1363	424	1018	2735	974
Volume-to-Capacity Ratio (*X*)	0.355	0.381		0.309	0.136	0.101	0.164	0.781	0.243	0.559	0.727	0.429
Back of Queue (*Q*), ft/ln (50 th percentile)	32.6	54		51.5	18.3	22.5	16.5	62.7	15.9	158	289.6	114.9
Back of Queue (*Q*), veh/ln (50 th percentile)	1.1	1.9		1.7	0.6	0.8	0.6	2.2	0.6	5.9	10.9	4.3
Queue Storage Ratio (*RQ*) (50 th percentile)	0.14	0.00		0.41	0.00	0.08	0.03	0.00	0.04	0.35	0.00	0.19
Uniform Delay (d_1), s/veh	47.8	44.0		38.0	43.4	18.8	24.0	8.1	6.4	31.7	17.7	9.6
Incremental Delay (d_2), s/veh	0.3	0.4		0.3	0.1	0.0	0.1	3.9	1.2	0.4	1.7	1.4
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	48.1	44.4		38.3	43.5	18.8	24.1	11.9	7.5	32.2	19.5	10.9
Level of Service (LOS)	D	D		D	D	B	C	B	A	C	B	B
Approach Delay, s/veh / LOS	46.4	D		29.2	C		11.9	B		20.7	C	
Intersection Delay, s/veh / LOS	19.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.73	C	2.86	C	2.44	B	2.08	B
Bicycle LOS Score / LOS	0.76	A	0.82	A	1.22	A	2.12	B

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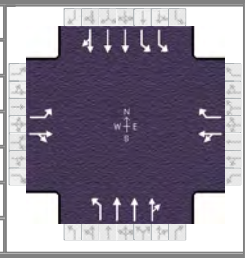
HCS7 Signalized Intersection Results Summary

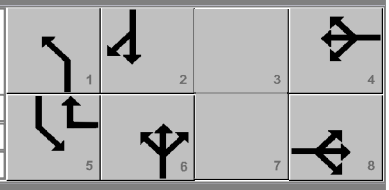
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.88
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Global Court	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections Mitigations				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	10	20	10	10	10	30	1020	20	30	1570	50

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	12	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	8.0	1.0	52.0	34.4	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		7.0	1.1	4.0	2.0	4.0
Phase Duration, s		39.0		39.0	12.0	58.0	13.0	59.0
Change Period, ($Y+R_c$), s		4.6		4.6	4.0	6.0	5.0	6.0
Max Allow Headway (*MAH*), s		4.1		4.1	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		9.2		6.0	3.2		3.2	
Green Extension Time (g_e), s		0.2		0.3	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.02		0.01	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	23	34			23	11	34	796	394	38	1373	677
Adjusted Saturation Flow Rate (*s*), veh/h/ln	580	691			781	819	1555	1633	1616	1579	1707	1679
Queue Service Time (g_s), s	3.2	3.9			0.1	1.0	1.2	21.3	21.4	1.2	30.6	30.7
Cycle Queue Clearance Time (g_c), s	7.2	3.9			4.0	1.0	1.2	21.3	21.4	1.2	30.6	30.7
Green Ratio (*g/C*)	0.31	0.31			0.31	0.39	0.55	0.47	0.47	0.07	0.48	0.48
Capacity (*c*), veh/h	226	216			293	316	212	1544	764	230	1645	809
Volume-to-Capacity Ratio (*X*)	0.101	0.158			0.077	0.036	0.162	0.516	0.516	0.165	0.835	0.837
Back of Queue (*Q*), ft/ln (50 th percentile)	18.2	26.1			15.8	6.8	10.5	241.3	217.2	12	169.9	169
Back of Queue (*Q*), veh/ln (50 th percentile)	0.5	0.6			0.4	0.2	0.4	8.4	8.7	0.4	6.2	6.8
Queue Storage Ratio (*RQ*) (50 th percentile)	0.06	0.00			0.00	0.02	0.04	0.00	0.00	0.03	0.00	0.00
Uniform Delay (d_1), s/veh	30.0	27.3			26.6	21.1	18.2	25.8	26.1	44.4	11.9	11.8
Incremental Delay (d_2), s/veh	0.1	0.1			0.0	0.0	0.1	1.1	2.2	0.1	3.4	6.7
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	30.0	27.5			26.7	21.1	18.3	26.9	28.3	44.5	15.3	18.5
Level of Service (LOS)	C	C			C	C	B	C	C	D	B	B
Approach Delay, s/veh / LOS	28.5	C		24.8	C		27.1	C		16.9	B	
Intersection Delay, s/veh / LOS	20.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.58	C	2.71	C	2.10	B	1.91	B
Bicycle LOS Score / LOS	0.58	A	0.54	A	1.16	A	1.52	B

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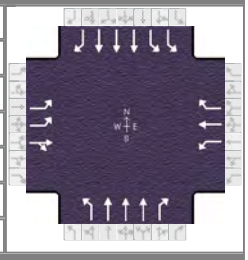
HCS7 Signalized Intersection Results Summary

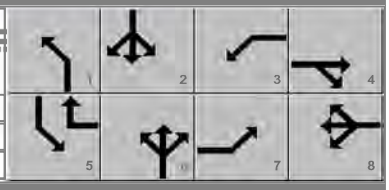
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.83
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Rohr Road	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections Mitigations				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	130	90	90	50	150	180	60	760	50	360	980	260

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	48	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	52.0	11.0	1.0	17.7
Yellow	3.0	0.0	5.0	3.0	3.0	4.3
Red	0.0	0.0	1.0	0.0	0.0	1.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	18.0	27.0	14.0	23.0	10.0	58.0	11.0	59.0
Change Period, ($Y+R_c$), s	3.0	5.3	3.0	5.3	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	7.7	18.5	5.2	17.3	4.3		10.0	
Green Extension Time (g_e), s	0.2	0.5	0.0	0.1	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.00	1.00	0.02	1.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	157	217		60	181	217	67	851	56	455	1238	328
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1387	1376		1584	1663	1409	1570	1496		1579	1550	
Queue Service Time (g_s), s	5.7	16.5		3.2	11.3	15.3	2.3	4.1		8.0	19.2	
Cycle Queue Clearance Time (g_c), s	5.7	16.5		3.2	11.3	15.3	2.3	4.1		8.0	19.2	
Green Ratio (*g/C*)	0.14	0.20		0.26	0.16	0.23	0.54	0.47		0.55	0.48	
Capacity (*c*), veh/h	378	271		254	268	329	280	2122		876	2241	
Volume-to-Capacity Ratio (*X*)	0.414	0.799		0.237	0.675	0.659	0.240	0.401		0.519	0.553	
Back of Queue (*Q*), ft/ln (50 th percentile)	59.2	200.4		34.6	140.1	156.5	23.7	29.3		68.7	174.4	
Back of Queue (*Q*), veh/ln (50 th percentile)	1.9	6.6		1.2	5.0	5.5	0.8	1.0		2.5	6.3	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.20	0.00		0.07	0.00	0.31	0.06	0.00		0.14	0.00	
Uniform Delay (d_1), s/veh	43.5	42.1		32.2	43.4	38.2	15.6	4.0		12.7	17.6	
Incremental Delay (d_2), s/veh	0.3	14.3		0.2	5.4	3.8	0.1	0.5		0.1	0.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	43.7	56.4		32.4	48.9	42.0	15.7	4.5	0.0	12.9	18.0	0.0
Level of Service (LOS)	D	E		C	D	D	B	A	A	B	B	A
Approach Delay, s/veh / LOS	51.1	D		43.5	D		5.0	A		13.9	B	
Intersection Delay, s/veh / LOS	18.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.73	C	2.85	C	2.27	B	2.10	B
Bicycle LOS Score / LOS	1.10	A	1.24	A	1.06	A	1.55	B

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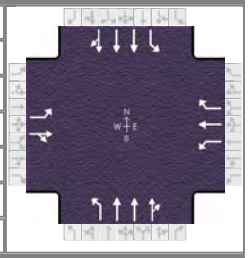
HCS7 Signalized Intersection Results Summary

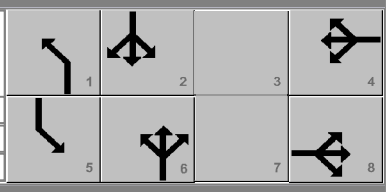
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.84
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Spiegel Drive	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections Mitigations				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	60	10	20	10	30	40	80	770	40	180	720	220

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	27	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	36.0	50.6	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.8	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		5.0	1.1	4.0	1.1	4.0
Phase Duration, s		56.0		56.0	12.0	43.0	11.0	42.0
Change Period, ($Y+R_c$), s		5.4		5.4	4.2	6.0	4.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		6.7		3.9	5.7		9.0	
Green Extension Time (g_e), s		0.4		0.4	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	71	36		12	36	48	89	605	295	226	819	362
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1296	1577		1351	1841	1560	1598	1678	1633	1682	1767	1553
Queue Service Time (g_s), s	3.5	1.4		0.5	1.2	1.9	3.7	11.4	11.4	7.0	18.4	17.4
Cycle Queue Clearance Time (g_c), s	4.7	1.4		1.9	1.2	1.9	3.7	11.4	11.4	7.0	18.4	17.4
Green Ratio (*g/C*)	0.46	0.46		0.46	0.46	0.46	0.40	0.34	0.34	0.39	0.33	0.33
Capacity (*c*), veh/h	648	726		670	847	718	247	1129	549	298	1156	508
Volume-to-Capacity Ratio (*X*)	0.110	0.049		0.018	0.042	0.066	0.360	0.536	0.538	0.759	0.708	0.711
Back of Queue (*Q*), ft/ln (50 th percentile)	27.9	13.2		4.3	12.6	17	31.5	93	94.2	68.7	149.9	128.7
Back of Queue (*Q*), veh/ln (50 th percentile)	1.0	0.5		0.2	0.5	0.7	1.1	3.3	3.4	2.6	5.6	4.8
Queue Storage Ratio (*RQ*) (50 th percentile)	0.09	0.00		0.01	0.00	0.03	0.09	0.00	0.00	0.15	0.00	0.00
Uniform Delay (d_1), s/veh	17.7	16.4		16.9	16.4	16.5	19.1	16.3	16.1	30.5	20.0	17.2
Incremental Delay (d_2), s/veh	0.0	0.0		0.0	0.0	0.0	0.2	0.9	1.8	8.0	3.0	6.7
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	17.7	16.4		16.9	16.4	16.6	19.2	17.1	17.9	38.5	23.0	24.0
Level of Service (LOS)	B	B		B	B	B	B	B	B	D	C	C
Approach Delay, s/veh / LOS	17.3	B		16.5	B		17.6	B		25.7	C	
Intersection Delay, s/veh / LOS	21.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.56	C	2.56	C	2.12	B	1.93	B
Bicycle LOS Score / LOS	0.66	A	0.64	A	1.07	A	1.22	A

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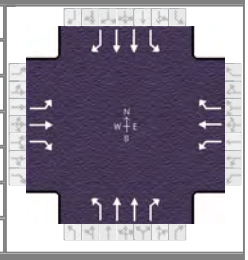
HCS7 Signalized Intersection Results Summary

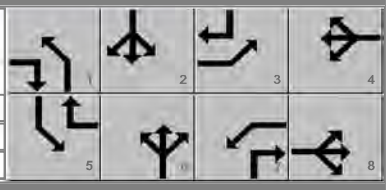
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.90
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	London-Groveport Road	File Name	2028 AM Projections.xus		
Project Description	2028 AM Projections Mitigations				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110	170	140	180	120	40	130	740	90	70	610	70

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.5	31.4	7.5	33.4	0.0	0.0
Yellow	4.7	5.6	4.7	5.6	0.0	0.0
Red	3.8	1.0	3.8	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	16.0	40.0	16.0	40.0	16.0	38.0	16.0	38.0
Change Period, ($Y+R_c$), s	8.5	6.6	8.5	6.6	8.5	6.6	8.5	6.6
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	7.9	12.0	9.5	8.4	9.3		6.3	
Green Extension Time (g_e), s	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	122	189	156	200	133	44	144	822	100	88	765	88
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1555	1633	1384	1654	1737	1472	1555	1555	1384	1570	1569	1397
Queue Service Time (g_s), s	5.9	10.0	8.7	7.5	6.4	2.2	7.3	28.3	5.5	4.3	26.8	6.2
Cycle Queue Clearance Time (g_c), s	5.9	10.0	8.7	7.5	6.4	2.2	7.3	28.3	5.5	4.3	26.8	6.2
Green Ratio (*g/C*)	0.37	0.30	0.37	0.37	0.30	0.37	0.35	0.29	0.35	0.35	0.29	0.35
Capacity (*c*), veh/h	421	496	515	394	527	547	186	888	489	179	896	494
Volume-to-Capacity Ratio (*X*)	0.290	0.381	0.302	0.508	0.253	0.081	0.776	0.926	0.204	0.491	0.854	0.178
Back of Queue (*Q*), ft/ln (50 th percentile)	61.3	111.8	81.1	29.8	71.8	20.1	138.3	359	54.9	72.4	355.8	92.2
Back of Queue (*Q*), veh/ln (50 th percentile)	2.1	3.9	2.8	1.1	2.6	0.7	4.8	12.6	1.9	2.6	12.5	3.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.12	0.00	0.16	0.06	0.00	0.04	0.23	0.00	0.15	0.14	0.00	0.23
Uniform Delay (d_1), s/veh	23.9	30.2	24.5	27.5	28.9	22.4	29.7	38.2	24.8	30.9	52.2	34.9
Incremental Delay (d_2), s/veh	0.1	0.2	0.1	0.4	0.1	0.0	16.8	16.9	0.9	0.5	7.1	0.5
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	24.1	30.3	24.6	28.0	29.0	22.4	46.5	55.1	25.7	31.4	59.3	35.4
Level of Service (LOS)	C	C	C	C	C	C	D	E	C	C	E	D
Approach Delay, s/veh / LOS	26.8	C		27.7	C		51.2	D		54.5	D	
Intersection Delay, s/veh / LOS	45.2						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.44	B	2.12	B	2.12	B
Bicycle LOS Score / LOS	1.26	A	1.11	A	1.37	A	1.18	A

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HCS7 Two-Way Stop-Control Report

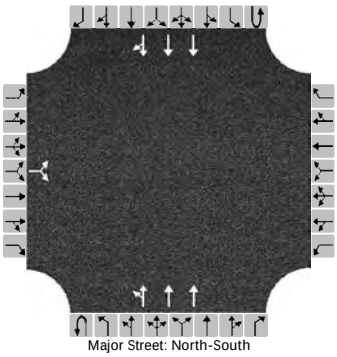
General Information

Analyst	Kimley-Horn
Agency/Co.	
Date Performed	2/23/2023
Analysis Year	2028
Time Analyzed	PM Projections
Intersection Orientation	North-South
Project Description	115792

Site Information

Intersection	Alum Creek & Rathmell
Jurisdiction	ODOT
East/West Street	Rathmell Road
North/South Street	Alum Creek Drive
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	3	0	0	0	3	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		40		30						40	2180				1530	170
Percent Heavy Vehicles (%)		8		8						14						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4		7.1						5.3						
Critical Headway (sec)		5.86		7.26						5.58						
Base Follow-Up Headway (sec)		3.8		3.9						3.1						
Follow-Up Headway (sec)		3.88		3.98						3.24						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			76							43						
Capacity, c (veh/h)			50							130						
v/c Ratio			1.54							0.33						
95% Queue Length, Q_{95} (veh)			7.3							1.3						
Control Delay (s/veh)			452.7							46.0						
Level of Service (LOS)			F							E						
Approach Delay (s/veh)	452.7								0.8							
Approach LOS	F															

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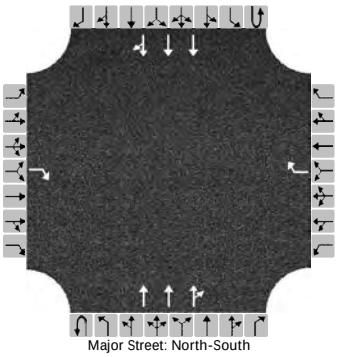
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Bixby
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Bixby Road
Analysis Year	2028	North/South Street	Alum Creek Drive
Time Analyzed	PM Projections	Peak Hour Factor	0.80
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	0	3	0	0	0	3	0
Configuration				R				R			T	TR			T	TR
Volume (veh/h)				10				20			2200	80			1540	20
Percent Heavy Vehicles (%)				13				0								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				7.1				7.1								
Critical Headway (sec)				7.36				7.10								
Base Follow-Up Headway (sec)				3.9				3.9								
Follow-Up Headway (sec)				4.03				3.90								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				13				25								
Capacity, c (veh/h)				200				109								
v/c Ratio				0.06				0.23								
95% Queue Length, Q_{95} (veh)				0.2				0.8								
Control Delay (s/veh)				24.2				47.6								
Level of Service (LOS)				C				E								
Approach Delay (s/veh)	24.2				47.6											
Approach LOS	C				E											

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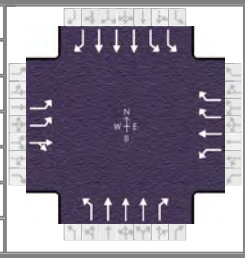
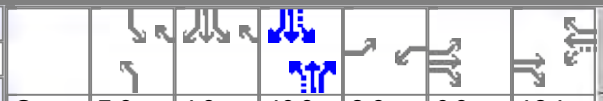
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.93
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Creekside Parkway/ Toy…	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections Mitigation				

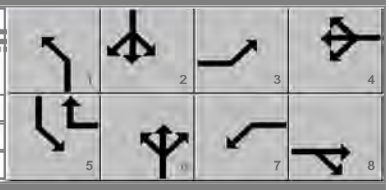


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	330	30	40	110	40	390	40	1560	100	190	1180	180

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On



Green	7.0	4.0	46.0	8.0	6.0	12.1
Yellow	3.0	4.0	5.0	3.0	3.0	3.6
Red	0.0	0.0	1.0	1.0	1.0	2.3



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	22.0	28.0	12.0	18.0	10.0	52.0	18.0	60.0
Change Period, ($Y+R_c$), s	4.0	5.9	4.0	5.9	3.0	6.0	4.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.3	3.1	3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s	13.1	6.3	9.0	14.1	3.8		5.8	
Green Extension Time (g_e), s	0.4	1.3	0.0	0.0	0.0	0.0	0.3	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.22	0.00	1.00	1.00	0.63		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	355	75		118	43	419	46	1776	114	204	1269	194
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1647	1615		1640	1722	1292	1527	1456	1359	1387	1362	1271
Queue Service Time (g_s), s	11.1	4.3		7.0	2.5	12.1	1.8	42.4	3.4	3.8	25.2	10.1
Cycle Queue Clearance Time (g_c), s	11.1	4.3		7.0	2.5	12.1	1.8	42.4	3.4	3.8	25.2	10.1
Green Ratio (*g/C*)	0.16	0.20		0.18	0.11	0.24	0.48	0.42	0.42	0.56	0.49	0.49
Capacity (*c*), veh/h	539	325		319	189	613	254	1827	568	498	2006	624
Volume-to-Capacity Ratio (*X*)	0.658	0.232		0.371	0.227	0.684	0.179	0.972	0.200	0.410	0.633	0.310
Back of Queue (*Q*), ft/ln (50 th percentile)	123.3	45		76.8	29.4	144.5	17.2	233.4	26.9	31.5	224	86.9
Back of Queue (*Q*), veh/ln (50 th percentile)	4.6	1.7		2.8	1.1	5.3	0.6	8.0	0.9	1.0	7.4	2.9
Queue Storage Ratio (*RQ*) (50 th percentile)	0.52	0.00		0.61	0.00	0.54	0.03	0.00	0.07	0.07	0.00	0.14
Uniform Delay (d_1), s/veh	43.1	36.8		39.6	44.7	38.2	18.3	17.8	10.9	21.7	20.7	16.8
Incremental Delay (d_2), s/veh	2.3	0.1		0.3	0.2	2.6	0.1	9.6	0.4	0.2	1.5	1.3
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	45.5	37.0		39.9	44.9	40.8	18.4	27.4	11.3	21.9	22.2	18.1
Level of Service (LOS)	D	D		D	D	D	B	C	B	C	C	B
Approach Delay, s/veh / LOS	44.0	D		40.9	D		26.2	C		21.7	C	
Intersection Delay, s/veh / LOS	28.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.73	C	2.86	C	2.43	B	2.09	B
Bicycle LOS Score / LOS	1.20	A	1.45	A	1.49	A	1.40	A

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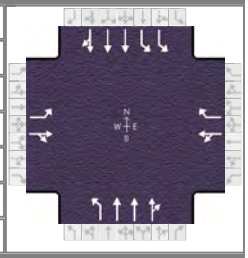
HCS7 Signalized Intersection Results Summary

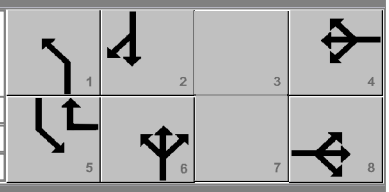
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.96
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Global Court	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	10	30	20	10	30	20	1650	10	10	1300	20

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	12	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	8.0	1.0	52.0	34.4	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		7.0	1.1	4.0	2.0	4.0
Phase Duration, s		39.0		39.0	12.0	58.0	13.0	59.0
Change Period, ($Y+R_c$), s		4.6		4.6	4.0	6.0	5.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		6.9		5.6	2.8		2.4	
Green Extension Time (g_e), s		0.2		0.2	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.01		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	21	42			31	31	23	1265	630	11	949	471
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1215	1426			948	1032	1541	1618	1613	1401	1515	1502
Queue Service Time (g_s), s	1.4	2.3			1.3	2.1	0.8	41.1	41.2	0.4	13.7	13.5
Cycle Queue Clearance Time (g_c), s	4.9	2.3			3.6	2.1	0.8	41.1	41.2	0.4	13.7	13.5
Green Ratio (*g/C*)	0.31	0.31			0.31	0.39	0.55	0.47	0.47	0.07	0.48	0.48
Capacity (*c*), veh/h	406	446			351	398	289	1530	763	204	1460	724
Volume-to-Capacity Ratio (*X*)	0.051	0.093			0.089	0.079	0.079	0.826	0.827	0.053	0.650	0.650
Back of Queue (*Q*), ft/ln (50 th percentile)	11.6	22.3			20.1	17.4	7	512	458.1	4.3	79.6	73.1
Back of Queue (*Q*), veh/ln (50 th percentile)	0.4	0.8			0.6	0.5	0.2	17.8	18.3	0.1	2.6	2.9
Queue Storage Ratio (*RQ*) (50 th percentile)	0.04	0.00			0.00	0.06	0.03	0.00	0.00	0.01	0.00	0.00
Uniform Delay (d_1), s/veh	29.0	26.8			27.2	21.4	13.3	39.3	39.5	51.2	6.6	6.5
Incremental Delay (d_2), s/veh	0.0	0.0			0.0	0.0	0.0	3.0	5.8	0.0	1.7	3.5
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	29.0	26.8			27.2	21.5	13.3	42.3	45.2	51.2	8.4	10.0
Level of Service (LOS)	C	C			C	C	B	D	D	D	A	A
Approach Delay, s/veh / LOS	27.5	C		24.3	C		42.9	D		9.2	A	
Intersection Delay, s/veh / LOS	28.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.58	C	2.71	C	2.10	B	1.91	B
Bicycle LOS Score / LOS	0.59	A	0.59	A	1.45	A	1.25	A

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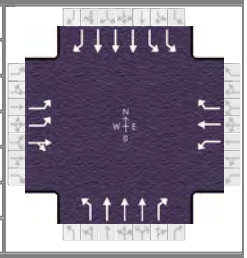
HCS7 Signalized Intersection Results Summary

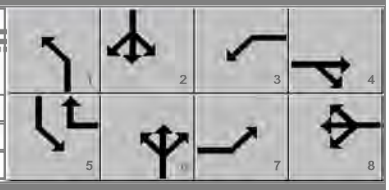
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.86
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Rohr Road	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	230	160	80	50	140	340	70	1110	60	270	900	180

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	48	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	10.0	5.0	42.0	7.0	8.0	14.7
Yellow	3.0	3.0	5.0	3.0	3.0	4.3
Red	0.0	0.0	1.0	0.0	0.0	1.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	21.0	31.0	10.0	20.0	13.0	48.0	21.0	56.0
Change Period, ($Y+R_c$), s	3.0	5.3	3.0	5.3	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	11.3	21.5	5.5	16.7	5.3		7.1	
Green Extension Time (g_e), s	0.4	0.9	0.0	0.0	0.0	0.0	0.5	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.03	0.69	1.00	1.00	0.10		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	267	279		58	163	395	79	1255	68	290	967	193
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1456	1485		1513	1589	1346	1541	1470		1387	1362	
Queue Service Time (g_s), s	9.3	19.5		3.5	10.9	14.7	3.3	23.8		5.1	18.4	
Cycle Queue Clearance Time (g_c), s	9.3	19.5		3.5	10.9	14.7	3.3	23.8		5.1	18.4	
Green Ratio (*g/C*)	0.16	0.23		0.20	0.13	0.30	0.47	0.38		0.56	0.45	
Capacity (*c*), veh/h	476	347		197	212	400	341	1683		702	1857	
Volume-to-Capacity Ratio (*X*)	0.561	0.804		0.295	0.767	0.988	0.232	0.746		0.413	0.521	
Back of Queue (*Q*), ft/ln (50 th percentile)	98.9	239.2		38.2	147.9	434.7	34.4	197.6		40.4	174.8	
Back of Queue (*Q*), veh/ln (50 th percentile)	3.4	8.1		1.3	5.1	14.9	1.2	6.9		1.3	5.8	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.33	0.00		0.08	0.00	0.87	0.09	0.00		0.09	0.00	
Uniform Delay (d_1), s/veh	42.4	39.8		37.4	46.0	38.5	18.6	20.4		13.2	21.1	
Incremental Delay (d_2), s/veh	0.9	12.0		0.3	14.0	41.5	0.1	2.6		0.1	0.8	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	43.3	51.8		37.7	60.0	80.0	18.7	23.0	0.0	13.3	21.8	0.0
Level of Service (LOS)	D	D		D	E	E	B	C	A	B	C	A
Approach Delay, s/veh / LOS	47.6	D		70.7	E		21.6	C		17.2	B	
Intersection Delay, s/veh / LOS	31.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.72	C	2.86	C	2.28	B	2.10	B
Bicycle LOS Score / LOS	1.39	A	1.50	B	1.28	A	1.35	A

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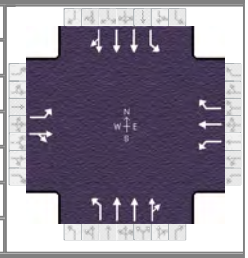
HCS7 Signalized Intersection Results Summary

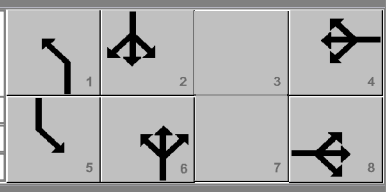
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.86
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	Spiegel Drive	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	250	60	140	30	40	220	40	770	30	130	740	160

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	27	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	36.0	50.6	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.8	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		5.0	1.1	4.0	1.1	4.0
Phase Duration, s		56.0		56.0	12.0	43.0	11.0	42.0
Change Period, ($Y+R_c$), s		5.4		5.4	4.2	6.0	4.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		21.1		14.4	4.2		8.8	
Green Extension Time (g_e), s		1.9		1.9	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.29		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	291	233		35	47	256	44	596	293	141	670	307
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1305	1595		1093	1781	1510	1443	1515	1484	1485	1559	1415
Queue Service Time (g_s), s	17.5	10.1		2.3	1.6	12.1	2.2	10.8	10.6	6.8	16.3	15.6
Cycle Queue Clearance Time (g_c), s	19.1	10.1		12.4	1.6	12.1	2.2	10.8	10.6	6.8	16.3	15.6
Green Ratio (*g/C*)	0.46	0.46		0.46	0.46	0.46	0.40	0.34	0.34	0.39	0.33	0.33
Capacity (*c*), veh/h	647	734		468	819	694	251	1019	499	274	1021	463
Volume-to-Capacity Ratio (*X*)	0.449	0.317		0.075	0.057	0.368	0.177	0.585	0.587	0.514	0.656	0.663
Back of Queue (*Q*), ft/ln (50 th percentile)	137.3	96.7		15.6	17	110.3	21.6	78.3	75.6	72.5	134.2	111.1
Back of Queue (*Q*), veh/ln (50 th percentile)	5.2	3.7		0.6	0.6	4.1	0.7	2.6	2.7	2.4	4.5	4.1
Queue Storage Ratio (*RQ*) (50 th percentile)	0.46	0.00		0.03	0.00	0.18	0.06	0.00	0.00	0.16	0.00	0.00
Uniform Delay (d_1), s/veh	21.8	18.8		22.7	16.5	19.3	23.6	12.3	11.9	24.6	19.6	17.4
Incremental Delay (d_2), s/veh	0.2	0.1		0.0	0.0	0.1	0.1	1.7	3.5	0.6	2.8	6.1
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	21.9	18.9		22.7	16.5	19.4	23.7	14.0	15.3	25.2	22.4	23.5
Level of Service (LOS)	C	B		C	B	B	C	B	B	C	C	C
Approach Delay, s/veh / LOS	20.6	C		19.4	B		14.9	B		23.1	C	
Intersection Delay, s/veh / LOS	19.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.56	C	2.56	C	2.12	B	1.93	B
Bicycle LOS Score / LOS	1.35	A	1.04	A	1.02	A	1.15	A

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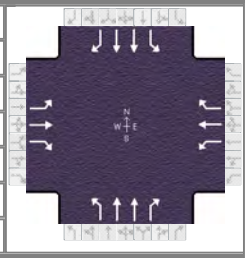
HCS7 Signalized Intersection Results Summary

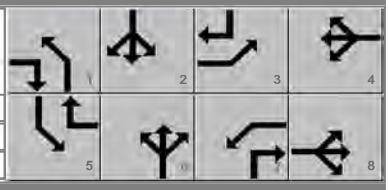
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.90
Urban Street	Alum Creek Drive	Analysis Year	2028	Analysis Period	1> 7:00
Intersection	London-Groveport Road	File Name	2028 PM Projections.xus		
Project Description	2028 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	200	150	230	180	60	220	690	140	110	670	130

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	28	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.5	6.0	29.4	11.5	25.4	0.0
Yellow	4.7	0.0	5.6	4.7	5.6	0.0
Red	3.8	0.0	1.0	3.8	1.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	20.0	32.0	20.0	32.0	22.0	42.0	16.0	36.0
Change Period, ($Y+R_c$), s	8.5	6.6	8.5	6.6	8.5	6.6	8.5	6.6
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	7.0	15.3	13.5	13.0	14.5		8.1	
Green Extension Time (g_e), s	0.1	1.0	0.0	1.1	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.16	0.03	1.00	0.01	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	100	222	167	256	200	67	244	767	156	121	737	143
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1555	1633	1384	1654	1737	1472	1555	1555	1384	1570	1569	1397
Queue Service Time (g_s), s	5.0	13.3	9.7	11.5	11.0	3.7	12.5	24.4	8.0	6.1	22.2	3.9
Cycle Queue Clearance Time (g_c), s	5.0	13.3	9.7	11.5	11.0	3.7	12.5	24.4	8.0	6.1	22.2	3.9
Green Ratio (*g/C*)	0.34	0.23	0.35	0.34	0.23	0.30	0.39	0.32	0.43	0.34	0.27	0.37
Capacity (*c*), veh/h	344	377	489	337	401	440	297	1001	590	223	839	519
Volume-to-Capacity Ratio (*X*)	0.290	0.589	0.341	0.758	0.499	0.151	0.822	0.766	0.264	0.543	0.879	0.275
Back of Queue (*Q*), ft/ln (50 th percentile)	52.9	155	90.8	162.9	126.5	35	190.8	278.7	77.3	70.5	171.1	30.8
Back of Queue (*Q*), veh/ln (50 th percentile)	1.8	5.4	3.2	6.0	4.7	1.3	6.7	9.7	2.7	2.5	6.0	1.1
Queue Storage Ratio (*RQ*) (50 th percentile)	0.11	0.00	0.18	0.31	0.00	0.07	0.32	0.00	0.21	0.14	0.00	0.08
Uniform Delay (d_1), s/veh	26.8	37.7	26.1	32.0	36.8	28.3	27.6	33.6	20.4	30.6	22.1	9.3
Incremental Delay (d_2), s/veh	0.2	1.7	0.2	8.6	0.4	0.1	15.7	5.6	1.1	1.2	10.3	1.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	27.0	39.3	26.3	40.7	37.1	28.4	43.3	39.2	21.5	31.8	32.4	10.4
Level of Service (LOS)	C	D	C	D	D	C	D	D	C	C	C	B
Approach Delay, s/veh / LOS	32.3	C		37.7	D		37.7	D		29.2	C	
Intersection Delay, s/veh / LOS	34.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.45	B	2.12	B	2.12	B
Bicycle LOS Score / LOS	1.29	A	1.35	A	1.45	A	1.32	A

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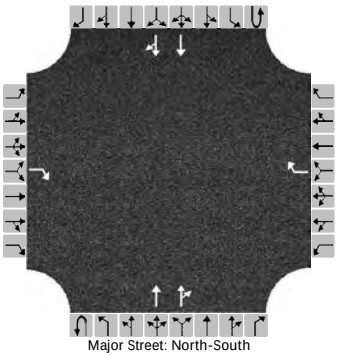
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Bixby
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Bixby Road
Analysis Year	2048	North/South Street	Alum Creek Drive
Time Analyzed	AM Projections	Peak Hour Factor	0.75
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	0	2	0	0	0	2	0
Configuration				R				R			T	TR			T	TR
Volume (veh/h)				10				10			1240	10			2780	20
Percent Heavy Vehicles (%)				3				3								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				6.9				6.9								
Critical Headway (sec)				6.96				6.96								
Base Follow-Up Headway (sec)				3.3				3.3								
Follow-Up Headway (sec)				3.33				3.33								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				13				13								
Capacity, c (veh/h)				61				310								
v/c Ratio				0.22				0.04								
95% Queue Length, Q_{95} (veh)				0.7				0.1								
Control Delay (s/veh)				79.1				17.1								
Level of Service (LOS)				F				C								
Approach Delay (s/veh)	79.1				17.1											
Approach LOS	F				C											

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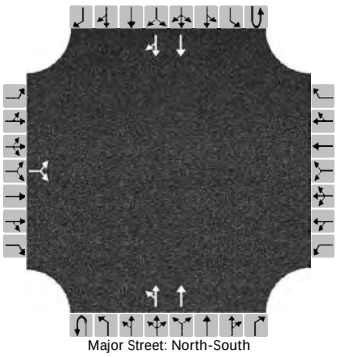
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Rathmell
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Rathmell Road
Analysis Year	2048	North/South Street	Alum Creek Drive
Time Analyzed	AM Projections	Peak Hour Factor	0.79
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	2	0	0	0	2	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		50		30						20	1230				2770	50
Percent Heavy Vehicles (%)		13		13						20						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		7.06		7.16						4.50						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.63		3.43						2.40						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			101							25						
Capacity, c (veh/h)										45						
v/c Ratio										0.56						
95% Queue Length, Q_{95} (veh)										2.1						
Control Delay (s/veh)										157.4						
Level of Service (LOS)										F						
Approach Delay (s/veh)									2.5							
Approach LOS																

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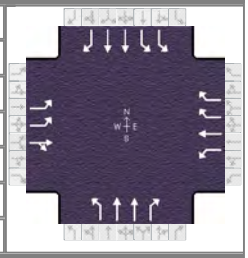
HCS7 Signalized Intersection Results Summary

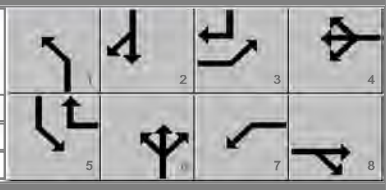
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.79
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Creekside Parkway/ Toy…	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	80	40	20	70	20	100	30	1070	110	520	1880	390

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	5.0	37.0	7.0	31.1	0.0
Yellow	3.0	4.0	5.0	3.0	3.6	0.0
Red	0.0	0.0	1.0	1.0	2.3	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	11.0	37.0	11.0	37.0	10.0	43.0	19.0	52.0
Change Period, ($Y+R_c$), s	4.0	5.9	4.0	5.9	3.0	6.0	4.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.3	3.1	3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s	5.5	6.1	6.6	5.7	3.5		17.0	
Green Extension Time (g_e), s	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	0.36		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	101	76		89	25	127	34	1206	124	658	2380	494
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1524	1555		1485	1559	1169	1541	1541	1372	1647	1696	1510
Queue Service Time (g_s), s	3.5	4.1		4.6	1.3	3.7	1.5	37.0	4.4	15.0	46.0	27.7
Cycle Queue Clearance Time (g_c), s	3.5	4.1		4.6	1.3	3.7	1.5	37.0	4.4	15.0	46.0	27.7
Green Ratio (*g/C*)	0.06	0.28		0.35	0.28	0.42	0.40	0.34	0.34	0.14	0.42	0.48
Capacity (*c*), veh/h	194	440		411	441	980	164	1036	461	449	1418	727
Volume-to-Capacity Ratio (*X*)	0.522	0.173		0.216	0.057	0.129	0.207	1.163	0.269	1.465	1.678	0.679
Back of Queue (*Q*), ft/ln (50 th percentile)	38.8	42.8		47.2	14.4	29	15.3	494.5	34.2	522	2061	257.7
Back of Queue (*Q*), veh/ln (50 th percentile)	1.4	1.5		1.6	0.5	1.0	0.5	17.2	1.2	19.6	77.5	9.7
Queue Storage Ratio (*RQ*) (50 th percentile)	0.17	0.00		0.38	0.00	0.11	0.03	0.00	0.09	1.16	0.00	0.43
Uniform Delay (d_1), s/veh	49.9	29.7		25.2	28.8	19.6	28.3	20.8	14.2	47.5	32.0	21.9
Incremental Delay (d_2), s/veh	1.2	0.1		0.1	0.0	0.0	0.1	78.1	0.6	221.2	308.1	5.1
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	51.1	29.8		25.3	28.8	19.6	28.4	98.9	14.8	268.7	340.1	27.0
Level of Service (LOS)	D	C		C	C	B	C	F	B	F	F	C
Approach Delay, s/veh / LOS	42.0	D		22.7	C		89.5	F		283.0	F	
Intersection Delay, s/veh / LOS	213.5						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.59	C	2.44	B	2.11	B
Bicycle LOS Score / LOS	0.78	A	0.88	A	1.75	B	3.40	C

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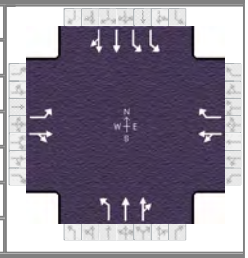
HCS7 Signalized Intersection Results Summary

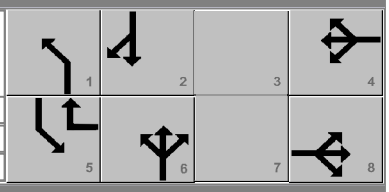
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.88
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Global Court	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	10	20	10	10	10	30	1180	20	40	1880	50

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	12	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	8.0	1.0	52.0	34.4	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		7.0	1.1	4.0	2.0	4.0
Phase Duration, s		39.0		39.0	12.0	58.0	13.0	59.0
Change Period, ($Y+R_c$), s		4.6		4.6	4.0	6.0	5.0	6.0
Max Allow Headway (*MAH*), s		4.1		4.1	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		9.2		6.0	3.1		3.1	
Green Extension Time (g_e), s		0.2		0.3	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.02		0.01	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	23	34			23	11	34	678	674	31	753	748
Adjusted Saturation Flow Rate (*s*), veh/h/ln	580	691			781	819	1555	1633	1623	1579	1707	1692
Queue Service Time (g_s), s	3.2	3.9			0.1	1.0	1.1	42.8	42.9	1.1	26.6	26.6
Cycle Queue Clearance Time (g_c), s	7.2	3.9			4.0	1.0	1.1	42.8	42.9	1.1	26.6	26.6
Green Ratio (*g/C*)	0.31	0.31			0.31	0.39	0.55	0.47	0.47	0.07	0.48	0.48
Capacity (*c*), veh/h	226	216			293	316	246	772	767	230	823	815
Volume-to-Capacity Ratio (*X*)	0.101	0.158			0.077	0.036	0.137	0.878	0.879	0.135	0.915	0.918
Back of Queue (*Q*), ft/ln (50 th percentile)	18.2	26.1			15.8	6.8	10.3	533.1	466	11.4	60.4	53.6
Back of Queue (*Q*), veh/ln (50 th percentile)	0.5	0.6			0.4	0.2	0.4	18.6	18.6	0.4	2.2	2.1
Queue Storage Ratio (*RQ*) (50 th percentile)	0.06	0.00			0.00	0.02	0.04	0.00	0.00	0.03	0.00	0.00
Uniform Delay (d_1), s/veh	30.0	27.3			26.6	21.1	16.3	32.6	32.8	51.5	3.9	3.8
Incremental Delay (d_2), s/veh	0.1	0.1			0.0	0.0	0.1	10.2	10.3	0.0	2.0	2.1
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	30.0	27.5			26.7	21.1	16.4	42.8	43.1	51.5	5.9	5.9
Level of Service (LOS)	C	C			C	C	B	D	D	D	A	A
Approach Delay, s/veh / LOS	28.5	C		24.8	C		42.3	D		6.8	A	
Intersection Delay, s/veh / LOS	23.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.29	B	2.44	B	2.10	B	1.91	B
Bicycle LOS Score / LOS	0.58	A	0.54	A	1.64	B	2.33	B

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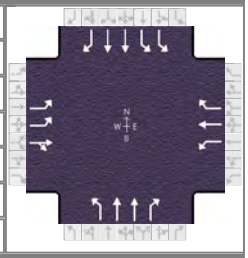
HCS7 Signalized Intersection Results Summary

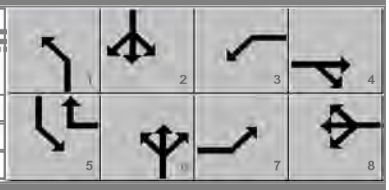
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.83
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Rohr Road	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	170	120	100	40	180	220	70	840	60	430	1180	300

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	48	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	52.0	11.0	1.0	17.7
Yellow	3.0	0.0	5.0	3.0	3.0	4.3
Red	0.0	0.0	1.0	0.0	0.0	1.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	18.0	27.0	14.0	23.0	10.0	58.0	11.0	59.0
Change Period, ($Y+R_c$), s	3.0	5.3	3.0	5.3	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	9.6	22.9	4.6	19.7	4.6		8.3	
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.07	1.00	0.00	1.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	205	265		48	217	265	76	916	65	337	924	235
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1387	1386		1584	1663	1409	1570	1569		1579	1625	
Queue Service Time (g_s), s	7.6	20.9		2.6	13.8	17.7	2.6	9.0		6.3	20.0	
Cycle Queue Clearance Time (g_c), s	7.6	20.9		2.6	13.8	17.7	2.6	9.0		6.3	20.0	
Green Ratio (*g/C*)	0.14	0.20		0.26	0.16	0.23	0.54	0.47		0.55	0.48	
Capacity (*c*), veh/h	378	274		224	268	329	316	1483		796	1566	
Volume-to-Capacity Ratio (*X*)	0.541	0.969		0.215	0.810	0.805	0.242	0.617		0.423	0.590	
Back of Queue (*Q*), ft/ln (50 th percentile)	79.6	318.5		27.5	191.5	219.5	27	51.1		49.9	179.2	
Back of Queue (*Q*), veh/ln (50 th percentile)	2.6	10.5		1.0	6.8	7.8	0.9	1.8		1.8	6.5	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.27	0.00		0.05	0.00	0.44	0.07	0.00		0.11	0.00	
Uniform Delay (d_1), s/veh	44.3	43.8		32.4	44.5	39.8	15.8	4.3		12.0	16.2	
Incremental Delay (d_2), s/veh	0.9	45.5		0.2	15.8	12.7	0.1	1.1		0.0	0.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	45.2	89.4		32.6	60.3	52.4	15.9	5.4	0.0	12.1	16.7	0.0
Level of Service (LOS)	D	F		C	E	D	B	A	A	B	B	A
Approach Delay, s/veh / LOS	70.1	E		53.9	D		5.9	A		13.0	B	
Intersection Delay, s/veh / LOS	24.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.60	C	2.27	B	2.10	B
Bicycle LOS Score / LOS	1.26	A	1.36	A	1.45	A	2.39	B

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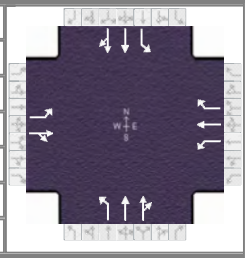
HCS7 Signalized Intersection Results Summary

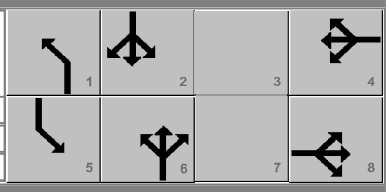
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.84
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Spiegel Drive	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	10	20	10	30	50	100	850	40	220	840	260

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	27	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	36.0	50.6	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.8	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		5.0	1.1	4.0	1.1	4.0
Phase Duration, s		56.0		56.0	12.0	43.0	11.0	42.0
Change Period, ($Y+R_c$), s		5.4		5.4	4.2	6.0	4.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		7.3		4.4	6.7		9.0	
Green Extension Time (g_e), s		0.4		0.5	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	83	36		12	36	60	108	483	475	182	475	436
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1296	1577		1351	1841	1560	1598	1678	1651	1682	1767	1622
Queue Service Time (g_s), s	4.2	1.4		0.5	1.2	2.4	4.7	24.6	24.5	7.0	24.8	24.1
Cycle Queue Clearance Time (g_c), s	5.3	1.4		1.9	1.2	2.4	4.7	24.6	24.5	7.0	24.8	24.1
Green Ratio (*g/C*)	0.46	0.46		0.46	0.46	0.46	0.40	0.34	0.34	0.39	0.33	0.33
Capacity (*c*), veh/h	648	726		670	847	718	235	564	555	225	578	531
Volume-to-Capacity Ratio (*X*)	0.129	0.049		0.018	0.042	0.083	0.459	0.856	0.856	0.810	0.821	0.821
Back of Queue (*Q*), ft/ln (50 th percentile)	32.9	13.2		4.3	12.6	21.4	40.3	151.4	148.1	107.4	229	194
Back of Queue (*Q*), veh/ln (50 th percentile)	1.2	0.5		0.2	0.5	0.8	1.4	5.4	5.3	4.0	8.5	7.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.11	0.00		0.01	0.00	0.04	0.12	0.00	0.00	0.24	0.00	0.00
Uniform Delay (d_1), s/veh	17.8	16.4		16.9	16.4	16.7	21.5	16.3	16.2	31.0	23.9	21.6
Incremental Delay (d_2), s/veh	0.0	0.0		0.0	0.0	0.0	0.1	5.0	5.1	14.3	9.6	10.4
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	17.9	16.4		16.9	16.4	16.7	21.7	21.3	21.2	45.3	33.5	31.9
Level of Service (LOS)	B	B		B	B	B	C	C	C	D	C	C
Approach Delay, s/veh / LOS	17.4	B		16.6	B		21.3	C		34.8	C	
Intersection Delay, s/veh / LOS	27.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.27	B	2.27	B	2.12	B	1.93	B
Bicycle LOS Score / LOS	0.68	A	0.66	A	1.46	A	1.78	B

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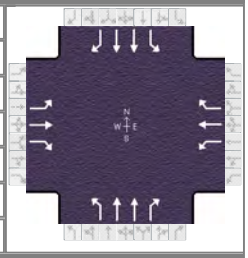
HCS7 Signalized Intersection Results Summary

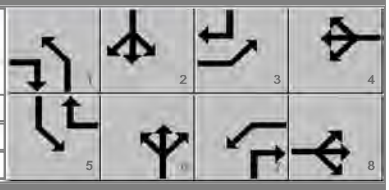
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.90
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	London-Groveport Road	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	120	190	170	210	140	40	150	830	110	80	710	80

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.5	31.4	7.5	33.4	0.0	0.0
Yellow	4.7	5.6	4.7	5.6	0.0	0.0
Red	3.8	1.0	3.8	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	16.0	40.0	16.0	40.0	16.0	38.0	16.0	38.0
Change Period, ($Y+R_c$), s	8.5	6.6	8.5	6.6	8.5	6.6	8.5	6.6
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	8.5	13.4	9.5	9.5	9.5		5.3	
Green Extension Time (g_e), s	0.0	1.1	0.0	1.1	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	133	211	189	233	156	44	167	922	122	67	597	67
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1555	1633	1384	1654	1737	1472	1555	1555	1384	1570	1569	1397
Queue Service Time (g_s), s	6.5	11.4	10.9	7.5	7.5	2.2	7.5	31.4	6.9	3.3	20.9	4.8
Cycle Queue Clearance Time (g_c), s	6.5	11.4	10.9	7.5	7.5	2.2	7.5	31.4	6.9	3.3	20.9	4.8
Green Ratio (*g/C*)	0.37	0.30	0.37	0.37	0.30	0.37	0.35	0.29	0.35	0.35	0.29	0.35
Capacity (*c*), veh/h	405	496	515	376	527	547	227	888	489	172	896	494
Volume-to-Capacity Ratio (*X*)	0.329	0.426	0.367	0.620	0.295	0.081	0.733	1.039	0.250	0.390	0.666	0.136
Back of Queue (*Q*), ft/ln (50 th percentile)	67.5	127	101.2	64.1	85	20.1	111.7	476.6	68.5	54.7	264.8	70.2
Back of Queue (*Q*), veh/ln (50 th percentile)	2.4	4.4	3.5	2.4	3.1	0.7	3.9	16.7	2.4	1.9	9.3	2.5
Queue Storage Ratio (*RQ*) (50 th percentile)	0.14	0.00	0.20	0.12	0.00	0.04	0.19	0.00	0.18	0.11	0.00	0.18
Uniform Delay (d_1), s/veh	24.2	30.6	25.1	30.2	29.3	22.4	31.2	39.3	25.2	30.6	49.2	34.2
Incremental Delay (d_2), s/veh	0.2	0.2	0.2	2.3	0.1	0.0	10.2	40.8	1.2	0.3	2.1	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	24.4	30.8	25.3	32.5	29.4	22.4	41.4	80.1	26.4	30.8	51.3	34.5
Level of Service (LOS)	C	C	C	C	C	C	D	F	C	C	D	C
Approach Delay, s/veh / LOS	27.3	C		30.4	C		69.3	E		47.9	D	
Intersection Delay, s/veh / LOS	50.4						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.44	B	2.12	B	2.12	B
Bicycle LOS Score / LOS	1.37	A	1.20	A	1.49	A	1.29	A

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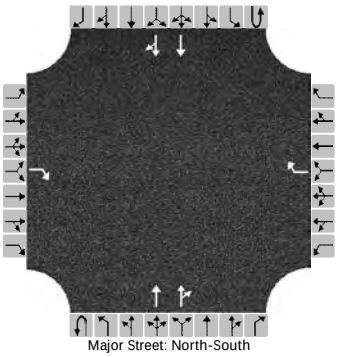
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Bixby
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Bixby Road
Analysis Year	2048	North/South Street	Alum Creek Drive
Time Analyzed	PM Projections	Peak Hour Factor	0.93
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	0	2	0	0	0	2	0
Configuration				R				R			T	TR			T	TR
Volume (veh/h)				20				20			2610	100			1850	20
Percent Heavy Vehicles (%)				13				3								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				6.9				6.9								
Critical Headway (sec)				7.16				6.96								
Base Follow-Up Headway (sec)				3.3				3.3								
Follow-Up Headway (sec)				3.43				3.33								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				22				22								
Capacity, c (veh/h)				221				118								
v/c Ratio				0.10				0.18								
95% Queue Length, Q_{95} (veh)				0.3				0.6								
Control Delay (s/veh)				23.1				42.3								
Level of Service (LOS)				C				E								
Approach Delay (s/veh)	23.1				42.3											
Approach LOS	C				E											

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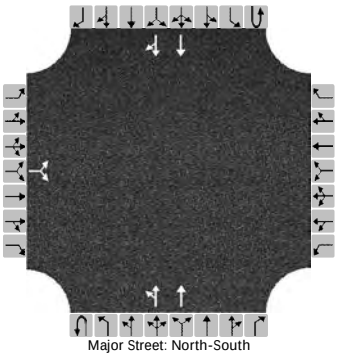
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Rathmell
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Rathmell Road
Analysis Year	2048	North/South Street	Alum Creek Drive
Time Analyzed	PM Projections	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	2	0	0	0	2	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		40		40						50	2580				1830	200
Percent Heavy Vehicles (%)		8		8						14						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.96		7.06						4.38						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.58		3.38						2.34						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			87							54						
Capacity, c (veh/h)			7							198						
v/c Ratio			12.77							0.27						
95% Queue Length, Q_{95} (veh)			12.6							1.1						
Control Delay (s/veh)			6354.5							30.0						
Level of Service (LOS)			F							D						
Approach Delay (s/veh)	6354.5								0.6							
Approach LOS	F															

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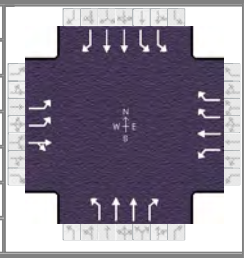
HCS7 Signalized Intersection Results Summary

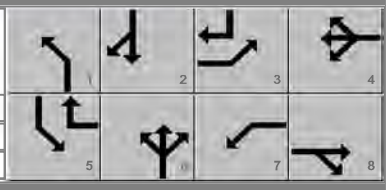
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.93
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Creekside Parkway/ Toy…	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	380	30	50	130	40	450	40	1890	120	230	1430	210

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	5.0	37.0	7.0	31.1	0.0
Yellow	3.0	4.0	5.0	3.0	3.6	0.0
Red	0.0	0.0	1.0	1.0	2.3	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	11.0	37.0	11.0	37.0	10.0	43.0	19.0	52.0
Change Period, ($Y+R_c$), s	4.0	5.9	4.0	5.9	3.0	6.0	4.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.3	3.1	3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s	9.0	6.5	8.7	16.7	3.4		11.3	
Green Extension Time (g_e), s	0.0	1.6	0.0	1.5	0.0	0.0	0.2	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	0.28		0.42	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	409	86		140	43	484	31	1470	93	247	1538	226
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1647	1601		1640	1722	1292	1527	1527	1359	1387	1428	1271
Queue Service Time (g_s), s	7.0	4.5		6.7	2.0	14.7	1.4	37.0	3.8	9.3	46.0	12.3
Cycle Queue Clearance Time (g_c), s	7.0	4.5		6.7	2.0	14.7	1.4	37.0	3.8	9.3	46.0	12.3
Green Ratio (*g/C*)	0.06	0.28		0.35	0.28	0.42	0.40	0.34	0.34	0.14	0.42	0.48
Capacity (*c*), veh/h	210	453		440	487	1083	163	1027	457	378	1194	612
Volume-to-Capacity Ratio (*X*)	1.949	0.190		0.318	0.088	0.447	0.191	1.431	0.204	0.654	1.288	0.369
Back of Queue (*Q*), ft/ln (50 th percentile)	419.8	45.7		70.9	22.8	119.8	14.1	1054.5	30.4	97.4	1114.5	107.6
Back of Queue (*Q*), veh/ln (50 th percentile)	15.8	1.7		2.6	0.8	4.4	0.5	36.4	1.0	3.2	36.7	3.5
Queue Storage Ratio (*RQ*) (50 th percentile)	1.79	0.00		0.57	0.00	0.44	0.02	0.00	0.08	0.22	0.00	0.18
Uniform Delay (d_1), s/veh	51.5	29.9		25.9	29.0	22.8	28.2	25.5	17.1	45.0	32.0	18.0
Incremental Delay (d_2), s/veh	443.9	0.1		0.2	0.0	0.1	0.0	194.5	0.1	3.2	135.8	1.7
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	495.4	30.0		26.1	29.0	22.9	28.2	220.0	17.2	48.2	167.8	19.7
Level of Service (LOS)	F	C		C	C	C	C	F	B	D	F	B
Approach Delay, s/veh / LOS	414.5	F		24.0	C		204.4	F		136.5	F	
Intersection Delay, s/veh / LOS	172.3						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.59	C	2.44	B	2.11	B
Bicycle LOS Score / LOS	1.30	A	1.59	B	2.31	B	2.15	B

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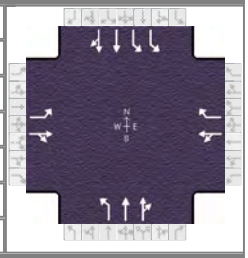
HCS7 Signalized Intersection Results Summary

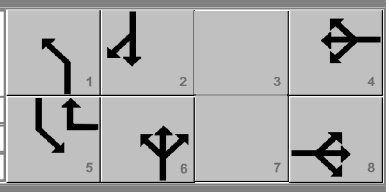
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.96
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Global Court	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	10	30	20	10	40	20	1980	10	20	1570	20

