TUSCARORA ROAD CORRIDOR STUDY








February 2022

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Syracuse, NY 13202
www.smtcmpo.org

SMTC

Tuscarora Road Corridor Study

Syracuse Metropolitan Transportation Council

February 2022

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EXECUTIVE SUMMARY

Overview

As part of the 2020-2021 Unified Planning Work Program (UPWP), the Syracuse Metropolitan Transportation Council (SMTC) agreed to complete the Tuscarora Road Corridor Study for the Village of Chittenango (Village) and Town of Sullivan (Town).

This study presents short- and long-term strategies to:

- improve safety for pedestrians walking along and across Tuscarora Road,
- improve safety for bicyclists using Tuscarora Road,
- improve safety for residents who live along Tuscarora Road,
- encourage drivers to follow the posted speed limit (30 m.p.h.) on this road, and
- reduce the number of vehicles using Tuscarora Road as an alternative to State Route 5, which runs through the village's business district.

The SMTC worked with a Study Advisory Committee (SAC) made up of representatives of the Village of Chittenango, as well as Madison County, the Town of Manlius in Onondaga County, and the New York State Department of Transportation (Regions 2 and 3).

With the SAC's support, the SMTC engaged in a robust public involvement program, including an online survey, virtual meetings with stakeholders, the presentation of an online video, and a virtual question and answer session.

This input informed the development of several design concepts for the corridor. For the purposes of this study, the corridor was split into three segments:

- West End: the portion from West Genesee Street (Route 5) to Talbert Drive;
- Center Section: the portion from Talbert Drive to the Bolivar Road / Lake Street intersection;
- Eastern End: the portion from the Bolivar Road / Lake Street intersection to East Genesee Street (Route 5).

At least one concept was developed for each of these sections.

Sidewalk / Trail

All the design concepts include some version of an off-road facility (either a trail or a sidewalk) along the length of the corridor. West of the existing trail segment, an off-road facility is proposed for the south side of the road. East of the existing trail, the trail (or sidewalk) would run along the north side of Tuscarora Road. East of Bolivar Road, a trail – possibly paved with asphalt – seems more appropriate than a sidewalk, given the predominance of open space and agricultural uses in this segment.

Crosswalks

Raised crosswalks with rapid rectangular flashing beacons (RRFBs) are proposed at three locations: at Wheatfield Drive in the West End segment, and at Burning Hollow and Naymik Drives in the Center Section. A raised intersection at Race and Manor Streets is proposed for the East End. Raised features like these help to slow vehicles down and improve the visibility of pedestrians in crosswalks.

However, discussions with representatives of Durfee Farm on Tuscarora Road indicate that their equipment would likely be forced to come to a complete stop at raised features. This could cause unsafe passing maneuvers at crosswalks,

which would run counter to the goal of improving safety at these key crossing points.

Bolivar Road / Lake Street Intersection

The most frequently commented upon design concept was the idea of converting the existing Tuscarora Road / Bolivar Road / Lake Street intersection from a skewed intersection with stop sign control on the two side streets to a roundabout. This intersection was identified in the online stakeholder survey (conducted from late December 2020 to early January 2021) as the one point on the corridor with the most safety concerns. A roundabout would be an effective and attractive way to both improve safety and slow vehicles on Tuscarora Road.

Residents' concerns included snow removal, the ability of school buses and agricultural equipment to navigate it, the cost, and safety concerns caused by slopes on the northbound, eastbound, and westbound approaches. These issues are discussed below.

An alternative approach that would improve this intersection dramatically at a lower cost would be to realign the northbound and southbound approaches, possibly relocating the intersection slightly to the east. While it would not slow vehicles on Tuscarora Road, it would improve lines of sight at this intersection.

Eastern End

The concept for the Eastern End of the corridor is to, over the long-term, implement design elements to create a streetscape that firmly establishes this area as a part of the village.

Currently the streetscape gives the appearance of the kind of scattered-site, linear development found in hamlets on rural arterials: the sidewalk is broken up by parking areas, there is no on-street parking or street trees, and the most visible parking areas on the north side of the road are off-street spaces adjacent to buildings' front doors.

One element of reducing through traffic on Tuscarora Road (at least for westbound traffic) is to visually close off this entrance to the road using streetscape design elements such as street trees, on-street parking, and a continuous sidewalk.

Additionally, a raised intersection at the Race Street / Manor Drive intersection would both slow vehicles down and provide an upgraded pedestrian crossing for users of the extended Chittenango Creekwalk Trail, running north to the Erie Canalway Trail.

The Village should also pursue funding for a pedestrian bridge over Chittenango Creek, parallel to the existing vehicle bridge. While this is an expensive addition to a trail along the north side of Tuscarora Road in this section, it would significantly improve user safety.

CHAPTER 1 - INTRODUCTION

Overview

As part of the 2020-2021 Unified Planning Work Program (UPWP), the Syracuse Metropolitan Transportation Council (SMTC) has agreed to complete the *Tuscarora Road Corridor Study* for the Village of Chittenango (Village) and Town of Sullivan (Town).

Tuscarora Road is an east-west major collector that runs along the north side of the Village. Over the past 75 years, several residential neighborhoods have been developed in Chittenango with Tuscarora Road as their primary means of ingress and egress. Like most post-World War II development, these neighborhoods were built around the automobile. There does not seem to have been much anticipation of how the resulting traffic increase would affect people living along Tuscarora Road, or of how bicyclists and pedestrians would use it as traffic volumes increased.

Today, Tuscarora Road's speeds and volumes are not in keeping with the corridor's predominantly residential context. This study is a review of short- and long-term strategies to:

- improve safety for pedestrians walking along and across Tuscarora Road,
- improve safety for bicyclists using Tuscarora Road,
- improve safety for residents who live along Tuscarora Road,
- encourage drivers to follow the posted speed limit (30 mph) on this road, and
- reduce the number of vehicles using Tuscarora Road as an alternative to State Route 5, which runs through the village's business district.

SAC Members and Study Process

SAC Members

The Study Advisory Committee (SAC) for this project included representatives of the following local government and community groups:

- Village of Chittenango
- Town of Sullivan
- Madison County
- New York State Department of Transportation (NYSDOT), Regions 2 and 3
- Town of Manlius
- Tuscarora Road Advisory Committee (TRAC)[1]

Public outreach process

Online Survey

On December 10, 2020, a 15-question online survey was posted to a public website and was available to the public until January 9, 2021. The SAC and other community members in the Village of Chittenango helped advertise the survey on social media. In total, 387 responses were received.

