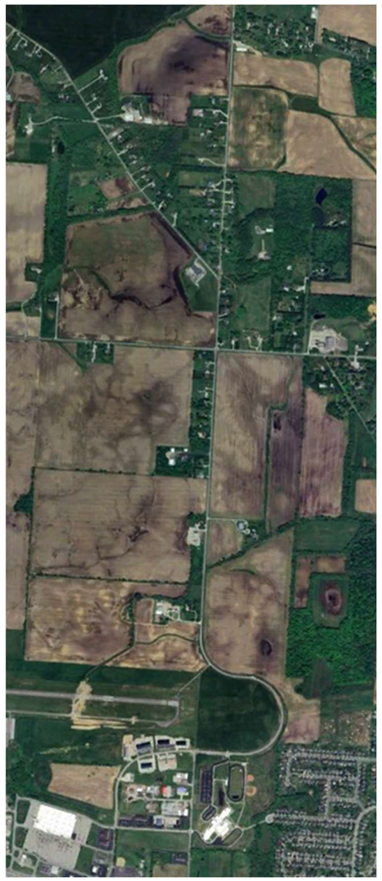
Coonpath Road & Election House Road
Feasibility Study

Feasibility Study September 2024

BURGESS & NIPLE

TABLE OF CONTENTS



Signature Page

This Feasibility Study was prepared by Burgess & Niple, Inc. Signatures and contact information for the primary report author and reviewer appear below.

Preparer's Signature

Tim McDonald, P.E
Burgess & Niple, Inc.
330 Rush Alley, Suite 700
Columbus, Ohio 43215
614.459.2050
Tim.mcdonald@burgessniple.com

Reviewer's Signature

Brian Toombs
Burgess & Niple, Inc.
330 Rush Alley, Suite 700
Columbus, Ohio 43215
614.459.2050
Brian.toombs@burgessniple.com

Executive Summary

The purpose of the study is to develop an alternative to improve safety and operation of the Coonpath Road and Election House Road intersection.

The Coonpath Road and Election House Road intersection has experienced continued growth in recent years. This growth is projected to continue for the foreseeable future, fueled by the continued increase in population in the county and the increased use of US 33 across Ohio.

The current intersection is a traditional 4-way stop controlled intersection with no turn lanes. The traffic at the intersection is projected to be Level of Service "F" in the design year of 2048. Additionally, the current intersection is experiencing more crashes annually when compared to similar intersections.

This Feasibility study analyzed 3 alternatives:

- Alternative 1 (Signalized Intersection)
- Alternative 2 (Roundabout)
- Alternative 3 (Peanut Roundabout)

The Feasibility study looked at 6 key criteria to compare the alternatives:

- Safety Performance
- Traffic Operations
- Environmental Impacts
- Utilities Impacts
- Right of way Impacts
- Construction Cost Estimate

The proposed Roundabout with a northbound right turn lane offers the greatest safety and congestion benefits relative to the cost and impacts compared to the other proposed solutions. The Signalized Intersection is predicted to increase crashes but improve the vehicular capacity of the intersection. By comparison, the Roundabout with right turn lane alternative is predicted to have fewer crashes and reduced delay over the signalized intersection. Based on the increased benefits, the recommended alternative from this study is the roundabout alternative.

The right turn lane could be built with the initial roundabout project or be added in the future when traffic levels increase. This strategy could be used to phase the project and defer a portion of the cost of the project to a future time when gaining additional capacity is critical. It is recommended to purchase the right of way required for the right turn lane with the initial roundabout project to ensure future land use does not preclude this intersection enhancement.

Chapter 2 Introduction

Coonpath Road is an east-west corridor distributing traffic across central Fairfield County. Coonpath Road intersects US 33 at an interchange offering full movements, making it an attractive corridor for distribution of traffic in the region. This traffic is predominately residential and agricultural in nature. Election House Road is a north-south corridor connecting to Columbus-Lancaster Road which is a significant retail, commercial, and light industrial corridor for the region.

South of Coonpath Road, Election House Road has light industrial, retail, the Fairfield County airport, and the General Sherman Junior High School. North of Coonpath Road, Election House Road is predominantly residential and agricultural. This intersection provides a key link between the residential areas east, west, and north to the various destinations south of Election House Road.

The US 33 corridor, just over 2 miles to the west of this intersection, has continued to be widened and improved between Columbus and Southeastern Ohio, resulting in growth in traffic volumes. This growth along US 33 has translated into modest growth of 2-3% annually along Coonpath Road and Election House Road.

Existing Safety Analysis

- 23 crashes during the 5-year period of 2018-2022
- 56.5% (13) rear end crashes

Exiting Capacity Analysis

- Coonpath Road Currently has 8980 vehicles per day
- Election House Road currently has 4660 vehicle per day
- Current Level of Service is C
- The Intersection will operate at Level of Service F by 2048 with no improvements.

Purpose Statement
The purpose of the study is to identify alternatives to improve safety and reduce congestion at the Coonpath Road and Election House Road intersection.

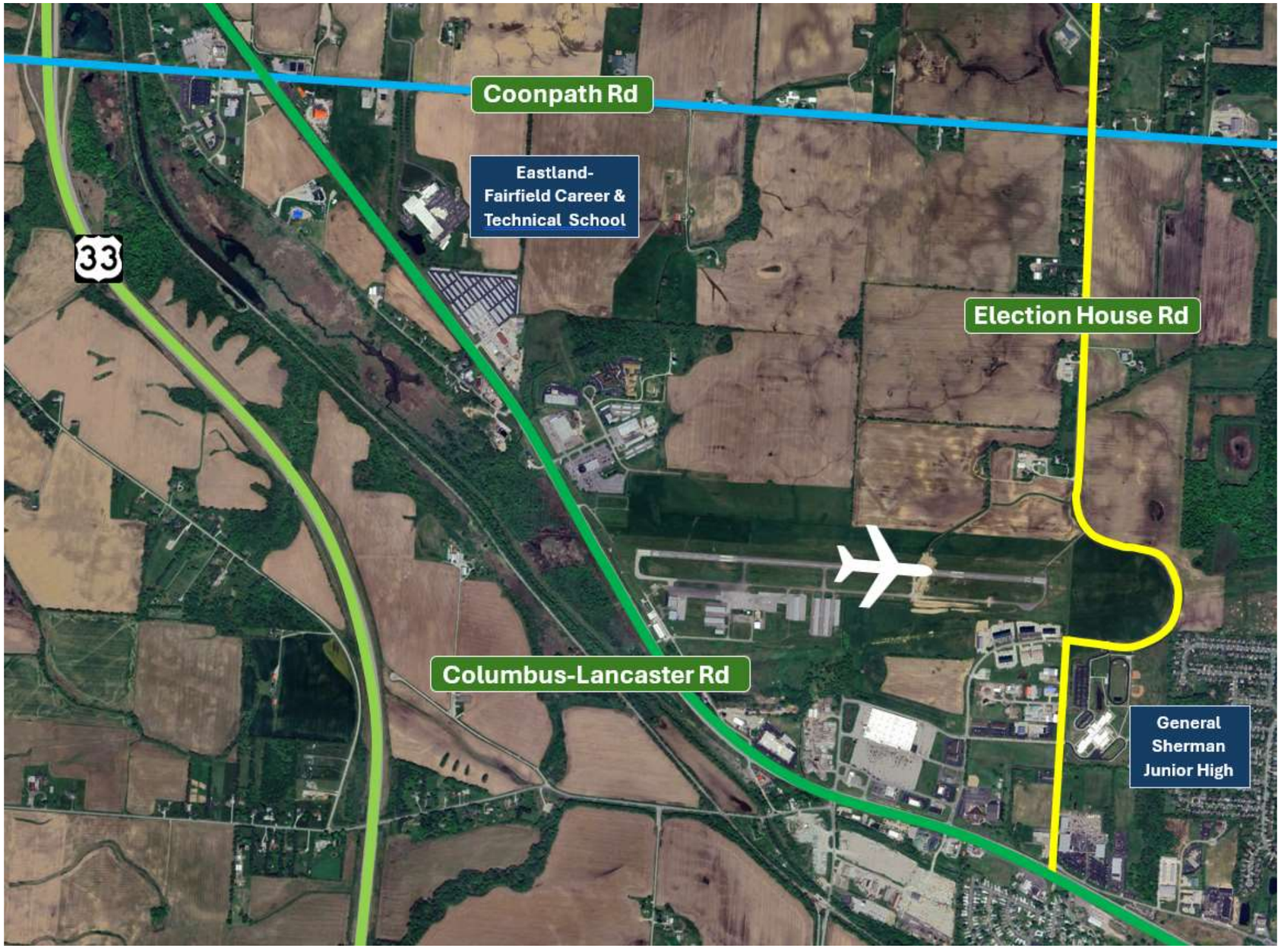


Figure 1 – Map of Area

Chapter 3 Alternatives Considered

3 Alternatives have been evaluated at this intersection:

- Alternative 1 - Signalized Intersection
- Alternative 2 - Roundabout
- Alternative 3 - Peanut Roundabout

The following design criteria has been set and was followed for the build alternatives studied:

Criteria	Coonpath Rd	Election House Rd
Functional Classification	Minor Arterial	Minor Collector
Locale (103.1 or 301-4)	N/A (Rural)	N/A (Rural)
Roadway Type	Rural	Rural
Design Speed	55 MPH	55 MPH
Legal Speed	55 MPH	55 MPH
National Truck Network	NO	NO
National Highway System	NO	NO
Design Vehicle	WB-62	WB-62
Check Vehicle	WB-67	WB-67
Lane Width	11'	11'
Treated Curbed Shoulder Width	1-2 Paved (or curb & gutter)	1-2 Paved (or curb & gutter)
Treated Uncurbed Shoulder Width	4'	4'
Graded Shoulder Width	4'	4'

Table 1 Design Criteria

Alternative 1 – Signalized Intersection

This alternative adds a traffic signal at the intersection. The addition of a signal will allow a greater control for traffic capacity by individual movements. The higher volume movements will then be able to receive increased priority with extra green time, potentially improving the overall operation and safety of the intersection. To optimize the alternative and add additional capacity, a left and right turn lane is added in the northbound direction and a left turn lane added in the east, west and southbound directions. Refer to ***Figure 2*** for the schematic plan view of Alternative 1.

Figure 2 - Signalized Intersection Schematic Plan View

Alternative 2 – Roundabout

The second alternative is a roundabout with the addition of a northbound right turn lane. This turn lane is needed due to the large number of vehicles making the northbound to eastbound movement in the design year. The northbound leg of the intersection had the largest right turning volume of any approach. This additional turn lane would improve the capacity and operation of the overall roundabout with minimal impacts. However, the turn lane would not be need for capacity in the opening day. Refer to ***Figure 3*** for the schematic plan view of Alternative 2.

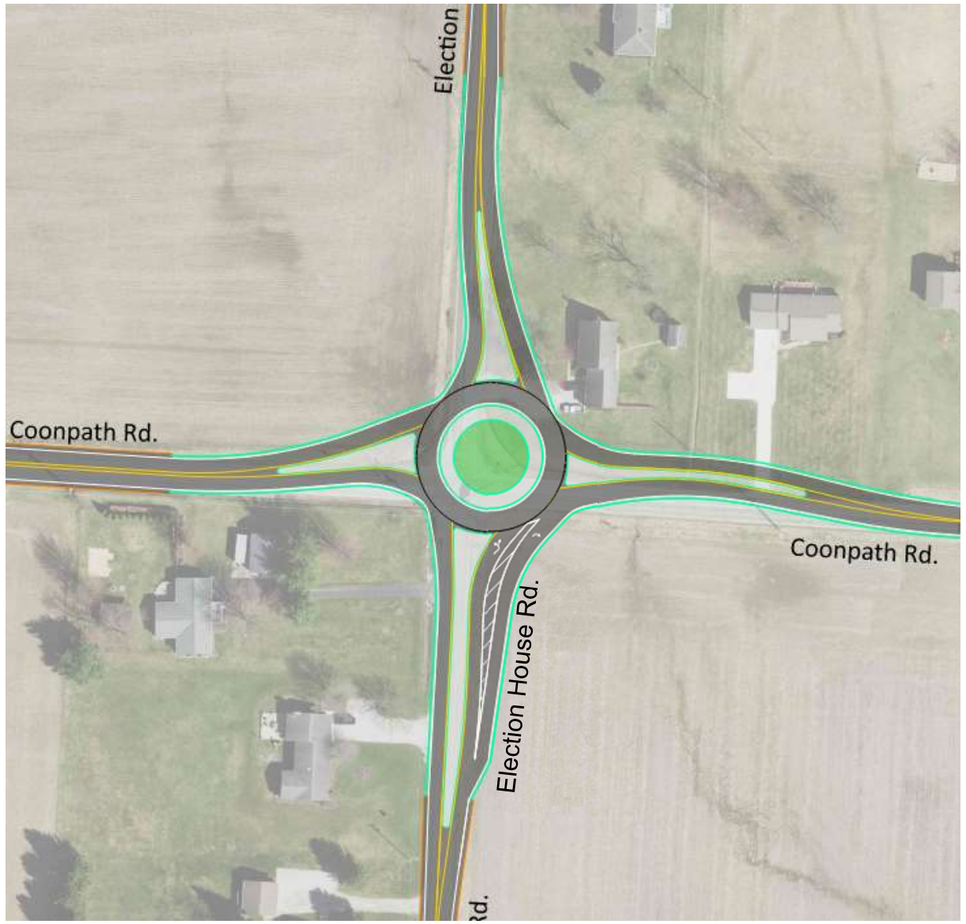


Figure 3 - Roundabout with right turn lane Schematic Plan View

Alternative 3 – Peanut Roundabout

The third alternative is a Peanut shaped roundabout with the addition of a northbound right turn lane. Similar to Alternative 2, the right turn lane is needed due to the large number of vehicles making the northbound to eastbound movement in the design year. This Peanut shape allows the roundabout to minimize right of way impacts on the northeast and southwest quadrants of the intersection. It also allows for the possibility of locating a driveway in roundabout. This driveway would function similar to a fifth leg allow the resident full access to the roundabout. Refer to ***Figure 4*** for the schematic plan view of Alternative 3.

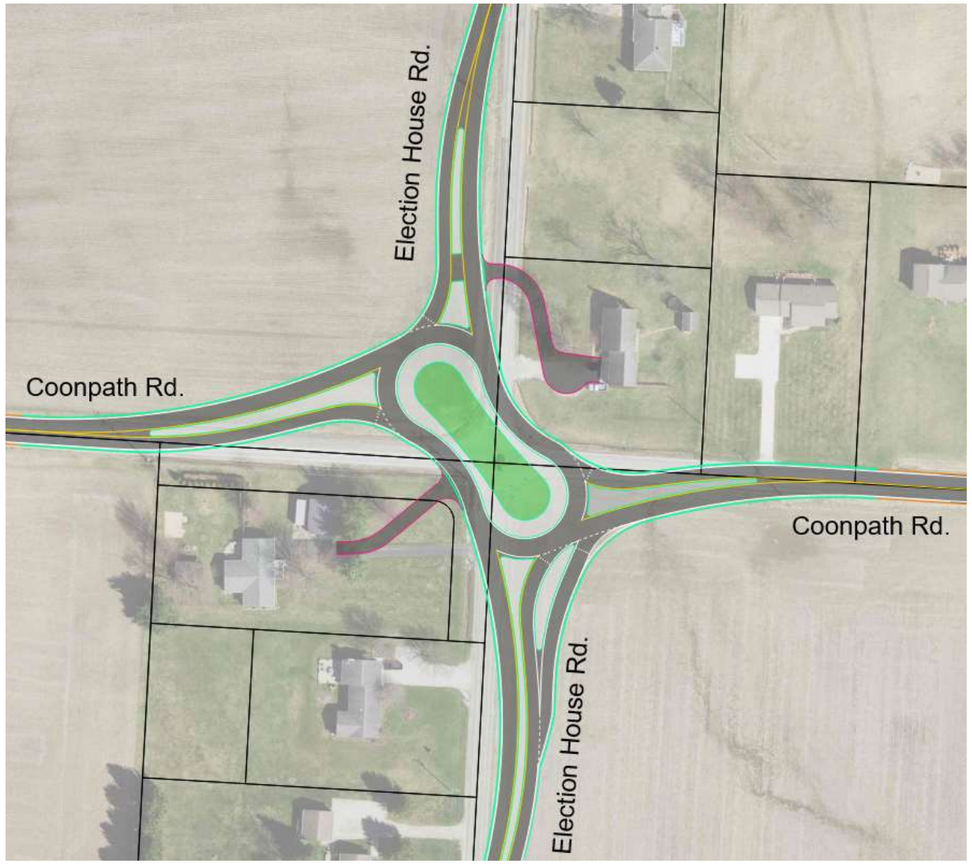


Figure 4 – Peanut Roundabout with right turn lane Schematic Plan View

Alternatives Considered and Dismissed

Additionally, an upgraded 4-way stop controlled intersection was considered. The alternative was analyzed with an additional left turn lane on all four legs to improve capacity. The capacity analysis showed that the intersection would operate at a Level of Service of "F" in the design year, indicating it didn't address the critical safety and congestion needs. See ***Appendix E*** for the detailed HCS analysis of this alternative. For this reason, this alternative was dismissed from further consideration.

Chapter 4 Key Criteria

An assessment was completed on the conceptual alternatives being proposed for this intersection upgrade. The objective of this additional analysis was to determine the feasibility of each alternative as well as identifying those elements critical to the implementation of each alternative needing to be addressed with further analysis. This effort helped identify the costs and benefits of each alternative. A summary of the key analyses and assessments is provided in this section of this report.

Safety Performance

Crash Trends Analysis

Crash data from January 1, 2018 through December 31, 2022 was obtained for the study area from ODOT's GIS Crash Analysis Tool (GCAT) and analyzed using ODOT's Crash Analysis Module (CAM) tool. In the five-year period, 23 crashes occurred in the study area with 30 percent resulting in injury. There were no fatalities or serious injuries reported during this period.

Figure 5 shows the breakdown of crashes by severity per year. The year 2018 experienced the highest frequency of total crashes, with seven crashes. The year 2019 experienced the highest frequency of injury crashes, with three crashes. Over the last three years there is a trend of increase crashes.

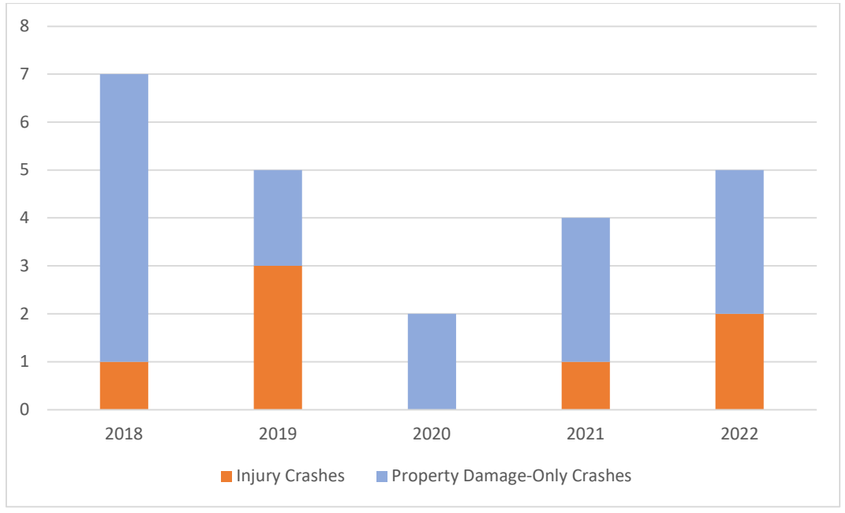


Figure 5: Crash Summary by Year

Figure 6 summarizes the crashes by type at the Coonpath Road at Election House Road intersection. The most prevalent crash type was rear end, which make up 57 percent of all crashes. This was followed by angle crashes, which make up 31 percent of all crashes.

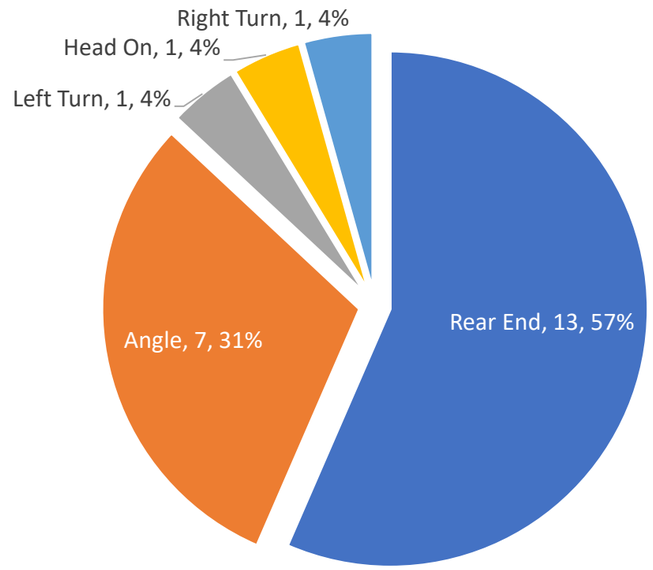


Figure 6: Crash Summary by Type

All but one rear end crash occurred on the eastbound and westbound approaches of the intersection. Out of the 13 rear end crashes, four resulted in injury. Two other rear end crashes cited speed as a contributing factor.

Out of the seven angle crashes, one resulted in injury. All cited either "failure to yield" or "ran stop sign" as the primary contributing factor. Of the crashes that cited "failure to yield" it was not clear if this meant the driver failed to stop at the stop sign, or if there were discrepancies between who had the right of way. A detailed crash diagram and CAM tool output is provided in **Appendix B.**

Existing Safety Performance

Highway Safety Manual methodology was applied using ODOT's Economic Crash Analysis Tool (ECAT). This process allows users to assess the existing safety performance of a location based on a combination of historical crash data, existing roadway characteristics, and traffic volumes. The analysis output is provided via three values, define:

Predicted Crash Frequency ($N_{PREDICTED}$) – defined as how a site would be expected to perform relative to 1,000 sites with comparable roadway characteristics and traffic volumes. This value is presented using units of crashes per year, and commonly broken down according to injury severity level.

Expected Crash Frequency ($N_{EXPECTED}$) – defined as the average performance of a site, normalized over an extended period based on actual crash history. This value is presented using units of crashes per year, and commonly broken down according to injury severity level.

Potential for Safety Improvement (N_{PSI}) – Difference between Expected Crash Frequency and Predicted Crash Frequency. A positive value indicates that the location is performing poorly compared to similar locations and safety improvements would likely have a significant impact on reducing crash frequency.

Injury Severity Levels are based on FHWA's KABCO rating scale where: K= fatal injury crash, A = incapacitating injury crash, B= non-incapacitating injury crash, C= possible injury, O= no injury/property damage only.

HSM Results for the study area are summarized in **Table 2**.

Table 2: HSM Results, Existing Conditions

	KA	B	C	O	TOTAL
TOTAL $N_{PREDICTED}$	0.0200	0.2041	0.2985	1.1361	1.6587
TOTAL $N_{EXPECTED}$	0.0292	0.2679	0.3883	1.8303	2.5157
TOTAL N P_{SI}	**0.0092**	**0.0638**	**0.0898**	**0.6942**	**0.8570**

Findings show that the intersection is performing worse than would be predicted based on the roadway characteristics and traffic volumes. The intersection experiences approximately 0.86 more crashes per year than similar intersections.

Proposed Safety Performance

Highway Safety Manual methodology was also applied using ODOT's Economic Crash Analysis Tool (ECAT) to evaluate the proposed safety performance for four alternatives:

1. No Build
2. Install a signal at the intersection with dedicated left turn lanes on all approaches and a dedicated right turn lane on the northbound approach.
3. Install a single lane roundabout with right turn bypass lane on the northbound approach.

Safety performance evaluation comparing the proposed alternatives to the No Build alternative is shown in **Table 3** and **Table 4.** All analysis was performed using 2048 traffic volume projections.

Table 3: HSM Results, Proposed Signal

	KA	B	C	O	TOTAL
TOTAL $N_{PREDICTED}$ No Build	0.0424	0.3932	0.5646	2.2418	3.2420
TOTAL $N_{PREDICTED}$ Signal	0.1340	0.6377	0.9565	3.2498	4.9780
TOTAL N P_{SI}	**0.0916**	**0.2445**	**0.3919**	**1.0080**	**1.7360**

Table 4: HSM Results, Proposed Roundabout

	KA	B	C	O	TOTAL
TOTAL $N_{PREDICTED}$ No Build	0.0424	0.3932	0.5646	2.2418	3.2420
TOTAL $N_{PREDICTED}$ Roundabout	0.0231	0.1947	0.2413	2.1897	2.6488
TOTAL N P_{SI}	**-0.0193**	**-0.1985**	**-0.3233**	**-0.0521**	**-0.5932**

Findings show that installing a signal at the intersection is expected to increase overall crash frequency by approximately 1.74 crashes per year. Installing a roundabout at the intersection is expected to reduce overall crash frequency by approximately 0.59 crashes per year. Alternatives 2 & 3 will have similar safety benefits by calming traffic and reducing conflict points.

Traffic Operations

Data Collected

Turning movements were conducted using Miovision at the study intersection on Thursday, February 15, 2024. The AM peak hour for the study area was identified as 6:45-7:45 AM and the PM peak hour was determined to be 4:15-5:15 PM. A seasonal adjustment factor has been applied to the counts to determine AADT in accordance with the procedures outlined by ODOT's Modeling and Forecasting office. Copies of the traffic counts and figures showing the 2024 Existing traffic volumes are contained in **Appendix D.**

Design Year Intersection Traffic Forecasts

Future year No-Build traffic forecasts were developed by Burgess & Niple. The ODOT Traffic Forecast Management System(TFMS) was used to determine the annual growth rate at Coonpath Road and Election House Road intersection. TFMS predicts that the corridor will have a nearly flat annual growth rate of 2.2%. In addition to the annual growth rate, a Design Hour Volume (DHV) factor was applied. The DVH factor converts the peak hour volume to the 30th highest hour volume. Based on counts being conducted on a Thursday in February the DHV factor of 1.27.

With the application of the annual growth rate and DHV factor, the 2024 peak hour traffic counts were increased to 2048 design hour volumes using the following calculations:

- 2048 Projected increase = 2.2% per year x 24 years x 1.27 = 94.1%

Capacity Analysis

Capacity Analysis for the alternatives was conducted using the 2048 traffic projections. Highway Capacity Software (HCS), version 2023 was used for the analysis. The operational goals for the traffic analysis are that the overall intersection operates with a Level of Service (LOS) of D or better, each movement at LOS E or better, a volume to capacity (v/c) ratio of less than 0.93, and a queue storage ratio (QSR) of less than 1.0. Intersection capacity results are discussed in this chapter and detailed outputs of the HCS analysis are contained in **Appendix E.**

Existing 4-way Stop

The No Build alternative at the existing intersection is projected to be at LOS F in the design year. The analysis shows a projected average delay of 278 seconds per vehicle in the PM peak and 275 seconds per vehicle in the AM Peak. The only direction not expected to exceed LOS F is the southbound direction due to lower traffic volumes on the north approach leg.

Table 5 2048 No Build Coonpath Rd & Election House Road

		Eastbound Coonpath Rd	Westbound Coonpath Rd	Northbound Election House Rd	Southbound Election House Rd
2048 No Build AM		TRL	TRL	TRL	TRL
LOS	F	D	F	C	C
Delay	275.0	25.3	470.2	15.7	19.0
95th %ile Queue		115	1846	53	84
2048 No Build PM		TRL	TRL	TRL	TRL
LOS	F	F	F	F	D
Delay	278.3	396.1	343.4	125.6	26.0
95th %ile Queue		1228	1073	489	96

Improved 4-way stop

By adding an additional turn lane in each direction, the projected delay per vehicle will improve from 275 to 152 seconds per vehicle. Although this is a significant improvement the overall intersection LOS will remain an F in the design year. Therefore, this is not considered as a viable alternative.

Table 6 2048 Improved 4-way Stop Coonpath Road & Election House Road

		Eastbound Coonpath Rd		Westbound Coonpath Rd		Northbound Election House Rd		Southbound Election House Rd	
		L	TR	L	TR	L	TR	L	TR
2048 4 Way Stop with additional Turn Lane AM									
LOS	F	B	D	C	F	B	B	B	C
Delay	151.8	11.0	25.6	15.8	312.7	11.8	14.7	11.8	17.6
95th %ile Queue		5	140	56	1233	5	42	8	71
		24.7 C		253.3 F		14.4 B		16.8 C	
		L	TR	L	TR	L	TR	L	TR
2048 4 Way Stop with additional Turn Lane PM									
LOS	F	B	F	C	F	B	F	B	C
Delay	150.3	14.2	307.2	23.2	111.9	12.1	118.5	13.9	20.5
95th %ile Queue		20	980	88	434	3	469	10	66
		275.1 F		83.2 F		116.3 F		19.3 C	

Signalized Intersection

This alternative signalizes the intersection with the addition of turn lanes in each direction. Left turn lanes were placed on all approaches and a right only turn lane was placed on the northbound approach. The signal allows for the distribution of green time and balancing of the delay for individual movements. This signal is projected to operate at a LOS C in the AM and LOS D in the PM design year. This alternative provides good operation overall, however, the northbound through movement is at a LOS E which is acceptable but less than optimal. The average vehicular delay is 28.6 seconds in 2048 AM Peak and 42 seconds in the PM Peak. This is a significant delay savings over the exiting 4-way stop condition intersection treatment.

Table 7 2048 Signalized Coonpath Road & Election House Road

		Eastbound Coonpath Rd		Westbound Coonpath Rd		Northbound Election House Rd			Southbound Election House Rd	
		L	TR	L	TR	L	T	R	L	TR
2048 Signal with additional Turn Lane AM										
LOS	C	B	B	B	C	C	D	C	C	D
Delay	28.6	19.6	17.7	11.5	31.8	35.0	37.3	31.8	33.2	43.7
V/C		0.12	0.39	0.36	0.88	0.17	0.21	0.30	0.11	0.86
QSR		0.04	0.22	0.31	0.65	0.07	0.06	0.28	0.10	0.24
95th %ile Queue		11	218	93	646	21	56	98	30	244
		17.8 B		27.8 C		33.8 C			42.4 D	
2048 Signal with additional Turn Lane PM										
LOS	D	B	D	C	C	D	E	D	D	D
Delay	42.0	15.8	53.9	34.4	22.1	37.7	63.7	46.2	35.9	41.5
V/C		0.24	0.96	0.91	0.61	0.06	0.84	0.79	0.26	0.6
QSR		0.17	0.77	0.93	0.36	0.04	0.30	0.96	0.15	0.22
95th %ile Queue		50	770	279	362	11	296	335	44	219
		49.7 D		26.1 C		53.2 D			40.5 D	

Roundabout

This alternative constructs a single lane roundabout at the intersection. The proposed roundabout would operate at an overall LOS C with an average delay of 19.2 seconds in the 2048 AM peak hour and 24.0 in the 2048 PM peak hour. The northbound movement would operate at a LOS E and average delay of 36.7 seconds per vehicle. A right turn lane was developed to further relieve this future congestion for comparison. This improved roundabout alternative would operate at the highest level of the alternatives with the PM Peak hour average delay further reduced to 18 seconds per vehicle. Alternative 3 was developed to minimize impact to residential properties and will operate at similar levels to Alternative 2.