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	12	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	8.0	1.0	52.0	34.4	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		7.0	1.1	4.0	2.0	4.0
Phase Duration, s		39.0		39.0	12.0	58.0	13.0	59.0
Change Period, ($Y+R_c$), s		4.6		4.6	4.0	6.0	5.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		7.7		5.6	2.7		2.7	
Green Extension Time (g_e), s		0.3		0.3	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.01		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	31	42			31	42	21	1036	1036	17	687	684
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1215	1426			948	1032	1541	1618	1615	1401	1515	1508
Queue Service Time (g_s), s	2.1	2.3			1.3	2.8	0.7	52.0	52.0	0.7	37.5	37.5
Cycle Queue Clearance Time (g_c), s	5.7	2.3			3.6	2.8	0.7	52.0	52.0	0.7	37.5	37.5
Green Ratio (*g/C*)	0.31	0.31			0.31	0.39	0.55	0.47	0.47	0.07	0.48	0.48
Capacity (*c*), veh/h	406	446			351	398	219	765	764	204	730	727
Volume-to-Capacity Ratio (*X*)	0.077	0.093			0.089	0.105	0.095	1.354	1.356	0.085	0.941	0.941
Back of Queue (*Q*), ft/ln (50 th percentile)	17.5	22.3			20.1	23.4	6.3	1573.1	1368.5	6.9	102.8	83.9
Back of Queue (*Q*), veh/ln (50 th percentile)	0.6	0.8			0.6	0.7	0.2	54.6	54.7	0.2	3.4	3.4
Queue Storage Ratio (*RQ*) (50 th percentile)	0.06	0.00			0.00	0.08	0.02	0.00	0.00	0.02	0.00	0.00
Uniform Delay (d_1), s/veh	29.2	26.8			27.2	21.6	19.7	38.5	38.5	51.3	7.2	7.1
Incremental Delay (d_2), s/veh	0.0	0.0			0.0	0.0	0.0	160.1	161.2	0.0	3.2	3.2
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	29.3	26.8			27.2	21.7	19.7	198.6	199.7	51.3	10.4	10.3
Level of Service (LOS)	C	C			C	C	B	F	F	D	B	B
Approach Delay, s/veh / LOS	27.9	C		24.1	C		197.4	F		10.9	B	
Intersection Delay, s/veh / LOS	119.1						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.29	B	2.44	B	2.10	B	1.91	B
Bicycle LOS Score / LOS	0.61	A	0.61	A	2.21	B	1.87	B

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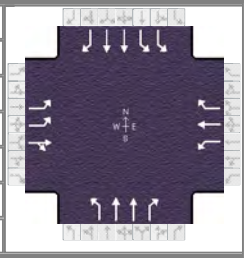
HCS7 Signalized Intersection Results Summary

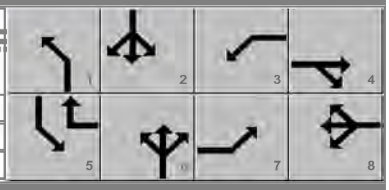
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.86
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Rohr Road	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	310	210	110	60	170	430	80	1270	70	330	1070	220

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	48	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	52.0	11.0	1.0	17.7
Yellow	3.0	0.0	5.0	3.0	3.0	4.3
Red	0.0	0.0	1.0	0.0	0.0	1.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	18.0	27.0	14.0	23.0	10.0	58.0	11.0	59.0
Change Period, ($Y+R_c$), s	3.0	5.3	3.0	5.3	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	15.4	23.7	5.9	19.7	5.2		8.0	
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	1.00	0.05	1.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	360	372		70	198	500	89	1418	78	286	928	191
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1456	1482		1513	1589	1346	1541	1541		1387	1428	
Queue Service Time (g_s), s	13.4	21.7		3.9	13.1	17.7	3.2	48.6		6.0	24.2	
Cycle Queue Clearance Time (g_c), s	13.4	21.7		3.9	13.1	17.7	3.2	48.6		6.0	24.2	
Green Ratio (*g/C*)	0.14	0.20		0.26	0.16	0.23	0.54	0.47		0.55	0.48	
Capacity (*c*), veh/h	397	292		217	256	315	291	1457		351	1376	
Volume-to-Capacity Ratio (*X*)	0.908	1.272		0.322	0.773	1.589	0.307	0.973		0.815	0.675	
Back of Queue (*Q*), ft/ln (50 th percentile)	179.1	579.5		42	174.3	957.3	32.2	465.8		52.9	205	
Back of Queue (*Q*), veh/ln (50 th percentile)	6.1	19.7		1.4	6.0	32.8	1.1	16.2		1.7	6.7	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.60	0.00		0.08	0.00	1.91	0.08	0.00		0.11	0.00	
Uniform Delay (d_1), s/veh	46.8	44.2		32.9	44.2	42.2	17.1	21.3		22.6	16.4	
Incremental Delay (d_2), s/veh	23.7	146.7		0.3	12.5	279.9	0.1	10.5		4.2	0.8	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	70.5	190.8		33.2	56.7	322.0	17.2	31.8	0.0	26.8	17.2	0.0
Level of Service (LOS)	E	F		C	E	F	B	C	A	C	B	A
Approach Delay, s/veh / LOS	131.6	F		227.4	F		29.4	C		16.8	B	
Intersection Delay, s/veh / LOS	76.0						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.45	B	2.60	C	2.27	B	2.10	B
Bicycle LOS Score / LOS	1.70	B	1.75	B	1.85	B	2.04	B

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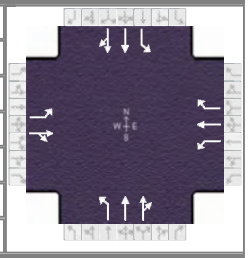
HCS7 Signalized Intersection Results Summary

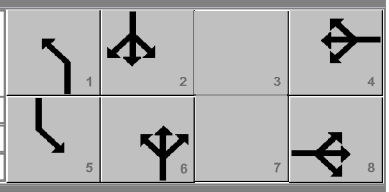
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.86
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Spiegel Drive	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	280	70	160	30	40	240	40	900	30	160	880	200

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	27	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	36.0	50.6	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.8	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		5.0	1.1	4.0	1.1	4.0
Phase Duration, s		56.0		56.0	12.0	43.0	11.0	42.0
Change Period, ($Y+R_c$), s		5.4		5.4	4.2	6.0	4.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		23.9		16.4	4.0		8.9	
Green Extension Time (g_e), s		2.2		2.2	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.21		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	326	267		35	47	279	46	538	531	142	494	462
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1305	1596		1059	1781	1510	1443	1515	1497	1485	1559	1459
Queue Service Time (g_s), s	20.3	12.0		2.4	1.6	13.5	2.0	37.0	37.0	6.9	33.9	33.7
Cycle Queue Clearance Time (g_c), s	21.9	12.0		14.4	1.6	13.5	2.0	37.0	37.0	6.9	33.9	33.7
Green Ratio (*g/C*)	0.46	0.46		0.46	0.46	0.46	0.40	0.34	0.34	0.39	0.33	0.33
Capacity (*c*), veh/h	647	734		438	819	694	177	509	504	160	510	477
Volume-to-Capacity Ratio (*X*)	0.503	0.364		0.080	0.057	0.402	0.260	1.055	1.055	0.886	0.969	0.969
Back of Queue (*Q*), ft/ln (50 th percentile)	159.4	114.2		16.1	17	122.6	18	336.8	307.9	107.8	370.7	299.9
Back of Queue (*Q*), veh/ln (50 th percentile)	6.0	4.3		0.6	0.6	4.6	0.6	11.2	11.0	3.6	12.5	11.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.53	0.00		0.03	0.00	0.20	0.05	0.00	0.00	0.24	0.00	0.00
Uniform Delay (d_1), s/veh	22.5	19.3		23.9	16.5	19.7	22.9	19.6	19.4	29.8	27.5	26.0
Incremental Delay (d_2), s/veh	0.2	0.1		0.0	0.0	0.1	0.1	40.5	40.6	27.9	24.7	25.7
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	22.8	19.4		24.0	16.5	19.8	23.0	60.1	60.1	57.7	52.2	51.7
Level of Service (LOS)	C	B		C	B	B	C	F	F	E	D	D
Approach Delay, s/veh / LOS	21.2	C		19.8	B		58.5	E		52.7	D	
Intersection Delay, s/veh / LOS	45.1						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.27	B	2.27	B	2.12	B	1.93	B
Bicycle LOS Score / LOS	1.47	A	1.08	A	1.42	A	1.68	B

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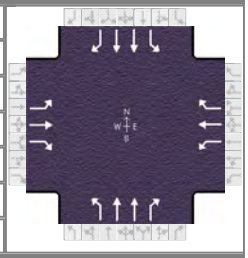
HCS7 Signalized Intersection Results Summary

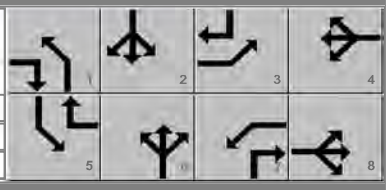
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.87
Urban Street	Alum Creek Drive	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	London-Groveport Road	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	100	230	170	270	210	70	270	800	170	130	790	150

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.5	31.4	7.5	33.4	0.0	0.0
Yellow	4.7	5.6	4.7	5.6	0.0	0.0
Red	3.8	1.0	3.8	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	16.0	40.0	16.0	40.0	16.0	38.0	16.0	38.0
Change Period, ($Y+R_c$), s	8.5	6.6	8.5	6.6	8.5	6.6	8.5	6.6
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	7.2	15.8	9.5	14.4	9.5		8.1	
Green Extension Time (g_e), s	0.0	1.5	0.0	1.5	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.00	1.00	0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	115	264	195	310	241	80	310	920	195	122	739	140
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1654	1737	1472	1654	1737	1472	1612	1611	1434	1527	1527	1359
Queue Service Time (g_s), s	5.2	13.8	10.6	7.5	12.4	4.0	7.5	31.4	11.2	6.1	26.4	10.2
Cycle Queue Clearance Time (g_c), s	5.2	13.8	10.6	7.5	12.4	4.0	7.5	31.4	11.2	6.1	26.4	10.2
Green Ratio (*g/C*)	0.37	0.30	0.37	0.37	0.30	0.37	0.35	0.29	0.35	0.35	0.29	0.35
Capacity (*c*), veh/h	361	527	547	344	527	547	193	920	507	170	872	481
Volume-to-Capacity Ratio (*X*)	0.318	0.501	0.357	0.901	0.458	0.147	1.607	1.000	0.385	0.717	0.848	0.292
Back of Queue (*Q*), ft/ln (50 th percentile)	54.4	155.3	99.1	202.9	139.5	37.4	441.2	440.2	113.2	110.3	335.8	147.2
Back of Queue (*Q*), veh/ln (50 th percentile)	2.0	5.7	3.6	7.5	5.1	1.4	15.9	15.8	4.1	3.8	11.6	5.1
Queue Storage Ratio (*RQ*) (50 th percentile)	0.11	0.00	0.20	0.39	0.00	0.07	0.74	0.00	0.30	0.22	0.00	0.37
Uniform Delay (d_1), s/veh	24.4	31.5	25.0	36.8	31.0	23.0	34.9	39.3	26.6	31.2	49.8	36.3
Incremental Delay (d_2), s/veh	0.2	0.3	0.1	25.0	0.2	0.0	295.8	29.6	2.2	5.6	4.9	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	24.6	31.7	25.2	61.7	31.2	23.0	330.6	68.9	28.8	36.8	54.7	37.0
Level of Service (LOS)	C	C	C	E	C	C	F	E	C	D	D	D
Approach Delay, s/veh / LOS	28.1	C		45.2	D		120.4	F		50.0	D	
Intersection Delay, s/veh / LOS	73.3						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.44	B	2.12	B	2.12	B
Bicycle LOS Score / LOS	1.44	A	1.53	B	1.66	B	1.50	B

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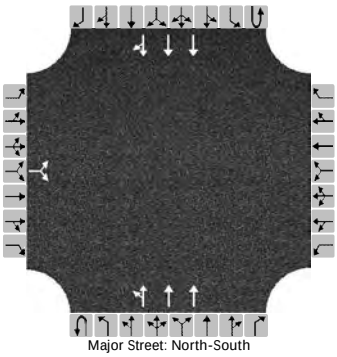
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Rathmell
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Rathmell Road
Analysis Year	2048	North/South Street	Alum Creek Drive
Time Analyzed	AM Projections	Peak Hour Factor	0.79
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	3	0	0	0	3	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		50		30						20	1230				2770	50
Percent Heavy Vehicles (%)		13		13						20						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4		7.1						5.3						
Critical Headway (sec)		5.96		7.36						5.70						
Base Follow-Up Headway (sec)		3.8		3.9						3.1						
Follow-Up Headway (sec)		3.93		4.03						3.30						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			101							25						
Capacity, c (veh/h)										13						
v/c Ratio										1.94						
95% Queue Length, Q_{95} (veh)										3.9						
Control Delay (s/veh)										1029.1						
Level of Service (LOS)										F						
Approach Delay (s/veh)									16.5							
Approach LOS																

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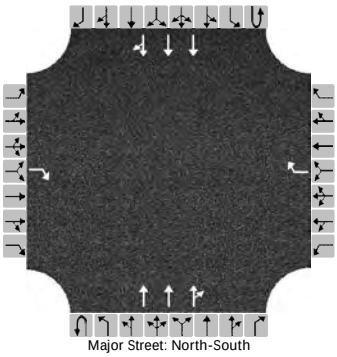
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Bixby
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Bixby Road
Analysis Year	2048	North/South Street	Alum Creek Drive
Time Analyzed	AM Projections	Peak Hour Factor	0.80
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	0	3	0	0	0	3	0
Configuration				R				R			T	TR			T	TR
Volume (veh/h)				10				10			1240	10			2780	20
Percent Heavy Vehicles (%)				3				3								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				7.1				7.1								
Critical Headway (sec)				7.16				7.16								
Base Follow-Up Headway (sec)				3.9				3.9								
Follow-Up Headway (sec)				3.93				3.93								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				13				13								
Capacity, c (veh/h)				63				288								
v/c Ratio				0.20				0.04								
95% Queue Length, Q_{95} (veh)				0.7				0.1								
Control Delay (s/veh)				75.4				18.1								
Level of Service (LOS)				F				C								
Approach Delay (s/veh)	75.4				18.1											
Approach LOS	F				C											

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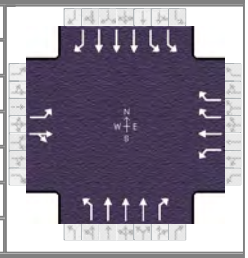
HCS7 Signalized Intersection Results Summary

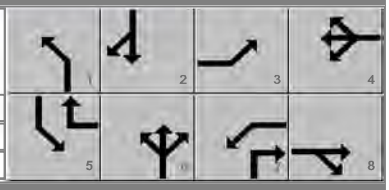
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.79
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Creekside Parkway/ Toy…	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	80	40	20	70	20	100	30	1070	110	520	1880	390

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	8.0	20.0	42.0	7.0	10.1	0.0
Yellow	3.0	4.0	5.0	3.0	3.6	0.0
Red	0.0	0.0	1.0	1.0	2.3	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	11.0	16.0	11.0	16.0	11.0	48.0	35.0	72.0
Change Period, ($Y+R_c$), s	4.0	5.9	4.0	5.9	3.0	6.0	4.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.3	3.1	3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s	9.0	7.1	7.9	5.9	3.4		21.7	
Green Extension Time (g_e), s	0.0	0.1	0.0	0.2	0.0	0.0	1.2	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	1.00	1.00	0.42	0.04		0.02	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	101	76		89	25	127	34	1228	126	658	2380	494
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1570	1555		1485	1559	1169	1541	1470	1372	1647	1618	1510
Queue Service Time (g_s), s	7.0	5.1		5.9	1.6	3.9	1.4	14.9	2.2	19.7	42.3	21.4
Cycle Queue Clearance Time (g_c), s	7.0	5.1		5.9	1.6	3.9	1.4	14.9	2.2	19.7	42.3	21.4
Green Ratio (*g/C*)	0.06	0.09		0.16	0.09	0.37	0.45	0.38	0.45	0.28	0.60	0.60
Capacity (*c*), veh/h	100	143		190	143	874	203	1683	611	929	2912	906
Volume-to-Capacity Ratio (*X*)	1.014	0.532		0.467	0.177	0.145	0.170	0.729	0.207	0.709	0.817	0.545
Back of Queue (*Q*), ft/ln (50 th percentile)	151.2	58.1		64.1	19	31.8	14	73.9	17.5	203.6	359.2	175.9
Back of Queue (*Q*), veh/ln (50 th percentile)	5.3	2.0		2.2	0.6	1.1	0.5	2.6	0.6	7.7	13.5	6.6
Queue Storage Ratio (*RQ*) (50 th percentile)	0.64	0.00		0.51	0.00	0.12	0.02	0.00	0.05	0.45	0.00	0.29
Uniform Delay (d_1), s/veh	51.5	47.7		42.0	46.1	22.8	20.9	8.5	5.4	35.5	17.3	13.1
Incremental Delay (d_2), s/veh	93.8	2.0		0.7	0.2	0.0	0.1	2.3	0.6	2.2	2.7	2.4
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	145.3	49.7		42.6	46.3	22.8	21.0	10.7	6.0	37.6	19.9	15.4
Level of Service (LOS)	F	D		D	D	C	C	B	A	D	B	B
Approach Delay, s/veh / LOS	104.3	F		32.6	C		10.6	B		22.6	C	
Intersection Delay, s/veh / LOS	22.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.74	C	2.86	C	2.43	B	1.88	B
Bicycle LOS Score / LOS	0.78	A	0.88	A	1.33	A	2.43	B

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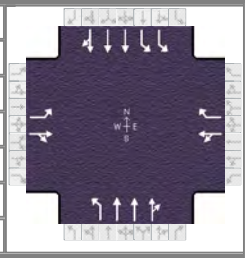
HCS7 Signalized Intersection Results Summary

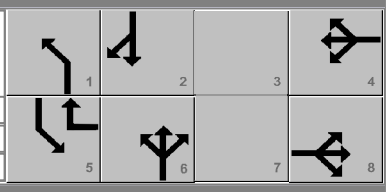
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.88
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Global Court	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	10	20	10	10	10	30	1180	20	40	1880	50

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	12	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	8.0	1.0	53.0	33.4	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		7.0	1.1	4.0	2.0	4.0
Phase Duration, s		38.0		38.0	12.0	59.0	13.0	60.0
Change Period, ($Y+R_c$), s		4.6		4.6	4.0	6.0	5.0	6.0
Max Allow Headway (*MAH*), s		4.1		4.1	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		9.3		6.0	3.2		3.6	
Green Extension Time (g_e), s		0.2		0.3	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.02		0.05	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	23	34			23	11	34	921	456	51	1633	810
Adjusted Saturation Flow Rate (*s*), veh/h/ln	580	691			779	819	1555	1633	1619	1579	1707	1684
Queue Service Time (g_s), s	3.3	4.0			0.1	1.0	1.2	23.6	23.6	1.6	49.4	50.4
Cycle Queue Clearance Time (g_c), s	7.3	4.0			4.0	1.0	1.2	23.6	23.6	1.6	49.4	50.4
Green Ratio (*g/C*)	0.30	0.30			0.30	0.38	0.55	0.48	0.48	0.07	0.49	0.49
Capacity (*c*), veh/h	220	210			286	308	180	1574	780	230	1676	827
Volume-to-Capacity Ratio (*X*)	0.103	0.163			0.080	0.037	0.191	0.585	0.585	0.220	0.974	0.980
Back of Queue (*Q*), ft/ln (50 th percentile)	18.5	26.5			16	7	11.3	249.6	222.3	16.1	286.5	298.6
Back of Queue (*Q*), veh/ln (50 th percentile)	0.5	0.7			0.4	0.2	0.4	8.7	8.9	0.6	10.4	11.9
Queue Storage Ratio (*RQ*) (50 th percentile)	0.06	0.00			0.00	0.02	0.04	0.00	0.00	0.04	0.00	0.00
Uniform Delay (d_1), s/veh	30.8	28.1			27.3	21.7	25.2	22.9	22.8	44.6	15.2	15.2
Incremental Delay (d_2), s/veh	0.1	0.1			0.0	0.0	0.1	1.2	2.3	0.1	10.5	17.8
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	30.8	28.2			27.4	21.7	25.3	24.1	25.2	44.7	25.7	33.0
Level of Service (LOS)	C	C			C	C	C	C	C	D	C	C
Approach Delay, s/veh / LOS	29.2	C		25.5	C		24.5	C		28.5	C	
Intersection Delay, s/veh / LOS	27.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.58	C	2.71	C	2.10	B	1.90	B
Bicycle LOS Score / LOS	0.58	A	0.54	A	1.26	A	1.72	B

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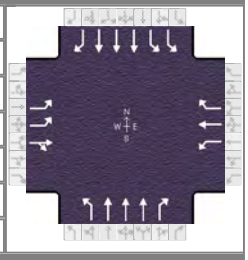
HCS7 Signalized Intersection Results Summary

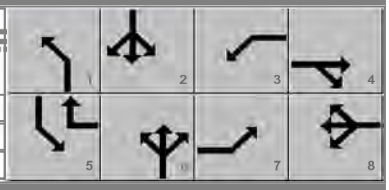
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.83
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Rohr Road	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	170	120	100	40	180	220	70	840	60	430	1180	300

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	22	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	32.0	18.0	1.0	30.7
Yellow	3.0	3.0	5.0	3.0	0.0	4.3
Red	0.0	0.0	1.0	0.0	0.0	1.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	21.0	36.0	22.0	37.0	10.0	38.0	14.0	42.0
Change Period, ($Y+R_c$), s	3.0	5.3	3.0	5.3	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	9.3	20.7	3.9	17.6	5.8		13.0	
Green Extension Time (g_e), s	0.3	1.3	0.0	1.4	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.00	0.06	0.00	0.01	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	205	265		48	217	265	78	942	67	543	1491	379
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1387	1386		1584	1663	1409	1570	1496		1579	1550	
Queue Service Time (g_s), s	7.3	18.7		1.9	11.7	15.6	3.8	17.9		11.0	33.9	
Cycle Queue Clearance Time (g_c), s	7.3	18.7		1.9	11.7	15.6	3.8	17.9		11.0	33.9	
Green Ratio (*g/C*)	0.16	0.28		0.45	0.29	0.39	0.35	0.29		0.41	0.33	
Capacity (*c*), veh/h	454	387		447	479	547	166	1306		586	1522	
Volume-to-Capacity Ratio (*X*)	0.451	0.685		0.108	0.453	0.485	0.474	0.721		0.928	0.980	
Back of Queue (*Q*), ft/ln (50 th percentile)	75.9	201.7		19.2	131.9	144.3	42.3	144.9		128.5	169.9	
Back of Queue (*Q*), veh/ln (50 th percentile)	2.5	6.6		0.7	4.7	5.1	1.5	5.1		4.7	6.2	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.25	0.00		0.04	0.00	0.29	0.11	0.00		0.27	0.00	
Uniform Delay (d_1), s/veh	41.5	35.3		18.7	32.0	25.4	30.7	23.6		28.5	17.7	
Incremental Delay (d_2), s/veh	0.3	4.1		0.0	0.2	0.2	0.7	2.9		5.2	6.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	41.8	39.5		18.8	32.3	25.6	31.3	26.5	0.0	33.7	23.8	0.0
Level of Service (LOS)	D	D		B	C	C	C	C	A	C	C	A
Approach Delay, s/veh / LOS	40.5	D		27.7	C		25.2	C		22.3	C	
Intersection Delay, s/veh / LOS	25.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.72	C	2.84	C	2.29	B	2.12	B
Bicycle LOS Score / LOS	1.26	A	1.36	A	1.13	A	1.75	B

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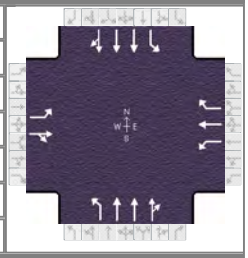
HCS7 Signalized Intersection Results Summary

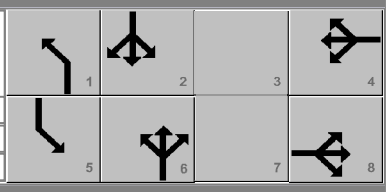
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.84
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Spiegel Drive	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	10	20	10	30	50	100	850	40	220	840	260

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	27	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.0	1.0	36.0	50.6	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.8	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		5.0	1.1	4.0	1.1	4.0
Phase Duration, s		56.0		56.0	12.0	43.0	11.0	42.0
Change Period, ($Y+R_c$), s		5.4		5.4	4.2	6.0	4.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		7.3		4.4	7.0		9.0	
Green Extension Time (g_e), s		0.4		0.5	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	83	36		12	36	60	111	664	325	277	961	422
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1296	1577		1351	1841	1560	1598	1678	1637	1682	1767	1550
Queue Service Time (g_s), s	4.2	1.4		0.5	1.2	2.4	5.0	9.9	9.6	7.0	20.3	17.7
Cycle Queue Clearance Time (g_c), s	5.3	1.4		1.9	1.2	2.4	5.0	9.9	9.6	7.0	20.3	17.7
Green Ratio (*g/C*)	0.46	0.46		0.46	0.46	0.46	0.40	0.34	0.34	0.39	0.33	0.33
Capacity (*c*), veh/h	648	726		670	847	718	229	1129	551	295	1156	507
Volume-to-Capacity Ratio (*X*)	0.129	0.049		0.018	0.042	0.083	0.485	0.588	0.590	0.938	0.831	0.832
Back of Queue (*Q*), ft/ln (50 th percentile)	32.9	13.2		4.3	12.6	21.4	50.9	67.9	68	136.7	100.5	74.2
Back of Queue (*Q*), veh/ln (50 th percentile)	1.2	0.5		0.2	0.5	0.8	1.8	2.4	2.4	5.1	3.7	2.8
Queue Storage Ratio (*RQ*) (50 th percentile)	0.11	0.00		0.01	0.00	0.04	0.15	0.00	0.00	0.30	0.00	0.00
Uniform Delay (d_1), s/veh	17.8	16.4		16.9	16.4	16.7	25.3	10.6	10.1	35.2	12.3	9.0
Incremental Delay (d_2), s/veh	0.0	0.0		0.0	0.0	0.0	0.3	1.1	2.2	13.4	1.8	4.1
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	17.9	16.4		16.9	16.4	16.7	25.6	11.7	12.3	48.6	14.1	13.0
Level of Service (LOS)	B	B		B	B	B	C	B	B	D	B	B
Approach Delay, s/veh / LOS	17.4	B		16.6	B		13.3	B		19.6	B	
Intersection Delay, s/veh / LOS	17.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.56	C	2.56	C	2.12	B	1.93	B
Bicycle LOS Score / LOS	0.68	A	0.66	A	1.14	A	1.35	A

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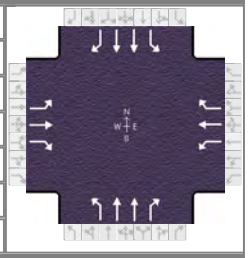
HCS7 Signalized Intersection Results Summary

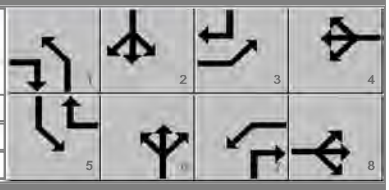
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.90
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	London-Groveport Road	File Name	2048 AM Projections.xus		
Project Description	2048 AM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	120	190	170	210	140	40	150	830	110	80	710	80

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	11	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	11.5	35.4	15.5	3.0	14.4	0.0
Yellow	4.7	5.6	4.7	0.0	5.6	0.0
Red	3.8	1.0	3.8	0.0	1.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	27.0	24.0	24.0	21.0	20.0	42.0	20.0	42.0
Change Period, ($Y+R_c$), s	8.5	6.6	8.5	6.6	8.5	6.6	8.5	6.6
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	9.2	15.7	15.2	11.4	9.6		6.5	
Green Extension Time (g_e), s	0.1	0.3	0.0	0.5	0.1	0.0	0.1	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	0.00	1.00	1.00	1.00	1.00		0.08	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	133	211	189	233	156	44	167	922	122	100	891	100
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1555	1633	1384	1654	1737	1472	1555	1555	1384	1570	1569	1397
Queue Service Time (g_s), s	7.2	13.7	12.8	13.2	9.4	2.6	7.6	31.5	5.7	4.5	30.7	5.3
Cycle Queue Clearance Time (g_c), s	7.2	13.7	12.8	13.2	9.4	2.6	7.6	31.5	5.7	4.5	30.7	5.3
Green Ratio (*g/C*)	0.30	0.16	0.26	0.27	0.13	0.24	0.43	0.32	0.46	0.43	0.32	0.49
Capacity (*c*), veh/h	376	258	364	315	227	347	241	1001	640	239	1010	684
Volume-to-Capacity Ratio (*X*)	0.355	0.817	0.519	0.741	0.684	0.128	0.690	0.922	0.191	0.420	0.883	0.147
Back of Queue (*Q*), ft/ln (50 th percentile)	76.7	191.9	123.2	159.9	120.8	25.3	89.9	389.5	54.3	49.6	386.4	75.1
Back of Queue (*Q*), veh/ln (50 th percentile)	2.7	6.7	4.3	5.9	4.4	0.9	3.1	13.6	1.9	1.7	13.6	2.6
Queue Storage Ratio (*RQ*) (50 th percentile)	0.15	0.00	0.25	0.30	0.00	0.05	0.15	0.00	0.14	0.10	0.00	0.19
Uniform Delay (d_1), s/veh	30.0	44.8	34.6	34.8	45.6	33.2	25.9	36.0	17.4	27.9	45.9	20.1
Incremental Delay (d_2), s/veh	0.2	17.1	0.6	8.0	6.9	0.1	6.8	14.9	0.7	0.2	5.9	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	30.2	61.9	35.2	42.8	52.5	33.2	32.7	50.8	18.1	28.1	51.8	20.4
Level of Service (LOS)	C	E	D	D	D	C	C	D	B	C	D	C
Approach Delay, s/veh / LOS	44.5	D		45.3	D		45.0	D		46.7	D	
Intersection Delay, s/veh / LOS	45.6						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.46	B	2.46	B	2.12	B	2.12	B
Bicycle LOS Score / LOS	1.37	A	1.20	A	1.49	A	1.29	A

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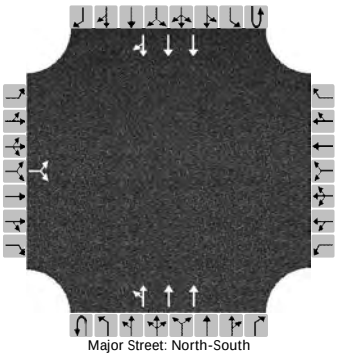
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Rathmell
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Rathmell Road
Analysis Year	2048	North/South Street	Alum Creek Drive
Time Analyzed	PM Projections	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	3	0	0	0	3	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		40		40						50	2590				1830	200
Percent Heavy Vehicles (%)		8		8						14						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4		7.1						5.3						
Critical Headway (sec)		5.86		7.26						5.58						
Base Follow-Up Headway (sec)		3.8		3.9						3.1						
Follow-Up Headway (sec)		3.88		3.98						3.24						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			87							54						
Capacity, c (veh/h)			28							84						
v/c Ratio			3.14							0.65						
95% Queue Length, Q_{95} (veh)			10.5							3.0						
Control Delay (s/veh)			1259.2							106.3						
Level of Service (LOS)			F							F						
Approach Delay (s/veh)	1259.2								2.0							
Approach LOS	F															

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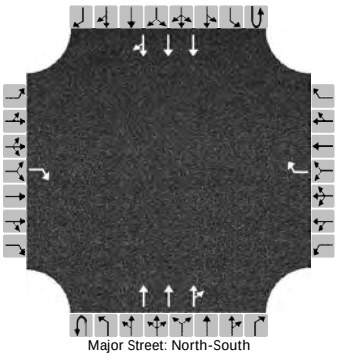
HCS7 Two-Way Stop-Control Report

General Information

Analyst	Kimley-Horn	Intersection	Alum Creek & Bixby
Agency/Co.		Jurisdiction	ODOT
Date Performed	2/23/2023	East/West Street	Bixby Road
Analysis Year	2048	North/South Street	Alum Creek Drive
Time Analyzed	PM Projections	Peak Hour Factor	0.80
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	115792		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	0	3	0	0	0	3	0
Configuration				R				R			T	TR			T	TR
Volume (veh/h)				20				20			2620	100			1850	20
Percent Heavy Vehicles (%)				3				3								
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)				7.1				7.1								
Critical Headway (sec)				7.16				7.16								
Base Follow-Up Headway (sec)				3.9				3.9								
Follow-Up Headway (sec)				3.93				3.93								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				25				25								
Capacity, c (veh/h)				159				69								
v/c Ratio				0.16				0.36								
95% Queue Length, Q_{95} (veh)				0.5				1.4								
Control Delay (s/veh)				31.9				85.1								
Level of Service (LOS)				D				F								
Approach Delay (s/veh)	31.9				85.1											
Approach LOS	D				F											

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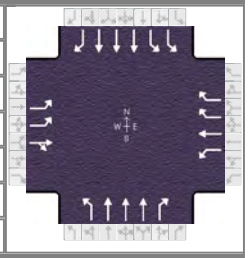
HCS7 Signalized Intersection Results Summary

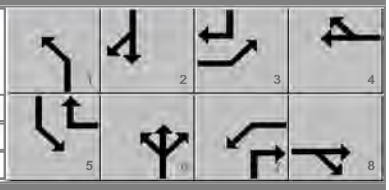
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.93
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Creekside Parkway/ Toy…	File Name	2048 PM Projections - 120.xus		
Project Description	2048 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	380	30	50	130	40	450	40	1890	120	230	1430	210

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	10.0	58.5	16.0	0.5	12.1	0.0
Yellow	3.0	5.0	3.0	0.0	3.6	0.0
Red	0.0	1.0	1.0	0.0	2.3	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	2.0	4.0	2.0	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	20.5	18.5	20.0	18.0	13.0	64.5	17.0	68.5
Change Period, ($Y+R_c$), s	4.0	5.9	4.0	5.9	3.0	6.0	4.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.3	3.1	3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s	16.7	8.1	11.7	14.1	3.7		12.5	
Green Extension Time (g_e), s	0.0	0.8	0.1	0.0	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.54	0.25	1.00	0.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	409	86		140	43	484	45	2129	135	247	1538	226
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1647	1601		1640	1722	1292	1527	1456	1359	1387	1362	1271
Queue Service Time (g_s), s	14.7	6.1		9.7	2.8	12.1	1.7	58.5	1.9	10.5	34.7	8.9
Cycle Queue Clearance Time (g_c), s	14.7	6.1		9.7	2.8	12.1	1.7	58.5	1.9	10.5	34.7	8.9
Green Ratio (*g/C*)	0.14	0.10		0.13	0.10	0.21	0.57	0.49	0.62	0.11	0.52	0.66
Capacity (*c*), veh/h	453	168		219	174	540	249	2130	844	301	2128	837
Volume-to-Capacity Ratio (*X*)	0.902	0.512		0.639	0.248	0.896	0.181	1.000	0.160	0.823	0.723	0.270
Back of Queue (*Q*), ft/ln (50 th percentile)	193.2	66		115.8	32.8	224.3	15.2	219.1	13.7	126	311.6	67.2
Back of Queue (*Q*), veh/ln (50 th percentile)	7.3	2.5		4.2	1.2	8.2	0.5	7.6	0.5	4.1	10.3	2.2
Queue Storage Ratio (*RQ*) (50 th percentile)	0.55	0.00		0.51	0.00	0.80	0.03	0.00	0.04	0.28	0.00	0.11
Uniform Delay (d_1), s/veh	51.0	50.8		49.3	49.8	46.2	18.3	12.2	3.2	52.4	22.1	8.5
Incremental Delay (d_2), s/veh	20.5	1.1		4.8	0.3	17.0	0.1	15.3	0.3	15.7	2.2	0.8
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	71.4	51.9		54.0	50.0	63.1	18.4	27.5	3.4	68.1	24.3	9.3
Level of Service (LOS)	E	D		D	D	E	B	C	A	E	C	A
Approach Delay, s/veh / LOS	68.0	E		60.4	E		25.9	C		28.0	C	
Intersection Delay, s/veh / LOS	34.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.74	C	2.86	C	2.42	B	2.09	B
Bicycle LOS Score / LOS	1.30	A	1.59	B	1.70	B	1.59	B

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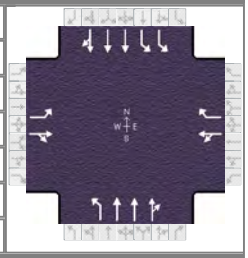
HCS7 Signalized Intersection Results Summary

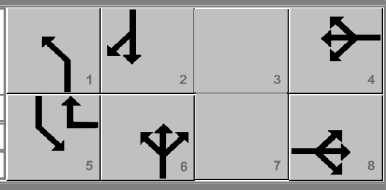
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.96
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Global Court	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	10	30	20	10	40	20	1980	10	20	1570	20

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	1	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	9.0	4.0	65.0	17.4	0.0	0.0
Yellow	3.0	0.0	5.0	3.6	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		7.0	1.1	4.0	2.0	4.0
Phase Duration, s		22.0		22.0	13.0	71.0	17.0	75.0
Change Period, ($Y+R_c$), s		4.6		4.6	4.0	6.0	5.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		9.2		6.7	2.5		2.8	
Green Extension Time (g_e), s		0.2		0.2	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.01		0.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	31	42			31	42	23	1525	761	22	1142	567
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1215	1426			891	1032	1541	1618	1614	1401	1515	1504
Queue Service Time (g_s), s	2.6	2.8			1.9	3.4	0.5	46.8	47.0	0.8	15.5	15.4
Cycle Queue Clearance Time (g_c), s	7.2	2.8			4.7	3.4	0.5	46.8	47.0	0.8	15.5	15.4
Green Ratio (*g/C*)	0.16	0.16			0.16	0.27	0.67	0.59	0.59	0.11	0.63	0.63
Capacity (*c*), veh/h	206	226			195	276	307	1913	954	306	1900	944
Volume-to-Capacity Ratio (*X*)	0.151	0.185			0.160	0.151	0.075	0.798	0.798	0.070	0.601	0.601
Back of Queue (*Q*), ft/ln (50 th percentile)	22.3	28.2			25.6	28.8	3.6	541	475.2	8.4	88.4	77.5
Back of Queue (*Q*), veh/ln (50 th percentile)	0.8	1.0			0.7	0.8	0.1	18.8	19.0	0.3	2.9	3.1
Queue Storage Ratio (*RQ*) (50 th percentile)	0.07	0.00			0.00	0.10	0.01	0.00	0.00	0.02	0.00	0.00
Uniform Delay (d_1), s/veh	44.1	40.1			41.0	30.8	6.2	30.1	30.2	48.7	5.4	5.4
Incremental Delay (d_2), s/veh	0.1	0.1			0.1	0.1	0.0	0.7	1.5	0.0	0.9	1.8
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	44.2	40.3			41.2	30.9	6.2	30.8	31.7	48.7	6.3	7.1
Level of Service (LOS)	D	D			D	C	A	C	C	D	A	A
Approach Delay, s/veh / LOS	42.0	D		35.3	D		30.9	C		7.1	A	
Intersection Delay, s/veh / LOS	21.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.60	C	2.73	C	2.08	B	1.88	B
Bicycle LOS Score / LOS	0.61	A	0.61	A	1.64	B	1.41	A

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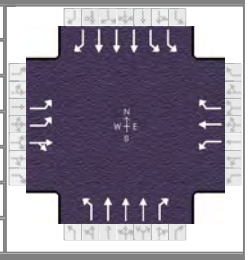
HCS7 Signalized Intersection Results Summary

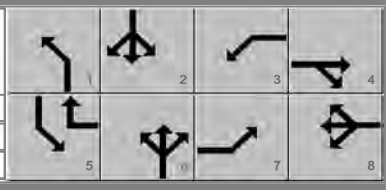
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.83
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Rohr Road	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	310	210	110	60	170	430	80	1270	70	330	1070	220

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	54	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	10.0	36.0	10.0	3.0	30.7	0.0
Yellow	3.0	5.0	3.0	3.0	4.3	0.0
Red	0.0	1.0	0.0	0.0	1.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	1	6	5	2
Case Number	2.0	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	19.0	42.0	13.0	36.0	13.0	42.0	13.0	42.0
Change Period, ($Y+R_c$), s	3.0	5.3	3.0	5.3	3.0	6.0	3.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.2	3.1	3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	16.6	29.5	5.3	32.7	5.9		10.2	
Green Extension Time (g_e), s	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.33	0.10	1.00	0.27		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	373	386		72	205	518	92	1466	81	354	1149	236
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1387	1412		1584	1663	1409	1570	1496		1579	1550	
Queue Service Time (g_s), s	14.6	27.5		3.3	11.1	30.7	3.9	35.9		8.2	26.8	
Cycle Queue Clearance Time (g_c), s	14.6	27.5		3.3	11.1	30.7	3.9	35.9		8.2	26.8	
Green Ratio (*g/C*)	0.15	0.33		0.37	0.28	0.37	0.42	0.33		0.42	0.33	
Capacity (*c*), veh/h	403	471		267	464	521	236	1469		418	1522	
Volume-to-Capacity Ratio (*X*)	0.926	0.818		0.270	0.441	0.994	0.391	0.998		0.848	0.755	
Back of Queue (*Q*), ft/ln (50 th percentile)	196.2	318.5		34.7	125.4	526.3	38.8	438		96.6	324.4	
Back of Queue (*Q*), veh/ln (50 th percentile)	6.5	10.5		1.2	4.4	18.7	1.4	15.4		3.5	11.8	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.65	0.00		0.07	0.00	0.88	0.10	0.00		0.20	0.00	
Uniform Delay (d_1), s/veh	46.4	33.6		25.6	32.6	34.5	23.1	37.2		26.2	47.9	
Incremental Delay (d_2), s/veh	26.7	10.2		0.2	0.2	37.6	0.3	20.1		11.6	2.8	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	73.1	43.8		25.8	32.8	72.2	23.4	57.3	0.0	37.7	50.6	0.0
Level of Service (LOS)	E	D		C	C	E	C	E	A	D	D	A
Approach Delay, s/veh / LOS	58.2	E		57.8	E		52.5	D		41.1	D	
Intersection Delay, s/veh / LOS	50.2						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.71	C	2.84	C	2.29	B	2.12	B
Bicycle LOS Score / LOS	1.74	B	1.80	B	1.43	A	1.56	B

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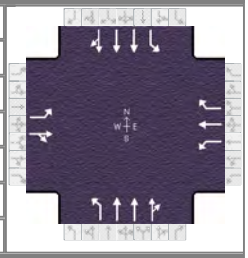
HCS7 Signalized Intersection Results Summary

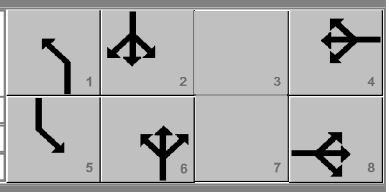
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.86
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Spiegel Drive	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	280	70	160	30	40	240	40	900	30	160	880	200

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	27	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Float	Simult. Gap N/S	On

Green	7.8	1.0	52.0	29.6	0.0	0.0
Yellow	3.0	3.0	5.0	3.6	0.0	0.0
Red	1.2	1.0	1.0	1.8	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		8		4	1	6	5	2
Case Number		6.0		5.0	1.1	4.0	1.1	4.0
Phase Duration, s		35.0		35.0	12.0	58.0	17.0	63.0
Change Period, ($Y+R_c$), s		5.4		5.4	4.2	6.0	4.0	6.0
Max Allow Headway (*MAH*), s		3.3		3.3	2.9	0.0	2.9	0.0
Queue Clearance Time (g_s), s		31.6		21.5	3.7		7.7	
Green Extension Time (g_e), s		0.0		1.6	0.0	0.0	0.1	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		1.00		0.21	0.12		0.07	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	326	267		35	47	279	46	716	352	175	812	368
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1305	1596		1059	1781	1510	1443	1515	1488	1485	1559	1409
Queue Service Time (g_s), s	27.4	16.2		3.3	2.2	18.2	1.7	5.6	5.3	5.7	26.4	27.6
Cycle Queue Clearance Time (g_c), s	29.6	16.2		19.5	2.2	18.2	1.7	5.6	5.3	5.7	26.4	27.6
Green Ratio (*g/C*)	0.27	0.27		0.27	0.27	0.27	0.54	0.47	0.47	0.61	0.52	0.52
Capacity (*c*), veh/h	391	430		195	479	406	264	1432	704	426	1616	730
Volume-to-Capacity Ratio (*X*)	0.832	0.623		0.179	0.097	0.687	0.174	0.500	0.501	0.410	0.502	0.504
Back of Queue (*Q*), ft/ln (50 th percentile)	265.6	169.6		23	24.5	186.9	15.5	37.8	38.2	53.3	328.7	290.8
Back of Queue (*Q*), veh/ln (50 th percentile)	10.1	6.4		0.9	0.9	7.0	0.5	1.3	1.4	1.8	11.1	10.9
Queue Storage Ratio (*RQ*) (50 th percentile)	0.89	0.00		0.04	0.00	0.31	0.04	0.00	0.00	0.12	0.00	0.00
Uniform Delay (d_1), s/veh	41.3	35.3		43.8	30.2	36.0	16.1	3.8	3.6	11.2	34.0	37.1
Incremental Delay (d_2), s/veh	13.4	2.1		0.2	0.0	4.0	0.1	1.0	2.1	0.1	0.7	1.5
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	54.7	37.4		44.0	30.2	40.1	16.2	4.9	5.7	11.4	34.7	38.6
Level of Service (LOS)	D	D		D	C	D	B	A	A	B	C	D
Approach Delay, s/veh / LOS	46.9	D		39.2	D		5.6	A		32.7	C	
Intersection Delay, s/veh / LOS	27.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.59	C	2.59	C	2.10	B	1.90	B
Bicycle LOS Score / LOS	1.47	A	1.08	A	1.11	A	1.28	A

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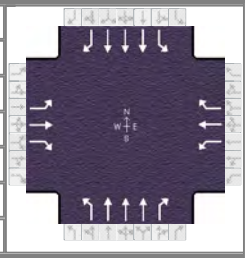
HCS7 Signalized Intersection Results Summary

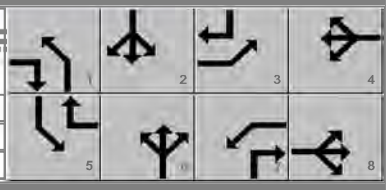
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst	Kimley-Horn	Analysis Date	Feb 23, 2023	Area Type	Other
Jurisdiction	ODOT	Time Period		PHF	0.87
Urban Street	Alum Creek Drive	Analysis Year	2048	Analysis Period	1> 7:00
Intersection	London-Groveport Road	File Name	2048 PM Projections.xus		
Project Description	2048 PM Projections Mitigation				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	100	230	170	270	210	70	270	800	170	130	790	150

Signal Information			
Cycle, s	110.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.5	1.5	26.4	8.5	5.0	23.4
Yellow	4.7	4.7	5.6	4.7	0.0	5.6
Red	3.8	3.8	1.0	3.8	0.0	1.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	3	8	7	4	1	6	5	2
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	17.0	30.0	22.0	35.0	25.0	43.0	15.0	33.0
Change Period, ($Y+R_c$), s	8.5	6.6	8.5	6.6	8.5	6.6	8.5	6.6
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s	7.8	17.5	15.5	15.2	17.5		8.5	
Green Extension Time (g_e), s	0.0	1.0	0.0	1.4	0.0	0.0	0.0	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00		1.00	
Max Out Probability	1.00	0.31	1.00	0.01	1.00		1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	3	8	18	7	4	14	1	6	16	5	2	12
Adjusted Flow Rate (*v*), veh/h	115	264	195	310	241	80	310	920	195	144	873	166
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1654	1737	1472	1654	1737	1472	1612	1537	1434	1527	1456	1359
Queue Service Time (g_s), s	5.8	15.5	10.7	13.5	13.2	4.3	15.5	18.3	9.5	6.5	21.0	10.3
Cycle Queue Clearance Time (g_c), s	5.8	15.5	10.7	13.5	13.2	4.3	15.5	18.3	9.5	6.5	21.0	10.3
Green Ratio (*g/C*)	0.29	0.21	0.36	0.34	0.26	0.32	0.41	0.33	0.45	0.30	0.24	0.32
Capacity (*c*), veh/h	320	370	534	342	448	467	336	1526	651	232	1048	431
Volume-to-Capacity Ratio (*X*)	0.359	0.715	0.366	0.906	0.538	0.172	0.925	0.603	0.300	0.620	0.832	0.384
Back of Queue (*Q*), ft/ln (50 th percentile)	62.8	193.4	100.9	130.5	151.6	41.3	314.8	191.6	91.3	26.6	235.8	97.7
Back of Queue (*Q*), veh/ln (50 th percentile)	2.3	7.1	3.7	4.8	5.6	1.5	11.3	6.9	3.3	0.9	8.1	3.4
Queue Storage Ratio (*RQ*) (50 th percentile)	0.13	0.00	0.20	0.25	0.00	0.08	0.52	0.00	0.24	0.05	0.00	0.24
Uniform Delay (d_1), s/veh	30.3	40.2	25.8	34.3	35.2	27.1	27.3	30.8	19.0	33.5	40.8	28.3
Incremental Delay (d_2), s/veh	0.3	5.6	0.2	26.0	0.7	0.1	30.1	1.8	1.2	3.2	6.7	2.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	30.6	45.8	25.9	60.4	35.9	27.2	57.4	32.5	20.2	36.6	47.5	30.5
Level of Service (LOS)	C	D	C	E	D	C	E	C	C	D	D	C
Approach Delay, s/veh / LOS	36.0	D		46.8	D		36.3	D		43.8	D	
Intersection Delay, s/veh / LOS	40.3						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.72	C	2.72	C	2.12	B	2.13	B
Bicycle LOS Score / LOS	1.44	A	1.53	B	1.27	A	1.16	A

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APPENDIX

H. Signal Warrant Analysis

STUDY AND ANALYSIS INFORMATION

Municipality:	ODOT	**Traffic Volumes Obtained By:**	Smart Services
County:	Franklin	**Analysis Date:**	3/17/2023
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	Kimley-Horn
Google map link:	Map		

Analysis Information

Data Collection Date:	8/16/2022
Day of the Week:	Tuesday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	Yes
Total Number of Approaches at Intersection:	4

Major Street Information

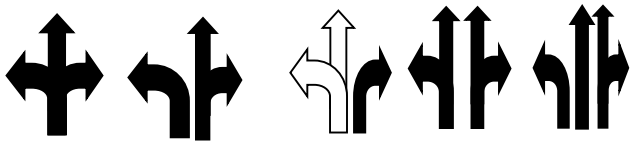
Major Street Name and Route Number:	Alum Creek Drive	
Major Street Approach Direction:	N-Bound S-Bound	
Number of Thru Lanes on Each Major Street Approach:	3	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	55	**MPH**

50 for this one.