This survey was intended to engage study area residents and to serve a role similar to that of a scoping-level public meeting. Survey results are discussed in chapter 3, Mobility Issues. An in-

[1] TRAC began as a grassroots, citizen-led organization in 2015. It has since become a citizens' committee of the Village of Chittenango that gives residents concerned with safety on this corridor a forum for discussing issues and opportunities for improvement. Two members of TRAC were members of the SMTC's SAC.

depth summary of survey responses is provided in Appendix B.

Study Area and Project Context

Study Area

This study is focused on the length of the Tuscarora Road corridor (including adjacent land), from its intersection with Route 5 on the west side of Chittenango to its intersection with Route 5 / Route 13 on the east side of the village. Because of its relevance to Tuscarora Road and the movement of traffic, Route 5 is also discussed in this analysis, as are Lake Street and Bolivar Road.

Local Plans

Village of Chittenango Comprehensive Plan

The Village of Chittenango Comprehensive Plan was adopted in 2008. The plan documents existing conditions and proposes improvements and a future land use plan. The Comprehensive Plan notes several significant issues with the Tuscarora Road corridor, going so far as to identify "Tuscarora Road providing a diversion of commuter traffic around the downtown business Core" as one of four weaknesses in the local economic climate. The plan goes on to note that Tuscarora Road's "relatively straight alignment … its width, and 30 mph" speed limit "provide for easy mobility in and out of the northern portion of the Village." This, in turn, "creates safety implications for pedestrians living off of Tuscarora Road."

In its implementation section, the Plan's recommendation for Tuscarora Road is a study that will look at:

> the current and future traffic demands implications of mobility, safety, and accessibility along Tuscarora Road and NYS Route 5 between the eastern and western Village boundary. This study should evaluate transportation and land use related issues, generate travel demand modeling to forecast appropriate improvement projects, and provide a long-range plan to enhance safety and circulation in the northern portion of the Village adjacent to Tuscarora Road.[2]

It also provides a concept for a new Village Downtown Gateway Area at the Route 5/Tuscarora intersection, with new development creating a more continuous street frontage along both Route 5 and Tuscarora Road, added street trees, and fewer large parking lots along these roads. (See Figure 1.1)

Figure 1.1: Intersection Concept from the Village of Chittenango Comprehensive Plan

Left: Existing development, parking and circulation scenario; Right: Potential redevelopment, reconfiguration of parking, circulation, and access management at the Tuscarora Road / Route 5 intersection

The Comprehensive Plan anticipates that more development on the village's north side is likely;

[2] *Village of Chittenango Comprehensive Plan*, Volume I, Section 7.3.2,August 2008.

the Plan states that "As development interest grows within the area, it can be expected that requests for annexation will increase as well".

Town of Sullivan Comprehensive Plan

The Town of Sullivan Comprehensive Plan, adopted in January 2006, provides valuable information on both the Town and the Village of Chittenango, where roughly half of the Town's residents live. Tuscarora Road traffic is not specifically mentioned in this plan, but an increase in traffic volumes over time is identified as an issue, as is the difficulty of maintaining roads that safely accommodate motorists and pedestrians.

One issue raised several times in the Town's plan is residents' desire to improve the appearance of Chittenango's central business district with commercial and residential façade improvement programs and streetscape upgrades.

Another issue raised in this plan is the aging of the town's population and the need to provide more housing for seniors.

2019 SMTC Technical Memorandum

In the spring of 2019, the Village of Chittenango contacted SMTC staff with a request for assistance with concerns related to pedestrian safety on Tuscarora Road. The SMTC reviewed available data and prepared a brief memo exploring the feasibility of a few short-term interventions.

This memo concluded that the most viable short-term solutions would be to add an uncontrolled crosswalk to Tuscarora Road, based on NYSDOT's guidelines, and to add a trail or path along Tuscarora Road, separated from the roadway by vegetation. Additionally, this memo recommended improvements to the eastbound Tuscarora Road approach to the East Genesee Street / Tuscarora Road intersection. The improvements are like those shown in the Village's Comprehensive Plan: orienting buildings toward the street and using streetscaping to give this section of Tuscarora Road the look of a traditional village street, rather than a rural route that can be used to bypass the village.

Since the preparation of that memo, the Village has developed a stone dust walking trail on the south side of Tuscarora Road. No crosswalks have been added.

Corridor Safety History

Tuscarora Road has a reputation as a road on which drivers speed and drive recklessly. A review of local newspaper articles indicates that, while serious incidents and fatal crashes are rare, they occur periodically. In the 1990s, there were two notable fatal crashes, one involving a head-on collision on Tuscarora Road (resulting in two deaths) and another at the Tuscarora Road / Bolivar Road / Lake Street intersection.

An all-way stop was implemented at the Tuscarora Road / Bolivar Road / Lake Street intersection in 1979 as the result of a school budget crisis that meant that large numbers of students had to walk to school. The stop signs for traffic on Tuscarora Road were removed in 1983, in part because they were never officially approved by the Village Board. But the Village's Public Safety Commissioner supported removing the stop signs because of the grades on Tuscarora Road on both sides of this intersection, which can create a hazard when the road is icy or wet, preventing vehicles from stopping at the stop signs.[3]

[3] "Unofficial Chittenango Stop Signs Ordered Removed", *Post-Standard*, October 12, 1983. As this article notes, the stop signs that were in place between 1979 and 1983 were never officially approved by the Village Board. Then Public Safety Commissioner Richard Carbery recommended that the stop signs be removed.

Proposed / Ongoing Projects

Tuscarora Road Trail

In 2019, the Village of Chittenango added a stone dust trail along the south side of Tuscarora Road, separated from the road by a narrow strip of grass. The trail currently extends from Talbert Drive on the west to Naymik Drive on the east.

Since its development, the trail has reportedly been heavily used by residents of the area. No formal counts have been taken, but a site visit in February 2021 showed a number of tracks in the snow, in spite of the fact that snow on the trail is not cleared by the Village.

Tracks in the snow on the existing Tuscarora Road Trail, February 2021

Chittenango Creekwalk Extension

The Village has been planning an extension of the Creekwalk north from Tuscarora Road to Chittenango Landing on the Old Erie Canal for several years. As of this writing, the Village has obtained the land rights needed to extend the trail along Chittenango Creek to the Canal and construction of this extension is underway. When complete, this will provide a (largely) off-road trail connection between the Village's central business district and the statewide Erie Canalway Trail.