Table 8 2048 Roundabout Coonpath Road & Election House Road

		Eastbound Coonpath Rd	Westbound Coonpath Rd	Northbound Election House Rd	Southbound Election House Rd
		R	R	R	R
2048 Roundabout AM					
LOS	C	A	C	A	C
Delay	19.4	8.8	24.9	6.5	20.9
V/C		0.41	0.89	0.22	0.58
95th %ile Queue		52	339.0	24	94.2
		R	R	L	R
2048 Roundabout PM					
LOS	C	D	C	E	A
Delay	24.0	27.6	15.6	36.7	9.8
V/C		0.86	0.71	0.86	0.34
95th %ile Queue		276	159	245	38

Table 9 2048 Roundabout with right turn lane Coonpath Road & Election House Road

		Eastbound Coonpath Rd	Westbound Coonpath Rd	Northbound Election House Rd		Southbound Election House Rd
		R	R	L	R	R
2048 Roundabout AM						
LOS	C	A	C	A	A	C
Delay	19.2	8.8	24.9	4.7	5.1	20.9
V/C		0.41	0.89	0.09	0.12	0.58
95th %ile Queue		52	339.0	8	11	94.2
		8.8 A	24.9 C	49.9 A		20.9 C
		R	R	L	R	R
2048 Roundabout PM						
LOS	C	D	C	A	B	A
Delay	18.0	27.6	15.6	9.6	11.7	9.8
V/C		0.86	0.71	0.33	0.44	0.34
95th %ile Queue		276	159	36	56	38
		27.6 D	15.6 C	10.8 B		9.8 A

Environmental Screening

This Environmental Screening for the Coonpath and Election House intersection was evaluated by Burgess & Niple (B&N) on April 11, 2024. The desktop reconnaissance utilized the following resources: aerial imagery, Untied States Geological Survey(USGS) topographic mapping, United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping, USFWS Threatened & Endangered Species, Federal Emergent Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Cultural Resources, Regulated Materials Review, and Underserved Population Review. Mapping and data from these various agencies are located in **Appendix F**. Resources found during the desktop reconnaissance are discussed in this chapter.

Aerial imagery was assessed using Google Imagery and Environmental Systems Research Institute (ESRI) World Imagery. The intersection is in a rural setting, with the surrounding land composed of residential and agricultural. There are active row-cropping fields and residential homes with maintained lawns. Sporadic trees are found in the residential properties. The study area is on the USGS 7.5-minute Carroll Quadrangle, OH topographic map. The study area is located at approximately 880 feet above mean sea level.

The USFWS National Wetland Inventory (NWI) mapping depicts no features within the study area. While the NWI mapping is a useful tool for preliminary assessments, an on-site survey may be required to ensure there are not any unmapped features within the study area such as wetlands or small streams within the right-of-way. The study area is found on the FEMA FIRM panel 39045C0145G (eff. 1/6/2012). The study area is within Zone X, indicating an area of minimal flood hazard.

The USFWS Information for Planning and Consultation (IPaC) system was accessed to identify any potential federally threatened or endangered species within the study area. Two endangered species may be present within the study area, the Indiana bat (*Myotis sodalis*) and the Northern Long-eared bat (*Myotis septentrionalis*). One proposed endangered species, the Tricolored bat (*Perimyotis subflavus*), is also potentially within the study area. The Monarch butterfly (*Danaus Plexippus*) is a candidate species potentially within the study area. To protect the bat species, the USFWS will likely recommend seasonal tree clearing between October 1 and March 31.

Cultural resources were assessed using mapping the Ohio State Historic Preservation Office (OSHPO) provided. Mapping provided by OSHPO shows there are no known historical properties or archaeological sites within or adjacent to the study area. As the farm fields have had minimal earth disturbance, a Phase I archaeological survey may be required.

Regulated Materials were assessed utilizing the ODOT Ohio Regulated Properties Search (ORPS) tool. There are no properties within or adjacent to the study area with regulated materials or past incidents.

The ODOT Transportation Information Mapping System (TIMS) was utilized to determine demographics of the people living within the study area. The study area is within four separate census tracts. In the southwest tract, the population is 1% people of color and 27% of the population is low income. The southeast tract population has 11% of people designated as low income and 12% of the population are people of color. Within the northeast tract, 10% of the population is considered low income, and 5% of the population are people of color. In the northwest tract, 11% of the population is low income and 12% of the population is comprised of people of color.

The above information was obtained from public agency records and reflects the information contained in their data bases. A detailed environmental review including field investigations will likely be required during preliminary and detailed design to determine if any undocumented environmental attributes are present within the study area.

Utilities Impacts

Existing private and public utilities and respective owners were determined by submitting an OUPS ticket and reviewing record plans. All Alternatives have similar utility impacts.

- **South Central Power** Overhead powerlines are located on the west side of Election House Road and south side of Coonpath. There are additional Transmission and Distribution lines under the proposed layouts. South Central Power may have easements that could require reimbursable relocations.
- **AT&T** has buried cable on the north side of Coonpath Road and on the eastside of election house road. AT&T's buried cables also travel under the Election House Road immediately south of the intersection and under Coonpath Road immediately west of the intersection.
- **Northeast Ohio Natural Gas** services all buildings along Coonpath Road and Election House Rd. The lines are buried on the northside of Coonpath Rd. Along Election House Road the buried lines are west of the road to the south of the intersection then cross over and travel on the eastern side of the roadway. Northeast Ohio Natural Gas may have easements that could require reimbursable relocations.

See ***Appendix G*** for detailed responses from the utility owners in the area.

Right of way Impacts

Signalized Intersection would have strip takes to allow for the addition of turn lanes and pushing the ditches out. The cost of these strip takes are anticipated to be approximately $100,000.

Roundabout alternative will have increase impacts due to the close proximity of the houses on SW and NE quadrants of the interchange. Because right of way is already owned by the county on the SW parcel along Election House and Coonpath Roads the optimized design has the roundabout shifted to the north. This requires the relocation of the residential structure on the NE quadrant. This residential structure is estimated to cost $400,000 to relocated. Additional there will be various strip takes to construct the roundabout. These strip takes will cost approximately $500,000

Peanut roundabout will eliminate the need for a residential relocation however the length of the roadway needed tie into the existing roads is lengthened. This also lengthens the to needed right of way along the roadways. These strip takes are predominantly in the agricultural parcels but other minor takes may be required. It is anticipated Right of way will cost approximately $150,000 for this alternative.

Construction Cost Estimates

Construction cost estimates were prepared for all the alternatives. These construction cost estimates assumed the big-ticket items, such as pavement areas, curb, barrier, and earthwork were quantified using CADD areas. Other items, such as drainage, traffic control, and maintenance of traffic (MOT), were reported as a raw percentage of the total construction cost or based on similar projects due to the lack of detailed design completed at this time. The cost estimate utilized 2024 bid tabs for unit costs, and the entire estimate was inflated for 2027 year of construction using an inflation percentage increase of 17.9%. A 30% contingency was applied to the construction cost subtotal due to the level of uncertainty that still exists with the design. The table shows the estimated construction costs for the four Build alternatives. Refer to **Appendix H** of this report for the Construction Cost Estimates for each Build alternative.

Alternative	Construction Cost Estimate
Signalized Intersection	$2,401,000
Roundabout with right turn lane	$2,729,000
Peanut Roundabout with right turn lane	$3.641,000

Table 10 - Construction Cost Estimates

Chapter 5 Conclusions & Next Steps

The matrix comparing all alternatives across the 5 Key Criteria discussed in Chapter 4. The No Build 4-way stop does not meet the purpose of the project by not improving safety or congestion. Therefore, the No Build is not being considered for advancement.

The Safety analysis shows the roundabout alternatives could reduce the predicted number of crashes when compared to similar intersections and the signalized intersection is likely to increase crashes overall when compared to similar intersections.

Traffic performance shows the roundabout alternatives exhibit better LOS performance than the signalized intersection as well. The roundabout with a northbound turn lane will further improve operations. The northbound movement is projected to be at LOS E in the design year unless the turn lane is constructed.

Environmental impacts are minimal with all alternatives and therefore is not a significant differentiating factor in selecting the alternative. Utility impacts are also similar in all alternatives and not a significant differentiating factor.

The Roundabout alternatives have the greatest benefits in both the Safety Performance and the Traffic Operations category. The peanut alternative does eliminate a residential relocation, however it doesn't justify its increased construction cost. Therefor, the traditional roundabout is the preferred strategy overall.

The right turn lane could be built with the initial roundabout project or be added in the future when traffic levels increase. This strategy could be used to phase the project and defer a portion of the cost of the project to a future time when gaining additional capacity is critical. It is recommended to purchase the right of way required for the right turn lane with the initial roundabout project to ensure future land use does not preclude this intersection enhancement.

Coonpath Road & Election House Road				
	No Build	Alternative 1	Alternative 3	Alternative 4
Evaluation Criteria	4-Way Stop	Signal	Roundabout w/Turn lane	Peanut w/Turn lane
Safety Performance				
Traffic Operations				
Enviornmental Impacts				
Utility Impacts				
Right of Way Impacts				
Cost Estimates				

Good	Fair	Satisfactory	Unsatisfactory	Poor
				

Table 11 – Evaluation Matrix

Next Steps

Depending on which alternative described in this study is carried forward into the next phase of project development, further investigation and information gathering may be necessary to confirm impacts and meet the needs established by the design process. Here are the recommendations for next steps:

- Identify potential funding partners and obtain funding for the project. Potential sources include ODOT Safety Program, CEAO Safety, Federal Grant opportunities (Safe Streets for All), CORPO and Local Funding opportunities.
- Obtain Survey and Geotechnical information to advance the project design
- Develop detailed horizontal and vertical geometry of the Recommended Alternative and evaluate/optimize the right-of-way impacts.
- On site Environmental Screening
- Phase I archaeological Survey
- Advance the Recommended Alternative through the Design and NEPA process

Coonpath Rd and Election House Rd

Intersection Feasibility Study

Appendix A

Alternative Layouts

BURGESS & NIPLE

Coonpath Rd and Electionhouse Rd
Signalized Intersection Alternative 1
6/13/2024

FAIRFIELD COUNTY ENGINEER

0 100
50 200

Election House Rd.

Coonpath Rd.

Coonpath Rd.

Election House Rd.

CTY-RTE-SECTION

Coonpath Rd. and Election House Rd.
Roundabout with right turn lane
6/17/2024

FAIRFIELD COUNTY ENGINEER

N

0 100
50 200

Election House Rd.

Coonpath Rd.

Coonpath Rd.

Election House Rd.

CTY-RTE-SECTION

Coonpath Rd. and Election House Rd.
Peanut Roundabout
6/17/2024

FAIRFIELD COUNTY ENGINEER

0 100
50 200

Election House Rd.

Coonpath Rd.

Coonpath Rd.

Election House Rd.

CTY-RTE-SECTION

Coonpath Rd and Election House Rd

Intersection Feasibility Study

Appendix B

Crash Diagram & CAM

BURGESS & NIPLE

(A) 9/10/2018 - 17/D/O/D
10/30/2019 - 17/D/R/W
8/1/2022 - 12/D/C/D*

(B) 10/1/2018 - 7/A/C/O
8/1/2020 - 6/D/C/D

(C) 2/19/2020 - 12/D/C/D

(D) 5/30/2018 - 14/D/C/D*
1/29/2019 - 19/N/O/D*
6/24/2021 - 8/D/C/D
10/18/2021 - 10/D/C/D

(E) 10/24/2018 - 7/D/C/D
8/17/2022 - 6/A/C/D
10/19/2022 - 7/D/R/W*

(F) 12/1/2018 - 8/D/R/W
11/10/2021 - 18/N/C/D*

(G) 4/10/2021 - 14/D/O/D
3/3/2022 - 20/N/O/D
5/13/2022 - 13/D/C/D

(H) 11/16/2018 - 14/D/O/D
11/11/2019 - 15/D/O/D

(I) 10/15/2019 - 19/N/C/D*

(J) 2/24/2018 - 11/D/R/W

(K) 9/27/2019 - 7/D/C/D*

ELECTION HOUSE RD

COONPATH RD

COONPATH RD

ELECTION HOUSE RD

I 1

J 1

F 2

H 2

D 4

E 3

A 3

B 2

G 3

K 1

C 1

LEGEND

A 1 — # CRASHES
PATTERN

→ - DIRECTION OF TRAVEL
* - MINOR INJURY OR INJURY POSSIBLE
●→ - AT FAULT VEHICLE

REAR END
HEAD ON
ANGLE
LEFT TURN
RIGHT TURN

XX/XX/XXXX - DATE OF COLLISION
11/D/C/D
- 11 - HOUR OF COLLISION
- D - ROAD CONDITION: D - DRY, W - WET, O - OTHER/UNKNOWN
- C - WEATHER CONDITION: C - CLEAR, O - CLOUDY, R - RAIN
- D - LIGHT CONDITION: D - DAYLIGHT, A - DAWN/DUSK, N - DARK, NOT LIGHTED

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED KEB
CHECKED MLV

COONPATH RD & ELECTION HOUSE RD
CRASH DIAGRAM

BURGESS & NIPLE

1
1

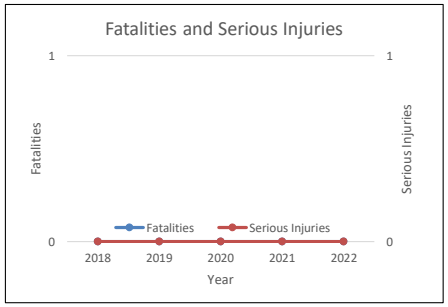
P:\PR6197200000\00-Planning\Safety\Safety\Election House Rd Crash Diagram.dgn Design 4/22/2024 11:40:24 AM kbright

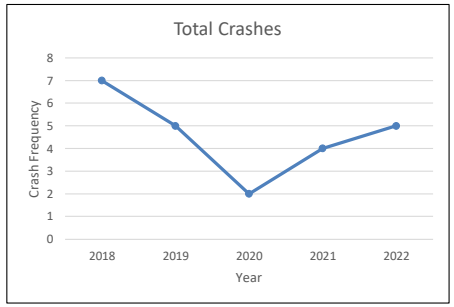
Coonpath Rd NW & Election House Rd NW

Crash Summary Sheet

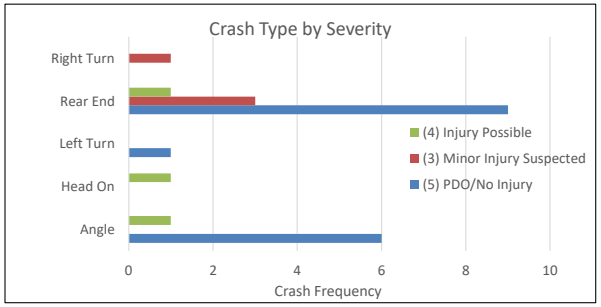
Crashes Per Year	4.60	Percent Injury	30.4%	EPDO	2.41

Year	Total Crashes	Fatalities	Serious Injuries
2018	7	0	0
2019	5	0	0
2020	2	0	0
2021	4	0	0
2022	5	0	0
Grand Total	23	0	0





Total Crashes Crash Type	Injury Level (3) Minor Injury	(4) Injury Possil	(5) PDO/No Inj	Grand Total
Rear End	3	1	9	13
Angle	0	1	6	7
Right Turn	1	0	0	1
Head On	0	1	0	1
Left Turn	0	0	1	1
Grand Total	4	3	16	23



Coonpath Rd NW & Election House Rd NW

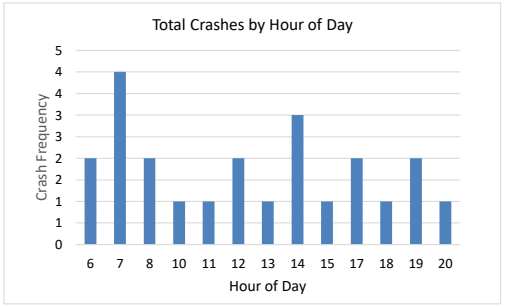
Crash Summary Sheet

Crashes Per Year	4.60	Percent Injury	30.4%	EPDO	2.41

Road Condition	Total Crashes	Fatalities	Serious Injuries
Dry	18	0	0
Wet	4	0	0
Other / Unknown	1	0	0
Grand Total	23	0	0

Hour of Day	Total Crashes
6	2
7	4
8	2
10	1
11	1
12	2
13	1
14	3
15	1
17	2
18	1
19	2
20	1
Grand Total	23

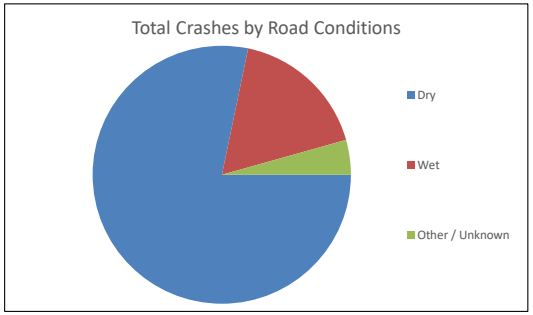
Month	Total Crashes
January	1
February	2
March	1
April	1
May	2
June	1
August	3
September	2
October	6
November	3
December	1
Grand Total	23

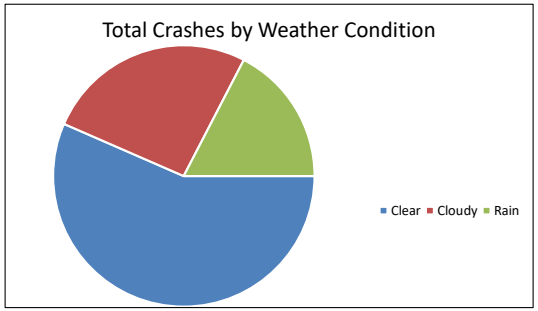


Weather	Total Crashes	Fatalities	Serious Injuries
Clear	13	0	0
Cloudy	6	0	0
Rain	4	0	0
Grand Total	23	0	0

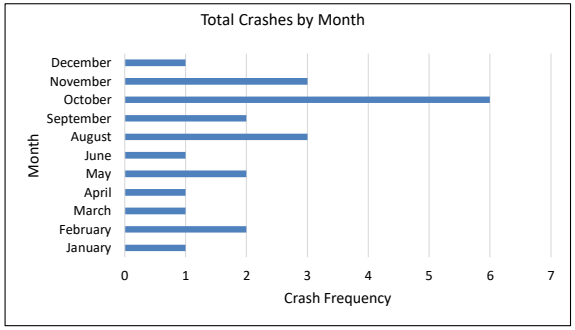
Day in Week	Total Crashes
(2) Monday	5
(3) Tuesday	2
(4) Wednesday	7
(5) Thursday	2
(6) Friday	3
(7) Saturday	4
Grand Total	23

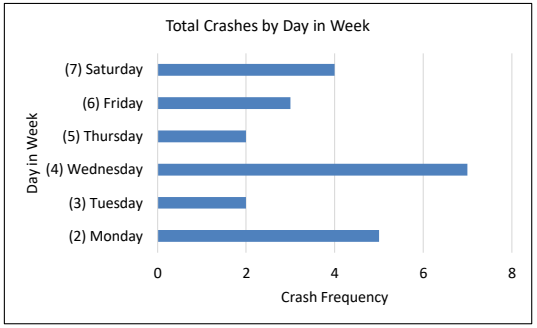
Crash Location	Total Crashes	Fatalities	Serious Injuries
Four-Way Intersection	15	0	0
Not An Intersection	5	0	0
Data Not Valid or Not Provided	3	0	0
Grand Total	23	0	0





Roadway Contour	Total Crashes	Fatalities	Serious Injuries
Straight Level	12	0	0
Straight Grade	11	0	0
Grand Total	23	0	0





Coonpath Rd NW & Election House Rd NW

Crash Summary Sheet

Fatalities	0
Serious Injuries	0
Other Injuries	9

Crashes Per Year	4.60
Fatal and All Injury Crashes	7
Percent Injury	30.4%
Equivalent PDO Index Value	2.41

Crash Severity	Crashes	%
(3) Minor Injury Suspected	4	17.39%
(4) Injury Possible	3	13.04%
(5) PDO/No Injury	16	69.57%
Grand Total	23	100.00%

Year	Crashes	%
2018	7	30.43%
2019	5	21.74%
2020	2	8.70%
2021	4	17.39%
2022	5	21.74%
Grand Total	23	100.00%

Day of Week	Crashes	%
(2) Monday	5	21.74%
(3) Tuesday	2	8.70%
(4) Wednesday	7	30.43%
(5) Thursday	2	8.70%
(6) Friday	3	13.04%
(7) Saturday	4	17.39%
Grand Total	23	100.00%

Crash Type	Crashes	%
Rear End	13	56.52%
Angle	7	30.43%
Right Turn	1	4.35%
Head On	1	4.35%
Left Turn	1	4.35%
Grand Total	23	100.00%

Hour of Day	Crashes	%
6	2	8.70%
7	4	17.39%
8	2	8.70%
10	1	4.35%
11	1	4.35%
12	2	8.70%
13	1	4.35%
14	3	13.04%
15	1	4.35%
17	2	8.70%
18	1	4.35%
19	2	8.70%
20	1	4.35%
Grand Total	23	100.00%

Month	Crashes	%
1	1	4.35%
2	2	8.70%
3	1	4.35%
4	1	4.35%
5	2	8.70%
6	1	4.35%
8	3	13.04%
9	2	8.70%
10	6	26.09%
11	3	13.04%
12	1	4.35%
Grand Total	23	100.00%

Coonpath Rd NW & Election House Rd NW

Crash Summary Sheet

Weather Condition	Crashes	%
Clear	13	56.52%
Cloudy	6	26.09%
Rain	4	17.39%
Grand Total	23	100.00%

Road Condition	Crashes	%
Dry	18	78.26%
Wet	4	17.39%
Other / Unknown	1	4.35%
Grand Total	23	100.00%

Light Condition	Crashes	%
Daylight	17	73.91%
Dark - Roadway Not Lighted	4	17.39%
Dawn/Dusk	2	8.70%
Grand Total	23	100.00%

Number of Units	Crashes	%
2	21	91.30%
3	2	8.70%
Grand Total	23	100.00%

ODOT Location	Crashes	%
Four-Way Intersection	15	65.22%
Not An Intersection	5	21.74%
Data Not Valid or Not Provided	3	13.04%
Grand Total	23	100.00%

Work Zone Related	Crashes	%
No	23	100.00%
Grand Total	23	100.00%

Alcohol Related	Crashes	%
No	23	100.00%
Grand Total	23	100.00%

Drug Related (Inc. Marijuana)	Crashes	%
No	22	95.65%
Yes	1	4.35%
Grand Total	23	100.00%

Contour	Crashes	%
Straight Grade	11	47.83%
Straight Level	12	52.17%
Grand Total	23	100.00%

Marijuana Related	Crashes	%
No	23	100.00%
Grand Total	23	100.00%

Roadway Departure	Crashes	%
No	23	100.00%
Grand Total	23	100.00%

Older Driver (65+)	Crashes	%
No	18	78.26%
Yes	5	21.74%
Grand Total	23	100.00%

Intersection Related	Crashes	%
Yes	19	82.61%
No	4	17.39%
Grand Total	23	100.00%

Young Driver (15-25)	Crashes	%
No	11	47.83%
Yes	12	52.17%
Grand Total	23	100.00%

Speed Related	Crashes	%
No	21	91.30%
Yes	2	8.70%
Grand Total	23	100.00%

Motorcycle Involved	Crashes	%
No	23	100.00%
Grand Total	23	100.00%

Coonpath Rd NW & Election House Rd NW

Crash Summary Sheet

Unit 1 Summary

Unit 1 Pre-Crash Action	Crashes	%
Straight Ahead	19	82.61%
Slowing or Stopped In Traffic	3	13.04%
Data Not Valid or Not Provided	1	4.35%
Grand Total	23	100.00%

Unit 1 Contributing Factor	Crashes	%
Following Too Closely/ACDA	13	56.52%
Failure to Yield	4	17.39%
Ran Stop Sign	3	13.04%
Left of Center	1	4.35%
Other Improper Action	1	4.35%
None	1	4.35%
Grand Total	23	100.00%

Unit 1 Object Struck	Crashes	%
Nothing Struck	23	100.00%
Grand Total	23	100.00%

Unit 1 Traffic Control	Crashes	%
Stop Sign	14	60.87%
No Control	9	39.13%
Grand Total	23	100.00%

Unit 1 Posted Speed	Crashes	%
45	9	39.13%
50	1	4.35%
55	13	56.52%
Grand Total	23	100.00%

Unit 1 Direction From	Crashes	%
West	9	39.13%
East	8	34.78%
South	5	21.74%
Southeast	1	4.35%
Grand Total	23	100.00%

Unit 1 Direction To	Crashes	%
East	9	39.13%
West	8	34.78%
North	5	21.74%
Northwest	1	4.35%
Grand Total	23	100.00%

Coonpath Rd NW & Election House Rd NW

Crash Summary Sheet

Unit 1 Summary

Unit 1 Type	Crashes	%
Passenger Car	14	60.87%
Pick up	5	21.74%
Sport Utility Vehicle	2	8.70%
Unknown or Hit/Skip	1	4.35%
Passenger Van (minivan)	1	4.35%
Grand Total	23	100.00%

Unit 1 Special Function	Crashes	%
None	23	100.00%
Grand Total	23	100.00%

Coonpath Rd NW & Election House Rd NW
Crash Summary Sheet

Unit 2 Summary

Unit 2 Pre-Crash Action	Crashes	%
Slowing or Stopped In Traffic	13	56.52%
Straight Ahead	8	34.78%
Making Left Turn	1	4.35%
Making Right Turn	1	4.35%
Grand Total	23	100.00%

Unit 2 Contributing Factor	Crashes	%
None	22	95.65%
Other Improper Action	1	4.35%
Grand Total	23	100.00%

Unit 2 Direction From	Crashes	%
East	8	34.78%
North	3	13.04%
South	4	17.39%
West	8	34.78%
Grand Total	23	100.00%

Unit 2 Direction To	Crashes	%
East	9	39.13%
North	3	13.04%
South	4	17.39%
West	7	30.43%
Grand Total	23	100.00%

Unit 2 Type	Crashes	%
Passenger Car	12	52.17%
Sport Utility Vehicle	5	21.74%
Pick up	4	17.39%
Passenger Van (minivan)	1	4.35%
Semi-Tractor	1	4.35%
Grand Total	23	100.00%

Unit 2 Special Function	Crashes	%
None	23	100.00%
Grand Total	23	100.00%

Coonpath Rd and Election House Rd

Intersection Feasibility Study

Appendix C

ECAT Analysis

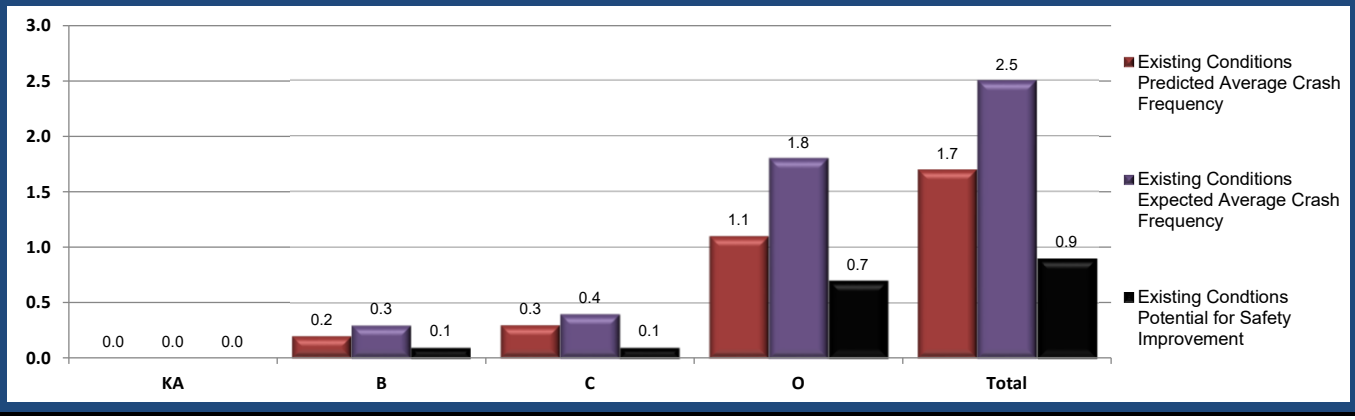
BURGESS & NIPLE

Project Safety Performance Report

General Information

Project Name	Coonpath Road at Election House Road	Contact Email	megan.valentine@burgessniple.com
Project Description	Intersection Feasibility Study - Existing Analyis	Contact Phone	
Reference Number	-	Date Performed	6/11/2024
Analyst	MLV	Analysis Year	2024
Agency/Company	B&N		

Summary of Anticipated Safety Performance of the Project (average crashes/year)



Project Summary Results (Without Animal Crashes)

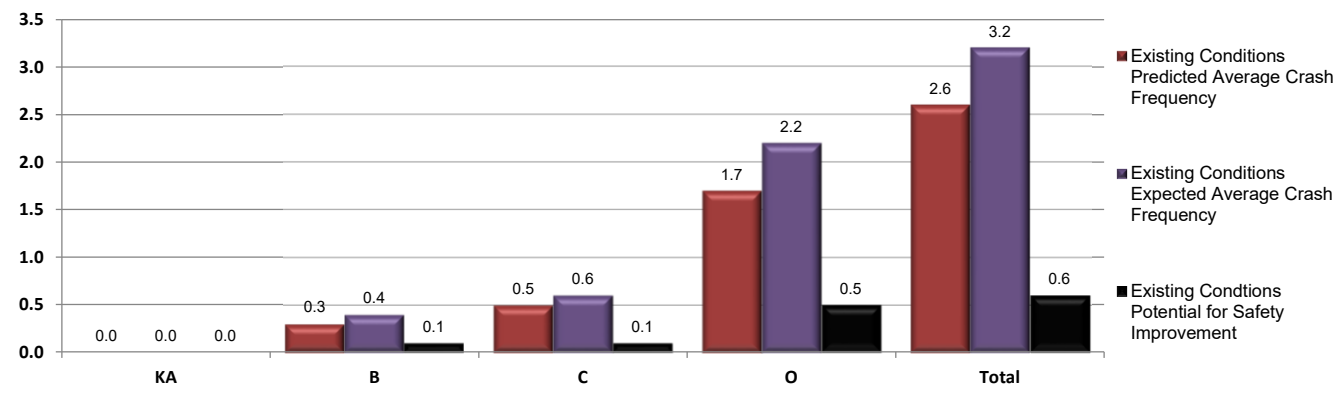
	KA	B	C	O	Total
$N_{predicted}$ - Existing Conditions	0.0200	0.2041	0.2985	1.1361	1.6587
$N_{expected}$ - Existing Conditions	0.0292	0.2679	0.3883	1.8303	2.5157
$N_{potential\ for\ improvement}$ - Existing Conditions	**0.0092**	**0.0638**	**0.0898**	**0.6942**	**0.8570**

Project Safety Performance Report

General Information

Project Name	Coonpath Road at Election House Road	Contact Email	megan.valentine@burgessniple.com
Project Description	Intersection Feasibility Study - No Build Analyis	Contact Phone	
Reference Number	-	Date Performed	6/11/2024
Analyst	MLV	Analysis Year	2048
Agency/Company	B&N		

Summary of Anticipated Safety Performance of the Project (average crashes/year)



Project Summary Results (Without Animal Crashes)

	KA	B	C	O	Total
$N_{predicted}$ - Existing Conditions	0.0339	0.3418	0.5047	1.7377	2.6181
$N_{expected}$ - Existing Conditions	0.0424	0.3932	0.5646	2.2418	3.2420
$N_{potential\ for\ improvement}$ - Existing Conditions	**0.0085**	**0.0514**	**0.0599**	**0.5041**	**0.6239**

Project Safety Performance Report

General Information

Project Name	Coonpath Road at Election House Road	Contact Email	megan.valentine@burgessniple.com
Project Description	Intersection Feasibility Study - No Build Analyis	Contact Phone	
Reference Number	-	Date Performed	6/11/2024
Analyst	MLV	Analysis Year	2048
Agency/Company	B&N		

Existing Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.0339	0.3418	0.5047	1.7377	2.6181

Existing Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.0424	0.3932	0.5646	2.2418	3.242

Existing Conditions Project Element Potential for Safety Improvement Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	**0.0085**	**0.0514**	**0.0599**	**0.5041**	**0.6239**