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Groveport Road	
Minor Street Approach Configuration:	3	E-Bound
	3	W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach:	1	**LANE(S)**
Apply Right Turn Lane Reduction*:	No	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**Yes**	Condition A was met. Condition B was met. Condition A (70%) was met. Condition B (70%) was met. Combination of A/B (80%) was met.*Combination of A/B (56%) was met.*	
Warrant 2, Four-Hour Vehicular Volume	Yes	**Yes**	Figure 4C-1 (100%)	
Warrant 3, Peak Hour	Yes	**Yes**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 3:45 PM 4:45 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 11:15 AM 12:15 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:
1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Retain Existing Traffic Signal

Notes:

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	4	33	9			46	12	0	0			12	1	205	11			217	10	0	0			10
12:15 AM	4	31	11			46	14	0	0			14	1	93	1			95	4	0	0			4
12:30 AM	6	45	7			58	11	0	0			11	1	64	5			70	8	0	0			8
12:45 AM	10	40	8			58	10	0	0			10	0	49	0			49	3	0	0			3
Hourly Total	24	149	35	0	0	208	47	0	0	0	0	47	3	411	17	0	0	431	25	0	0	0	0	25
1:00 AM	8	33	7			48	19	0	0			19	1	65	3			69	2	0	0			2
1:15 AM	6	39	4			50	5	0	0			5	0	69	2			71	2	0	0			2
1:30 AM	3	35	5			43	5	0	0			5	0	36	1			37	6	0	0			6
1:45 AM	6	44	7			57	6	0	0			6	2	33	3			38	2	0	0			2
Hourly Total	23	151	23	0	0	198	35	0	0	0	0	35	3	203	9	0	0	215	12	0	0	0	0	12
2:00 AM	5	36	6			47	14	0	0			14	0	125	7			132	2	0	0			2
2:15 AM	13	33	4			50	15	0	0			15	1	56	3			60	3	0	0			3
2:30 AM	7	32	5			44	4	0	0			4	1	78	4			83	1	0	0			1
2:45 AM	6	49	3			58	8	0	0			8	0	36	3			39	2	0	0			2
Hourly Total	31	150	18	0	0	199	41	0	0	0	0	41	2	295	17	0	0	314	8	0	0	0	0	8
3:00 AM	4	53	6			63	18	0	0			18	0	42	2			44	7	0	0			7
3:15 AM	9	70	5			84	13	0	0			13	1	53	3			57	5	0	0			5
3:30 AM	8	90	7			106	15	0	0			15	2	162	7			171	5	0	0			5
3:45 AM	8	100	2			110	28	0	0			28	1	78	8			87	4	0	0			4
Hourly Total	29	313	20	0	0	363	74	0	0	0	0	74	4	335	20	0	0	359	21	0	0	0	0	21
4:00 AM	11	118	11			140	16	0	0			16	2	115	8			125	6	0	0			6
4:15 AM	12	164	12			189	19	0	0			19	0	82	1			83	8	0	0			8
4:30 AM	18	231	14			263	30	0	0			30	6	159	4			169	16	0	0			16
4:45 AM	21	276	24			321	29	0	0			29	1	97	4			102	20	0	0			20
Hourly Total	62	789	61	0	0	913	94	0	0	0	0	94	9	453	17	0	0	479	50	0	0	0	0	50
5:00 AM	20	207	17			244	24	0	0			24	3	137	11			151	8	0	0			8
5:15 AM	27	348	37			412	41	0	0			41	4	93	6			103	24	0	0			24
5:30 AM	36	509	35			580	51	0	0			51	1	80	6			87	34	0	0			34
5:45 AM	66	614	48			730	48	0	0			48	7	122	14			143	50	0	0			50
Hourly Total	149	1678	137	0	0	1966	164	0	0	0	0	164	15	432	37	0	0	484	116	0	0	0	0	116
6:00 AM	36	326	32			394	66	0	0			66	5	181	7			193	25	0	0			25
6:15 AM	51	372	43			466	92	0	0			92	2	160	10			172	37	0	0			37
6:30 AM	50	505	75			630	132	0	0			132	3	186	12			201	36	0	0			36
6:45 AM	80	585	109			774	137	0	0			137	4	204	15			223	57	0	0			57
Hourly Total	217	1788	259	0	0	2264	427	0	0	0	0	427	14	731	44	0	0	789	155	0	0	0	0	155
7:00 AM	54	261	72			387	164	0	0			164	3	194	17			214	23	0	0			23
7:15 AM	59	369	60			488	141	0	0			141	6	206	19			231	28	0	0			28
7:30 AM	73	404	66			543	178	0	0			178	7	213	18			238	35	0	0			35
7:45 AM	86	484	65			635	150	0	0			150	5	164	20			189	40	0	0			40
Hourly Total	272	1518	263	0	0	2053	633	0	0	0	0	633	21	777	74	0	0	872	126	0	0	0	0	126
8:00 AM	67	324	60			451	139	0	0			139	8	158	21			187	27	0	0			27
8:15 AM	47	317	35			399	129	0	0			129	0	159	13			172	19	0	0			19
8:30 AM	48	282	48			378	112	0	0			112	8	169	17			194	35	0	0			35
8:45 AM	42	271	55			368	117	0	0			117	4	161	13			178	27	0	0			27
Hourly Total	204	1194	198	0	0	1596	497	0	0	0	0	497	20	647	64	0	0	731	108	0	0	0	0	108
9:00 AM	37	193	35			265	128	0	0			128	5	158	27			190	23	0	0			23
9:15 AM	41	195	31			267	167	0	0			167	5	140	14			159	21	0	0			21
9:30 AM	43	198	34			275	92	0	1			93	5	166	22			193	20	0	0			20
9:45 AM	38	190	42			270	93	0	0			93	1	153	10			164	24	0	0			24
Hourly Total	159	776	142	0	0	1077	480	0	1	0	0	481	16	617	73	0	0	706	88	0	0	0	0	88
10:00 AM	38	147	26			211	95	0	0			95	2	141	24			167	21	0	0			21
10:15 AM	47	148	44			239	101	0	0			101	8	150	17			175	24	0	0			24
10:30 AM	46	157	35			238	91	0	0			91	4	160	18			182	28	0	0			28
10:45 AM	55	182	40			277	73	0	0			73	12	157	19			189	26	0	0			26
Hourly Total	186	634	145	0	0	965	360	0	0	0	0	360	26	608	78	0	0	713	99	0	0	0	0	99
11:00 AM	46	178	47			271	96	0	0			96	12	201	34			247	35	0	0			35
11:15 AM	51	175	49			275	115	0	0			115	15	158	32			205	40	0	0			40
11:30 AM	49	178	42			269	91	0	0			91	13	194	27			234	47	0	0			47
11:45 AM	46	184	48			278	89	0	0			89	14	168	34			216	50	0	0			50
Hourly Total	192	715	186	0	0	1093	391	0	0	0	0	391	54	721	127	0	0	902	172	0	0	0	0	172
12:00 PM	57	162	53			272	79	0	0			79	13	217	51			282	40	0	0			40
12:15 PM	58	167	46			271	82	0	0			82	8	197	39			244	62	0	1			63
12:30 PM	46	188	53			287	114	0	0			114	7	169	39			215	53	0	0			53
12:45 PM	45	171	60			276	93	0	0			93	3	202	32			237	40	0	0			40
Hourly Total	206	688	212	0	0	1106	368	0	0	0	0	368	31	785	161	0	0	978	195	0	1	0	0	196
1:00 PM	52	198	42			292	100	0	0			100	5	220	40			265	28	0	0			28
1:15 PM	53	227	46			326	77	0	0			77	11	195	21			227	47	0	0			47
1:30 PM	45	282	41			369	117	0	0			117	3	242	26			271	39	0	0			39
1:45 PM	58	290	52			400	90	0	0			90	4	213	18			235	36	0	0			36
Hourly Total	208	997	181	0	0	1387	384	0	0	0	0	384	23	870	105	0	0	998	150	0	0	0	0	150
2:00 PM	65	258	63			386	122	0	0			122	8	325	35			368	27	0	0			27
2:15 PM	52	245	77			374	110	0	0			110	7	378	31			416	30	0	0			30
2:30 PM	55	303	82			440	147	0	0			147	7	354	33			394	28	0	0			28
2:45 PM	69	301	77			447	115	0	0			115	9	430	39			479	42	0	0			42
Hourly Total	241	1107	299	0	0	1647	494	0	0	0	0	494	31	1487	138	0	0	1657	127	0	0	0	0	127
3:00 PM	56	262	84			402	151	0	0			151	8	410	49			467	27	0	3			30
3:15 PM	45	285	117			447	170	0	0			170	10	334	31			375	52	0	0			52
3:30 PM	55	284	95			434	205	0	0			205	10	390	34			434	42	0	0			42
3:45 PM	62	301	106			469	172	0	0			172	6	455	26			487	37	0	0			37
Hourly Total	218	1132	402	0	0	1752	698	0	0	0	0	698	34	1589	140	0	0	1763	158	0	3	0	0	161
4:00 PM	78	258	129			465	211	0	0			211	5	330	32			367	30	0	0			30
4:15 PM	85	295	104			484	196	0	0			196	9	372	23			404	33	0	0			33
4:30 PM	50	335	109			494	208	0	0			208	3	408	22			433	31	0	0			31
4:45 PM	63	302	112			477	140	0	0			140	6	428	26			460	42	0	0			42
Hourly Total	276	1190	454	0	0	1920	755	0	0	0	0	755	23	1538	103	0	0	1664	136	0	0	0	0	136
5:00 PM	47	231	103			381	194	0	0			194	4	362	41			407	20	0	0			20
5:15 PM	51	241	153			445	153	0	0			153	7	346	24			377	29	0	0			29
5:30 PM	50	211	149			411	152	0	0			152	8	287	28			323	29	0	0			29
5:45 PM	52	238	110			400	113	0	0			113	8	228	23			259	32	0	0			32
Hourly Total	200	921	515	0	0	1637	612	0	0	0	0	612	27	1223	116	0	0	1366	110	0	0	0	0	110
6:00 PM	39	175	80			294	131	0	0			131	3	242	21			266	22	0	0			22
6:15 PM	35	197	82			314	107	0	0			107	2	186	15			203	26	0	0			26
6:30 PM	31	156	69			256	90	0	0			90	8	195	11			214	18	0	0			18
6:45 PM	29	138	60			227	95	0	0			95	8	157	12			177	18	0	0			18
Hourly Total	134	666	291	0	0	1091	423	0	0	0	0	423	21	780	59	0	0	860	84	0	0	0	0	84
7:00 PM	22	90	48			160	83	0	0			83	8	155	21			186	13	0	0			13
7:15 PM	29	113	46			188	79	0	0			79	3	132	12			147	17	0	0			17
7:30 PM	25	80	37			142	87	0	0			87	6	126	4			136	18	0	0			18
7:45 PM	25	102	51			179	55	0	0			55	7	104	15			126	16	0	0			16
Hourly Total	101	385	182	0	0	669	304	0	0	0	0	304	24	517	52	0	0	595	64	0	0	0	0	64
8:00 PM	25	98	36			160	52	0	1			53	5	110	17			133	12	0	0			12
8:15 PM	37	94	40			171	55	0	0			55	8	113	13			134	16	0	0			16
8:30 PM	25	96	35			156	50	0	0			50	2	116	9			128	17	0	0			17
8:45 PM	27	95	31			154	47	0	0			47	2	83	8			93	16	0	0			16
Hourly Total	114	383	142	0	0	641	204	0	1	0	0	205	17	422	47	0	0	488	61	0	0	0	0	61
9:00 PM	22	114	32			168	44	0	0			44	3	95	10			108	17	0	0			17
9:15 PM	25	88	37			150	37	0	0			37	2	88	18			108	13	0	0			13
9:30 PM	23	109	27			159	26	0	0			26	2	104	10			116	10	0	0			10
9:45 PM	13	108	21			142	39	0	0			39	1	96	4			101	11	0	0			11
Hourly Total	83	419	117	0	0	619	146	0	0	0	0	146	8	383	42	0	0	433	51	0	0	0	0	51
10:00 PM	15	65	21			101	38	0	0			38	4	154	21			179	14	0	0			14
10:15 PM	18	77	15			111	25	0	0			25	3	121	7			131	15	0	0			15
10:30 PM	15	83	10			108	21	0	0			21	1	91	8			100	11	0	0			11
10:45 PM	11	93	23			128	23	0	0			23	1	80	4			85	7	0	0			7
Hourly Total	59	318	69	0	0	448	107	0	0	0	0	107	9	446	40	0	0	495	47	0	0	0	0	47
11:00 PM	3	56	18			77	22	0	0			22	1	147	7			155	13	0	0			13
11:15 PM	8	62	16			86	17	0	0			17	3	104	6			113	6	0	0			6
11:30 PM	13	52	12			77	30	0	0			30	5	240	12			257	6	0	0			6
11:45 PM	7	46	10			63	20	0	0			20	0	165	13			178	8	0	0			8
Hourly Total	31	216	56	0	0	303	89	0	0	0	0	89	9	656	38	0	0	703	33	0	0	0	0	33

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	639	47	1		1				1		1				1		1	1
12:15 AM	493	54																
12:30 AM	472	45																
12:45 AM	424	39																
1:00 AM	412	35													1			
1:15 AM	474	30			1													
1:30 AM	464	40																
1:45 AM	511	39									1						1	
2:00 AM	513	41													1			
2:15 AM	441	45			1													
2:30 AM	472	43																
2:45 AM	621	54	1								1						1	1
3:00 AM	721	74							1	1			1	1	1			
3:15 AM	879	72			1													
3:30 AM	1009	78					1	1										
3:45 AM	1165	93	1								1						1	1
4:00 AM	1391	94							1	1			1	1	1	1		
4:15 AM	1521	102			1													
4:30 AM	1765	124					1	1										
4:45 AM	2000	145	1								1	1					1	1
5:00 AM	2448	164							1	1			1	1	1	1		
5:15 AM	2640	206			1	1												
5:30 AM	2763	257					1	1										
5:45 AM	2927	338	1	1							1	1					1	1
6:00 AM	3053	427							1	1			1	1	1	1		
6:15 AM	3067	525			1	1												
6:30 AM	3148	574					1	1										
6:45 AM	3098	620	1	1							1	1					1	1
7:00 AM	2925	633							1	1			1	1	1	1		
7:15 AM	2962	608			1	1												
7:30 AM	2814	596					1	1										
7:45 AM	2605	530	1	1							1	1					1	1
8:00 AM	2327	497							1	1			1	1	1	1		
8:15 AM	2144	486			1	1												
8:30 AM	1999	524					1	1										
8:45 AM	1895	505	1	1							1	1					1	1
9:00 AM	1783	481							1	1			1	1	1	1		
9:15 AM	1706	448			1	1												
9:30 AM	1694	382					1	1										
9:45 AM	1646	380	1	1							1	1					1	1

10:00 AM	1677	360							1	1			1	1	1	1		
10:15 AM	1817	361			1	1												
10:30 AM	1883	375					1	1										
10:45 AM	1966	375	1	1							1	1					1	1
11:00 AM	1995	391							1	1			1	1	1	1		
11:15 AM	2030	374			1	1												
11:30 AM	2065	341					1	1										
11:45 AM	2064	364	1	1							1	1					1	1
12:00 PM	2083	368							1	1			1	1	1	1		
12:15 PM	2087	389			1	1												
12:30 PM	2125	384					1	1										
12:45 PM	2262	387	1	1							1	1					1	1
1:00 PM	2384	384							1	1			1	1	1	1		
1:15 PM	2581	406			1	1												
1:30 PM	2818	439					1	1										
1:45 PM	3013	469	1	1							1	1					1	1
2:00 PM	3303	494							1	1			1	1	1	1		
2:15 PM	3418	523			1	1												
2:30 PM	3450	583					1	1										
2:45 PM	3484	641	1	1							1	1					1	1
3:00 PM	3515	698							1	1			1	1	1	1		
3:15 PM	3478	758			1	1												
3:30 PM	3544	784					1	1										
3:45 PM	3603	787	1	1							1	1					1	1
4:00 PM	3584	755							1	1			1	1	1	1		
4:15 PM	3540	738			1	1												
4:30 PM	3474	695					1	1										
4:45 PM	3280	639	1	1							1	1					1	1
5:00 PM	3002	612							1	1			1	1	1	1		
5:15 PM	2774	549			1	1												
5:30 PM	2469	503					1	1										
5:45 PM	2206	441	1	1							1	1					1	1
6:00 PM	1951	423							1	1			1	1	1	1		
6:15 PM	1735	375			1	1												
6:30 PM	1553	347					1	1										
6:45 PM	1361	344	1	1							1	1					1	1
7:00 PM	1261	304							1	1			1	1	1	1		
7:15 PM	1208	274			1	1												
7:30 PM	1178	250					1	1										
7:45 PM	1183	213	1	1							1	1					1	1
8:00 PM	1125	205							1	1			1	1	1	1		
8:15 PM	1110	196			1	1												
8:30 PM	1063	178					1	1										
8:45 PM	1055	154	1	1							1	1					1	1
9:00 PM	1052	146							1	1			1	1	1	1		
9:15 PM	1056	140			1	1												
9:30 PM	1039	128					1	1										
9:45 PM	972	123	1								1	1					1	1
HOURS MET			**22**	**16**	**23**	**17**	**20**	**20**	**22**	**21**	**23**	**18**	**21**	**21**	**24**	**20**	**23**	**22**
WARRANT SATISFIED?			**YES**		**YES**		**YES**		**YES**		**YES**				**YES**			

Warrant Met: **Yes**

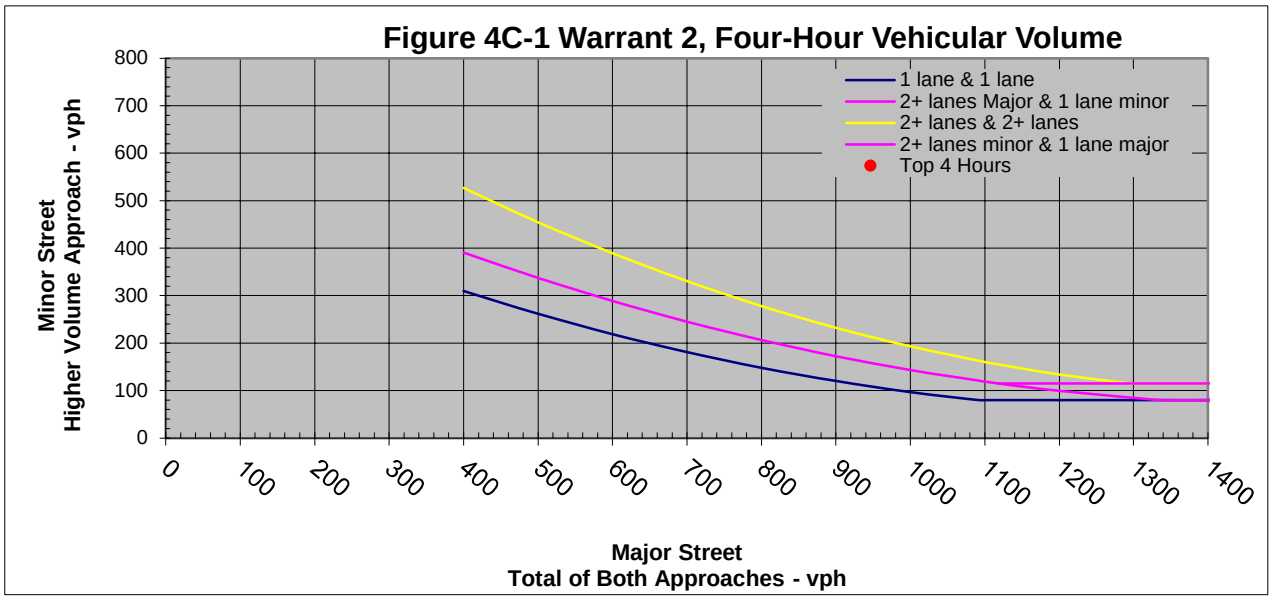
Notes: Condition A was met. Condition B was met. Condition A (70%) was met. Condition B (70%) was met. Combination of A/B (80%) was met.*Combination of A/B (56%) was met.*

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	18
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	21
Minor Street:	1 Lane		

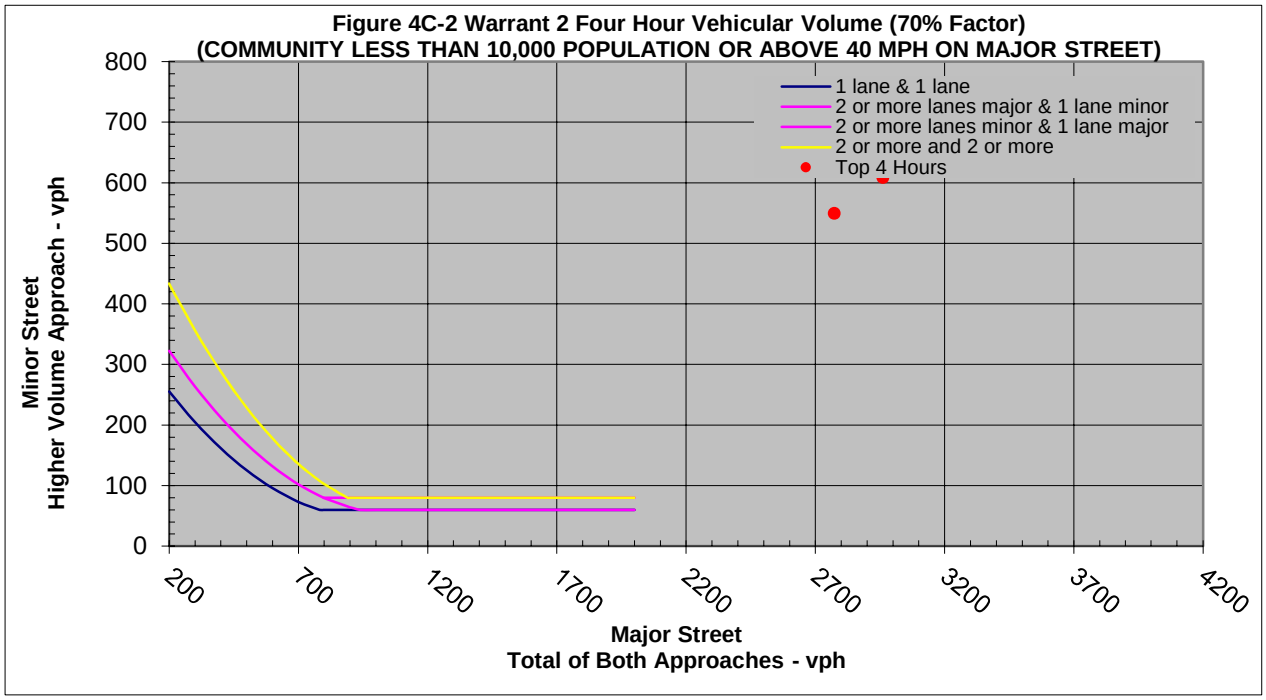
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Alum Creek Drive		Minor - Groveport Road					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	789	2264	427	155	3053	427	Met	
6:15 AM	810	2257	525	153	3067	525		Met
6:30 AM	869	2279	574	144	3148	574		
6:45 AM	906	2192	620	143	3098	620		
7:00 AM	872	2053	633	126	2925	633	Met	
7:15 AM	845	2117	608	130	2962	608		Met
7:30 AM	786	2028	596	121	2814	596		
7:45 AM	742	1863	530	121	2605	530		
8:00 AM	731	1596	497	108	2327	497	Met	
8:15 AM	734	1410	486	104	2144	486		Met
8:30 AM	721	1278	524	106	1999	524		
8:45 AM	720	1175	505	91	1895	505		
9:00 AM	706	1077	481	88	1783	481	Met	
9:15 AM	683	1023	448	86	1706	448		Met
9:30 AM	699	995	382	89	1694	382		
9:45 AM	688	958	380	97	1646	380		
10:00 AM	712	965	360	99	1677	360	Met	
10:15 AM	792	1025	361	113	1817	361		Met
10:30 AM	822	1061	375	129	1883	375		
10:45 AM	874	1092	375	148	1966	375		
11:00 AM	902	1093	391	172	1995	391	Met	
11:15 AM	936	1094	374	177	2030	374		Met
11:30 AM	975	1090	341	200	2065	341		
11:45 AM	956	1108	364	206	2064	364		
12:00 PM	977	1106	368	196	2083	368	Met	
12:15 PM	961	1126	389	184	2087	389		Met
12:30 PM	944	1181	384	168	2125	384		
12:45 PM	1000	1262	387	154	2262	387		
1:00 PM	998	1386	384	150	2384	384	Met	
1:15 PM	1101	1480	406	149	2581	406		Met
1:30 PM	1290	1528	439	132	2818	439		
1:45 PM	1413	1600	469	121	3013	469		
2:00 PM	1656	1647	494	127	3303	494	Met	
2:15 PM	1755	1663	523	130	3418	523		Met
2:30 PM	1714	1736	583	152	3450	583		
2:45 PM	1754	1730	641	166	3484	641		
3:00 PM	1763	1752	698	161	3515	698	Met	
3:15 PM	1663	1815	758	161	3478	758		Met
3:30 PM	1692	1852	784	142	3544	784		
3:45 PM	1691	1912	787	131	3603	787		
4:00 PM	1664	1920	755	136	3584	755	Met	
4:15 PM	1704	1836	738	126	3540	738		Met
4:30 PM	1677	1797	695	122	3474	695		
4:45 PM	1567	1713	639	120	3280	639		
5:00 PM	1366	1636	612	110	3002	612	Met	
5:15 PM	1225	1549	549	112	2774	549		Met
5:30 PM	1051	1418	503	109	2469	503		
5:45 PM	942	1264	441	98	2206	441		
6:00 PM	860	1091	423	84	1951	423	Met	
6:15 PM	778	957	375	75	1735	375		Met
6:30 PM	722	831	347	66	1553	347		
6:45 PM	644	717	344	66	1361	344		
7:00 PM	593	668	304	64	1261	304	Met	
7:15 PM	541	667	274	63	1208	274		Met
7:30 PM	528	650	250	62	1178	250		
7:45 PM	519	664	213	61	1183	213		
8:00 PM	486	639	205	61	1125	205	Met	



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	4:00 PM	5:00 PM	3584	755
2nd Highest Hour	3:00 PM	4:00 PM	3515	698
3rd Highest Hour	7:00 AM	8:00 AM	2925	633
4th Highest Hour	5:00 PM	6:00 PM	3002	612

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	3:15 PM	4:15 PM	3478	758
2nd Highest Hour	4:15 PM	5:15 PM	3540	738
3rd Highest Hour	7:15 AM	8:15 AM	2962	608
4th Highest Hour	5:15 PM	6:15 PM	2774	549



Are the requirements for Warrant 2 met?: **Yes**

OMUTCD WARRANT 3, PEAK HOUR

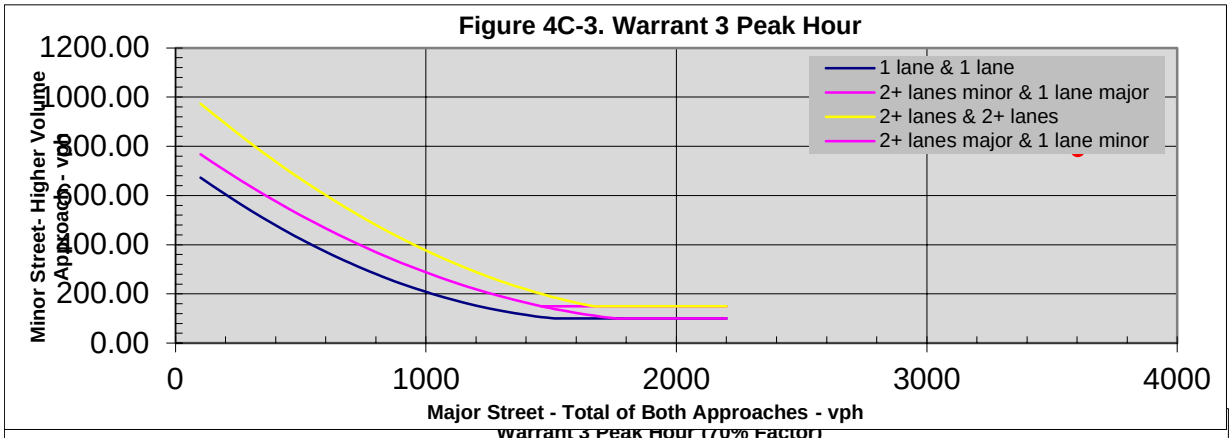
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	3:45 PM
Major Street:	2 or More Lanes	Peak Hour End Time	4:45 PM
Minor Street:	1 Lane		

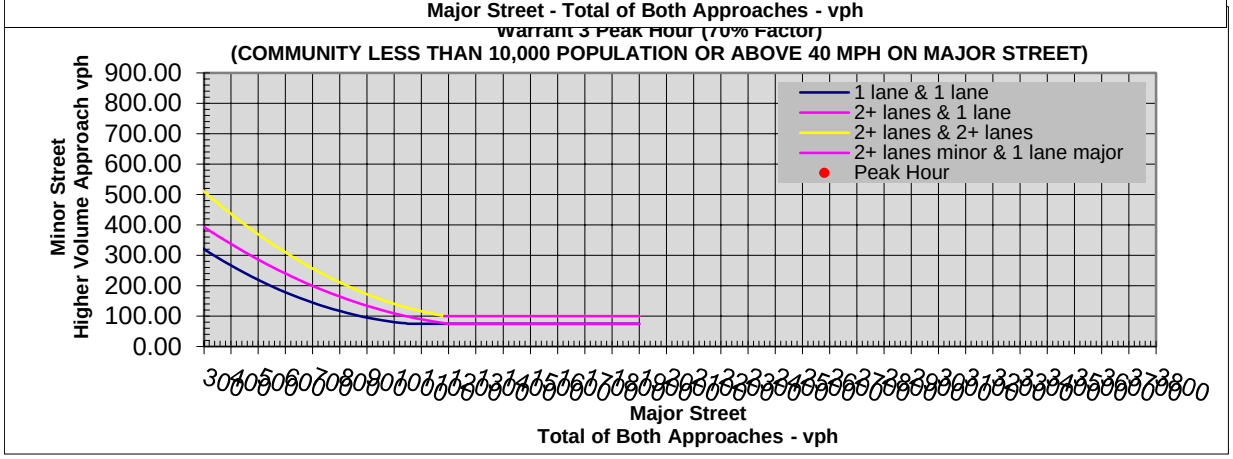
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Are the requirements for Warrant 3 met?: **Yes**





Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	3053	427	3480	3635
6:15 AM	3067	525	3592	3745
6:30 AM	3148	574	3722	3866
6:45 AM	3098	620	3718	3861
7:00 AM	2925	633	3558	3684
7:15 AM	2962	608	3570	3700
7:30 AM	2814	596	3410	3531
7:45 AM	2605	530	3135	3256
8:00 AM	2327	497	2824	2932
8:15 AM	2144	486	2630	2734
8:30 AM	1999	524	2523	2629
8:45 AM	1895	505	2400	2491
9:00 AM	1783	481	2264	2352
9:15 AM	1706	448	2154	2240
9:30 AM	1694	382	2076	2165
9:45 AM	1646	380	2026	2123
10:00 AM	1677	360	2037	2136
10:15 AM	1817	361	2178	2291
10:30 AM	1883	375	2258	2387
10:45 AM	1966	375	2341	2489
11:00 AM	1995	391	2386	2558
11:15 AM	2030	374	2404	2581
11:30 AM	2065	341	2406	2606
11:45 AM	2064	364	2428	2634
12:00 PM	2083	368	2451	2647
12:15 PM	2087	389	2476	2660
12:30 PM	2125	384	2509	2677
12:45 PM	2262	387	2649	2803
1:00 PM	2384	384	2768	2918
1:15 PM	2581	406	2987	3136
1:30 PM	2818	439	3257	3389
1:45 PM	3013	469	3482	3603
2:00 PM	3303	494	3797	3924
2:15 PM	3418	523	3941	4071
2:30 PM	3450	583	4033	4185
2:45 PM	3484	641	4125	4291
3:00 PM	3515	698	4213	4374
3:15 PM	3478	758	4236	4397
3:30 PM	3544	784	4328	4470
3:45 PM	3603	787	4390	4521
4:00 PM	3584	755	4339	4475
4:15 PM	3540	738	4278	4404
4:30 PM	3474	695	4169	4291
4:45 PM	3280	639	3919	4039
5:00 PM	3002	612	3614	3724
5:15 PM	2774	549	3323	3435
5:30 PM	2469	503	2972	3081
5:45 PM	2206	441	2647	2745
6:00 PM	1951	423	2374	2458
6:15 PM	1735	375	2110	2185
6:30 PM	1553	347	1900	1966
6:45 PM	1361	344	1705	1771
7:00 PM	1261	304	1565	1629
7:15 PM	1208	274	1482	1545
7:30 PM	1178	250	1428	1490
7:45 PM	1183	213	1396	1457
8:00 PM	1125	205	1330	1391

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
3603	787	100	75

STUDY AND ANALYSIS INFORMATION

Municipality:	ODOT	**Traffic Volumes Obtained By:**	Smart Services
County:	Franklin	**Analysis Date:**	3/17/2023
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	Kimley-Horn
Google map link:	Map		

Analysis Information

Data Collection Date: 8/16/2022

Day of the Week: Tuesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 3

Major Street Information

Major Street Name and Route Number: Alum Creek Drive

Major Street Approach Direction: N-Bound, S-Bound

Number of Thru Lanes on Each Major Street Approach: 3 **LANE(S)**

Speed Limit or 85th Percentile Speed on the Major Street*: 55 **MPH**

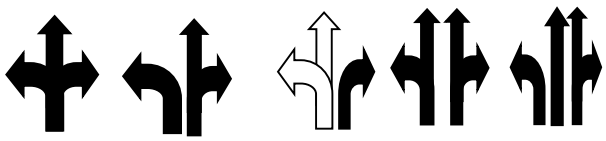
50

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Rathmell Road

Minor Street Approach Configuration: 1 E-Bound, W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach: 1 **LANE(S)**

Apply Right Turn Lane Reduction*: Yes

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**	Condition B (70%) was met.	
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**	Figure 4C-2 (70% Factor)	
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 8:30 AM 9:30 AM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 5:30 PM 6:30 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Install New Traffic Signal

Notes: Met 70% Factor for Warrants 1 and 2

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	6	41				47						0		234	1			235	1		3			4
12:15 AM	4	30				34						0		91	0			91	0		1			1
12:30 AM	11	44				55						0		66	0			66	0		1			1
12:45 AM	14	30				44						0		49	1			50	1		2			3
Hourly Total	35	145		0	0	180	0	0	0	0	0	0		440	2	0	0	442	2		7	0	0	9
1:00 AM	3	29				32						0		66	1			67	1		2			3
1:15 AM	9	31				40						0		62	2			64	0		2			2
1:30 AM	10	30				40						0		36	2			38	0		1			1
1:45 AM	21	25				46						0		37	3			40	0		1			1
Hourly Total	43	115		0	0	158	0	0	0	0	0	0		201	8	0	0	209	1		6	0	0	7
2:00 AM	6	33				39						0		126	0			126	0		1			1
2:15 AM	5	34				39						0		62	0			62	2		2			4
2:30 AM	6	27				33						0		80	0			80	1		2			3
2:45 AM	5	53				58						0		38	0			38	1		2			3
Hourly Total	22	147		0	0	169	0	0	0	0	0	0		306	0	0	0	306	4		7	0	0	11
3:00 AM	5	55				60						0		38	0			38	2		3			5
3:15 AM	4	78				82						0		57	0			57	0		1			1
3:30 AM	2	95				97						0		184	1			185	2		2			4
3:45 AM	3	106				109						0		73	1			74	1		7			8
Hourly Total	14	334		0	0	348	0	0	0	0	0	0		352	2	0	0	354	5		13	0	0	18
4:00 AM	3	117				120						0		116	0			116	3		8			11
4:15 AM	0	176				176						0		76	0			76	0		3			3
4:30 AM	4	242				246						0		166	0			166	1		8			9
4:45 AM	2	300				302						0		99	0			99	1		0			1
Hourly Total	9	835		0	0	844	0	0	0	0	0	0		457	0	0	0	457	5		19	0	0	24
5:00 AM	3	215				218						0		150	0			150	3		1			4
5:15 AM	2	372				374						0		102	1			103	4		5			9
5:30 AM	2	542				544						0		82	0			82	2		2			4
5:45 AM	5	686				691						0		138	0			138	3		4			7
Hourly Total	12	1815		0	0	1827	0	0	0	0	0	0		472	1	0	0	473	12		12	0	0	24
6:00 AM	4	354				358						0		184	2			186	0		6			6
6:15 AM	7	405				412						0		169	3			172	1		8			9
6:30 AM	7	533				540						0		200	2			202	3		8			11
6:45 AM	16	631				647						0		216	2			218	4		10			14
Hourly Total	34	1923		0	0	1957	0	0	0	0	0	0		769	9	0	0	778	8		32	0	0	40
7:00 AM	21	256				277						0		219	6			225	10		13			23
7:15 AM	20	356				376						0		209	1			210	3		16			19
7:30 AM	11	436				447						0		229	3			232	9		18			27
7:45 AM	6	525				531						0		205	2			207	4		5			9
Hourly Total	58	1573		0	0	1631	0	0	0	0	0	0		862	12	0	0	874	26		52	0	0	78
8:00 AM	17	333				350						0		163	4			167	2		15			17
8:15 AM	27	317				344						0		156	5			161	6		9			15
8:30 AM	32	292				324						0		186	9			195	1		14			15
8:45 AM	23	281				304						0		157	3			160	6		23			29
Hourly Total	99	1223		0	0	1322	0	0	0	0	0	0		662	21	0	0	683	15		61	0	0	76
9:00 AM	15	199				214						0		170	6			176	6		19			25
9:15 AM	17	205				222						0		166	2			168	4		16			20
9:30 AM	14	215				229						0		175	5			180	7		19			26
9:45 AM	13	210				223						0		159	2			161	1		8			9
Hourly Total	59	829		0	0	888	0	0	0	0	0	0		670	15	0	0	685	18		62	0	0	80
10:00 AM	10	164				174						0		152	3			155	2		9			11
10:15 AM	7	172				179						0		158	4			162	5		15			20
10:30 AM	9	170				179						0		178	3			181	4		12			16
10:45 AM	9	201				210						0		194	4			198	4		12			16
Hourly Total	35	707		0	0	742	0	0	0	0	0	0		682	14	0	0	696	15		48	0	0	63
11:00 AM	7	215				222						0		221	3			224	2		11			13
11:15 AM	14	215				229						0		191	6			197	2		5			7
11:30 AM	20	218				238						0		218	1			219	5		11			16
11:45 AM	18	214				232						0		209	6			215	3		6			9
Hourly Total	59	862		0	0	921	0	0	0	0	0	0		839	16	0	0	855	12		33	0	0	45
12:00 PM	16	189				205						0		270	1			271	5		8			13
12:15 PM	14	219				233						0		227	5			232	3		9			12
12:30 PM	19	226				245						0		206	3			209	3		9			12
12:45 PM	14	203				217						0		226	10			236	5		19			24
Hourly Total	63	837		0	0	900	0	0	0	0	0	0		929	19	0	0	948	16		45	0	0	61
1:00 PM	11	231				242						0		236	1			237	2		12			14
1:15 PM	14	267				281						0		201	1			202	6		16			22
1:30 PM	10	313				323						0		245	5			250	2		8			10
1:45 PM	18	325				343						0		212	5			217	6		11			17
Hourly Total	53	1136		0	0	1189	0	0	0	0	0	0		894	12	0	0	906	16		47	0	0	63
2:00 PM	10	281				291						0		372	3			375	5		7			12
2:15 PM	14	264				278						0		414	2			416	3		9			12
2:30 PM	16	317				333						0		471	2			473	5		7			12
2:45 PM	24	332				356						0		427	5			432	5		7			12
Hourly Total	64	1194		0	0	1258	0	0	0	0	0	0		1684	12	0	0	1696	18		30	0	0	48
3:00 PM	14	274				288						0		485	5			490	3		10			13
3:15 PM	14	312				326						0		393	4			397	6		14			20
3:30 PM	29	302				331						0		454	3			457	3		8			11
3:45 PM	20	318				338						0		435	2			437	8		6			14
Hourly Total	77	1206		0	0	1283	0	0	0	0	0	0		1767	14	0	0	1781	20		38	0	0	58
4:00 PM	28	266				294						0		426	13			439	5		10			15
4:15 PM	36	297				333						0		373	5			378	3		3			6
4:30 PM	45	316				361						0		473	6			479	11		7			18
4:45 PM	36	305				341						0		439	8			447	4		8			12
Hourly Total	145	1184		0	0	1329	0	0	0	0	0	0		1711	32	0	0	1743	23		28	0	0	51
5:00 PM	22	251				273						0		485	5			490	5		9			14
5:15 PM	30	253				283						0		341	2			343	6		13			19
5:30 PM	19	237				256						0		345	5			350	6		16			22
5:45 PM	32	245				277						0		257	8			265	5		11			16
Hourly Total	103	986		0	0	1089	0	0	0	0	0	0		1428	20	0	0	1448	22		49	0	0	71
6:00 PM	22	171				193						0		253	3			256	3		17			20
6:15 PM	20	202				222						0		188	3			191	5		19			24
6:30 PM	23	140				163						0		229	2			231	3		13			16
6:45 PM	20	140				160						0		173	1			174	3		10			13
Hourly Total	85	653		0	0	738	0	0	0	0	0	0		843	9	0	0	852	14		59	0	0	73
7:00 PM	10	96				106						0		175	5			180	5		14			19
7:15 PM	7	120				127						0		127	0			127	2		28			30
7:30 PM	12	86				98						0		120	2			122	3		9			12
7:45 PM	11	102				113						0		110	3			113	5		11			16
Hourly Total	40	404		0	0	444	0	0	0	0	0	0		532	10	0	0	542	15		62	0	0	77
8:00 PM	15	97				112						0		122	3			125	3		5			8
8:15 PM	17	101				118						0		114	0			114	8		15			23
8:30 PM	10	101				111						0		102	3			105	3		23			26
8:45 PM	7	105				112						0		80	4			84	5		8			13
Hourly Total	49	404		0	0	453	0	0	0	0	0	0		418	10	0	0	428	19		51	0	0	70
9:00 PM	13	117				130						0		104	3			107	4		12			16
9:15 PM	9	87				96						0		96	1			97	6		17			23
9:30 PM	10	111				121						0		102	6			108	6		9			15
9:45 PM	7	113				120						0		91	2			93	7		12			19
Hourly Total	39	428		0	0	467	0	0	0	0	0	0		393	12	0	0	405	23		50	0	0	73
10:00 PM	2	71				73						0		179	2			181	3		11			14
10:15 PM	7	88				95						0		117	1			118	3		6			9
10:30 PM	3	93				96						0		97	3			100	6		9			15
10:45 PM	4	94				98						0		83	4			87	0		2			2
Hourly Total	16	346		0	0	362	0	0	0	0	0	0		476	10	0	0	486	12		28	0	0	40
11:00 PM	2	64				66						0		149	5			154	2		7			9
11:15 PM	2	62				64						0		111	4			115	1		4			5
11:30 PM	5	50				55						0		238	1			239	1		4			5
11:45 PM	2	54				56						0		169	2			171	0		1			1
Hourly Total	11	230		0	0	241	0	0	0	0	0	0		667	12	0	0	679	4		16	0	0	20

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	622	9	1		1						1				1		1	
12:15 AM	439	8																
12:30 AM	418	9																
12:45 AM	375	9																
1:00 AM	367	7													1			
1:15 AM	433	5			1													
1:30 AM	430	7																
1:45 AM	465	9																
2:00 AM	475	10													1			
2:15 AM	408	13																
2:30 AM	446	12			1													
2:45 AM	615	11	1								1						1	
3:00 AM	702	17							1						1			
3:15 AM	840	23											1					
3:30 AM	953	25			1		1											
3:45 AM	1083	30	1								1						1	
4:00 AM	1301	23							1						1			
4:15 AM	1433	16											1					
4:30 AM	1658	20			1		1											
4:45 AM	1872	15	1								1						1	
5:00 AM	2300	21							1						1			
5:15 AM	2476	26											1					
5:30 AM	2583	26			1		1											
5:45 AM	2699	33	1								1						1	
6:00 AM	2735	40							1						1			
6:15 AM	2693	57											1					
6:30 AM	2695	65			1		1											
6:45 AM	2632	81	1								1						1	1
7:00 AM	2505	76							1	1					1			
7:15 AM	2520	71											1	1				
7:30 AM	2439	66			1		1											
7:45 AM	2279	55	1								1						1	1
8:00 AM	2005	74							1	1					1			
8:15 AM	1878	81											1	1				
8:30 AM	1763	86			1		1	1										
8:45 AM	1653	96	1								1						1	1
9:00 AM	1573	77							1	1					1			
9:15 AM	1512	64											1	1				
9:30 AM	1463	63			1		1											
9:45 AM	1414	54	1								1						1	1

10:00 AM	1438	60							1	1					1			
10:15 AM	1555	62											1	1				
10:30 AM	1640	50			1		1											
10:45 AM	1737	50	1								1						1	1
11:00 AM	1776	43							1						1			
11:15 AM	1806	42											1					
11:30 AM	1845	47			1		1											
11:45 AM	1842	44	1								1						1	1
12:00 PM	1848	58							1	1					1			
12:15 PM	1851	60											1	1				
12:30 PM	1869	69			1		1											
12:45 PM	1988	67	1								1						1	1
1:00 PM	2095	60							1	1					1			
1:15 PM	2282	58											1					
1:30 PM	2493	48			1		1											
1:45 PM	2726	46	1								1						1	1
2:00 PM	2954	41							1						1			
2:15 PM	3066	46											1					
2:30 PM	3095	55			1		1											
2:45 PM	3077	54	1								1						1	1
3:00 PM	3064	55							1	1					1			
3:15 PM	3019	52											1					
3:30 PM	3007	39			1		1											
3:45 PM	3059	43	1								1						1	1
4:00 PM	3072	42							1						1			
4:15 PM	3102	41											1					
4:30 PM	3017	53			1		1											
4:45 PM	2783	63	1								1						1	1
5:00 PM	2537	67							1	1					1			
5:15 PM	2223	73											1	1				
5:30 PM	2010	79			1		1	1										
5:45 PM	1798	73	1								1						1	1
6:00 PM	1590	71							1	1					1			
6:15 PM	1427	69											1	1				
6:30 PM	1268	76			1		1	1										
6:45 PM	1094	72	1								1						1	1
7:00 PM	986	74							1	1					1			
7:15 PM	937	64											1	1				
7:30 PM	915	56			1		1											
7:45 PM	911	70	1								1						1	1
8:00 PM	881	67							1	1					1			
8:15 PM	881	74											1	1				
8:30 PM	842	75			1													
8:45 PM	855	63	1								1						1	1
9:00 PM	872	69							1	1					1			
9:15 PM	889	67											1	1				
9:30 PM	909	54			1		1											
9:45 PM	876	54	1								1						1	1
HOURS MET			**22**	**0**	**23**	**0**	**19**	**3**	**21**	**12**	**22**	**0**	**20**	**10**	**24**	**0**	**22**	**16**
WARRANT SATISFIED?			**NO**		**NO**		**NO**		**YES**		**NO**				**NO**			

Warrant Met: **No**

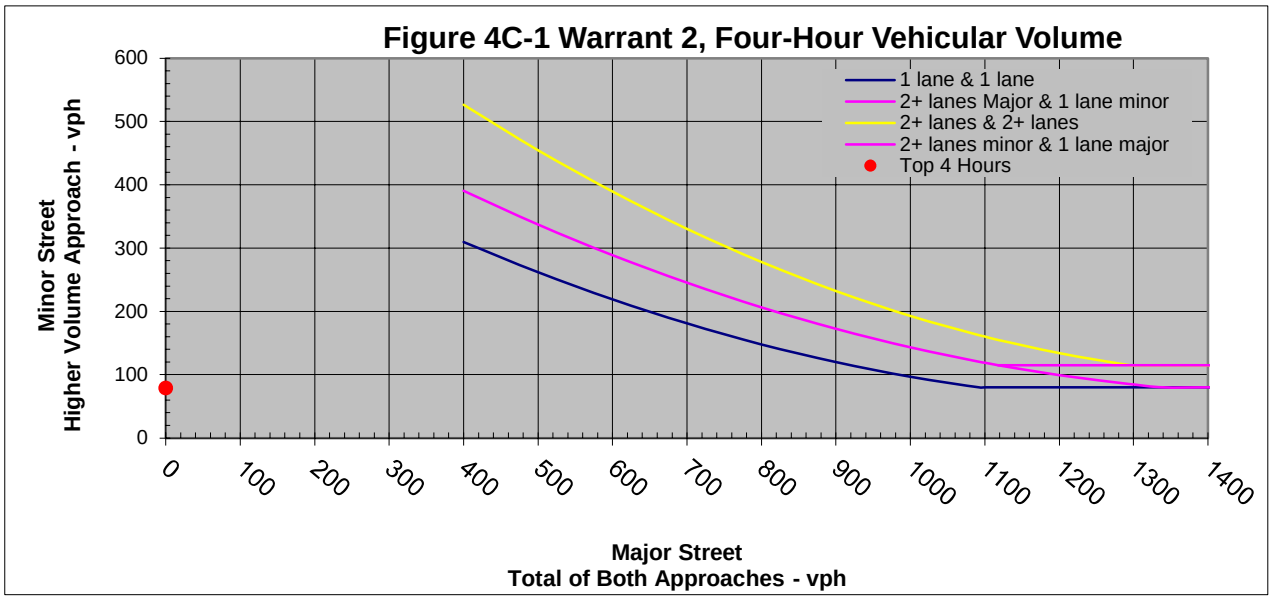
Notes: Condition B (70%) was met.

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	2
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	10
Minor Street:	1 Lane		

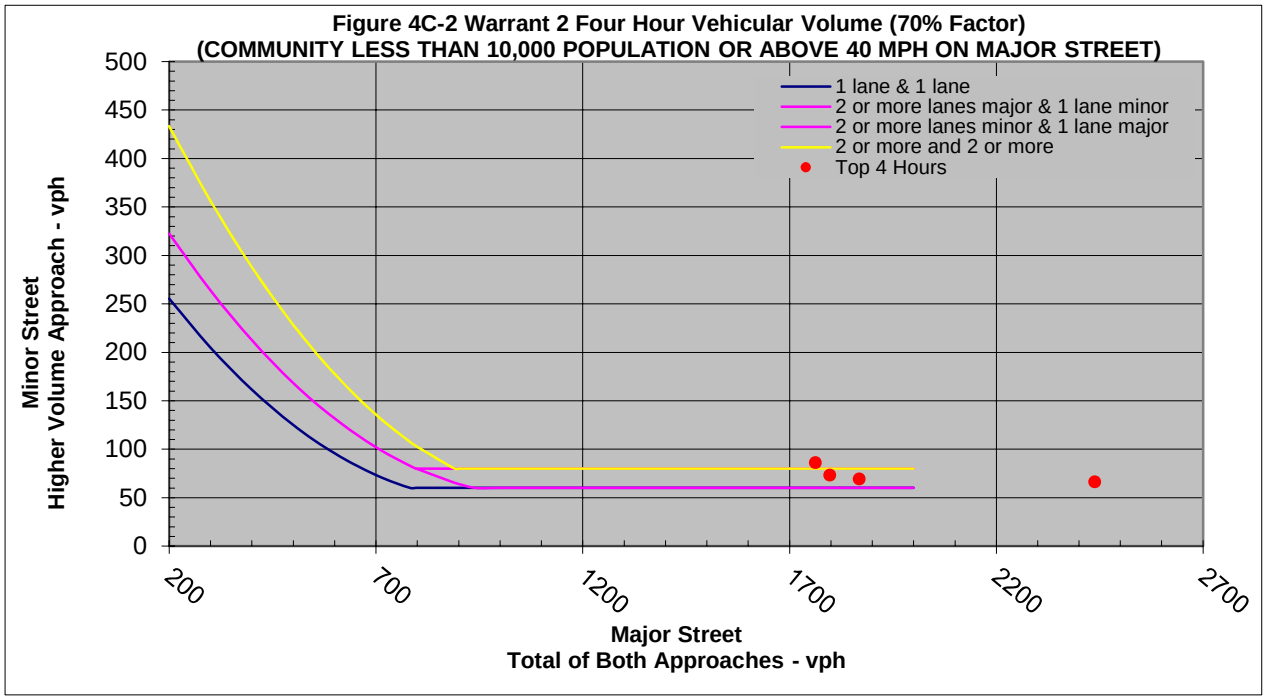
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Alum Creek Drive		Minor - Rathmell Road					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	778	1957	0	40	2735	40		
6:15 AM	817	1876	0	57	2693	57		
6:30 AM	855	1840	0	65	2695	65		Met
6:45 AM	885	1747	0	81	2632	81	Met	
7:00 AM	874	1631	0	76	2505	76		
7:15 AM	816	1704	0	71	2520	71		
7:30 AM	767	1672	0	66	2439	66		Met
7:45 AM	730	1549	0	55	2279	55		
8:00 AM	683	1322	0	74	2005	74		
8:15 AM	692	1186	0	81	1878	81	Met	
8:30 AM	699	1064	0	86	1763	86		Met
8:45 AM	684	969	0	96	1653	96		
9:00 AM	685	888	0	77	1573	77		
9:15 AM	664	848	0	64	1512	64		
9:30 AM	658	805	0	63	1463	63		Met
9:45 AM	659	755	0	54	1414	54		
10:00 AM	696	742	0	60	1438	60		
10:15 AM	765	790	0	62	1555	62		
10:30 AM	800	840	0	50	1640	50		
10:45 AM	838	899	0	50	1737	50		
11:00 AM	855	921	0	43	1776	43		
11:15 AM	902	904	0	42	1806	42		
11:30 AM	937	908	0	47	1845	47		
11:45 AM	927	915	0	44	1842	44		
12:00 PM	948	900	0	58	1848	58		
12:15 PM	914	937	0	60	1851	60		
12:30 PM	884	985	0	69	1869	69		Met
12:45 PM	925	1063	0	67	1988	67		
1:00 PM	906	1189	0	60	2095	60		
1:15 PM	1044	1238	0	58	2282	58		
1:30 PM	1258	1235	0	48	2493	48		
1:45 PM	1481	1245	0	46	2726	46		
2:00 PM	1696	1258	0	41	2954	41		
2:15 PM	1811	1255	0	46	3066	46		
2:30 PM	1792	1303	0	55	3095	55		
2:45 PM	1776	1301	0	54	3077	54		
3:00 PM	1781	1283	0	55	3064	55		
3:15 PM	1730	1289	0	52	3019	52		
3:30 PM	1711	1296	0	39	3007	39		
3:45 PM	1733	1326	0	43	3059	43		
4:00 PM	1743	1329	0	42	3072	42		
4:15 PM	1794	1308	0	41	3102	41		
4:30 PM	1759	1258	0	53	3017	53		
4:45 PM	1630	1153	0	63	2783	63		Met
5:00 PM	1448	1089	0	67	2537	67		
5:15 PM	1214	1009	0	73	2223	73		
5:30 PM	1062	948	0	79	2010	79		
5:45 PM	943	855	0	73	1798	73		Met
6:00 PM	852	738	0	71	1590	71		
6:15 PM	776	651	0	69	1427	69		
6:30 PM	712	556	0	76	1268	76		
6:45 PM	603	491	0	72	1094	72		Met
7:00 PM	542	444	0	74	986	74		
7:15 PM	487	450	0	64	937	64		
7:30 PM	474	441	0	56	915	56		
7:45 PM	457	454	0	70	911	70		Met
8:00 PM	428	453	0	67	881	67		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	6:45 AM	7:45 AM	2632	81
2nd Highest Hour	8:15 AM	9:15 AM	1878	81
3rd Highest Hour	12:00 AM	1:00 AM	0	79
4th Highest Hour	5:30 PM	6:30 PM	2010	79

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	8:30 AM	9:30 AM	1763	86
2nd Highest Hour	5:45 PM	6:45 PM	1798	73
3rd Highest Hour	12:30 PM	1:30 PM	1869	69
4th Highest Hour	7:30 AM	8:30 AM	2439	66



Are the requirements for Warrant 2 met?: **No**

OMUTCD WARRANT 3, PEAK HOUR

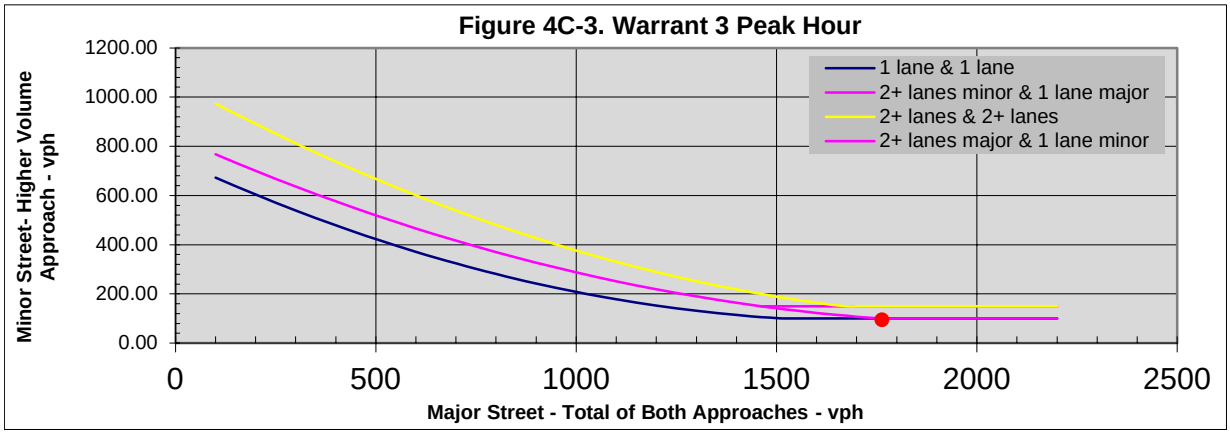
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	8:30 AM
Major Street:	2 or More Lanes	Peak Hour End Time	9:30 AM
Minor Street:	1 Lane		

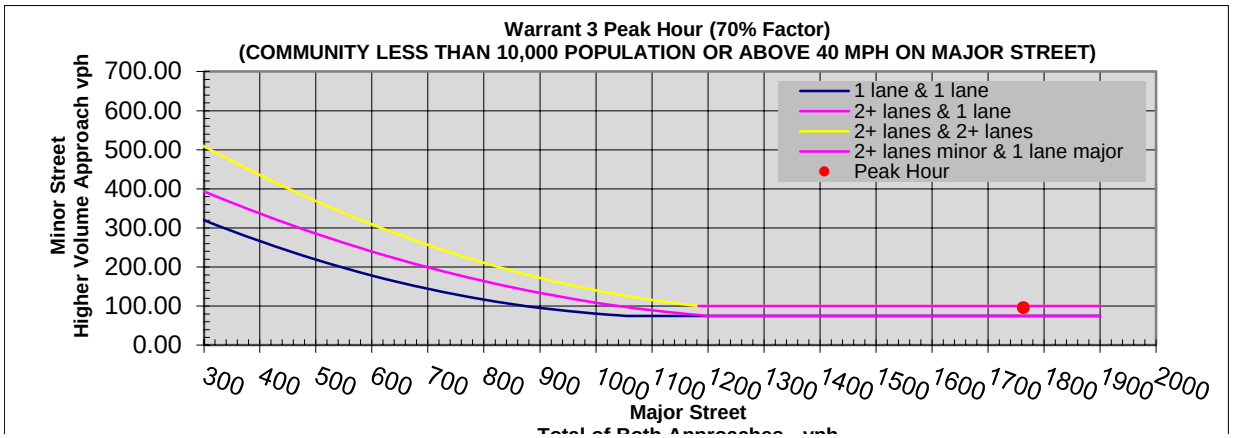
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Are the requirements for Warrant 3 met?: No





Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	2735	40	2775	2775
6:15 AM	2693	57	2750	2750
6:30 AM	2695	65	2760	2760
6:45 AM	2632	81	2713	2713
7:00 AM	2505	76	2581	2581
7:15 AM	2520	71	2591	2591
7:30 AM	2439	66	2505	2505
7:45 AM	2279	55	2334	2334
8:00 AM	2005	74	2079	2079
8:15 AM	1878	81	1959	1959
8:30 AM	1763	86	1849	1849
8:45 AM	1653	96	1749	1749
9:00 AM	1573	77	1650	1650
9:15 AM	1512	64	1576	1576
9:30 AM	1463	63	1526	1526
9:45 AM	1414	54	1468	1468
10:00 AM	1438	60	1498	1498
10:15 AM	1555	62	1617	1617
10:30 AM	1640	50	1690	1690
10:45 AM	1737	50	1787	1787
11:00 AM	1776	43	1819	1819
11:15 AM	1806	42	1848	1848
11:30 AM	1845	47	1892	1892
11:45 AM	1842	44	1886	1886
12:00 PM	1848	58	1906	1906
12:15 PM	1851	60	1911	1911
12:30 PM	1869	69	1938	1938
12:45 PM	1988	67	2055	2055
1:00 PM	2095	60	2155	2155
1:15 PM	2282	58	2340	2340
1:30 PM	2493	48	2541	2541
1:45 PM	2726	46	2772	2772
2:00 PM	2954	41	2995	2995
2:15 PM	3066	46	3112	3112
2:30 PM	3095	55	3150	3150
2:45 PM	3077	54	3131	3131
3:00 PM	3064	55	3119	3119
3:15 PM	3019	52	3071	3071
3:30 PM	3007	39	3046	3046
3:45 PM	3059	43	3102	3102
4:00 PM	3072	42	3114	3114
4:15 PM	3102	41	3143	3143
4:30 PM	3017	53	3070	3070
4:45 PM	2783	63	2846	2846
5:00 PM	2537	67	2604	2604
5:15 PM	2223	73	2296	2296
5:30 PM	2010	79	2089	2089
5:45 PM	1798	73	1871	1871
6:00 PM	1590	71	1661	1661
6:15 PM	1427	69	1496	1496
6:30 PM	1268	76	1344	1344
6:45 PM	1094	72	1166	1166
7:00 PM	986	74	1060	1060
7:15 PM	937	64	1001	1001
7:30 PM	915	56	971	971
7:45 PM	911	70	981	981
8:00 PM	881	67	948	948

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1763	96	100	75

STUDY AND ANALYSIS INFORMATION

Municipality:	ODOT	**Traffic Volumes Obtained By:**	Smart Services
County:	Franklin	**Analysis Date:**	3/17/2023
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	Kimley-Horn
Google map link:	Map		

Analysis Information

Data Collection Date:	8/16/2022
Day of the Week:	Tuesday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	No
Total Number of Approaches at Intersection:	4

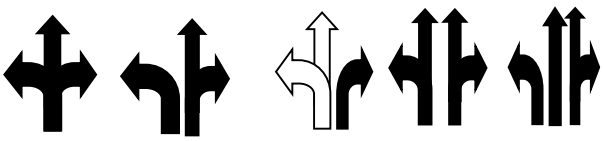
Major Street Information

Major Street Name and Route Number:	Alum Creek Drive	
Major Street Approach Direction:	N-Bound	
	S-Bound	
Number of Thru Lanes on Each Major Street Approach:	3	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	55	**MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Bixby Road	
Minor Street Approach Configuration:	3	E-Bound
	3	W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach:	1	**LANE(S)**
Apply Right Turn Lane Reduction*:	No	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**		
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**		
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 1:30 PM 2:30 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 12:45 PM 1:45 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Do Not Install New Traffic Signal

Notes: Warrants 1, 2, and 3 are not met for the intersection.