Known Developments

Over the last 20 years, more than 200 single-family homes have been developed in the area west of the West Genesee / Tuscarora Road intersection, straddling the Onondaga / Madison County line. In March 2020, a project proposing 132 apartments for senior citizens was presented to the Town of Manlius Planning Board but was subsequently withdrawn after "strong and heated" opposition to the project materialized.[4] Opposition primarily came from nearby residents who objected to, among other things, the potential traffic impacts of the development.

[4] "Developer pulls $25 million residential project slated for town of Manlius after public outcry", www.syracuse.com, March 11, 2020.

CHAPTER 2 - EXISTING CONDITIONS

Land Use

Agricultural Districts

Section 305-a of the Agricultural Districts Law protects farmers against local laws that unreasonably restrict farm operations located within an agricultural district.

Agricultural District 3 includes farmland in the Towns of Lenox, Lincoln, and Sullivan, as well as the City of Oneida. The Durfee Farm property located north of Tuscarora Road is included in Ag District 3, including the area between Bolivar Road and the unnamed stream that runs just east of Bolivar Road (see Figure 2.1).

Existing Zoning

Town of Sullivan

With the exception of the residential areas accessed by Burning Hollow, Naymik, and Horizon Drives, and a small area north of Tom Tom Street, the area north of Tuscarora Road is in the Town of Sullivan. Zoning along Bolivar Road and west of the road (as far north as Kinderhook Road) is Medium Density Residential (MR-12). The large parcel bounded by Bolivar Road, the Erie Canal, and the Village boundary is zoned Agricultural (A).

The Town's MR-12 zoning allows single-family homes on lots between 12,000 and 40,000 square feet. Farm related structures are also allowed by right. Other uses that can be permitted in this district are medical facilities, multiple-family dwellings, and orphanages.

Village of Chittenango

West of Chittenango Creek, the Tuscarora Road corridor is a mix of low and medium-density residential zoning districts. The village's only "Special Business" district is located on the Route 5 corridor due east of the Route 5/ Tuscarora Road intersection, extending along Tuscarora as far as the creek (see Figure 2.2). This district is intended to foster a mix of light industrial and retail / commercial uses.

Demographics

At the time of the 2010 Census, the Village of Chittenango had a population of 5,081. This was a three percent increase over the 2000 Census, when the village's population was 4,915. According to the recent 2020 decennial Census, the Village's population decreased below the 2000 value to 4,896.

Over the past 30 years, changes to the village's population have been relatively modest – particularly compared to the 143 percent growth between the 1950 and 1960 Censuses, or the 20 percent growth between 1960 and 1970.

Population Density

The Village of Chittenango squeezes one third of the Town of Sullivan's population into 2.5 square miles: less than five percent of the Town's total area. Pockets of relatively high population density (5,000 people per square mile) pop up throughout the village. Population density drops off precipitously outside of the village's boundaries. See Figure 2.3.

Age

According to 2015-2019 American Community Survey (ACS) dataset, the village's median age is 40.6 years old, slightly above the statewide median of 38.8 and below the Madison County median of 41.9 years.