Summary by Crash Type

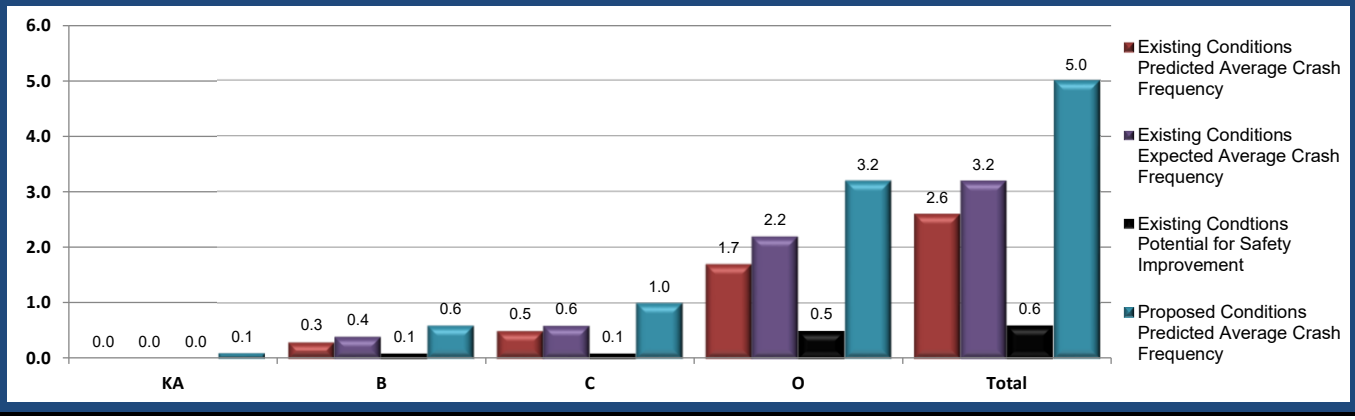
Crash Type	Existing			Proposed
	Predicted Crash Frequency	Expected Crash Frequency	PSI	Expected Crash Frequency
Unknown	0.0002	0.0000	-0.0002	
Head On	0.0143	0.0226	**0.0083**	
Rear End	0.3849	0.6583	**0.2734**	
Backing	0.1136	0.2106	**0.0970**	
Sideswipe - Meeting	0.0000	0.0000	0.0000	
Sideswipe - Passing	0.0743	0.1377	**0.0634**	
Angle	0.7465	1.2775	**0.5310**	
Parked Vehicle	0.0711	0.0000	-0.0711	
Pedestrian	0.0242	0.0242	0.0000	
Animal	0.0000	0.0000	0.0000	
Train	0.0000	0.0000	0.0000	
Pedalcycles	0.0178	0.0178	0.0000	
Other Non-Vehicle	0.0000	0.0000	0.0000	
Fixed Object	0.1131	0.0000	-0.1131	
Other Object	0.0000	0.0000	0.0000	
Overturning	0.0000	0.0000	0.0000	
Other Non-Collision	0.0043	0.0000	-0.0043	
Left Turn	0.0362	0.0632	**0.0270**	
Right Turn	0.0581	0.1037	**0.0456**	

Project Safety Performance Report

General Information

Project Name	Coonpath Road at Election House Road	Contact Email	megan.valentine@burgessniple.com
Project Description	Intersection Feasibility Study - Build Analyis, Proposed Signal	Contact Phone	
Reference Number	-	Date Performed	6/11/2024
Analyst	MLV	Analysis Year	2048
Agency/Company	B&N		

Summary of Anticipated Safety Performance of the Project (average crashes/year)



Project Summary Results (Without Animal Crashes)

	KA	B	C	O	Total
$N_{predicted}$ - Existing Conditions	0.0339	0.3418	0.5047	1.7377	2.6181
$N_{expected}$ - Existing Conditions	0.0424	0.3932	0.5646	2.2418	3.2420
$N_{potential\ for\ improvement}$ - Existing Conditions	**0.0085**	**0.0514**	**0.0599**	**0.5041**	**0.6239**
$N_{expected}$ - Proposed Conditions	0.1340	0.6377	0.9565	3.2498	4.9780

Project Safety Performance Report

General Information

Project Name	Coonpath Road at Election House Road	Contact Email	megan.valentine@burgessniple.com
Project Description	Intersection Feasibility Study - Build Analyis, Proposed Signal	Contact Phone	
Reference Number	-	Date Performed	6/11/2024
Analyst	MLV	Analysis Year	2048
Agency/Company	B&N		

Existing Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.0339	0.3418	0.5047	1.7377	2.6181

Existing Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.0424	0.3932	0.5646	2.2418	3.242

Existing Conditions Project Element Potential for Safety Improvement Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	**0.0085**	**0.0514**	**0.0599**	**0.5041**	**0.6239**

Proposed Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.134	0.6377	0.9565	3.2498	4.978

Summary by Crash Type

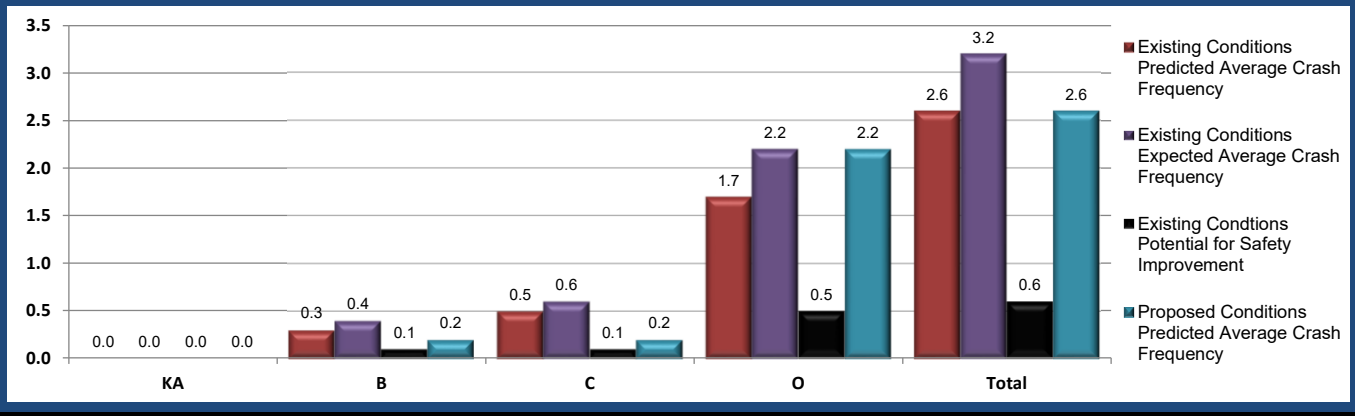
Crash Type	Existing			Proposed
	Predicted Crash Frequency	Expected Crash Frequency	PSI	Predicted Crash Frequency
Unknown	0.0002	0.0000	-0.0002	0.0098
Head On	0.0143	0.0226	**0.0083**	0.0923
Rear End	0.3849	0.6583	**0.2734**	2.3087
Backing	0.1136	0.2106	**0.0970**	0.0914
Sideswipe - Meeting	0.0000	0.0000	0.0000	0.0036
Sideswipe - Passing	0.0743	0.1377	**0.0634**	0.4573
Angle	0.7465	1.2775	**0.5310**	0.8015
Parked Vehicle	0.0711	0.0000	-0.0711	0.0413
Pedestrian	0.0242	0.0242	0.0000	0.0134
Animal	0.0000	0.0000	0.0000	0.0000
Train	0.0000	0.0000	0.0000	0.0007
Pedalcycles	0.0178	0.0178	0.0000	0.0035
Other Non-Vehicle	0.0000	0.0000	0.0000	0.0000
Fixed Object	0.1131	0.0000	-0.1131	0.3508
Other Object	0.0000	0.0000	0.0000	0.0139
Overturning	0.0000	0.0000	0.0000	0.0193
Other Non-Collision	0.0043	0.0000	-0.0043	0.0283
Left Turn	0.0362	0.0632	**0.0270**	0.5164
Right Turn	0.0581	0.1037	**0.0456**	0.2256

Project Safety Performance Report

General Information

Project Name	Coonpath Road at Election House Road	Contact Email	megan.valentine@burgessniple.com
Project Description	Intersection Feasibility Study - Build Analyis, Proposed Roundabout	Contact Phone	
Reference Number	-	Date Performed	6/11/2024
Analyst	MLV	Analysis Year	2048
Agency/Company	B&N		

Summary of Anticipated Safety Performance of the Project (average crashes/year)



Project Summary Results (Without Animal Crashes)

	KA	B	C	O	Total
$N_{predicted}$ - Existing Conditions	0.0339	0.3418	0.5047	1.7377	2.6181
$N_{expected}$ - Existing Conditions	0.0424	0.3932	0.5646	2.2418	3.2420
$N_{potential\ for\ improvement}$ - Existing Conditions	**0.0085**	**0.0514**	**0.0599**	**0.5041**	**0.6239**
$N_{expected}$ - Proposed Conditions	0.0231	0.1947	0.2413	2.1897	2.6488

Project Safety Performance Report

General Information

Project Name	Coonpath Road at Election House Road	Contact Email	megan.valentine@burgessniple.com
Project Description	Intersection Feasibility Study - Build Analyis, Proposed Roundabout	Contact Phone	
Reference Number	-	Date Performed	6/11/2024
Analyst	MLV	Analysis Year	2048
Agency/Company	B&N		

Existing Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.0339	0.3418	0.5047	1.7377	2.6181

Existing Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.0424	0.3932	0.5646	2.2418	3.242

Existing Conditions Project Element Potential for Safety Improvement Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	**0.0085**	**0.0514**	**0.0599**	**0.5041**	**0.6239**

Proposed Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.0231	0.1947	0.2413	2.1897	2.6488

Summary by Crash Type

Crash Type	Existing			Proposed
	Predicted Crash Frequency	Expected Crash Frequency	PSI	Predicted Crash Frequency
Unknown	0.0002	0.0000	-0.0002	0.0710
Head On	0.0143	0.0226	**0.0083**	0.0046
Rear End	0.3849	0.6583	**0.2734**	0.4350
Backing	0.1136	0.2106	**0.0970**	0.0221
Sideswipe - Meeting	0.0000	0.0000	0.0000	0.0000
Sideswipe - Passing	0.0743	0.1377	**0.0634**	0.8052
Angle	0.7465	1.2775	**0.5310**	0.7446
Parked Vehicle	0.0711	0.0000	-0.0711	0.0000
Pedestrian	0.0242	0.0242	0.0000	0.0046
Animal	0.0000	0.0000	0.0000	0.0267
Train	0.0000	0.0000	0.0000	0.0000
Pedalcycles	0.0178	0.0178	0.0000	0.0046
Other Non-Vehicle	0.0000	0.0000	0.0000	0.0000
Fixed Object	0.1131	0.0000	-0.1131	0.2676
Other Object	0.0000	0.0000	0.0000	0.0000
Overturning	0.0000	0.0000	0.0000	0.0046
Other Non-Collision	0.0043	0.0000	-0.0043	0.0488
Left Turn	0.0362	0.0632	**0.0270**	0.0627
Right Turn	0.0581	0.1037	**0.0456**	0.1734

Project Safety Performance Report

General Information

Project Name	Coonpath Road at Election House Road	Contact Email	megan.valentine@burgessniple.com
Project Description	Intersection Feasibility Study - Existing Analyis	Contact Phone	
Reference Number	-	Date Performed	6/11/2024
Analyst	MLV	Analysis Year	2024
Agency/Company	B&N		

Existing Conditions Project Element Predicted Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.02	0.2041	0.2985	1.1361	1.6587

Existing Conditions Project Element Expected Crash Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	0.0292	0.2679	0.3883	1.8303	2.5157

Existing Conditions Project Element Potential for Safety Improvement Summary (Without Animal Crashes)

Project Element ID	Common Name	Crash Severity Level				
		KA	B	C	O	Total
CR31; 3.099	Coonpath at Election House	**0.0092**	**0.0638**	**0.0898**	**0.6942**	**0.857**

Summary by Crash Type

Crash Type	Existing			Proposed
	Predicted Crash Frequency	Expected Crash Frequency	PSI	Expected Crash Frequency
Unknown	0.0002	0.0000	-0.0002	
Head On	0.0143	0.0226	**0.0083**	
Rear End	0.3849	0.6583	**0.2734**	
Backing	0.1136	0.2106	**0.0970**	
Sideswipe - Meeting	0.0000	0.0000	0.0000	
Sideswipe - Passing	0.0743	0.1377	**0.0634**	
Angle	0.7465	1.2775	**0.5310**	
Parked Vehicle	0.0711	0.0000	-0.0711	
Pedestrian	0.0242	0.0242	0.0000	
Animal	0.0000	0.0000	0.0000	
Train	0.0000	0.0000	0.0000	
Pedalcycles	0.0178	0.0178	0.0000	
Other Non-Vehicle	0.0000	0.0000	0.0000	
Fixed Object	0.1131	0.0000	-0.1131	
Other Object	0.0000	0.0000	0.0000	
Overturning	0.0000	0.0000	0.0000	
Other Non-Collision	0.0043	0.0000	-0.0043	
Left Turn	0.0362	0.0632	**0.0270**	
Right Turn	0.0581	0.1037	**0.0456**	

Coonpath Rd and Election House Rd

Intersection Feasibility Study

Appendix D

Traffic Plates & Counts

BURGESS & NIPLE

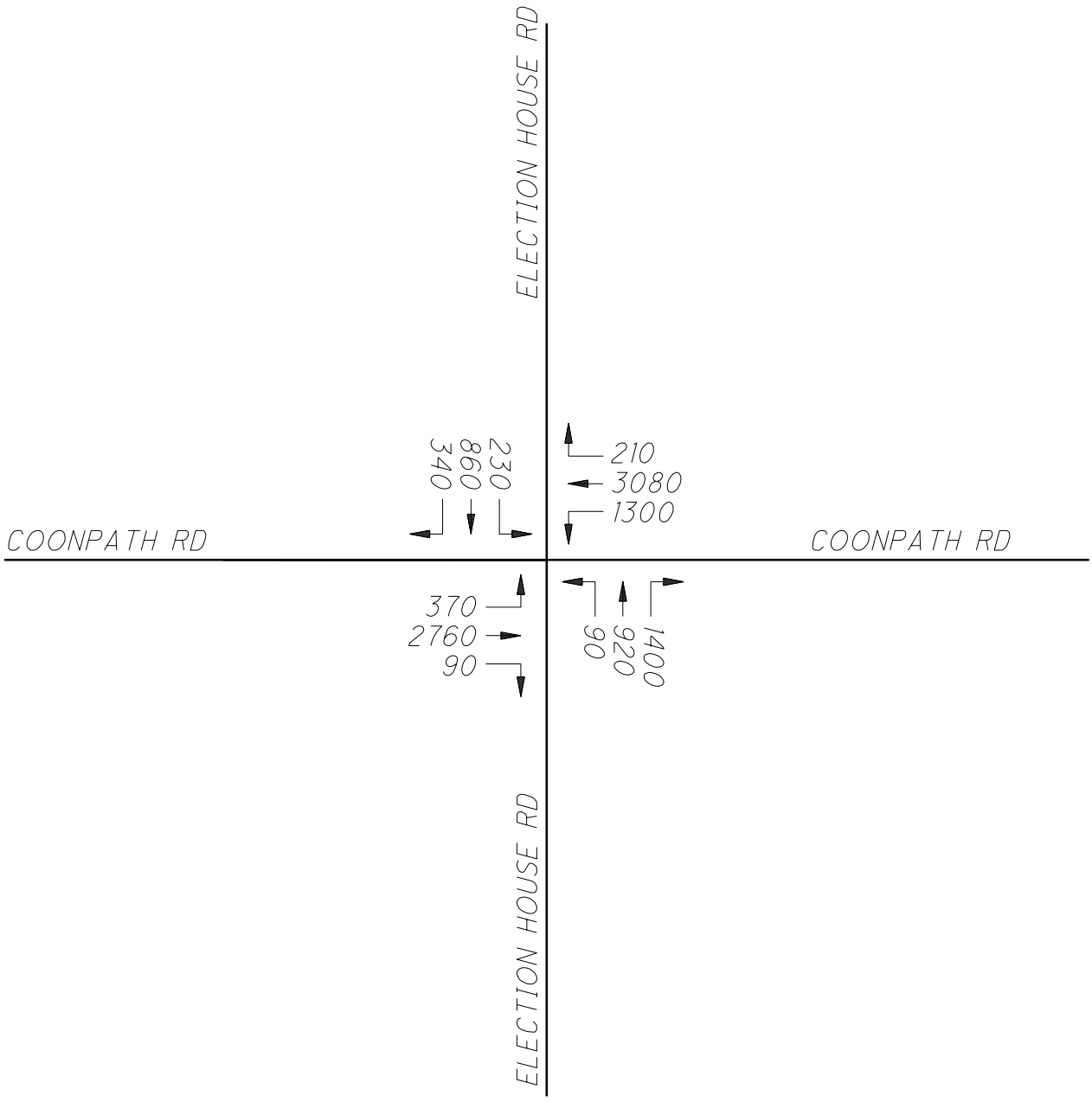


FIGURE 1

COONPATH ROAD & ELECTION HOUSE ROAD FEASIBILITY STUDY
EXISTING ADT

NOT TO SCALE

N

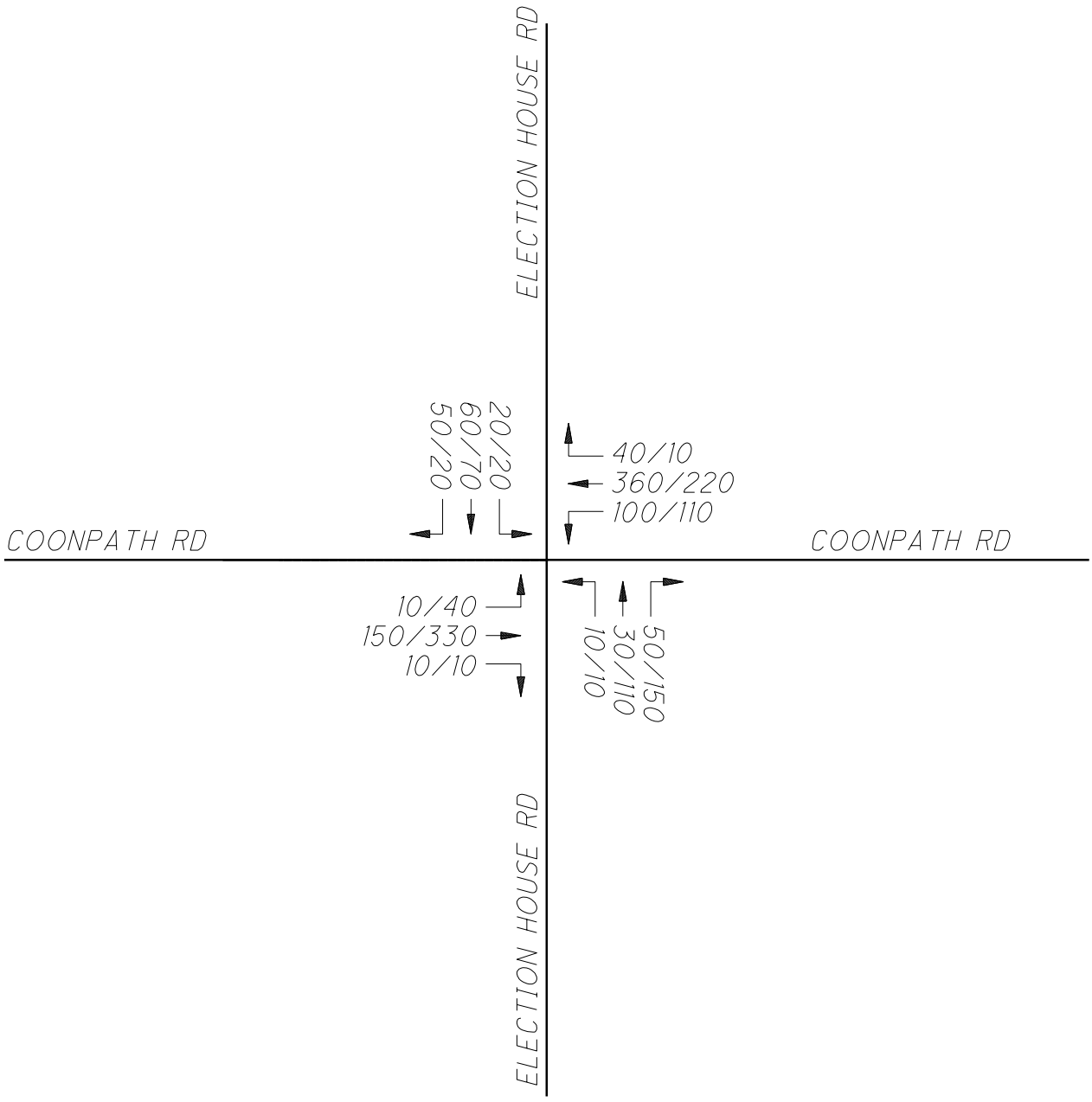


FIGURE 2

COONPATH ROAD & ELECTION HOUSE ROAD FEASIBILITY STUDY
EXISTING AM/PM PEAK HOURS

NOT TO SCALE

N

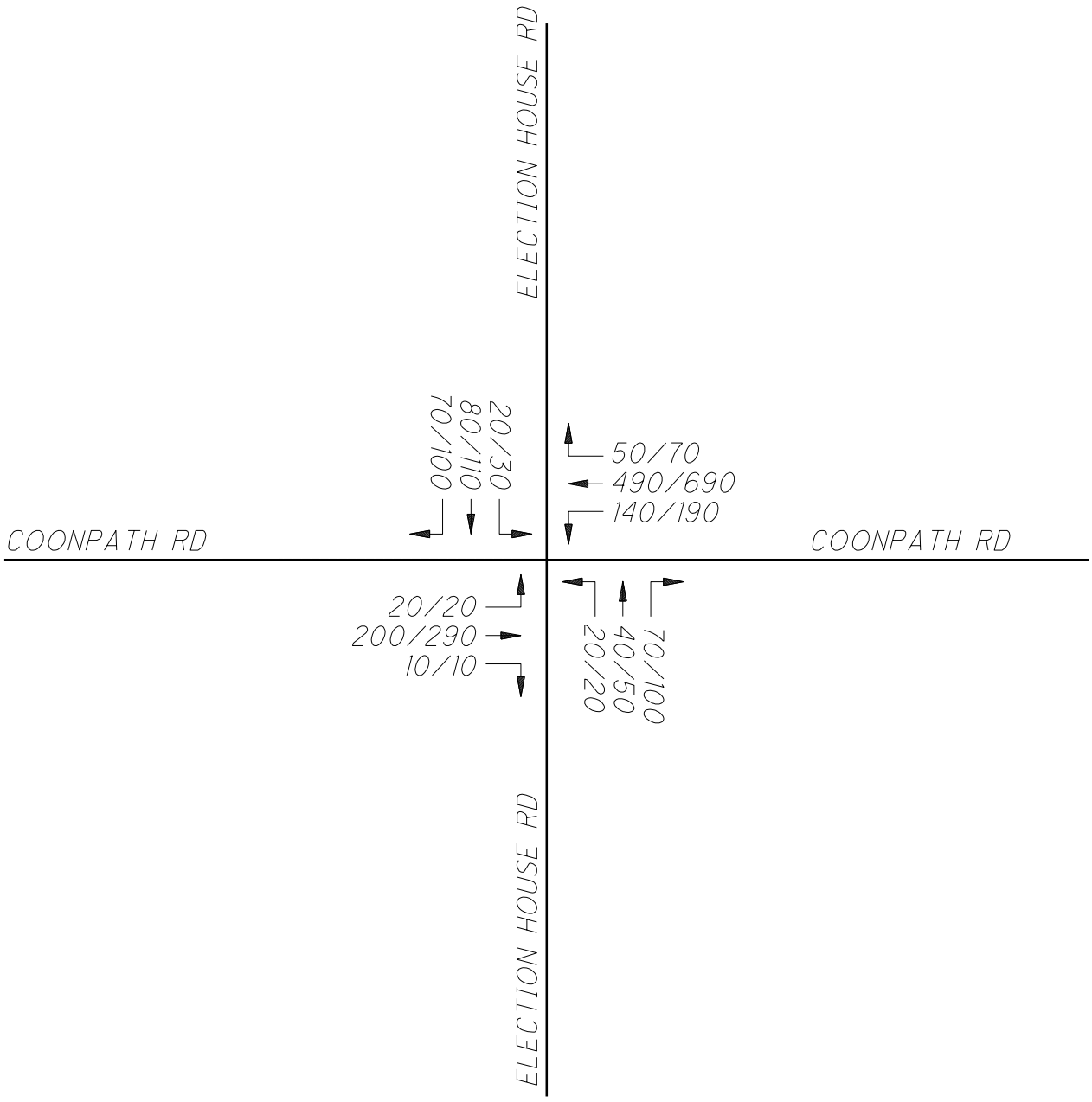


FIGURE 3

COONPATH ROAD & ELECTION HOUSE ROAD FEASIBILITY STUDY
2028/2048 AM PEAK HOURS

NOT TO SCALE

N

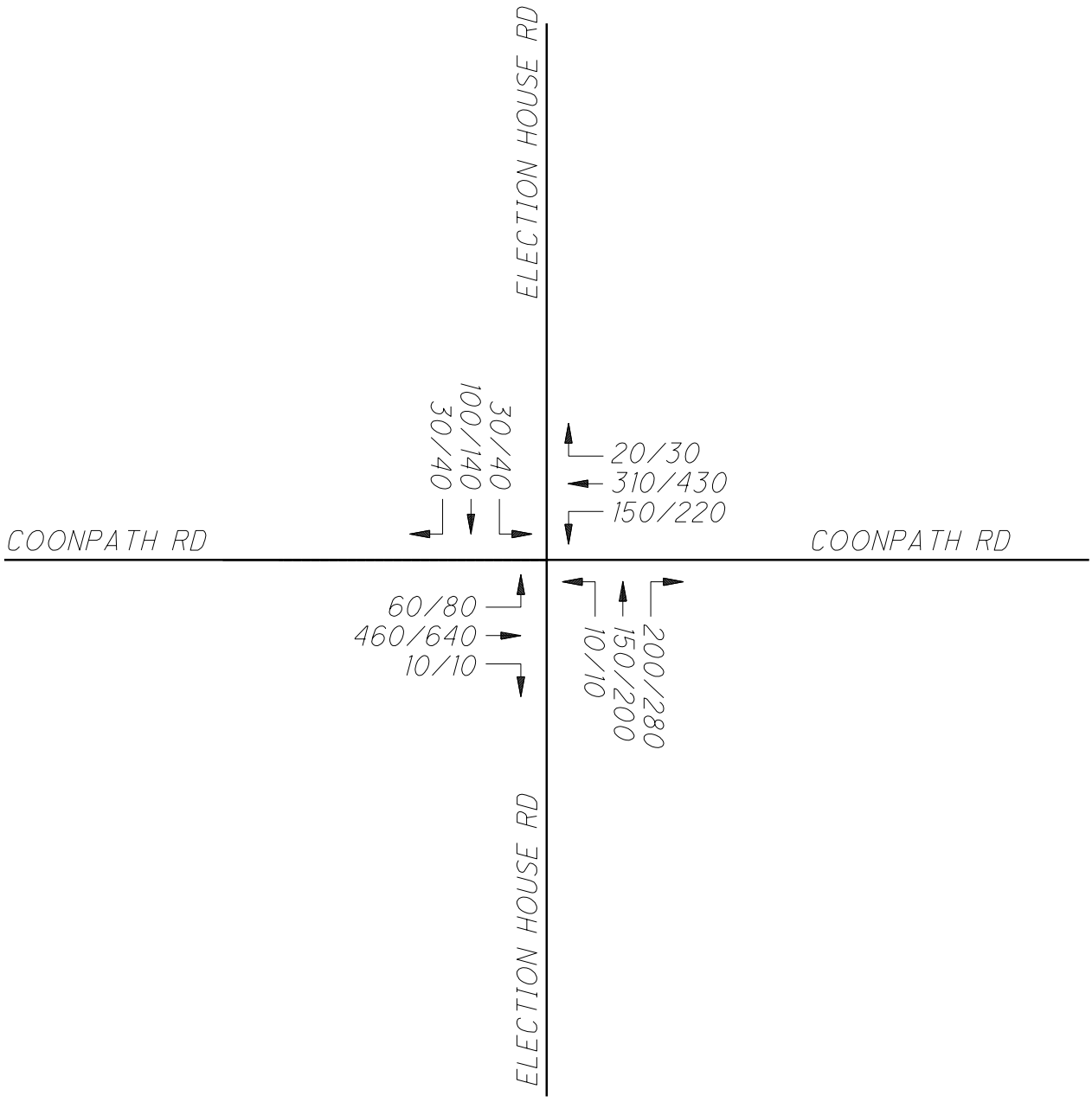


FIGURE 4

COONPATH ROAD & ELECTION HOUSE ROAD FEASIBILITY STUDY
2028/2048 PM PEAK HOURS

NOT TO SCALE

N

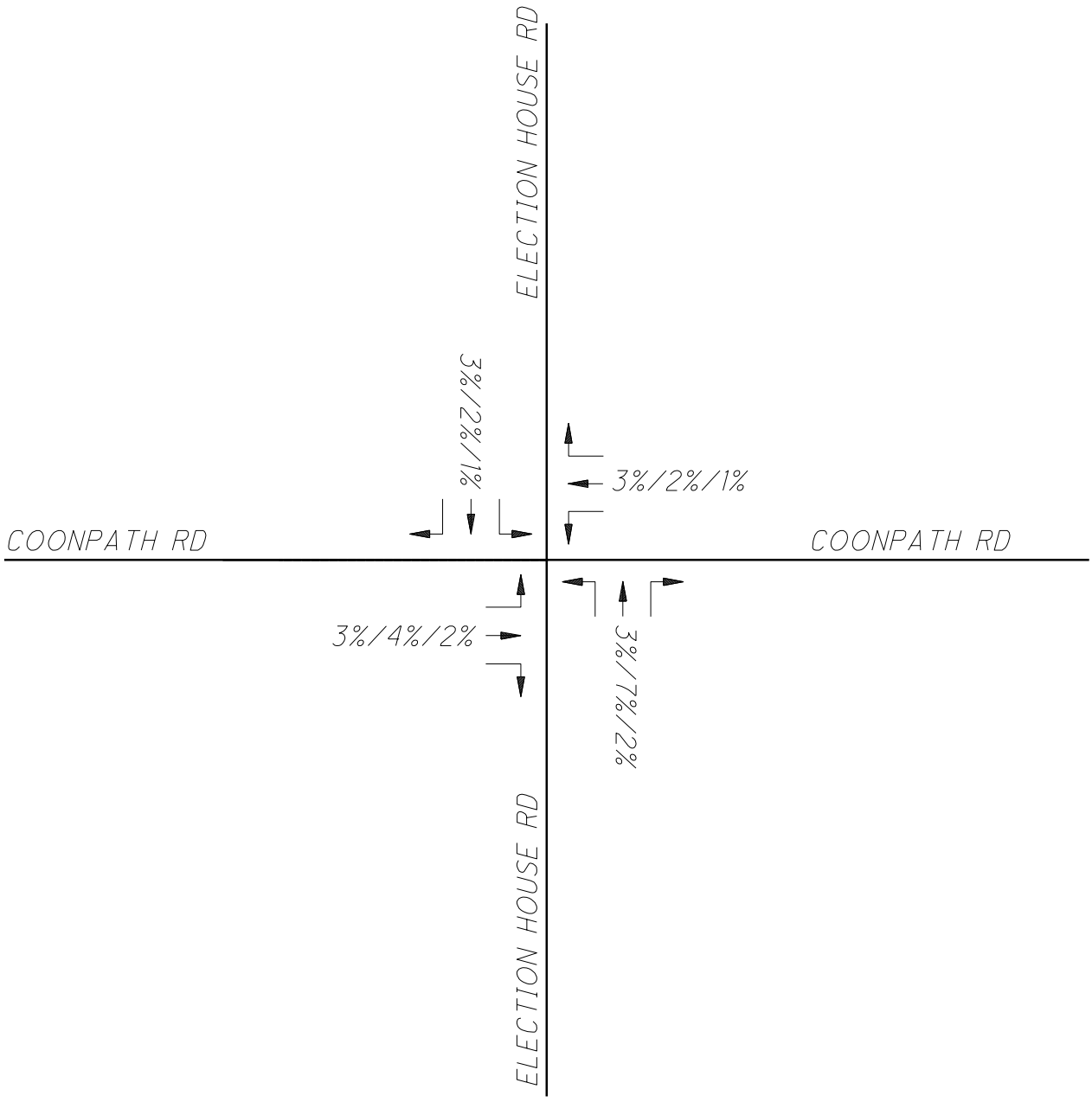


FIGURE 5

COONPATH ROAD & ELECTION HOUSE ROAD FEASIBILITY STUDY
T24/ AM/ PM

NOT TO SCALE

N

Coonpath Rd & Election House Rd - TMC

Thu Feb 15, 2024
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1157465, Location: 39.769983, -82.646213