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	0	36	0			36	1	0	0			1	5	225	0			230	0	0	0			0
12:15 AM	0	32	0			32	1	0	0			1	0	92	0			92	0	0	0			0
12:30 AM	1	39	0			40	0	0	0			0	0	66	0			66	0	0	0			0
12:45 AM	0	30	0			30	0	0	0			0	0	46	0			46	0	0	0			0
Hourly Total	1	137	0	0	0	138	2	0	0	0	0	2	5	429	0	0	0	434	0	0	0	0	0	0
1:00 AM	0	33	0			33	0	0	0			0	0	68	0			68	1	0	0			1
1:15 AM	0	30	0			30	0	0	0			0	0	58	0			58	0	0	0			0
1:30 AM	0	29	0			29	0	0	0			0	0	38	0			38	0	0	0			0
1:45 AM	0	24	0			24	0	0	0			0	0	42	0			42	0	0	0			0
Hourly Total	0	116	0	0	0	116	0	0	0	0	0	0	0	206	0	0	0	206	1	0	0	0	0	1
2:00 AM	0	34	0			34	0	0	0			0	2	133	0			135	0	0	0			0
2:15 AM	0	36	0			36	0	0	0			0	1	62	0			63	0	0	0			0
2:30 AM	1	23	0			24	0	0	0			0	1	80	0			81	0	0	0			0
2:45 AM	0	50	0			50	0	0	0			0	0	40	0			40	0	0	0			0
Hourly Total	1	143	0	0	0	144	0	0	0	0	0	0	4	315	0	0	0	319	0	0	0	0	0	0
3:00 AM	0	56	0			56	0	0	0			0	3	39	0			42	0	0	0			0
3:15 AM	0	81	0			81	0	0	0			0	0	56	0			56	0	0	0			0
3:30 AM	0	95	0			95	0	0	0			0	2	189	0			191	0	0	0			0
3:45 AM	1	107	0			108	0	0	0			0	2	71	0			73	0	0	0			0
Hourly Total	1	339	0	0	0	340	0	0	0	0	0	0	7	355	0	0	0	362	0	0	0	0	0	0
4:00 AM	0	116	0			116	0	0	0			0	1	118	0			119	0	0	0			0
4:15 AM	6	166	0			172	0	0	0			0	0	77	0			77	1	0	0			1
4:30 AM	3	238	0			241	0	0	0			0	2	173	0			175	0	0	0			0
4:45 AM	4	305	0			309	1	0	0			1	1	101	0			102	1	0	0			1
Hourly Total	13	825	0	0	0	838	1	0	0	0	0	1	4	469	0	0	0	473	2	0	0	0	0	2
5:00 AM	9	206	0			215	0	0	0			0	0	150	0			150	1	0	0			1
5:15 AM	18	355	0			373	0	0	0			0	1	107	0			108	1	0	0			1
5:30 AM	18	518	0			536	0	0	0			0	3	90	0			93	1	0	0			1
5:45 AM	28	664	0			692	0	0	0			0	0	154	0			154	0	0	0			0
Hourly Total	73	1743	0	0	0	1816	0	0	0	0	0	0	4	501	0	0	0	505	3	0	0	0	0	3
6:00 AM	1	356	0			357	0	0	0			0	2	190	0			192	0	0	0			0
6:15 AM	3	412	0			415	2	0	0			2	0	166	0			166	1	0	0			1
6:30 AM	3	497	0			500	1	0	0			1	1	197	0			198	2	0	0			2
6:45 AM	5	669	0			674	1	0	0			1	4	232	0			236	0	0	0			0
Hourly Total	12	1934	0	0	0	1946	4	0	0	0	0	4	7	785	0	0	0	792	3	0	0	0	0	3
7:00 AM	7	284	0			291	3	0	0			3	1	215	0			216	2	0	0			2
7:15 AM	4	353	0			357	3	0	0			3	3	210	0			213	1	0	0			1
7:30 AM	6	413	0			419	2	0	0			2	3	230	0			233	0	0	0			0
7:45 AM	7	518	0			525	6	0	0			6	0	202	0			202	4	0	0			4
Hourly Total	24	1568	0	0	0	1592	14	0	0	0	0	14	7	857	0	0	0	864	7	0	0	0	0	7
8:00 AM	6	382	0			388	2	0	0			2	5	168	0			173	1	0	0			1
8:15 AM	1	323	0			324	1	0	0			1	2	163	0			165	3	0	0			3
8:30 AM	6	296	0			302	0	0	0			0	2	190	0			192	1	0	0			1
8:45 AM	7	300	0			307	2	0	0			2	3	157	0			160	0	0	0			0
Hourly Total	20	1301	0	0	0	1321	5	0	0	0	0	5	12	678	0	0	0	690	5	0	0	0	0	5
9:00 AM	4	219	0			223	1	0	0			1	2	183	0			185	1	0	0			1
9:15 AM	4	203	0			207	1	0	0			1	4	159	0			163	1	0	0			1
9:30 AM	3	204	0			207	2	0	0			2	0	180	0			180	2	0	0			2
9:45 AM	1	210	0			211	1	0	0			1	2	156	0			158	2	0	0			2
Hourly Total	12	836	0	0	0	848	5	0	0	0	0	5	8	678	0	0	0	686	6	0	0	0	0	6
10:00 AM	1	168	0			169	1	0	0			1	2	162	0			164	3	0	0			3
10:15 AM	2	188	0			190	2	0	0			2	1	162	0			163	0	0	0			0
10:30 AM	3	171	0			174	2	0	0			2	0	185	0			185	1	0	0			1
10:45 AM	1	210	0			211	2	0	0			2	3	191	0			194	2	0	0			2
Hourly Total	7	737	0	0	0	744	7	0	0	0	0	7	6	700	0	0	0	706	6	0	0	0	0	6
11:00 AM	4	206	0			210	1	0	0			1	4	246	0			250	4	0	0			4
11:15 AM	1	214	0			215	1	0	0			1	6	205	0			211	3	0	0			3
11:30 AM	4	234	0			238	2	0	0			2	2	222	0			224	3	0	0			3
11:45 AM	3	224	0			227	1	0	0			1	7	226	0			233	2	0	0			2
Hourly Total	12	878	0	0	0	890	5	0	0	0	0	5	19	899	0	0	0	918	12	0	0	0	0	12
12:00 PM	1	198	0			199	0	0	0			0	2	282	0			284	1	0	0			1
12:15 PM	5	207	0			212	2	0	0			2	6	223	0			229	2	0	0			2
12:30 PM	6	226	0			232	2	0	0			2	6	207	0			213	5	0	0			5
12:45 PM	2	218	0			220	2	0	0			2	8	236	0			244	2	0	0			2
Hourly Total	14	849	0	0	0	863	6	0	0	0	0	6	22	948	0	0	0	970	10	0	0	0	0	10
1:00 PM	3	232	0			235	0	0	0			0	5	249	0			254	0	0	0			0
1:15 PM	3	274	0			277	2	0	0			2	4	206	0			210	2	0	0			2
1:30 PM	2	315	0			317	3	0	0			3	1	268	0			269	4	0	0			4
1:45 PM	0	320	0			320	1	0	0			1	6	239	0			245	1	0	0			1
Hourly Total	8	1141	0	0	0	1149	6	0	0	0	0	6	16	962	0	0	0	978	7	0	0	0	0	7
2:00 PM	2	287	0			289	3	0	0			3	12	374	0			386	6	0	0			6
2:15 PM	1	270	0			271	3	0	0			3	13	402	0			415	3	0	0			3
2:30 PM	4	331	0			335	4	0	0			4	14	499	0			513	1	0	0			1
2:45 PM	3	349	0			352	1	0	0			1	11	394	0			405	2	0	0			2
Hourly Total	10	1237	0	0	0	1247	11	0	0	0	0	11	50	1669	0	0	0	1719	12	0	0	0	0	12
3:00 PM	0	289	0			289	5	0	0			5	15	493	0			508	3	0	0			3
3:15 PM	6	319	0			325	3	0	0			3	11	395	0			406	3	0	0			3
3:30 PM	2	317	0			319	0	0	0			0	12	527	0			539	0	0	0			0
3:45 PM	1	342	0			343	1	0	0			1	26	411	0			437	2	0	0			2
Hourly Total	9	1267	0	0	0	1276	9	0	0	0	0	9	64	1826	0	0	0	1890	8	0	0	0	0	8
4:00 PM	4	258	0			262	4	0	0			4	17	420	0			437	2	0	0			2
4:15 PM	2	299	0			301	1	0	0			1	14	334	0			348	0	0	0			0
4:30 PM	1	345	0			346	1	0	0			1	22	517	0			539	6	0	0			6
4:45 PM	4	309	0			313	2	0	0			2	7	419	0			426	3	0	0			3
Hourly Total	11	1211	0	0	0	1222	8	0	0	0	0	8	60	1690	0	0	0	1750	11	0	0	0	0	11
5:00 PM	8	247	0			255	4	0	0			4	14	491	0			505	1	0	0			1
5:15 PM	9	252	0			261	1	0	0			1	7	315	0			322	2	0	0			2
5:30 PM	25	211	0			236	2	0	0			2	5	345	0			350	4	0	0			4
5:45 PM	33	227	0			260	1	0	0			1	6	264	0			270	1	0	0			1
Hourly Total	75	937	0	0	0	1012	8	0	0	0	0	8	32	1415	0	0	0	1447	8	0	0	0	0	8
6:00 PM	3	172	0			175	2	0	0			2	2	240	0			242	2	0	0			2
6:15 PM	3	211	0			214	1	0	0			1	11	191	0			202	1	0	0			1
6:30 PM	2	149	0			151	1	0	0			1	1	217	0			218	0	0	0			0
6:45 PM	2	137	0			139	0	0	0			0	5	153	0			158	1	0	0			1
Hourly Total	10	669	0	0	0	679	4	0	0	0	0	4	19	801	0	0	0	820	4	0	0	0	0	4
7:00 PM	3	106	0			109	1	0	0			1	1	180	0			181	0	0	0			0
7:15 PM	0	123	0			123	0	0	0			0	0	127	0			127	1	0	0			1
7:30 PM	0	90	0			90	0	0	0			0	0	116	0			116	1	0	0			1
7:45 PM	1	106	0			107	1	0	0			1	1	115	0			116	1	0	0			1
Hourly Total	4	425	0	0	0	429	2	0	0	0	0	2	2	538	0	0	0	540	3	0	0	0	0	3
8:00 PM	2	94	0			96	4	0	0			4	6	130	0			136	1	0	0			1
8:15 PM	0	114	0			114	1	0	0			1	4	121	0			125	0	0	0			0
8:30 PM	3	109	0			112	3	0	0			3	1	100	0			101	1	0	0			1
8:45 PM	2	110	0			112	1	0	0			1	1	82	0			83	2	0	0			2
Hourly Total	7	427	0	0	0	434	9	0	0	0	0	9	12	433	0	0	0	445	4	0	0	0	0	4
9:00 PM	1	110	0			111	0	0	0			0	6	110	0			116	0	0	0			0
9:15 PM	2	97	0			99	1	0	0			1	0	96	0			96	1	0	0			1
9:30 PM	1	111	0			112	1	0	0			1	1	105	0			106	1	0	0			1
9:45 PM	2	124	0			126	1	0	0			1	3	97	0			100	1	0	0			1
Hourly Total	6	442	0	0	0	448	3	0	0	0	0	3	10	408	0	0	0	418	3	0	0	0	0	3
10:00 PM	0	75	0			75	0	0	0			0	2	175	0			177	1	0	0			1
10:15 PM	0	94	0			94	1	0	0			1	2	116	0			118	0	0	0			0
10:30 PM	0	100	0			100	0	0	0			0	3	99	0			102	1	0	0			1
10:45 PM	1	100	0			101	0	0	0			0	3	89	0			92	0	0	0			0
Hourly Total	1	369	0	0	0	370	1	0	0	0	0	1	10	479	0	0	0	489	2	0	0	0	0	2
11:00 PM	0	67	0			67	0	0	0			0	1	146	0			147	1	0	0			1
11:15 PM	0	67	0			67	0	0	0			0	4	116	0			120	0	0	0			0
11:30 PM	0	56	0			56	1	0	0			1	3	239	0			242	0	0	0			0
11:45 PM	1	50	0			51	0	0	0			0	0	169	0			169	1	0	0			1
Hourly Total	1	240	0	0	0	241	1	0	0	0	0	1	8	670	0	0	0	678	2	0	0	0	0	2

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	572	2			1						1				1		1	
12:15 AM	407	1																
12:30 AM	371	1																
12:45 AM	332	1																
1:00 AM	322	1																
1:15 AM	390	0													1			
1:30 AM	401	0																
1:45 AM	439	0			1													
2:00 AM	463	0																
2:15 AM	392	0													1			
2:30 AM	430	0																
2:45 AM	611	0	1		1						1						1	
3:00 AM	702	0							1									
3:15 AM	839	0											1		1			
3:30 AM	951	1					1											
3:45 AM	1081	1	1		1						1						1	
4:00 AM	1311	2							1									
4:15 AM	1441	3											1		1			
4:30 AM	1673	3					1											
4:45 AM	1886	4	1		1						1						1	
5:00 AM	2321	3							1									
5:15 AM	2505	2											1		1			
5:30 AM	2605	2					1											
5:45 AM	2674	3	1		1						1						1	
6:00 AM	2738	4							1									
6:15 AM	2696	7											1		1			
6:30 AM	2685	8					1											
6:45 AM	2639	9	1		1						1						1	
7:00 AM	2456	14							1									
7:15 AM	2510	13											1		1			
7:30 AM	2429	11					1											
7:45 AM	2271	9	1		1						1						1	
8:00 AM	2011	5							1									
8:15 AM	1858	5											1		1			
8:30 AM	1739	4					1											
8:45 AM	1632	6	1		1						1						1	
9:00 AM	1534	6							1									
9:15 AM	1459	8											1		1			
9:30 AM	1442	7					1											
9:45 AM	1414	6	1		1						1						1	

10:00 AM	1450	7							1									
10:15 AM	1577	7											1		1			
10:30 AM	1650	10					1											
10:45 AM	1753	12	1		1						1						1	
11:00 AM	1808	12							1									
11:15 AM	1831	9											1		1			
11:30 AM	1846	8					1											
11:45 AM	1829	10	1		1						1						1	
12:00 PM	1833	10							1									
12:15 PM	1839	9											1		1			
12:30 PM	1885	9					1											
12:45 PM	2026	8	1		1						1						1	
1:00 PM	2127	7							1									
1:15 PM	2313	13											1		1			
1:30 PM	2512	14					1											
1:45 PM	2774	11	1		1						1						1	
2:00 PM	2966	12							1									
2:15 PM	3088	13											1		1			
2:30 PM	3133	13					1											
2:45 PM	3143	9	1		1						1						1	
3:00 PM	3166	9							1									
3:15 PM	3068	8											1		1			
3:30 PM	2986	6					1											
3:45 PM	3013	10	1		1						1						1	
4:00 PM	2972	11							1									
4:15 PM	3033	10											1		1			
4:30 PM	2967	12					1											
4:45 PM	2668	10	1		1						1						1	
5:00 PM	2459	8							1									
5:15 PM	2116	9											1		1			
5:30 PM	1949	8					1											
5:45 PM	1732	5	1		1						1						1	
6:00 PM	1499	4							1									
6:15 PM	1372	3											1		1			
6:30 PM	1206	2					1											
6:45 PM	1043	3	1		1						1						1	
7:00 PM	969	3							1									
7:15 PM	911	5											1		1			
7:30 PM	900	6					1											
7:45 PM	907	9	1		1						1						1	
8:00 PM	879	9							1									
8:15 PM	874	5											1		1			
8:30 PM	830	5																
8:45 PM	835	4	1		1						1						1	
9:00 PM	866	3							1									
9:15 PM	891	4											1		1			
9:30 PM	908	3					1											
9:45 PM	892	3	1		1						1						1	
HOURS MET			**21**	**0**	**23**	**0**	**19**	**0**	**21**	**0**	**22**	**0**	**20**	**0**	**23**	**0**	**22**	**0**
WARRANT SATISFIED?			**NO**		**NO**		**NO**		**NO**		**NO**				**NO**			

Warrant Met: **No**

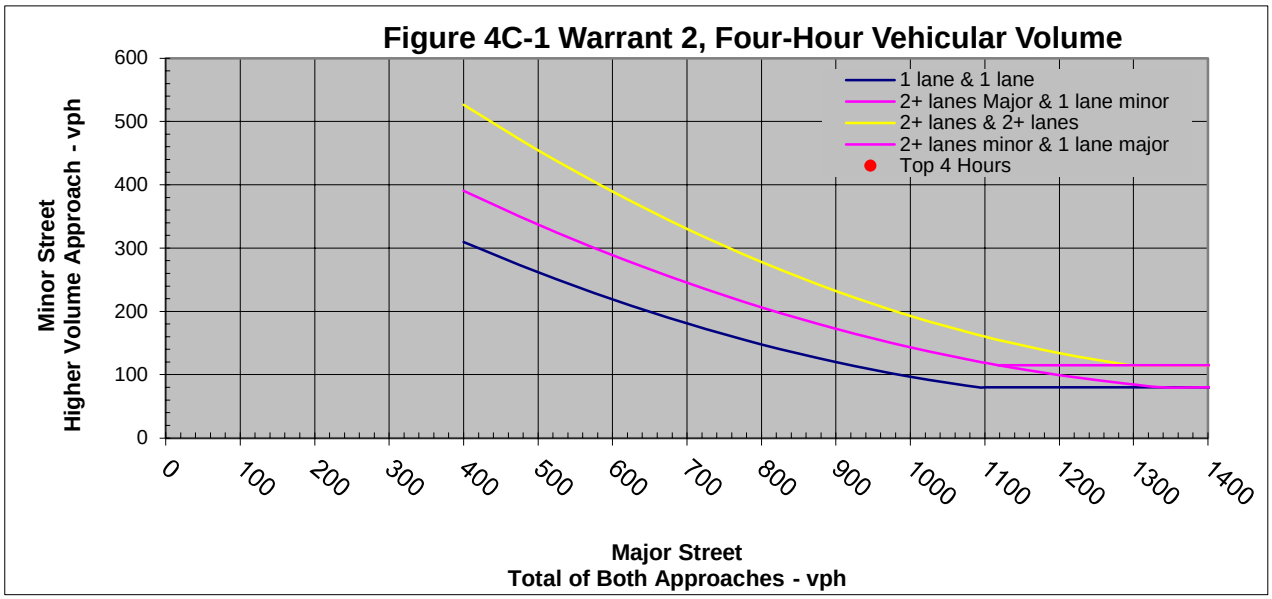
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	0
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	0
Minor Street:	1 Lane		

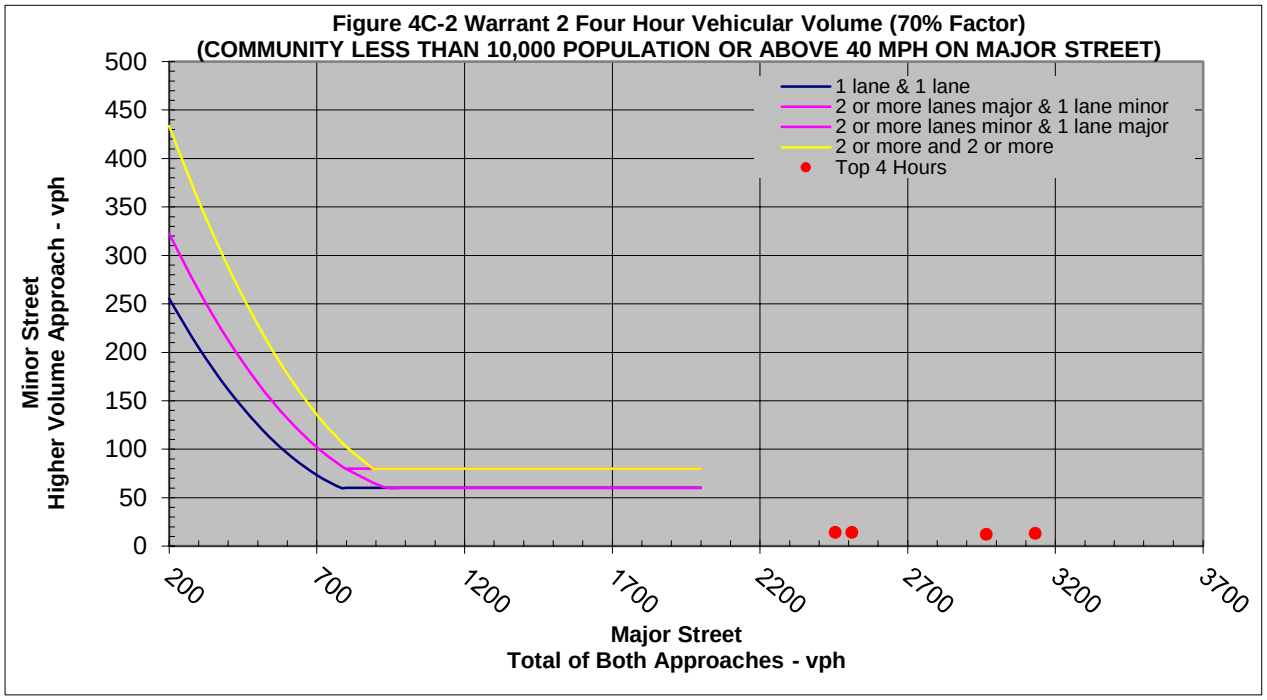
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Alum Creek Drive		Minor - Bixby Road					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	792	1946	4	3	2738	4		
6:15 AM	816	1880	7	5	2696	7		
6:30 AM	863	1822	8	5	2685	8		
6:45 AM	898	1741	9	3	2639	9		
7:00 AM	864	1592	14	7	2456	14		
7:15 AM	821	1689	13	6	2510	13		
7:30 AM	773	1656	11	8	2429	11		
7:45 AM	732	1539	9	9	2271	9		
8:00 AM	690	1321	5	5	2011	5		
8:15 AM	702	1156	4	5	1858	5		
8:30 AM	700	1039	4	3	1739	4		
8:45 AM	688	944	6	4	1632	6		
9:00 AM	686	848	5	6	1534	6		
9:15 AM	665	794	5	8	1459	8		
9:30 AM	665	777	6	7	1442	7		
9:45 AM	670	744	6	6	1414	6		
10:00 AM	706	744	7	6	1450	7		
10:15 AM	792	785	7	7	1577	7		
10:30 AM	840	810	6	10	1650	10		
10:45 AM	879	874	6	12	1753	12		
11:00 AM	918	890	5	12	1808	12		
11:15 AM	952	879	4	9	1831	9		
11:30 AM	970	876	5	8	1846	8		
11:45 AM	959	870	5	10	1829	10		
12:00 PM	970	863	6	10	1833	10		
12:15 PM	940	899	6	9	1839	9		
12:30 PM	921	964	6	9	1885	9		
12:45 PM	977	1049	7	8	2026	8		
1:00 PM	978	1149	6	7	2127	7		
1:15 PM	1110	1203	9	13	2313	13		
1:30 PM	1315	1197	10	14	2512	14		
1:45 PM	1559	1215	11	11	2774	11		
2:00 PM	1719	1247	11	12	2966	12		
2:15 PM	1841	1247	13	9	3088	13		
2:30 PM	1832	1301	13	9	3133	13		
2:45 PM	1858	1285	9	8	3143	9		
3:00 PM	1890	1276	9	8	3166	9		
3:15 PM	1819	1249	8	7	3068	8		
3:30 PM	1761	1225	6	4	2986	6		
3:45 PM	1761	1252	7	10	3013	10		
4:00 PM	1750	1222	8	11	2972	11		
4:15 PM	1818	1215	8	10	3033	10		
4:30 PM	1792	1175	8	12	2967	12		
4:45 PM	1603	1065	9	10	2668	10		
5:00 PM	1447	1012	8	8	2459	8		
5:15 PM	1184	932	6	9	2116	9		
5:30 PM	1064	885	6	8	1949	8		
5:45 PM	932	800	5	4	1732	5		
6:00 PM	820	679	4	4	1499	4		
6:15 PM	759	613	3	2	1372	3		
6:30 PM	684	522	2	2	1206	2		
6:45 PM	582	461	1	3	1043	3		
7:00 PM	540	429	2	3	969	3		
7:15 PM	495	416	5	4	911	5		
7:30 PM	493	407	6	3	900	6		
7:45 PM	478	429	9	3	907	9		
8:00 PM	445	434	9	4	879	9		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	1:30 PM	2:30 PM	2512	14
2nd Highest Hour	7:00 AM	8:00 AM	2456	14
3rd Highest Hour	2:30 PM	3:30 PM	3133	13
4th Highest Hour	4:30 PM	5:30 PM	2967	12

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	1:30 PM	2:30 PM	2512	14
2nd Highest Hour	7:00 AM	8:00 AM	2456	14
3rd Highest Hour	2:30 PM	3:30 PM	3133	13
4th Highest Hour	4:30 PM	5:30 PM	2967	12



Are the requirements for Warrant 2 met?: **No**

OMUTCD WARRANT 3, PEAK HOUR

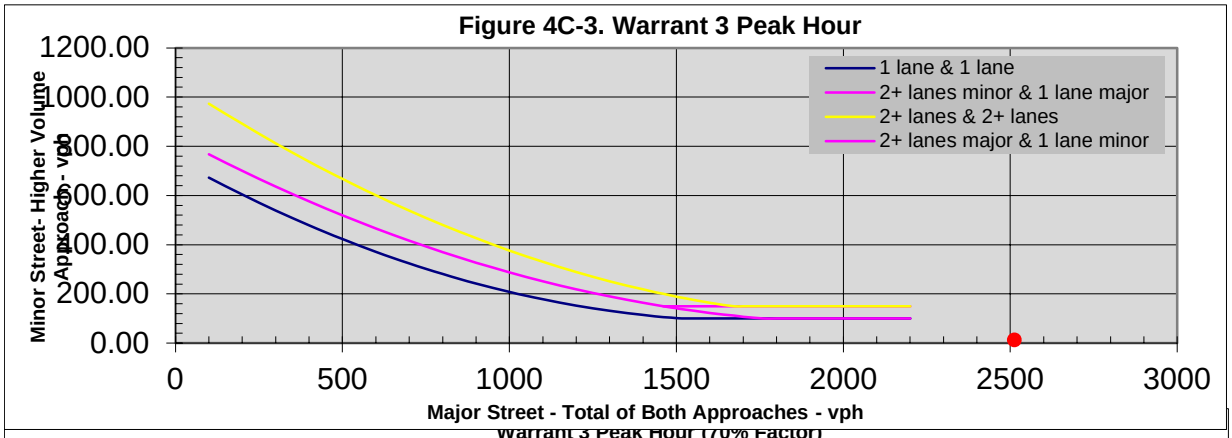
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	1:30 PM
Major Street:	2 or More Lanes	Peak Hour End Time	2:30 PM
Minor Street:	1 Lane		

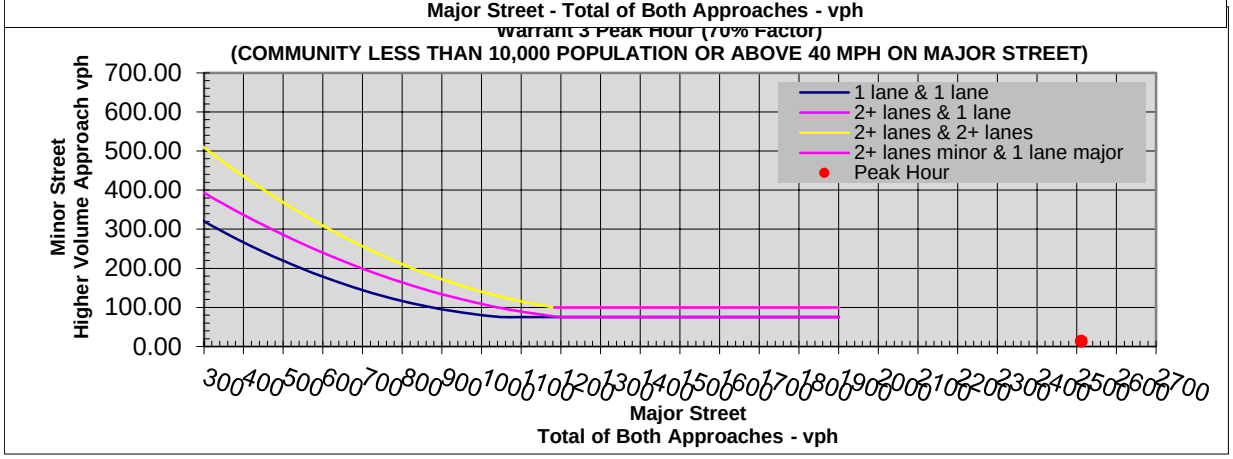
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Are the requirements for Warrant 3 met?: **No**





Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	2738	4	2742	2745
6:15 AM	2696	7	2703	2708
6:30 AM	2685	8	2693	2698
6:45 AM	2639	9	2648	2651
7:00 AM	2456	14	2470	2477
7:15 AM	2510	13	2523	2529
7:30 AM	2429	11	2440	2448
7:45 AM	2271	9	2280	2289
8:00 AM	2011	5	2016	2021
8:15 AM	1858	5	1863	1867
8:30 AM	1739	4	1743	1746
8:45 AM	1632	6	1638	1642
9:00 AM	1534	6	1540	1545
9:15 AM	1459	8	1467	1472
9:30 AM	1442	7	1449	1455
9:45 AM	1414	6	1420	1426
10:00 AM	1450	7	1457	1463
10:15 AM	1577	7	1584	1591
10:30 AM	1650	10	1660	1666
10:45 AM	1753	12	1765	1771
11:00 AM	1808	12	1820	1825
11:15 AM	1831	9	1840	1844
11:30 AM	1846	8	1854	1859
11:45 AM	1829	10	1839	1844
12:00 PM	1833	10	1843	1849
12:15 PM	1839	9	1848	1854
12:30 PM	1885	9	1894	1900
12:45 PM	2026	8	2034	2041
1:00 PM	2127	7	2134	2140
1:15 PM	2313	13	2326	2335
1:30 PM	2512	14	2526	2536
1:45 PM	2774	11	2785	2796
2:00 PM	2966	12	2978	2989
2:15 PM	3088	13	3101	3110
2:30 PM	3133	13	3146	3155
2:45 PM	3143	9	3152	3160
3:00 PM	3166	9	3175	3183
3:15 PM	3068	8	3076	3083
3:30 PM	2986	6	2992	2996
3:45 PM	3013	10	3023	3030
4:00 PM	2972	11	2983	2991
4:15 PM	3033	10	3043	3051
4:30 PM	2967	12	2979	2987
4:45 PM	2668	10	2678	2687
5:00 PM	2459	8	2467	2475
5:15 PM	2116	9	2125	2131
5:30 PM	1949	8	1957	1963
5:45 PM	1732	5	1737	1741
6:00 PM	1499	4	1503	1507
6:15 PM	1372	3	1375	1377
6:30 PM	1206	2	1208	1210
6:45 PM	1043	3	1046	1047
7:00 PM	969	3	972	974
7:15 PM	911	5	916	920
7:30 PM	900	6	906	909
7:45 PM	907	9	916	919
8:00 PM	879	9	888	892

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
2512	14	100	75

STUDY AND ANALYSIS INFORMATION

Municipality:	ODOT	**Traffic Volumes Obtained By:**	Smart Services
County:	Franklin	**Analysis Date:**	3/17/2023
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	Kimley-Horn
Google map link:	Map		

Analysis Information

Data Collection Date:	8/16/2022
Day of the Week:	Tuesday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	Yes
Total Number of Approaches at Intersection:	4

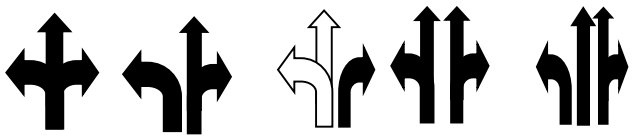
Major Street Information

Major Street Name and Route Number:	Alum Creek Drive	
Major Street Approach Direction:	N-Bound	
	S-Bound	
Number of Thru Lanes on Each Major Street Approach:	3	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	55	**MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Creekside Parkway/ Toy Road	
Minor Street Approach Configuration:	2	E-Bound
	2	W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach:	1	**LANE(S)**
Apply Right Turn Lane Reduction*:	No	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**Yes**	Condition A was met. Condition B was met. Condition A (70%) was met. Condition B (70%) was met. Combination of A/B (80%) was met.*Combination of A/B (56%) was met.*	
Warrant 2, Four-Hour Vehicular Volume	Yes	**Yes**	Figure 4C-1 (100%)	
Warrant 3, Peak Hour	Yes	**Yes**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 2:15 PM 3:15 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 1:15 PM 2:15 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Retain Existing Traffic Signal

Notes: Warrants 1, 2, and 3 were met for the intersection

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	1	32	6			39	29	4	5			38	6	146	2			154	0	3	37			40
12:15 AM	1	21	10			32	9	0	4			13	4	60	1			65	0	1	14			15
12:30 AM	2	31	8			41	9	0	5			14	5	39	0			44	1	1	13			15
12:45 AM	0	26	4			30	11	1	4			16	4	24	0			28	0	0	5			5
Hourly Total	4	110	28	0	0	142	58	5	18	0	0	81	19	269	3	0	0	291	1	5	69	0	0	75
1:00 AM	0	29	2			31	16	1	5			22	2	53	0			55	1	0	1			2
1:15 AM	4	25	3			32	20	0	6			26	1	34	0			35	0	1	0			1
1:30 AM	3	24	3			30	2	1	1			4	3	37	0			40	0	0	1			1
1:45 AM	3	17	4			24	2	0	3			5	5	34	0			39	0	0	4			4
Hourly Total	10	95	12	0	0	117	40	2	15	0	0	57	11	158	0	0	0	169	1	1	6	0	0	8
2:00 AM	1	29	4			34	10	0	3			13	11	66	0			77	0	3	54			57
2:15 AM	5	26	5			36	3	2	4			9	3	39	0			42	0	1	8			9
2:30 AM	2	21	2			25	5	2	4			11	5	71	0			76	0	0	5			5
2:45 AM	2	38	12			52	4	0	4			8	1	28	0			29	0	0	2			2
Hourly Total	10	114	23	0	0	147	22	4	15	0	0	41	20	204	0	0	0	224	0	4	69	0	0	73
3:00 AM	1	41	13			55	1	0	3			4	3	41	0			44	0	1	5			6
3:15 AM	5	40	33			78	3	1	6			10	0	34	0			34	1	1	15			17
3:30 AM	2	57	41			100	4	1	5			10	7	133	0			140	3	3	39			45
3:45 AM	5	78	23			106	3	1	2			6	7	52	0			59	4	4	11			19
Hourly Total	13	216	110	0	0	339	11	3	16	0	0	30	17	260	0	0	0	277	8	9	70	0	0	87
4:00 AM	9	68	38			115	4	2	3			9	11	87	0			98	2	2	23			27
4:15 AM	18	90	64			172	9	0	7			16	13	46	3			62	1	8	11			20
4:30 AM	37	158	49			244	25	1	8			34	15	82	1			98	5	5	58			68
4:45 AM	49	197	51			297	10	2	8			20	7	65	2			74	3	2	14			19
Hourly Total	113	513	202	0	0	828	48	5	26	0	0	79	46	280	6	0	0	332	11	17	106	0	0	134
5:00 AM	21	140	51			212	39	2	4			45	12	91	6			109	1	2	4			7
5:15 AM	40	249	64			353	16	2	12			30	10	69	9			88	2	2	9			13
5:30 AM	66	352	91			509	11	2	8			21	12	74	7			93	4	11	6			21
5:45 AM	124	425	102			651	15	7	10			32	18	112	14			144	5	6	9			20
Hourly Total	251	1166	308	0	0	1725	81	13	34	0	0	128	52	346	36	0	0	434	12	21	28	0	0	61
6:00 AM	68	248	56			372	14	0	13			27	11	141	4			156	3	4	17			24
6:15 AM	64	277	75			416	13	3	11			27	12	128	4			144	3	4	16			23
6:30 AM	57	344	101			502	19	3	9			31	23	161	6			190	4	5	12			21
6:45 AM	77	426	124			627	21	6	17			44	28	172	5			205	3	16	7			26
Hourly Total	266	1295	356	0	0	1917	67	12	50	0	0	129	74	602	19	0	0	695	13	29	52	0	0	94
7:00 AM	31	196	84			311	19	0	6			25	21	186	5			212	2	5	8			15
7:15 AM	36	259	61			356	15	1	9			25	19	150	5			174	2	2	10			14
7:30 AM	55	313	65			433	14	3	13			30	21	184	3			208	0	4	10			14
7:45 AM	68	381	68			517	17	3	12			32	17	154	5			176	4	4	13			21
Hourly Total	190	1149	278	0	0	1617	65	7	40	0	0	112	78	674	18	0	0	770	8	15	41	0	0	64
8:00 AM	45	227	62			334	13	5	11			29	15	139	2			156	4	1	8			13
8:15 AM	36	242	50			328	15	4	13			32	14	100	2			116	0	0	21			21
8:30 AM	29	197	69			295	24	4	12			40	21	142	2			165	2	3	9			14
8:45 AM	22	192	53			267	21	3	18			42	12	112	1			125	1	1	14			16
Hourly Total	132	858	234	0	0	1224	73	16	54	0	0	143	62	493	7	0	0	562	7	5	52	0	0	64
9:00 AM	21	159	36			216	20	2	15			37	16	130	5			151	1	5	16			22
9:15 AM	20	144	35			199	16	4	11			31	14	122	4			140	4	2	10			16
9:30 AM	20	153	43			216	25	2	16			43	8	121	2			131	4	1	13			18
9:45 AM	19	165	32			216	31	3	14			48	10	103	2			115	4	4	22			30
Hourly Total	80	621	146	0	0	847	92	11	56	0	0	159	48	476	13	0	0	537	13	12	61	0	0	86
10:00 AM	21	122	24			167	20	4	17			41	14	118	3			135	2	4	15			21
10:15 AM	16	123	36			175	17	4	12			33	13	120	4			137	4	1	16			21
10:30 AM	18	120	27			165	13	3	10			26	15	132	3			150	4	2	21			27
10:45 AM	21	134	43			198	23	4	19			46	17	128	2			147	10	3	24			37
Hourly Total	76	499	130	0	0	705	73	15	58	0	0	146	59	498	12	0	0	569	20	10	76	0	0	106
11:00 AM	17	155	40			212	28	11	14			53	25	168	4			197	6	6	22			34
11:15 AM	15	151	46			212	30	4	18			52	17	135	3			155	4	5	17			26
11:30 AM	35	164	31			230	28	3	14			45	24	141	4			169	12	5	24			41
11:45 AM	22	159	39			220	31	5	22			58	21	159	3			183	9	7	10			26
Hourly Total	89	629	156	0	0	874	117	23	68	0	0	208	87	603	14	0	0	704	31	23	73	0	0	127
12:00 PM	15	143	39			197	36	7	28			71	18	195	4			217	5	4	26			35
12:15 PM	19	144	45			208	21	5	17			43	17	165	3			185	5	3	18			26
12:30 PM	19	150	51			220	33	3	19			55	18	164	2			184	5	1	19			25
12:45 PM	18	140	45			203	43	2	8			53	12	172	10			194	3	2	22			27
Hourly Total	71	577	180	0	0	828	133	17	72	0	0	222	65	696	19	0	0	780	18	10	85	0	0	113
1:00 PM	23	160	39			222	41	4	12			57	10	169	2			181	8	3	23			34
1:15 PM	24	194	50			268	35	4	11			50	20	143	5			168	7	8	14			29
1:30 PM	40	194	82			316	37	8	21			66	23	176	5			204	2	9	26			37
1:45 PM	27	206	89			322	43	6	23			72	12	160	4			176	7	8	32			47
Hourly Total	114	754	260	0	0	1128	156	22	67	0	0	245	65	648	16	0	0	729	24	28	95	0	0	147
2:00 PM	24	175	77			276	86	7	15			108	9	223	3			235	12	11	85			108
2:15 PM	28	176	82			286	81	3	11			95	17	247	4			268	9	5	39			53
2:30 PM	32	251	39			322	132	7	10			149	12	274	5			291	5	5	88			98
2:45 PM	55	254	33			342	74	4	20			98	15	243	1			259	3	5	31			39
Hourly Total	139	856	231	0	0	1226	373	21	56	0	0	450	53	987	13	0	0	1053	29	26	243	0	0	298
3:00 PM	47	190	44			281	116	7	16			139	25	286	3			314	8	2	73			83
3:15 PM	57	225	40			322	43	6	22			71	24	278	1			303	9	6	38			53
3:30 PM	23	225	34			282	118	7	32			157	8	311	2			321	9	7	92			108
3:45 PM	22	255	38			315	43	9	20			72	19	276	21			316	6	7	75			88
Hourly Total	149	895	156	0	0	1200	320	29	90	0	0	439	76	1151	27	0	0	1254	32	22	278	0	0	332
4:00 PM	19	210	28			257	67	9	13			89	15	287	4			306	7	6	46			59
4:15 PM	32	227	29			288	49	8	16			73	9	227	5			241	7	1	40			48
4:30 PM	35	275	42			352	97	4	19			120	17	321	3			341	22	6	102			130
4:45 PM	51	217	28			296	46	2	14			62	12	290	3			305	8	4	55			67
Hourly Total	137	929	127	0	0	1193	259	23	62	0	0	344	53	1125	15	0	0	1193	44	17	243	0	0	304
5:00 PM	21	188	27			236	73	4	21			98	18	311	8			337	8	3	92			103
5:15 PM	24	177	46			247	46	7	12			65	18	203	0			221	6	6	29			41
5:30 PM	5	165	38			208	67	8	17			92	18	214	5			237	6	2	27			35
5:45 PM	12	170	39			221	46	10	19			75	14	171	0			185	4	2	20			26
Hourly Total	62	700	150	0	0	912	232	29	69	0	0	330	68	899	13	0	0	980	24	13	168	0	0	205
6:00 PM	9	126	36			171	34	1	17			52	13	180	2			195	5	3	20			28
6:15 PM	12	146	50			208	29	5	7			41	12	126	3			141	0	1	15			16
6:30 PM	3	125	18			146	28	2	9			39	5	138	2			145	7	4	22			33
6:45 PM	6	110	24			140	13	2	12			27	9	126	2			137	3	1	16			20
Hourly Total	30	507	128	0	0	665	104	10	45	0	0	159	39	570	9	0	0	618	15	9	73	0	0	97
7:00 PM	6	80	18			104	26	4	13			43	11	117	4			132	1	3	18			22
7:15 PM	7	94	22			123	15	5	7			27	8	94	1			103	3	1	9			13
7:30 PM	11	68	11			90	8	3	10			21	12	89	1			102	4	3	11			18
7:45 PM	7	83	18			108	11	2	4			17	7	84	1			92	1	3	9			13
Hourly Total	31	325	69	0	0	425	60	14	34	0	0	108	38	384	7	0	0	429	9	10	47	0	0	66
8:00 PM	10	77	9			96	13	4	11			28	5	108	1			114	1	1	8			10
8:15 PM	6	89	18			113	11	2	10			23	9	96	0			105	1	1	11			13
8:30 PM	13	76	19			108	11	1	18			30	5	72	2			79	2	1	10			13
8:45 PM	5	87	16			108	4	0	2			6	10	55	1			66	3	2	11			16
Hourly Total	34	329	62	0	0	425	39	7	41	0	0	87	29	331	4	0	0	364	7	5	40	0	0	52
9:00 PM	8	85	22			115	9	3	1			13	9	74	0			83	1	1	16			18
9:15 PM	6	67	17			90	12	1	7			20	4	70	3			77	0	2	6			8
9:30 PM	10	93	12			115	6	3	10			19	2	88	2			92	3	2	11			16
9:45 PM	15	83	29			127	14	0	5			19	4	68	3			75	0	1	10			11
Hourly Total	39	328	80	0	0	447	41	7	23	0	0	71	19	300	8	0	0	327	4	6	43	0	0	53
10:00 PM	7	48	15			70	17	1	7			25	6	115	1			122	2	1	32			35
10:15 PM	7	67	13			87	4	3	4			11	8	78	0			86	4	2	14			20
10:30 PM	4	69	27			100	8	3	10			21	5	70	1			76	4	1	15			20
10:45 PM	2	71	26			99	17	1	2			20	5	55	0			60	1	1	5			7
Hourly Total	20	255	81	0	0	356	46	8	23	0	0	77	24	318	2	0	0	344	11	5	66	0	0	82
11:00 PM	8	43	15			66	61	2	7			70	5	76	1			82	0	3	14			17
11:15 PM	8	35	20			63	51	3	6			60	7	49	2			58	0	1	20			21
11:30 PM	7	32	13			52	85	1	3			89	5	128	0			133	2	4	27			33
11:45 PM	7	44	4			55	20	0	7			27	8	126	1			135	0	0	5			5
Hourly Total	30	154	52	0	0	236	217	6	23	0	0	246	25	379	4	0	0	408	2	8	66	0	0	76

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	433	81			1										1			
12:15 AM	326	65																
12:30 AM	296	78																
12:45 AM	281	68																
1:00 AM	286	57																
1:15 AM	311	63																
1:30 AM	322	71																
1:45 AM	353	75													1			
2:00 AM	371	73																
2:15 AM	359	32																
2:30 AM	393	33																
2:45 AM	532	70			1						1				1		1	1
3:00 AM	616	87	1															
3:15 AM	730	108							1	1			1	1				
3:30 AM	852	111																
3:45 AM	954	134			1	1	1	1			1	1			1	1	1	1
4:00 AM	1160	134	1															
4:15 AM	1268	115							1	1			1	1				
4:30 AM	1475	129																
4:45 AM	1735	116			1	1	1	1			1				1	1	1	1
5:00 AM	2159	128	1															
5:15 AM	2366	110							1	1			1	1				
5:30 AM	2485	107																
5:45 AM	2575	117			1	1	1	1			1				1	1	1	1
6:00 AM	2612	129	1															
6:15 AM	2607	127							1	1			1	1				
6:30 AM	2577	125																
6:45 AM	2526	124			1	1	1	1			1	1			1	1	1	1
7:00 AM	2387	112	1															
7:15 AM	2354	116							1	1			1	1				
7:30 AM	2268	123																
7:45 AM	2087	133			1	1	1	1			1	1			1	1	1	1
8:00 AM	1786	143	1															
8:15 AM	1663	151							1	1			1	1				
8:30 AM	1558	150																
8:45 AM	1445	153			1	1	1	1			1	1			1	1	1	1
9:00 AM	1384	159	1	1														
9:15 AM	1319	163							1	1			1	1				
9:30 AM	1292	165																
9:45 AM	1260	148			1	1	1	1			1	1			1	1	1	1

10:00 AM	1274	146	1															
10:15 AM	1381	158							1	1			1	1				
10:30 AM	1436	177																
10:45 AM	1520	196			1	1	1	1			1	1			1	1	1	1
11:00 AM	1578	208	1	1														
11:15 AM	1583	226							1	1			1	1				
11:30 AM	1609	217																
11:45 AM	1614	227			1	1	1	1			1	1			1	1	1	1
12:00 PM	1608	222	1	1														
12:15 PM	1597	208							1	1			1	1				
12:30 PM	1640	215																
12:45 PM	1756	226			1	1	1	1			1	1			1	1	1	1
1:00 PM	1857	245	1	1														
1:15 PM	1965	296							1	1			1	1				
1:30 PM	2083	341																
1:45 PM	2176	424			1	1	1	1			1	1			1	1	1	1
2:00 PM	2279	450	1	1														
2:15 PM	2363	481							1	1			1	1				
2:30 PM	2434	457																
2:45 PM	2424	465			1	1	1	1			1	1			1	1	1	1
3:00 PM	2454	439	1	1														
3:15 PM	2422	389							1	1			1	1				
3:30 PM	2326	391																
3:45 PM	2416	354			1	1	1	1			1	1			1	1	1	1
4:00 PM	2386	344	1	1														
4:15 PM	2396	353							1	1			1	1				
4:30 PM	2335	345																
4:45 PM	2087	317			1	1	1	1			1	1			1	1	1	1
5:00 PM	1892	330	1	1														
5:15 PM	1685	284							1	1			1	1				
5:30 PM	1566	260																
5:45 PM	1412	207			1	1	1	1			1	1			1	1	1	1
6:00 PM	1283	159	1	1														
6:15 PM	1153	150							1	1			1	1				
6:30 PM	1030	136																
6:45 PM	931	118			1	1	1	1			1				1	1	1	1
7:00 PM	854	108	1															
7:15 PM	828	93							1	1			1	1				
7:30 PM	820	89																
7:45 PM	815	98			1						1				1	1	1	1
8:00 PM	789	87	1															
8:15 PM	777	72							1	1			1	1				
8:30 PM	726	69																
8:45 PM	746	58			1						1				1		1	1
9:00 PM	774	71	1															
9:15 PM	768	83							1	1			1	1				
9:30 PM	774	82																
9:45 PM	743	86			1						1				1	1	1	1
HOURS MET			**21**	**10**	**22**	**17**	**16**	**16**	**20**	**20**	**21**	**14**	**19**	**19**	**23**	**19**	**21**	**21**
WARRANT SATISFIED?			**YES**		**YES**		**YES**		**YES**		**YES**				**YES**			

Warrant Met: **Yes**

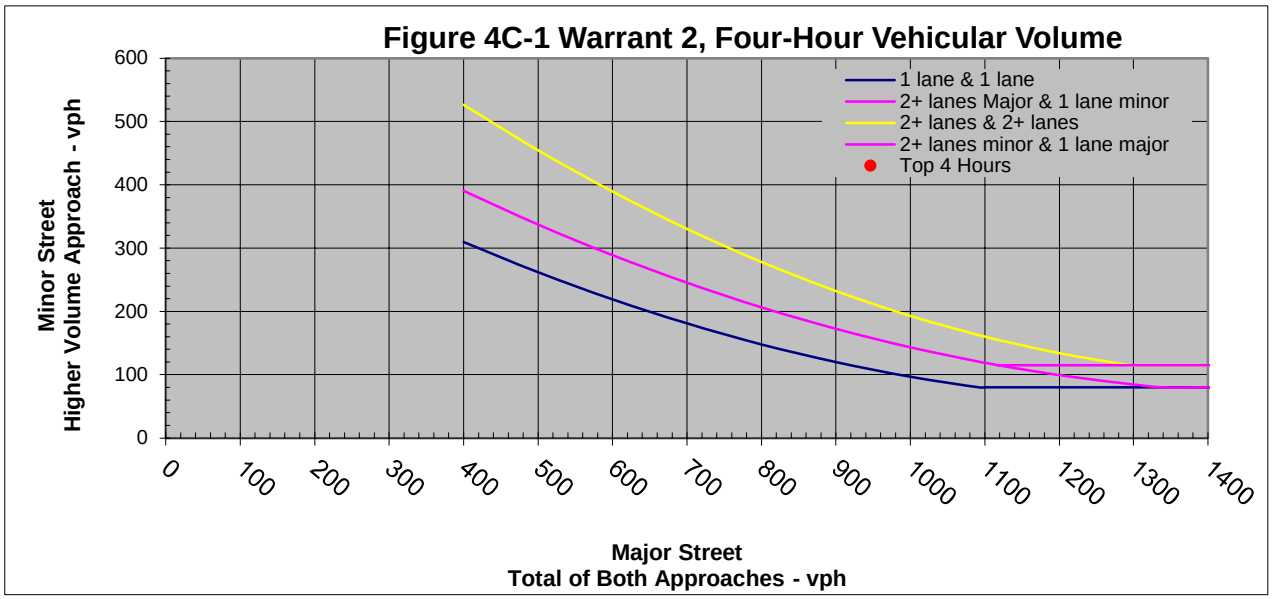
Notes: Condition A was met. Condition B was met. Condition A (70%) was met. Condition B (70%) was met. Combination of A/B (80%) was met.*Combination of A/B (56%) was met.*

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	15
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	19
Minor Street:	1 Lane		

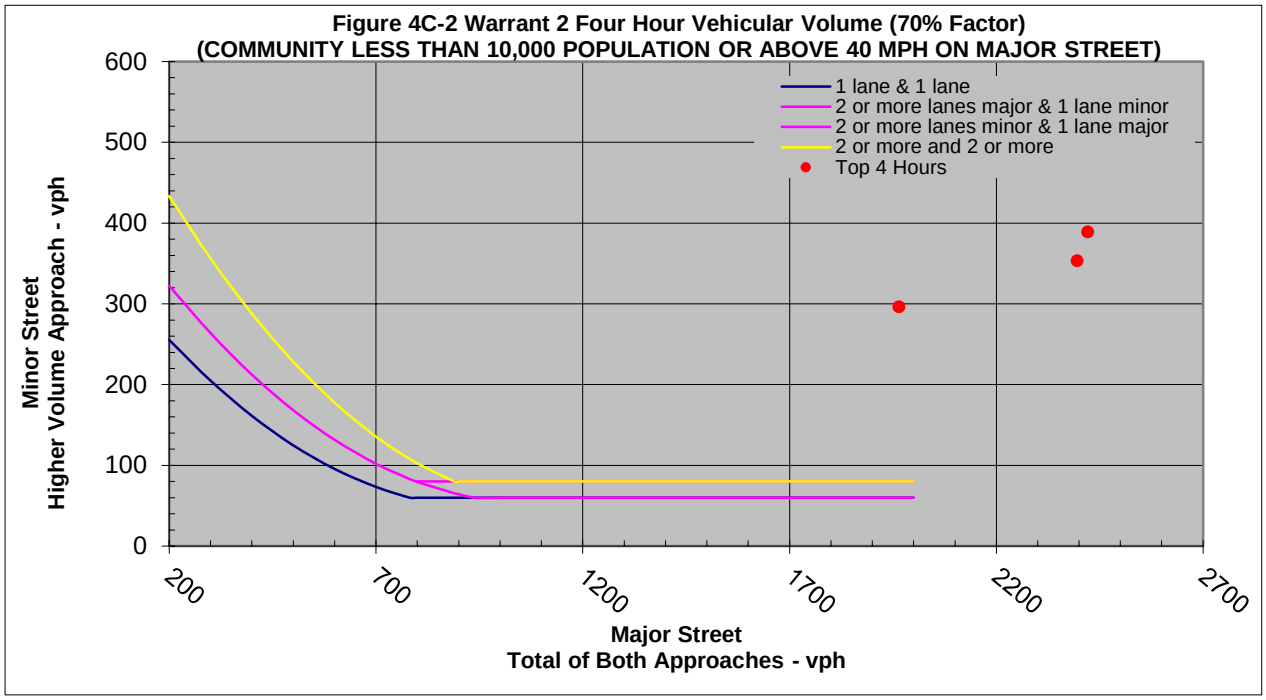
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Alum Creek Drive		inor - Creekside Parkway/ Toy Roa					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	695	1917	129	94	2612	129	Met	
6:15 AM	751	1856	127	85	2607	127		Met
6:30 AM	781	1796	125	76	2577	125		
6:45 AM	799	1727	124	69	2526	124		
7:00 AM	770	1617	112	64	2387	112	Met	
7:15 AM	714	1640	116	62	2354	116		Met
7:30 AM	656	1612	123	69	2268	123		
7:45 AM	613	1474	133	69	2087	133		
8:00 AM	562	1224	143	64	1786	143	Met	
8:15 AM	557	1106	151	73	1663	151		Met
8:30 AM	581	977	150	68	1558	150		
8:45 AM	547	898	153	72	1445	153		
9:00 AM	537	847	159	86	1384	159	Met	
9:15 AM	521	798	163	85	1319	163		Met
9:30 AM	518	774	165	90	1292	165		
9:45 AM	537	723	148	99	1260	148		
10:00 AM	569	705	146	106	1274	146	Met	
10:15 AM	631	750	158	119	1381	158		Met
10:30 AM	649	787	177	124	1436	177		
10:45 AM	668	852	196	138	1520	196		
11:00 AM	704	874	208	127	1578	208	Met	
11:15 AM	724	859	226	128	1583	226		Met
11:30 AM	754	855	217	128	1609	217		
11:45 AM	769	845	227	112	1614	227		
12:00 PM	780	828	222	113	1608	222	Met	
12:15 PM	744	853	208	112	1597	208		Met
12:30 PM	727	913	215	115	1640	215		
12:45 PM	747	1009	226	127	1756	226		
1:00 PM	729	1128	245	147	1857	245	Met	
1:15 PM	783	1182	296	221	1965	296		Met
1:30 PM	883	1200	341	245	2083	341		
1:45 PM	970	1206	424	306	2176	424		
2:00 PM	1053	1226	450	298	2279	450	Met	
2:15 PM	1132	1231	481	273	2363	481		Met
2:30 PM	1167	1267	457	273	2434	457		
2:45 PM	1197	1227	465	283	2424	465		
3:00 PM	1254	1200	439	332	2454	439	Met	
3:15 PM	1246	1176	389	308	2422	389		Met
3:30 PM	1184	1142	391	303	2326	391		
3:45 PM	1204	1212	354	325	2416	354		
4:00 PM	1193	1193	344	304	2386	344	Met	
4:15 PM	1224	1172	353	348	2396	353		Met
4:30 PM	1204	1131	345	341	2335	345		
4:45 PM	1100	987	317	246	2087	317		
5:00 PM	980	912	330	205	1892	330	Met	
5:15 PM	838	847	284	130	1685	284		Met
5:30 PM	758	808	260	105	1566	260		
5:45 PM	666	746	207	103	1412	207		
6:00 PM	618	665	159	97	1283	159	Met	
6:15 PM	555	598	150	91	1153	150		Met
6:30 PM	517	513	136	88	1030	136		
6:45 PM	474	457	118	73	931	118		
7:00 PM	429	425	108	66	854	108		
7:15 PM	411	417	93	54	828	93		Met
7:30 PM	413	407	89	54	820	89		
7:45 PM	390	425	98	49	815	98		
8:00 PM	364	425	87	52	789	87		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	2:00 PM	3:00 PM	2279	450
2nd Highest Hour	3:00 PM	4:00 PM	2454	439
3rd Highest Hour	4:00 PM	5:00 PM	2386	344
4th Highest Hour	5:00 PM	6:00 PM	1892	330