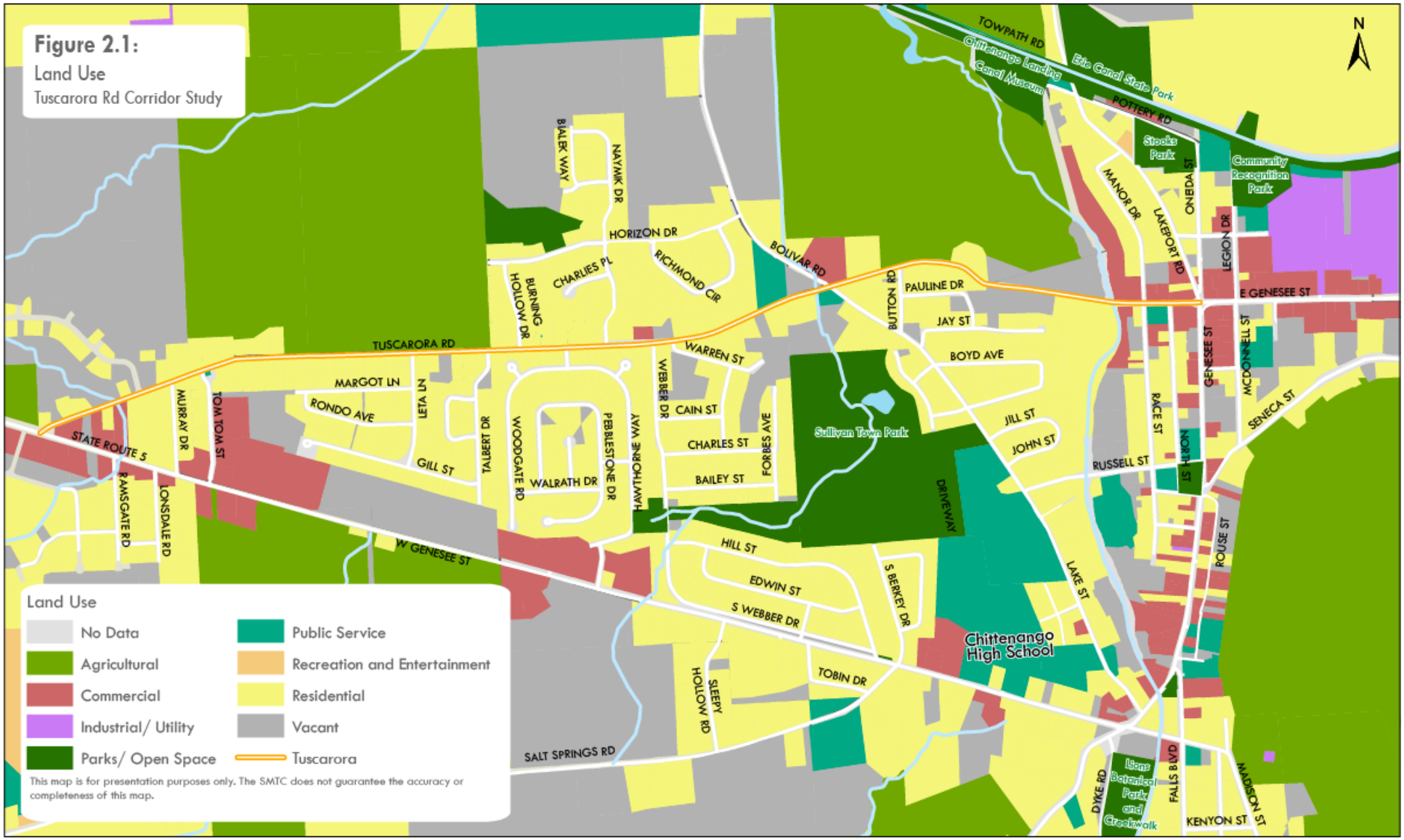
Figure 2.1:
Land Use
Tuscarora Rd Corridor Study
N
TOWPATH RD
Chittenango Landing Canal Museum
Erie Canal State Park
POTTERY RD
Shocks Park
Community Recognition Park
MANOR DR
LAKEPORT RD
ONEIDA ST
LEGION DR
E GENESEE ST
MCDONNELL ST
SENECA ST
GENESEE ST
RACE ST
NORTH ST
ROUSE ST
LAKE ST
BIALEK WAY
NAYMIK DR
HORIZON DR
CHARLIES PL
RICHMOND CIR
BURNING HOLLOW DR
BOLIVAR RD
BOULTON RD
PAULINE DR
JAY ST
BOYD AVE
JILL ST
JOHN ST
RUSSELL ST
TUSCARORA RD
WARREN ST
MARGOT LN
RONDO AVE
LETA LN
GILL ST
TALBERT DR
WOODGATE RD
WALRATH DR
PEBBLESTONE DR
HAWTHORNE WAY
WEBBER DR
CAIN ST
CHARLES ST
BAILEY ST
FORBES AVE
Sullivan Town Park
DRIVEWAY
STATE ROUTE 5
MURRAY DR
TOM TOM ST
RAMSGATE RD
LONSDALE RD
W GENESEE ST
HILL ST
EDWIN ST
S WEBBER DR
S BERKEY DR
TOBIN DR
SLEEPY HOLLOW RD
SALT SPRINGS RD
Chittenango High School
DYKE RD
Lions Botanical Park and Creekwalk
FALLS BLVD
KENYON ST
MADISON ST
Land Use
No Data
Agricultural
Commercial
Industrial/ Utility
Parks/ Open Space
Public Service
Recreation and Entertainment
Residential
Vacant
Tuscarora
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0
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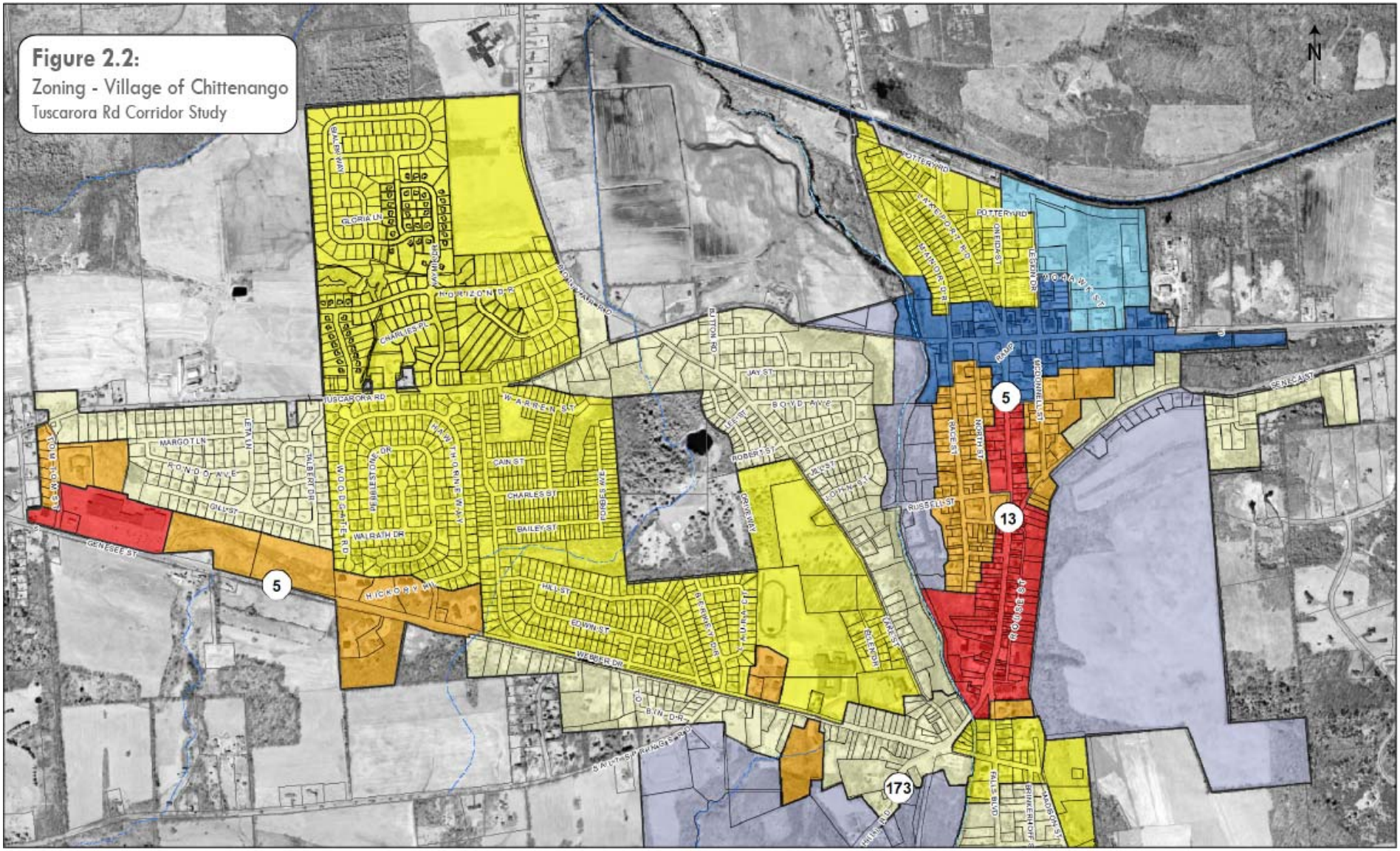
3,000
Feet
SMTC



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SMTC

Race and Ethnicity

According to the 2020 decennial Census, 96 percent of village residents are white, while 6 percent are minority. The racial composition of adjacent census tracts is similarly homogenized.

People of Hispanic ethnicity make up roughly two percent of the village's population.