Provided by: Burgess & Niple, Inc
330 Rush Alley, Suite 700, Columbus, OH, 43215, US

Leg	Election House Rd					Coonpath Rd					Election House Rd					Coonpath Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-02-15 12:00AM	0	0	0	0	**0**	0	0	0	0	**0**	1	1	0	0	**2**	0	3	0	0	**3**	**5**
12:15AM	0	0	0	0	**0**	0	2	0	0	**2**	0	0	0	0	**0**	0	1	0	0	**1**	**3**
12:30AM	0	1	0	0	**1**	0	1	0	0	**1**	2	2	0	0	**4**	0	7	1	0	**8**	**14**
12:45AM	0	0	0	0	**0**	0	1	0	0	**1**	0	1	0	0	**1**	0	4	1	0	**5**	**7**
Hourly Total	0	1	0	0	**1**	0	4	0	0	**4**	3	4	0	0	**7**	0	15	2	0	**17**	**29**
1:00AM	0	0	0	0	**0**	0	2	0	0	**2**	1	0	0	0	**1**	0	2	0	0	**2**	**5**
1:15AM	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**	0	1	0	0	**1**	**2**
1:30AM	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	**1**
1:45AM	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	2	0	0	**2**	**3**
Hourly Total	0	0	0	0	**0**	0	2	0	0	**2**	2	1	0	0	**3**	0	6	0	0	**6**	**11**
2:00AM	0	0	0	0	**0**	0	3	0	0	**3**	0	0	0	0	**0**	0	1	0	0	**1**	**4**
2:15AM	1	0	0	0	**1**	0	5	1	0	**6**	0	0	0	0	**0**	0	3	0	0	**3**	**10**
2:30AM	0	1	0	0	**1**	0	0	1	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	**2**
2:45AM	0	0	0	0	**0**	0	3	0	0	**3**	1	0	0	0	**1**	0	1	0	0	**1**	**5**
Hourly Total	1	1	0	0	**2**	0	11	2	0	**13**	1	0	0	0	**1**	0	5	0	0	**5**	**21**
3:00AM	0	0	0	0	**0**	0	4	0	0	**4**	1	0	0	0	**1**	0	0	0	0	**0**	**5**
3:15AM	0	0	0	0	**0**	0	5	1	0	**6**	2	0	0	0	**2**	0	1	0	0	**1**	**9**
3:30AM	0	0	0	0	**0**	1	2	0	0	**3**	0	0	0	0	**0**	0	2	0	0	**2**	**5**
3:45AM	0	0	0	0	**0**	0	5	1	0	**6**	1	0	0	0	**1**	0	2	0	0	**2**	**9**
Hourly Total	0	0	0	0	**0**	1	16	2	0	**19**	4	0	0	0	**4**	0	5	0	0	**5**	**28**
4:00AM	0	1	0	0	**1**	0	10	0	0	**10**	1	0	0	0	**1**	0	0	0	0	**0**	**12**
4:15AM	0	1	0	0	**1**	0	12	4	0	**16**	2	0	0	0	**2**	0	4	0	0	**4**	**23**
4:30AM	2	0	0	0	**2**	1	8	4	0	**13**	1	1	0	0	**2**	0	4	1	0	**5**	**22**
4:45AM	2	2	0	0	**4**	0	17	1	0	**18**	0	0	0	0	**0**	0	2	1	0	**3**	**25**
Hourly Total	4	4	0	0	**8**	1	47	9	0	**57**	4	1	0	0	**5**	0	10	2	0	**12**	**82**
5:00AM	1	0	0	0	**1**	1	37	2	0	**40**	1	2	0	0	**3**	0	2	0	0	**2**	**46**
5:15AM	3	4	0	0	**7**	2	43	9	0	**54**	1	1	1	0	**3**	0	6	0	0	**6**	**70**
5:30AM	4	3	0	0	**7**	2	48	11	0	**61**	2	0	1	0	**3**	0	3	0	0	**3**	**74**
5:45AM	3	1	1	0	**5**	2	72	18	0	**92**	8	2	0	0	**10**	0	12	1	0	**13**	**120**
Hourly Total	11	8	1	0	**20**	7	200	40	0	**247**	12	5	2	0	**19**	0	23	1	0	**24**	**310**
6:00AM	2	2	0	0	**4**	0	76	7	0	**83**	8	3	2	0	**13**	1	11	0	0	**12**	**112**
6:15AM	13	7	2	0	**22**	0	83	20	0	**103**	8	3	1	0	**12**	0	12	1	0	**13**	**150**
6:30AM	7	9	1	0	**17**	3	76	21	0	**100**	1	5	2	0	**8**	2	19	0	0	**21**	**146**
6:45AM	11	14	2	0	**27**	7	90	31	0	**128**	9	7	0	0	**16**	2	27	4	0	**33**	**204**
Hourly Total	33	32	5	0	**70**	10	325	79	0	**414**	26	18	5	0	**49**	5	69	5	0	**79**	**612**
7:00AM	14	12	0	0	**26**	11	78	20	0	**109**	14	7	5	0	**26**	1	28	3	0	**32**	**193**
7:15AM	16	18	5	0	**39**	14	93	26	0	**133**	20	7	6	0	**33**	2	39	3	0	**44**	**249**
7:30AM	12	15	9	0	**36**	4	95	23	0	**122**	9	6	1	0	**16**	1	53	1	0	**55**	**229**
7:45AM	13	12	1	0	**26**	7	74	33	0	**114**	15	4	2	0	**21**	3	28	6	0	**37**	**198**
Hourly Total	55	57	15	0	**127**	36	340	102	0	**478**	58	24	14	0	**96**	7	148	13	0	**168**	**869**
8:00AM	9	8	3	0	**20**	4	61	18	0	**83**	6	12	1	0	**19**	0	24	2	0	**26**	**148**
8:15AM	6	12	1	0	**19**	5	68	22	0	**95**	9	8	2	0	**19**	1	27	2	0	**30**	**163**
8:30AM	5	11	0	0	**16**	6	60	25	0	**91**	10	10	4	0	**24**	1	27	6	0	**34**	**165**
8:45AM	10	27	3	0	**40**	5	56	35	0	**96**	14	8	2	0	**24**	1	31	2	0	**34**	**194**
Hourly Total	30	58	7	0	**95**	20	245	100	0	**365**	39	38	9	0	**86**	3	109	12	0	**124**	**670**
9:00AM	4	19	6	0	**29**	4	50	24	0	**78**	11	13	1	0	**25**	1	27	3	0	**31**	**163**
9:15AM	2	17	3	0	**22**	0	34	16	0	**50**	21	13	0	0	**34**	4	16	3	0	**23**	**129**
9:30AM	6	10	4	0	**20**	1	38	24	0	**63**	23	10	0	0	**33**	1	20	0	0	**21**	**137**
9:45AM	8	19	3	0	**30**	1	40	23	0	**64**	14	14	1	0	**29**	0	25	3	0	**28**	**151**
Hourly Total	20	65	16	0	**101**	6	162	87	0	**255**	69	50	2	0	**121**	6	88	9	0	**103**	**580**
10:00AM	2	12	4	0	**18**	1	32	23	0	**56**	7	6	1	0	**14**	1	21	5	0	**27**	**115**
10:15AM	3	14	4	0	**21**	1	29	18	0	**48**	22	6	2	0	**30**	0	29	4	0	**33**	**132**
10:30AM	4	19	9	0	**32**	1	39	15	0	**55**	19	8	0	0	**27**	1	28	1	0	**30**	**144**
10:45AM	2	14	6	0	**22**	4	38	27	0	**69**	15	13	2	0	**30**	4	22	1	0	**27**	**148**

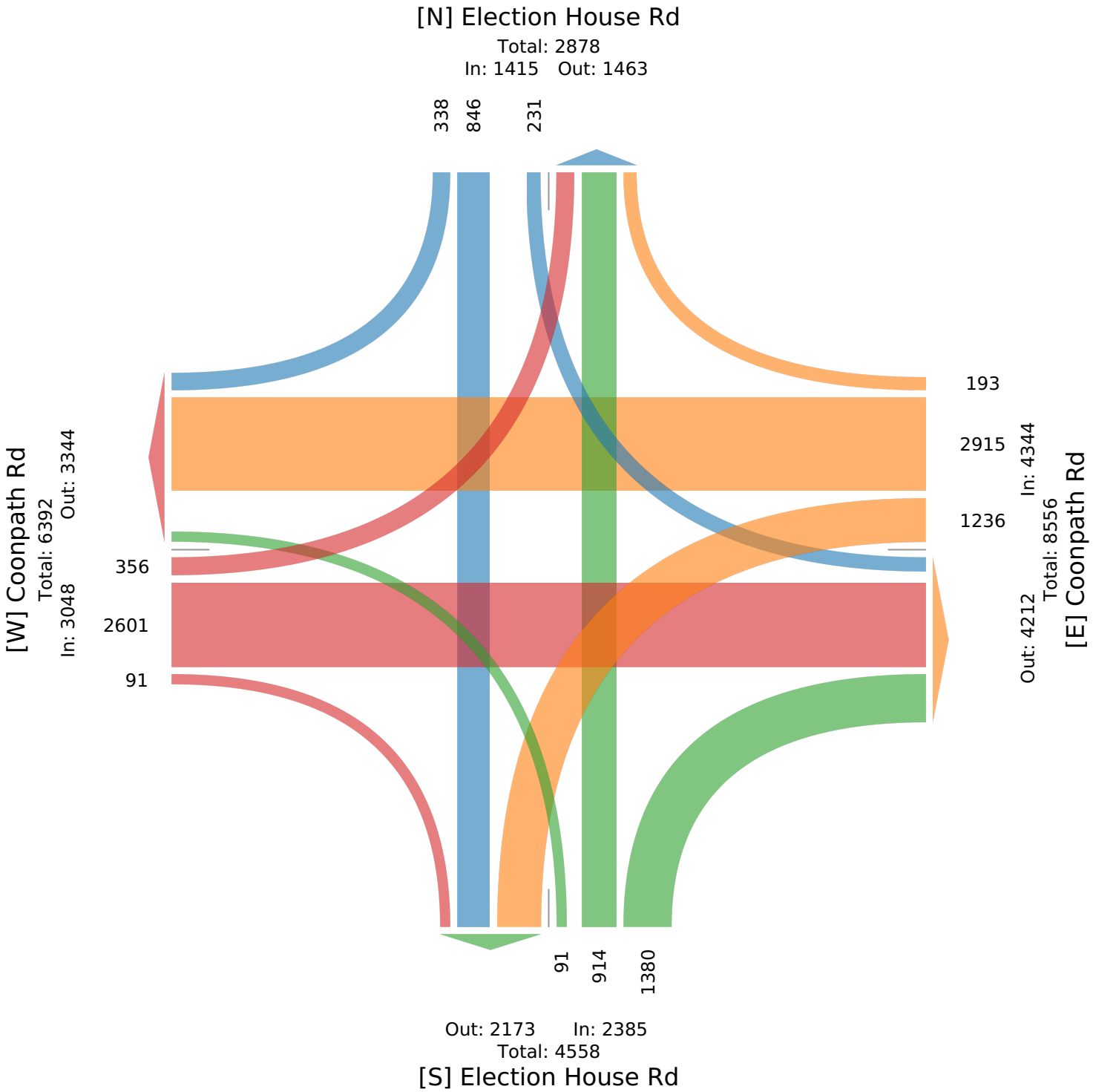
Leg	Election House Rd					Coonpath Rd					Election House Rd					Coonpath Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
Hourly Total	11	59	23	0	**93**	7	138	83	0	**228**	63	33	5	0	**101**	6	100	11	0	**117**	**539**
11:00AM	2	12	4	0	**18**	3	35	25	0	**63**	18	12	2	0	**32**	2	16	2	0	**20**	**133**
11:15AM	5	14	2	0	**21**	0	27	18	0	**45**	21	14	0	0	**35**	2	21	2	0	**25**	**126**
11:30AM	2	23	5	0	**30**	2	32	18	0	**52**	30	19	0	0	**49**	3	34	6	0	**43**	**174**
11:45AM	5	15	5	0	**25**	3	21	17	0	**41**	19	9	2	0	**30**	2	33	5	0	**40**	**136**
Hourly Total	14	64	16	0	**94**	8	115	78	0	**201**	88	54	4	0	**146**	9	104	15	0	**128**	**569**
12:00PM	0	11	4	0	**15**	2	26	14	0	**42**	20	17	3	0	**40**	3	21	4	0	**28**	**125**
12:15PM	7	16	2	0	**25**	1	27	20	0	**48**	24	20	0	0	**44**	2	27	5	0	**34**	**151**
12:30PM	6	9	1	0	**16**	2	39	19	0	**60**	27	15	5	0	**47**	2	26	4	0	**32**	**155**
12:45PM	5	9	2	0	**16**	3	32	19	0	**54**	23	14	0	0	**37**	3	26	9	0	**38**	**145**
Hourly Total	18	45	9	0	**72**	8	124	72	0	**204**	94	66	8	0	**168**	10	100	22	0	**132**	**576**
1:00PM	5	9	6	0	**20**	3	28	13	0	**44**	24	14	1	0	**39**	0	29	11	0	**40**	**143**
1:15PM	2	13	2	0	**17**	5	32	16	0	**53**	23	18	1	0	**42**	2	25	5	0	**32**	**144**
1:30PM	3	17	6	0	**26**	1	28	16	0	**45**	32	21	2	0	**55**	5	33	5	0	**43**	**169**
1:45PM	3	14	1	0	**18**	3	42	22	0	**67**	15	14	5	0	**34**	3	45	1	0	**49**	**168**
Hourly Total	13	53	15	0	**81**	12	130	67	0	**209**	94	67	9	0	**170**	10	132	22	0	**164**	**624**
2:00PM	3	11	3	0	**17**	5	58	25	0	**88**	21	21	2	0	**44**	1	54	7	0	**62**	**211**
2:15PM	13	26	17	0	**56**	4	40	22	0	**66**	30	13	3	0	**46**	5	61	16	0	**82**	**250**
2:30PM	6	24	7	0	**37**	5	42	21	0	**68**	42	11	3	0	**56**	2	45	9	0	**56**	**217**
2:45PM	0	19	3	0	**22**	4	35	19	0	**58**	32	21	2	0	**55**	0	64	3	0	**67**	**202**
Hourly Total	22	80	30	0	**132**	18	175	87	0	**280**	125	66	10	0	**201**	8	224	35	0	**267**	**880**
3:00PM	6	13	7	0	**26**	2	42	25	0	**69**	29	25	1	0	**55**	0	67	8	0	**75**	**225**
3:15PM	4	17	8	0	**29**	4	53	31	0	**88**	37	20	1	0	**58**	2	65	9	0	**76**	**251**
3:30PM	12	19	12	0	**43**	4	51	24	0	**79**	39	20	2	0	**61**	0	61	2	0	**63**	**246**
3:45PM	6	22	4	0	**32**	0	53	21	0	**74**	33	23	2	0	**58**	3	80	10	0	**93**	**257**
Hourly Total	28	71	31	0	**130**	10	199	101	0	**310**	138	88	6	0	**232**	5	273	29	0	**307**	**979**
4:00PM	7	13	5	0	**25**	3	61	15	0	**79**	32	21	1	0	**54**	4	81	11	0	**96**	**254**
4:15PM	3	22	2	0	**27**	3	60	27	0	**90**	42	26	1	0	**69**	2	87	9	0	**98**	**284**
4:30PM	9	19	9	0	**37**	2	50	33	0	**85**	39	29	0	0	**68**	1	76	7	0	**84**	**274**
4:45PM	6	11	7	0	**24**	5	48	32	0	**85**	25	17	1	0	**43**	1	85	14	0	**100**	**252**
Hourly Total	25	65	23	0	**113**	13	219	107	0	**339**	138	93	3	0	**234**	8	329	41	0	**378**	**1064**
5:00PM	3	18	5	0	**26**	3	64	19	0	**86**	39	33	0	0	**72**	1	84	12	0	**97**	**281**
5:15PM	4	17	4	0	**25**	2	51	28	0	**81**	46	25	0	0	**71**	4	76	17	0	**97**	**274**
5:30PM	4	22	3	0	**29**	7	54	20	0	**81**	29	27	3	0	**59**	1	92	10	0	**103**	**272**
5:45PM	5	22	1	0	**28**	5	36	25	0	**66**	34	19	1	0	**54**	0	68	8	0	**76**	**224**
Hourly Total	16	79	13	0	**108**	17	205	92	0	**314**	148	104	4	0	**256**	6	320	47	0	**373**	**1051**
6:00PM	0	11	2	0	**13**	0	29	14	0	**43**	29	24	1	0	**54**	2	58	5	0	**65**	**175**
6:15PM	5	20	2	0	**27**	5	25	12	0	**42**	21	12	3	0	**36**	0	42	13	0	**55**	**160**
6:30PM	1	6	0	0	**7**	2	31	11	0	**44**	30	17	4	0	**51**	1	35	9	0	**45**	**147**
6:45PM	3	12	3	0	**18**	0	25	7	0	**32**	20	18	0	0	**38**	1	45	8	0	**54**	**142**
Hourly Total	9	49	7	0	**65**	7	110	44	0	**161**	100	71	8	0	**179**	4	180	35	0	**219**	**624**
7:00PM	4	10	1	0	**15**	3	9	15	0	**27**	18	10	0	0	**28**	0	32	5	0	**37**	**107**
7:15PM	4	9	0	0	**13**	2	14	6	0	**22**	22	20	0	0	**42**	2	34	5	0	**41**	**118**
7:30PM	4	7	4	0	**15**	0	7	9	0	**16**	15	20	1	0	**36**	1	49	9	0	**59**	**126**
7:45PM	0	7	3	0	**10**	1	10	5	0	**16**	13	14	0	0	**27**	1	28	4	0	**33**	**86**
Hourly Total	12	33	8	0	**53**	6	40	35	0	**81**	68	64	1	0	**133**	4	143	23	0	**170**	**437**
8:00PM	2	3	6	0	**11**	1	11	4	0	**16**	14	10	0	0	**24**	0	20	5	0	**25**	**76**
8:15PM	4	2	2	0	**8**	1	14	5	0	**20**	18	13	0	0	**31**	0	27	5	0	**32**	**91**
8:30PM	0	1	0	0	**1**	0	12	3	0	**15**	15	6	0	0	**21**	0	13	2	0	**15**	**52**
8:45PM	2	3	1	0	**6**	0	18	4	0	**22**	3	8	0	0	**11**	0	20	1	0	**21**	**60**
Hourly Total	8	9	9	0	**26**	2	55	16	0	**73**	50	37	0	0	**87**	0	80	13	0	**93**	**279**
9:00PM	2	4	1	0	**7**	1	4	2	0	**7**	10	1	0	0	**11**	0	16	5	0	**21**	**46**
9:15PM	1	1	0	0	**2**	2	7	6	0	**15**	8	3	0	0	**11**	0	20	4	0	**24**	**52**
9:30PM	3	1	0	0	**4**	0	9	5	0	**14**	8	7	0	0	**15**	0	18	2	0	**20**	**53**
9:45PM	0	2	0	0	**2**	0	7	5	0	**12**	3	3	1	0	**7**	0	6	0	0	**6**	**27**
Hourly Total	6	8	1	0	**15**	3	27	18	0	**48**	29	14	1	0	**44**	0	60	11	0	**71**	**178**
10:00PM	1	1	0	0	**2**	0	4	2	0	**6**	8	3	0	0	**11**	0	11	4	0	**15**	**34**
10:15PM	0	0	0	0	**0**	1	8	4	0	**13**	4	4	0	0	**8**	0	17	1	0	**18**	**39**
10:30PM	0	1	0	0	**1**	0	5	3	0	**8**	1	2	0	0	**3**	0	12	0	0	**12**	**24**
10:45PM	0	0	0	0	**0**	0	0	3	0	**3**	3	1	0	0	**4**	0	4	3	0	**7**	**14**

Leg	Election House Rd					Coonpath Rd					Election House Rd					Coonpath Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
Hourly Total	1	2	0	0	**3**	1	17	12	0	**30**	16	10	0	0	**26**	0	44	8	0	**52**	**111**
11:00PM	0	1	0	0	**1**	0	2	1	0	**3**	5	4	0	0	**9**	0	9	0	0	**9**	**22**
11:15PM	0	2	0	0	**2**	0	2	0	0	**2**	3	0	0	0	**3**	0	9	0	0	**9**	**16**
11:30PM	0	0	2	0	**2**	0	3	2	0	**5**	1	2	0	0	**3**	0	12	0	0	**12**	**22**
11:45PM	1	0	0	0	**1**	0	2	0	0	**2**	2	0	0	0	**2**	0	4	0	0	**4**	**9**
Hourly Total	1	3	2	0	**6**	0	9	3	0	**12**	11	6	0	0	**17**	0	34	0	0	**34**	**69**
Total	338	846	231	0	**1415**	193	2915	1236	0	**4344**	1380	914	91	0	**2385**	91	2601	356	0	**3048**	**11192**
% Approach	23.9%	59.8%	16.3%	0%	**-**	4.4%	67.1%	28.5%	0%	**-**	57.9%	38.3%	3.8%	0%	**-**	3.0%	85.3%	11.7%	0%	**-**	-
% Total	3.0%	7.6%	2.1%	0%	**12.6%**	1.7%	26.0%	11.0%	0%	**38.8%**	12.3%	8.2%	0.8%	0%	**21.3%**	0.8%	23.2%	3.2%	0%	**27.2%**	-
Lights	326	831	222	0	**1379**	187	2837	1186	0	**4210**	1338	900	88	0	**2326**	88	2520	342	0	**2950**	10865
% Lights	96.4%	98.2%	96.1%	0%	**97.5%**	96.9%	97.3%	96.0%	0%	**96.9%**	97.0%	98.5%	96.7%	0%	**97.5%**	96.7%	96.9%	96.1%	0%	**96.8%**	97.1%
Articulated Trucks	2	1	1	0	**4**	0	22	5	0	**27**	2	2	0	0	**4**	0	29	2	0	**31**	66
% Articulated Trucks	0.6%	0.1%	0.4%	0%	**0.3%**	0%	0.8%	0.4%	0%	**0.6%**	0.1%	0.2%	0%	0%	**0.2%**	0%	1.1%	0.6%	0%	**1.0%**	0.6%
Buses and Single-Unit Trucks	10	14	8	0	**32**	6	56	45	0	**107**	40	12	3	0	**55**	3	52	12	0	**67**	261
% Buses and Single-Unit Trucks	3.0%	1.7%	3.5%	0%	**2.3%**	3.1%	1.9%	3.6%	0%	**2.5%**	2.9%	1.3%	3.3%	0%	**2.3%**	3.3%	2.0%	3.4%	0%	**2.2%**	2.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Coonpath Rd & Election House Rd - TMC
Thu Feb 15, 2024
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1157465, Location: 39.769983, -82.646213

Provided by: Burgess & Niple, Inc
330 Rush Alley, Suite 700, Columbus, OH, 43215, US



Coonpath Rd & Election House Rd - TMC

Thu Feb 15, 2024
AM Peak (6:45 AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1157465, Location: 39.769983, -82.646213

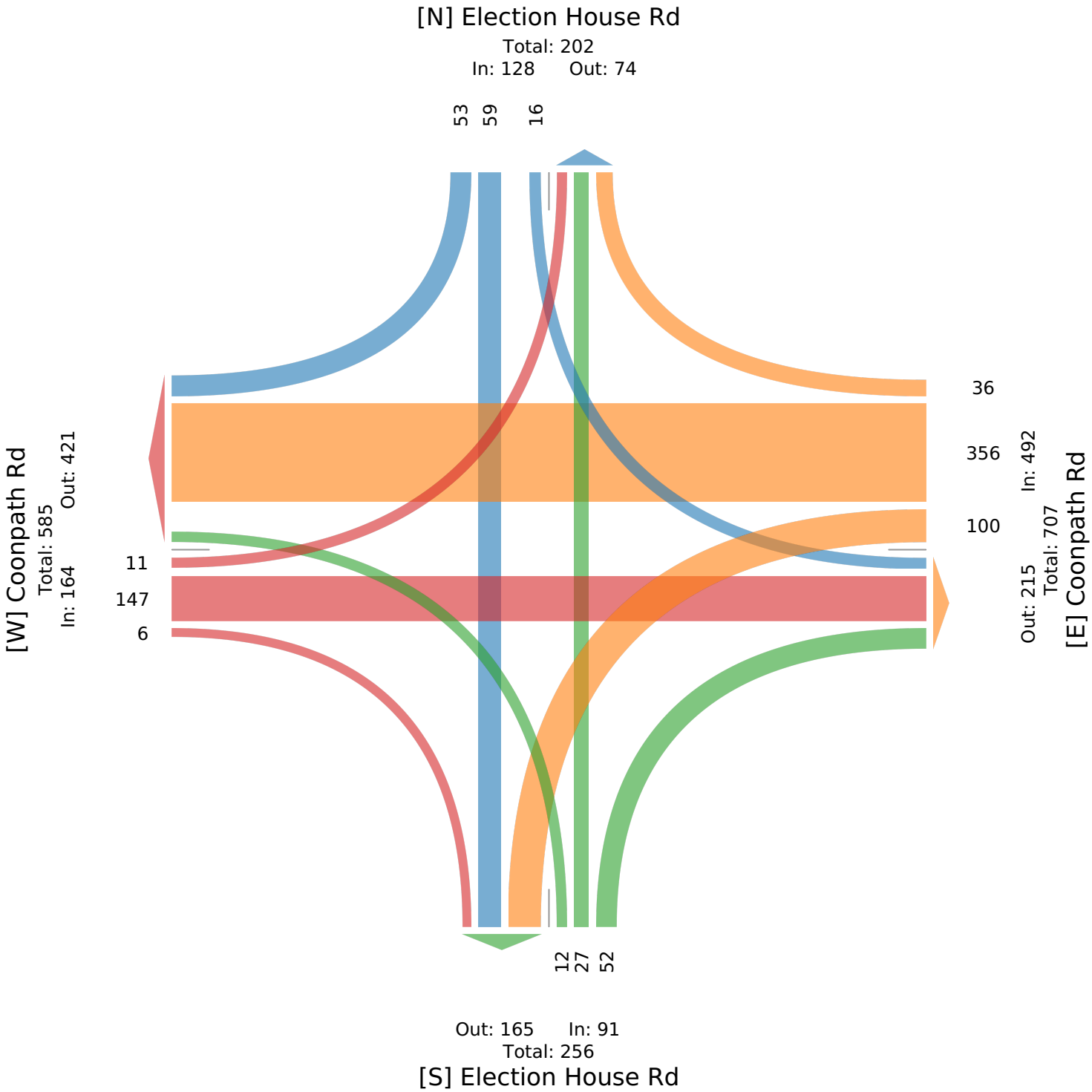
Provided by: Burgess & Niple, Inc
330 Rush Alley, Suite 700, Columbus, OH, 43215, US

Leg	Election House Rd					Coonpath Rd					Election House Rd					Coonpath Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-02-15 6:45AM	11	14	2	0	**27**	7	90	31	0	**128**	9	7	0	0	**16**	2	27	4	0	**33**	**204**
7:00AM	14	12	0	0	**26**	11	78	20	0	**109**	14	7	5	0	**26**	1	28	3	0	**32**	**193**
7:15AM	16	18	5	0	**39**	14	93	26	0	**133**	20	7	6	0	**33**	2	39	3	0	**44**	**249**
7:30AM	12	15	9	0	**36**	4	95	23	0	**122**	9	6	1	0	**16**	1	53	1	0	**55**	**229**
Total	53	59	16	0	**128**	36	356	100	0	**492**	52	27	12	0	**91**	6	147	11	0	**164**	**875**
% Approach	41.4%	46.1%	12.5%	0%	**-**	7.3%	72.4%	20.3%	0%	**-**	57.1%	29.7%	13.2%	0%	**-**	3.7%	89.6%	6.7%	0%	**-**	-
% Total	6.1%	6.7%	1.8%	0%	**14.6%**	4.1%	40.7%	11.4%	0%	**56.2%**	5.9%	3.1%	1.4%	0%	**10.4%**	0.7%	16.8%	1.3%	0%	**18.7%**	-
PHF	0.828	0.819	0.444	-	**0.821**	0.643	0.937	0.806	-	**0.925**	0.650	0.964	0.500	-	**0.689**	0.750	0.693	0.688	-	**0.745**	0.879
Lights	51	59	15	0	**125**	35	351	98	0	**484**	47	26	12	0	**85**	6	140	11	0	**157**	851
% Lights	96.2%	100%	93.8%	0%	**97.7%**	97.2%	98.6%	98.0%	0%	**98.4%**	90.4%	96.3%	100%	0%	**93.4%**	100%	95.2%	100%	0%	**95.7%**	97.3%
Articulated Trucks	0	0	0	0	**0**	0	1	1	0	**2**	1	0	0	0	**1**	0	2	0	0	**2**	5
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0.3%	1.0%	0%	**0.4%**	1.9%	0%	0%	0%	**1.1%**	0%	1.4%	0%	0%	**1.2%**	0.6%
Buses and Single-Unit Trucks	2	0	1	0	**3**	1	4	1	0	**6**	4	1	0	0	**5**	0	5	0	0	**5**	19
% Buses and Single-Unit Trucks	3.8%	0%	6.3%	0%	**2.3%**	2.8%	1.1%	1.0%	0%	**1.2%**	7.7%	3.7%	0%	0%	**5.5%**	0%	3.4%	0%	0%	**3.0%**	2.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Coonpath Rd & Election House Rd - TMC
Thu Feb 15, 2024
AM Peak (6:45 AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1157465, Location: 39.769983, -82.646213

Provided by: Burgess & Niple, Inc
330 Rush Alley, Suite 700, Columbus, OH, 43215, US



Coonpath Rd & Election House Rd - TMC

Thu Feb 15, 2024
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1157465, Location: 39.769983, -82.646213