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	2:15 PM	3:15 PM	2363	481
2nd Highest Hour	3:15 PM	4:15 PM	2422	389
3rd Highest Hour	4:15 PM	5:15 PM	2396	353
4th Highest Hour	1:15 PM	2:15 PM	1965	296



Are the requirements for Warrant 2 met?: **Yes**

OMUTCD WARRANT 3, PEAK HOUR

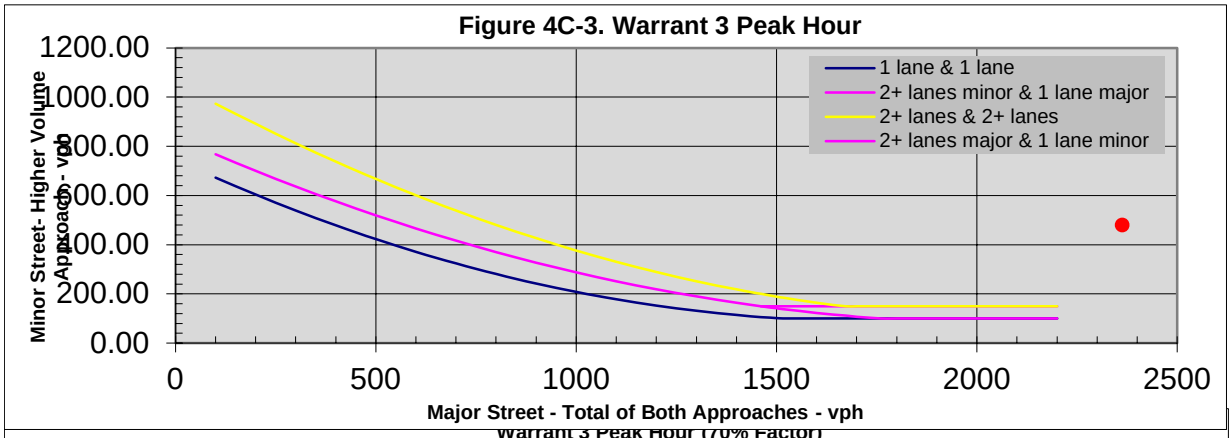
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	2:15 PM
Major Street:	2 or More Lanes	Peak Hour End Time	3:15 PM
Minor Street:	1 Lane		

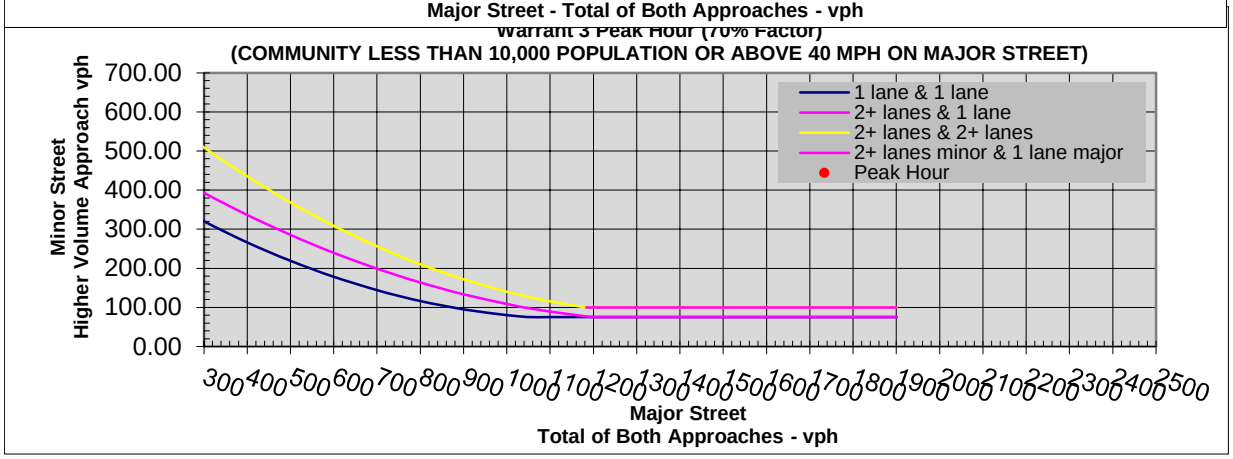
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Are the requirements for Warrant 3 met?:	Yes





Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	2612	129	2741	2835
6:15 AM	2607	127	2734	2819
6:30 AM	2577	125	2702	2778
6:45 AM	2526	124	2650	2719
7:00 AM	2387	112	2499	2563
7:15 AM	2354	116	2470	2532
7:30 AM	2268	123	2391	2460
7:45 AM	2087	133	2220	2289
8:00 AM	1786	143	1929	1993
8:15 AM	1663	151	1814	1887
8:30 AM	1558	150	1708	1776
8:45 AM	1445	153	1598	1670
9:00 AM	1384	159	1543	1629
9:15 AM	1319	163	1482	1567
9:30 AM	1292	165	1457	1547
9:45 AM	1260	148	1408	1507
10:00 AM	1274	146	1420	1526
10:15 AM	1381	158	1539	1658
10:30 AM	1436	177	1613	1737
10:45 AM	1520	196	1716	1854
11:00 AM	1578	208	1786	1913
11:15 AM	1583	226	1809	1937
11:30 AM	1609	217	1826	1954
11:45 AM	1614	227	1841	1953
12:00 PM	1608	222	1830	1943
12:15 PM	1597	208	1805	1917
12:30 PM	1640	215	1855	1970
12:45 PM	1756	226	1982	2109
1:00 PM	1857	245	2102	2249
1:15 PM	1965	296	2261	2482
1:30 PM	2083	341	2424	2669
1:45 PM	2176	424	2600	2906
2:00 PM	2279	450	2729	3027
2:15 PM	2363	481	2844	3117
2:30 PM	2434	457	2891	3164
2:45 PM	2424	465	2889	3172
3:00 PM	2454	439	2893	3225
3:15 PM	2422	389	2811	3119
3:30 PM	2326	391	2717	3020
3:45 PM	2416	354	2770	3095
4:00 PM	2386	344	2730	3034
4:15 PM	2396	353	2749	3097
4:30 PM	2335	345	2680	3021
4:45 PM	2087	317	2404	2650
5:00 PM	1892	330	2222	2427
5:15 PM	1685	284	1969	2099
5:30 PM	1566	260	1826	1931
5:45 PM	1412	207	1619	1722
6:00 PM	1283	159	1442	1539
6:15 PM	1153	150	1303	1394
6:30 PM	1030	136	1166	1254
6:45 PM	931	118	1049	1122
7:00 PM	854	108	962	1028
7:15 PM	828	93	921	975
7:30 PM	820	89	909	963
7:45 PM	815	98	913	962
8:00 PM	789	87	876	928

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
2363	481	100	75

STUDY AND ANALYSIS INFORMATION

Municipality:	ODOT	**Traffic Volumes Obtained By:**	Smart Services
County:	Franklin	**Analysis Date:**	3/17/2023
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	Kimley-Horn
Google map link:	Map		

Analysis Information

Data Collection Date:	8/18/2022
Day of the Week:	Thursday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	Yes
Total Number of Approaches at Intersection:	4

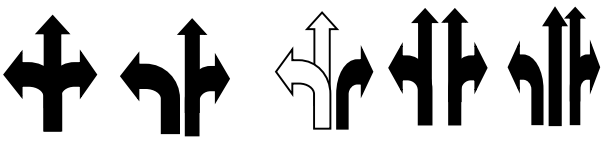
Major Street Information

Major Street Name and Route Number:	Alum Creek Drive	
Major Street Approach Direction:	N-Bound S-Bound	
Number of Thru Lanes on Each Major Street Approach:	3	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	55	**MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Global Court	
Minor Street Approach Configuration:	2	E-Bound
	3	W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach:	1	**LANE(S)**
Apply Right Turn Lane Reduction*:	No	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**		
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**		
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 3:30 PM 4:30 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 6:00 AM 7:00 AM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Retain Existing Traffic Signal

Notes: Warrants 1, 2, and 3 are not met for the intersection

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	0	29	0			29	3	0	0			3	2	153	0			155	0	0	0			0
12:15 AM	1	37	1			39	1	0	1			2	2	59	0			61	0	0	0			0
12:30 AM	0	32	1			33	0	0	0			0	0	40	0			40	0	0	0			0
12:45 AM	1	29	1			31	1	0	0			1	1	30	1			32	1	0	2			3
Hourly Total	2	127	3	0	0	132	5	0	1	0	0	6	5	282	1	0	0	288	1	0	2	0	0	3
1:00 AM	0	32	1			33	3	0	0			3	1	65	0			66	0	0	1			1
1:15 AM	0	24	2			26	2	0	2			4	0	31	1			32	0	0	1			1
1:30 AM	0	30	0			30	2	0	0			2	0	33	0			33	0	0	0			0
1:45 AM	0	33	2			35	0	0	0			0	0	37	1			38	0	0	0			0
Hourly Total	0	119	5	0	0	124	7	0	2	0	0	9	1	166	2	0	0	169	0	0	2	0	0	2
2:00 AM	1	26	1			28	2	0	0			2	0	92	0			92	0	0	0			0
2:15 AM	0	37	0			37	1	0	0			1	1	34	0			35	0	0	0			0
2:30 AM	0	27	0			27	1	0	0			1	1	88	0			89	0	0	0			0
2:45 AM	1	34	0			35	2	0	2			4	0	48	1			49	1	0	0			1
Hourly Total	2	124	1	0	0	127	6	0	2	0	0	8	2	262	1	0	0	265	1	0	0	0	0	1
3:00 AM	0	34	0			34	0	0	0			0	0	36	0			36	0	0	3			3
3:15 AM	2	44	1			47	0	0	0			0	0	28	1			29	1	0	4			5
3:30 AM	0	69	1			70	1	0	1			2	1	149	1			151	2	0	0			2
3:45 AM	2	76	3			81	1	0	2			3	0	67	0			67	0	0	0			0
Hourly Total	4	223	5	0	0	232	2	0	3	0	0	5	1	280	2	0	0	283	3	0	7	0	0	10
4:00 AM	0	61	1			62	0	0	1			1	1	91	0			92	2	0	0			2
4:15 AM	0	105	4			109	2	0	1			3	1	75	1			77	0	0	2			2
4:30 AM	1	158	4			163	2	0	0			2	0	92	1			93	1	0	0			1
4:45 AM	2	185	1			188	2	0	1			3	0	72	3			75	2	0	1			3
Hourly Total	3	509	10	0	0	522	6	0	3	0	0	9	2	330	5	0	0	337	5	0	3	0	0	8
5:00 AM	1	150	1			152	1	0	0			1	0	104	1			105	0	0	0			0
5:15 AM	0	237	3			240	2	0	0			2	1	82	1			84	1	0	1			2
5:30 AM	1	353	0			354	2	0	1			3	1	114	2			117	0	0	1			1
5:45 AM	4	425	1			430	1	0	2			3	1	141	3			145	1	0	0			1
Hourly Total	6	1165	5	0	0	1176	6	0	3	0	0	9	3	441	7	0	0	451	2	0	2	0	0	4
6:00 AM	2	208	0			210	0	0	0			0	2	153	3			158	5	0	0			5
6:15 AM	4	297	3			304	0	0	1			1	1	158	3			162	0	0	2			2
6:30 AM	6	386	1			393	0	0	1			1	0	204	4			208	2	1	0			3
6:45 AM	8	398	8			414	1	0	1			2	4	190	4			198	2	0	5			7
Hourly Total	20	1289	12	0	0	1321	1	0	3	0	0	4	7	705	14	0	0	726	9	1	7	0	0	17
7:00 AM	14	214	10			238	1	0	1			2	5	207	7			219	2	0	4			6
7:15 AM	6	299	3			308	2	0	1			3	2	179	3			184	4	0	5			9
7:30 AM	9	289	5			303	1	0	1			2	3	202	5			210	3	0	0			3
7:45 AM	18	355	4			377	3	0	2			5	3	153	6			162	1	0	3			4
Hourly Total	47	1157	22	0	0	1226	7	0	5	0	0	12	13	741	21	0	0	775	10	0	12	0	0	22
8:00 AM	4	267	3			274	4	0	2			6	2	155	2			159	3	1	4			8
8:15 AM	5	206	2			213	2	0	1			3	1	160	3			164	2	0	2			4
8:30 AM	0	223	6			229	3	0	1			4	0	128	4			132	0	1	1			2
8:45 AM	8	215	3			226	5	0	1			6	3	133	2			138	2	0	1			3
Hourly Total	17	911	14	0	0	942	14	0	5	0	0	19	6	576	11	0	0	593	7	2	8	0	0	17
9:00 AM	2	174	1			177	2	0	2			4	3	137	1			141	3	0	4			7
9:15 AM	3	160	7			170	1	0	2			3	0	149	5			154	1	0	3			4
9:30 AM	1	171	8			180	3	0	1			4	2	148	1			151	2	0	3			5
9:45 AM	6	216	6			228	4	0	1			5	2	147	0			149	0	0	1			1
Hourly Total	12	721	22	0	0	755	10	0	6	0	0	16	7	581	7	0	0	595	6	0	11	0	0	17
10:00 AM	3	198	3			204	7	0	0			7	5	157	4			166	5	1	2			8
10:15 AM	2	157	4			163	7	0	0			7	1	146	3			150	5	0	1			6
10:30 AM	0	169	2			171	4	0	5			9	0	180	3			183	3	0	2			5
10:45 AM	4	187	3			194	2	1	1			4	0	186	1			187	2	0	2			4
Hourly Total	9	711	12	0	0	732	20	1	6	0	0	27	6	669	11	0	0	686	15	1	7	0	0	23
11:00 AM	4	157	3			164	4	1	5			10	4	219	2			225	1	0	2			3
11:15 AM	1	203	4			208	7	0	3			10	1	165	0			166	1	0	4			5
11:30 AM	8	219	5			232	6	0	4			10	4	183	2			189	3	0	1			4
11:45 AM	4	213	5			222	2	0	2			4	4	181	5			190	6	0	2			8
Hourly Total	17	792	17	0	0	826	19	1	14	0	0	34	13	748	9	0	0	770	11	0	9	0	0	20
12:00 PM	0	213	1			214	8	0	2			10	5	198	2			205	2	0	4			6
12:15 PM	2	186	4			192	2	0	4			6	5	235	1			241	4	0	4			8
12:30 PM	2	189	4			195	3	1	0			4	2	247	4			253	1	0	2			3
12:45 PM	1	193	5			199	1	0	1			2	3	170	1			174	4	0	4			8
Hourly Total	5	781	14	0	0	800	14	1	7	0	0	22	15	850	8	0	0	873	11	0	14	0	0	25
1:00 PM	4	189	1			194	4	0	1			5	1	191	2			194	3	0	1			4
1:15 PM	4	219	3			226	2	0	3			5	1	158	4			163	1	0	2			3
1:30 PM	5	212	7			224	4	0	1			5	6	208	2			216	6	0	2			8
1:45 PM	5	224	8			237	2	0	1			3	0	210	2			212	6	0	2			8
Hourly Total	18	844	19	0	0	881	12	0	6	0	0	18	8	767	10	0	0	785	16	0	7	0	0	23
2:00 PM	6	211	3			220	6	0	1			7	1	271	3			275	1	0	1			2
2:15 PM	6	256	3			265	12	0	3			15	2	288	6			296	9	1	2			12
2:30 PM	3	279	3			285	2	0	1			3	1	332	6			339	9	0	12			21
2:45 PM	3	295	3			301	8	0	4			12	2	297	4			303	1	0	4			5
Hourly Total	18	1041	12	0	0	1071	28	0	9	0	0	37	6	1188	19	0	0	1213	20	1	19	0	0	40
3:00 PM	2	252	3			257	7	0	1			8	0	379	1			380	5	0	3			8
3:15 PM	2	256	1			259	7	0	2			9	3	344	3			350	3	0	2			5
3:30 PM	6	272	0			278	2	0	2			4	0	365	1			366	12	0	7			19
3:45 PM	4	264	1			269	4	0	0			4	8	298	5			311	5	0	4			9
Hourly Total	14	1044	5	0	0	1063	20	0	5	0	0	25	11	1386	10	0	0	1407	25	0	16	0	0	41
4:00 PM	2	246	2			250	4	0	2			6	0	304	0			304	7	0	5			12
4:15 PM	1	281	5			287	1	0	3			4	3	266	2			271	5	0	5			10
4:30 PM	1	342	1			344	3	0	1			4	6	351	3			360	4	0	5			9
4:45 PM	4	280	0			284	1	0	3			4	2	260	0			262	2	0	3			5
Hourly Total	8	1149	8	0	0	1165	9	0	9	0	0	18	11	1181	5	0	0	1197	18	0	18	0	0	36
5:00 PM	2	231	3			236	6	0	2			8	1	333	0			334	1	1	6			8
5:15 PM	0	216	4			220	2	0	2			4	3	217	0			220	1	0	6			7
5:30 PM	2	243	0			245	4	0	3			7	2	244	0			246	2	0	5			7
5:45 PM	2	234	1			237	2	0	1			3	2	185	1			188	2	0	0			2
Hourly Total	6	924	8	0	0	938	14	0	8	0	0	22	8	979	1	0	0	988	6	1	17	0	0	24
6:00 PM	1	180	1			182	4	0	3			7	2	194	0			196	1	0	7			8
6:15 PM	0	180	2			182	2	0	3			5	0	152	0			152	2	0	1			3
6:30 PM	0	145	1			146	1	0	1			2	4	198	1			203	2	0	2			4
6:45 PM	6	112	3			121	0	0	0			0	1	162	0			163	3	0	3			6
Hourly Total	7	617	7	0	0	631	7	0	7	0	0	14	7	706	1	0	0	714	8	0	13	0	0	21
7:00 PM	4	99	1			104	3	0	1			4	0	176	2			178	0	0	1			1
7:15 PM	1	96	3			100	5	0	0			5	0	151	1			152	3	0	2			5
7:30 PM	0	89	2			91	0	0	0			0	0	103	0			103	0	0	4			4
7:45 PM	3	109	1			113	0	0	1			1	1	91	2			94	0	0	1			1
Hourly Total	8	393	7	0	0	408	8	0	2	0	0	10	1	521	5	0	0	527	3	0	8	0	0	11
8:00 PM	1	86	0			87	2	0	0			2	1	106	0			107	1	0	3			4
8:15 PM	1	101	2			104	1	0	0			1	1	84	1			86	0	0	0			0
8:30 PM	1	82	2			85	1	0	1			2	2	91	1			94	0	0	3			3
8:45 PM	0	73	1			74	3	0	2			5	2	77	3			82	2	0	0			2
Hourly Total	3	342	5	0	0	350	7	0	3	0	0	10	6	358	5	0	0	369	3	0	6	0	0	9
9:00 PM	1	98	0			99	0	0	1			1	0	70	0			70	0	0	2			2
9:15 PM	2	73	2			77	4	0	0			4	2	56	0			58	0	0	0			0
9:30 PM	0	89	3			92	4	0	1			5	0	85	0			85	0	0	0			0
9:45 PM	2	98	1			101	3	0	1			4	2	60	0			62	2	0	2			4
Hourly Total	5	358	6	0	0	369	11	0	3	0	0	14	4	271	0	0	0	275	2	0	4	0	0	6
10:00 PM	0	64	1			65	2	0	2			4	3	119	0			122	0	0	1			1
10:15 PM	1	84	1			86	1	0	1			2	2	93	1			96	1	0	0			1
10:30 PM	1	69	1			71	2	0	5			7	0	95	1			96	0	0	0			0
10:45 PM	0	79	1			80	0	0	0			0	2	66	0			68	0	0	1			1
Hourly Total	2	296	4	0	0	302	5	0	8	0	0	13	7	373	2	0	0	382	1	0	2	0	0	3
11:00 PM	0	47	2			49	1	0	1			2	1	95	0			96	2	0	4			6
11:15 PM	4	47	2			53	1	0	1			2	0	48	1			49	1	0	0			1
11:30 PM	0	35	0			35	1	0	0			1	0	112	1			113	1	0	0			1
11:45 PM	0	33	1			34	3	0	0			3	0	142	0			142	1	0	0			1
Hourly Total	4	162	5	0	0	171	6	0	2	0	0	8	1	397	2	0	0	400	5	0	4	0	0	9

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	420	6			1										1			
12:15 AM	335	6																
12:30 AM	293	8																
12:45 AM	283	10																
1:00 AM	293	9																
1:15 AM	314	8																
1:30 AM	328	5																
1:45 AM	381	4													1			
2:00 AM	392	8																
2:15 AM	342	6																
2:30 AM	346	9																
2:45 AM	451	11			1										1			
3:00 AM	515	10									1						1	
3:15 AM	599	9																
3:30 AM	709	9	1						1									
3:45 AM	744	9			1								1		1			
4:00 AM	859	9									1						1	
4:15 AM	962	9					1											
4:30 AM	1100	8	1						1									
4:45 AM	1315	9			1								1		1			
5:00 AM	1627	9									1						1	
5:15 AM	1738	9					1											
5:30 AM	1880	9	1						1									
5:45 AM	2010	11			1								1		1			
6:00 AM	2047	17									1						1	
6:15 AM	2136	18					1											
6:30 AM	2162	25	1						1									
6:45 AM	2074	25			1								1		1			
7:00 AM	2001	22									1						1	
7:15 AM	1977	24					1											
7:30 AM	1862	19	1						1									
7:45 AM	1710	18			1								1		1			
8:00 AM	1535	19									1						1	
8:15 AM	1420	17					1											
8:30 AM	1367	17	1						1									
8:45 AM	1337	19			1								1		1			
9:00 AM	1350	17									1						1	
9:15 AM	1402	19					1											
9:30 AM	1391	23	1						1									
9:45 AM	1414	28			1								1		1			

10:00 AM	1418	27									1						1	
10:15 AM	1437	30					1											
10:30 AM	1498	33	1						1									
10:45 AM	1565	34			1								1		1			
11:00 AM	1596	34									1						1	
11:15 AM	1626	34					1											
11:30 AM	1685	30	1						1									
11:45 AM	1712	25			1								1		1			
12:00 PM	1673	25									1						1	
12:15 PM	1642	23					1											
12:30 PM	1598	18	1						1									
12:45 PM	1590	23			1								1		1			
1:00 PM	1666	23									1						1	
1:15 PM	1773	21					1											
1:30 PM	1945	30	1						1									
1:45 PM	2129	43			1								1		1			
2:00 PM	2284	40									1						1	
2:15 PM	2426	46					1											
2:30 PM	2474	39	1						1									
2:45 PM	2494	37			1								1		1			
3:00 PM	2470	41									1						1	
3:15 PM	2387	45					1											
3:30 PM	2336	50	1						1									
3:45 PM	2396	40			1								1		1			
4:00 PM	2362	36									1						1	
4:15 PM	2378	32					1											
4:30 PM	2260	29	1						1									
4:45 PM	2047	27			1								1		1			
5:00 PM	1926	24									1						1	
5:15 PM	1734	24					1											
5:30 PM	1628	22	1						1									
5:45 PM	1486	17			1								1		1			
6:00 PM	1345	21									1						1	
6:15 PM	1249	14					1											
6:30 PM	1167	16	1						1									
6:45 PM	1012	16			1								1		1			
7:00 PM	935	11									1						1	
7:15 PM	847	14																
7:30 PM	785	9	1						1									
7:45 PM	770	8			1								1		1			
8:00 PM	719	10									1						1	
8:15 PM	694	9																
8:30 PM	639	12	1						1									
8:45 PM	637	15			1										1			
9:00 PM	644	14									1						1	
9:15 PM	662	17																
9:30 PM	709	15	1						1									
9:45 PM	699	17			1										1			
HOURS MET			**19**	**0**	**22**	**0**	**15**	**0**	**19**	**0**	**21**	**0**	**17**	**0**	**23**	**0**	**21**	**0**
WARRANT SATISFIED?			**NO**		**NO**		**NO**		**NO**		**NO**				**NO**			

Warrant Met: **No**

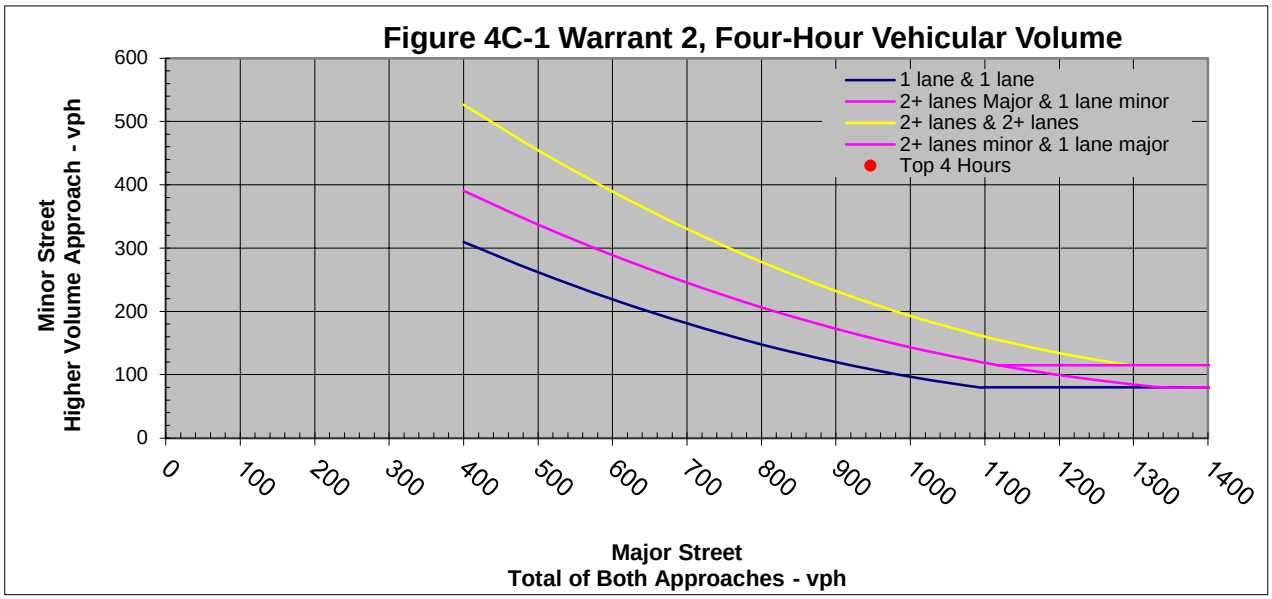
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	0
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	0
Minor Street:	1 Lane		

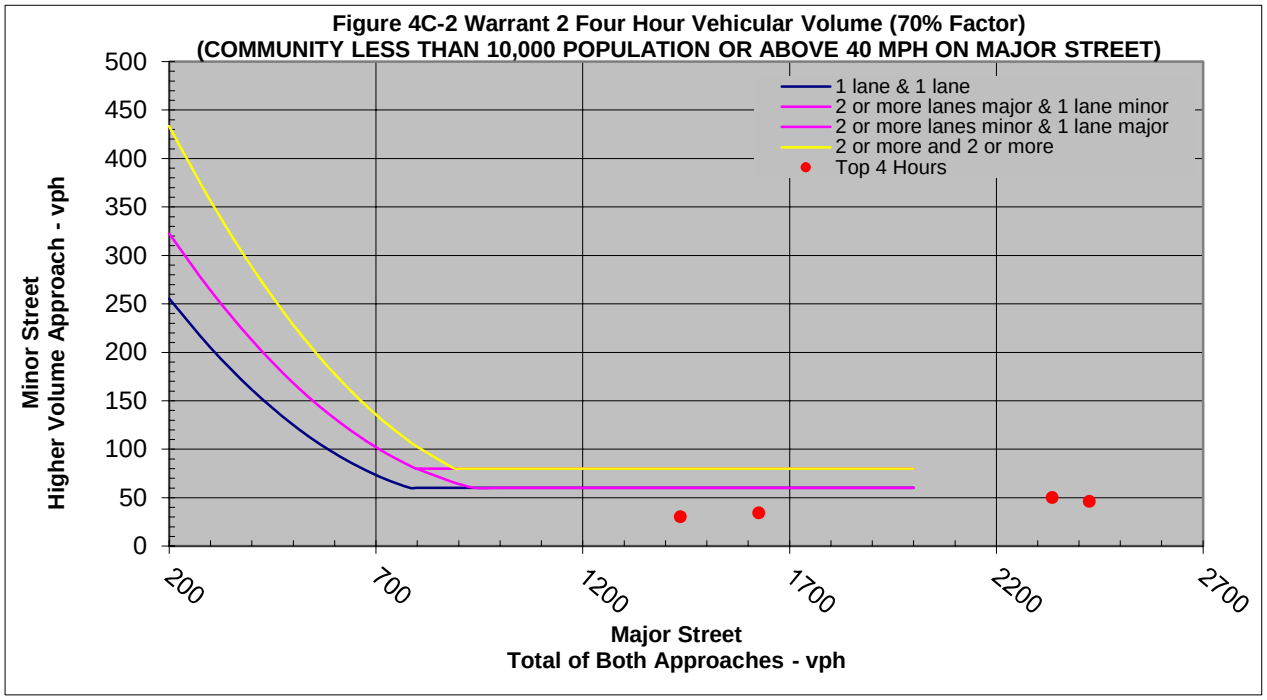
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Alum Creek Drive		Minor - Global Court					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	726	1321	4	17	2047	17		
6:15 AM	787	1349	6	18	2136	18		
6:30 AM	809	1353	8	25	2162	25		
6:45 AM	811	1263	9	25	2074	25		
7:00 AM	775	1226	12	22	2001	22		
7:15 AM	715	1262	16	24	1977	24		
7:30 AM	695	1167	16	19	1862	19		
7:45 AM	617	1093	18	18	1710	18		
8:00 AM	593	942	19	17	1535	19		
8:15 AM	575	845	17	16	1420	17		
8:30 AM	565	802	17	16	1367	17		
8:45 AM	584	753	17	19	1337	19		
9:00 AM	595	755	16	17	1350	17		
9:15 AM	620	782	19	18	1402	19		
9:30 AM	616	775	23	20	1391	23		
9:45 AM	648	766	28	20	1414	28		
10:00 AM	686	732	27	23	1418	27		
10:15 AM	745	692	30	18	1437	30		
10:30 AM	761	737	33	17	1498	33		
10:45 AM	767	798	34	16	1565	34		
11:00 AM	770	826	34	20	1596	34		
11:15 AM	750	876	34	23	1626	34		
11:30 AM	825	860	30	26	1685	30		
11:45 AM	889	823	24	25	1712	25		
12:00 PM	873	800	22	25	1673	25		
12:15 PM	862	780	17	23	1642	23		
12:30 PM	784	814	16	18	1598	18		
12:45 PM	747	843	17	23	1590	23		
1:00 PM	785	881	18	23	1666	23		
1:15 PM	866	907	20	21	1773	21		
1:30 PM	999	946	30	30	1945	30		
1:45 PM	1122	1007	28	43	2129	43		
2:00 PM	1213	1071	37	40	2284	40		
2:15 PM	1318	1108	38	46	2426	46		
2:30 PM	1372	1102	32	39	2474	39		
2:45 PM	1399	1095	33	37	2494	37		
3:00 PM	1407	1063	25	41	2470	41		
3:15 PM	1331	1056	23	45	2387	45		
3:30 PM	1252	1084	18	50	2336	50		
3:45 PM	1246	1150	18	40	2396	40		
4:00 PM	1197	1165	18	36	2362	36		
4:15 PM	1227	1151	20	32	2378	32		
4:30 PM	1176	1084	20	29	2260	29		
4:45 PM	1062	985	23	27	2047	27		
5:00 PM	988	938	22	24	1926	24		
5:15 PM	850	884	21	24	1734	24		
5:30 PM	782	846	22	20	1628	22		
5:45 PM	739	747	17	17	1486	17		
6:00 PM	714	631	14	21	1345	21		
6:15 PM	696	553	11	14	1249	14		
6:30 PM	696	471	11	16	1167	16		
6:45 PM	596	416	9	16	1012	16		
7:00 PM	527	408	10	11	935	11		
7:15 PM	456	391	8	14	847	14		
7:30 PM	390	395	4	9	785	9		
7:45 PM	381	389	6	8	770	8		
8:00 PM	369	350	10	9	719	10		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	3:30 PM	4:30 PM	2336	50
2nd Highest Hour	2:15 PM	3:15 PM	2426	46
3rd Highest Hour	11:15 AM	12:15 PM	1626	34
4th Highest Hour	10:15 AM	11:15 AM	1437	30

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	3:30 PM	4:30 PM	2336	50
2nd Highest Hour	2:15 PM	3:15 PM	2426	46
3rd Highest Hour	11:15 AM	12:15 PM	1626	34
4th Highest Hour	10:15 AM	11:15 AM	1437	30



Are the requirements for Warrant 2 met?: **No**

OMUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	3:30 PM
Major Street:	2 or More Lanes	Peak Hour End Time	4:30 PM
Minor Street:	1 Lane		

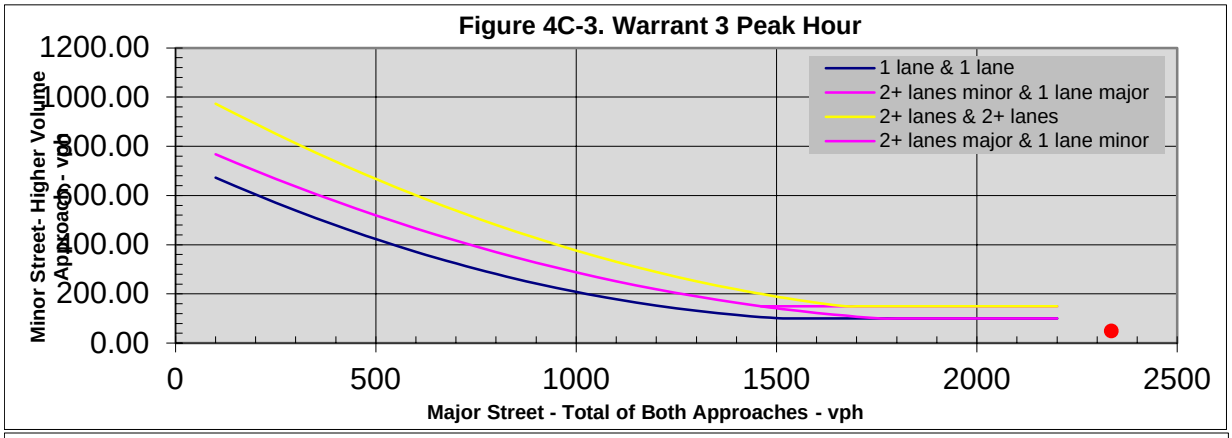
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

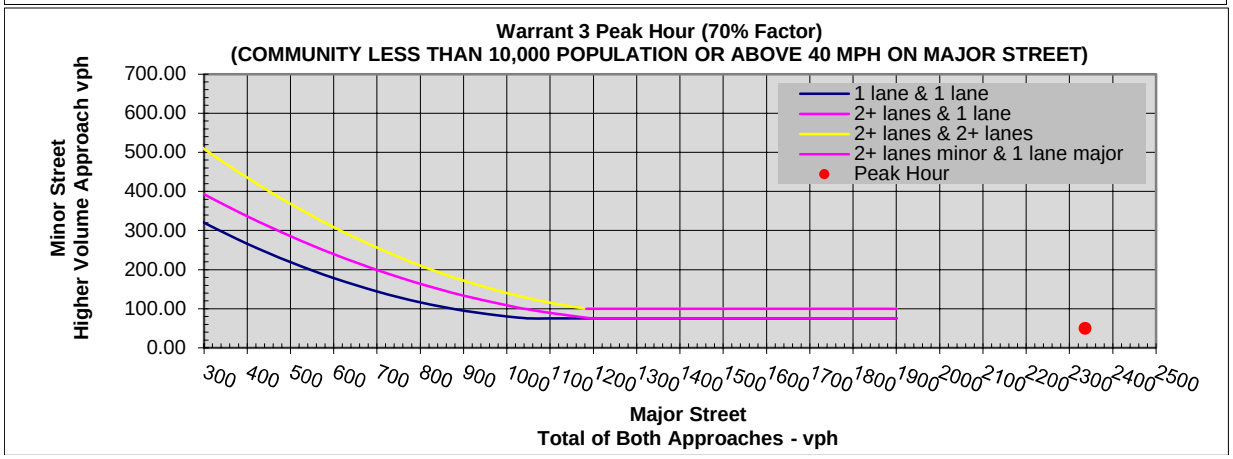
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

**If applicable, attach all supporting calculations and documentation.*

Are the requirements for Warrant 3 met?: No





Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	2047	17	2064	2068
6:15 AM	2136	18	2154	2160
6:30 AM	2162	25	2187	2195
6:45 AM	2074	25	2099	2108
7:00 AM	2001	22	2023	2035
7:15 AM	1977	24	2001	2017
7:30 AM	1862	19	1881	1897
7:45 AM	1710	18	1728	1746
8:00 AM	1535	19	1554	1571
8:15 AM	1420	17	1437	1453
8:30 AM	1367	17	1384	1400
8:45 AM	1337	19	1356	1373
9:00 AM	1350	17	1367	1383
9:15 AM	1402	19	1421	1439
9:30 AM	1391	23	1414	1434
9:45 AM	1414	28	1442	1462
10:00 AM	1418	27	1445	1468
10:15 AM	1437	30	1467	1485
10:30 AM	1498	33	1531	1548
10:45 AM	1565	34	1599	1615
11:00 AM	1596	34	1630	1650
11:15 AM	1626	34	1660	1683
11:30 AM	1685	30	1715	1741
11:45 AM	1712	25	1737	1761
12:00 PM	1673	25	1698	1720
12:15 PM	1642	23	1665	1682
12:30 PM	1598	18	1616	1632
12:45 PM	1590	23	1613	1630
1:00 PM	1666	23	1689	1707
1:15 PM	1773	21	1794	1814
1:30 PM	1945	30	1975	2005
1:45 PM	2129	43	2172	2200
2:00 PM	2284	40	2324	2361
2:15 PM	2426	46	2472	2510
2:30 PM	2474	39	2513	2545
2:45 PM	2494	37	2531	2564
3:00 PM	2470	41	2511	2536
3:15 PM	2387	45	2432	2455
3:30 PM	2336	50	2386	2404
3:45 PM	2396	40	2436	2454
4:00 PM	2362	36	2398	2416
4:15 PM	2378	32	2410	2430
4:30 PM	2260	29	2289	2309
4:45 PM	2047	27	2074	2097
5:00 PM	1926	24	1950	1972
5:15 PM	1734	24	1758	1779
5:30 PM	1628	22	1650	1670
5:45 PM	1486	17	1503	1520
6:00 PM	1345	21	1366	1380
6:15 PM	1249	14	1263	1274
6:30 PM	1167	16	1183	1194
6:45 PM	1012	16	1028	1037
7:00 PM	935	11	946	956
7:15 PM	847	14	861	869
7:30 PM	785	9	794	798
7:45 PM	770	8	778	784
8:00 PM	719	10	729	738

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
2336	50	100	75

STUDY AND ANALYSIS INFORMATION

Municipality:	ODOT	**Traffic Volumes Obtained By:**	Smart Services
County:	Franklin	**Analysis Date:**	3/17/2023
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	Kimley-Horn
Google map link:	Map		

Analysis Information

Data Collection Date:	8/16/2022
Day of the Week:	Tuesday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	Yes
Total Number of Approaches at Intersection:	4

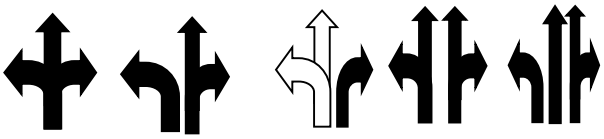
Major Street Information

Major Street Name and Route Number:	Alum Creek Drive	
Major Street Approach Direction:	N-Bound	
	S-Bound	
Number of Thru Lanes on Each Major Street Approach:	3	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	55	**MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Rohr Road	
Minor Street Approach Configuration:	2	E-Bound
	5	W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach:	1	**LANE(S)**
Apply Right Turn Lane Reduction*:	No	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**Yes**	Condition A was met. Condition B was met. Condition A (70%) was met. Condition B (70%) was met. Combination of A/B (80%) was met.*Combination of A/B (56%) was met.*	
Warrant 2, Four-Hour Vehicular Volume	Yes	**Yes**	Figure 4C-1 (100%)	
Warrant 3, Peak Hour	Yes	**Yes**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 2:15 PM 3:15 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 3:00 PM 4:00 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:
1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Retain Existing Traffic Signal

Notes:

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	8	27	8			43	24	7	1			32	2	109	2			113	3	2	24			29
12:15 AM	7	15	4			26	12	1	1			14	1	42	7			50	6	5	12			23
12:30 AM	2	26	6			34	10	6	1			17	1	24	5			30	4	6	9			19
12:45 AM	4	23	4			31	7	5	0			12	0	13	6			19	4	3	6			13
Hourly Total	21	91	22	0	0	134	53	19	3	0	0	75	4	188	20	0	0	212	17	16	51	0	0	84
1:00 AM	6	27	5			38	11	6	1			18	4	27	4			35	6	5	10			21
1:15 AM	8	12	6			26	4	3	1			8	0	24	5			29	2	4	3			9
1:30 AM	4	20	3			27	10	3	1			14	0	19	3			22	5	2	7			14
1:45 AM	3	9	5			17	4	2	0			6	0	28	3			31	3	0	4			7
Hourly Total	21	68	19	0	0	108	29	14	3	0	0	46	4	98	15	0	0	117	16	11	24	0	0	51
2:00 AM	10	13	5			28	16	7	0			23	0	48	5			53	3	11	15			29
2:15 AM	9	16	7			32	8	4	0			12	1	22	2			25	4	3	8			15
2:30 AM	7	15	4			26	11	7	0			18	4	57	2			63	1	2	8			11
2:45 AM	7	24	11			42	8	1	1			10	0	15	7			22	1	1	8			10
Hourly Total	33	68	27	0	0	128	43	19	1	0	0	63	5	142	16	0	0	163	9	17	39	0	0	65
3:00 AM	7	36	2			45	18	2	0			20	0	18	2			20	3	7	8			18
3:15 AM	5	26	10			41	6	3	0			9	3	21	0			24	3	0	8			11
3:30 AM	10	42	18			70	16	6	0			22	10	122	5			137	4	1	12			17
3:45 AM	9	54	21			84	10	4	1			15	6	32	1			39	5	2	6			13
Hourly Total	31	158	51	0	0	240	50	15	1	0	0	66	19	193	8	0	0	220	15	10	34	0	0	59
4:00 AM	6	55	11			72	21	1	3			25	3	51	5			59	2	7	21			30
4:15 AM	12	65	15			92	19	7	1			27	4	45	4			53	2	5	5			12
4:30 AM	22	115	27			164	42	14	12			68	4	47	4			55	8	6	5			19
4:45 AM	17	157	29			203	15	18	4			37	3	48	4			55	9	6	10			25
Hourly Total	57	392	82	0	0	531	97	40	20	0	0	157	14	191	17	0	0	222	21	24	41	0	0	86
5:00 AM	22	74	35			131	30	15	7			52	4	71	7			82	7	10	7			24
5:15 AM	35	134	65			234	25	14	8			47	5	57	8			70	6	9	11			26
5:30 AM	52	232	89			373	26	21	7			54	8	60	7			75	8	17	13			38
5:45 AM	58	285	109			452	48	23	11			82	10	91	9			110	12	28	19			59
Hourly Total	167	725	298	0	0	1190	129	73	33	0	0	235	27	279	31	0	0	337	33	64	50	0	0	147
6:00 AM	45	173	46			264	34	23	1			58	8	109	10			127	14	11	18			43
6:15 AM	51	185	55			291	24	35	4			63	6	102	8			116	16	15	13			44
6:30 AM	55	197	79			331	26	32	10			68	13	147	8			168	20	21	23			64
6:45 AM	77	224	99			400	43	32	5			80	10	155	20			185	8	22	17			47
Hourly Total	228	779	279	0	0	1286	127	122	20	0	0	269	37	513	46	0	0	596	58	69	71	0	0	198
7:00 AM	36	141	61			238	52	29	3			84	9	118	7			134	12	11	28			51
7:15 AM	31	169	47			247	25	26	9			60	7	139	8			154	17	17	28			62
7:30 AM	53	173	52			278	35	23	4			62	5	154	8			167	12	10	24			46
7:45 AM	66	224	91			381	39	27	4			70	5	117	10			132	17	11	16			44
Hourly Total	186	707	251	0	0	1144	151	105	20	0	0	276	26	528	33	0	0	587	58	49	96	0	0	203
8:00 AM	25	173	64			262	18	27	7			52	4	112	10			126	10	12	21			43
8:15 AM	44	149	51			244	19	11	6			36	5	80	10			95	12	13	25			50
8:30 AM	22	140	42			204	39	10	2			51	4	98	4			106	4	6	20			30
8:45 AM	28	157	45			230	23	14	4			41	10	77	10			97	10	6	21			37
Hourly Total	119	619	202	0	0	940	99	62	19	0	0	180	23	367	34	0	0	424	36	37	87	0	0	160
9:00 AM	26	116	35			177	30	13	2			45	5	98	10			113	13	5	26			44
9:15 AM	27	93	22			142	32	14	7			53	7	94	10			111	14	12	23			49
9:30 AM	23	113	29			165	38	19	5			62	5	75	9			89	12	5	24			41
9:45 AM	20	123	35			178	26	24	8			58	7	67	10			84	7	15	26			48
Hourly Total	96	445	121	0	0	662	126	70	22	0	0	218	24	334	39	0	0	397	46	37	99	0	0	182
10:00 AM	23	94	30			147	24	16	2			42	1	84	12			97	15	12	24			51
10:15 AM	21	88	36			145	35	17	6			58	2	86	10			98	9	6	23			38
10:30 AM	23	82	33			138	34	13	3			50	3	94	13			110	13	7	23			43
10:45 AM	26	99	31			156	35	12	3			50	6	96	17			119	16	12	24			52
Hourly Total	93	363	130	0	0	586	128	58	14	0	0	200	12	360	52	0	0	424	53	37	94	0	0	184
11:00 AM	20	111	37			168	43	26	7			76	8	125	16			149	11	17	26			54
11:15 AM	31	104	30			165	37	16	8			61	8	102	14			124	12	12	22			46
11:30 AM	36	104	44			184	44	30	2			76	7	105	15			127	15	16	36			67
11:45 AM	28	118	42			188	42	24	3			69	5	112	19			136	13	16	23			52
Hourly Total	115	437	153	0	0	705	166	96	20	0	0	282	28	444	64	0	0	536	51	61	107	0	0	219
12:00 PM	38	100	34			172	46	28	10			84	7	136	34			177	26	16	36			78
12:15 PM	25	103	37			165	42	24	3			69	10	125	19			154	32	23	28			83
12:30 PM	40	106	35			181	43	25	5			73	6	119	13			138	19	14	30			63
12:45 PM	35	106	30			171	41	12	7			60	5	104	9			118	11	15	30			56
Hourly Total	138	415	136	0	0	689	172	89	25	0	0	286	28	484	75	0	0	587	88	68	124	0	0	280
1:00 PM	31	103	47			181	42	24	3			69	2	119	12			133	15	19	23			57
1:15 PM	34	125	47			206	37	18	4			59	5	109	12			126	18	12	24			54
1:30 PM	37	111	50			198	51	19	9			79	4	132	9			145	9	16	24			49
1:45 PM	37	143	72			252	42	15	8			65	9	112	16			137	12	16	27			55
Hourly Total	139	482	216	0	0	837	172	76	24	0	0	272	20	472	49	0	0	541	54	63	98	0	0	215
2:00 PM	35	131	49			215	83	32	7			122	9	122	9			140	9	12	34			55
2:15 PM	22	132	34			188	84	13	12			109	9	161	13			183	13	15	30			58
2:30 PM	41	172	44			257	82	36	14			132	9	199	15			223	17	32	40			89
2:45 PM	37	200	50			287	52	24	12			88	10	155	21			186	17	16	34			67
Hourly Total	135	635	177	0	0	947	301	105	45	0	0	451	37	637	58	0	0	732	56	75	138	0	0	269
3:00 PM	29	138	35			202	91	39	4			134	10	222	19			251	15	34	43			92
3:15 PM	37	165	53			255	51	22	11			84	17	188	8			213	19	20	35			74
3:30 PM	36	182	63			281	86	34	10			130	6	239	10			255	14	45	72			131
3:45 PM	41	188	70			299	51	16	10			77	16	172	17			205	15	26	29			70
Hourly Total	143	673	221	0	0	1037	279	111	35	0	0	425	49	821	54	0	0	924	63	125	179	0	0	367
4:00 PM	33	158	54			245	77	36	14			127	4	179	11			194	17	28	32			77
4:15 PM	30	169	42			241	54	27	18			99	7	164	7			178	10	17	28			55
4:30 PM	32	179	70			281	79	30	6			115	6	252	13			271	12	39	51			102
4:45 PM	27	180	65			272	46	23	16			85	7	203	4			214	15	10	40			65
Hourly Total	122	686	231	0	0	1039	256	116	54	0	0	426	24	798	35	0	0	857	54	94	151	0	0	299
5:00 PM	33	136	65			234	52	31	6			89	10	218	14			242	15	21	39			75
5:15 PM	25	118	54			197	41	7	3			51	10	148	10			168	10	16	25			51
5:30 PM	21	111	57			189	72	24	6			102	4	148	9			161	11	19	43			73
5:45 PM	17	128	64			209	37	9	6			52	3	116	9			128	5	13	20			38
Hourly Total	96	493	240	0	0	829	202	71	21	0	0	294	27	630	42	0	0	699	41	69	127	0	0	237
6:00 PM	13	89	44			146	50	22	13			85	5	114	9			128	13	12	25			50
6:15 PM	16	99	46			161	29	14	5			48	7	93	5			105	10	7	16			33
6:30 PM	17	91	31			139	32	10	2			44	6	96	10			112	5	8	24			37
6:45 PM	15	86	33			134	26	11	0			37	2	82	9			93	8	6	18			32
Hourly Total	61	365	154	0	0	580	137	57	20	0	0	214	20	385	33	0	0	438	36	33	83	0	0	152
7:00 PM	12	65	22			99	48	8	3			59	1	67	8			76	6	8	23			37
7:15 PM	11	67	22			100	21	9	1			31	4	62	5			71	7	6	19			32
7:30 PM	16	55	19			90	19	6	5			30	0	63	6			69	5	4	19			28
7:45 PM	16	52	14			82	18	6	0			24	4	60	5			69	7	4	19			30
Hourly Total	55	239	77	0	0	371	106	29	9	0	0	144	9	252	24	0	0	285	25	22	80	0	0	127
8:00 PM	11	57	12			80	15	6	1			22	0	73	6			79	11	6	20			37
8:15 PM	9	76	19			104	18	5	1			24	1	69	6			76	4	6	13			23
8:30 PM	14	52	13			79	22	8	0			30	3	46	6			55	6	9	14			29
8:45 PM	15	61	16			92	12	9	1			22	1	47	3			51	7	5	20			32
Hourly Total	49	246	60	0	0	355	67	28	3	0	0	98	5	235	21	0	0	261	28	26	67	0	0	121
9:00 PM	7	66	8			81	15	7	3			25	3	46	8			57	9	8	14			31
9:15 PM	12	46	14			72	12	16	2			30	3	54	4			61	4	11	15			30
9:30 PM	12	72	14			98	9	5	0			14	0	72	6			78	7	4	9			20
9:45 PM	14	54	12			80	23	9	1			33	4	50	4			58	7	2	6			15
Hourly Total	45	238	48	0	0	331	59	37	6	0	0	102	10	222	22	0	0	254	27	25	44	0	0	96
10:00 PM	6	47	9			62	40	12	3			55	1	56	3			60	6	8	25			39
10:15 PM	13	47	14			74	30	9	0			39	1	40	4			45	2	16	15			33
10:30 PM	15	54	15			84	19	6	2			27	0	45	1			46	8	2	11			21
10:45 PM	15	53	15			83	14	3	0			17	3	41	3			47	7	5	9			21
Hourly Total	49	201	53	0	0	303	103	30	5	0	0	138	5	182	11	0	0	198	23	31	60	0	0	114
11:00 PM	12	33	8			53	30	16	3			49	1	44	6			51	5	5	8			18
11:15 PM	9	29	8			46	6	6	1			13	0	34	1			35	3	6	15			24
11:30 PM	6	28	10			44	13	8	1			22	2	116	3			121	2	9	7			18
11:45 PM	12	23	7			42	9	4	0			13	3	106	8			117	5	6	8			19
Hourly Total	39	113	33	0	0	185	58	34	5	0	0	97	6	300	18	0	0	324	15	26	38	0	0	79

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	346	84													1	1		
12:15 AM	263	76																
12:30 AM	242	62																
12:45 AM	227	57																
1:00 AM	225	51																
1:15 AM	233	59																
1:30 AM	235	65																
1:45 AM	275	62																
2:00 AM	291	65																
2:15 AM	275	60																
2:30 AM	283	57																
2:45 AM	401	61													1			
3:00 AM	460	66			1													
3:15 AM	526	71									1						1	1
3:30 AM	606	89	1															
3:45 AM	618	135													1	1		
4:00 AM	753	157			1	1			1	1			1	1				
4:15 AM	835	184									1	1					1	1
4:30 AM	994	204	1	1			1	1										
4:45 AM	1223	190													1	1		
5:00 AM	1527	235			1	1			1	1			1	1				
5:15 AM	1705	241									1	1					1	1
5:30 AM	1808	257	1	1			1	1										
5:45 AM	1859	271													1	1		
6:00 AM	1882	269			1	1			1	1			1	1				
6:15 AM	1863	295									1	1					1	1
6:30 AM	1857	292	1	1			1	1										
6:45 AM	1803	286													1	1		
7:00 AM	1731	276			1	1			1	1			1	1				
7:15 AM	1747	244									1	1					1	1
7:30 AM	1685	220	1	1			1	1										
7:45 AM	1550	209													1	1		
8:00 AM	1364	180			1	1			1	1			1	1				
8:15 AM	1266	173									1	1					1	1
8:30 AM	1180	190	1	1			1	1										
8:45 AM	1124	201													1	1		
9:00 AM	1059	218			1	1			1	1			1	1				
9:15 AM	1013	215									1	1					1	1
9:30 AM	1003	220	1	1			1	1										
9:45 AM	997	208													1	1		

10:00 AM	1010	200			1	1			1	1			1	1				
10:15 AM	1083	234									1	1					1	1
10:30 AM	1129	237	1	1			1	1										
10:45 AM	1192	263													1	1		
11:00 AM	1241	282			1	1			1	1			1	1				
11:15 AM	1273	290									1	1					1	1
11:30 AM	1303	298	1	1			1	1										
11:45 AM	1311	295													1	1		
12:00 PM	1276	286			1	1			1	1			1	1				
12:15 PM	1241	271									1	1					1	1
12:30 PM	1254	261	1	1			1	1										
12:45 PM	1278	267													1	1		
1:00 PM	1378	272			1	1			1	1			1	1				
1:15 PM	1419	325									1	1					1	1
1:30 PM	1458	375	1	1			1	1										
1:45 PM	1595	428													1	1		
2:00 PM	1679	451			1	1			1	1			1	1				
2:15 PM	1777	463									1	1					1	1
2:30 PM	1874	438	1	1			1	1										
2:45 PM	1930	436													1	1		
3:00 PM	1961	425			1	1			1	1			1	1				
3:15 PM	1947	418									1	1					1	1
3:30 PM	1898	433	1	1			1	1										
3:45 PM	1914	418													1	1		
4:00 PM	1896	426			1	1			1	1			1	1				
4:15 PM	1933	388									1	1					1	1
4:30 PM	1879	340	1	1			1	1										
4:45 PM	1677	327													1	1		
5:00 PM	1528	294			1	1			1	1			1	1				
5:15 PM	1326	290									1	1					1	1
5:30 PM	1227	287	1	1			1	1										
5:45 PM	1128	229													1	1		
6:00 PM	1018	214			1	1			1	1			1	1				
6:15 PM	919	188									1	1					1	1
6:30 PM	824	171	1	1														
6:45 PM	732	157													1	1		
7:00 PM	656	144			1	1			1	1								
7:15 PM	640	127									1	1					1	1
7:30 PM	649	118	1															
7:45 PM	624	119													1	1		
8:00 PM	616	121			1	1												
8:15 PM	595	115									1						1	1
8:30 PM	548	122																
8:45 PM	590	113													1	1		
9:00 PM	585	102			1													
9:15 PM	569	132									1	1					1	1
9:30 PM	555	141																
9:45 PM	509	154													1	1		
HOURS MET			**17**	**15**	**21**	**18**	**14**	**14**	**16**	**16**	**20**	**18**	**15**	**15**	**22**	**21**	**20**	**20**
WARRANT SATISFIED?			**YES**		**YES**		**YES**		**YES**		**YES**				**YES**			