Income and Poverty

According to 2015-2019 ACS data, incomes in Chittenango are higher, on average, than in Madison County as a whole. The village's median household income was estimated around $77,000, compared to $62,000 in both Madison County and Onondaga County. Among villages in the SMTC's Metropolitan Planning Area (MPA), Chittenango has the third highest median household income.

The poverty rate in the village is 9.1 percent, below the countywide rate for Madison County of 9.8 percent and well below Onondaga County's 14.1 percent poverty rate.

Commuting Data and Vehicle Ownership

As is true across Upstate New York, most of Chittenango's workers (85 percent) get to work in a single-occupant vehicle. Nearly 8 percent of workers carpool, and 4 percent work at home. A not insignificant number of workers are able to walk to work: roughly 2 percent. Public transit service is not available in this area.

Table 2.1: Means of Transportation to Work – Village of Chittenango

Means of Transportation	Percent of Workers
Drove Alone	85
Carpooled	7.6
Public Transportation	0
Walked	2.2
Other Means	1.2
Worked at Home	3.9

Source: 2018 US Census American Community Survey, Five-Year Data, Table B08141

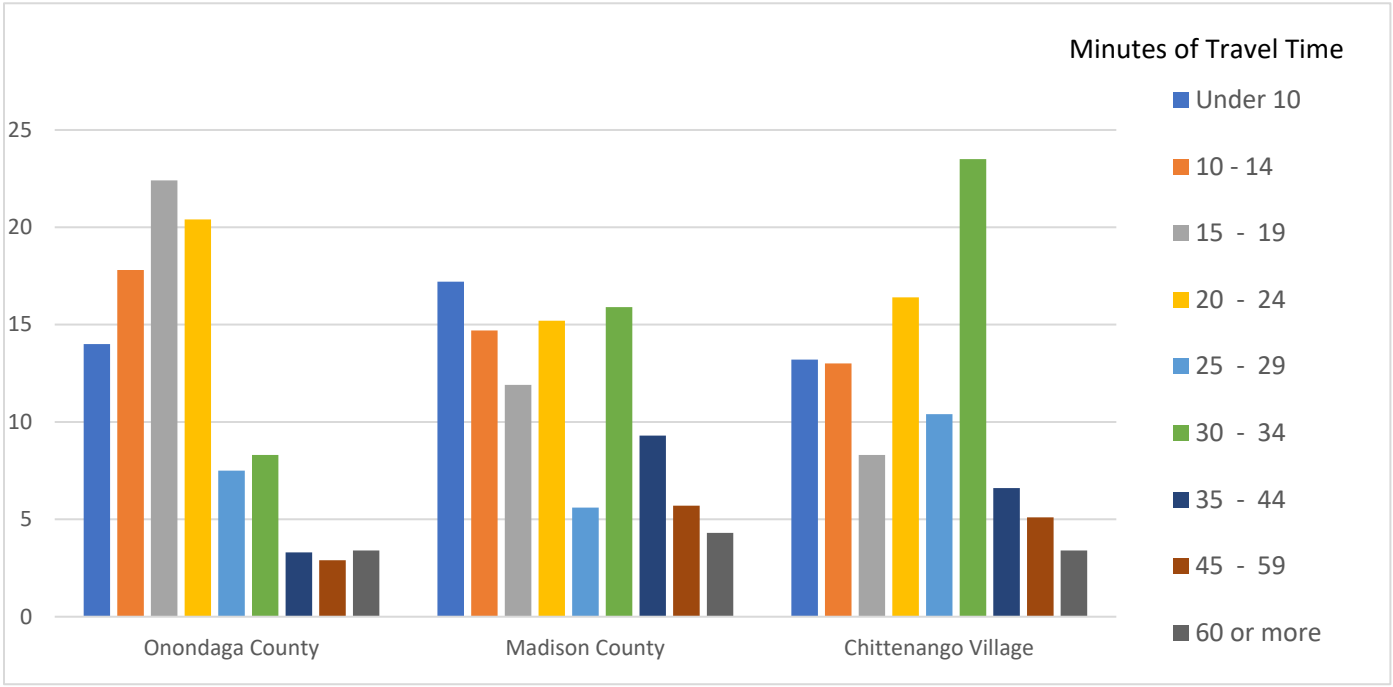
As would be expected given the proportion of people who drive themselves to work, car ownership rates are fairly high in the village. Only 2 percent of all households do not have a vehicle.

Place of Work and Travel Time to Work

The majority of the village's 2,500 workers (63 percent) work outside of Madison County. Just over 20 percent of the village's workers work in the village itself.

Mean travel time to work for workers living in the village was 25 minutes, compared to 23 minutes for all workers in Madison County and 20 minutes for all workers in Onondaga County. This is in part a result of the large proportion of people commuting 25 to 30 minutes to jobs in the City of Syracuse. According to Census data, nearly 20 percent of Chittenango's workers work in Syracuse.[5] As shown in Figure 2.4, the proportion of workers with commutes between 30 and 34 minutes is substantially higher than in either Onondaga or Madison Counties.

Figure 2.4: Commute time (in minutes) by proportion of workforce



Source: 2018 US Census American Community Survey, Five-Year Data, Table S0801

[5] U.S. Census Bureau, OnTheMap Application, https://onthemap.ces.census.gov (based on 2017 data).

Roads

Functional Classification

Functional classification, or "functional class," categorizes roads according to their character and the role they play in the transportation network. This classification puts roads into categories ranging from principal arterial, which are designed for high-speed trips between cities, to low-speed local roads, which provide access to individual properties. Roads are also classified as being urban or rural based on an Urban Area boundary, which is primarily dependent on population density reported in the most recent Census. Although the entire study area is located outside of the contiguous Syracuse Urban Area, the Village of Chittenango is located within an urban area identified by the Federal Highway Administration per the 2010 Census. Therefore, study area roadways are classified as urban roadways. 2020 Census urban area data was not available at time of writing.