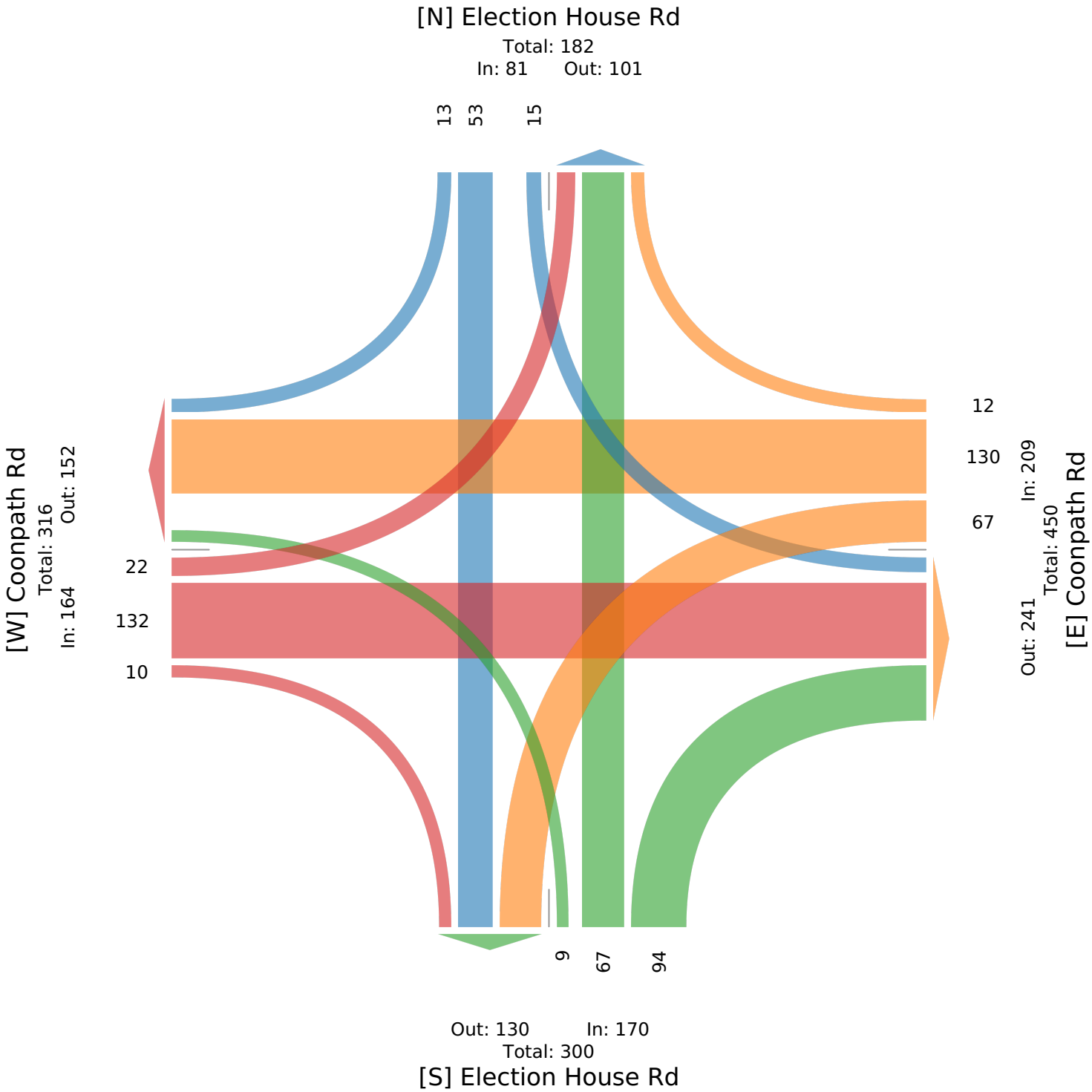
Provided by: Burgess & Niple, Inc
330 Rush Alley, Suite 700, Columbus, OH, 43215, US

Leg	Election House Rd					Coonpath Rd					Election House Rd					Coonpath Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-02-15 1:00PM	5	9	6	0	**20**	3	28	13	0	**44**	24	14	1	0	**39**	0	29	11	0	**40**	**143**
1:15PM	2	13	2	0	**17**	5	32	16	0	**53**	23	18	1	0	**42**	2	25	5	0	**32**	**144**
1:30PM	3	17	6	0	**26**	1	28	16	0	**45**	32	21	2	0	**55**	5	33	5	0	**43**	**169**
1:45PM	3	14	1	0	**18**	3	42	22	0	**67**	15	14	5	0	**34**	3	45	1	0	**49**	**168**
Total	13	53	15	0	**81**	12	130	67	0	**209**	94	67	9	0	**170**	10	132	22	0	**164**	**624**
% Approach	16.0%	65.4%	18.5%	0%	-	5.7%	62.2%	32.1%	0%	-	55.3%	39.4%	5.3%	0%	-	6.1%	80.5%	13.4%	0%	-	-
% Total	2.1%	8.5%	2.4%	0%	**13.0%**	1.9%	20.8%	10.7%	0%	**33.5%**	15.1%	10.7%	1.4%	0%	**27.2%**	1.6%	21.2%	3.5%	0%	**26.3%**	-
PHF	0.650	0.779	0.625	-	**0.779**	0.600	0.774	0.761	-	**0.780**	0.734	0.798	0.450	-	**0.773**	0.500	0.733	0.500	-	**0.837**	0.923
Lights	13	51	15	0	**79**	12	121	62	0	**195**	93	66	7	0	**166**	10	125	22	0	**157**	597
% Lights	100%	96.2%	100%	0%	**97.5%**	100%	93.1%	92.5%	0%	**93.3%**	98.9%	98.5%	77.8%	0%	**97.6%**	100%	94.7%	100%	0%	**95.7%**	95.7%
Articulated Trucks	0	0	0	0	**0**	0	3	1	0	**4**	0	1	0	0	**1**	0	4	0	0	**4**	9
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	2.3%	1.5%	0%	**1.9%**	0%	1.5%	0%	0%	**0.6%**	0%	3.0%	0%	0%	**2.4%**	1.4%
Buses and Single-Unit Trucks	0	2	0	0	**2**	0	6	4	0	**10**	1	0	2	0	**3**	0	3	0	0	**3**	18
% Buses and Single-Unit Trucks	0%	3.8%	0%	0%	**2.5%**	0%	4.6%	6.0%	0%	**4.8%**	1.1%	0%	22.2%	0%	**1.8%**	0%	2.3%	0%	0%	**1.8%**	2.9%

*L: Left, R: Right, T: Thru, U: U-Turn

Coonpath Rd & Election House Rd - TMC
Thu Feb 15, 2024
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1157465, Location: 39.769983, -82.646213

Provided by: Burgess & Niple, Inc
330 Rush Alley, Suite 700, Columbus, OH, 43215, US



Coonpath Rd & Election House Rd - TMC

Thu Feb 15, 2024
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1157465, Location: 39.769983, -82.646213

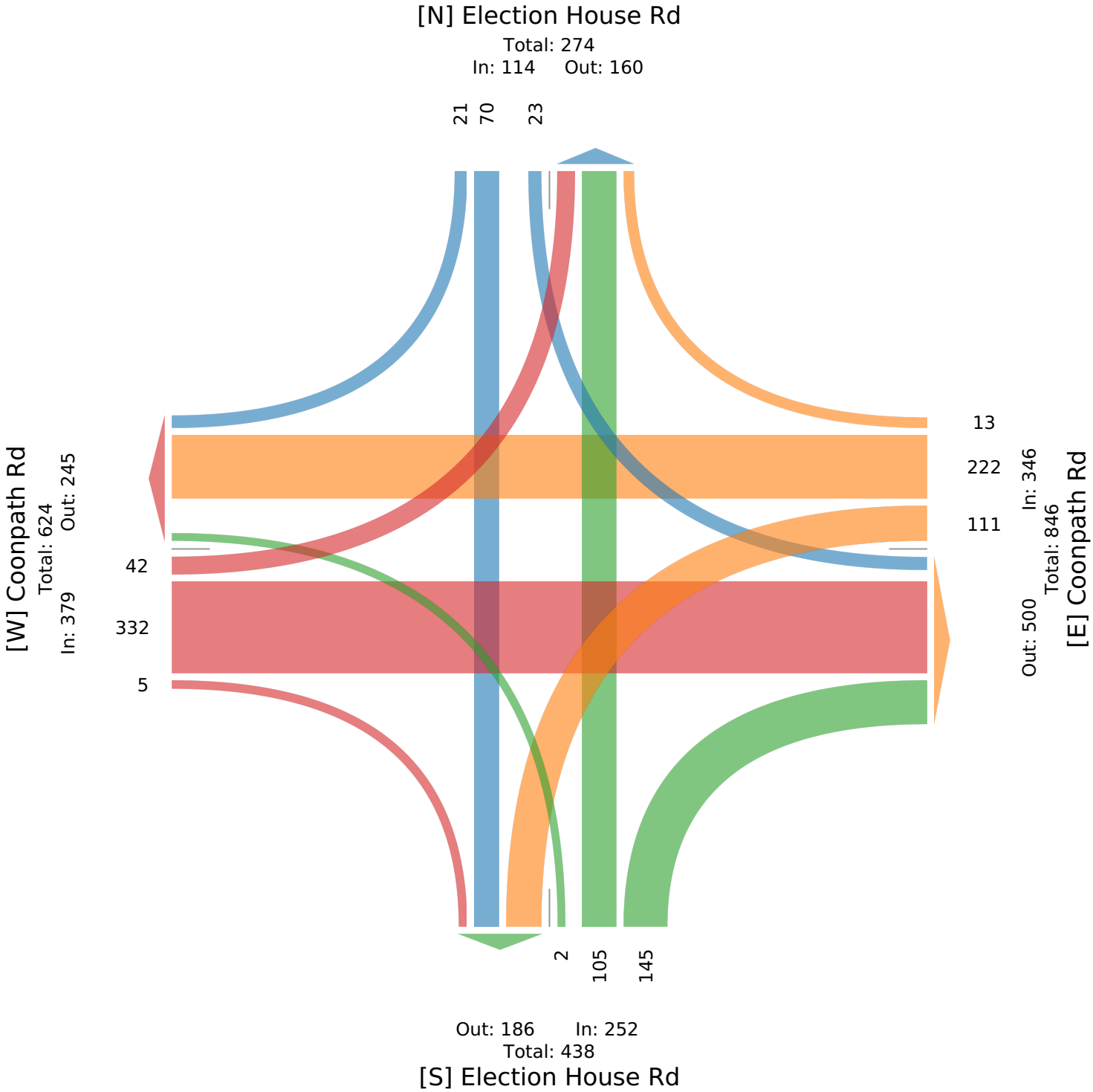
Provided by: Burgess & Niple, Inc
330 Rush Alley, Suite 700, Columbus, OH, 43215, US

Leg	Election House Rd					Coonpath Rd					Election House Rd					Coonpath Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-02-15 4:15PM	3	22	2	0	**27**	3	60	27	0	**90**	42	26	1	0	**69**	2	87	9	0	**98**	**284**
4:30PM	9	19	9	0	**37**	2	50	33	0	**85**	39	29	0	0	**68**	1	76	7	0	**84**	**274**
4:45PM	6	11	7	0	**24**	5	48	32	0	**85**	25	17	1	0	**43**	1	85	14	0	**100**	**252**
5:00PM	3	18	5	0	**26**	3	64	19	0	**86**	39	33	0	0	**72**	1	84	12	0	**97**	**281**
Total	21	70	23	0	**114**	13	222	111	0	**346**	145	105	2	0	**252**	5	332	42	0	**379**	**1091**
% Approach	18.4%	61.4%	20.2%	0%	**-**	3.8%	64.2%	32.1%	0%	**-**	57.5%	41.7%	0.8%	0%	**-**	1.3%	87.6%	11.1%	0%	**-**	-
% Total	1.9%	6.4%	2.1%	0%	**10.4%**	1.2%	20.3%	10.2%	0%	**31.7%**	13.3%	9.6%	0.2%	0%	**23.1%**	0.5%	30.4%	3.8%	0%	**34.7%**	-
PHF	0.583	0.795	0.639	-	**0.770**	0.650	0.867	0.841	-	**0.961**	0.863	0.795	0.500	-	**0.875**	0.625	0.954	0.750	-	**0.948**	0.960
Lights	21	70	22	0	**113**	13	220	109	0	**342**	141	103	2	0	**246**	5	327	41	0	**373**	1074
% Lights	100%	100%	95.7%	0%	**99.1%**	100%	99.1%	98.2%	0%	**98.8%**	97.2%	98.1%	100%	0%	**97.6%**	100%	98.5%	97.6%	0%	**98.4%**	98.4%
Articulated Trucks	0	0	1	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	4	0	0	**4**	5
% Articulated Trucks	0%	0%	4.3%	0%	**0.9%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	1.2%	0%	0%	**1.1%**	0.5%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	2	2	0	**4**	4	2	0	0	**6**	0	1	1	0	**2**	12
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0%	0.9%	1.8%	0%	**1.2%**	2.8%	1.9%	0%	0%	**2.4%**	0%	0.3%	2.4%	0%	**0.5%**	1.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Coonpath Rd & Election House Rd - TMC
Thu Feb 15, 2024
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1157465, Location: 39.769983, -82.646213

Provided by: Burgess & Niple, Inc
330 Rush Alley, Suite 700, Columbus, OH, 43215, US



Coonpath Rd and Election House Rd

Intersection Feasibility Study

Appendix E

Traffic Analysis

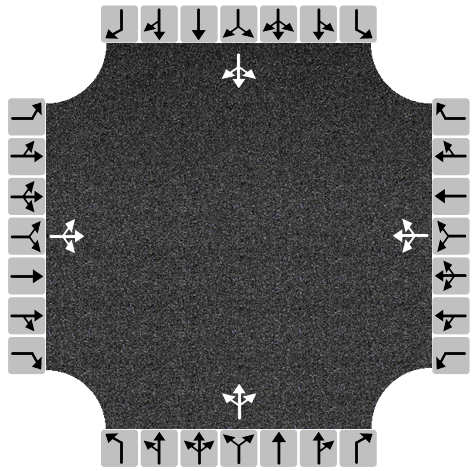
BURGESS & NIPLE

HCS All-Way Stop Control Report

General and Site Information

Analyst	Kyle Bright
Agency/Co.	Burgess & Niple
Date Performed	4/9/2024
Analysis Year	2048
Analysis Time Period (hrs)	0.25
Time Analyzed	AM peak
Project Description	2048 No-Build
Intersection	Coonpath Rd & Election House Rd
Jurisdiction	
East/West Street	Coonpath Rd
North/South Street	Election House Rd
Peak Hour Factor	0.88

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	20	290	10	190	690	70	20	50	100	30	110	100
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	364			1080			193			273		
Percent Heavy Vehicles	4			2			7			2		
Initial Departure Headway, h_d (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.323			0.960			0.172			0.242		
Final Departure Headway, h_d (s)	7.02			6.65			7.60			7.31		
Final Degree of Utilization, x	0.709			1.995			0.408			0.554		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, t_s (s)	5.02			4.65			5.60			5.31		

Capacity, Delay and Level of Service

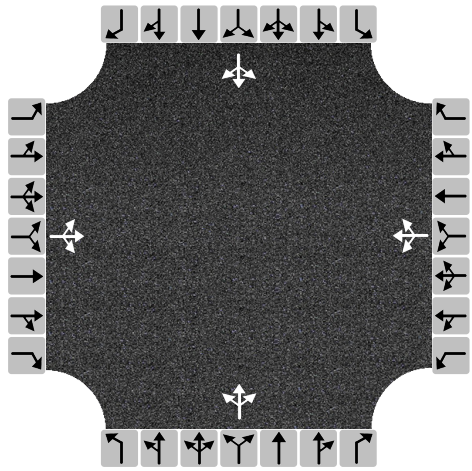
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	364			1080			193			273		
Capacity (veh/h)	513			541			474			492		
95% Queue Length, Q_{95} (veh)	5.6			72.9			2.0			3.3		
95% Queue Length, Q_{95} (ft)	144.7			1845.8			52.6			84.0		
Control Delay (s/veh)	25.3			470.2			15.7			19.0		
Level of Service, LOS	D			F			C			C		
Approach Delay (s/veh) | LOS	25.3	D		470.2	F		15.7	C		19.0	C	
Intersection Delay (s/veh) | LOS	275.0						F					

HCS All-Way Stop Control Report

General and Site Information

Analyst	Kyle Bright
Agency/Co.	Burgess & Niple
Date Performed	4/9/2024
Analysis Year	2048
Analysis Time Period (hrs)	0.25
Time Analyzed	PM peak
Project Description	2048 No-Build
Intersection	Coonpath Rd & Election House Rd
Jurisdiction	
East/West Street	Coonpath Rd
North/South Street	Election House Rd
Peak Hour Factor	0.96

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	80	640	10	220	430	30	10	200	280	40	140	40
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	760			708			510			229		
Percent Heavy Vehicles	2			1			2			1		
Initial Departure Headway, h_d (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.676			0.630			0.454			0.204		
Final Departure Headway, h_d (s)	8.59			8.61			8.25			9.51		
Final Degree of Utilization, x	1.814			1.693			1.170			0.605		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, t_s (s)	6.59			6.61			6.25			7.51		

Capacity, Delay and Level of Service

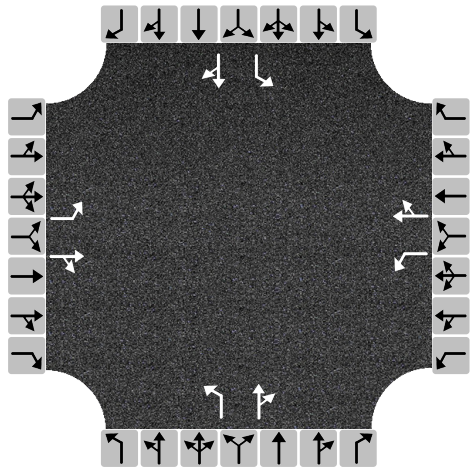
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	760			708			510			229		
Capacity (veh/h)	419			418			436			379		
95% Queue Length, Q_{95} (veh)	48.5			42.5			19.2			3.8		
95% Queue Length, Q_{95} (ft)	1228.0			1072.7			489.2			95.7		
Control Delay (s/veh)	396.1			343.4			125.6			26.0		
Level of Service, LOS	F			F			F			D		
Approach Delay (s/veh) | LOS	396.1	F		343.4	F		125.6	F		26.0	D	
Intersection Delay (s/veh) | LOS	278.3						F					

HCS All-Way Stop Control Report

General and Site Information

Analyst	Kyle Bright
Agency/Co.	Burgess & Niple
Date Performed	4/9/2024
Analysis Year	2048
Analysis Time Period (hrs)	0.25
Time Analyzed	AM peak
Project Description	2048 No-Build
Intersection	Coonpath Rd & Election House Rd
Jurisdiction	
East/West Street	Coonpath Rd
North/South Street	Election House Rd
Peak Hour Factor	0.88

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	20	290	10	190	690	70	20	50	100	30	110	100
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR		L	TR		L	TR		L	TR	
Flow Rate, v (veh/h)	23	341		216	864		23	170		34	239	
Percent Heavy Vehicles	4	4		2	2		7	7		2	2	
Initial Departure Headway, h_d (s)	3.20	3.20		3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.020	0.303		0.192	0.768		0.020	0.152		0.030	0.212	
Final Departure Headway, h_d (s)	7.91	7.39		7.39	6.82		8.62	7.69		8.36	7.55	
Final Degree of Utilization, x	0.050	0.700		0.443	1.637		0.054	0.364		0.079	0.500	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, t_s (s)	5.61	5.09		5.09	4.52		6.32	5.39		6.06	5.25	

Capacity, Delay and Level of Service

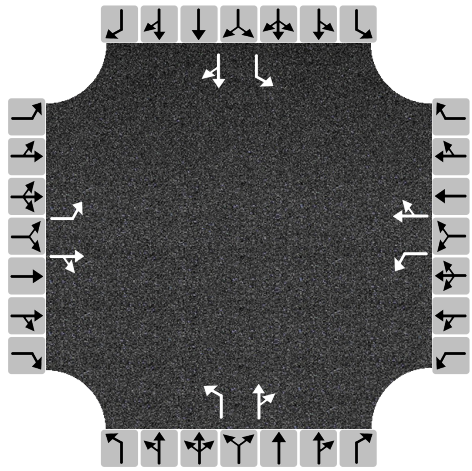
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR		L	TR		L	TR		L	TR	
Flow Rate, v (veh/h)	23	341		216	864		23	170		34	239	
Capacity (veh/h)	455	487		487	528		417	468		431	477	
95% Queue Length, Q_{95} (veh)	0.2	5.4		2.2	48.7		0.2	1.6		0.3	2.8	
95% Queue Length, Q_{95} (ft)	5.2	139.5		55.7	1233.1		5.3	42.1		7.6	71.3	
Control Delay (s/veh)	11.0	25.6		15.8	312.7		11.8	14.7		11.8	17.6	
Level of Service, LOS	B	D		C	F		B	B		B	C	
Approach Delay (s/veh) | LOS	24.7	C		253.3	F		14.4	B		16.8	C	
Intersection Delay (s/veh) | LOS	151.8						F					

HCS All-Way Stop Control Report

General and Site Information

Analyst	Kyle Bright
Agency/Co.	Burgess & Niple
Date Performed	4/9/2024
Analysis Year	2048
Analysis Time Period (hrs)	0.25
Time Analyzed	PM peak
Project Description	2048 No-Build
Intersection	Coonpath Rd & Election House Rd
Jurisdiction	
East/West Street	Coonpath Rd
North/South Street	Election House Rd
Peak Hour Factor	0.96

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	80	640	10	220	430	30	10	200	280	40	140	40
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

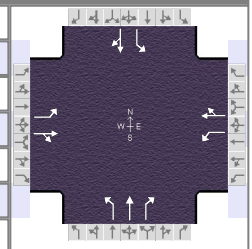
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR		L	TR		L	TR		L	TR	
Flow Rate, v (veh/h)	83	677		229	479		10	500		42	188	
Percent Heavy Vehicles	2	2		1	1		2	2		1	1	
Initial Departure Headway, h_d (s)	3.20	3.20		3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.074	0.602		0.204	0.426		0.009	0.444		0.037	0.167	
Final Departure Headway, h_d (s)	9.06	8.57		9.01	8.48		9.17	8.28		9.95	9.31	
Final Degree of Utilization, x	0.210	1.611		0.574	1.129		0.027	1.150		0.115	0.485	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, t_s (s)	6.76	6.27		6.71	6.18		6.87	5.98		7.65	7.01	

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR		L	TR		L	TR		L	TR	
Flow Rate, v (veh/h)	83	677		229	479		10	500		42	188	
Capacity (veh/h)	397	420		400	425		393	435		362	387	
95% Queue Length, Q_{95} (veh)	0.8	38.7		3.5	17.2		0.1	18.4		0.4	2.6	
95% Queue Length, Q_{95} (ft)	20.3	979.9		88.3	434.1		2.5	468.8		10.1	65.5	
Control Delay (s/veh)	14.2	307.2		23.2	111.9		12.1	118.5		13.9	20.5	
Level of Service, LOS	B	F		C	F		B	F		B	C	
Approach Delay (s/veh) | LOS	275.1	F		83.2	F		116.3	F		19.3	C	
Intersection Delay (s/veh) | LOS	150.3						F					

HCS Signalized Intersection Results Summary

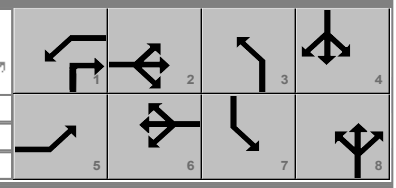
General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	Kyle Bright	Analysis Date	4/9/2024	Area Type	Other
Jurisdiction		Time Period	AM peak	PHF	0.88
Urban Street		Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Coonpath Rd & Election…	File Name	2048 Build Signalized AM.xus		
Project Description	2048 Build Signalized AM				



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	290	10	190	690	70	20	50	100	30	110	100

Signal Information			
Cycle, s	100.0	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	3.3	4.9	48.4	3.3	1.0	15.2
Yellow	4.0	0.0	4.0	4.0	0.0	4.0
Red	2.0	0.0	2.0	2.0	0.0	2.0



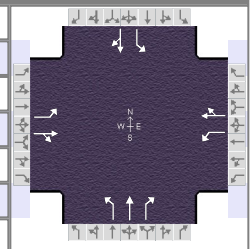
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	9.3	54.4	14.2	59.3	9.3	21.2	10.3	22.2
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.0	0.0	3.0	0.0	3.0	3.1	3.0	3.1
Queue Clearance Time (g_s), s	2.6		7.9		3.1	7.8	3.6	15.5
Green Extension Time (g_e), s	0.0	0.0	0.3	0.0	0.0	0.7	0.0	0.7
Phase Call Probability	0.47		1.00		0.47	1.00	0.61	1.00
Max Out Probability	0.00		0.00		0.00	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	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	23	341		216	864		23	57	114	34	239	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1753	1830		1781	1840		1711	1796	1610	1781	1723	
Queue Service Time (g_s), s	0.6	11.8		5.9	41.3		1.1	2.8	5.8	1.6	13.5	
Cycle Queue Clearance Time (g_c), s	0.6	11.8		5.9	41.3		1.1	2.8	5.8	1.6	13.5	
Green Ratio (*g/C*)	0.52	0.48		0.57	0.53		0.18	0.15	0.23	0.19	0.16	
Capacity (*c*), veh/h	192	885		598	980		136	272	376	315	279	
Volume-to-Capacity Ratio (*X*)	0.118	0.385		0.361	0.881		0.167	0.209	0.302	0.108	0.856	
Back of Queue (*Q*), ft/ln (95 th percentile)	11	218		93	646		21	56	98	30	244	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.4	8.4		3.7	25.5		0.8	2.1	3.9	1.2	9.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.04	0.22		0.31	0.65		0.07	0.06	0.28	0.10	0.24	
Uniform Delay (d_1), s/veh	19.5	16.4		11.3	20.6		34.8	37.2	31.6	33.1	40.8	
Incremental Delay (d_2), s/veh	0.1	1.3		0.1	11.2		0.2	0.1	0.2	0.1	3.0	
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	19.6	17.7		11.5	31.8		35.0	37.3	31.8	33.2	43.7	
Level of Service (LOS)	B	B		B	C		C	D	C	C	D	
Approach Delay, s/veh / LOS	17.8	B		27.8	C		33.8	C		42.4	D	
Intersection Delay, s/veh / LOS	28.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.09	B	1.89	B	1.94	B	1.94	B
Bicycle LOS Score / LOS	1.09	A	2.27	B	0.81	A	0.94	A

HCS Signalized Intersection Results Summary

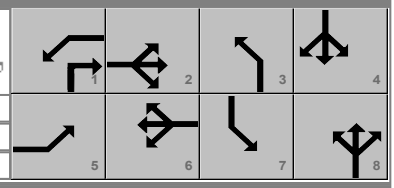
General Information				Intersection Information	
Agency	Burgess & Niple			Duration, h	0.250
Analyst	Kyle Bright	Analysis Date	4/9/2024	Area Type	CBD
Jurisdiction		Time Period	PM peak	PHF	0.88
Urban Street		Analysis Year	2048	Analysis Period	1> 7:00
Intersection	Coonpath Rd & Election…	File Name	2048 Build Signalized PM.xus		
Project Description	2048 Build Signalized PM				



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	640	10	220	430	30	10	200	280	40	140	40

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	6.6	0.4	50.0	2.1	5.2	17.7
Yellow	4.0	4.0	4.0	4.0	0.0	4.0
Red	2.0	2.0	2.0	0.0	0.0	2.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	3.0	1.1	4.0
Phase Duration, s	12.6	56.0	19.0	62.4	6.1	23.7	11.3	28.9
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	4.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.0	0.0	3.0	0.0	3.0	3.1	3.0	3.1
Queue Clearance Time (g_s), s	5.2		12.7		2.6	19.7	4.5	14.5
Green Extension Time (g_e), s	0.1	0.0	0.4	0.0	0.0	0.0	0.0	1.1
Phase Call Probability	0.94		1.00		0.29	1.00	0.75	1.00
Max Out Probability	0.00		0.00		0.00	1.00	0.00	0.09

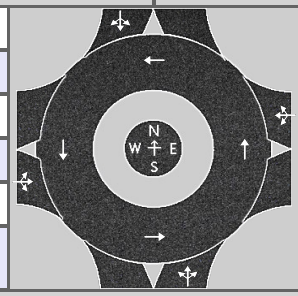
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	91	739		250	523		11	227	318	45	205	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1603	1679		1616	1677		1603	1683	1449	1616	1631	
Queue Service Time (g_s), s	3.2	47.0		10.7	24.3		0.6	14.4	17.7	2.5	12.5	
Cycle Queue Clearance Time (g_c), s	3.2	47.0		10.7	24.3		0.6	14.4	17.7	2.5	12.5	
Green Ratio (*g/C*)	0.52	0.45		0.59	0.51		0.18	0.16	0.28	0.22	0.21	
Capacity (*c*), veh/h	379	766		276	860		177	271	402	174	340	
Volume-to-Capacity Ratio (*X*)	0.240	0.964		0.906	0.607		0.064	0.837	0.791	0.261	0.601	
Back of Queue (*Q*), ft/ln (95 th percentile)	50	770		279	362		11	296	335	44	219	
Back of Queue (*Q*), veh/ln (95 th percentile)	2.0	30.3		11.1	14.4		0.4	11.6	13.4	1.7	8.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.17	0.77		0.93	0.36		0.04	0.30	0.96	0.15	0.22	
Uniform Delay (d_1), s/veh	15.7	29.0		29.8	18.9		37.7	44.7	36.8	35.6	39.4	
Incremental Delay (d_2), s/veh	0.1	24.9		4.6	3.2		0.1	19.0	9.4	0.3	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	
Control Delay (*d*), s/veh	15.8	53.9		34.4	22.1		37.7	63.7	46.2	35.9	41.5	
Level of Service (LOS)	B	D		C	C		D	E	D	D	D	
Approach Delay, s/veh / LOS	49.7	D		26.1	C		53.2	D		40.5	D	
Intersection Delay, s/veh / LOS	42.0						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	1.90	B	1.94	B	1.94	B
Bicycle LOS Score / LOS	1.86	B	1.76	B	1.41	A	0.90	A

HCS Roundabouts Report

General Information

Analyst	Kyle Bright
Agency or Co.	Burgess & Niple
Date Performed	4/9/2024
Analysis Year	2024
Time Analyzed	AM Peak
Project Description	2048 Build



Site Information

Intersection	Coonpath Rd & Election Ho...
E/W Street Name	Coonpath Rd
N/S Street Name	Election House Rd
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.88
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	20	290	10	0	190	690	70	0	20	50	100	0	30	110	100
Percent Heavy Vehicles, %	0	4	4	4	0	2	2	2	0	7	7	7	0	2	2	2
Flow Rate (v_{PCE}), pc/h	0	24	343	12	0	219	797	81	0	24	61	121	0	35	128	116
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		379			1097			206			279	
Entry Volume, veh/h		364			1080			193			273	
Circulating Flow (v_c), pc/h	382			109			402			1040		
Exiting Flow (v_{ex}), pc/h	499			937			166			359		
Capacity (c_{pce}), pc/h		935			1235			916			478	
Capacity (c), veh/h		897			1215			859			467	
v/c Ratio (x)		0.41			0.89			0.22			0.58	

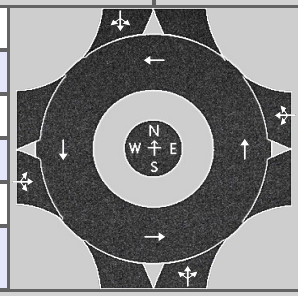
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		8.8			24.9			6.5			20.9	
Lane LOS		A			C			A			C	
95% Queue Length, Q_{95} (veh)		2.0			13.4			0.9			3.7	
95% Queue Length, Q_{95} (ft)		51.7			339.3			23.7			94.2	
Approach Delay, s/veh | LOS	8.8	A		24.9	C		6.5	A		20.9	C	
Intersection Delay, s/veh | LOS	19.4						C					

HCS Roundabouts Report

General Information

Analyst	Kyle Bright
Agency or Co.	Burgess & Niple
Date Performed	4/9/2024
Analysis Year	2048
Time Analyzed	PM Peak
Project Description	2048 Build



Site Information

Intersection	Coonpath Rd & Election Ho...
E/W Street Name	Coonpath Rd
N/S Street Name	Election House Rd
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.96
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	80	640	10	0	220	430	30	0	10	200	280	0	40	140	40
Percent Heavy Vehicles, %	0	2	2	2	0	1	1	1	0	2	2	2	0	1	1	1
Flow Rate (v_{PCE}), pc/h	0	85	677	11	0	232	453	32	0	11	213	299	0	42	147	42
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		773			717			523			231	
Entry Volume, veh/h		761			708			511			229	
Circulating Flow (v_c), pc/h	421			309			804			696		
Exiting Flow (v_{ex}), pc/h	1018			506			330			390		
Capacity (c_{pce}), pc/h		898			1007			608			679	
Capacity (c), veh/h		884			995			594			672	
v/c Ratio (x)		0.86			0.71			0.86			0.34	