Warrant Met: **Yes**

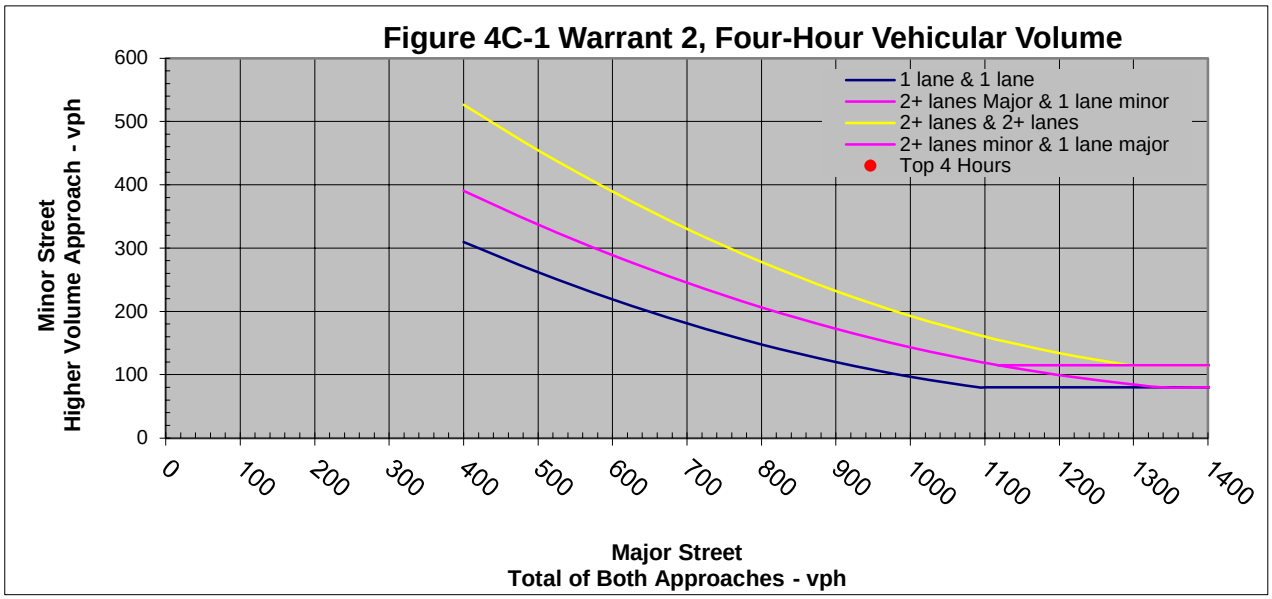
Notes: Condition A was met. Condition B was met. Condition A (70%) was met. Condition B (70%) was met. Combination of A/B (80%) was met.*Combination of A/B (56%) was met.*

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	14
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	16
Minor Street:	1 Lane		

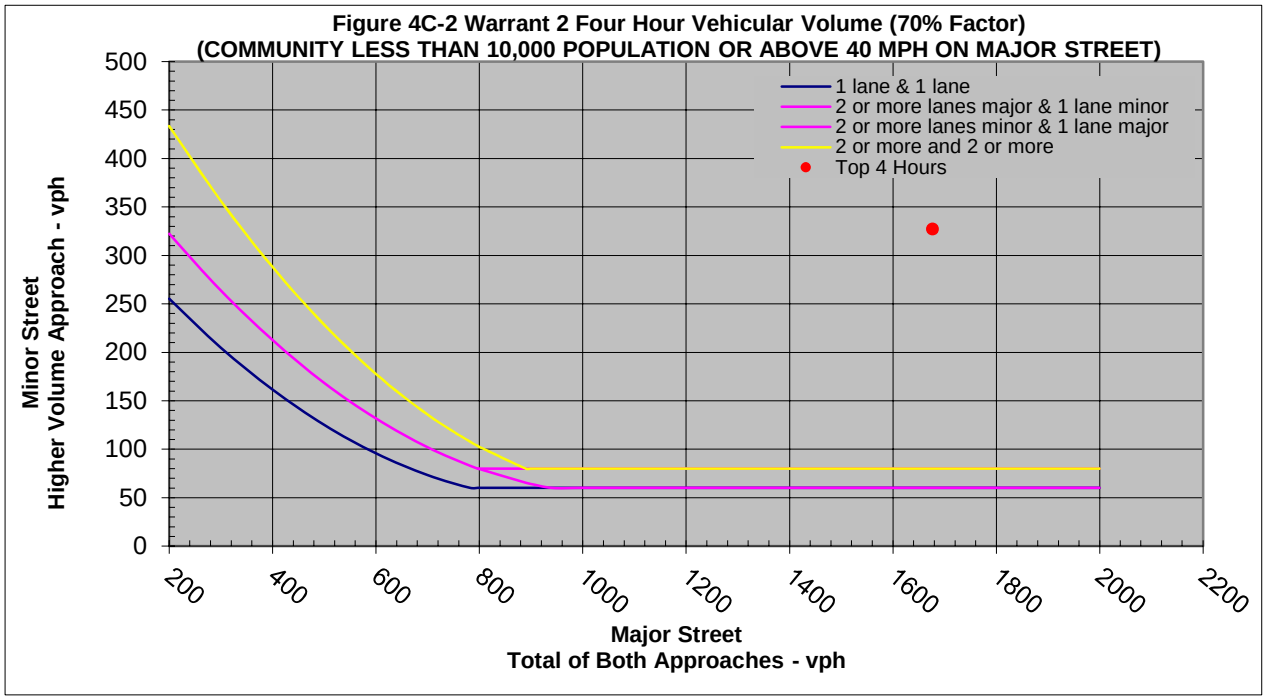
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Alum Creek Drive		Minor - Rohr Road					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	596	1286	269	198	1882	269		
6:15 AM	603	1260	295	206	1863	295		
6:30 AM	641	1216	292	224	1857	292	Met	
6:45 AM	640	1163	286	206	1803	286		Met
7:00 AM	587	1144	276	203	1731	276		
7:15 AM	579	1168	244	195	1747	244		
7:30 AM	520	1165	220	183	1685	220	Met	
7:45 AM	459	1091	209	167	1550	209		Met
8:00 AM	424	940	180	160	1364	180		
8:15 AM	411	855	173	161	1266	173		
8:30 AM	427	753	190	160	1180	190	Met	
8:45 AM	410	714	201	171	1124	201		Met
9:00 AM	397	662	218	182	1059	218		
9:15 AM	381	632	215	189	1013	215		
9:30 AM	368	635	220	178	1003	220	Met	
9:45 AM	389	608	208	180	997	208		Met
10:00 AM	424	586	200	184	1010	200		
10:15 AM	476	607	234	187	1083	234		
10:30 AM	502	627	237	195	1129	237	Met	
10:45 AM	519	673	263	219	1192	263		Met
11:00 AM	536	705	282	219	1241	282		
11:15 AM	564	709	290	243	1273	290		
11:30 AM	594	709	298	280	1303	298	Met	
11:45 AM	605	706	295	276	1311	295		Met
12:00 PM	587	689	286	280	1276	286		
12:15 PM	543	698	271	259	1241	271		
12:30 PM	515	739	261	230	1254	261	Met	
12:45 PM	522	756	267	216	1278	267		Met
1:00 PM	541	837	272	215	1378	272		
1:15 PM	548	871	325	213	1419	325		
1:30 PM	605	853	375	217	1458	375	Met	
1:45 PM	683	912	428	257	1595	428		Met
2:00 PM	732	947	451	269	1679	451		
2:15 PM	843	934	463	306	1777	463		
2:30 PM	873	1001	438	322	1874	438	Met	
2:45 PM	905	1025	436	364	1930	436		Met
3:00 PM	924	1037	425	367	1961	425		
3:15 PM	867	1080	418	352	1947	418		
3:30 PM	832	1066	433	333	1898	433	Met	
3:45 PM	848	1066	418	304	1914	418		Met
4:00 PM	857	1039	426	299	1896	426		
4:15 PM	905	1028	388	297	1933	388		
4:30 PM	895	984	340	293	1879	340	Met	
4:45 PM	785	892	327	264	1677	327		Met
5:00 PM	699	829	294	237	1528	294		
5:15 PM	585	741	290	212	1326	290		
5:30 PM	522	705	287	194	1227	287	Met	
5:45 PM	473	655	229	158	1128	229		Met
6:00 PM	438	580	214	152	1018	214		
6:15 PM	386	533	188	139	919	188		
6:30 PM	352	472	171	138	824	171		
6:45 PM	309	423	157	129	732	157		Met
7:00 PM	285	371	144	127	656	144		
7:15 PM	288	352	107	127	640	127		
7:30 PM	293	356	100	118	649	118		
7:45 PM	279	345	100	119	624	119		
8:00 PM	261	355	98	121	616	121		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	2:30 PM	3:30 PM	1874	438
2nd Highest Hour	3:30 PM	4:30 PM	1898	433
3rd Highest Hour	1:30 PM	2:30 PM	1458	375
4th Highest Hour	4:30 PM	5:30 PM	1879	340

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	2:45 PM	3:45 PM	1930	436
2nd Highest Hour	1:45 PM	2:45 PM	1595	428
3rd Highest Hour	3:45 PM	4:45 PM	1914	418
4th Highest Hour	4:45 PM	5:45 PM	1677	327



Are the requirements for Warrant 2 met?: **Yes**

OMUTCD WARRANT 3, PEAK HOUR

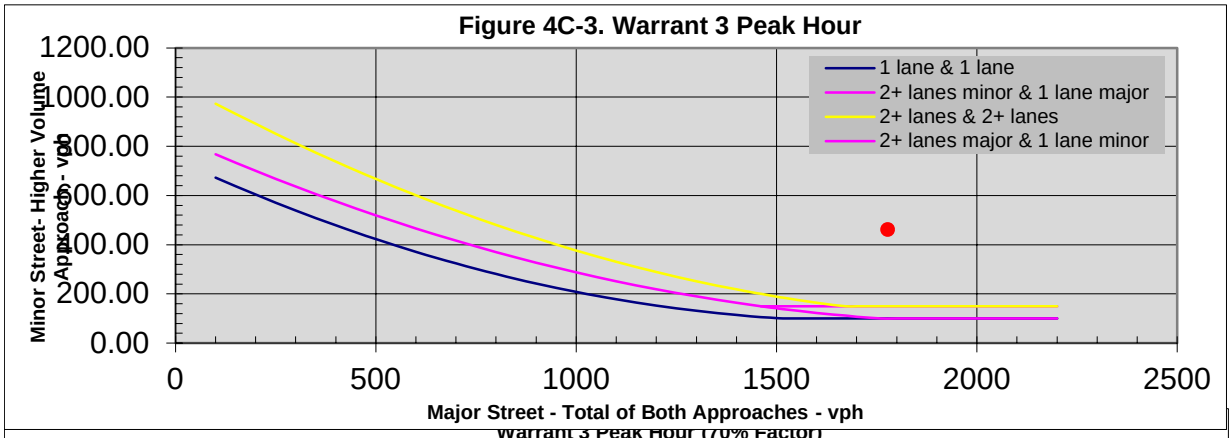
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	2:15 PM
Major Street:	2 or More Lanes	Peak Hour End Time	3:15 PM
Minor Street:	1 Lane		

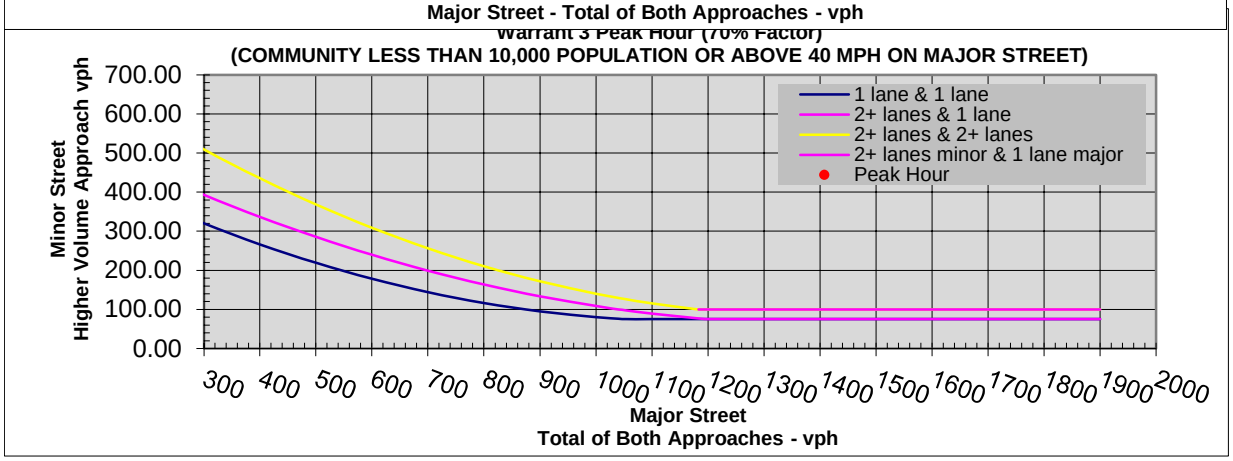
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Are the requirements for Warrant 3 met?: **Yes**





Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	1882	269	2151	2349
6:15 AM	1863	295	2158	2364
6:30 AM	1857	292	2149	2373
6:45 AM	1803	286	2089	2295
7:00 AM	1731	276	2007	2210
7:15 AM	1747	244	1991	2186
7:30 AM	1685	220	1905	2088
7:45 AM	1550	209	1759	1926
8:00 AM	1364	180	1544	1704
8:15 AM	1266	173	1439	1600
8:30 AM	1180	190	1370	1530
8:45 AM	1124	201	1325	1496
9:00 AM	1059	218	1277	1459
9:15 AM	1013	215	1228	1417
9:30 AM	1003	220	1223	1401
9:45 AM	997	208	1205	1385
10:00 AM	1010	200	1210	1394
10:15 AM	1083	234	1317	1504
10:30 AM	1129	237	1366	1561
10:45 AM	1192	263	1455	1674
11:00 AM	1241	282	1523	1742
11:15 AM	1273	290	1563	1806
11:30 AM	1303	298	1601	1881
11:45 AM	1311	295	1606	1882
12:00 PM	1276	286	1562	1842
12:15 PM	1241	271	1512	1771
12:30 PM	1254	261	1515	1745
12:45 PM	1278	267	1545	1761
1:00 PM	1378	272	1650	1865
1:15 PM	1419	325	1744	1957
1:30 PM	1458	375	1833	2050
1:45 PM	1595	428	2023	2280
2:00 PM	1679	451	2130	2399
2:15 PM	1777	463	2240	2546
2:30 PM	1874	438	2312	2634
2:45 PM	1930	436	2366	2730
3:00 PM	1961	425	2386	2753
3:15 PM	1947	418	2365	2717
3:30 PM	1898	433	2331	2664
3:45 PM	1914	418	2332	2636
4:00 PM	1896	426	2322	2621
4:15 PM	1933	388	2321	2618
4:30 PM	1879	340	2219	2512
4:45 PM	1677	327	2004	2268
5:00 PM	1528	294	1822	2059
5:15 PM	1326	290	1616	1828
5:30 PM	1227	287	1514	1708
5:45 PM	1128	229	1357	1515
6:00 PM	1018	214	1232	1384
6:15 PM	919	188	1107	1246
6:30 PM	824	171	995	1133
6:45 PM	732	157	889	1018
7:00 PM	656	144	800	927
7:15 PM	640	127	767	874
7:30 PM	649	118	767	867
7:45 PM	624	119	743	843
8:00 PM	616	121	737	835

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1777	463	100	75

STUDY AND ANALYSIS INFORMATION

Municipality:	ODOT	**Traffic Volumes Obtained By:**	Smart Services
County:	Franklin	**Analysis Date:**	3/17/2023
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	Kimley-Horn
Google map link:	Map		

Analysis Information

Data Collection Date:	8/16/2022
Day of the Week:	Tuesday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	Yes
Total Number of Approaches at Intersection:	4

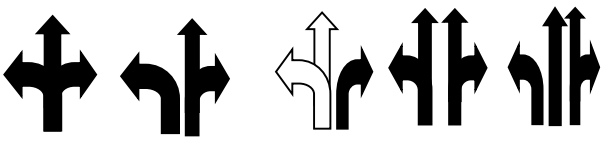
Major Street Information

Major Street Name and Route Number:	Alum Creek Drive
Major Street Approach Direction:	N-Bound S-Bound
Number of Thru Lanes on Each Major Street Approach:	3 **LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	55 **MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Spiegel Drive	
Minor Street Approach Configuration:	2	E-Bound
	5	W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach:	1	**LANE(S)**
Apply Right Turn Lane Reduction*:	No	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**Yes**	Condition B was met. Condition B (70%) was met. Combination of A/B (56%) was met.*	
Warrant 2, Four-Hour Vehicular Volume	Yes	**Yes**	Figure 4C-1 (100%)	
Warrant 3, Peak Hour	Yes	**Yes**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 3:15 PM 4:15 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 6:30 AM 7:30 AM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Retain Existing Traffic Signal

Notes:

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	2	27	1			30	7	0	1			8	0	60	1			61	15	7	46			68
12:15 AM	3	18	2			23	3	0	0			3	0	37	2			39	1	0	6			7
12:30 AM	2	24	3			29	5	0	0			5	0	20	2			22	0	0	6			6
12:45 AM	4	21	3			28	2	0	0			2	0	16	1			17	1	0	0			1
Hourly Total	11	90	9	0	0	110	17	0	1	0	0	18	0	133	6	0	0	139	17	7	58	0	0	82
1:00 AM	2	24	8			34	19	0	0			19	0	19	0			19	1	0	2			3
1:15 AM	2	13	2			17	2	0	0			2	0	20	0			20	1	0	6			7
1:30 AM	1	25	1			27	1	1	0			2	0	19	2			21	0	0	0			0
1:45 AM	1	11	1			13	1	0	0			1	0	28	0			28	0	0	2			2
Hourly Total	6	73	12	0	0	91	23	1	0	0	0	24	0	86	2	0	0	88	2	0	10	0	0	12
2:00 AM	3	9	3			15	4	0	0			4	0	44	1			45	1	0	3			4
2:15 AM	1	19	1			21	2	0	0			2	0	16	1			17	3	0	10			13
2:30 AM	3	13	0			16	0	0	0			0	0	12	0			12	4	5	51			60
2:45 AM	0	24	1			25	3	0	0			3	0	12	1			13	1	1	3			5
Hourly Total	7	65	5	0	0	77	9	0	0	0	0	9	0	84	3	0	0	87	9	6	67	0	0	82
3:00 AM	3	30	2			35	5	1	0			6	0	17	2			19	2	0	1			3
3:15 AM	3	29	1			33	3	0	0			3	2	13	1			16	1	0	10			11
3:30 AM	5	35	2			42	2	0	0			2	0	93	3			96	5	2	46			53
3:45 AM	8	48	2			58	0	0	0			0	0	31	0			31	4	0	7			11
Hourly Total	19	142	7	0	0	168	10	1	0	0	0	11	2	154	6	0	0	162	12	2	64	0	0	78
4:00 AM	7	48	4			59	0	0	0			0	0	53	3			56	0	0	3			3
4:15 AM	19	39	7			65	0	0	0			0	1	47	3			51	0	0	4			4
4:30 AM	42	70	19			131	0	0	0			0	0	50	10			60	0	1	6			7
4:45 AM	69	64	46			179	0	3	0			3	2	37	12			51	0	1	9			10
Hourly Total	137	221	76	0	0	434	0	3	0	0	0	3	3	187	28	0	0	218	0	2	22	0	0	24
5:00 AM	13	56	14			83	16	2	0			18	4	57	3			64	1	1	8			10
5:15 AM	19	104	29			152	5	2	1			8	4	53	8			65	1	0	11			12
5:30 AM	40	135	47			222	15	1	2			18	6	57	13			76	1	2	5			8
5:45 AM	79	170	68			317	11	6	0			17	4	87	27			118	9	3	10			22
Hourly Total	151	465	158	0	0	774	47	11	3	0	0	61	18	254	51	0	0	323	12	6	34	0	0	52
6:00 AM	18	109	66			193	18	3	1			22	9	96	13			118	6	2	12			20
6:15 AM	44	134	31			209	6	4	0			10	7	95	18			120	4	3	13			20
6:30 AM	56	136	18			210	7	6	0			13	5	161	15			181	2	0	12			14
6:45 AM	59	171	32			262	1	6	1			8	4	180	12			196	2	1	11			14
Hourly Total	177	550	147	0	0	874	32	19	2	0	0	53	25	532	58	0	0	615	14	6	48	0	0	68
7:00 AM	30	115	11			156	5	1	0			6	5	144	7			156	4	0	10			14
7:15 AM	32	150	18			200	7	2	1			10	5	145	5			155	1	0	6			7
7:30 AM	27	132	30			189	8	4	1			13	4	147	3			154	5	0	6			11
7:45 AM	43	166	37			246	5	4	1			10	4	129	4			137	1	3	6			10
Hourly Total	132	563	96	0	0	791	25	11	3	0	0	39	18	565	19	0	0	602	11	3	28	0	0	42
8:00 AM	34	127	38			199	6	2	0			8	4	126	7			137	0	1	5			6
8:15 AM	36	112	30			178	8	3	0			11	8	76	5			89	6	2	7			15
8:30 AM	24	105	17			146	3	1	0			4	2	98	3			103	7	1	15			23
8:45 AM	26	116	26			168	4	3	1			8	3	84	4			91	4	0	7			11
Hourly Total	120	460	111	0	0	691	21	9	1	0	0	31	17	384	19	0	0	420	17	4	34	0	0	55
9:00 AM	24	100	9			133	8	0	4			12	5	95	7			107	6	1	13			20
9:15 AM	16	98	9			123	5	0	2			7	4	85	2			91	7	4	16			27
9:30 AM	26	98	6			130	8	3	1			12	5	72	5			82	2	1	10			13
9:45 AM	25	110	12			147	2	0	0			2	0	77	3			80	1	0	9			10
Hourly Total	91	406	36	0	0	533	23	3	7	0	0	33	14	329	17	0	0	360	16	6	48	0	0	70
10:00 AM	9	97	10			116	2	0	0			2	3	87	6			96	7	3	9			19
10:15 AM	11	75	8			94	0	0	2			2	2	79	3			84	0	1	15			16
10:30 AM	13	84	10			107	2	0	0			2	7	86	2			95	1	2	19			22
10:45 AM	11	99	8			118	5	2	2			9	3	106	2			111	3	0	14			17
Hourly Total	44	355	36	0	0	435	9	2	4	0	0	15	15	358	13	0	0	386	11	6	57	0	0	74
11:00 AM	22	98	10			130	13	1	0			14	8	115	5			128	11	1	23			35
11:15 AM	15	108	9			132	11	4	2			17	3	91	5			99	5	1	15			21
11:30 AM	20	86	14			120	5	2	1			8	5	107	6			118	5	1	21			27
11:45 AM	18	103	12			133	10	0	5			15	4	117	10			131	6	2	16			24
Hourly Total	75	395	45	0	0	515	39	7	8	0	0	54	20	430	26	0	0	476	27	5	75	0	0	107
12:00 PM	17	110	14			141	25	4	2			31	4	126	8			138	14	1	28			43
12:15 PM	21	97	21			139	10	1	0			11	7	123	6			136	3	1	15			19
12:30 PM	20	94	22			136	13	1	1			15	5	106	2			113	2	1	18			21
12:45 PM	19	86	25			130	16	3	0			19	4	100	6			110	5	0	11			16
Hourly Total	77	387	82	0	0	546	64	9	3	0	0	76	20	455	22	0	0	497	24	3	72	0	0	99
1:00 PM	13	99	12			124	16	0	1			17	5	103	5			113	5	0	19			24
1:15 PM	22	105	14			141	16	2	0			18	5	117	11			133	8	1	13			22
1:30 PM	27	95	16			138	4	6	1			11	7	111	6			124	4	2	25			31
1:45 PM	31	105	24			160	10	2	0			12	5	112	6			123	4	1	20			25
Hourly Total	93	404	66	0	0	563	46	10	2	0	0	58	22	443	28	0	0	493	21	4	77	0	0	102
2:00 PM	23	106	19			148	11	2	3			16	4	116	6			126	7	3	26			36
2:15 PM	20	121	29			170	43	5	0			48	3	119	8			130	14	0	24			38
2:30 PM	13	142	37			192	53	2	6			61	7	143	4			154	15	5	43			63
2:45 PM	28	147	59			234	62	4	7			73	6	134	6			146	9	5	15			29
Hourly Total	84	516	144	0	0	744	169	13	16	0	0	198	20	512	24	0	0	556	45	13	108	0	0	166
3:00 PM	33	109	23			165	86	13	7			106	6	145	5			156	9	0	26			35
3:15 PM	38	151	15			204	12	7	5			24	3	148	13			164	33	14	57			104
3:30 PM	32	158	7			197	21	3	2			26	4	165	3			172	61	26	105			192
3:45 PM	36	190	14			240	21	5	1			27	3	124	4			131	17	8	24			49
Hourly Total	139	608	59	0	0	806	140	28	15	0	0	183	16	582	25	0	0	623	120	48	212	0	0	380
4:00 PM	22	140	11			173	23	3	2			28	0	147	4			151	12	3	33			48
4:15 PM	23	166	13			202	11	1	3			15	3	111	5			119	17	8	45			70
4:30 PM	30	166	7			203	15	2	0			17	5	206	7			218	18	7	51			76
4:45 PM	37	182	6			225	21	3	1			25	4	157	10			171	9	2	30			41
Hourly Total	112	654	37	0	0	803	70	9	6	0	0	85	12	621	26	0	0	659	56	20	159	0	0	235
5:00 PM	12	132	4			148	64	4	6			74	3	161	3			167	9	4	24			37
5:15 PM	8	131	5			144	27	0	2			29	3	107	1			111	5	4	29			38
5:30 PM	4	111	11			126	16	0	1			17	1	131	0			132	2	3	20			25
5:45 PM	9	120	11			140	13	0	0			13	1	106	0			107	3	3	13			19
Hourly Total	33	494	31	0	0	558	120	4	9	0	0	133	8	505	4	0	0	517	19	14	86	0	0	119
6:00 PM	8	94	13			115	23	0	5			28	4	90	0			94	3	0	12			15
6:15 PM	5	98	14			117	19	1	0			20	2	80	2			84	3	0	11			14
6:30 PM	4	68	19			91	12	0	0			12	3	86	0			89	1	1	9			11
6:45 PM	5	72	18			95	15	2	1			18	1	66	0			67	0	2	16			18
Hourly Total	22	332	64	0	0	418	69	3	6	0	0	78	10	322	2	0	0	334	7	3	48	0	0	58
7:00 PM	4	71	4			79	15	0	0			15	1	61	3			65	2	0	7			9
7:15 PM	1	65	10			76	10	0	0			10	0	54	6			60	1	0	6			7
7:30 PM	6	54	4			64	10	1	0			11	2	49	1			52	2	0	6			8
7:45 PM	5	51	3			59	8	1	0			9	1	46	1			48	2	0	6			8
Hourly Total	16	241	21	0	0	278	43	2	0	0	0	45	4	210	11	0	0	225	7	0	25	0	0	32
8:00 PM	6	63	3			72	17	1	3			21	2	72	1			75	1	2	5			8
8:15 PM	8	66	7			81	8	0	0			8	1	57	2			60	3	0	3			6
8:30 PM	5	52	2			59	2	0	1			3	1	58	4			63	4	0	4			8
8:45 PM	7	72	4			83	2	0	0			2	2	35	2			39	2	0	7			9
Hourly Total	26	253	16	0	0	295	29	1	4	0	0	34	6	222	9	0	0	237	10	2	19	0	0	31
9:00 PM	4	68	5			77	11	0	1			12	2	38	3			43	3	2	14			19
9:15 PM	10	35	7			52	4	0	1			5	4	47	4			55	3	0	7			10
9:30 PM	17	58	6			81	11	1	1			13	1	60	3			64	3	1	10			14
9:45 PM	15	43	5			63	8	0	1			9	0	39	6			45	3	1	10			14
Hourly Total	46	204	23	0	0	273	34	1	4	0	0	39	7	184	16	0	0	207	12	4	41	0	0	57
10:00 PM	5	46	5			56	3	2	0			5	1	53	4			58	4	0	6			10
10:15 PM	5	45	4			54	4	0	1			5	0	39	2			41	2	0	7			9
10:30 PM	6	52	5			63	6	0	2			8	0	39	1			40	4	0	8			12
10:45 PM	6	44	7			57	3	0	0			3	0	33	1			34	5	0	9			14
Hourly Total	22	187	21	0	0	230	16	2	3	0	0	21	1	164	8	0	0	173	15	0	30	0	0	45
11:00 PM	4	33	3			40	6	0	1			7	0	36	2			38	1	0	6			7
11:15 PM	4	28	6			38	0	0	1			1	1	31	1			33	2	1	2			5
11:30 PM	4	21	4			29	14	0	0			14	1	100	0			101	0	0	6			6
11:45 PM	2	27	2			31	59	1	1			61	1	52	0			53	0	0	2			2
Hourly Total	14	109	15	0	0	138	79	1	3	0	0	83	3	219	3	0	0	225	3	1	16	0	0	20

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	249	82																
12:15 AM	211	29																
12:30 AM	186	28																
12:45 AM	183	25																
1:00 AM	179	24																
1:15 AM	186	13																
1:30 AM	187	19																
1:45 AM	167	79																
2:00 AM	164	82																
2:15 AM	158	81																
2:30 AM	169	79																
2:45 AM	279	72																
3:00 AM	330	78																
3:15 AM	391	78													1			
3:30 AM	458	71			1													
3:45 AM	511	25									1						1	
4:00 AM	652	24	1						1									
4:15 AM	684	31													1			
4:30 AM	785	39			1								1					
4:45 AM	892	47									1						1	1
5:00 AM	1097	61	1				1		1	1								
5:15 AM	1261	65													1			
5:30 AM	1373	70			1								1	1				
5:45 AM	1466	76									1						1	1
6:00 AM	1489	68	1				1		1	1								
6:15 AM	1490	62													1			
6:30 AM	1516	49			1								1					
6:45 AM	1468	46									1						1	1
7:00 AM	1393	42	1				1		1									
7:15 AM	1417	41													1			
7:30 AM	1329	42			1								1					
7:45 AM	1235	54									1						1	1
8:00 AM	1111	55	1				1		1	1								
8:15 AM	1015	69													1			
8:30 AM	962	81			1								1	1				
8:45 AM	925	71									1						1	1
9:00 AM	893	70	1						1	1								
9:15 AM	865	69													1			
9:30 AM	829	58			1								1					
9:45 AM	819	67									1						1	1

10:00 AM	821	74	1						1	1								
10:15 AM	867	90													1	1		
10:30 AM	920	95			1		1	1					1	1				
10:45 AM	956	100									1						1	1
11:00 AM	991	107	1						1	1								
11:15 AM	1012	115													1	1		
11:30 AM	1056	113			1	1	1	1					1	1				
11:45 AM	1067	107									1						1	1
12:00 PM	1043	99	1						1	1								
12:15 PM	1001	80													1			
12:30 PM	1000	83			1		1	1					1	1				
12:45 PM	1013	93									1						1	1
1:00 PM	1056	102	1						1	1								
1:15 PM	1093	114													1	1		
1:30 PM	1119	130			1	1	1	1					1	1				
1:45 PM	1203	162									1	1					1	1
2:00 PM	1300	198	1	1					1	1								
2:15 PM	1347	288													1	1		
2:30 PM	1415	264			1	1	1	1					1	1				
2:45 PM	1438	360									1	1					1	1
3:00 PM	1429	380	1	1					1	1								
3:15 PM	1432	393													1	1		
3:30 PM	1385	359			1	1	1	1					1	1				
3:45 PM	1437	243									1	1					1	1
4:00 PM	1462	235	1	1					1	1								
4:15 PM	1453	224													1	1		
4:30 PM	1387	192			1	1	1	1					1	1				
4:45 PM	1224	145									1	1					1	1
5:00 PM	1075	133	1						1	1								
5:15 PM	969	97													1	1		
5:30 PM	915	78			1		1	1					1	1				
5:45 PM	837	73									1						1	1
6:00 PM	752	78	1						1	1								
6:15 PM	687	65													1			
6:30 PM	622	55			1													
6:45 PM	558	54									1						1	1
7:00 PM	503	45																
7:15 PM	506	51													1			
7:30 PM	511	49			1													
7:45 PM	517	41									1						1	
8:00 PM	532	34																
8:15 PM	505	42													1			
8:30 PM	471	46			1													
8:45 PM	494	52									1							
9:00 PM	480	57																
9:15 PM	474	48													1			
9:30 PM	462	47			1													
9:45 PM	420	45																
HOURS MET			**15**	**3**	**19**	**5**	**12**	**8**	**15**	**13**	**18**	**4**	**14**	**10**	**20**	**7**	**17**	**15**
WARRANT SATISFIED?			**NO**		**NO**		**YES**		**YES**		**NO**				**YES**			

Warrant Met: **Yes**

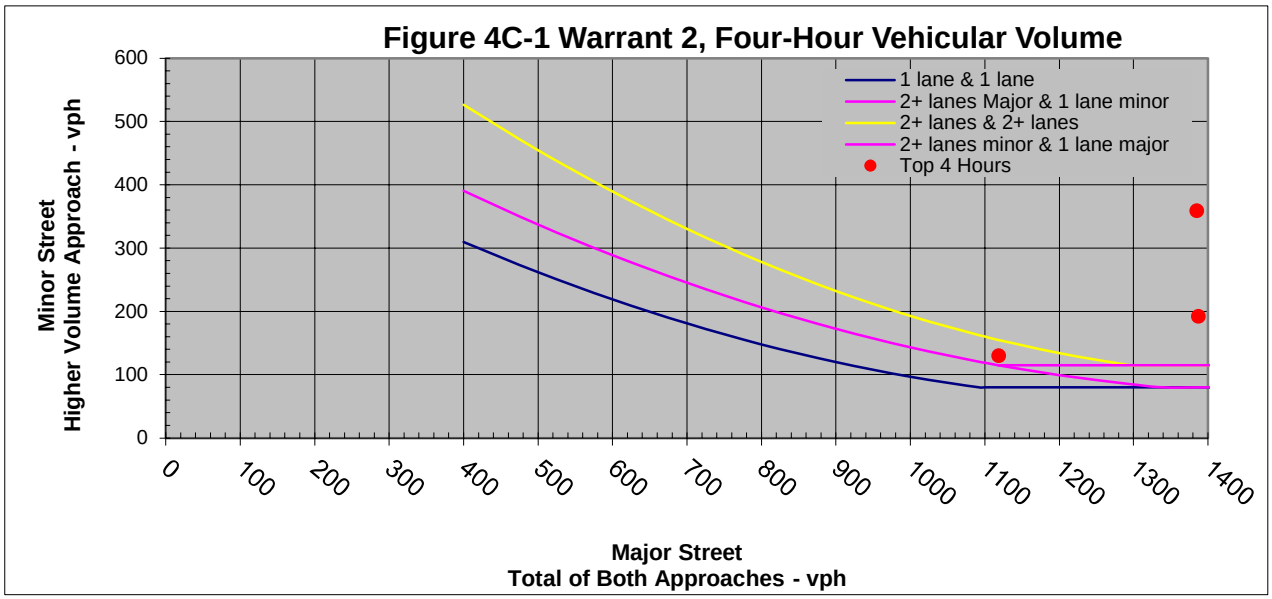
Notes: Condition B was met. Condition B (70%) was met. Combination of A/B (56%) was met.*

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	4
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	12
Minor Street:	1 Lane		

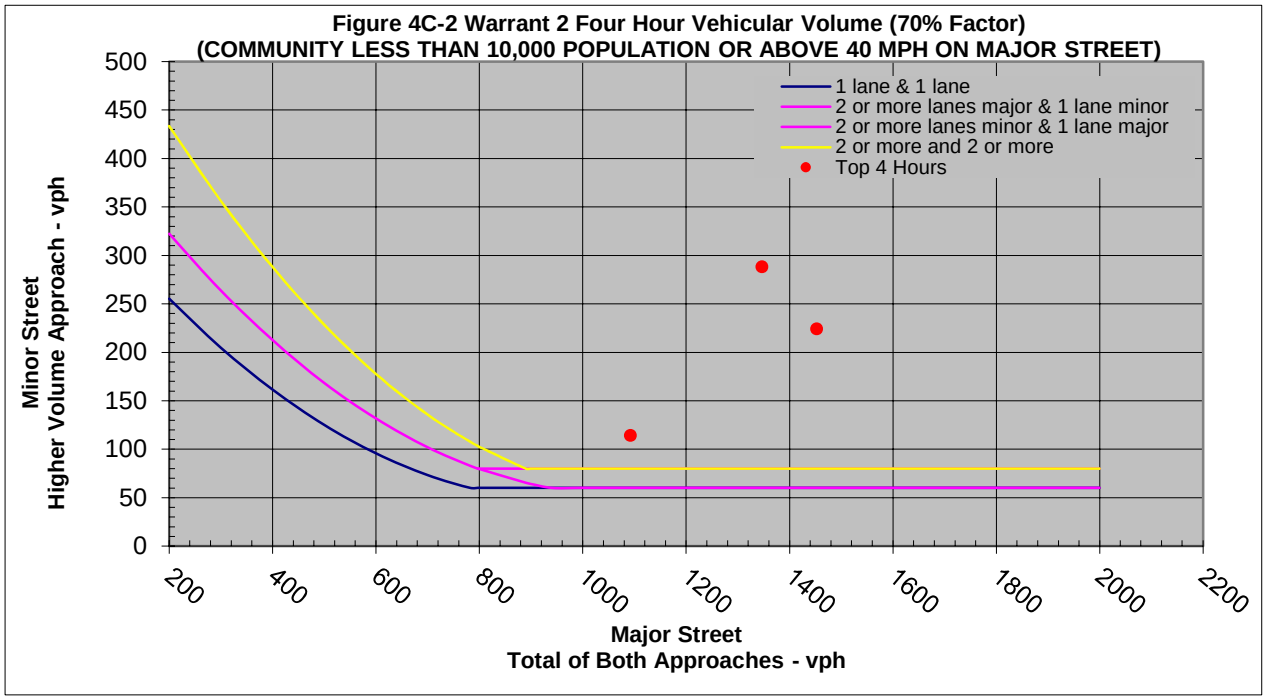
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Alum Creek Drive		Minor - Spiegel Drive					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	615	874	53	68	1489	68		Met
6:15 AM	653	837	37	62	1490	62		
6:30 AM	688	828	37	49	1516	49		
6:45 AM	661	807	37	46	1468	46		
7:00 AM	602	791	39	42	1393	42		
7:15 AM	583	834	41	34	1417	41		
7:30 AM	517	812	42	42	1329	42		
7:45 AM	466	769	33	54	1235	54		
8:00 AM	420	691	31	55	1111	55		
8:15 AM	390	625	35	69	1015	69		Met
8:30 AM	392	570	31	81	962	81		
8:45 AM	371	554	39	71	925	71		
9:00 AM	360	533	33	70	893	70		
9:15 AM	349	516	23	69	865	69		Met
9:30 AM	342	487	18	58	829	58		
9:45 AM	355	464	8	67	819	67		
10:00 AM	386	435	15	74	821	74		
10:15 AM	418	449	27	90	867	90		Met
10:30 AM	433	487	42	95	920	95		
10:45 AM	456	500	48	100	956	100		
11:00 AM	476	515	54	107	991	107		
11:15 AM	486	526	71	115	1012	115		Met
11:30 AM	523	533	65	113	1056	113		
11:45 AM	518	549	72	107	1067	107		
12:00 PM	497	546	76	99	1043	99		
12:15 PM	472	529	62	80	1001	80		Met
12:30 PM	469	531	69	83	1000	83		
12:45 PM	480	533	65	93	1013	93		
1:00 PM	493	563	58	102	1056	102		
1:15 PM	506	587	57	114	1093	114		Met
1:30 PM	503	616	87	130	1119	130	Met	
1:45 PM	533	670	137	162	1203	162		
2:00 PM	556	744	198	166	1300	198		
2:15 PM	586	761	288	165	1347	288		Met
2:30 PM	620	795	264	231	1415	264	Met	
2:45 PM	638	800	229	360	1438	360		
3:00 PM	623	806	183	380	1429	380		
3:15 PM	618	814	105	393	1432	393		Met
3:30 PM	573	812	96	359	1385	359	Met	
3:45 PM	619	818	87	243	1437	243		
4:00 PM	659	803	85	235	1462	235		
4:15 PM	675	778	131	224	1453	224		Met
4:30 PM	667	720	145	192	1387	192	Met	
4:45 PM	581	643	145	141	1224	145		
5:00 PM	517	558	133	119	1075	133		
5:15 PM	444	525	87	97	969	97		Met
5:30 PM	417	498	78	73	915	78		
5:45 PM	374	463	73	59	837	73		
6:00 PM	334	418	78	58	752	78		
6:15 PM	305	382	65	52	687	65		
6:30 PM	281	341	55	45	622	55		
6:45 PM	244	314	54	42	558	54		
7:00 PM	225	278	45	32	503	45		
7:15 PM	235	271	51	31	506	51		
7:30 PM	235	276	49	30	511	49		
7:45 PM	246	271	41	30	517	41		
8:00 PM	237	295	34	31	532	34		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	3:30 PM	4:30 PM	1385	359
2nd Highest Hour	2:30 PM	3:30 PM	1415	264
3rd Highest Hour	4:30 PM	5:30 PM	1387	192
4th Highest Hour	1:30 PM	2:30 PM	1119	130

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	3:15 PM	4:15 PM	1432	393
2nd Highest Hour	2:15 PM	3:15 PM	1347	288
3rd Highest Hour	4:15 PM	5:15 PM	1453	224
4th Highest Hour	1:15 PM	2:15 PM	1093	114



Are the requirements for Warrant 2 met?: **Yes**

OMUTCD WARRANT 3, PEAK HOUR

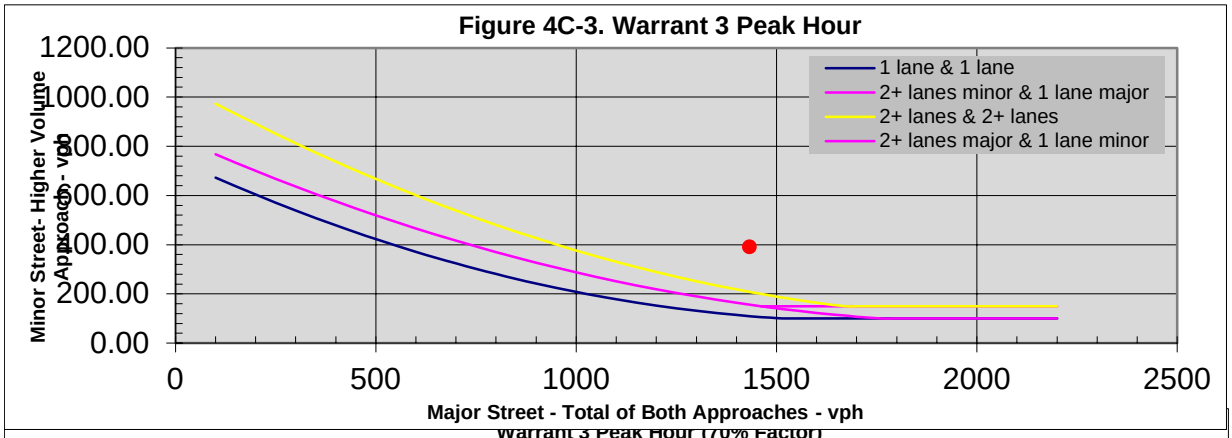
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	3:15 PM
Major Street:	2 or More Lanes	Peak Hour End Time	4:15 PM
Minor Street:	1 Lane		

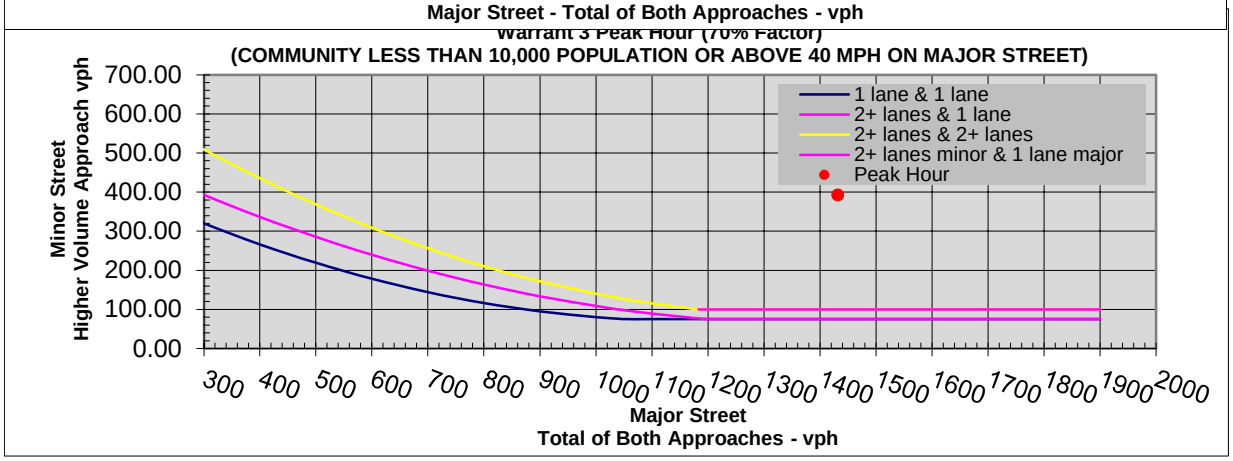
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Are the requirements for Warrant 3 met?: **Yes**





Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	1489	68	1557	1610
6:15 AM	1490	62	1552	1589
6:30 AM	1516	49	1565	1602
6:45 AM	1468	46	1514	1551
7:00 AM	1393	42	1435	1474
7:15 AM	1417	41	1458	1492
7:30 AM	1329	42	1371	1413
7:45 AM	1235	54	1289	1322
8:00 AM	1111	55	1166	1197
8:15 AM	1015	69	1084	1119
8:30 AM	962	81	1043	1074
8:45 AM	925	71	996	1035
9:00 AM	893	70	963	996
9:15 AM	865	69	934	957
9:30 AM	829	58	887	905
9:45 AM	819	67	886	894
10:00 AM	821	74	895	910
10:15 AM	867	90	957	984
10:30 AM	920	95	1015	1057
10:45 AM	956	100	1056	1104
11:00 AM	991	107	1098	1152
11:15 AM	1012	115	1127	1198
11:30 AM	1056	113	1169	1234
11:45 AM	1067	107	1174	1246
12:00 PM	1043	99	1142	1218
12:15 PM	1001	80	1081	1143
12:30 PM	1000	83	1083	1152
12:45 PM	1013	93	1106	1171
1:00 PM	1056	102	1158	1216
1:15 PM	1093	114	1207	1264
1:30 PM	1119	130	1249	1336
1:45 PM	1203	162	1365	1502
2:00 PM	1300	198	1498	1664
2:15 PM	1347	288	1635	1800
2:30 PM	1415	264	1679	1910
2:45 PM	1438	360	1798	2027
3:00 PM	1429	380	1809	1992
3:15 PM	1432	393	1825	1930
3:30 PM	1385	359	1744	1840
3:45 PM	1437	243	1680	1767
4:00 PM	1462	235	1697	1782
4:15 PM	1453	224	1677	1808
4:30 PM	1387	192	1579	1724
4:45 PM	1224	145	1369	1510
5:00 PM	1075	133	1208	1327
5:15 PM	969	97	1066	1153
5:30 PM	915	78	993	1066
5:45 PM	837	73	910	969
6:00 PM	752	78	830	888
6:15 PM	687	65	752	804
6:30 PM	622	55	677	722
6:45 PM	558	54	612	654
7:00 PM	503	45	548	580
7:15 PM	506	51	557	588
7:30 PM	511	49	560	590
7:45 PM	517	41	558	588
8:00 PM	532	34	566	597

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1432	393	157	75

STUDY AND ANALYSIS INFORMATION

Municipality:	ODOT	**Traffic Volumes Obtained By:**	Smart Services
County:	Franklin	**Analysis Date:**	3/17/2023
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	Kimley-Horn
Google map link:	Map		

Analysis Information

Data Collection Date:	8/16/2022
Day of the Week:	Tuesday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	Yes
Total Number of Approaches at Intersection:	4

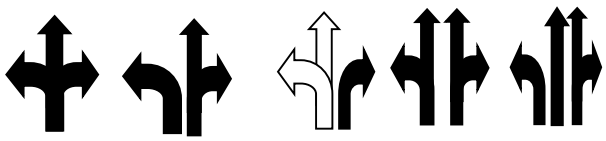
Major Street Information

Major Street Name and Route Number:	Alum Creek Drive	
Major Street Approach Direction:	N-Bound S-Bound	
Number of Thru Lanes on Each Major Street Approach:	3	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	55	**MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	SR-317	
Minor Street Approach Configuration:	5	E-Bound
	5	W-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach:	1	**LANE(S)**
Apply Right Turn Lane Reduction*:	No	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**Yes**	Condition A was met. Condition B was met. Condition A (70%) was met. Condition B (70%) was met. Combination of A/B (80%) was met.*Combination of A/B (56%) was met.*	
Warrant 2, Four-Hour Vehicular Volume	Yes	**Yes**	Figure 4C-1 (100%)	
Warrant 3, Peak Hour	Yes	**Yes**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 4:15 PM 5:15 PM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 3:15 PM 4:15 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Retain Existing Traffic Signal

Notes: Warrants 1, 2, and 3 were met for the intersection.