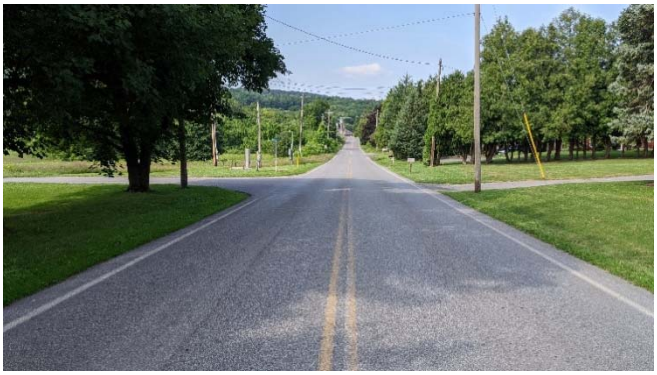
Functional classification is directly related to federal-aid eligibility, which determines whether a road may receive federal transportation funding. Principal arterials, minor arterials, major collectors, and urban minor collectors are federal-aid eligible. Rural minor collectors and local roads (urban and rural) are not federal-aid eligible. See figure 2.5.

Tuscarora Road

Tuscarora Road is an urban major collector owned by both the Town of Sullivan and the Village of Chittenango. Tuscarora Road runs from West Genesee Street to East Genesee Street (the local designations for the two branches of Route 5 in the Village). Tuscarora Road is a two-lane facility with narrow shoulders and a speed limit of 30 mph. Daily traffic volumes on Tuscarora Road range from 4,500 from Route 5 to Murray Drive to 5,800 from Murray Drive to East Genesee Street.

As a major collector, Tuscarora Road is a federal-aid eligible facility.

The corridor is primarily residential with connections to many of the village's residential streets. Although the corridor functions as a major connector for residents, except for the eastern end of the roadway, it lacks crosswalks and sidewalks. There is a stone dust path between Talbert Drive and Naymik Drive along the road's southern edge.



Tuscarora Road near Tom Tom Street facing west

Stone dust trail adjacent to Tuscarora Road facing east

Tuscarora Road near Route 5 facing east

Truck Restriction

The bridge over Chittenango Creek on Tuscarora Road is limited to vehicles under five tons, with signage informing truck drivers of this restriction posted at both West Genesee Street and East Genesee Street. During field observations, SMTC staff noted trucks estimated to be over this limit traveling along the corridor. Many trucks also frequent the farm located along the western portion of the corridor.

Tuscarora Road over Chittenango Creek

Route 5

Route 5 is an urban principal arterial owned by NYSDOT that runs through the heart of the village. There are three distinct sections of the corridor with unique characteristics (West Genesee Street, Genesee Street, East Genesee Street).

West Genesee Street, heading east from the western village border until Route 5 turns north, operates as a high-speed, high-volume roadway with speeds up to 55 mph. The roadway has two wide lanes with wide shoulders. A limited number of cross streets intersect with West Genesee Street until the segment just east of the High School, where it becomes a more traditional village street, with curbs and sidewalks. There is a posted 25 mph school zone in front of the High School. The most recent annual average daily traffic (AADT[6]) volume estimate for this portion of Route 5 is 8,560 vehicles.

Genesee Street, heading north from West Genesee Street to East Genesee Street, operates as the village's main street, with a posted speed limit of 30 mph, a narrow right-of-way, and sidewalks along the length of the corridor. There are ladder-style crosswalks across Route 5 at West Genesee Street, Village Hall, Catherine Street, Arch Street, Lennox Lane, and East Genesee Street/ Tuscarora Road. North of Lennox Lane the roadway widens to three lanes, including a center turn lane. The most recent AADT for this portion of Route 5 is documented at 9,900.

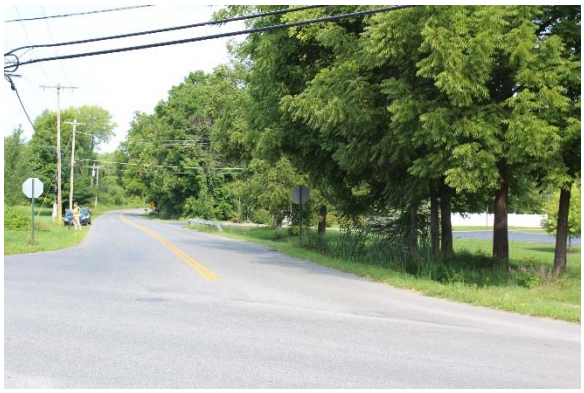
East Genesee Street, heading east from Genesee Street to the eastern village border, continues as the village's main street with a center turn lane before reducing to two lanes heading east out of the village. The most recent AADT for this portion of Route 5 is documented at 10,300.

Route 5, Genesee Street facing north

[6] Annual average daily traffic, or AADT, is a rough approximation of the volume of traffic on a given road on an average day.

Bolivar Road

Bolivar Road is a local road that runs north from Tuscarora Road. The roadway consists of two wide lanes without shoulders and a speed limit of 40 mph. The most recent AADT for this corridor is 1,600. No sidewalks or pedestrian amenities exist along the corridor as it runs primarily through rural land north of the village, with some residential development towards the intersection with Tuscarora Road.



Bolivar Road at Tuscarora Road facing northwest

Lake Street

Lake Street is a local road that runs south from Tuscarora Road to Genesee Street. The roadway consists of two narrow lanes without shoulders and a speed limit of 30 mph. Towards the southern end of the corridor, between Mead Place and Genesee Street, there is a 20 mph school zone. Sidewalks exist for most of the corridor along the eastern side of the roadway, with crosswalks located at the Jill Street entrance to Sullivan Park and at Genesee Street.

Lake Street near Tuscarora Road facing southeast

Subdivision Streets

Most roadways within the Village of Chittenango are narrow local roads through residential subdivisions. Most of the north-south streets in the village intersect with Tuscarora Road. As is true in other suburban developments, there are no sidewalks and crosswalks on most of these streets. Traffic volumes on these small, residential streets are assumed to be under 1,500 vehicles a day.