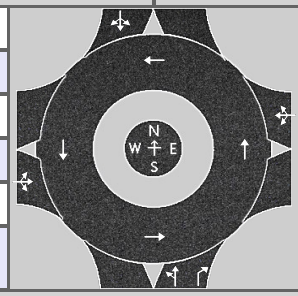
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		27.6			15.6			36.7			9.8	
Lane LOS		D			C			E			A	
95% Queue Length, Q_{95} (veh)		10.9			6.3			9.6			1.5	
95% Queue Length, Q_{95} (ft)		276.0			159.0			244.6			37.8	
Approach Delay, s/veh | LOS	27.6	D		15.6	C		36.7	E		9.8	A	
Intersection Delay, s/veh | LOS	24.0						C					

HCS Roundabouts Report

General Information

Analyst	Kyle Bright
Agency or Co.	Burgess & Niple
Date Performed	4/9/2024
Analysis Year	2024
Time Analyzed	AM Peak
Project Description	2048 Build



Site Information

Intersection	Coonpath Rd & Election Ho...
E/W Street Name	Coonpath Rd
N/S Street Name	Election House Rd
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.88
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0
Lane Assignment			LTR				LTR		LT		R				LTR	
Volume (V), veh/h	0	20	290	10	0	190	690	70	0	20	50	100	0	30	110	100
Percent Heavy Vehicles, %	0	4	4	4	0	2	2	2	0	7	7	7	0	2	2	2
Flow Rate (v_{PCE}), pc/h	0	24	343	12	0	219	797	81	0	24	61	121	0	35	128	116
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763		4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087			2.6087		2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		379			1097		85	121			279	
Entry Volume, veh/h		364			1080		80	114			273	
Circulating Flow (v_c), pc/h	382			109			402			1040		
Exiting Flow (v_{ex}), pc/h	499			937			166			359		
Capacity (c_{pce}), pc/h		935			1235		985	985			478	
Capacity (c), veh/h		897			1215		924	924			467	
v/c Ratio (x)		0.41			0.89		0.09	0.12			0.58	

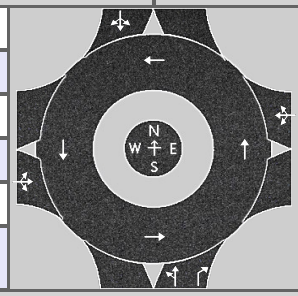
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		8.8			24.9		4.7	5.1			20.9	
Lane LOS		A			C		A	A			C	
95% Queue Length, Q_{95} (veh)		2.0			13.4		0.3	0.4			3.7	
95% Queue Length, Q_{95} (ft)		51.7			339.3		7.9	10.5			94.2	
Approach Delay, s/veh | LOS	8.8	A		24.9	C		4.9	A		20.9	C	
Intersection Delay, s/veh | LOS	19.2						C					

HCS Roundabouts Report

General Information

Analyst	Kyle Bright
Agency or Co.	Burgess & Niple
Date Performed	4/9/2024
Analysis Year	2048
Time Analyzed	PM Peak
Project Description	2048 Build



Site Information

Intersection	Coonpath Rd & Election Ho...
E/W Street Name	Coonpath Rd
N/S Street Name	Election House Rd
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.96
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0
Lane Assignment			LTR				LTR		LT		R				LTR	
Volume (V), veh/h	0	80	640	10	0	220	430	30	0	10	200	280	0	40	140	40
Percent Heavy Vehicles, %	0	2	2	2	0	1	1	1	0	2	2	2	0	1	1	1
Flow Rate (v_{PCE}), pc/h	0	85	677	11	0	232	453	32	0	11	213	299	0	42	147	42
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763		4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087			2.6087		2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		773			717		224	299			231	
Entry Volume, veh/h		761			708		219	292			229	
Circulating Flow (v_c), pc/h	421			309			804			696		
Exiting Flow (v_{ex}), pc/h	1018			506			330			390		
Capacity (c_{pce}), pc/h		898			1007		683	683			679	
Capacity (c), veh/h		884			995		667	667			672	
v/c Ratio (x)		0.86			0.71		0.33	0.44			0.34	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		27.6			15.6		9.6	11.7			9.8	
Lane LOS		D			C		A	B			A	
95% Queue Length, Q_{95} (veh)		10.9			6.3		1.4	2.2			1.5	
95% Queue Length, Q_{95} (ft)		276.0			159.0		35.7	56.1			37.8	
Approach Delay, s/veh | LOS	27.6	D		15.6	C		10.8	B		9.8	A	
Intersection Delay, s/veh | LOS	18.0						C					

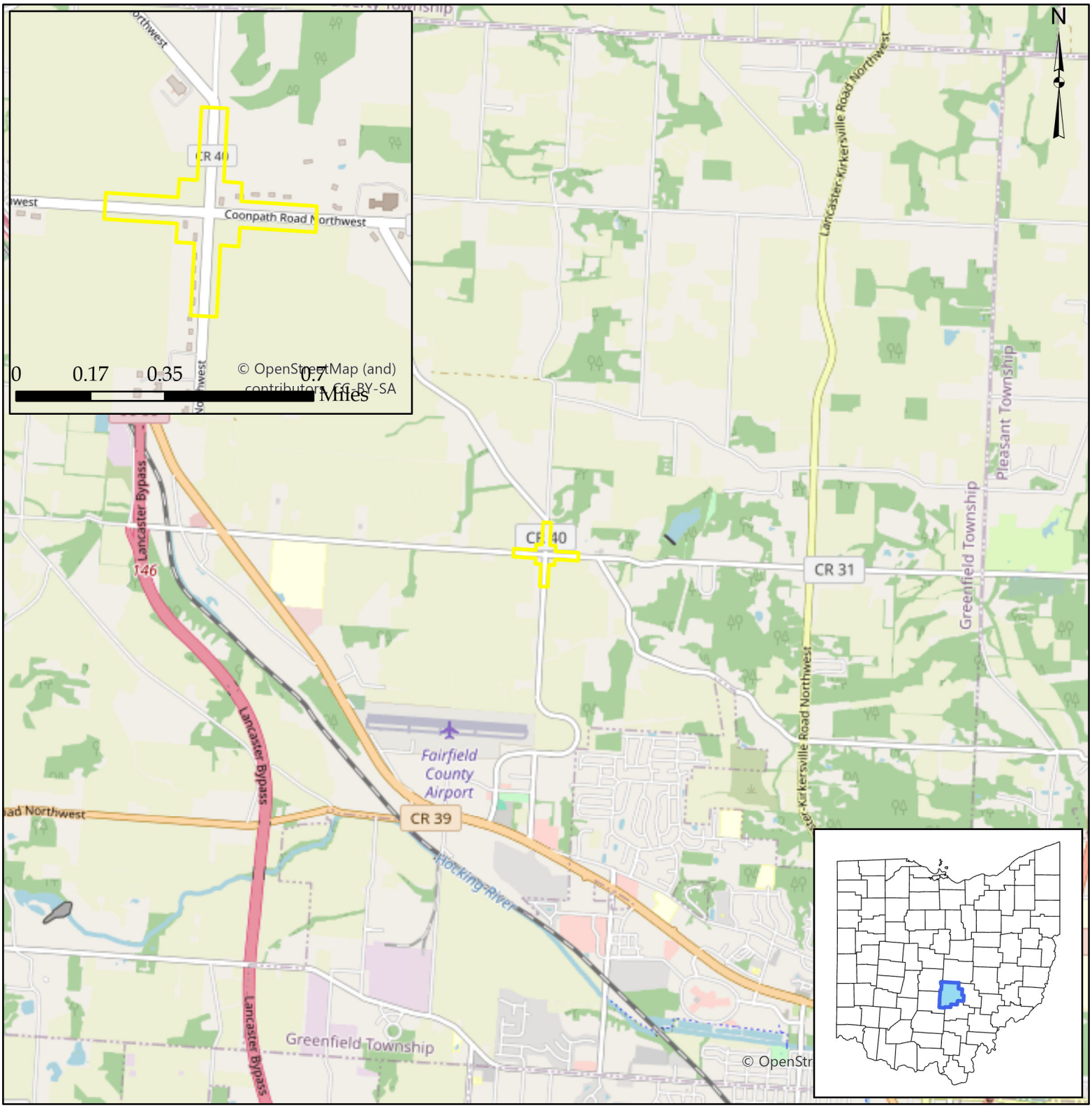
Coonpath Rd and Election House Rd

Intersection Feasibility Study

Appendix F

Environmental

BURGESS & NIPLE



0 0.5 1 2 Miles

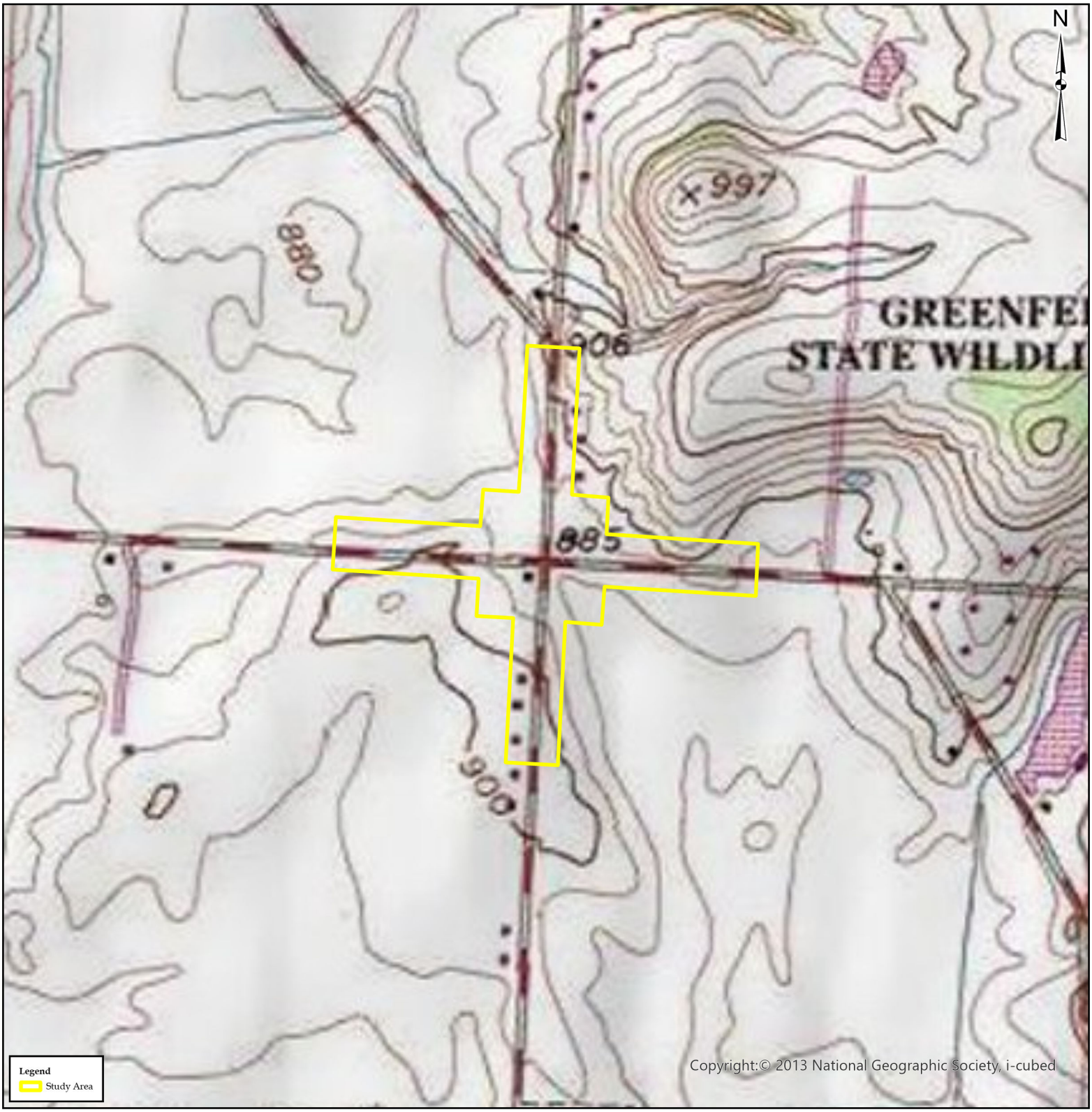
Sources:
Non Orthophotography Data: U.S. Census Ohio County Map
Orthophotography: ESRI World Street Map
Map Projection: WGS 1984 Web Mercator
Map Datum: WGS 1984

Coonpath Road & Election House Road Intersection Improvements
Greenfield Township, Fairfield County, OH

Project Location Map

BURGESS & NIPLE
Engineers ■ Planners ■ Environmental Scientists

April 2023



0 500 1,000 2,000 Feet

Coonpath Road & Election House Road
Intersection Improvements
Greenfield Township, Fairfield County, OH

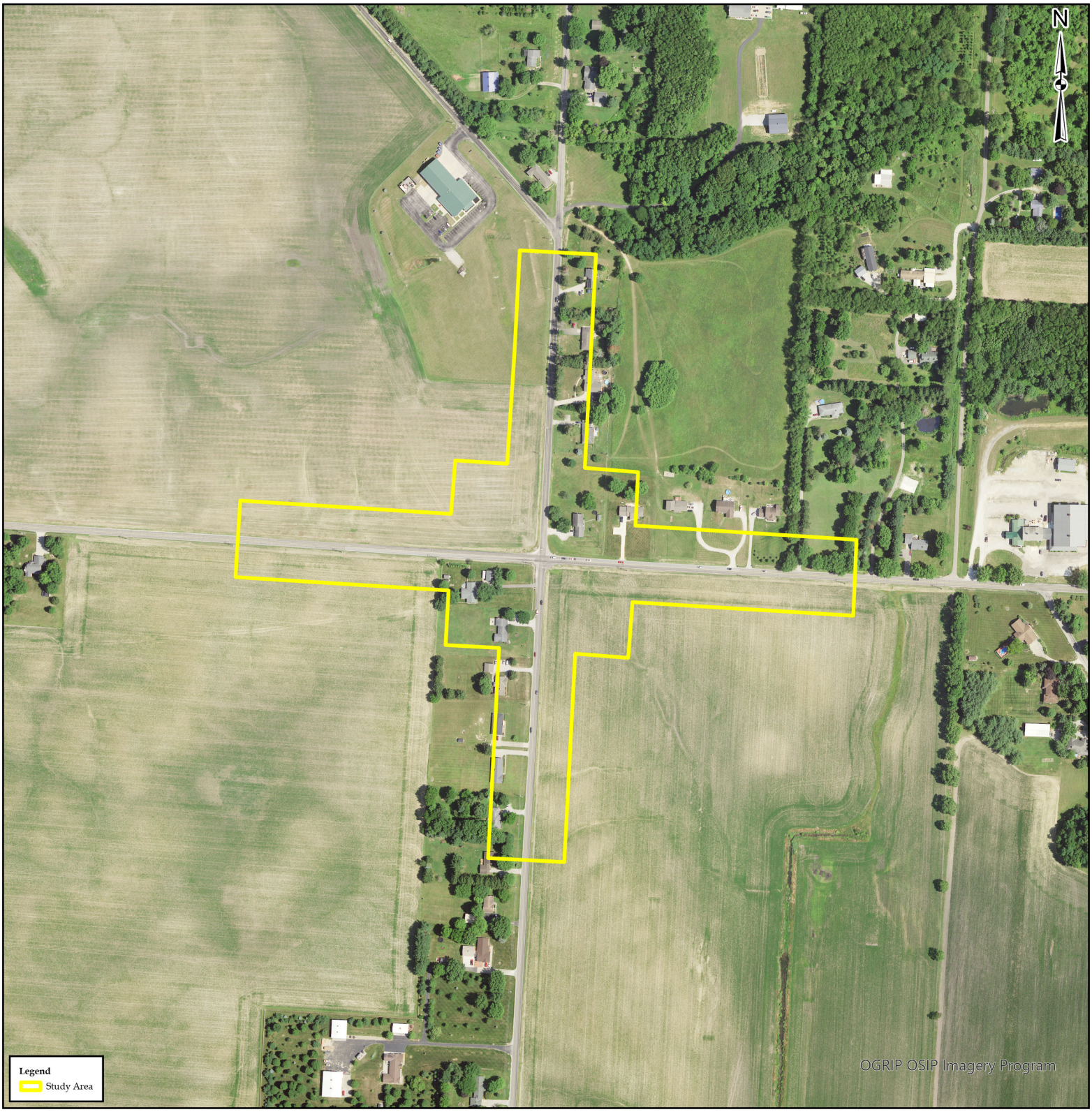
Carroll, OH 7.5-Minute Quadrangle

Sources:
Orthophotography: USGS Topographic Data
Map Projection: WGS 1984 Web Mercator
Map Datum: WGS 1984

USGS Topographic Map

BURGESS & NIPLE
Engineers ■ Planners ■ Environmental Scientists

April 2023



0 375 750 1,500 Feet

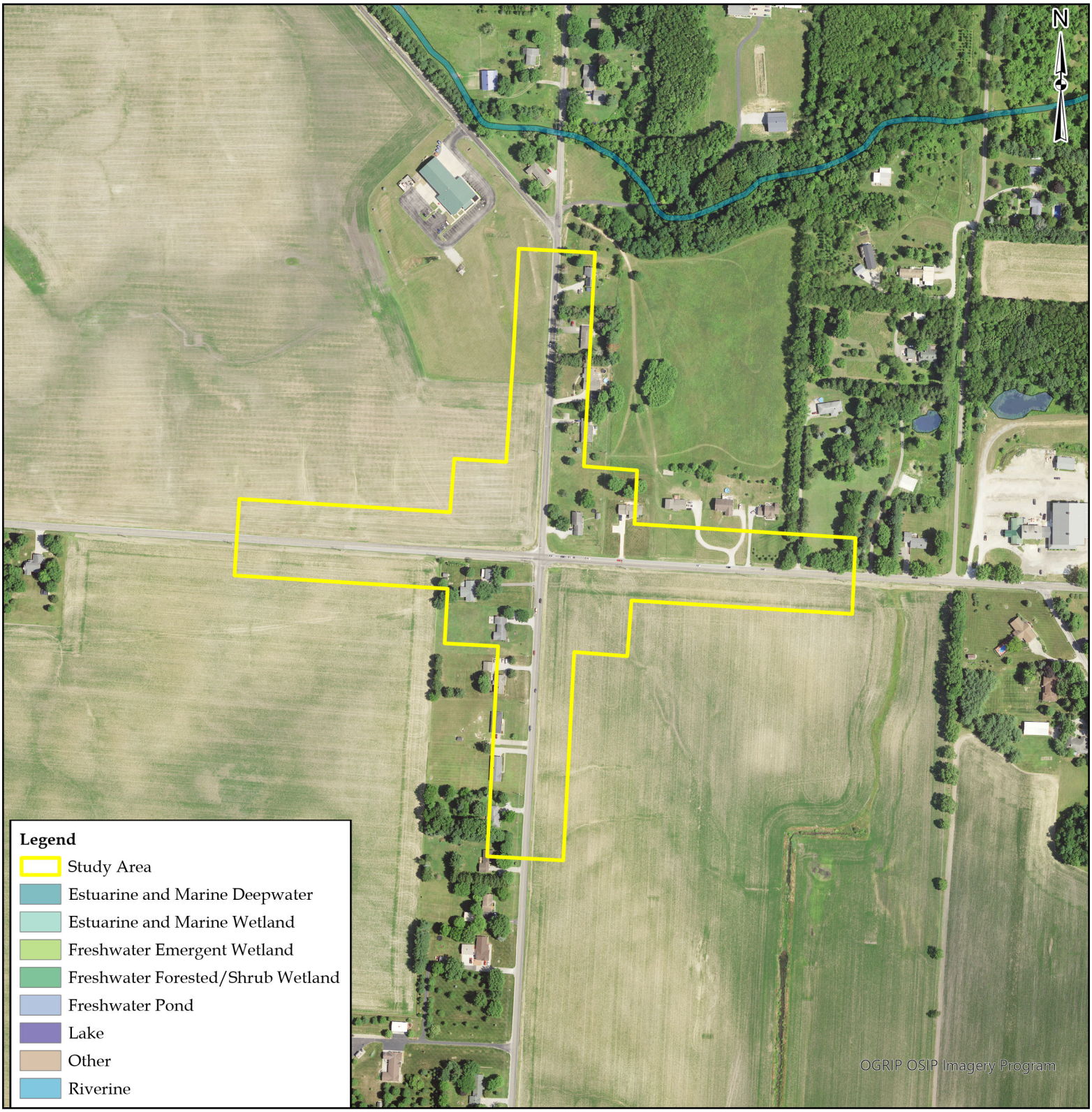
Coonpath Road & Election House Road
Intersection Improvements
Greenfield Township, Fairfield County, OH

Sources:
Orthophotography: Ohio Statewide Imagery Program
Map Projection: WGS 1984 Web Mercator
Map Datum: WGS 1984

Aerial Map

BURGESS & NIPLE
Engineers ■ Planners ■ Environmental Scientists

April 2023



0 375 750 1,500 Feet

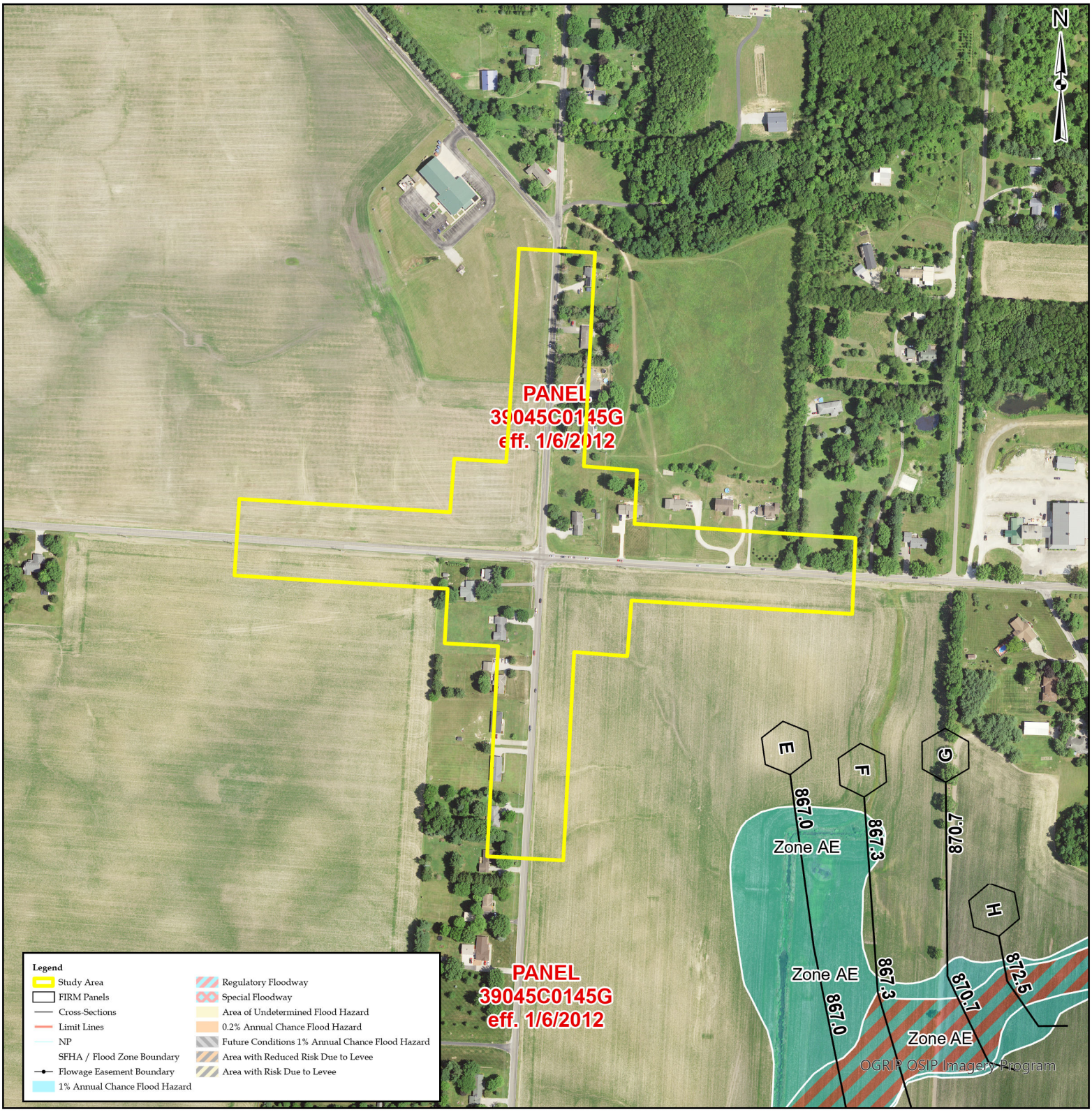
Coonpath Road & Election House Road
Intersection Improvements
Greenfield Township, Fairfield County, OH

Sources:
Non Orthophotography Data: National Wetlands Inventory Layer
Orthophotography: Ohio Statewide Imagery Program
Map Projection: WGS 1984 Web Mercator
Map Datum: WGS 1984

NWI Map

BURGESS & NIPLE
Engineers ■ Planners ■ Environmental Scientists

April 2024



0 375 750 1,500 Feet

Coonpath Road & Election House Road
Intersection Improvements
Greenfield Township, Fairfield County, OH

Sources:
Non Orthophotography: FEMA Flood Hazard Layer
Orthophotography: Ohio Statewide Imagery Program
Map Projection: WGS 1984 Web Mercator
Map Datum: WGS 1984

FEMA Flood Hazard Map

BURGESS & NIPLE
Engineers ■ Planners ■ Environmental Scientists

April 2024

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To: 04/11/2024 13:06:32 UTC
Project Code: 2024-0075643
Project Name: Coonpath & Election House Feasibility Study

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
(614) 416-8993

PROJECT SUMMARY

Project Code: 2024-0075643
Project Name: Coonpath & Election House Feasibility Study
Project Type: Road/Hwy - Maintenance/Modification
Project Description: The proposed project will make modifications to the Coonpath Road and Election House Road intersection for improved safety.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.769999350000006,-82.6461710999606,14z

Counties: Fairfield County, Ohio

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	County of Fairfield
Name:	Crystal Scales
Address:	330 Rush Alley
Address Line 2:	Suite 700
City:	Columbus
State:	OH
Zip:	43215
Email	crystal.scales@burgessniple.com
Phone:	6144597272

Ohio State Historic Preservation Office GIS Data

- Approximate Project Area Boundary
- Search Area (1-mile buffer)
- National Register Listings
- National Historic Landmark
- Removed from National Register
- SHPO Determinations of Eligibility
- Federal Tax Credit Projects
- Archaeological Inventory
- Archaeological Inventory (pending review)
- Historic Inventory
- OGS Cemeteries
- NR Boundaries
- OAI Boundaries
- OAI Boundaries (pending review)
- Previously Surveyed Areas

N

0 0.25 0.5 Miles

0 0.5 1 Kilometers

OGS #3141

NADB # 17087

NADB # 19306

NADB # 12146

NADB # 20864

NADB # 20865

NADB # 12145

NADB # 18290

NADB # 18046

Coonpath & Election House

Claypools Run

Greenfield Creek

Greenfield Lake

GINDER RD NW

HATTER RD NW

LANCASTER-KIRKERSVILLE RD NW

CO HWY 31

CO HWY 40

COLUMBUS-LANCASTER RD NW

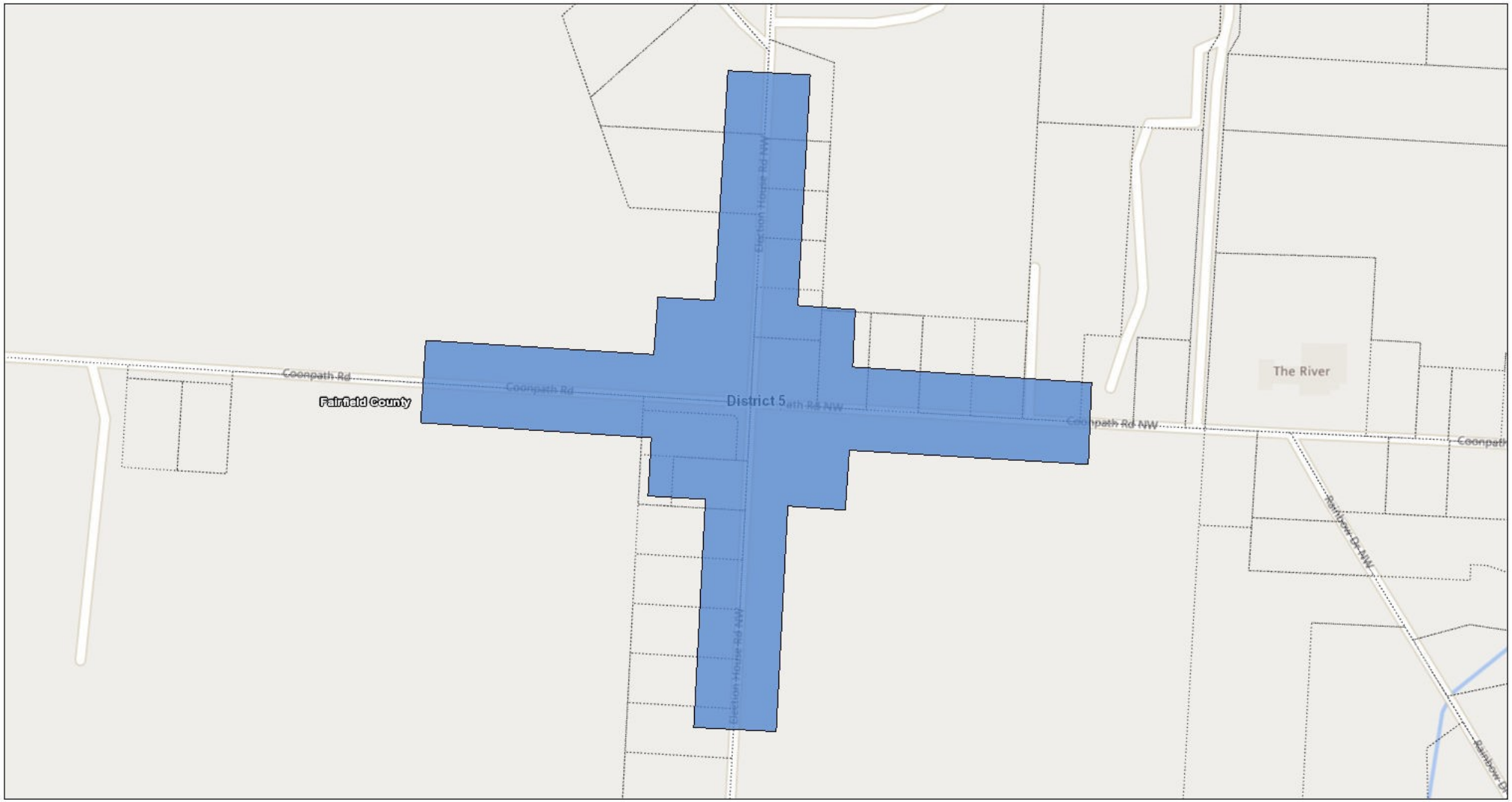
DOLSON CT

RAINBOW DR NW

Fairfield County Airport

ZACHARIA

ORPS Analysis Map



4/2/2024, 8:28:40 AM

1:4,514

0 0.04 0.09 0.17 mi

0 0.05 0.1 0.2 km

- Study area
- Parcels_WebMerc
- Institutional Controls
- Engineering Controls
- TSD

RCRA (US EPA)

- CESQG
- LQG
- SQG
- TRANSFER FACILITY
- TRANSPORTER
- TSD
- UNSPECIFIED UNIVERSE
- OTHER HAZARDOUS WASTE ACTIVITIES
- NPL - 1/2-mile Buffer
- Non-NPL - 0.1-mile Buffer