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach					
	Southbound						Westbound						Nouthbound						Eastbound					
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total
12:00 AM	5	18	19			42	5	6	4			15	6	51	7			64	2	7	4			13
12:15 AM	8	6	4			18	3	1	3			7	3	28	5			36	5	8	6			19
12:30 AM	5	17	3			25	1	7	3			11	3	13	3			19	0	10	6			16
12:45 AM	8	12	3			23	3	4	3			10	2	8	3			13	2	3	4			9
Hourly Total	26	53	29	0	0	108	12	18	13	0	0	43	14	100	18	0	0	132	9	28	20	0	0	57
1:00 AM	10	12	1			23	3	4	1			8	4	12	2			18	4	5	4			13
1:15 AM	3	11	2			16	3	5	1			9	0	12	0			12	4	2	5			11
1:30 AM	15	10	1			26	3	5	5			13	1	11	2			14	2	4	12			18
1:45 AM	5	4	1			10	4	4	0			8	1	9	2			12	4	9	12			25
Hourly Total	33	37	5	0	0	75	13	18	7	0	0	38	6	44	6	0	0	56	14	20	33	0	0	67
2:00 AM	0	10	1			11	4	5	6			15	13	41	1			55	1	2	3			6
2:15 AM	6	10	3			19	1	1	1			3	2	10	1			13	2	2	5			9
2:30 AM	2	12	7			21	1	3	0			4	1	7	0			8	0	5	2			7
2:45 AM	8	15	2			25	6	6	3			15	2	6	1			9	2	4	4			10
Hourly Total	16	47	13	0	0	76	12	15	10	0	0	37	18	64	3	0	0	85	5	13	14	0	0	32
3:00 AM	15	14	1			30	4	7	4			15	3	11	3			17	0	3	3			6
3:15 AM	23	8	1			32	4	6	10			20	0	10	4			14	5	6	4			15
3:30 AM	21	12	4			37	1	10	10			21	27	79	6			112	5	10	18			33
3:45 AM	19	34	2			55	1	9	10			20	4	18	4			26	5	9	17			31
Hourly Total	78	68	8	0	0	154	10	32	34	0	0	76	34	118	17	0	0	169	15	28	42	0	0	85
4:00 AM	16	31	3			50	4	8	11			23	5	18	3			26	7	13	29			49
4:15 AM	4	31	2			37	4	4	15			23	5	10	6			21	12	15	30			57
4:30 AM	6	59	6			71	9	7	19			35	4	29	5			38	10	10	21			41
4:45 AM	4	52	2			58	10	12	25			47	6	30	3			39	9	20	19			48
Hourly Total	30	173	13	0	0	216	27	31	70	0	0	128	20	87	17	0	0	124	38	58	99	0	0	195
5:00 AM	5	56	2			63	5	11	9			25	13	51	6			70	4	10	11			25
5:15 AM	15	79	9			103	6	11	36			53	9	45	7			61	18	18	15			51
5:30 AM	21	117	7			145	5	30	62			97	9	52	12			73	15	19	19			53
5:45 AM	26	134	15			175	12	30	70			112	8	96	16			120	30	27	12			69
Hourly Total	67	386	33	0	0	486	28	82	177	0	0	287	39	244	41	0	0	324	67	74	57	0	0	198
6:00 AM	16	98	12			126	7	20	36			63	15	86	21			122	28	22	15			65
6:15 AM	14	103	11			128	12	29	37			78	11	91	15			117	26	17	20			63
6:30 AM	14	76	10			100	11	26	36			73	8	113	13			134	18	8	49			75
6:45 AM	15	138	16			169	2	27	49			78	23	140	23			186	28	33	24			85
Hourly Total	59	415	49	0	0	523	32	102	158	0	0	292	57	430	72	0	0	559	100	80	108	0	0	288
7:00 AM	11	91	18			120	8	22	29			59	15	120	20			155	31	28	26			85
7:15 AM	11	120	12			143	7	25	35			67	13	127	25			165	34	38	21			93
7:30 AM	17	118	8			143	10	22	36			68	17	126	31			174	21	34	14			69
7:45 AM	22	126	19			167	11	30	36			77	20	101	12			133	31	31	20			82
Hourly Total	61	455	57	0	0	573	36	99	136	0	0	271	65	474	88	0	0	627	117	131	81	0	0	329
8:00 AM	24	90	18			132	12	23	36			71	16	80	13			109	26	31	33			90
8:15 AM	15	89	11			115	13	24	27			64	13	67	18			98	16	18	13			47
8:30 AM	19	66	9			94	4	13	29			46	13	75	23			111	24	29	24			77
8:45 AM	24	77	24			125	8	18	18			44	18	71	20			109	16	24	17			57
Hourly Total	82	322	62	0	0	466	37	78	110	0	0	225	60	293	74	0	0	427	82	102	87	0	0	271
9:00 AM	15	85	26			126	14	22	26			62	9	75	17			101	16	20	14			50
9:15 AM	15	69	15			99	11	31	17			59	10	60	15			85	12	17	13			42
9:30 AM	20	68	18			106	7	31	11			49	16	56	14			86	11	16	18			45
9:45 AM	23	69	15			107	10	33	24			67	17	57	15			89	17	30	12			59
Hourly Total	73	291	74	0	0	438	42	117	78	0	0	237	52	248	61	0	0	361	56	83	57	0	0	196
10:00 AM	22	60	17			99	9	29	30			68	16	68	14			98	26	16	16			58
10:15 AM	15	62	6			83	9	15	17			41	16	67	16			99	13	18	15			46
10:30 AM	24	59	9			92	14	22	22			58	13	51	20			84	20	31	24			75
10:45 AM	26	62	10			98	9	23	18			50	20	76	29			125	18	19	19			56
Hourly Total	87	243	42	0	0	372	41	89	87	0	0	217	65	262	79	0	0	406	77	84	74	0	0	235
11:00 AM	25	66	12			103	13	23	29			65	23	89	16			128	30	25	29			84
11:15 AM	14	70	21			105	10	26	38			74	21	90	19			130	29	23	15			67
11:30 AM	16	65	15			96	10	19	41			70	25	83	23			131	21	23	20			64
11:45 AM	15	89	16			120	13	35	30			78	21	92	18			131	25	18	21			64
Hourly Total	70	290	64	0	0	424	46	103	138	0	0	287	90	354	76	0	0	520	105	89	85	0	0	279
12:00 PM	22	83	21			126	15	31	40			86	40	100	23			163	28	22	19			69
12:15 PM	12	80	12			104	10	31	52			93	18	102	22			142	17	19	20			56
12:30 PM	22	67	10			99	17	27	47			91	19	83	12			114	20	15	21			56
12:45 PM	13	70	13			96	15	32	41			88	23	71	15			109	28	19	18			65
Hourly Total	69	300	56	0	0	425	57	121	180	0	0	358	100	356	72	0	0	528	93	75	78	0	0	246
1:00 PM	17	66	10			93	7	33	33			73	26	95	23			144	19	11	15			45
1:15 PM	31	75	16			122	11	24	34			69	18	83	20			121	36	36	23			95
1:30 PM	31	57	11			99	8	27	20			55	16	98	28			142	24	22	18			64
1:45 PM	10	79	15			104	4	44	40			88	22	97	21			140	26	21	15			62
Hourly Total	89	277	52	0	0	418	30	128	127	0	0	285	82	373	92	0	0	547	105	90	71	0	0	266
2:00 PM	19	83	20			122	10	45	29			84	16	87	24			127	29	35	30			94
2:15 PM	19	95	21			135	15	29	48			92	20	84	31			135	30	28	28			86
2:30 PM	28	113	19			160	9	43	51			103	33	129	48			210	27	34	15			76
2:45 PM	32	114	12			158	12	43	37			92	34	94	39			167	34	32	19			85
Hourly Total	98	405	72	0	0	575	46	160	165	0	0	371	103	394	142	0	0	639	120	129	92	0	0	341
3:00 PM	26	85	17			128	16	42	38			96	41	125	48			214	38	50	23			111
3:15 PM	26	115	32			173	14	37	37			88	26	122	44			192	18	47	24			89
3:30 PM	28	141	54			223	13	42	38			93	47	136	61			244	25	36	14			75
3:45 PM	32	143	17			192	8	44	44			96	40	98	36			174	28	41	19			88
Hourly Total	112	484	120	0	0	716	51	165	157	0	0	373	154	481	189	0	0	824	109	174	80	0	0	363
4:00 PM	23	131	14			168	9	43	36			88	34	124	52			210	32	33	16			81
4:15 PM	28	128	25			181	10	32	53			95	19	101	30			150	30	44	13			87
4:30 PM	26	136	25			187	10	41	46			97	37	195	47			279	30	46	16			92
4:45 PM	26	132	25			183	17	32	53			102	25	118	52			195	27	36	25			88
Hourly Total	103	527	89	0	0	719	46	148	188	0	0	382	115	538	181	0	0	834	119	159	70	0	0	348
5:00 PM	29	111	15			155	16	58	51			125	29	121	32			182	14	37	25			76
5:15 PM	25	97	14			136	13	40	38			91	36	76	23			135	30	47	17			94
5:30 PM	7	94	17			118	21	34	36			91	25	92	21			138	27	32	21			80
5:45 PM	21	88	9			118	6	27	40			73	18	81	22			121	22	27	17			66
Hourly Total	82	390	55	0	0	527	56	159	165	0	0	380	108	370	98	0	0	576	93	143	80	0	0	316
6:00 PM	23	72	8			103	6	33	29			68	25	68	14			107	17	33	16			66
6:15 PM	41	56	8			105	8	37	32			77	17	57	16			90	25	28	17			70
6:30 PM	15	43	17			75	8	24	22			54	16	57	18			91	19	23	22			64
6:45 PM	4	57	13			74	6	24	33			63	13	39	10			62	18	30	15			63
Hourly Total	83	228	46	0	0	357	28	118	116	0	0	262	71	221	58	0	0	350	79	114	70	0	0	263
7:00 PM	13	44	13			70	7	19	27			53	15	44	7			66	16	26	16			58
7:15 PM	6	59	6			71	9	18	33			60	19	44	9			72	26	19	11			56
7:30 PM	10	39	9			58	8	12	24			44	12	37	5			54	21	33	10			64
7:45 PM	7	40	6			53	2	20	19			41	12	38	12			62	16	21	10			47
Hourly Total	36	182	34	0	0	252	26	69	103	0	0	198	58	163	33	0	0	254	79	99	47	0	0	225
8:00 PM	8	46	9			63	2	19	29			50	11	54	8			73	10	30	20			60
8:15 PM	6	54	5			65	5	22	23			50	15	35	7			57	21	15	18			54
8:30 PM	8	45	6			59	5	22	29			56	12	40	9			61	16	19	16			51
8:45 PM	13	50	7			70	0	19	22			41	12	28	9			49	20	14	6			40
Hourly Total	35	195	27	0	0	257	12	82	103	0	0	197	50	157	33	0	0	240	67	78	60	0	0	205
9:00 PM	12	53	8			73	5	14	22			41	16	36	8			60	8	16	6			30
9:15 PM	8	32	8			48	11	10	30			51	7	43	15			65	9	5	4			18
9:30 PM	11	38	12			61	8	8	17			33	13	50	11			74	15	6	5			26
9:45 PM	12	38	5			55	8	4	23			35	11	31	4			46	9	7	4			20
Hourly Total	43	161	33	0	0	237	32	36	92	0	0	160	47	160	38	0	0	245	41	34	19	0	0	94
10:00 PM	11	33	6			50	3	7	12			22	11	48	7			66	6	6	4			16
10:15 PM	18	24	4			46	6	7	11			24	12	24	11			47	9	6	5			20
10:30 PM	7	47	5			59	3	14	15			32	8	24	5			37	7	13	20			40
10:45 PM	5	34	9			48	3	10	12			25	5	22	4			31	10	9	7			26
Hourly Total	41	138	24	0	0	203	15	38	50	0	0	103	36	118	27	0	0	181	32	34	36	0	0	102
11:00 PM	9	24	4			37	1	8	16			25	7	33	5			45	6	12	7			25
11:15 PM	9	19	5			33	4	10	9			23	6	28	6			40	5	5	2			12
11:30 PM	3	18	1			22	3	6	5			14	25	112	15			152	2	11	9			22
11:45 PM	0	22	3			25	4	4	7			15	5	41	5			51	3	7	10			20
Hourly Total	21	83	13	0	0	117	12	28	37	0	0	77	43	214	31	0	0	288	16	35	28	0	0	79

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	2 or More Lanes
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1	X		600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	240	57																
12:15 AM	175	57																
12:30 AM	149	49																
12:45 AM	145	51																
1:00 AM	131	67																
1:15 AM	156	60																
1:30 AM	160	58																
1:45 AM	149	47																
2:00 AM	161	37																
2:15 AM	142	37																
2:30 AM	156	54																
2:45 AM	276	71																
3:00 AM	323	85																
3:15 AM	352	128													1	1		
3:30 AM	364	170																
3:45 AM	324	178																
4:00 AM	340	195																
4:15 AM	397	171													1	1		
4:30 AM	503	165			1	1					1	1						
4:45 AM	612	222	1	1													1	1
5:00 AM	810	287							1	1			1	1				
5:15 AM	925	325					1	1							1	1		
5:30 AM	1006	350			1	1					1	1						
5:45 AM	1022	326	1	1													1	1
6:00 AM	1082	292							1	1			1	1				
6:15 AM	1109	308					1	1							1	1		
6:30 AM	1172	338			1	1					1	1						
6:45 AM	1255	332	1	1													1	1
7:00 AM	1200	329							1	1			1	1				
7:15 AM	1166	334					1	1							1	1		
7:30 AM	1071	288			1	1					1	1						
7:45 AM	959	296	1	1													1	1
8:00 AM	893	271							1	1			1	1				
8:15 AM	879	231													1	1		
8:30 AM	850	226			1	1					1	1						
8:45 AM	837	214	1	1													1	1
9:00 AM	799	237							1	1			1	1				
9:15 AM	769	243													1	1		
9:30 AM	767	225			1	1					1	1						
9:45 AM	751	238	1	1													1	1

10:00 AM	778	235							1	1			1	1				
10:15 AM	812	261													1	1		
10:30 AM	865	282			1	1					1	1						
10:45 AM	916	271	1	1			1	1									1	1
11:00 AM	944	287							1	1			1	1				
11:15 AM	1002	308													1	1		
11:30 AM	1013	327			1	1					1	1						
11:45 AM	999	348	1	1			1	1									1	1
12:00 PM	953	358							1	1			1	1				
12:15 PM	901	345													1	1		
12:30 PM	898	321			1	1					1	1						
12:45 PM	926	285	1	1			1	1									1	1
1:00 PM	965	285							1	1			1	1				
1:15 PM	977	315													1	1		
1:30 PM	1004	319			1	1					1	1						
1:45 PM	1133	367	1	1			1	1									1	1
2:00 PM	1214	371							1	1			1	1				
2:15 PM	1307	383													1	1		
2:30 PM	1402	379			1	1					1	1						
2:45 PM	1499	369	1	1			1	1									1	1
3:00 PM	1540	373							1	1			1	1				
3:15 PM	1576	365													1	1		
3:30 PM	1542	372			1	1					1	1						
3:45 PM	1541	376	1	1			1	1									1	1
4:00 PM	1553	382							1	1			1	1				
4:15 PM	1512	419													1	1		
4:30 PM	1452	415			1	1					1	1						
4:45 PM	1242	409	1	1			1	1									1	1
5:00 PM	1103	380							1	1			1	1				
5:15 PM	976	323													1	1		
5:30 PM	900	309			1	1					1	1						
5:45 PM	810	272	1	1													1	1
6:00 PM	707	263							1	1								
6:15 PM	633	255													1	1		
6:30 PM	581	241			1	1					1	1						
6:45 PM	527	241															1	1
7:00 PM	506	225																
7:15 PM	506	227													1	1		
7:30 PM	485	225			1	1					1	1						
7:45 PM	493	212																
8:00 PM	497	205																
8:15 PM	494	188													1	1		
8:30 PM	485	189			1	1					1	1						
8:45 PM	500	166																
9:00 PM	482	160																
9:15 PM	465	141													1	1		
9:30 PM	445	114			1	1												
9:45 PM	406	113																
HOURS MET			**14**	**14**	**18**	**18**	**10**	**10**	**14**	**14**	**17**	**17**	**13**	**13**	**20**	**20**	**15**	**15**
WARRANT SATISFIED?			**YES**		**YES**		**YES**		**YES**		**YES**				**YES**			

Warrant Met: **Yes**

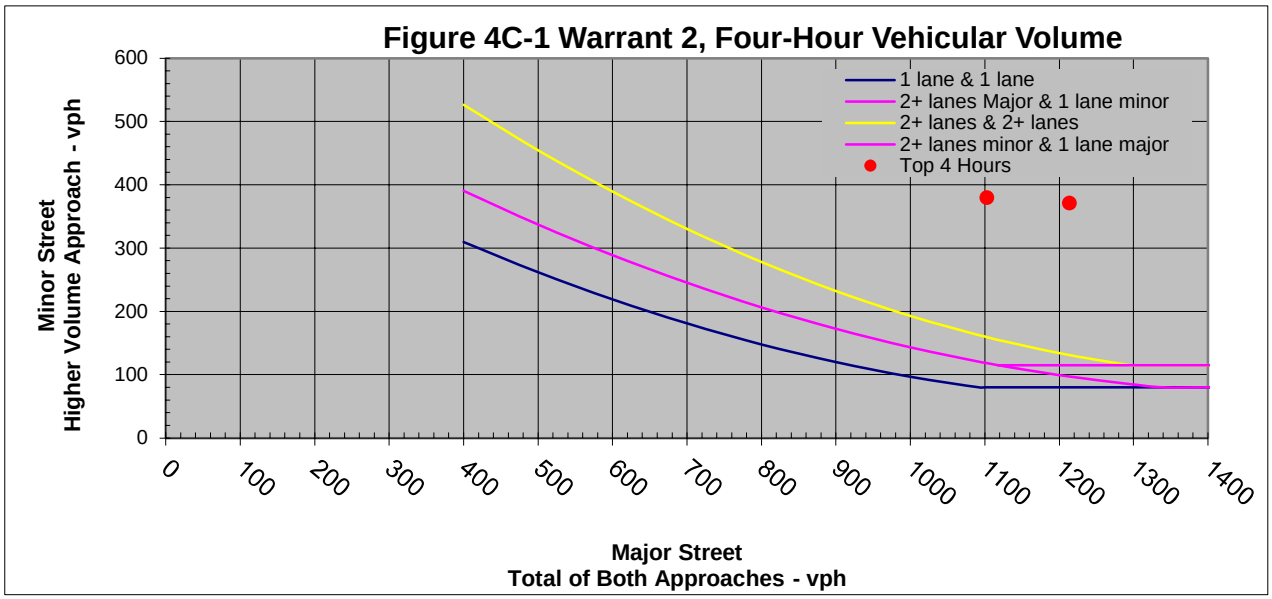
Notes: Condition A was met. Condition B was met. Condition A (70%) was met. Condition B (70%) was met. Combination of A/B (80%) was met.*Combination of A/B (56%) was met.*

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	14
Major street:	2 or More Lanes	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	16
Minor Street:	1 Lane		

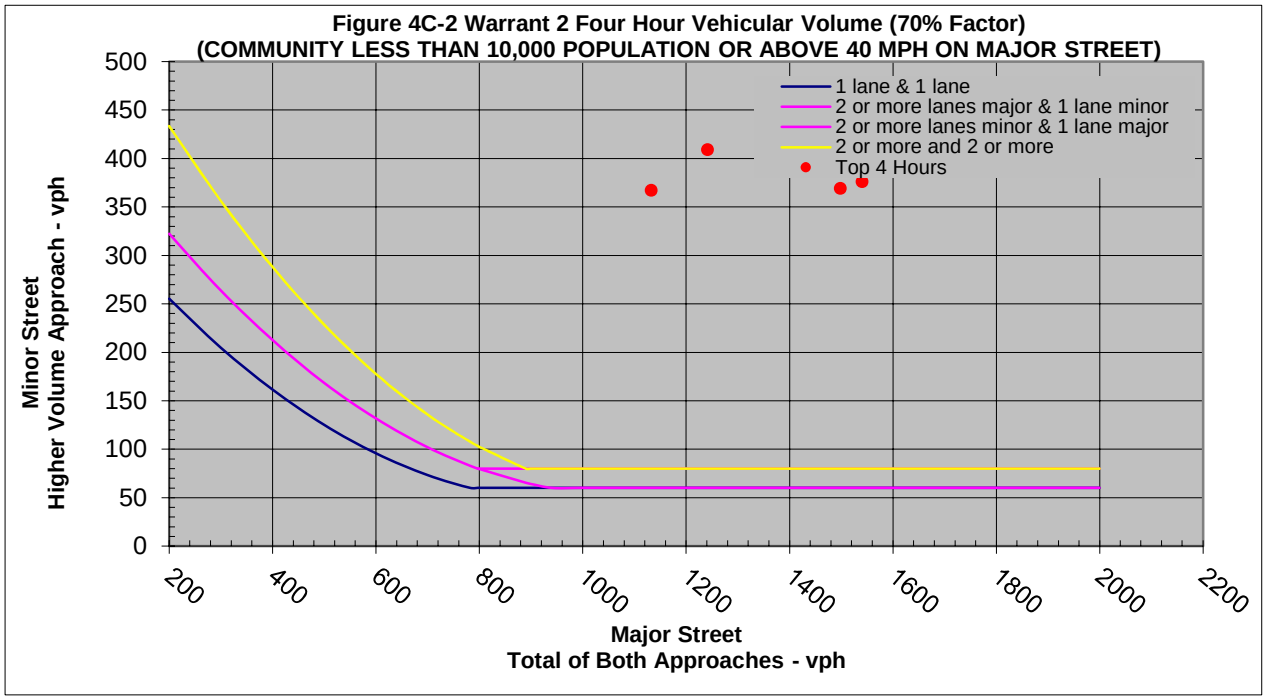
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Alum Creek Drive		Minor - SR-317					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	559	523	292	288	1082	292	Met	
6:15 AM	592	517	288	308	1109	308		
6:30 AM	640	532	277	338	1172	338		
6:45 AM	680	575	272	332	1255	332		Met
7:00 AM	627	573	271	329	1200	329	Met	
7:15 AM	581	585	283	334	1166	334		
7:30 AM	514	557	280	288	1071	288		
7:45 AM	451	508	258	296	959	296		Met
8:00 AM	427	466	225	271	893	271	Met	
8:15 AM	419	460	216	231	879	231		
8:30 AM	406	444	211	226	850	226		
8:45 AM	381	456	214	194	837	214		Met
9:00 AM	361	438	237	196	799	237	Met	
9:15 AM	358	411	243	204	769	243		
9:30 AM	372	395	225	208	767	225		
9:45 AM	370	381	234	238	751	238		Met
10:00 AM	406	372	217	235	778	235	Met	
10:15 AM	436	376	214	261	812	261		
10:30 AM	467	398	247	282	865	282		
10:45 AM	514	402	259	271	916	271		Met
11:00 AM	520	424	287	279	944	287	Met	
11:15 AM	555	447	308	264	1002	308		
11:30 AM	567	446	327	253	1013	327		
11:45 AM	550	449	348	245	999	348		Met
12:00 PM	528	425	358	246	953	358	Met	
12:15 PM	509	392	345	222	901	345		
12:30 PM	488	410	321	261	898	321		
12:45 PM	516	410	285	269	926	285		Met
1:00 PM	547	418	285	266	965	285	Met	
1:15 PM	530	447	296	315	977	315		
1:30 PM	544	460	319	306	1004	319		
1:45 PM	612	521	367	318	1133	367		Met
2:00 PM	639	575	371	341	1214	371	Met	
2:15 PM	726	581	383	358	1307	383		
2:30 PM	783	619	379	361	1402	379		
2:45 PM	817	682	369	360	1499	369		Met
3:00 PM	824	716	373	363	1540	373	Met	
3:15 PM	820	756	365	333	1576	365		
3:30 PM	778	764	372	331	1542	372		
3:45 PM	813	728	376	348	1541	376		Met
4:00 PM	834	719	382	348	1553	382	Met	
4:15 PM	806	706	419	343	1512	419		
4:30 PM	791	661	415	350	1452	415		
4:45 PM	650	592	409	338	1242	409		Met
5:00 PM	576	527	380	316	1103	380	Met	
5:15 PM	501	475	323	306	976	323		
5:30 PM	456	444	309	282	900	309		
5:45 PM	409	401	272	266	810	272		Met
6:00 PM	350	357	262	263	707	263	Met	
6:15 PM	309	324	247	255	633	255		
6:30 PM	291	290	230	241	581	241		
6:45 PM	254	273	220	241	527	241		Met
7:00 PM	254	252	198	225	506	225		
7:15 PM	261	245	195	227	506	227		
7:30 PM	246	239	185	225	485	225		
7:45 PM	253	240	197	212	493	212		Met
8:00 PM	240	257	197	205	497	205		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	4:00 PM	5:00 PM	1553	382
2nd Highest Hour	3:00 PM	4:00 PM	1540	373
3rd Highest Hour	2:00 PM	3:00 PM	1214	371
4th Highest Hour	5:00 PM	6:00 PM	1103	380

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	4:45 PM	5:45 PM	1242	409
2nd Highest Hour	3:45 PM	4:45 PM	1541	376
3rd Highest Hour	2:45 PM	3:45 PM	1499	369
4th Highest Hour	1:45 PM	2:45 PM	1133	367



Are the requirements for Warrant 2 met?: **Yes**

OMUTCD WARRANT 3, PEAK HOUR

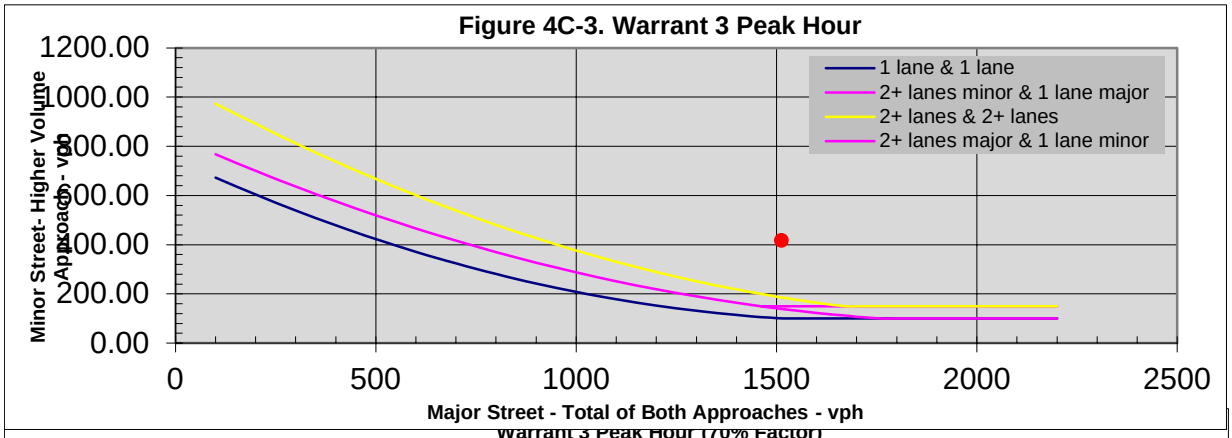
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	4:15 PM
Major Street:	2 or More Lanes	Peak Hour End Time	5:15 PM
Minor Street:	1 Lane		

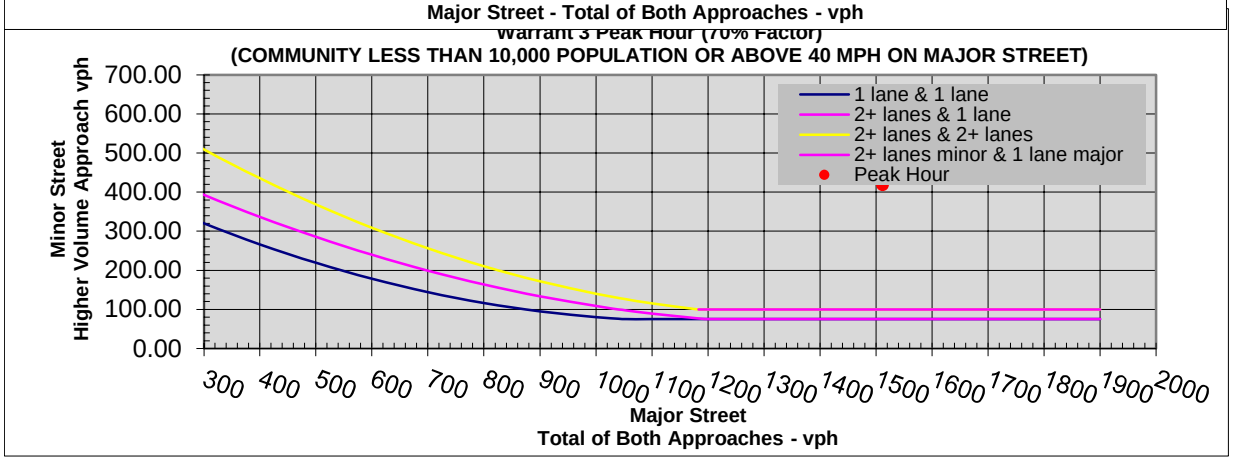
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Are the requirements for Warrant 3 met?: **Yes**





Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	1082	292	1374	1662
6:15 AM	1109	308	1417	1705
6:30 AM	1172	338	1510	1787
6:45 AM	1255	332	1587	1859
7:00 AM	1200	329	1529	1800
7:15 AM	1166	334	1500	1783
7:30 AM	1071	288	1359	1639
7:45 AM	959	296	1255	1513
8:00 AM	893	271	1164	1389
8:15 AM	879	231	1110	1326
8:30 AM	850	226	1076	1287
8:45 AM	837	214	1051	1245
9:00 AM	799	237	1036	1232
9:15 AM	769	243	1012	1216
9:30 AM	767	225	992	1200
9:45 AM	751	238	989	1223
10:00 AM	778	235	1013	1230
10:15 AM	812	261	1073	1287
10:30 AM	865	282	1147	1394
10:45 AM	916	271	1187	1446
11:00 AM	944	287	1231	1510
11:15 AM	1002	308	1310	1574
11:30 AM	1013	327	1340	1593
11:45 AM	999	348	1347	1592
12:00 PM	953	358	1311	1557
12:15 PM	901	345	1246	1468
12:30 PM	898	321	1219	1480
12:45 PM	926	285	1211	1480
1:00 PM	965	285	1250	1516
1:15 PM	977	315	1292	1588
1:30 PM	1004	319	1323	1629
1:45 PM	1133	367	1500	1818
2:00 PM	1214	371	1585	1926
2:15 PM	1307	383	1690	2048
2:30 PM	1402	379	1781	2142
2:45 PM	1499	369	1868	2228
3:00 PM	1540	373	1913	2276
3:15 PM	1576	365	1941	2274
3:30 PM	1542	372	1914	2245
3:45 PM	1541	376	1917	2265
4:00 PM	1553	382	1935	2283
4:15 PM	1512	419	1931	2274
4:30 PM	1452	415	1867	2217
4:45 PM	1242	409	1651	1989
5:00 PM	1103	380	1483	1799
5:15 PM	976	323	1299	1605
5:30 PM	900	309	1209	1491
5:45 PM	810	272	1082	1348
6:00 PM	707	263	970	1232
6:15 PM	633	255	888	1135
6:30 PM	581	241	822	1052
6:45 PM	527	241	768	988
7:00 PM	506	225	731	929
7:15 PM	506	227	733	928
7:30 PM	485	225	710	895
7:45 PM	493	212	705	902
8:00 PM	497	205	702	899

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1512	419	139	75

APPENDIX

I. Alum Creek Drive Crash Data Table

Document Nu	Year	Local Report Number	Severity	Crash Type	ODOT Crash Location	NLF ID	County True Log	State True Log	On Road	At Road	ODOT Latitude	ODOT Longitude	ODOT FIPS Name	Date	Month	Hour	Day in Week	Weather Conditior	Road Condition	Light Condition
201740072 77	2017	1769879	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	4/14/2017	4	9	(6) Friday	Cloudy	Dry	Daylight
20174009536	2017	1792042	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	0.929	0.929	CR122	ROHR RD	39.843318	-82.935592	HAMILTON TOWNSHIP	5/15/2017	5	7	(2) Monday	Clear	Dry	Daylight
20174010998	2017	17111446	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	6/7/2017	6	15	(4) Wednesday	Cloudy	Dry	Daylight
20174013690	2017	17127169	(5) PDO/No Injury	Backing	Four-Way Intersection	CFRACR00122**C	1.584	1.584	CR122	TOY RD	39.852408	-82.938624	HAMILTON TOWNSHIP	6/28/2017	6	11	(4) Wednesday	Clear	Dry	Daylight
20174014782	2017	17154095	(3) Minor Injury Susp	Left Turn	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	8/3/2017	8	7	(5) Thursday	Clear	Dry	Daylight
20174015346	2017	17190296	(5) PDO/No Injury	Fixed Object	Not An Intersection	CFRACR00122**C	1.676	1.676	CR122	TOY RD	39.853745	-82.938556	HAMILTON TOWNSHIP	9/22/2017	9	7	(6) Friday	Clear	Dry	Dawn/Dusk
20174015768	2017	17159013	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	8/10/2017	8	4	(5) Thursday	Clear	Dry	Dark - Lighted Roadway
20174020423	2017	17239809	(3) Minor Injury Susp	Rear End	Not An Intersection	CFRACR00122**C	1.676	1.676	CR122	CREEKSIDE PK	39.853745	-82.938556	HAMILTON TOWNSHIP	12/2/2017	12	6	(7) Saturday	Cloudy	Dry	Dawn/Dusk
20174022989	2017	17225340	(5) PDO/No Injury	Other Non-Collision	Not An Intersection	CFRACR00122**C	1.574	1.574	CR122	TOY RD	39.852264	-82.938635	HAMILTON TOWNSHIP	11/10/2017	11	9	(6) Friday	Clear	Dry	Daylight
20174023229	2017	17233427	(5) PDO/No Injury	Right Turn	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	11/22/2017	11	6	(4) Wednesday	Clear	Dry	Dawn/Dusk
20174027270	2017	17238829	(3) Minor Injury Susp	Rear End	Four-Way Intersection	CFRACR00122**C	1.584	1.584	CR122	CREEKSIDE PK	39.852408	-82.938624	HAMILTON TOWNSHIP	11/29/2017	11	23	(4) Wednesday	Clear	Dry	Dark - Roadway Not Light
20174027332	2017	17247253	(5) PDO/No Injury	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	1.594	1.594	CR122	TOY RD	39.852556	-82.938617	HAMILTON TOWNSHIP	12/12/2017	12	23	(3) Tuesday	Snow	Snow	Dark - Roadway Not Light
20176007803	2017	17000029	(5) PDO/No Injury	Other Non-Collision	Not An Intersection	CFRACR00122**C	2.347	2.347	CR122	CR121	39.863317	-82.937214	OBETZ	1/14/2017	1	6	(7) Saturday	Unknown	Other / Unknown	Dark - Roadway Not Light
20176034004	2017	17M000355	(4) Injury Possible	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	2/28/2017	2	18	(3) Tuesday	Rain	Wet	Dark - Lighted Roadway
20176061321	2017	17000184	(5) PDO/No Injury	Fixed Object	Not An Intersection	CFRACR00122**C	2.347	2.347	CR122	CR121	39.863317	-82.937214	OBETZ	4/28/2017	4	8	(6) Friday	Unknown	Other / Unknown	Other / Unknown
20176098255	2017	17000285	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.585	2.585	CR122	GROVEPORT F	39.866571	-82.935797	OBETZ	6/29/2017	6	15	(5) Thursday	Clear	Dry	Daylight
20176098432	2017	17000297	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	1.82	1.82	CR122	E BIXBY RD	39.855826	-82.93845	HAMILTON TOWNSHIP	7/5/2017	7	16	(4) Wednesday	Clear	Dry	Daylight
20176105225	2017	17M001265	(4) Injury Possible	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.04	0.04	CR122	LONDON GRO\	39.830638	-82.933861	MADISON TOWNSHIP	7/12/2017	7	6	(4) Wednesday	Cloudy	Dry	Daylight
20176135280	2017	17000347	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	2.347	2.347	CR122	RATHMELL RD	39.863317	-82.937214	OBETZ	7/27/2017	7	12	(5) Thursday	Cloudy	Dry	Daylight
20176135299	2017	17000387	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.87	1.87	CR122	BIXBY RD	39.856555	-82.938411	OBETZ	8/12/2017	8	6	(7) Saturday	Clear	Wet	Dawn/Dusk
20176135300	2017	17000402	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	2.377	2.377	CR122	RATHMELL RD	39.863724	-82.937037	OBETZ	8/21/2017	8	19	(2) Monday	Clear	Dry	Daylight
20176135301	2017	17000417	(4) Injury Possible	Angle	T-Intersection	CFRACR00122**C	2.347	2.347	CR122	CR129	39.863317	-82.937214	OBETZ	8/29/2017	8	9	(3) Tuesday	Cloudy	Dry	Dark - Lighted Roadway
20176142020	2017	17M001721	(5) PDO/No Injury	Right Turn	T-Intersection	TFRATR00662**C	0.081	0.081	TR662	ALUM CREEK I	39.833018	-82.934003	MADISON TOWNSHIP	9/19/2017	9	7	(3) Tuesday	Cloudy	Dry	Daylight
20176142266	2017	17M001724	(5) PDO/No Injury	Right Turn	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	9/20/2017	9	12	(4) Wednesday	Clear	Dry	Daylight
20176207706	2017	17000651	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	2.337	2.337	CR122	RATHMELL RD	39.863182	-82.937287	OBETZ	12/12/2017	12	1	(3) Tuesday	Clear	Dry	Dark - Unknown Roadway
20176207859	2017	17000677	(4) Injury Possible	Fixed Object	Four-Way Intersection	CFRACR00122**C	1.82	1.82	CR122	BIXBY RD	39.855826	-82.93845	HAMILTON TOWNSHIP	12/28/2017	12	1	(5) Thursday	Clear	Dry	Dark - Roadway Not Light
20176209322	2017	17M002334	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	12/27/2017	12	16	(4) Wednesday	Cloudy	Dry	Daylight
20177000205	2017	1713501	(4) Injury Possible	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.47	0.47	CR122	ROHR RD	39.836894	-82.933498	MADISON TOWNSHIP	1/21/2017	1	16	(7) Saturday	Rain	Wet	Daylight
20177007524	2017	1733621	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	1.82	1.82	CR122	BIXBY RD	39.855826	-82.93845	HAMILTON TOWNSHIP	2/20/2017	2	10	(2) Monday	Fog, Smog, Smoke	Wet	Daylight
20177007550	2017	1731062	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.717	1.717	CR122	TOY RD	39.854339	-82.938526	HAMILTON TOWNSHIP	2/16/2017	2	16	(5) Thursday	Clear	Dry	Daylight
20177007727	2017	1725981	(3) Minor Injury Susp	Rear End	Not An Intersection	CFRACR00122**C	1.534	1.534	CR122	TOY RD	39.851691	-82.938588	HAMILTON TOWNSHIP	2/9/2017	2	6	(5) Thursday	Clear	Wet	Dark - Roadway Not Light
20177011477	2017	1739610	(3) Minor Injury Susp	Angle	Four-Way Intersection	CFRACR00122**C	1.584	1.584	CR122	TOY RD	39.852408	-82.938624	HAMILTON TOWNSHIP	3/1/2017	3	5	(4) Wednesday	Rain	Wet	Dark - Roadway Not Light
20177011518	2017	1747665	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.82	1.82	CR122	BIXBY RD	39.855826	-82.93845	HAMILTON TOWNSHIP	3/13/2017	3	9	(2) Monday	Clear	Dry	Daylight
20177016546	2017	1754289	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.038	1.038	CR122	ROHR RD	39.844758	-82.936448	HAMILTON TOWNSHIP	3/23/2017	3	7	(5) Thursday	Clear	Dry	Dawn/Dusk
20177016549	2017	1755155	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00122**C	1.584	1.584	CR122	TOY RD	39.852408	-82.938624	HAMILTON TOWNSHIP	3/24/2017	3	13	(6) Friday	Clear	Dry	Daylight
20177016580	2017	1749677	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00235**C	1.95	1.95	CR235	ROHR RD	39.843813	-82.935719	GROVEPORT	3/16/2017	3	12	(5) Thursday	Clear	Dry	Daylight
20177025866	2017	1798805	(2) Serious Injury Su	Angle	T-Intersection	CFRACR00122**C	1.82	1.82	CR122	BIXBY RD	39.855826	-82.93845	HAMILTON TOWNSHIP	5/22/2017	5	0	(2) Monday	Rain	Wet	Dark - Roadway Not Light
20177027052	2017	17108831	(2) Serious Injury Su	Pedestrian	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPREGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	6/3/2017	6	23	(7) Saturday	Clear	Dry	Dark - Roadway Not Light
20177028987	2017	17115211	(4) Injury Possible	Rear End	Four-Way Intersection	CFRACR00122**C	1.584	1.584	CR122	TOY RD	39.852408	-82.938624	HAMILTON TOWNSHIP	6/12/2017	6	15	(2) Monday	Clear	Dry	Daylight
20177028990	2017	17117233	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	1.82	1.82	CR122	BIXBY RD	39.855826	-82.93845	HAMILTON TOWNSHIP	6/15/2017	6	7	(5) Thursday	Clear	Dry	Daylight
20177029001	2017	17117509	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.009	1.009	CR122	ROHR RD	39.844368	-82.93621	HAMILTON TOWNSHIP	6/15/2017	6	15	(5) Thursday	Clear	Dry	Daylight
20177036193	2017	17148373	(3) Minor Injury Susp	Right Turn	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	7/26/2017	7	11	(4) Wednesday	Clear	Dry	Daylight
20177045053	2017	17183650	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	1.82	1.82	CR122	BIXBY RD	39.855826	-82.93845	HAMILTON TOWNSHIP	9/13/2017	9	15	(4) Wednesday	Cloudy	Dry	Daylight
20177047721	2017	17198816	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	10/3/2017	10	15	(3) Tuesday	Clear	Dry	Daylight
20177049408	2017	17203537	(3) Minor Injury Susp	Left Turn	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	10/10/2017	10	6	(3) Tuesday	Fog, Smog, Smoke	Wet	Dark - Roadway Not Light
20177049433	2017	17205865	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	1.82	1.82	CR122	BIXBY RD	39.855826	-82.93845	HAMILTON TOWNSHIP	10/13/2017	10	9	(6) Friday	Clear	Dry	Daylight
20177049440	2017	17205101	(3) Minor Injury Susp	Head On	Not An Intersection	CFRACR00122**C	1.147	1.147	CR122	ROHR RD	39.846211	-82.937256	HAMILTON TOWNSHIP	10/12/2017	10	7	(5) Thursday	Cloudy	Wet	Daylight
20177050421	2017	17207884	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	0.929	0.929	CR122	ROHR RD	39.843318	-82.935592	HAMILTON TOWNSHIP	10/16/2017	10	7	(2) Monday	Clear	Dry	Daylight
20177050655	2017	17213519	(5) PDO/No Injury	Left Turn	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	10/24/2017	10	5	(3) Tuesday	Cloudy	Dry	Dark - Roadway Not Light
20177052459	2017	17219672	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.574	1.574	CR122	TOY RD	39.852264	-82.938635	HAMILTON TOWNSHIP	11/2/2017	11	7	(5) Thursday	Rain	Wet	Dark - Lighted Roadway
20177054125	2017	17233405	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	11/22/2017	11	6	(4) Wednesday	Clear	Dry	Dawn/Dusk
20177054131	2017	17219647	(5) PDO/No Injury	Right Turn	Four-Way Intersection	TFRATR00236**C	0.97	0.97	TR236	ALUM CREEK I	39.852408	-82.938624	HAMILTON TOWNSHIP	11/2/2017	11	5	(5) Thursday	Cloudy	Wet	Dawn/Dusk
20177057129	2017	17230651	(4) Injury Possible	Head On	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	11/18/2017	11	6	(7) Saturday	Cloudy	Wet	Dawn/Dusk
20177058846	2017	17237933	(3) Minor Injury Susp	Fixed Object	Not An Intersection	CFRACR00122**C	0.77	0.77	CR122	ROHR RD	39.841183	-82.934455	HAMILTON TOWNSHIP	11/29/2017	11	12	(4) Wednesday	Clear	Dry	Daylight
20183220244	2018	18M002240	(3) Minor Injury Susp	Left Turn	Not An Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	12/17/2018	12	7	(2) Monday	Clear	Dry	Dawn/Dusk
20184000193	2018	18862	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	1/2/2018	1	11	(3) Tuesday	Clear	Wet	Daylight
20184002524	2018	1834507	(3) Minor Injury Susp	Angle	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	2/22/2018	2	6	(5) Thursday	Rain	Wet	Dawn/Dusk
20184005102	2018	1868434	(1) Fatal	Left Turn	T-Intersection	CFRACR00122**C	2.34	2.34	CR122	RATHMELL RD	39.863223	-82.937265	OBETZ	4/13/2018	4	15	(6) Friday	Clear	Dry	Daylight
20184009597	2018	1894923	(3) Minor Injury Susp	Fixed Object	Four-Way Intersection	TFRATR00236**C	0.976	0.976	TR236	ALUM CREEK I	39.852401	-82.938505	HAMILTON TOWNSHIP	5/18/2018	5	22	(6) Friday	Cloudy	Wet	Dark - Lighted Roadway
20184017562	2018	18192281	(5) PDO/No Injury	Fixed Object	Not An Intersection	CFRACR00122**C	1.849	1.849	CR122	BIXBY RD	39.856244	-82.938427	HAMILTON TOWNSHIP	10/3/2018	10	7	(4) Wednesday	Cloudy	Dry	Dawn/Dusk
20184019053	2018	18211096	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00122**C	1.835	1.835	CR122	ALUM CREEK I	39.856047	-82.938438	HAMILTON TOWNSHIP	10/31/2018	10	0	(4) Wednesday	Clear	Dry	Dark - Roadway Not Light
20184021139	2018	18236372	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.835	1.835	CR122	BIXBY RD	39.856047	-82.938438	HAMILTON TOWNSHIP	12/7/2018	12	8	(6) Friday	Clear	Dry	Daylight
20186008946	2018	18000002	(3) Minor Injury Susp	Rear End	Not An Intersection	CFRACR00122**C	2.347	2.347	CR122	RATHMELL RD	39.863323	-82.937212	OBETZ	1/2/2018	1	6	(3) Tuesday	Cloudy	Wet	Dark - Roadway Not Light
20186008948	2018	18000003	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.055	2.055	CR122	CR129	39.859219	-82.938266	OBETZ	1/2/2018	1	7	(3) Tuesday	Cloudy	Dry	Daylight
20186008949	2018	18000012	(5) PDO/No Injury	Sideswipe - Passing	T-Intersection	CFRACR00122**C	2.349	2.349	CR122	RATHMELL RD	39.863343	-82.937203	OBETZ	1/5/2018	1	6	(6) Friday	Clear	Dry	Dark - Roadway Not Light
20186008950	2018	18000011	(3) Minor Injury Susp	Overturning	Not An Intersection	CFRACR00122**C	2.347	2.347	CR122	RATHMELL RD	39.863323	-82.937212	OBETZ	1/4/2018	1	11	(5) Thursday	Clear	Dry	Daylight
20186010543	2018	18000009	(5) PDO/No Injury	Angle	Not An Intersection	CFRACR00122**C	2.369	2.369	CR122	RATHMELL RD	39.86362	-82.937082	OBETZ	1/4/2018	1	1	(5) Thursday	Clear	Dry	Dark - Roadway Not Light
20186032866	2018	18000084	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	2.347	2.347	CR122	RATHMELL RD	39.863323	-82.937212	OBETZ	2/20/2018	2	6	(3) Tuesday	Cloudy	Wet	Dawn/Dusk
20186046814	2018	18000108	(2) Serious Injury Su	Angle	T-Intersection	CFRACR00122**C	2.347	2.347	CR122	W RATHMELL	39.863314	-82.937216	OBETZ	3/2/2018	3	14	(6) Friday	Clear	Dry	Daylight
20186046816	2018	18000137	(4) Injury Possible	Fixed Object	Not An Intersection	CFRACR00122**C	2.345	2.345	CR122	CR129	39.863292	-82.937228	OBETZ	3/20/2018	3	11	(3) Tuesday	Cloudy	Dry	Daylight
20186049075	2018	18M000073	(3) Minor Injury Susp	Angle	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	1/16/2018	1	6	(3) Tuesday	Cloudy	Wet	Dark - Lighted Roadway
20186060407	2018	18M000011	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	0	0	CR122	LONDON GRO\	39.830058	-82.933904	MADISON TOWNSHIP	1/3/2018	1	11	(4) Wednesday	Clear	Dry	Daylight
20186066891	2018	18M000662	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	4/23/2018	4	8	(2) Monday	Cloudy	Snow	Daylight
20186072257	2018	18M000492	(5) PDO/No Injury	Left Turn	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	3/27/2018	3	15	(3) Tuesday	Cloudy	Wet	Daylight
20186091824	2018	18M001026	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.399	0.399	CR122	LONDON GRO\	39.835862	-82.933477	MADISON TOWNSHIP	6/8/2018	6	20	(6) Friday	Rain	Wet	Dawn/Dusk
20186109661	2018	18M001248	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	7/12/2018	7	0	(5) Thursday	Clear	Dry	Dark - Lighted Roadway
20186120981	2018	18000369	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	2.347	2.347	CR122	RATHMELL RD	39.863323	-82.937212	OBETZ	7/15/2018	7	9	(1) Sunday	Clear	Dry	Daylight
20186178726	2018	18000521	(4) Injury Possible	Angle	T-Intersection	CFRACR00122**C	2.347	2.347	CR122	RATHMELL RD	39.863323	-82.937212	OBETZ	9/28/2018	9	10	(6) Friday	Clear	Dry	Daylight
20186178732	2018	18000576	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.929	1.929	CR122	CR229	39.8574	-82.938365	OBETZ	10/31/2018	10	11	(4) Wednesday	Rain	Wet	Daylight
20186180914	2018	18M001898	(5) PDO/No Injury	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL RD	39.837362	-82.933499	MADISON TOWNSHIP	10/23/2018	10	6	(3) Tuesday	Clear	Dry	Dark - Lighted Roadway
20186180918	2018	18M001937	(4) Injury Possible	Fixed Object	Not An Intersection	CFRACR00122**C	0.385	0.385	CR122	SPIEGEL DR	39.835658	-82.93349	MADISON TOWNSHIP	10/28/2018	10	2	(1) Sunday	Rain	Wet	Dark - Lighted Roadway
20186205754	2018	18M002167	(5) PDO/No Injury	Fixed Object	Not An Intersection	CFRACR00122**C	0.019	0.019	CR122	LONDON GRO\	39.830334	-82.933883	MADISON TOWNSHIP	12/3/2018	12	15	(2) Monday	Rain	Wet	Daylight
20186209652	2018	18M002133	(3) Minor Injury Susp	Rear End	Not An Intersection	CFRACR00122**C	0.31	0.31	CR122	SPIEGEL DR	39.834567	-82.933567	MADISON TOWNSHIP	11/27/2018	11	0	(3) Tuesday	Snow	Wet	Dark - Lighted Roadway
20186218487	2018	18M002266	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL RD	39.837362	-82.933499	MADISON TOWNSHIP	12/20/2018	12	13	(5) Thursday	Cloudy	Dry	Daylight
20187002267	2018	1819256	(3) Minor Injury Susp	Rear End	Not An Intersection	CFRACR00122**C	1.585	1.585	CR122	TOY RD	39.852426	-82.938624	HAMILTON TOWNSHIP	1/30/2018	1	6	(3) Tuesday	Cloudy	Wet	Dawn/Dusk
20187005339	2018	1829517	(4) Injury Possible	Head On	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	2/14/2018	2	15	(4) Wednesday	Rain	Wet	Daylight
20187005357	2018	1830591	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.6	1.6	CR122	TOY RD	39.852644	-82.938612	HAMILTON TOWNSHIP	2/16/2018	2	6	(6) Friday	Rain	Wet	Daylight
20187006637	2018	1832768	(4) Injury Possible	Rear End	Four-Way Intersection	CFRACR00122**C	1.585	1.585	CR122	TOY RD	39.852426	-82.938624	HAMILTON TOWNSHIP	2/19/2018	2	17	(2) Monday	Clear	Dry	Daylight
20187008756	2018	1843305	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00122**C	1.779	1.779	CR122	BIRBY RD	39.855233	-82.93848	HAMILTON TOWNSHIP	3/6/2018	3	15	(3) Tuesday	Clear	Dry	Daylight
20187010410	2018	1849342	(5) PDO/No Injury	Overturning	Not An Intersection	CFRACR00122**C	1.606	1.606	CR122	TOY RD	39.852737	-82.938608	HAMILTON TOWNSHIP	3/15/2018	3	15	(5) Thursday	Clear	Dry	Daylight
20187015888	2018	1867467	(4) Injury Possible	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.687	1.687	CR122	CREEKSIDE PK	39.8539	-82.938548	HAMILTON TOWNSHIP	4/12/2018	4	6	(5) Thursday	Clear	Dry	Dark - Lighted Roadway
20187018258	2018	1878666	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00122**C	1.837	1.837	CR122	BIXBY RD	39.856075	-82.938437	HAMILTON TOWNSHIP	4/28/2018	4	12	(7) Saturday	Cloudy	Dry	Daylight
20187018986	2018	1866783	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	1.362	1.362	CR122	GLOBAL DR	39.849209	-82.938325	HAMILTON TOWNSHIP	4/11/2018	4	6	(4) Wednesday	Clear	Dry	Daylight
20187018988	2018	1867458	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.585	1.585	CR122	CREEKSIDE PK	39.852426	-82.938624	HAMILTON TOWNSHIP	4/12/2018	4	5	(5) Thursday	Clear	Dry	Dark - Lighted Roadway
20187025173	2018	18113592	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.619	1.619	CR122	CREEKSIDE PK	39.852917	-82.938598	HAMILTON TOWNSHIP	6/13/2018	6	21	(4) Wednesday	Cloudy	Dry	Dark - Lighted Roadway
20187027293	2018	18123108	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.601	1.601	CR122	CREEKSIDE PK	39.852656	-82.938612	HAMILTON TOWNSHIP	6/27/2018	6	5	(4) Wednesday	Cloudy	Wet	Dawn/Dusk
20187030920	2018	18138381	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.748	1.748	CR122	BIXBY RD	39.854788	-82.938503	HAMILTON TOWNSHIP	7/18/2018	7	6	(4) Wednesday	Clear	Dry	Daylight
20187035573	2018	18166307	(4) Injury Possible	Head On	Four-Way Intersection	CFRACR00122**C	1.582	1.582	CR122	TOY RD	39.852379	-82.938627	HAMILTON TOWNSHIP	8/27/2018	8	5	(2) Monday	Clear	Dry	Dark - Lighted Roadway