Figure 2.5:
Functional Classification
Tuscarora Rd Corridor Study
N
TOWPATH RD
Chittenango Landing Canal Museum
Erie Canal State Park
POTTERY RD
Stooks Park
Community Recognition Park
BIALEK WAY
NAYMIK DR
1608
HORIZON DR
BOLIVAR RD
MANOR DR
LAKEPORT RD
4729
ONEIDA ST
LEGION DR
CHARLIES PL
RICHMOND CIR
BURNING HOLLOW DR
PAULINE DR
BUTTON RD
E GENESEE ST
10268
JAY ST
TUSCARORA RD
5160
WARREN ST
BOYD AVE
MARGOT LN
RONDO AVE
LETA LN
WEBBER DR
CAIN ST
Sullivan Town Park
JILL ST
JOHN ST
RACE ST
324
NORTH ST
GENESEE ST
9874
MCDONNELL ST
SENECA ST
4492
STATE ROUTE 5
8561
MURRAY DR
TOM TOM ST
GILL ST
TALBERT DR
WOODGATE RD
PEBBLESTONE DR
HAWTHORNE WAY
CHARLES ST
FORBES AVE
BAILEY ST
996
973
RUSSELL ST
WALRATH DR
DRIVEWAY
W GENESEE ST
HILL ST
EDWIN ST
S WEBBER DR
S BERKEY DR
LAKE ST
Chittenango Creek
ROUSE ST
Chittenango High School
TOBIN DR
SLEEPY HOLLOW RD
3141
1837
1832
FALLS BLVD
MADISON ST
DYKE RD
Lions Botanical Park and Creekwalk
KENYON ST
789
SALT SPRINGS RD
Functional Classification
Rural Major Collector
Minor Collector
Major Collector
Existing Village Trails
Annual Average Daily Traffic (AADT)
Parks
Local
Minor Arterial
Principal Arterial
Proposed Village Trails
Buildings
Source: NYSDOT Traffic Counts
This map is for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of this map.
0
750
1,500
3,000
Feet
SMTC

National Highway System

According to the Federal Register, 23 USC § 101(a)(16), the term "National Highway System" (NHS) means the Federal-aid highway system as described in section 103(b). The NHS "consists of the highway routes and connections to transportation facilities that shall serve major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel and commerce." Roads on the NHS are prioritized for receipt of federal transportation funding.

Route 5 through Chittenango is the only roadway designated as part of the NHS in the study area.

Designated Bike Route

Along Route 5 there is a signed bike route that is not associated with a New York State designation. No formal facilities – such as lane striping or dedicated signals – are associated with this route. The primary bike route near the village is the Empire State Trail (discussed below).

Intersection Traffic Control

Within the study area, most intersections with Tuscarora Road and Route 5 are controlled by stop signs on the side streets. There are signalized intersections at W Genesee St/ Genesee St/Madison St, and Tuscarora Rd/Genesee St/E Genesee St. There is also a flashing red/yellow light at the Tuscarora Road/W. Genesee Street intersection (vehicles on Tuscarora Road have a stop sign). Other than these signals, traffic is not controlled by stop signs or other signals on Tuscarora Road or Route 5 in the study area.

Pedestrian Facilities

Pedestrian facilities throughout the study area are uneven, with the majority of facilities being along Route 5 through the center of the village. Pedestrian signals, countdown timers, and crosswalks exist at the intersections of Genesee Street and East Genesee Street/ Tuscarora Road as well as Genesee Street and West Genesee Street/ Madison Street. A mid-block crossing also exists on Genesee Street near the municipal parking lot.

Chittenango Creekwalk

The Chittenango Creekwalk starts in the heart of the village, just north of the Lake Street / Genesee Street intersection. The Creekwalk follows the creek's eastern shore north to Russell Street where it heads east to Race Street, where it heads north to its current terminus at Tuscarora Road. A connection between Tuscarora Road and the Chittenango Landing Canal Boat Museum is currently being planned.

Empire State Trail

According to the New York State website, "The 750-mile Empire State Trail showcases New York's special places, diverse history, and iconic landscapes." The trail runs along what remains of the Erie Canal, connecting Buffalo to Albany and New York City to the state's northern border with Canada. The Erie Canal State Park, which contains the Empire State Trail, runs across the northern border of the village.

ADA Compliance

According to the Federal Highway Administration (FHWA), the Americans with Disabilities Act (ADA) prohibits public entities of discriminating on the basis of disability, including the use of the public right-of-way. Due to these regulations all facilities in the public right-of-way must meet minimum standards of accessibility set by the federal government.

The study area has minimal pedestrian amenities outside of the village center. Where pedestrian amenities exist, there are various levels of ADA compliance.

Route 5, from Hills Street through the village center to the eastern border of the village maintains continuous sidewalk access on both sides, excluding from Hills Street to the high school entrance where sidewalks are only located on the northern side. Curb ramps generally possess tactile warnings and are facing in the proper direction with a few exceptions.

Stone dust trails, like the one along the south side of Tuscarora Road, are considered to be compliant with the ADA, provided that they are compacted to create a stable, firm, and slip resistant surface.

Bicycle Facilities

Bike rentals are available at the Chittenango Landing Canal Boat Museum, which is located next to the Empire State Trail.

Roadway Use

Speeds

Tuscarora Road

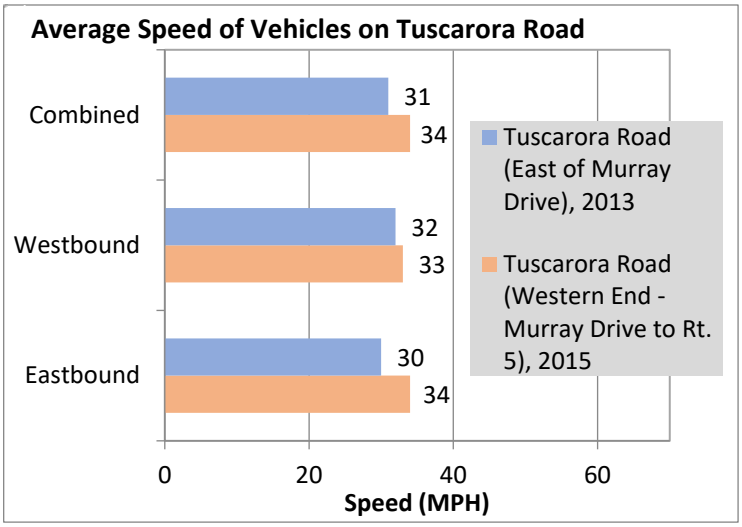
Speed data from NYSDOT splits Tuscarora Road into two sections, with the dividing line being Murray Drive.