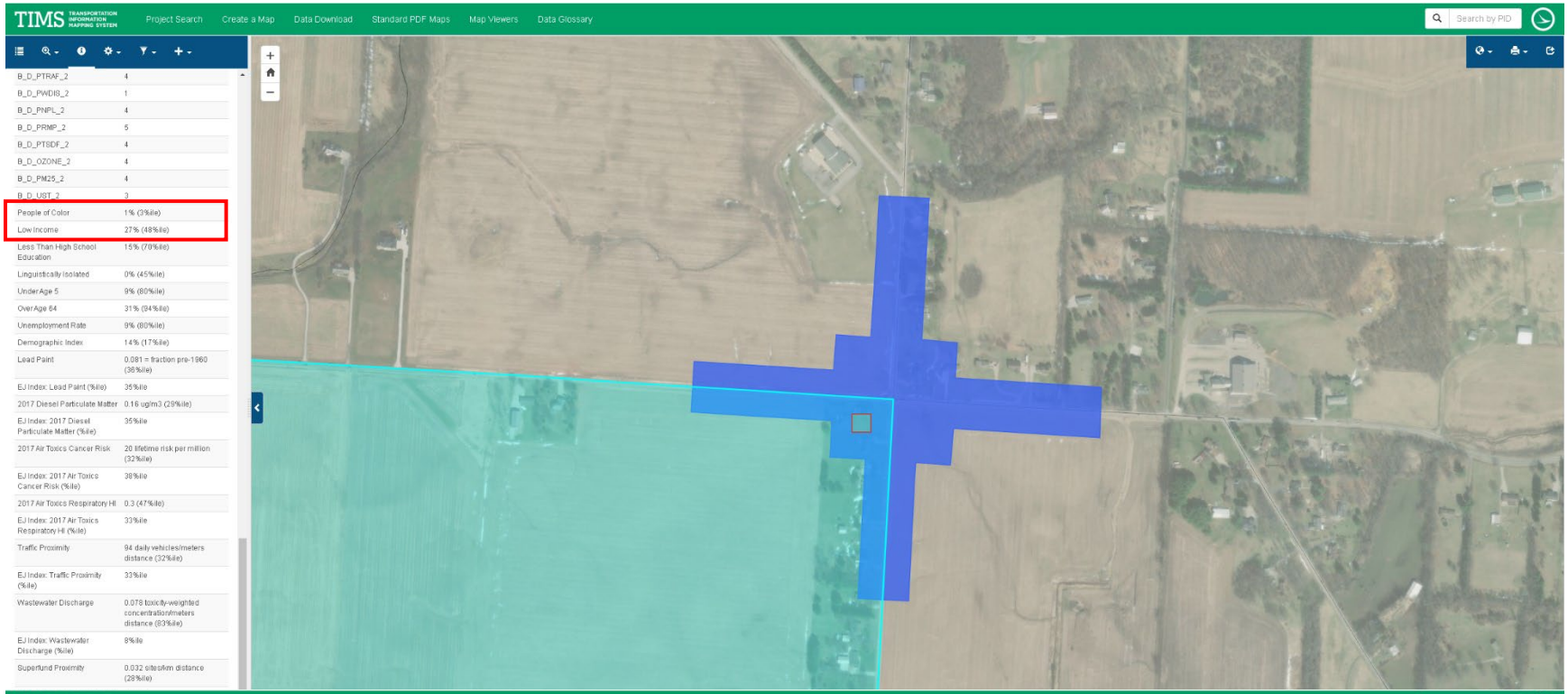
SEMS (US EPA)

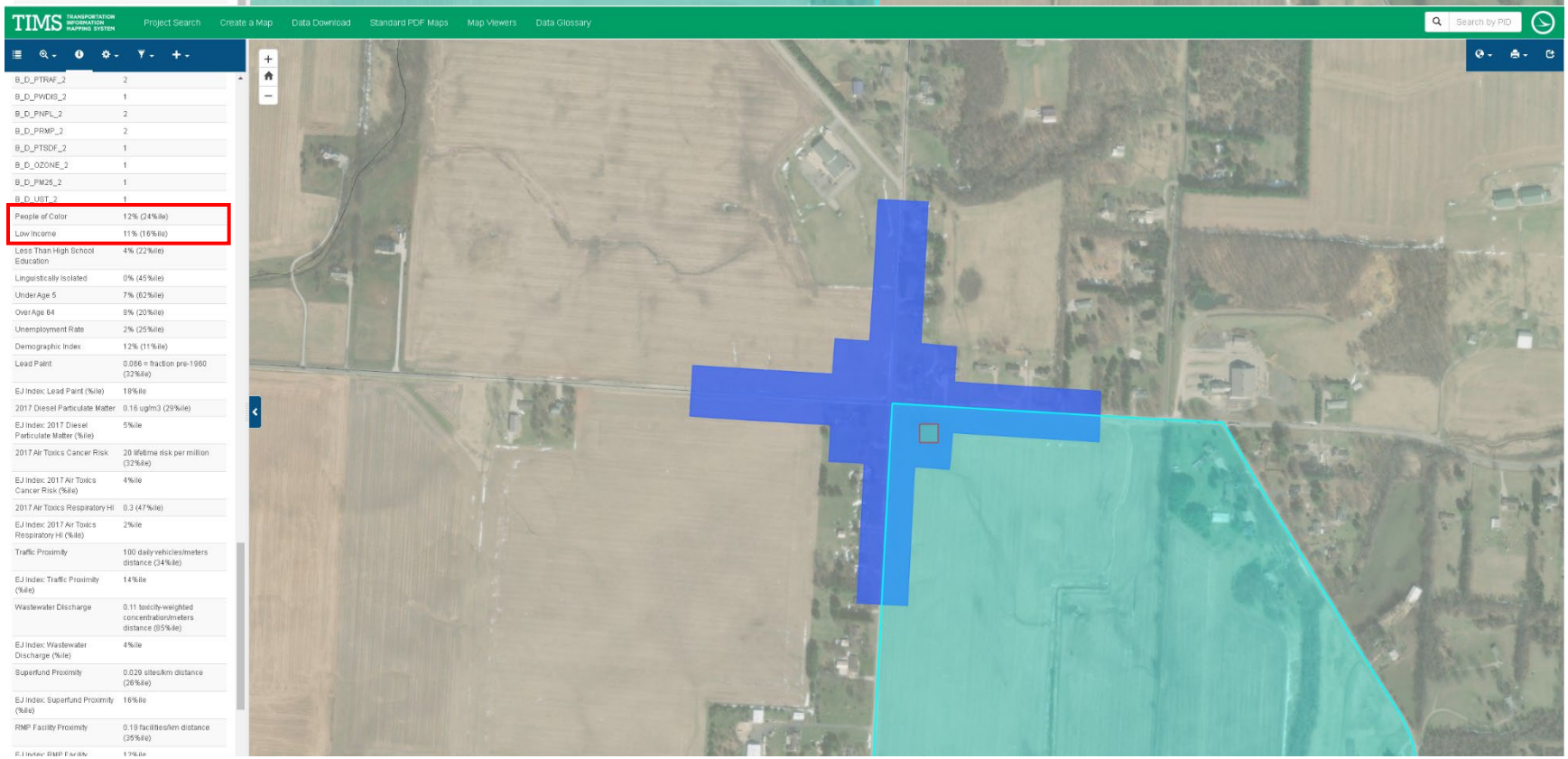
- SUPERFUND (NON-NPL)
- SUPERFUND NPL
- Potential Areas of Concern
- Ohio Voluntary Action Program Sites
- Ohio Spills Database
- Institutional Controls
- Engineering Controls
- Waste Facility Polygons
- Historic/Abandoned Facilities - 300-foot Buffer
- Historic Waste Facilities
- Abandoned Landfills
- Solid Waste Facilities - 1/4-mile Buffer
- Active Solid Waste Facilities
- Impoundment Sites
- DERR Database
- Coal Gas Generators

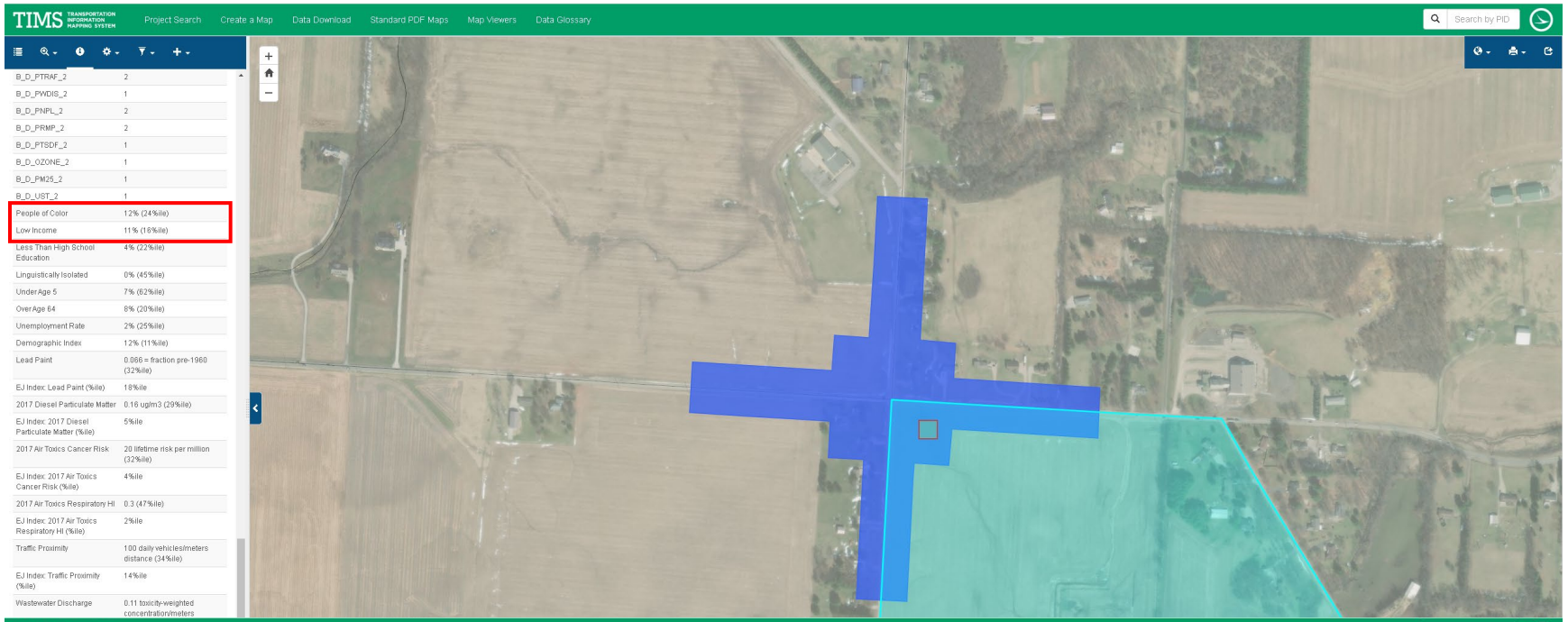
BUSTR - LUST Locations (BUSTR/OGRIP)

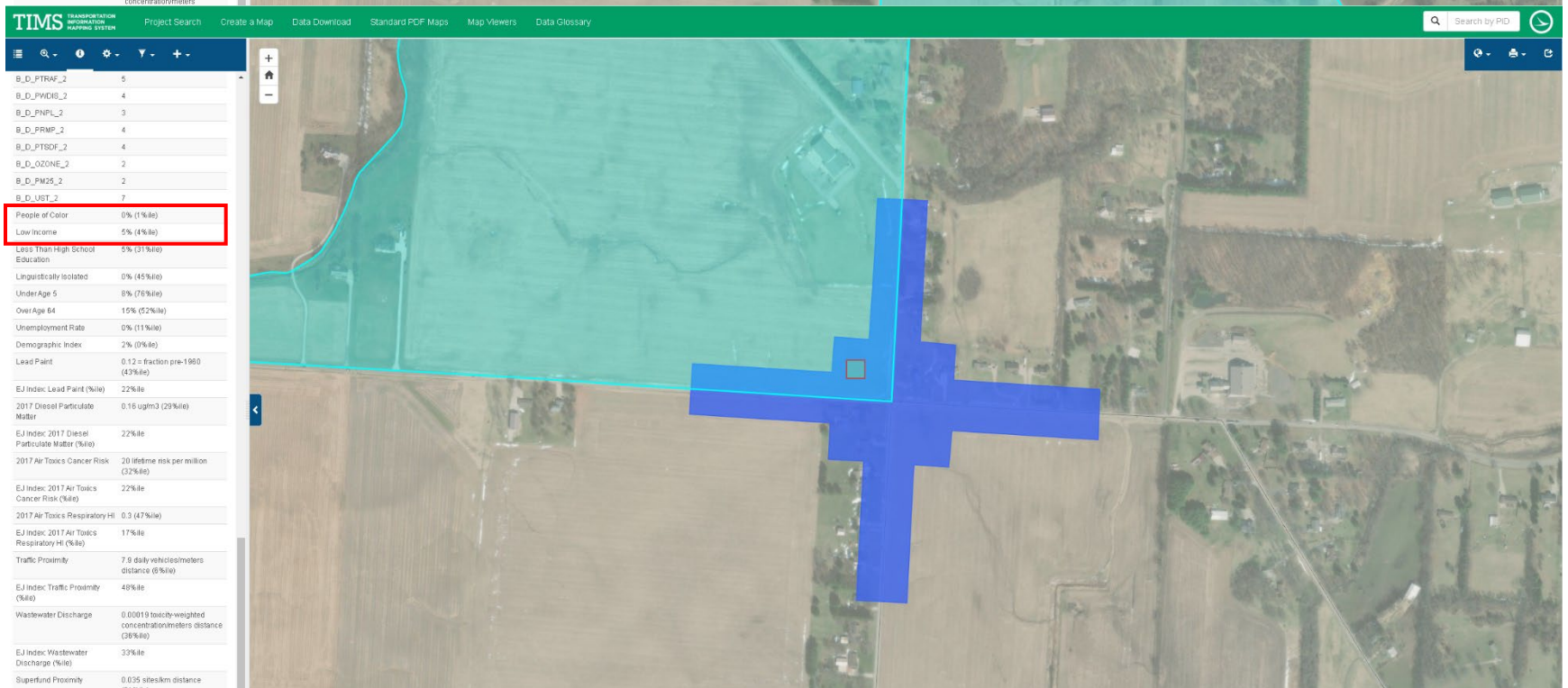
- LUST Status Unknown
- Active LUST
- Inactive LUST

Web AppBuilder for ArcGIS


TIMS
Project Search
Create a Map
Data Download
Standard PDF Maps
Map Viewers
Data Glossary
Search by PID
B_D_PTRAF_2 4
B_D_PWDIS_2 1
B_D_PNPL_2 4
B_D_PRMP_2 5
B_D_PTSDF_2 4
B_D_OZONE_2 4
B_D_PM25_2 4
B_D_UST_2 3
People of Color 1% (3%ile)
Low Income 27% (48%ile)
Less Than High School Education 15% (70%ile)
Linguistically Isolated 0% (45%ile)
Under Age 5 9% (80%ile)
Over Age 64 31% (94%ile)
Unemployment Rate 9% (80%ile)
Demographic Index 14% (17%ile)
Lead Paint 0.081 = fraction pre-1960 (36%ile)
EJ Index: Lead Paint (%ile) 35%ile
2017 Diesel Particulate Matter 0.16 ug/m3 (29%ile)
EJ Index: 2017 Diesel Particulate Matter (%ile) 35%ile
2017 Air Toxics Cancer Risk 20 lifetime risk per million (32%ile)
EJ Index: 2017 Air Toxics Cancer Risk (%ile) 38%ile
2017 Air Toxics Respiratory HI 0.3 (47%ile)
EJ Index: 2017 Air Toxics Respiratory HI (%ile) 33%ile
Traffic Proximity 94 daily vehicles/meters distance (32%ile)
EJ Index: Traffic Proximity (%ile) 33%ile
Wastewater Discharge 0.078 toxicity-weighted concentration/meters distance (83%ile)
EJ Index: Wastewater Discharge (%ile) 8%ile
Superfund Proximity 0.032 sites/km distance (28%ile)


TIMS
Project Search
Create a Map
Data Download
Standard PDF Maps
Map Viewers
Data Glossary
Search by PID
B_D_PTRAF_2 2
B_D_PWDIS_2 1
B_D_PNPL_2 2
B_D_PRMP_2 2
B_D_PTSDF_2 1
B_D_OZONE_2 1
B_D_PM25_2 1
B_D_UST_2 1
People of Color 12% (24%ile)
Low Income 11% (16%ile)
Less Than High School Education 4% (22%ile)
Linguistically Isolated 0% (45%ile)
Under Age 5 7% (62%ile)
Over Age 64 8% (20%ile)
Unemployment Rate 2% (25%ile)
Demographic Index 12% (11%ile)
Lead Paint 0.066 = fraction pre-1960 (32%ile)
EJ Index: Lead Paint (%ile) 18%ile
2017 Diesel Particulate Matter 0.16 ug/m3 (29%ile)
EJ Index: 2017 Diesel Particulate Matter (%ile) 5%ile
2017 Air Toxics Cancer Risk 20 lifetime risk per million (32%ile)
EJ Index: 2017 Air Toxics Cancer Risk (%ile) 4%ile
2017 Air Toxics Respiratory HI 0.3 (47%ile)
EJ Index: 2017 Air Toxics Respiratory HI (%ile) 2%ile
Traffic Proximity 100 daily vehicles/meters distance (34%ile)
EJ Index: Traffic Proximity (%ile) 14%ile
Wastewater Discharge 0.11 toxicity-weighted concentration/meters distance (85%ile)
EJ Index: Wastewater Discharge (%ile) 4%ile
Superfund Proximity 0.029 sites/km distance (26%ile)
EJ Index: Superfund Proximity (%ile) 16%ile
RMP Facility Proximity 0.19 facilities/km distance (35%ile)


TIMS
Project Search
Create a Map
Data Download
Standard PDF Maps
Map Viewers
Data Glossary
Search by PID
B_D_PTRAF_2 2
B_D_PWDIS_2 1
B_D_PNPL_2 2
B_D_PRMP_2 2
B_D_PTSDF_2 1
B_D_OZONE_2 1
B_D_PM25_2 1
B_D_UST_2 1
People of Color 12% (24%ile)
Low Income 11% (16%ile)
Less Than High School Education 4% (22%ile)
Linguistically Isolated 0% (45%ile)
Under Age 5 7% (62%ile)
Over Age 64 8% (20%ile)
Unemployment Rate 2% (25%ile)
Demographic Index 12% (11%ile)
Lead Paint 0.066 = fraction pre-1960 (32%ile)
EJ Index: Lead Paint (%ile) 18%ile
2017 Diesel Particulate Matter 0.16 ug/m3 (29%ile)
EJ Index: 2017 Diesel Particulate Matter (%ile) 5%ile
2017 Air Toxics Cancer Risk 20 lifetime risk per million (32%ile)
EJ Index: 2017 Air Toxics Cancer Risk (%ile) 4%ile
2017 Air Toxics Respiratory HI 0.3 (47%ile)
EJ Index: 2017 Air Toxics Respiratory HI (%ile) 2%ile
Traffic Proximity 100 daily vehicles/meters distance (34%ile)
EJ Index: Traffic Proximity (%ile) 14%ile
Wastewater Discharge 0.11 toxicity-weighted concentration/meters


TIMS
Project Search
Create a Map
Data Download
Standard PDF Maps
Map Viewers
Data Glossary
Search by PID
B_D_PTRAF_2 5
B_D_PWDIS_2 4
B_D_PNPL_2 3
B_D_PRMP_2 4
B_D_PTSDF_2 4
B_D_OZONE_2 2
B_D_PM25_2 2
B_D_UST_2 7
People of Color 0% (1%ile)
Low Income 5% (4%ile)
Less Than High School Education 5% (31%ile)
Linguistically Isolated 0% (45%ile)
Under Age 5 8% (76%ile)
Over Age 64 15% (52%ile)
Unemployment Rate 0% (11%ile)
Demographic Index 2% (0%ile)
Lead Paint 0.12 = fraction pre-1960 (43%ile)
EJ Index: Lead Paint (%ile) 22%ile
2017 Diesel Particulate Matter 0.16 ug/m3 (29%ile)
EJ Index: 2017 Diesel Particulate Matter (%ile) 22%ile
2017 Air Toxics Cancer Risk 20 lifetime risk per million (32%ile)
EJ Index: 2017 Air Toxics Cancer Risk (%ile) 22%ile
2017 Air Toxics Respiratory HI 0.3 (47%ile)
EJ Index: 2017 Air Toxics Respiratory HI (%ile) 17%ile
Traffic Proximity 7.9 daily vehicles/meters distance (6%ile)
EJ Index: Traffic Proximity (%ile) 48%ile
Wastewater Discharge 0.00019 toxicity-weighted concentration/meters distance (36%ile)
EJ Index: Wastewater Discharge (%ile) 33%ile
Superfund Proximity 0.035 sites/km distance

Coonpath Rd and Election House Rd

Intersection Feasibility Study

Appendix G

Utilities

BURGESS & NIPLE

OBFP 01232 OUPSb 05/22/24 15:59:11 B414301797-00B ROUT NEW POLY DSGN

Ticket : B414301797 Rev: 00B Taken: 05/22/24 03:46 PM Channel: WEB

State: OH Cnty: FAIRFIELD Place: GREENFIELD TWP

Address : Street: COONPATH RD NW
Cross 1 : ELECTION HOUSE RD NW
Rail/Hwy: Milemarker(s):
Where : BOTH SIDES OF THE ROAD STARTING AT THE INTERSECTION OF ELECTIO
: ROAD NW
: GOING 500 FT IN ALL DIRECTIONS
: FARTHEST POINT OFF ROAD 200 FT
:
: NO MARKINGS

WorkType: INTERSECTION IMPROVEMENT
Done for: COUNTY
Done by :
Whitelined: N Blasting: N
Means of Excavation: HAND TOOLS

Work date: 06/06/24 03:58 PM
Start by : 06/06/24 03:58 PM Response Due: 06/06/24 03:58 PM

Best Fit: 39.770173/-82.648883 39.772545/-82.645459
: 39.767395/-82.646958 39.769767/-82.643534

Comments:

Design call back requested: N Mailing of plan drawings requested: Y
Caller : ERIKA PATTERSON Phone: 614-459-2050 Ext: 1340
Company : BURGESS & NIPLE Type: CONT
Co addr : 330 RUSH ALLEY
City : COLUMBUS St: OH Zip: 43215
Alt cont: SAME AS ABOVE Phone:
Email: ERIKA.PATTERSON@BURGESSNIPLE.COM

Members:
=FAIRFIELD COUNTY ENGINEERS NEL =NORTHEAST OHIO NATURAL G
=AT&T - OHIO SCPP =SOUTH CENTRAL POWER / US
WCOB =CHARTER COMM(SPECTRUM/TIME WAR

	Map	Client / Term	Locator	Due
	DigView	AT&T OBFP	Milner II, Albert	6/6/24 03:58 PM
	DigView	Charter-Time Warner Cab WC...	Milner II, Albert	6/6/24 03:58 PM

Notes:
[2000 max.]

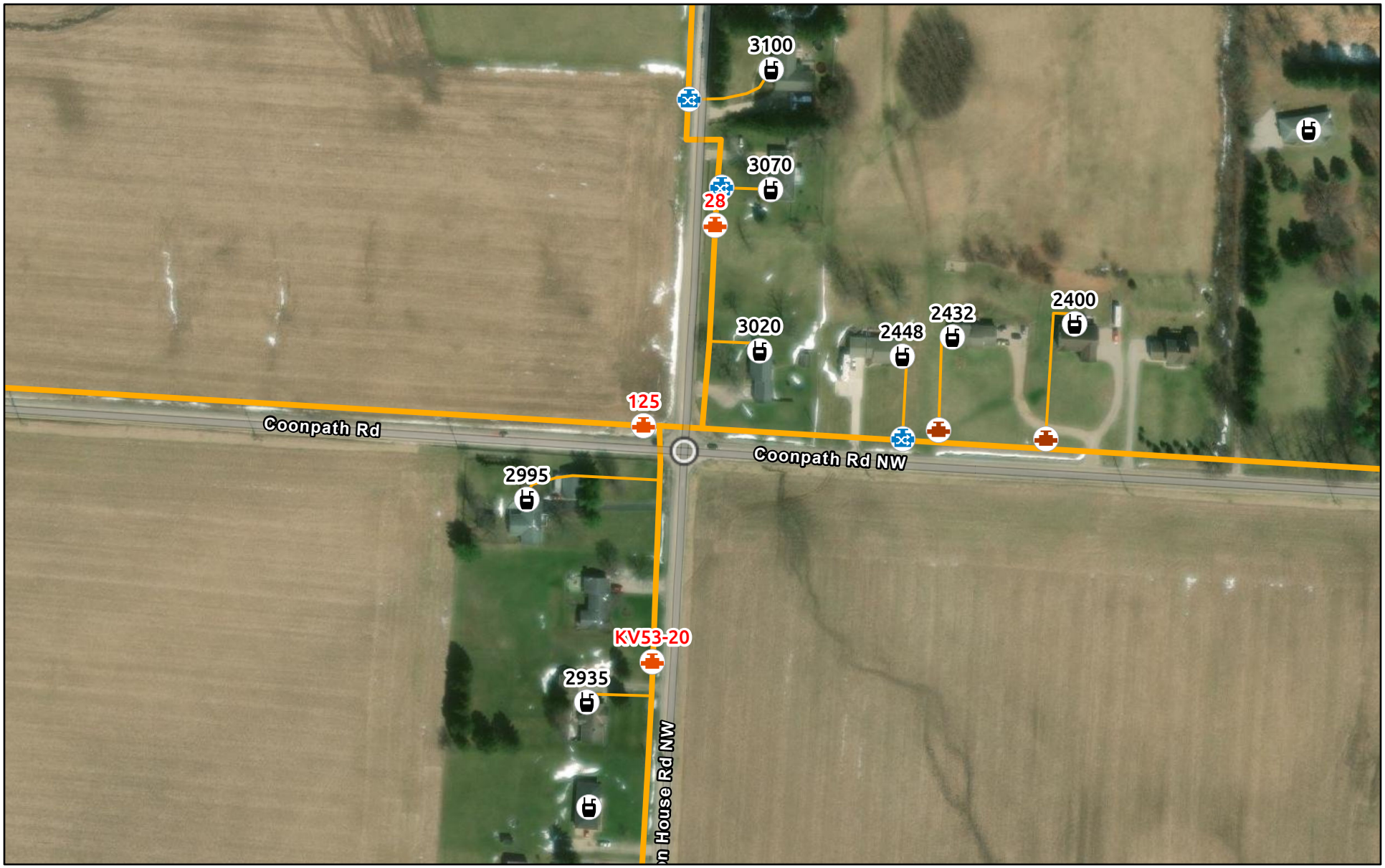
DigView - Logged in as Thomas, Bret (USICWeb) USIC, LLC

Search Map Link GPS Clear Map Ruler Draw Note Place Markers Options Capture AT&T Layers Legend Code Clone

AT&T
Abandoned
Aerial Cable
Aerial Fiber
Buried Cable
Buried Fiber
Buried Premise Cable
Buried Premise Fiber
Cable In Conduit
Conduit Main Buried
Default Symbol
Direction Arrow
Encapsulated Splice
Fiber In Conduit
Fiber Terminal
General Telco Point
General Telco Point
Map Print Link
Proposed
Splice Closure
Street Parcel Dark
Telco Capacitor
Telco Co
Telco Crossbox

From Computer
Total Attachments: 3
Now
Close Save
Project Ticket

Coonpath Rd & Election House Rd NW



6/17/2024

Pipeline Device

- (483) Emergency Valves
- (485) System Valves
- (42) Meters
- (1) Excess Flow Valve

Service Material

- (9) Plastic PE

Pipeline Material

- (9) Plastic PE

Tax Districts
Townships
World Imagery
Low Resolution 15m Imagery
High Resolution 60cm Imagery
High Resolution 30cm Imagery
Citations
60cm Resolution Metadata

1:3,261

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

QMF
2024

Coonpath Rd & Election House Rd NW

6/17/2024

Pipeline Device

(42) Meters

Pipeline Junction

(0) Riser

Pipeline Material

(9) Plastic PE

Tax Districts

Townships

Counties

Fairfield Parcel Data 5 4 2022

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

15cm Resolution Metadata

1:815

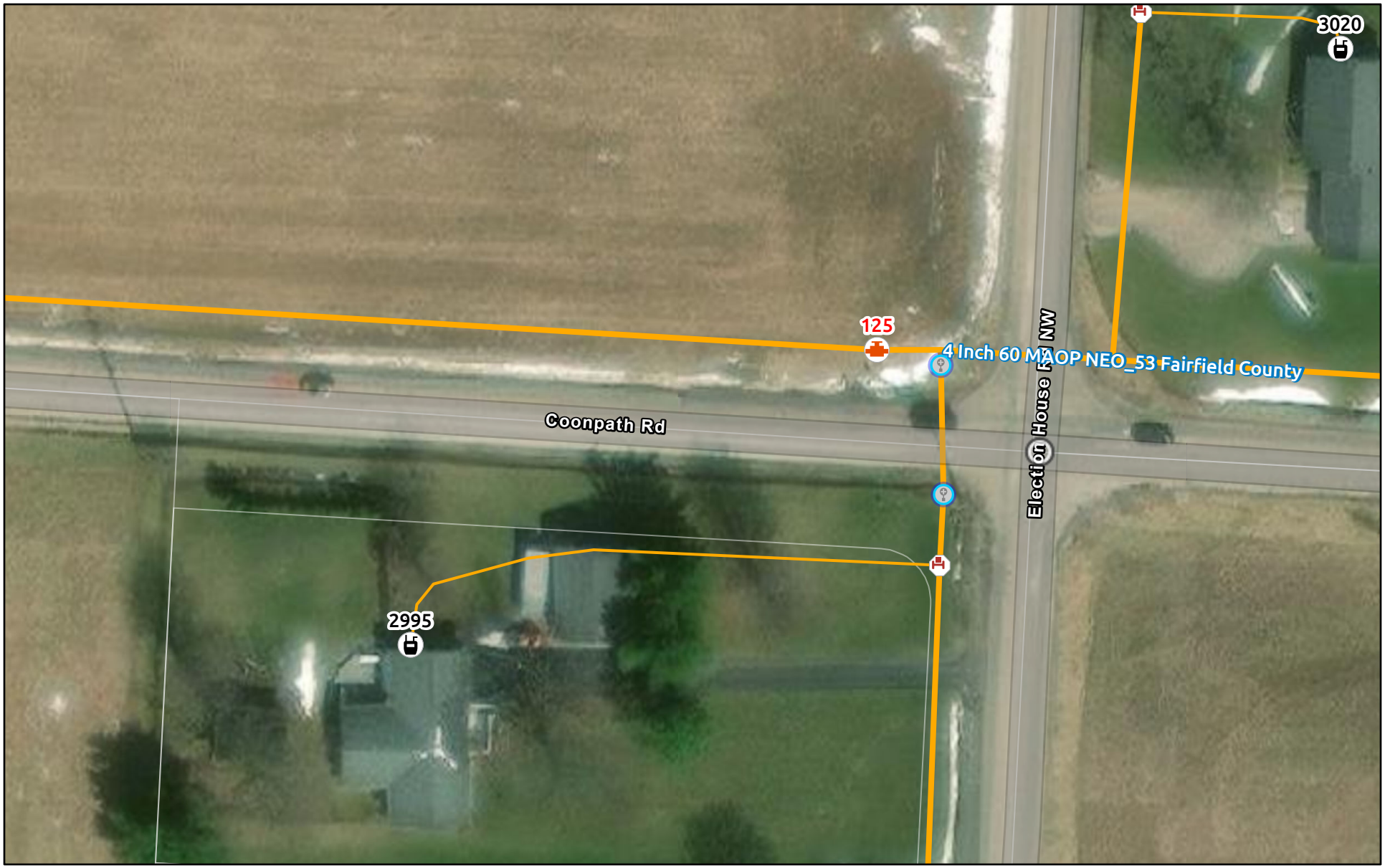
0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF

2024

Coonpath Rd & Election House Rd NW



6/17/2024

Pipeline Markers
- Other

Pipeline Device
- (483) Emergency Valves

(42) Meters

Pipeline Junction
- (842) Hot Tap
- (0) Riser

Service Material
- (9) Plastic PE

Pipeline Material
- (9) Plastic PE

Tax Districts
- Townships
- Counties
- Fairfield Parcel Data 5 4 2022
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations
- 15cm Resolution Metadata

1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF
2024

Coonpath Rd & Election House Rd NW

6/17/2024

Pipeline Markers
- Other

Pipeline Device
- (483) Emergency Valves
- (485) System Valves
- (42) Meters
- (1) Excess Flow Valve

Pipeline Junction
- (842) Hot Tap
- (2) Plastic Coupling
- (0) Riser

Service Material
- (9) Plastic PE

Pipeline Material
- (9) Plastic PE

Tax Districts
- Townships
- Counties
- Fairfield Parcel Data 5 4 2022
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations
- 15cm Resolution Metadata

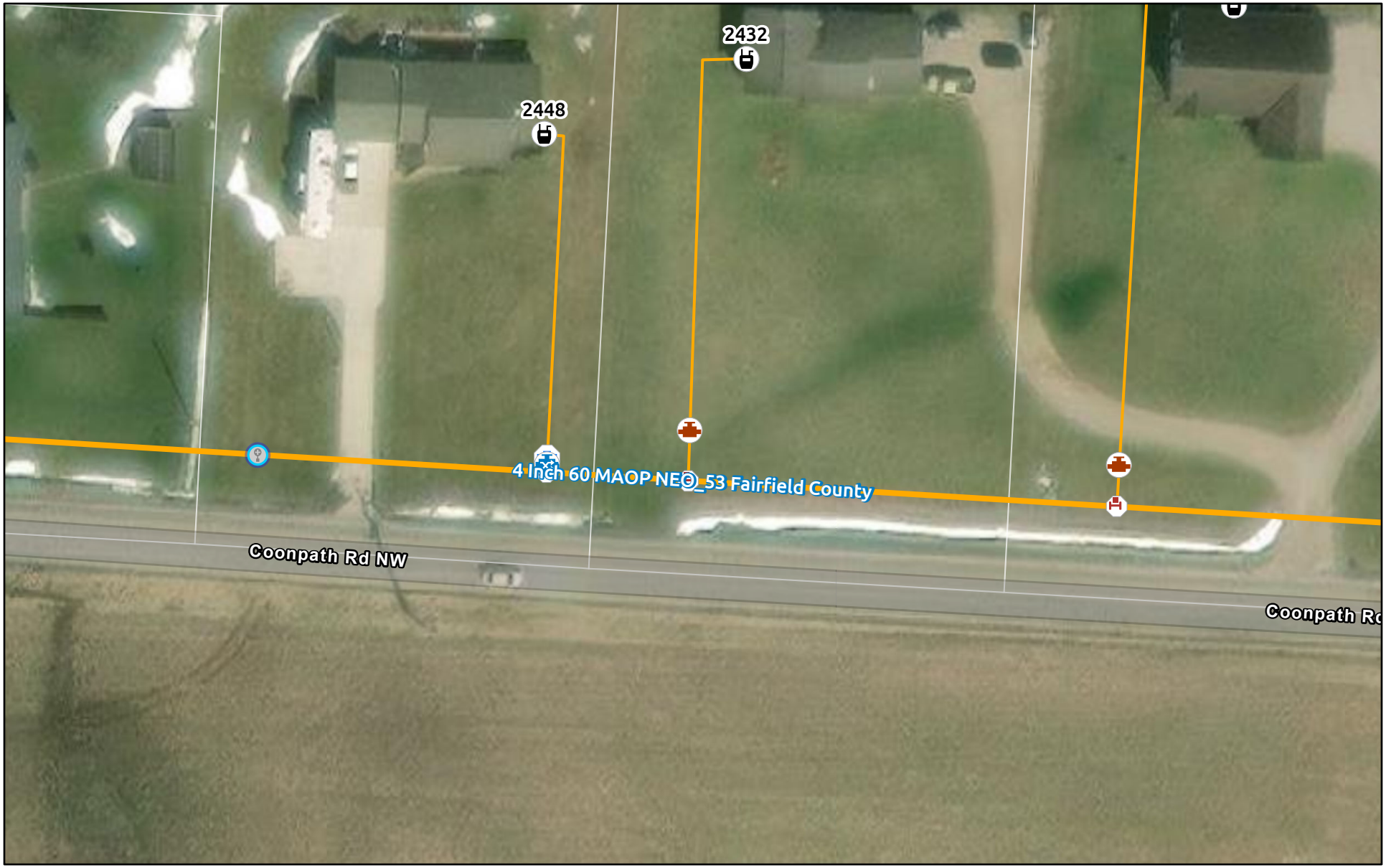
1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF
2024

Coonpath Rd & Election House Rd NW



6/17/2024

Pipeline Markers
- Other

Pipeline Device
- (485) System Valves

(42) Meters

Pipeline Junction
- (1) Excess Flow Valve
- (842) Hot Tap

(2) Plastic Coupling

Service Material
- (0) Riser
- (9) Plastic PE

Pipeline Material
- (9) Plastic PE

Tax Districts

Townships

Counties

Fairfield Parcel Data 5 4 2022

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

15cm Resolution Metadata

1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

Esri Community Maps Contributors, West Virginia GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/

QMF
2024

Coonpath Rd & Election House Rd NW

6/17/2024

Pipeline Markers
- Other

Pipeline Device
- (483) Emergency Valves
- (42) Meters

Pipeline Junction
- (842) Hot Tap
- (0) Riser

Service Material
- (9) Plastic PE

Pipeline Material
- (9) Plastic PE

Tax Districts
- Townships
- Counties
- Fairfield Parcel Data 5 4 2022
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations
- 15cm Resolution Metadata

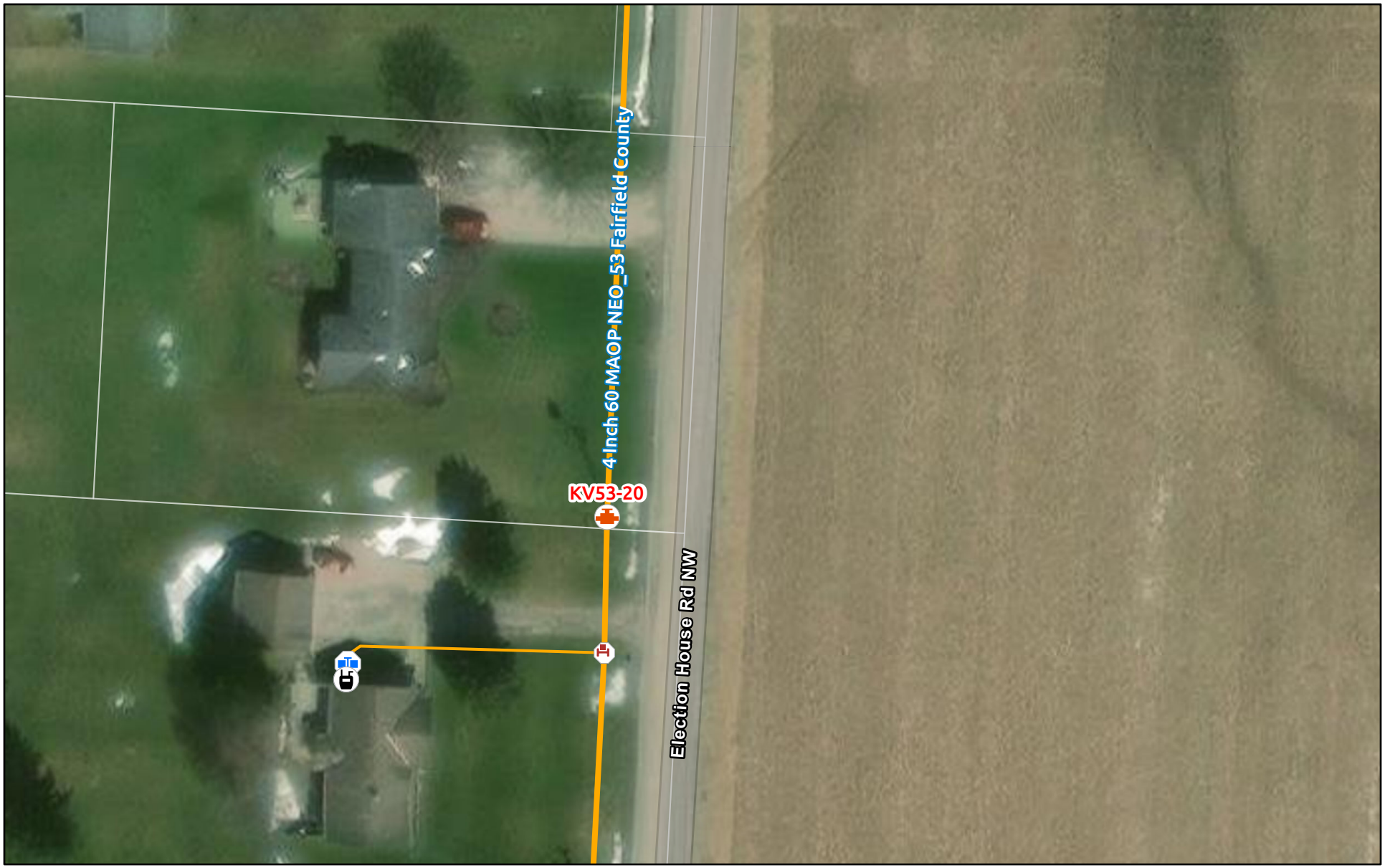
1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF
2024

Coonpath Rd & Election House Rd NW



6/17/2024

Pipeline Device
- (483) Emergency Valves
- (42) Meters

Pipeline Junction
- (842) Hot Tap
- (2) Plastic Coupling
- (0) Riser

Service Material
- (9) Plastic PE

Pipeline Material
- (9) Plastic PE

Tax Districts
Townships
Counties
Fairfield Parcel Data 5 4 2022
World Imagery
Low Resolution 15m Imagery
High Resolution 60cm Imagery
High Resolution 30cm Imagery
Citations
15cm Resolution Metadata

1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF
2024

Coonpath Rd & Election House Rd NW

6/17/2024

New Service Request

Pipeline Device

(42) Meters

Pipeline Junction

(2) Plastic Coupling

(0) Riser

Service Material

(9) Plastic PE

Pipeline Material

(9) Plastic PE

Tax Districts

Townships

Counties

Fairfield Parcel Data 5 4 2022

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

15cm Resolution Metadata

1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF

2024

Coonpath Rd & Election House Rd NW

6/17/2024

New Service Request
Pipeline Device
(42) Meters
(1) Excess Flow Valve
Pipeline Junction
(842) Hot Tap
(0) Riser
Service Material
(9) Plastic PE
Pipeline Material
(9) Plastic PE
Tax Districts
Townships
Counties
Fairfield Parcel Data 5 4 2022
World Imagery
Low Resolution 15m Imagery
High Resolution 60cm Imagery
High Resolution 30cm Imagery
Citations
15cm Resolution Metadata

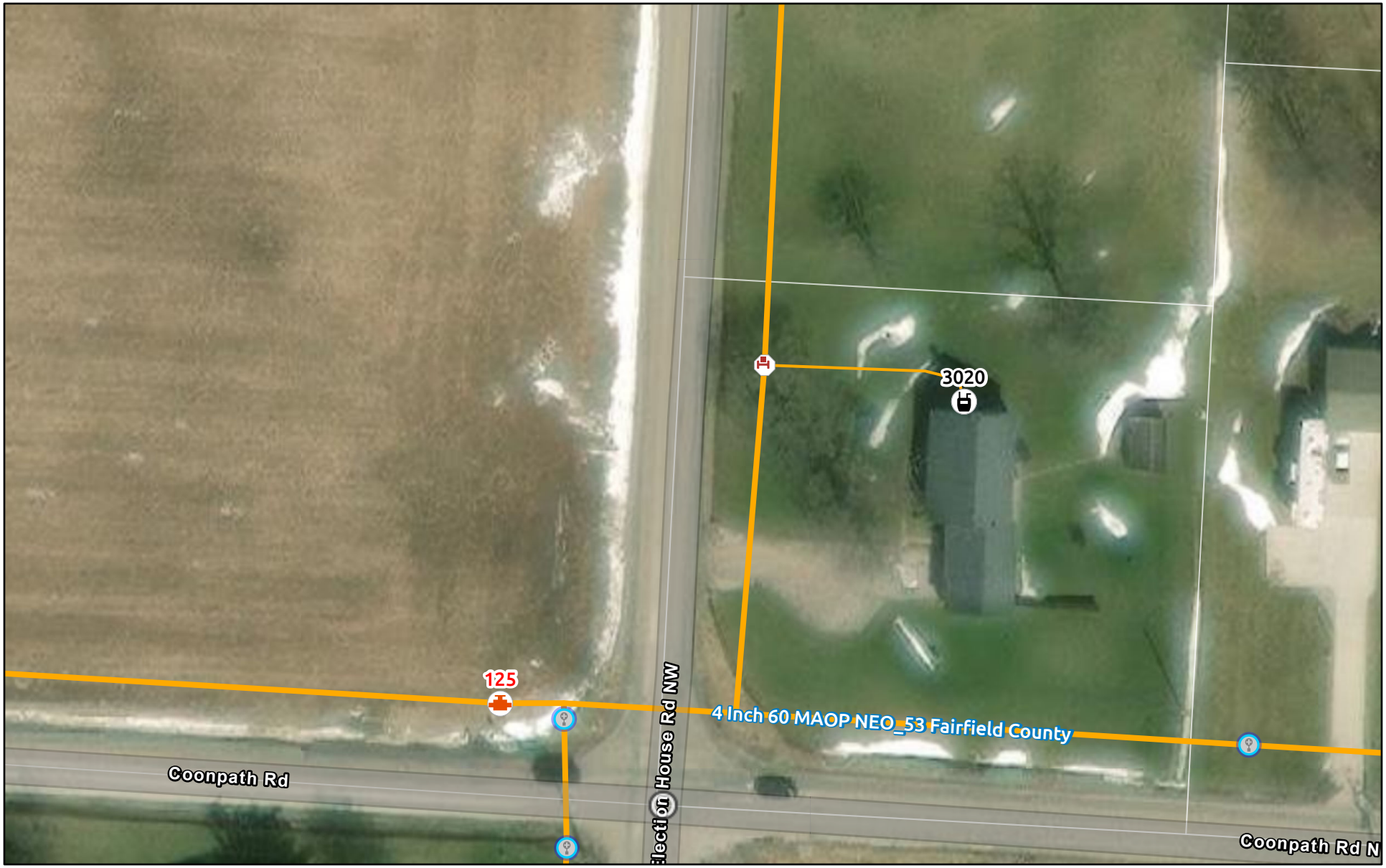
1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF
2024

Coonpath Rd & Election House Rd NW



6/17/2024

Pipeline Markers
- Other

Pipeline Device
- (483) Emergency Valves
- (42) Meters

Pipeline Junction
- (842) Hot Tap
- (0) Riser

Service Material
- (9) Plastic PE

Pipeline Material
- (9) Plastic PE

Tax Districts
- Townships
- Counties
- Fairfield Parcel Data 5 4 2022
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations
- 15cm Resolution Metadata

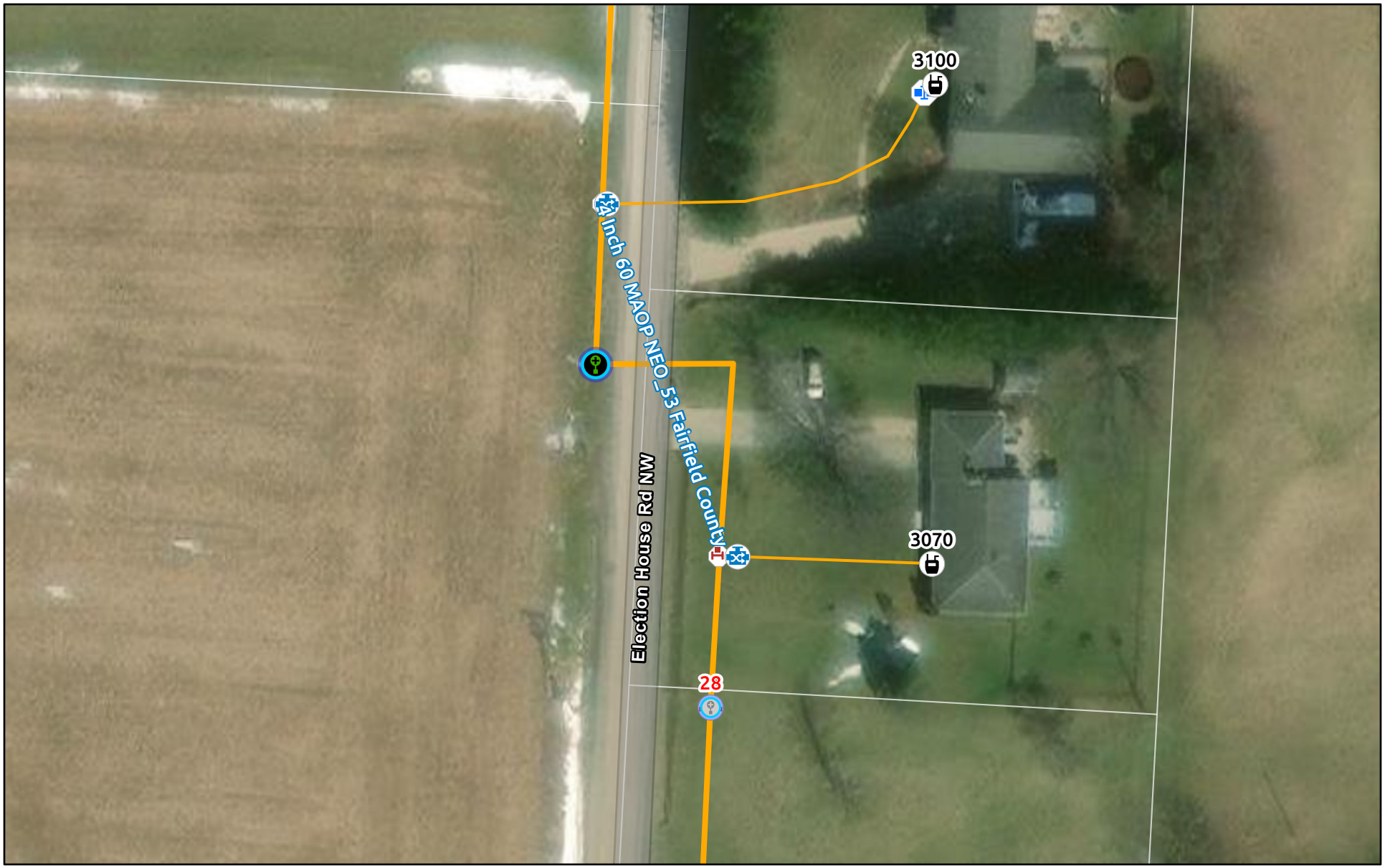
1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF
2024

Coonpath Rd & Election House Rd NW



6/17/2024

Pipeline Markers
- (4) Test Stations
- Other

Pipeline Device
- (483) Emergency Valves
- (42) Meters
- (1) Excess Flow Valve

Pipeline Junction
- (842) Hot Tap
- (2) Plastic Coupling
- (0) Riser

Service Material
- (9) Plastic PE

Pipeline Material
- (9) Plastic PE

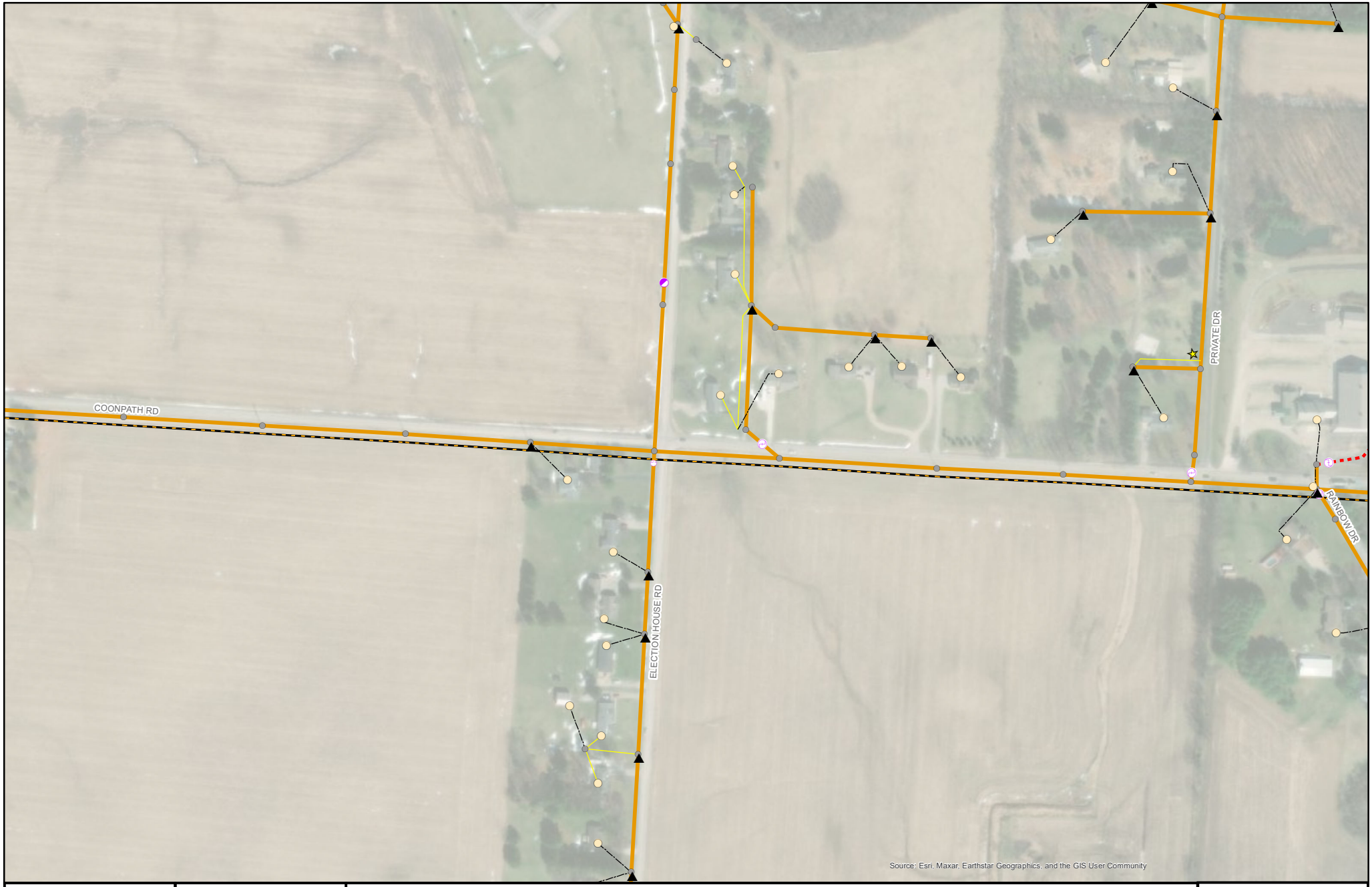
Tax Districts
- Townships
- Counties
- Fairfield Parcel Data 5 4 2022
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations
- 15cm Resolution Metadata

1:815

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

QMF
2024



OUPS Ticket B414301797

N W E S

0 80 160 240 320 Feet

Consumer	Fuse	Open Switch	Junction Cabinet	Primary Overhead
Padmount	Recloser	Closed Switch	Pedestal	Primary Underground
Overhead Transformer	Sectionalizer	gs_span_guy	Switch Cabinet	Secondary Overhead
Pole	Lights	roads	South Central Transmission	Secondary Underground

South Central Power Co.
A Touchstone Energy® Cooperative

This information is being provided in response to your design ticket request. It is provided from the current SCP GIS records in accordance with the OUPS requirements. The design ticket request does not relieve the excavator or contractor of requesting a separate OUPS ticket for a dig request by calling 811.

Coonpath Rd and Election House Rd

Intersection Feasibility Study

Appendix H

Cost Estimates

BURGESS & NIPLE

Coonpath Rd and Election House Rd Intersection

Coonpath Signalized
09/13/24

DESCRIPTION	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE (2024 dollars)
ROADWAY				
Pavement Removed	1,872	SQ YD	8	$14,980
Excavation	1,500	CU YD	30	$45,000
Embankment	3,000	CU YD	18	$54,000
			ROADWAY SUBTOTAL	**$114,000**
DRAINAGE				
Drainage	1	LUMP	$20,000.00	$20,000
			DRAINAGE SUBTOTAL	**$20,000**
EROSION CONTROL & BMP ELEMENTS				
Erosion Control	1	LUMP	$25,000.00	$25,000
			EROSION CONTROL SUBTOTAL	**$25,000**
PAVEMENT				
FULL DEPTH PAVEMENT - ASPHALT				
Asphalt Pavement Build-up	7,419	SQ YD	$100.00	$741,889
RESURFACING - ASPHALT				
Asphalt Resurfacing	7,212	SQ YD	$18.00	$129,810
			PAVEMENT SUBTOTA	$871,700
MAINTENTANCE OF TRAFFIC				
MOT	1	LUMP	$60,000.00	$60,000
			MAINTENANCE OF TRAFFIC SUBTOTAL	**$60,000**
TRAFFIC CONTROL				
Traffic Control	1	LUMP	$25,000.00	$25,000
Signals	1	LUMP	$300,000.00	$300,000
			TRAFFIC CONTROL SUBT	$325,000
LIGHTING				
Lighting	1	LUMP	$75,000.00	$75,000
			LIGHTING SUBTOTAL	**$75,000**
CONSTRUCTION MISC.				
Field Office, Type B	12	MONTH	2,000	$24,000
Construction Layout Stakes (0.75% of Total)	1	LUMP	11,180	$11,180
Mobilization	1	LUMP	40,000	$40,000
			CONSTRUCTION MISC. SUBTOTAL	$75,200
			CONSTRUCTION COST SUBTOTOAL	**$1,565,900**
COST CONTINGENCY - PRELIMINARY ENGINEERING (30%)				**$469,770**
TOTAL CONSTRUCTION COST, 2024 DOLLARS				**$2,036,000**
Construction Cost Inflation Rate (2024 to 2027)	17.9%			$364,444
CONSTRUCTION COST, 2029 DOLLARS				**$2,401,000**

- ESTIMATE DOES NOT INCLUDE COSTS FOR RIGHT OF WAY ACQUISITIONS OR UTILITY RELOCATIONS.

Coonpath Rd and Election House Rd Intersection

Shifted Roundabout with Right Turn

09/13/24

DESCRIPTION	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE (2024 dollars)
ROADWAY				
Pavement Removed	4,963	SQ YD	$8.00	$39,700
Curb	490	FT	$25.00	$12,250
Curb and Gutter	2,317	FT	$30.00	$69,510
Concrete Median	9,485	SQ FT	$10.00	$94,850
Truck Apron	325	SQ YD	$135.00	$43,830
Excavation	4,500	CU YD	$30.00	$135,000
Embankment	7,000	CU YD	$18.00	$126,000
			ROADWAY SUBTOTAL	**$521,200**
DRAINAGE				
Drainage	1	LUMP	$120,000.00	$120,000
			DRAINAGE SUBTOTAL	**$120,000**
EROSION CONTROL & BMP ELEMENTS				
Erosion Control	1	LUMP	$75,000.00	$75,000
			EROSION CONTROL SUBTOTAL	**$75,000**
PAVEMENT				
FULL DEPTH PAVEMENT - ASPHALT				
Asphalt Pavement Build-up	6,869	SQ YD	$100.00	$686,900
			PAVEMENT SUBTOTAL	**$686,900**
MAINTENTANCE OF TRAFFIC				
MOT	1	LUMP	$150,000.00	$150,000
			MAINTENANCE OF TRAFFIC SUBTOTAL	**$150,000**
TRAFFIC CONTROL				
Traffic Control	1	LUMP	$40,000.00	$40,000
			TRAFFIC CONTROL SUBTOTAL	**$40,000**
LIGHTING				
Lighting	1	LUMP	$110,000.00	$110,000
			LIGHTING SUBTOTAL	**$110,000**
CONSTRUCTION MISC.				
Field Office, Type B	12	MONTH	$2,000.00	$24,000
Construction Layout Stakes (0.75% of Total)	1	LUMP	$12,773.25	$12,773
Mobilization	1	LUMP	$40,000.00	$40,000
			CONSTRUCTION MISC. SUBTOTAL	**$76,800**
			CONSTRUCTION COST SUBTOTOAL	**$1,779,900**
COST CONTINGENCY - PRELIMINARY ENGINEERING (30%)				**$533,970**
TOTAL CONSTRUCTION COST, 2024 DOLLARS				**$2,314,000**
Construction Cost Inflation Rate (2024 to 2027)	17.9%			$414,206
CONSTRUCTION COST, 2029 DOLLARS				**$2,729,000**

- ESTIMATE DOES NOT INCLUDE COSTS FOR RIGHT OF WAY ACQUISITIONS OR UTILITY RELOCATIONS.

Coonpath Rd and Election House Rd Intersection

Peanut Roundabout
08/07/24

DESCRIPTION	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE (2024 dollars)
ROADWAY				
Pavement Removed	6,444	SQ YD	$8.00	$51,556
Curb	2,600	FT	$25.00	$65,000
Curb and Gutter	2,900	FT	$30.00	$87,000
Concrete Median	10,600	SQ FT	$10.00	$106,000
Truck Apron	833	SQ YD	$135.00	$112,500
Excavation	4,500	CU YD	$30.00	$135,000
Embankment	8,000	CU YD	$18.00	$144,000
			ROADWAY SUBTOTAL	**$701,100**
DRAINAGE				
Drainage	1	LUMP	$120,000.00	$120,000
			DRAINAGE SUBTOTAL	**$120,000**
EROSION CONTROL & BMP ELEMENTS				
Erosion Control	1	LUMP	$100,000.00	$100,000
			EROSION CONTROL SUBTOTAL	**$100,000**
PAVEMENT				
FULL DEPTH PAVEMENT - ASPHALT				
Asphalt Pavement Build-up	10,222	SQ YD	$100.00	$1,022,222
			PAVEMENT SUBTOTAL	**$1,022,300**
MAINTENTANCE OF TRAFFIC				
MOT	1	LUMP	$150,000.00	$150,000
			MAINTENANCE OF TRAFFIC SUBTOTAL	**$150,000**
TRAFFIC CONTROL				
Traffic Control	1	LUMP	$50,000.00	$50,000
			TRAFFIC CONTROL SUBTOTAL	**$50,000**
LIGHTING				
Lighting	1	LUMP	$150,000.00	$150,000
			LIGHTING SUBTOTAL	**$150,000**
CONSTRUCTION MISC.				
Field Office, Type B	12	MONTH	$2,000.00	$24,000
Construction Layout Stakes (0.75% of Total)	1	LUMP	$17,200.50	$17,201
Mobilization	1	LUMP	$40,000.00	$40,000
			CONSTRUCTION MISC. SUBTOTAL	**$81,300**
			CONSTRUCTION COST SUBTOTOAL	**$2,374,700**
COST CONTINGENCY - PRELIMINARY ENGINEERING (30%)				**$712,410**
TOTAL CONSTRUCTION COST, 2024 DOLLARS				**$3,088,000**
Construction Cost Inflation Rate (2024 to 2027)	17.9%			$552,752
CONSTRUCTION COST, 2029 DOLLARS				**$3,641,000**

- ESTIMATE DOES NOT INCLUDE COSTS FOR RIGHT OF WAY ACQUISITIONS OR UTILITY RELOCATIONS.