20187040044	2018	18181368	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.358	1.358	CR122	GLOBAL CT	39.849148	-82.938319	HAMILTON TOWNSHIP	9/17/2018	9	17	(2) Monday	Cloudy	Wet	Daylight
20187046016	2018	18209819	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	10/29/2018	10	9	(2) Monday	Cloudy	Dry	Daylight
20187046018	2018	18209237	(4) Injury Possible	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.747	1.747	CR122	BIXBY RD	39.854779	-82.938503	HAMILTON TOWNSHIP	10/28/2018	10	12	(1) Sunday	Cloudy	Dry	Daylight
20187052721	2018	18248778	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843845	-82.935904	HAMILTON TOWNSHIP	12/26/2018	12	4	(4) Wednesday	Fog, Smog, Smoke	Dry	Dark - Roadway Not Light
20187052723	2018	18248785	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843845	-82.935904	HAMILTON TOWNSHIP	12/26/2018	12	4	(4) Wednesday	Fog, Smog, Smoke	Dry	Dark - Roadway Not Light
20187053074	2018	18232903	(5) PDO/No Injury	Right Turn	Four-Way Intersection	TFRATR00236**C	0.97	0.97	TR236	ALUM CREEK I	39.852408	-82.938624	HAMILTON TOWNSHIP	12/2/2018	12	6	(1) Sunday	Rain	Wet	Dark - Lighted Roadway
20187053114	2018	18234220	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.679	1.679	CR122	TOY RD	39.85379	-82.938554	HAMILTON TOWNSHIP	12/4/2018	12	7	(3) Tuesday	Clear	Dry	Dark - Lighted Roadway
20187054462	2018	18243661	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.585	1.585	CR122	CREEK SIDE P	39.852426	-82.938624	HAMILTON TOWNSHIP	12/18/2018	12	7	(3) Tuesday	Clear	Dry	Daylight
20187054467	2018	18241216	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	1.585	1.585	CR122	CREEKSIDE PI	39.852426	-82.938624	HAMILTON TOWNSHIP	12/14/2018	12	11	(6) Friday	Clear	Dry	Daylight
20193037847	2019	19M-000280	(4) Injury Possible	Rear End	Four-Way Intersection	CFRACR00122**C	0.5	0.5	CR122	SPIEGEL DR	39.837331	-82.933499	MADISON TOWNSHIP	2/8/2019	2	15	(6) Friday	Clear	Dry	Daylight
20193081116	2019	19M-001021	(5) PDO/No Injury	Backing	Not An Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	5/2/2019	5	13	(5) Thursday	Clear	Dry	Daylight
20193115100	2019	19M-001485	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL DR	39.837362	-82.933499	MADISON TOWNSHIP	6/11/2019	6	15	(3) Tuesday	Clear	Dry	Daylight
20193129907	2019	19M-000952	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.209	0.209	CR122	ALUM CREEK I	39.833104	-82.933679	MADISON TOWNSHIP	4/25/2019	4	16	(5) Thursday	Cloudy	Wet	Daylight
20193143960	2019	19-000288	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.252	2.252	CR122	CR129	39.86201	-82.937761	OBETZ	7/3/2019	7	6	(4) Wednesday	Cloudy	Dry	Dawn/Dusk
20193143966	2019	19-000203	(5) PDO/No Injury	Fixed Object	T-Intersection	CFRACR00122**C	2.338	2.338	CR122	CR121	39.863192	-82.937281	OBETZ	4/26/2019	4	16	(6) Friday	Cloudy	Wet	Daylight
20193172115	2019	19-000355	(4) Injury Possible	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.833	1.833	CR122	BIXBY RD	39.856025	-82.938439	HAMILTON TOWNSHIP	8/14/2019	8	15	(4) Wednesday	Cloudy	Dry	Daylight
20193207953	2019	19-000419	(4) Injury Possible	Fixed Object	Not An Intersection	CFRACR00122**C	2.352	2.352	CR122	RATHMELL RD	39.863382	-82.937186	OBETZ	9/17/2019	9	15	(3) Tuesday	Clear	Dry	Daylight
20193207966	2019	19-000458	(5) PDO/No Injury	Rear End	T-Intersection	CFRACR00122**C	2.351	2.351	CR122	CR121	39.863368	-82.937192	OBETZ	10/9/2019	10	6	(4) Wednesday	Clear	Dry	Dark - Roadway Not Light
20193221287	2019	19-000392	(4) Injury Possible	Fixed Object	Not An Intersection	CFRACR00122**C	2.186	2.186	CR122	BIXBY RD	39.861091	-82.938037	OBETZ	9/4/2019	9	22	(4) Wednesday	Clear	Dry	Dark - Lighted Roadway
20193222903	2019	19-000426	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00229**C	1.449	1.449	CR229	BIXBY RD	39.855821	-82.938525	HAMILTON TOWNSHIP	9/20/2019	9	17	(6) Friday	Clear	Dry	Daylight
20193258647	2019	19M-002667	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	0.645	0.645	CR122	SPIEGAL DR	39.839424	-82.933894	MADISON TOWNSHIP	11/16/2019	11	6	(7) Saturday	Clear	Dry	Dark - Lighted Roadway
20193258754	2019	19M-002648	(4) Injury Possible	Angle	Not An Intersection	CFRACR00122**C	0.501	0.501	CR122	SPEIGEL DR	39.837343	-82.933499	MADISON TOWNSHIP	11/12/2019	11	12	(3) Tuesday	Clear	Dry	Daylight
20193273192	2019	19-000572	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	2.346	2.346	CR122	RATHMELL RD	39.863299	-82.937224	OBETZ	12/13/2019	12	10	(6) Friday	Cloudy	Dry	Daylight
20193279750	2019	19M-002765	(4) Injury Possible	Angle	Not An Intersection	CFRACR00122**C	0.495	0.495	CR122	SPIEGEL DR	39.837258	-82.933498	MADISON TOWNSHIP	12/4/2019	12	12	(4) Wednesday	Clear	Dry	Daylight
20193279756	2019	19M-002926	(4) Injury Possible	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.72	0.72	CR122	ROHR RD	39.840487	-82.934206	HAMILTON TOWNSHIP	12/11/2019	12	18	(4) Wednesday	Cloudy	Dry	Dark - Lighted Roadway
20193279805	2019	19M-002872	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	0.756	0.756	CR122	SPEIGEL DR	39.840995	-82.934388	HAMILTON TOWNSHIP	12/9/2019	12	6	(2) Monday	Rain	Wet	Dark - Roadway Not Light
20193282178	2019	19-000554	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.344	2.344	CR122	RATHMELL RD	39.863274	-82.937237	OBETZ	12/5/2019	12	9	(5) Thursday	Clear	Dry	Daylight
20193284453	2019	19M-003091	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	0.485	0.485	CR122	SPIEGEL DR	39.837119	-82.933497	MADISON TOWNSHIP	12/20/2019	12	7	(6) Friday	Clear	Dry	Dawn/Dusk
20193290811	2019	19-000607	(3) Minor Injury Susp	Rear End	Not An Intersection	CFRACR00122**C	2.358	2.358	CR122	RATHMELL RD	39.86347	-82.937148	OBETZ	12/27/2019	12	10	(6) Friday	Cloudy	Dry	Daylight
20194058380	2019	191772	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.632	1.632	CR122	CREEKSIDE PI	39.853099	-82.938589	HAMILTON TOWNSHIP	1/3/2019	1	16	(5) Thursday	Clear	Dry	Daylight
20194061404	2019	194980	(5) PDO/No Injury	Sideswipe - Passing	5 Or More Point Intersectio	CFRACR00122**C	1.822	1.822	CR122	BIXBY RD	39.855857	-82.938448	HAMILTON TOWNSHIP	1/8/2019	1	14	(3) Tuesday	Cloudy	Wet	Daylight
20194062106	2019	192157	(3) Minor Injury Susp	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	1/4/2019	1	6	(6) Friday	Clear	Dry	Dark - Lighted Roadway
20194062300	2019	19-000004	(5) PDO/No Injury	Fixed Object	T-Intersection	CFRACR00122**C	2.341	2.341	CR122	CR129	39.863236	-82.937258	OBETZ	1/2/2019	1	12	(4) Wednesday	Cloudy	Dry	Daylight
20194070942	2019	1914833	(3) Minor Injury Susp	Fixed Object	Four-Way Intersection	CFRACR00235**C	1.94	1.94	CR235	ALUM CREEK I	39.843843	-82.935903	HAMILTON TOWNSHIP	1/23/2019	1	17	(4) Wednesday	Cloudy	Wet	Dawn/Dusk
20194071405	2019	1942249	(5) PDO/No Injury	Right Turn	Four-Way Intersection	CFRACR00122**C	0.988	0.988	CR122	ROHR RD	39.844093	-82.936049	HAMILTON TOWNSHIP	3/6/2019	3	16	(4) Wednesday	Clear	Dry	Daylight
20194097002	2019	19-000130	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	2.551	2.551	CR122	GROVEPORT R	39.866101	-82.936001	OBETZ	4/3/2019	4	0	(4) Wednesday	Clear	Dry	Dark - Roadway Not Light
20194107105	2019	1983842	(5) PDO/No Injury	Rear End	5 Or More Point Intersectio	CFRACR00122**C	1.585	1.585	CR122	TOY RD	39.852428	-82.938623	HAMILTON TOWNSHIP	5/7/2019	5	17	(3) Tuesday	Clear	Dry	Daylight
20194108827	2019	1982021	(3) Minor Injury Susp	Pedalcycles	Four-Way Intersection	CFRACR00122**C	0.501	0.501	CR122	SPEIGEL RD	39.837344	-82.933499	MADISON TOWNSHIP	5/5/2019	5	6	(1) Sunday	Clear	Dry	Dawn/Dusk
20194111760	2019	19-000117	(4) Injury Possible	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	2.381	2.381	CR122	RATHMELL RD	39.863779	-82.937012	OBETZ	3/25/2019	3	14	(2) Monday	Clear	Wet	Daylight
20194145542	2019	19113199	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.646	1.646	CR122	CREEKSIDE PI	39.853308	-82.938579	HAMILTON TOWNSHIP	6/13/2019	6	6	(5) Thursday	Clear	Dry	Dawn/Dusk
20194152277	2019	19116727	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	0.971	0.971	CR122	ROHR RD	39.84387	-82.935919	HAMILTON TOWNSHIP	6/18/2019	6	7	(3) Tuesday	Cloudy	Wet	Daylight
20194159895	2019	19125413	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	1.61	1.61	CR122	TOY RD	39.852792	-82.938605	HAMILTON TOWNSHIP	6/29/2019	6	0	(7) Saturday	Clear	Dry	Dark - Lighted Roadway
20194170687	2019	1979260	(5) PDO/No Injury	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	1.586	1.586	CR122	CREEKSIDE PI	39.852443	-82.938623	HAMILTON TOWNSHIP	5/1/2019	5	14	(4) Wednesday	Clear	Dry	Daylight
20194171389	2019	19146667	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.344	1.344	CR122	GLOBAL CT	39.848943	-82.938285	HAMILTON TOWNSHIP	7/25/2019	7	16	(5) Thursday	Clear	Dry	Daylight
20194171796	2019	19146652	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	1.823	1.823	CR122	BIXBY RD	39.855867	-82.938448	HAMILTON TOWNSHIP	7/25/2019	7	16	(5) Thursday	Clear	Dry	Daylight
20194195645	2019	19161335	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.95	0.95	CR122	ROHR RD	39.843594	-82.935756	HAMILTON TOWNSHIP	8/13/2019	8	12	(3) Tuesday	Clear	Dry	Daylight
20194223816	2019	19139766	(5) PDO/No Injury	Fixed Object	Not An Intersection	CFRACR00122**C	1.822	1.822	CR122	BIXBY RD	39.855861	-82.938448	HAMILTON TOWNSHIP	7/16/2019	7	22	(3) Tuesday	Cloudy	Wet	Dark - Roadway Not Light
20194231234	2019	19183190	(2) Serious Injury Su	Head On	Not An Intersection	CFRACR00122**C	1.634	1.634	CR122	CREEKSIDE PI	39.853136	-82.938587	HAMILTON TOWNSHIP	9/11/2019	9	3	(4) Wednesday	Clear	Dry	Dark - Lighted Roadway
20194239433	2019	19199167	(5) PDO/No Injury	Right Turn	Four-Way Intersection	CFRACR00122**C	0.983	0.983	CR122	ROHR RD	39.844027	-82.936011	HAMILTON TOWNSHIP	10/2/2019	10	2	(4) Wednesday	Clear	Dry	Dark - Lighted Roadway
20194253276	2019	19209206	(5) PDO/No Injury	Fixed Object	Four-Way Intersection	CFRACR00122**C	0.944	0.944	CR122	ROHR RD	39.843516	-82.935709	HAMILTON TOWNSHIP	10/16/2019	10	6	(4) Wednesday	Rain	Wet	Dark - Roadway Not Light
20194259857	2019	19211287	(5) PDO/No Injury	Left Turn	5 Or More Point Intersectio	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	10/18/2019	10	22	(6) Friday	Clear	Dry	Dark - Lighted Roadway
20194266915	2019	19214298	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.823	1.823	CR122	BIXBY RD	39.855867	-82.938448	HAMILTON TOWNSHIP	10/23/2019	10	8	(4) Wednesday	Clear	Dry	Daylight
20194266971	2019	19221052	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	0.97	0.97	CR122	ROHR RD	39.843857	-82.935911	HAMILTON TOWNSHIP	11/1/2019	11	10	(6) Friday	Clear	Dry	Daylight
20194268008	2019	19215341	(3) Minor Injury Susp	Angle	Four-Way Intersection	CFRACR00122**C	0.949	0.949	CR122	RHOR RD	39.843579	-82.935747	HAMILTON TOWNSHIP	10/24/2019	10	13	(5) Thursday	Clear	Dry	Daylight
20194268122	2019	19218892	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.251	1.251	CR122	ROHR RD	39.847627	-82.937876	HAMILTON TOWNSHIP	10/29/2019	10	15	(3) Tuesday	Clear	Dry	Daylight
20194277622	2019	19225987	(5) PDO/No Injury	Angle	5 Or More Point Intersectio	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	11/8/2019	11	14	(6) Friday	Clear	Dry	Daylight
20194281757	2019	19225041	(5) PDO/No Injury	Right Turn	Four-Way Intersection	CFRACR00235**C	1.944	1.944	CR235	ALUM CREEK I	39.843831	-82.935829	HAMILTON TOWNSHIP	11/7/2019	11	5	(5) Thursday	Rain	Wet	Dark - Lighted Roadway
20194289753	2019	19242825	(3) Minor Injury Susp	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	1.586	1.586	CR122	CREEKSIDE PI	39.852434	-82.938623	HAMILTON TOWNSHIP	12/3/2019	12	6	(3) Tuesday	Clear	Wet	Dark - Lighted Roadway
20194289909	2019	19238298	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.59	1.59	CR122	CREEKSIDE PI	39.8525	-82.93862	HAMILTON TOWNSHIP	11/26/2019	11	0	(3) Tuesday	Clear	Dry	Dark - Lighted Roadway
20194291046	2019	19236278	(4) Injury Possible	Angle	Not An Intersection	CFRACR00122**C	0.964	0.964	CR122	ROHR RD	39.843778	-82.935864	HAMILTON TOWNSHIP	11/23/2019	11	0	(7) Saturday	Clear	Dry	Dark - Roadway Not Light
20194291428	2019	19245086	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.581	1.581	CR122	TOY RD	39.852361	-82.938628	HAMILTON TOWNSHIP	12/6/2019	12	6	(6) Friday	Clear	Dry	Dark - Lighted Roadway
20194291848	2019	19259000	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.843843	-82.935903	HAMILTON TOWNSHIP	12/26/2019	12	14	(5) Thursday	Cloudy	Dry	Daylight
20203006902	2020	20-000003	(5) PDO/No Injury	Fixed Object	T-Intersection	CFRACR00122**C	2.346	2.346	CR122	RATHMELL RD	39.86331	-82.937218	OBETZ	1/2/2020	1	6	(5) Thursday	Clear	Dry	Dark - Roadway Not Light
20203009213	2020	20M-001188	(4) Injury Possible	Rear End	Four-Way Intersection	CFRACR00122**C	0.505	0.505	CR122	SPIEGEL DR	39.837408	-82.933506	MADISON TOWNSHIP	1/16/2020	1	14	(5) Thursday	Cloudy	Dry	Daylight
20203015265	2020	20M-001185	(5) PDO/No Injury	Unknown	Not An Intersection	CFRACR00122**C	0.5	0.5	CR122	SPIEGEL DR	39.837333	-82.933499	MADISON TOWNSHIP	1/15/2020	1	12	(4) Wednesday	Cloudy	Dry	Daylight
20203042375	2020	20-000073	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	2.372	2.372	CR122	RATHMELL RD	39.863659	-82.937065	OBETZ	2/26/2020	2	10	(4) Wednesday	Rain	Wet	Daylight
20204094934	2020	2093010	(4) Injury Possible	Angle	Four-Way Intersection	TFRATR00236**C	1.531	1.531	TR236	ROHR RD	39.852182	-82.928212	OBETZ	5/30/2020	5	18	(7) Saturday	Clear	Dry	Daylight
20203127899	2020	20M-013243	(4) Injury Possible	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	0.002	0.002	CR122	LONDON GRO'	39.830092	-82.933901	MADISON TOWNSHIP	7/23/2020	7	21	(5) Thursday	Cloudy	Dry	Dark - Lighted Roadway
20204155871	2020	20150884	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00235**C	1.892	1.892	CR235	ROHR RD	39.843989	-82.936802	COLUMBUS	8/19/2020	8	8	(4) Wednesday	Clear	Dry	Daylight
20204153785	2020	20152703	(2) Serious Injury Su	Left Turn	Four-Way Intersection	CFRACR00235**C	1.892	1.892	CR235	ROHR RD	39.843989	-82.936802	COLUMBUS	8/21/2020	8	18	(6) Friday	Cloudy	Dry	Daylight
20203158159	2020	20M-015621	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	0.51	0.51	CR122	SPIEGAL DR	39.83748	-82.933516	MADISON TOWNSHIP	8/24/2020	8	14	(2) Monday	Clear	Dry	Daylight
20203158160	2020	20M-015616	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	0.503	0.503	CR122	SPIEGEL DR	39.837373	-82.933501	MADISON TOWNSHIP	8/24/2020	8	16	(2) Monday	Cloudy	Dry	Daylight
20204196973	2020	20179112	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00235**C	2.845	2.845	CR235	ROHR RD	39.841679	-82.919078	GROVEPORT	9/28/2020	9	15	(2) Monday	Rain	Wet	Daylight
20203168161	2020	20M-019239	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.209	0.209	CR122	S HAMILTON R	39.833096	-82.93368	MADISON TOWNSHIP	9/29/2020	9	17	(3) Tuesday	Cloudy	Dry	Daylight
20204222164	2020	20213299	(5) PDO/No Injury	Left Turn	Four-Way Intersection					ALUM CREEK I	ROHR RD	39.82002	-82.95639	HAMILTON TOWNSHIP	11/19/2020	11	18	(5) Thursday	Clear	Dry	Dark - Roadway Not Light
20203213138	2020	20M-024214	(5) PDO/No Injury	Right Turn	Not An Intersection	SFRASR00317**C	3.601	3.601	SR317	2560	39.830052	-82.933684	MADISON TOWNSHIP	11/19/2020	11	17	(5) Thursday	Cloudy	Dry	Dawn/Dusk
20204024037	2020	206474	(4) Injury Possible	Right Turn	Four-Way Intersection	CFRACR00122**C	1.354	1.354	CR122	GLOBAL CT	39.849085	-82.938312	HAMILTON TOWNSHIP	1/10/2020	1	19	(6) Friday	Rain	Wet	Dark - Lighted Roadway
20204024797	2020	204047	(3) Minor Injury Susp	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.997	0.997	CR122	ROHR RD	39.844211	-82.936118	HAMILTON TOWNSHIP	1/7/2020	1	5	(3) Tuesday	Clear	Dry	Dark - Lighted Roadway
20204042210	2020	2029418	(5) PDO/No Injury	Left Turn	Four-Way Intersection	CFRACR00122**C	0.967	0.967	CR122	ROHR RD	39.843814	-82.935886	HAMILTON TOWNSHIP	2/13/2020	2	19	(5) Thursday	Cloudy	Dry	Dark - Roadway Not Light
20204049500	2020	2032042	(3) Minor Injury Susp	Left Turn	Four-Way Intersection	CFRACR00122**C	0.979	0.979	CR122	ROHR RD	39.843974	-82.93598	HAMILTON TOWNSHIP	2/17/2020	2	22	(2) Monday	Clear	Dry	Dark - Lighted Roadway
20204055521	2020	2037924	(5) PDO/No Injury	Left Turn	Four-Way Intersection	CFRACR00122**C	0.977	0.977	CR122	ROHR RD	39.843952	-82.935967	HAMILTON TOWNSHIP	2/26/2020	2	11	(4) Wednesday	Rain	Wet	Daylight
20204068536	2020	2062777	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	1.631	1.631	CR122	CREEKSIDE PI	39.853095	-82.938589	HAMILTON TOWNSHIP	4/8/2020	4	6	(4) Wednesday	Clear	Wet	Dawn/Dusk
20204086129	2020	2079995	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00122**C	0.979	0.979	CR122	ROHR RD	39.84398	-82.935983	HAMILTON TOWNSHIP	5/11/2020	5	15	(2) Monday	Cloudy	Wet	Daylight
20204093008	2020	2082674	(2) Serious Injury Su	Angle	Four-Way Intersection	CFRACR00122**C	0.969	0.969	CR122	ROHR RD	39.84384	-82.935901	HAMILTON TOWNSHIP	5/15/2020	5	22	(6) Friday	Rain	Wet	Dawn/Dusk
20204112710	2020	20115127	(3) Minor Injury Susp	Angle	Four-Way Intersection	CFRACR00229**C	1.457	1.457	CR229	ALUM CREEK I	39.85583	-82.938379	HAMILTON TOWNSHIP	6/30/2020	6	6	(3) Tuesday	Clear	Dry	Daylight
20204122600	2020	20123948	(3) Minor Injury Susp	Left Turn	Four-Way Intersection	CFRACR00122**C	0.968	0.968	CR122	ROHR RD	39.843828	-82.935894	HAMILTON TOWNSHIP	7/11/2020	7	17	(7) Saturday	Cloudy	Dry	Daylight
20204130544	2020	20126010	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.843	1.843	CR122	BIXBY RD	39.856165	-82.938432	HAMILTON TOWNSHIP	7/14/2020	7	16	(3) Tuesday	Clear	Dry	Daylight
20204155744	2020	20147491	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.702	1.702	CR122	CREEKSIDE PI	39.854118	-82.938537	HAMILTON TOWNSHIP	8/14/2020	8	5	(6) Friday	Clear	Dry	Dark - Lighted Roadway
20204157606	2020	20159281	(4) Injury Possible	Left Turn	5 Or More Point Intersectio	CFRACR00122**C	0.503	0.503	CR122	SPIEGEL DR	39.83738	-82.933502	MADISON TOWNSHIP	8/31/2020	8	4	(2) Monday	Clear	Dry	Dark - Lighted Roadway
20204169675	2020	20161518	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.492	1.492	CR122	CREEKSIDE PI	39.851081	-82.938524	HAMILTON TOWNSHIP	9/3/2020	9	5	(5) Thursday	Rain	Wet	Dark - Lighted Roadway
20204169682	2020	20172164	(5) PDO/No Injury	Right Turn	Four-Way Intersection	CFRACR00235**C	1.939	1.939	CR235	ALUM CREEK I	39.843846	-82.935919	HAMILTON TOWNSHIP	9/18/2020	9	10	(6) Friday	Clear	Dry	Daylight
20204174636	2020	20177033	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.591	1.591	CR122	TOY RD	39.852515	-82.938619	HAMILTON TOWNSHIP	9/25/2020	9	14	(6) Friday	Clear	Dry	Daylight
20204186816	2020	20186134	(4) Injury Possible	Right Turn	Not An Intersection	CFRACR00122**C	1.816	1.816	CR122	BIXBY RD	39.855779	-82.938452	HAMILTON TOWNSHIP	10/9/2020	10	17	(6) Friday	Clear	Dry	Daylight
20204192179	2020	20185061	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	1.822	1.822	CR122	BIXBY RD	39.855862	-82.938448	HAMILTON TOWNSHIP	10/8/2020	10	4	(5) Thursday	Clear	Dry	Dark - Roadway Not Light
20204198040	2020	20180773	(3) Minor Injury Susp	Angle	Four-Way Intersection	CFRACR00235**C	1.929	1.929	CR235	ROHR RD	39.843876	-82.936109	COLUMBUS	10/1/2020	10	8	(5) Thursday	Clear	Dry	Daylight
20204198045	2020	20181005	(5) PDO/No Injury	Parked Vehicle	Four-Way Intersection	CFRACR00235**C	1.943	1.943	CR235	ALUM CREEK I	39.843834	-82.935849	HAMILTON TOWNSHIP	10/1/2020	10	13	(5) Thursday	Clear	Dry	Daylight
20204198201	2020	20183341	(4) Injury Possible	Right Turn	Not An Intersection	CFRACR00122**C	1.676	1.676	CR122	CREEKSIDE PI	39.853744	-82.938556	HAMILTON TOWNSHIP	10/5/2020	10	12	(2) Monday	Clear	Dry	Daylight
20204211090	2020	20207047	(5) PDO/No Injury	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	1.048	1.048	CR122	ROHR RD	39.844884	-82.936527	HAMILTON TOWNSHIP	11/10/2020	11	7	(3) Tuesday	Clear	Dry	Daylight
20204211698	2020	20204226	(2) Serious Injury Su	Sideswipe - Passing	Four-Way Intersection	CFRACR00400**C	0.557	0.557	CR400	ALUM CREEK I	39.837365	-82.933548	HAMILTON TOWNSHIP	11/6/2020	11	1	(6) Friday	Clear	Dry	Dark - Lighted Roadway

20204219501	2020	20212941	(5) PDO/No Injury	Sideswipe - Passing	Four-Way Intersection	CFRACR00235**C	1.953	1.953	CR235	ROHR RD	39.843804	-82.935664	GROVEPORT	11/19/2020	11	8	(5) Thursday	Clear	Dry	Daylight
20204219506	2020	20212401	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.725	1.725	CR122	BIXBY RD	39.854458	-82.93852	HAMILTON TOWNSHIP	11/18/2020	11	12	(4) Wednesday	Clear	Dry	Daylight
20204240807	2020	20228395	(5) PDO/No Injury	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	0.987	0.987	CR122	ROHR RD	39.844077	-82.93604	HAMILTON TOWNSHIP	12/14/2020	12	20	(2) Monday	Cloudy	Dry	Dark - Roadway Not Light
20212080190	2021	2178227	(1) Fatal	Angle	T-Intersection	CFRACR00121**C	3.772	3.772	CR121	RATHMELL RD	39.863324	-82.937364	OBETZ	5/10/2021	5	14	(2) Monday	Clear	Dry	Daylight
20214078717	2021	2164364	(4) Injury Possible	Angle	Four-Way Intersection	CFRACR00235**C	1.892	1.892	CR235	ROHR RD	39.843988	-82.936801	COLUMBUS	4/19/2021	4	9	(2) Monday	Clear	Dry	Daylight
20213098097	2021	21M-013087	(3) Minor Injury Susp	Rear End	Four-Way Intersection	CFRACR00122**C	0.036	0.036	CR122	SR317	39.830575	-82.933866	MADISON TOWNSHIP	5/22/2021	5	15	(7) Saturday	Clear	Dry	Daylight
20213098104	2021	21M-013597	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.042	0.042	CR122	SR317	39.830668	-82.933859	MADISON TOWNSHIP	5/27/2021	5	0	(5) Thursday	Cloudy	Dry	Daylight
20213120107	2021	21M-007693	(5) PDO/No Injury	Angle	Four-Way Intersection	CFRACR00122**C	0.503	0.503	CR122	SPIEGEL DR	39.837377	-82.933501	MADISON TOWNSHIP	3/29/2021	3	4	(2) Monday	Clear	Dry	Dark - Lighted Roadway
20213120119	2021	21M-015532	(5) PDO/No Injury	Right Turn	Not An Intersection	CFRACR00122**C	0.002	0.002	CR122	LONDON GRO'	39.830091	-82.933901	MADISON TOWNSHIP	6/17/2021	6	16	(5) Thursday	Clear	Dry	Daylight
20213138618	2021	08-21-017711	(5) PDO/No Injury	Sideswipe - Passing	Four-Way Intersection	CFRACR00122**C	0.002	0.002	CR122	LONDON GRO'	39.830087	-82.933901	MADISON TOWNSHIP	7/12/2021	7	23	(2) Monday	Clear	Dry	Dark - Roadway Not Light
20214215086	2021	21189448	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00235**C	1.893	1.893	CR235	ROHR RD	39.843986	-82.936784	COLUMBUS	10/15/2021	10	15	(6) Friday	Clear	Dry	Daylight
20214218432	2021	21194465	(3) Minor Injury Susp	Angle	Four-Way Intersection	CFRACR00235**C	1.893	1.893	CR235	ROHR RD	39.843986	-82.936784	COLUMBUS	10/22/2021	10	19	(6) Friday	Clear	Dry	Dark - Lighted Roadway
20214225160	2021	21196851	(4) Injury Possible	Rear End	Four-Way Intersection	CFRACR00235**C	1.893	1.893	CR235	ROHR RD	39.843986	-82.936784	COLUMBUS	10/26/2021	10	18	(3) Tuesday	Clear	Dry	Daylight
20214248457	2021	21210745	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00235**C	1.893	1.893	CR235	ROHR RD	39.843986	-82.936784	COLUMBUS	11/17/2021	11	11	(4) Wednesday	Cloudy	Dry	Daylight
20214264176	2021	21224281	(3) Minor Injury Susp	Sideswipe - Passing	Four-Way Intersection	CFRACR00235**C	1.893	1.893	CR235	ROHR RD	39.843986	-82.936784	COLUMBUS	12/8/2021	12	17	(4) Wednesday	Cloudy	Dry	Dark - Lighted Roadway
20214265573	2021	21225860	(3) Minor Injury Susp	Head On	Not An Intersection	CFRACR00235**C	1.893	1.893	CR235	ROHR RD	39.843986	-82.936784	COLUMBUS	12/11/2021	12	3	(7) Saturday	Rain	Wet	Dark - Lighted Roadway
20214264215	2021	21227619	(5) PDO/No Injury	Left Turn	Not An Intersection	CFRACR00235**C	1.893	1.893	CR235	ROHR RD	39.843986	-82.936784	COLUMBUS	12/14/2021	12	6	(3) Tuesday	Clear	Dry	Dawn/Dusk
20214266832	2021	21237253	(5) PDO/No Injury	Rear End	5 Or More Point Intersectio	CFRACR00235**C	1.893	1.893	CR235	ROHR RD	39.843986	-82.936784	COLUMBUS	12/29/2021	12	20	(4) Wednesday	Clear	Dry	Dark - Lighted Roadway
20213210596	2021	21-000006	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	2.343	2.343	CR122	RATHMELL RD	39.86327	-82.93724	OBETZ	1/4/2021	1	8	(2) Monday	Clear	Dry	Dawn/Dusk
20213210614	2021	21-000105	(3) Minor Injury Susp	Sideswipe - Passing	T-Intersection	CFRACR00122**C	2.347	2.347	CR122	RATHMELL RD	39.863317	-82.937214	OBETZ	2/22/2021	2	20	(2) Monday	Clear	Dry	Dark - Roadway Not Light
20213210620	2021	21-000150	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	2.348	2.348	CR122	RATHMELL RD	39.863325	-82.937211	OBETZ	3/9/2021	3	14	(3) Tuesday	Clear	Dry	Daylight
20213210629	2021	21-000185	(3) Minor Injury Susp	Fixed Object	Not An Intersection	CFRACR00122**C	2.307	2.307	CR122	CR129	39.862774	-82.937465	OBETZ	3/23/2021	3	5	(3) Tuesday	Clear	Dry	Dark - Roadway Not Light
20213210634	2021	21-000215	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	2.343	2.343	CR122	RATHMELL RD	39.863265	-82.937243	OBETZ	4/12/2021	4	16	(2) Monday	Cloudy	Dry	Daylight
20213210653	2021	21-000330	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.866	1.866	CR122	BIXBY RD	39.85649	-82.938414	OBETZ	6/2/2021	6	19	(4) Wednesday	Rain	Wet	Daylight
20213210658	2021	21-000358	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	2.349	2.349	CR122	RATHMELL RD	39.863347	-82.937201	OBETZ	6/15/2021	6	14	(3) Tuesday	Clear	Dry	Daylight
20213210669	2021	21-000406	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	2.346	2.346	CR122	CR121	39.863301	-82.937223	OBETZ	7/1/2021	7	5	(5) Thursday	Rain	Wet	Dark - Roadway Not Light
20213210815	2021	21-000461	(5) PDO/No Injury	Fixed Object	Not An Intersection	CFRACR00121**C	3.778	3.778	CR121	ALUM CREEK I	39.863319	-82.937252	OBETZ	7/26/2021	7	16	(2) Monday	Clear	Dry	Daylight
20213210823	2021	21-000484	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.366	2.366	CR122	RATHMELL RD	39.86358	-82.937099	OBETZ	8/5/2021	8	16	(5) Thursday	Clear	Dry	Daylight
20213210840	2021	21-000532	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.356	2.356	CR122	RATHMELL RD	39.863442	-82.93716	OBETZ	8/25/2021	8	9	(4) Wednesday	Clear	Dry	Dark - Roadway Not Light
20213210844	2021	21-000540	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00121**C	3.775	3.775	CR121	S ALUM CREEI	39.863322	-82.937316	OBETZ	8/29/2021	8	23	(1) Sunday	Clear	Dry	Dark - Roadway Not Light
20213210848	2021	21-000572	(5) PDO/No Injury	Right Turn	Not An Intersection	CFRACR00122**C	2.343	2.343	CR122	CR121	39.863269	-82.93724	OBETZ	9/9/2021	9	4	(5) Thursday	Clear	Dry	Dark - Roadway Not Light
20213210857	2021	21-000625	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.371	2.371	CR122	RATHMELL RD	39.863641	-82.937073	OBETZ	9/28/2021	9	16	(3) Tuesday	Clear	Dry	Daylight
20213210861	2021	21-000635	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.501	2.501	CR122	RATHMELL RD	39.865415	-82.936299	OBETZ	10/4/2021	10	12	(2) Monday	Cloudy	Dry	Daylight
20213210866	2021	21-000649	(3) Minor Injury Susp	Right Turn	T-Intersection	CFRACR00122**C	2.35	2.35	CR122	CR121	39.863364	-82.937194	OBETZ	10/11/2021	10	9	(2) Monday	Clear	Dry	Daylight
20213210899	2021	21-000436	(5) PDO/No Injury	Fixed Object	Not An Intersection	CFRACR00122**C	2.434	2.434	CR122	CR121	39.864506	-82.936695	OBETZ	7/15/2021	7	3	(5) Thursday	Clear	Dry	Dark - Roadway Not Light
20213216218	2021	21-000685	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.012	2.012	CR122	BIXBY RD	39.858596	-82.9383	OBETZ	10/21/2021	10	17	(5) Thursday	Cloudy	Wet	Daylight
20213227567	2021	08-21026142	(5) PDO/No Injury	Angle	Not An Intersection	CFRACR00122**C	0.502	0.502	CR122	SPIEGEL RD	39.837362	-82.933499	MADISON TOWNSHIP	10/24/2021	10	21	(1) Sunday	Rain	Snow	Dark - Roadway Not Light
20213229035	2021	21-000746	(3) Minor Injury Susp	Head On	Not An Intersection	CFRACR00122**C	2.36	2.36	CR122	RATHMELL RD	39.863497	-82.937136	OBETZ	11/19/2021	11	23	(6) Friday	Clear	Dry	Dark - Roadway Not Light
20213233515	2021	21-000754	(5) PDO/No Injury	Fixed Object	Not An Intersection	CFRACR00122**C	2.367	2.367	CR122	RATHMELL RD	39.863593	-82.937094	OBETZ	11/23/2021	11	0	(3) Tuesday	Clear	Dry	Dark - Roadway Not Light
20213239760	2021	21-000774	(2) Serious Injury Su	Angle	T-Intersection	CFRACR00122**C	2.351	2.351	CR122	CR121	39.863368	-82.937192	OBETZ	12/1/2021	12	12	(4) Wednesday	Rain	Wet	Daylight
20213256403	2021	21-000824	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	2.324	2.324	CR122	CR129	39.863006	-82.937371	OBETZ	12/23/2021	12	19	(5) Thursday	Clear	Dry	Dark - Roadway Not Light
20214042077	2021	2121186	(3) Minor Injury Susp	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.555	1.555	CR122	CREEKSIDE PI	39.851991	-82.93862	HAMILTON TOWNSHIP	2/7/2021	2	11	(1) Sunday	Clear	Dry	Daylight
20214060566	2021	2135738	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.626	1.626	CR122	CREEKSIDE PI	39.853014	-82.938594	HAMILTON TOWNSHIP	3/4/2021	3	6	(5) Thursday	Clear	Dry	Dawn/Dusk
20214069533	2021	2146711	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.027	1.027	CR122	ROHR RD	39.84461	-82.936356	HAMILTON TOWNSHIP	3/22/2021	3	14	(2) Monday	Clear	Dry	Daylight
20214069577	2021	2146344	(5) PDO/No Injury	Angle	Not An Intersection	CFRACR00122**C	0.971	0.971	CR122	ROHR RD	39.843875	-82.935921	HAMILTON TOWNSHIP	3/21/2021	3	21	(1) Sunday	Clear	Dry	Dark - Roadway Not Light
20214077932	2021	2164282	(5) PDO/No Injury	Angle	T-Intersection	CFRACR00122**C	1.584	1.584	CR122	TOY RD	39.852404	-82.938625	HAMILTON TOWNSHIP	4/19/2021	4	5	(2) Monday	Clear	Dry	Dark - Lighted Roadway
20214128749	2021	2199305	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.585	1.585	CR122	TOY RD	39.852421	-82.938624	HAMILTON TOWNSHIP	6/9/2021	6	12	(4) Wednesday	Rain	Wet	Daylight
20214143823	2021	2126114	(4) Injury Possible	Right Turn	Four-Way Intersection	CFRACR00122**C	1.587	1.587	CR122	CREEKSIDE PI	39.852447	-82.938622	HAMILTON TOWNSHIP	7/17/2021	7	6	(7) Saturday	Clear	Dry	Dawn/Dusk
20214145824	2021	2110641	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.586	1.586	CR122	TOY RD	39.852444	-82.938623	HAMILTON TOWNSHIP	6/25/2021	6	16	(6) Friday	Cloudy	Dry	Daylight
20214149678	2021	2112346 1	(4) Injury Possible	Rear End	Not An Intersection	CFRACR00122**C	0.693	0.693	CR122	SPIEGEL RD	39.840112	-82.934074	MADISON TOWNSHIP	7/13/2021	7	15	(3) Tuesday	Clear	Dry	Daylight
20214173597	2021	2153255	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.611	1.611	CR122	TOY RD	39.852806	-82.938604	HAMILTON TOWNSHIP	8/25/2021	8	10	(4) Wednesday	Clear	Dry	Daylight
20214188973	2021	2116587 5	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.755	1.755	CR122	BIXBY RD	39.854882	-82.938498	HAMILTON TOWNSHIP	9/11/2021	9	0	(7) Saturday	Clear	Dry	Dark - Roadway Not Light
20214194298	2021	2115969 1	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.587	1.587	CR122	TOY RD	39.852448	-82.938622	HAMILTON TOWNSHIP	9/2/2021	9	5	(5) Thursday	Clear	Dry	Dark - Lighted Roadway
20214200845	2021	2118223 9	(5) PDO/No Injury	Rear End	5 Or More Point Intersectio	CFRACR00122**C	1.601	1.601	CR122	CREEKSIDE PI	39.852655	-82.938612	HAMILTON TOWNSHIP	10/5/2021	10	6	(3) Tuesday	Fog, Smog, Smoke	Dry	Dawn/Dusk
20214214112	2021	2118318 8	(5) PDO/No Injury	Right Turn	Four-Way Intersection	CFRACR00122**C	1.581	1.581	CR122	CREEKSIDE PI	39.852364	-82.938628	HAMILTON TOWNSHIP	10/6/2021	10	14	(4) Wednesday	Clear	Dry	Daylight
20214243790	2021	2120636 5	(5) PDO/No Injury	Left Turn	Not An Intersection	CFRACR00122**C	1.58	1.58	CR122	TOY RD	39.852353	-82.938629	HAMILTON TOWNSHIP	11/10/2021	11	11	(4) Wednesday	Clear	Dry	Daylight
20214247697	2021	2121264 6	(5) PDO/No Injury	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	1.341	1.341	CR122	GLOBAL DR	39.848907	-82.938274	HAMILTON TOWNSHIP	11/20/2021	11	3	(7) Saturday	Clear	Dry	Dark - Roadway Not Light
20214264196	2021	2122079 9	(4) Injury Possible	Left Turn	Not An Intersection	CFRACR00122**C	0.953	0.953	CR122	ALUM CREEK I	39.84364	-82.935782	HAMILTON TOWNSHIP	12/3/2021	12	7	(6) Friday	Cloudy	Dry	Dawn/Dusk
20214264323	2021	2123524 5	(4) Injury Possible	Angle	Not An Intersection	CFRACR00122**C	1.583	1.583	CR122	CREEKSIDE PI	39.852403	-82.938625	HAMILTON TOWNSHIP	12/26/2021	12	12	(1) Sunday	Clear	Dry	Daylight
20214266760	2021	2123062 2	(5) PDO/No Injury	Rear End	Not An Intersection	CFRACR00122**C	1.588	1.588	CR122	TOY RD	39.852463	-82.938622	HAMILTON TOWNSHIP	12/18/2021	12	18	(7) Saturday	Clear	Dry	Dark - Lighted Roadway
20214267222	2021	2123213 5	(3) Minor Injury Susp	Sideswipe - Passing	Not An Intersection	CFRACR00122**C	0.917	0.917	CR122	ROHR RD	39.843159	-82.935498	HAMILTON TOWNSHIP	12/21/2021	12	7	(3) Tuesday	Clear	Dry	Dark - Roadway Not Light
20214268022	2021	2123177 6	(4) Injury Possible	Angle	Not An Intersection	CFRACR00122**C	1.58	1.58	CR122	TOY RD	39.852359	-82.938628	HAMILTON TOWNSHIP	12/20/2021	12	15	(2) Monday	Clear	Dry	Daylight
20214268265	2021	2123159 9	(5) PDO/No Injury	Rear End	Four-Way Intersection	CFRACR00122**C	1.623	1.623	CR122	CREEKSIDE PI	39.852981	-82.938595	HAMILTON TOWNSHIP	12/20/2021	12	10	(2) Monday	Clear	Dry	Daylight
20215119421	2021	25-0258-25	(3) Minor Injury Susp	Head On	Four-Way Intersection	CFRACR00122**C	1.583	1.583	CR122	TOY RD	39.852391	-82.938626	HAMILTON TOWNSHIP	7/1/2021	7	5	(5) Thursday	Rain	Wet	Dawn/Dusk

Crash Data Table			
Crash Type	Total Crashes	Total Crashes (%)	Statewide Average (%)
Unknown	2	0.8%	0.28%
Head On	6	2.3%	2.67%
Rear End	82	31.1%	9.11%
Backing	5	1.9%	1.15%
Sideswipe - Meeting	0	0.0%	0.12%
Sideswipe - Passing	61	23.1%	3.93%
Angle	32	12.1%	3.13%
Parked Vehicle	3	1.1%	0.86%
Pedestrian	1	0.4%	0.27%
Animal	0	0.0%	32.25%
Train	0	0.0%	0.02%
Pedalcycles	1	0.4%	0.14%
Other Non-Vehicle	0	0.0%	0.01%
Fixed Object	13	4.9%	36.90%
Other Object	0	0.0%	0.68%
Falling From Or In Vehicle	0	0.0%	0.00%
Overturning	4	1.5%	2.55%
Other Non-Collision	2	0.8%	1.69%
Left Turn	21	8.0%	3.72%
Right Turn	31	11.7%	0.52%
Total Crashes	264		

APPENDIX

J. Planning Level Cost Estimation

UTILITY COST ESTIMATE					
Item	Description	Unit	QTY	Unit Price	Total
	Sanitary Sewer				
	Sanitary Manhole Adjusted to Grade	Each	19	$ 1,500.00	$ 28,500.00
	Communications				
625	Telecom Manhole (Adjusted to Grade)	Each	19	$ 1,500.00	$ 28,500.00
625	Telecom Pull Box (Adjusted to Grade)	Each	13	$ 1,225.00	$ 15,925.00
	Interconnect				
625	Interconnect Pull Box (Relocated or Adjusted to Grade)	Each	33	$ 1,225.00	$ 40,425.00
	Electric				
625	Electric Pull Box (Relocated or Adjusted to Grade)	Each	5	$ 1,225.00	$ 6,125.00
632	Wood Pole	Each	10	$ 10,000.00	$ 100,000.00
	Water				
638	6" Ductile Iron Anchoring Pipe and Fittings	Ft	250	$ 200.00	$ 50,000.00
638	6" Vavle and Appurtencances	Each	10	$ 600.00	$ 6,000.00
638	Fire Hydrant	Each	10	$ 3,500.00	$ 35,000.00
638	Valve Box Adjusted to Grade	Each	17	$ 300.00	$ 5,100.00
	Gas				
611	Gas Valves (Adjusted to Grade)	Each	10	$ 300.00	$ 3,000.00
				Total	$ 318,575.00

Alum Creek Drive - State Route 317 to Rohr Road

why is this page included twice? cost breakdown for this section, similar to other 2 sections?

CONSTRUCTION COSTS

Roadway	$	1,174,000	Signals	$	525,000
Erosion Control	$	518,000	Street Lighting	$	422,000
Drainage	$	490,000	Structures	$	-
Pavement	$	3,609,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	165,000
Traffic Control	$	41,000			
			Construction Item Subtotal (rounded)	$	6,944,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	1,388,800
Annual/Cumulative Inflation Rate	*3%*	*21%*	Inflation**	$	1,750,000
Year of Estimate/Construction	*2023*	*2028*	Subtotal of Construction Costs	$	10,082,800

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	35,000
Right-of-Way			$	709,000
Environmental	*1.5%*		$	152,000
Engineering	*13%*	*of Construction Subtotal*	$	1,311,000
Construction Observ., Services	*7%*	*of Construction Subtotal*	$	706,000
		Subtotal of Other Project Costs	$	2,913,000

ESTIMATED TOTAL PROJECT COST	$	12,995,800

Estimate prepared by Stantec Consulting Serivces 2/1/2023

These cost estimates were developed at a planning level of analysis and many factors, some of which could affect the total project cost, remain unknown at this time. This estimates provides our best judgment of project cost based on the level of analysis (planning leve) by design professionals familiar with the construction industry. Bid item costs are based, in part, on previous bids tabulated by ODOT's Estimator software, and will vary as the Stantec has no control over a contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Stantec cannot and does not guarantee that bids or prices will not vary from this estimate.

Alum Creek Drive - Rohr Road to Toy Road

Detailed Construction Estimate

Item	Description	Quantity	Unit	Unit Cost	Total
	ROADWAY				
201	Clearing & Grubbing	-	Lump	$ 35,000.00	$ -
202	Walk Removed	24,136	SF	$ 1.50	$ 36,204
203	Excavation	12,217.00	CY	$ 25.00	$ 305,425
203	Embankment	6,004.00	CY	$ 25.00	$ 150,100
	Cut and Reuse as Fill	-	CY	$ 18.00	$ -
	Place Excavated Materials as Embankment	-	CY	$ 15.00	$ -
204	Subgrade Compaction	20,016	SY	$ 4.00	$ 80,065
606	Cable Barrier	-	FT	$ 15.00	$ -
607	Fence, Misc.: Wood Fence (fall protection along path)	-	FT	$ 30.00	$ -
608	Concrete Walk, 4"	24,136	SF	$ 10.00	$ 241,360
608	Concrete Walk, 8"	-	SF	$ 9.00	$ -
608	Curb Ramps	7	EA	$ 1,000.00	$ 7,000
	Concrete Steps APP	-	SF	$ 150.00	$ -
	Brick Walk A.P.P.	-	SF	$ 23.00	$ -
609	Curb, Type 6		LF	$ 20.00	$ -
622	Concrete Barrier, Single Slope	-	FT	$ 80.00	$ -
622	Concrete Barrier End Section	-	EA	$ 3,000.00	$ -
	Subtotal				**$ 820,154**
	EROSION CONTROL				
	Temporary Erosion and Sediment Control	3,100	FT	$ 41.00	$ 127,100
207	Perimeter Filter Fabric Fence	-	FT	$ 3.00	$ -
659	Water	155	M GAL	$ 100.00	$ 15,500
659	Topsoil	3,173	CY	$ 35.00	$ 111,068
659	Agricultural Lime	6	ACRE	$ 100.00	$ 591
659	Commercial Fertilizer	4	TON	$ 800.00	$ 3,088
659	Seeding & Mulching	28,589	SY	$ 2.00	$ 57,178
	Subtotal				**$ 314,525**
	DRAINAGE				
611	12" Conduit, Type B	500	FT	$ 130.00	$ 65,000
611	15" Conduit, Type B	250	FT	$ 130.00	$ 32,500
611	18" Conduit, Type B	250	FT	$ 165.00	$ 41,250
611	24" Conduit, Type B	100	FT	$ 185.00	$ 18,500
611	60" Conduit, Type B	0	FT	$ 825.00	$ -
611	Catch Basin No. 2-2B	7	EA	$ 2,100.00	$ 14,700
611	Catch Basin No. 3A	0	EA	$ 3,200.00	$ -
611	Manhole No. Type C	6	EA	$ 4,500.00	$ 27,000
605	4" Base Pipe Underdrain	6,200	FT	$ 12.00	$ 74,400
	Subtotal				**$ 273,350**
	PAVEMENT				
254	Pavement Planing	275,014	SY	$ 4.25	$ 1,168,810
301	Asphalt Concrete Base	4,656	CY	$ 120.00	$ 558,754
304	Aggregate Base	2,889	CY	$ 60.00	$ 173,345
408	Prime Coat	-	Gal	$ 4.00	$ -
448	Asphalt Concrete Surface Course	1,972	CY	$ 185.00	$ 364,840
448	Asphalt Concrete Intermediate Course	746	CY	$ 200.00	$ 149,130
	Subtotal				**$ 2,414,878**

Alum Creek Drive - Rohr Road to Toy Road

Detailed Construction Estimate

	WATER						
638	6" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	100.00	$	-
638	8" Ductile Iron Water Pipe and Fittings, Class 54	-	FT	$	125.00	$	-
638	16" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	200.00	$	-
638	6" Valve and Appurtenances	-	EA	$	600.00	$	-
638	Fire Hydrant	-	EA	$	2,500.00	$	-
638	Valve Box Adjusted to Grade	-	EA	$	300.00	$	-
638	Fire Hydrant Adjusted to Grade	-	EA	$	800.00	$	-
	Water Line to Irrigation	-	FT	$	20.00	$	-
	Water Service and Meter	-	Lump	$	3,000.00	$	-
816	3/4" Water Service Tap Relocated	-	EA	$	1,000.00	$	-
	Subtotal					**$**	**-**
	TRAFFIC CONTROL						
621	RPM	310	EA	$	25.00	$	7,750
630	Removal of Ground Mounted Sign and Disposal	-	EA	$	15.00	$	-
630	Removal of Ground Mounted Post Support and Disposal	-	EA	$	20.00	$	-
630	Sign, Flat Sheet	-	SF	$	20.00	$	-
631	Sign, Double faced, Street Name	-	EA	$	90.00	$	-
630	Ground Mounted Support, No. 3 Post	-	FT	$	15.00	$	-
630	Street Name Sign Support, No. 3 Post	-	FT	$	20.00	$	-
644	Center Line	-	MI	$	3,800.00	$	-
644	Edge Line	2.35	MI	$	2,000.00	$	4,697
644	Lane Line	1.17	MI				
644	Channelizing Line	2,055	FT	$	3.00	$	6,165
644	Transverse Line	-	FT	$	5.00	$	-
644	Stop Line	240	FT	$	15.00	$	3,600
644	Crosswalk Line	320	FT	$	12.00	$	3,840
644	Parking Stall Line	-	FT	$	1.50	$	-
644	Lane Arrow	16	EA	$	85.00	$	1,360
644	Word on Pavement	-	EA	$	100.00	$	-
	Markings Removal	-	LF	$	2.50	$	-
	RRFB	-	EA	$	15,000.00	$	-
	Subtotal					**$**	**27,412**
	LIGHTING						
625	Connector Kit, Type II	64	EA	$	60.00	$	3,840
625	Conventional Lighting Pole, APP, with foundation, installed	32	EA	$	3,300.00	$	105,600
625	Luminaire, Conventional, APP	32	EA	$	500.00	$	16,000
625	Parking Lot Lighting, with Luminaires	-	EA	$	7,000.00	$	-
625	Conduit and Wiring	5,756	LF	$	7.00	$	40,292
625	Trench	5,276		$	8.00	$	42,208
625	Power Service, A.P.P.	1	EA	$	3,000.00	$	3,000
625	Control Center	1	EA	$	3,000.00	$	3,000
625	High Voltage Test		Lump	$	6,000.00	$	-
625	Pole and Bracket Cable	2,880	LF	$	2.00	$	5,760
625	Pull Box	16	EA	$	1,200.00	$	19,200
625	Ground Rod	32	EA	$	250.00	$	8,000
	Misc.	-	Lump	$	15,000.00	$	-
	Subtotal					**$**	**246,900**

Alum Creek Drive - Rohr Road to Toy Road

Detailed Construction Estimate

	SIGNALS						
	Signal (Full Replacement)		Lump	$	250,000.00	$	-
	Signal (Minor Modifications)	1	Lump	$	25,000.00	$	25,000
	Signal (Major Modifications)		Lump	$	100,000.00	$	-
	TRENCH	-	FT	$	5.75	$	-
	Pull Box	-	EA	$	1,700.00	$	-
	Interconnect	-	EA	$	45.00	$	-
	Subtotal					**$**	**25,000**
	STRUCTURES						
Spec	Bridge over Big Walnut		SF	$	300.00	$	-
		-	Lump	$	-	$	-
		-	Lump	$	-	$	-
	Subtotal					**$**	**-**
	LANDSCAPING						
		-	SF	$	-	$	-
		-	SF	$	-	$	-
		-	SF	$	-	$	-
		-	EA	$	-	$	-
		-	Lump	$	50,000.00	$	-
		-	Lump	$	-	$	-
		-	Lump	$	-	$	-
	Subtotal					**$**	**-**
	MISCELLANEOUS						
614	Maintaining Traffic	-	Lump	$	40,000.00	$	40,000
623	Construction Layout Stakes	-	Lump	$	20,000.00	$	20,000
624	Mobilization	-	Lump	$	60,000.00	$	60,000
	Subtotal					**$**	**120,000**
				Construction Total		**$**	**4,242,000**

Statements of Probable Construction and Right-of-Way Costs and Detailed Cost Estimates prepared by the Engineer represent his best judgment as a design professional familiar with the construction industry. It is recognized, however, that the Engineer has no control over the Contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Engineer cannot and does not guarantee that bids or prices will not vary from any Statement of Probable Construction Cost or other cost estimate prepared by him.

Alum Creek Drive - Toy Road to Groveport Road

Detailed Construction Estimate

Item	Description	Quantity	Unit	Unit Cost	Total
	ROADWAY				
201	Clearing & Grubbing	-	Lump	$ 35,000.00	$ -
202	Walk Removed	36,382	SF	$ 1.50	$ 54,573
203	Excavation	13,938.00	CY	$ 25.00	$ 348,450
203	Embankment	78,727.00	CY	$ 25.00	$ 1,968,175
	Cut and Reuse as Fill	-	CY	$ 18.00	$ -
	Place Excavated Materials as Embankment	-	CY	$ 15.00	$ -
204	Subgrade Compaction	30,927	SY	$ 4.00	$ 123,710
606	Cable Barrier	-	FT	$ 15.00	$ -
607	Fence, Misc.: Wood Fence (fall protection along path)	-	FT	$ 30.00	$ -
608	Concrete Walk, 4"	36,382	SF	$ 10.00	$ 363,820
608	Concrete Walk, 8"	-	SF	$ 9.00	$ -
608	Curb Ramps	8	EA	$ 1,000.00	$ 8,000
	Concrete Steps APP	-	SF	$ 150.00	$ -
	Brick Walk A.P.P.	-	SF	$ 23.00	$ -
609	Curb, Type 6		LF	$ 20.00	$ -
622	Concrete Barrier, Single Slope	-	FT	$ 80.00	$ -
622	Concrete Barrier End Section	-	EA	$ 3,000.00	$ -
	Subtotal				**$ 2,866,728**
	EROSION CONTROL				
	Temporary Erosion and Sediment Control	4,950	ft	$ 41.00	$ 202,950
207	Perimeter Filter Fabric Fence	-	FT	$ 3.00	$ -
659	Water	292	M GAL	$ 100.00	$ 29,200
659	Topsoil	5,983	CY	$ 35.00	$ 209,402
659	Agricultural Lime	11	ACRE	$ 100.00	$ 1,114
659	Commercial Fertilizer	7	TON	$ 800.00	$ 5,824
659	Seeding & Mulching	53,900	SY	$ 2.00	$ 107,800
	Subtotal				**$ 556,290**
	DRAINAGE				
611	12" Conduit, Type B	0	FT	$ 130.00	$ -
611	15" Conduit, Type B	1,000	FT	$ 130.00	$ 130,000
611	18" Conduit, Type B	500	FT	$ 165.00	$ 82,500
611	24" Conduit, Type B	100	FT	$ 185.00	$ 18,500
611	60" Conduit, Type B	0	FT	$ 825.00	$ -
611	Catch Basin No. 2-2B	12	EA	$ 2,100.00	$ 25,988
611	Catch Basin No. 3A	8	EA	$ 3,200.00	$ 25,600
611	Manhole No. 3	12	EA	$ 4,500.00	$ 55,688
605	4" Base Pipe Underdrain	9,900	FT	$ 12.00	$ 118,800
	Subtotal				**$ 457,075**
	PAVEMENT				
254	Pavement Planing	266,797	SY	$ 4.25	$ 1,133,887
301	Asphalt Concrete Base	7,404	CY	$ 120.00	$ 888,482
304	Aggregate Base	4,481	CY	$ 60.00	$ 268,850
408	Prime Coat	-	Gal	$ 4.00	$ -
441	Asphalt Concrete Surface Course	2,323	CY	$ 185.00	$ 429,742
441	Asphalt Concrete Intermediate Course	1,153	CY	$ 200.00	$ 230,532
	Subtotal				**$ 2,951,494**

Alum Creek Drive - Toy Road to Groveport Road

Detailed Construction Estimate

	WATER						
638	6" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	100.00	$	-
638	8" Ductile Iron Water Pipe and Fittings, Class 54	-	FT	$	125.00	$	-
638	16" Ductile Iron Water Pipe and Fittings, Class 53	-	FT	$	200.00	$	-
638	6" Valve and Appurtenances	-	EA	$	600.00	$	-
638	Fire Hydrant	-	EA	$	2,500.00	$	-
638	Valve Box Adjusted to Grade	-	EA	$	300.00	$	-
638	Fire Hydrant Adjusted to Grade	-	EA	$	800.00	$	-
	Water Line to Irrigation	-	FT	$	20.00	$	-
	Water Service and Meter	-	Lump	$	3,000.00	$	-
816	3/4" Water Service Tap Relocated	-	EA	$	1,000.00	$	-
	Subtotal					**$**	**-**
	TRAFFIC CONTROL						
621	RPM	495	EA	$	25.00	$	12,375
630	Removal of Ground Mounted Sign and Disposal	-	EA	$	15.00	$	-
630	Removal of Ground Mounted Post Support and Disposal	-	EA	$	20.00	$	-
630	Sign, Flat Sheet	-	SF	$	20.00	$	-
631	Sign, Double faced, Street Name	-	EA	$	90.00	$	-
630	Ground Mounted Support, No. 3 Post	-	FT	$	15.00	$	-
630	Street Name Sign Support, No. 3 Post	-	FT	$	20.00	$	-
644	Center Line	-	MI	$	3,800.00	$	-
644	Edge Line	3.75	MI	$	2,000.00	$	7,500
644	Lane Line	1.88	MI				
644	Channelizing Line	262	FT	$	3.00	$	786
644	Transverse Line	-	FT	$	5.00	$	-
644	Stop Line	75	FT	$	15.00	$	1,125
644	Crosswalk Line	-	FT	$	12.00	$	-
644	Parking Stall Line	-	FT	$	1.50	$	-
644	Lane Arrow	-	EA	$	85.00	$	-
644	Word on Pavement	-	EA	$	100.00	$	-
	Markings Removal	-	LF	$	2.50	$	-
	RRFB	-	EA	$	15,000.00	$	-
	Subtotal					**$**	**21,786**
	LIGHTING						
625	Connector Kit, Type II	100	EA	$	60.00	$	6,000
625	Conventional Lighting Pole, APP, with foundation, installed	50	EA	$	3,300.00	$	165,000
625	Luminaire, Conventional, APP	50	EA	$	500.00	$	25,000
625	Parking Lot Lighting, with Luminaires	-	EA	$	7,000.00	$	-
625	Conduit and Wiring	3,400	LF	$	7.00	$	23,800
625	Trench	8,350		$	8.00	$	66,800
625	Power Service, A.P.P.	1	EA	$	3,000.00	$	3,000
625	Control Center	-	EA	$	3,000.00	$	-
625	High Voltage Test		Lump	$	6,000.00	$	-
625	Pole and Bracket Cable	3,000	LF	$	2.00	$	6,000
625	Pull Box	25	EA	$	1,200.00	$	30,000
625	Ground Rod	50	EA	$	250.00	$	12,500
	Misc.	-	Lump	$	15,000.00	$	-
	Subtotal					**$**	**338,100**

Alum Creek Drive - Toy Road to Groveport Road

Detailed Construction Estimate

	SIGNALS							
	Signal (Full Replacement)			Lump	$	250,000.00	$	-
	Signal (Minor Modifications)			Lump	$	25,000.00	$	-
	Signal (Major Modifications)			Lump	$	100,000.00	$	-
	TRENCH		-	FT	$	5.75	$	-
	Pull Box		-	EA	$	1,700.00	$	-
	Interconnect		-	EA	$	45.00	$	-
		Subtotal					**$**	**-**
	STRUCTURES							
Spec	Bridge over Big Walnut		46,240	SF	$	300.00	$	13,872,000
			-	Lump	$	-	$	-
			-	Lump	$	-	$	-
		Subtotal					**$**	**13,872,000**
	LANDSCAPING							
			-	SF	$	-	$	-
			-	SF	$	-	$	-
			-	SF	$	-	$	-
			-	EA	$	-	$	-
			-	Lump	$	50,000.00	$	-
			-	Lump	$	-	$	-
			-	Lump	$	-	$	-
		Subtotal					**$**	**-**
	MISCELLANEOUS							
614	Maintaining Traffic		-	Lump	$	60,000.00	$	60,000
623	Construction Layout Stakes		-	Lump	$	30,000.00	$	30,000
624	Mobilization		-	Lump	$	75,000.00	$	75,000
		Subtotal					**$**	**165,000**
					Construction Total		**$**	**21,228,000**

Statements of Probable Construction and Right-of-Way Costs and Detailed Cost Estimates prepared by the Engineer represent his best judgment as a design professional familiar with the construction industry. It is recognized, however, that the Engineer has no control over the Contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Engineer cannot and does not guarantee that bids or prices will not vary from any Statement of Probable Construction Cost or other cost estimate prepared by him.

Alum Creek Drive - State Route 317 to Rohr Road

CONSTRUCTION COSTS

Roadway	$	1,174,000	Signals	$	525,000
Erosion Control	$	518,000	Street Lighting	$	422,000
Drainage	$	490,000	Structures	$	-
Pavement	$	3,609,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	165,000
Traffic Control	$	41,000			
			Construction Item Subtotal (rounded)	$	6,944,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	1,388,800
Annual/Cumulative Inflation Rate	*3%*	*21%*	Inflation**	$	1,750,000
Year of Estimate/Construction	*2023*	*2028*	Subtotal of Construction Costs	$	10,082,800

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	35,000
Right-of-Way			$	709,000
Environmental	*1.5%*		$	152,000
Engineering	*13%*	*of Construction Subtotal*	$	1,311,000
Construction Observ., Services	*7%*	*of Construction Subtotal*	$	706,000
		Subtotal of Other Project Costs	$	2,913,000

ESTIMATED TOTAL PROJECT COST	$	12,995,800

Estimate prepared by Stantec Consulting Serivces 2/1/2023

These cost estimates were developed at a planning level of analysis and many factors, some of which could affect the total project cost, remain unknown at this time. This estimates provides our best judgment of project cost based on the level of analysis (planning leve) by design professionals familiar with the construction industry. Bid item costs are based, in part, on previous bids tabulated by ODOT's Estimator software, and will vary as the Stantec has no control over a contractor's methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, the Stantec cannot and does not guarantee that bids or prices will not vary from this estimate.

Alum Creek Drive - Rohr Road to Toy Road

CONSTRUCTION COSTS

Roadway	$	821,000	Signals	$	25,000
Erosion Control	$	315,000	Street Lighting	$	247,000
Drainage	$	274,000	Structures	$	-
Pavement	$	2,415,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	120,000
Traffic Control	$	28,000			
			Construction Item Subtotal (rounded)	$	4,245,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	849,000
Annual/Cumulative Inflation Rate	*3%*	*21%*	Inflation**	$	1,070,000
Year of Estimate/Construction	*2023*	*2028*	Subtotal of Construction Costs	$	6,164,000

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	90,000
Right-of-Way			$	289,000
Environmental	*1.5%*		$	93,000
Engineering	*13%*	*of Construction Subtotal*	$	802,000
Construction Observ., Services	*7%*	*of Construction Subtotal*	$	432,000
		Subtotal of Other Project Costs	$	1,706,000

ESTIMATED TOTAL PROJECT COST	$	7,870,000

Estimate prepared by Stantec Consulting Serivces 2/1/2023

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Alum Creek Drive - Toy Road to Groveport Road

CONSTRUCTION COSTS

Roadway	$	2,867,000	Signals	$	-
Erosion Control	$	557,000	Street Lighting	$	339,000
Drainage	$	458,000	Structures	$	13,872,000
Pavement	$	2,952,000	Landscaping	$	-
Water	$	-	Miscellaneous	$	165,000
Traffic Control	$	22,000			
			Construction Item Subtotal (rounded)	$	21,232,000
Project Scale Factor*		*0%*	Project Scale Unit Cost Cont.	$	-
General Contingency		*20%*	General Contingency	$	4,246,400
Annual/Cumulative Inflation Rate	*3%*	*21%*	Inflation**	$	5,351,000
Year of Estimate/Construction	*2023*	*2028*	Subtotal of Construction Costs	$	30,829,400

**Smaller projects typically have higher unit costs due to a loss of economies of scale. The Project Scale Factor is a rough adjustment to unit costs provided for projects which are often significantly larger.*
***Cumulative inflation between the year of estimate and construction. Includes project scale cost contingency and general contengency.*

OTHER PROJECT COSTS

Utility Relocation			$	25,000
Right-of-Way			$	222,000
Environmental	*1.5%*		$	463,000
Engineering	*13%*	*of Construction Subtotal*	$	4,008,000
Construction Observ., Services	*7%*	*of Construction Subtotal*	$	2,159,000
		Subtotal of Other Project Costs	$	6,877,000

ESTIMATED TOTAL PROJECT COST	$	37,706,400

Estimate prepared by Stantec Consulting Serivces 2/1/2023

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