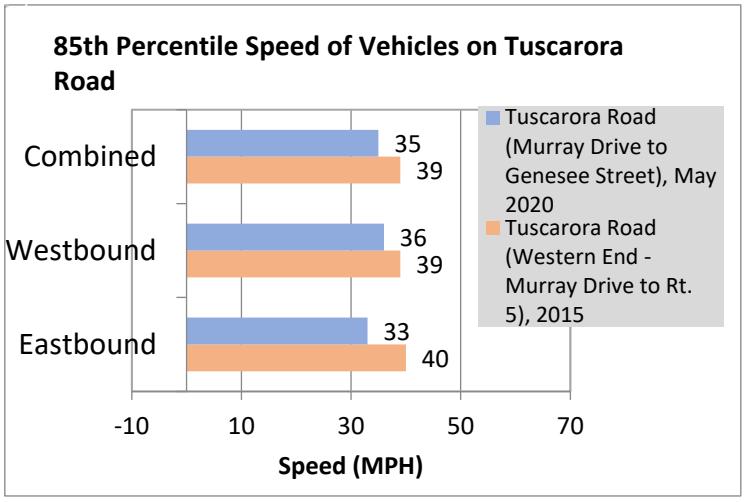
The posted speed along Tuscarora Road is 30 mph. East of Murray Drive the average speed of travel is around 31 mph, with westbound traffic slightly faster at 32 mph. West of Murray Drive the average speed increases to 34 mph.

Speed limits are often based on how most users actually use a road. For this reason, the 85th percentile speed is an important reference point in setting speed limits. The 85th percentile speed is the speed at or below which 85 percent of vehicles normally travel.

East of Murray Drive, the 85th percentile speed is 35 mph. West of Murray Drive the 85th percentile speed is 39 mph.

Figure 2.6: Average and 85th Percentile Speeds on Tuscarora Road





Heavy Vehicles

Tuscarora Road

FHWA classifies vehicles based on the weight and number of axles present. The number of heavy vehicles, including buses and larger trucks, using the road influences the design of the roadway along with the frequency of maintenance, as larger vehicles wear down the materials faster.

In 2013, East of Murray Drive, around 3 percent of vehicles were considered heavy vehicles. West of Murray Drive, in 2015, around 2 percent of vehicles were considered heavy vehicles. By

comparison, Route 5 through the Village of Chittenango sees heavy vehicles account for about 5 to 6 percent of its total traffic.

The main reason for the reduced number of heavy vehicles present along Tuscarora Road is the weight-restriction required for the bridge over Chittenango Creek.

Whether or not an individual truck uses Tuscarora Road seems to depend, to a large degree, on whether the truck's driver is using a commercial global positioning system (GPS) for routing purposes. Drivers who are using the personal GPS services found on personal cellular phones (e.g., Google Maps) are typically not routed around features such as low-clearance overpasses or weight-restricted bridges.

Collision History

In the five-year period from the start of 2015 to the end of 2019, there were 73 reported crashes on Tuscarora Road. There were no fatal collisions in this period, but there were 18 injuries, including three serious injuries.

The crash rate on Tuscarora Road is 1.19 times higher than the statewide average for similar facilities.[7] The collision data reports more than a dozen different reasons ("apparent factors") for these crashes, but the top three all relate to driver behavior, such as failing to yield the right-of-way to another driver or following too closely.

Nearly a third of all collisions on Tuscarora Road in this period were single-vehicle collisions, meaning the driver either ran off the road or collided with a tree or fence. One collision included hitting a pedestrian.

The crash rate at the Tuscarora Road / Bolivar Road intersection is 3.7 times the statewide average. Nine of the 15 crashes reported at this intersection in this period were right-angle collisions, with most attributed to driver behavior (rather than slippery roads or impaired driving). The number of right-angle crashes at this intersection is nearly 7 times higher than the statewide average for similar intersections.

Table 2.2: Crash Data for Tuscarora Road / Bolivar / Lake Street Intersection, 2015 - 2019

Crash Attributes	Number	Per Million Entering Vehicles	Statewide Average (Per Million Vehicles)
Total	15	1.24	0.31
Right Angle	9	0.74	0.08
Rear End	2	0.17	0.05
Sideswipe	1	0.08	0.01
Other	3	0.25	0.01

Sources: Crash data from NYSDOT's Accident Location Information System (ALIS); Statewide averages from NYSDOT's "Average Accident Rates For State Highways By Facility Type" (Based on accident data from 9/1/17 to 8/31/19)

[7] Including both mainline and juncture crashes. Statewide rate taken from NYSDOT's "Average Accident Rates for State Highways by Facility Type", based on data from September 1, 2017 to August 31, 2019. Available at: https://on.ny.gov/3z8kwTK.

CHAPTER 3 – MOBILITY ISSUES AND ANALYSIS

Tuscarora Road serves a variety of users, many with origins/destinations within the Village and some who see it as a shortcut through the Village. Residents walk and bike through the nearby neighborhoods and utilize Tuscarora Road as their way to and from home. Durfee's farm is a major agricultural center that uses Tuscarora Road as their primary connection to markets and consumers. At the same time, other commuters and commercial vehicles have been found to use the corridor as a cut-through to avoid the heavily traveled Route 5 that acts as a Main Street for the Village of Chittenango.

As a result of this mix of users, safety concerns have been raised, with implications for pedestrians, cyclists, and drivers. Below are specific concerns that SMTC staff heard from residents and visitors in all modes of transportation.

Pedestrians

According to Census data, most Chittenango area households have at least one vehicle. But for many people who cannot drive, either because they do not have a driver's license (such as young teenagers) or because they are physically limited in some way, or choose not to drive, getting around on foot may be their only transportation option.

Tuscarora Road plays a vital role in connecting the residential neighborhoods within the village to one another and to the commercial centers along Route 5. For pedestrians, the corridor can pose significant issues no matter which direction they head.

East-West Movement

The Village of Chittenango currently has two primary east-west connections, Tuscarora Road and Route 5, but only Tuscarora Road provides access to nearly all residential neighborhoods within the village. Due to this current street configuration, safe pedestrian access along Tuscarora Road is vital to increasing pedestrian access to the village.

In our survey of residents and visitors, about 20 percent indicated they walk or bike along Tuscarora Road more than once per week, with 5 percent utilizing the corridor every day. 78 percent of respondents believe the street currently poses safety concerns for people on foot and on bikes, with only 8 percent of respondents feeling the street is safe, as seen in Figure 3.1.

The narrow roadway, speed of traffic, and the lack of sidewalk were common concerns for residents, as shown in Figure 3.2. Shoulders along Tuscarora Road are narrow, typically around two feet wide, which forces pedestrians either close to speeding traffic or onto private property.

North-South Movement

Residents north of Tuscarora Road, as well as those within the new North Ridge development, must cross the corridor to access commercial businesses within the village, including the grocery store and pharmacy, as well as friends and neighbors. Currently there are no crosswalks that span Tuscarora Road,

Figure 3.1: How would you rate Tuscarora Road's safety for people riding bikes or walking along the road?
(1 is "not safe" and 5 is "perfectly safe")

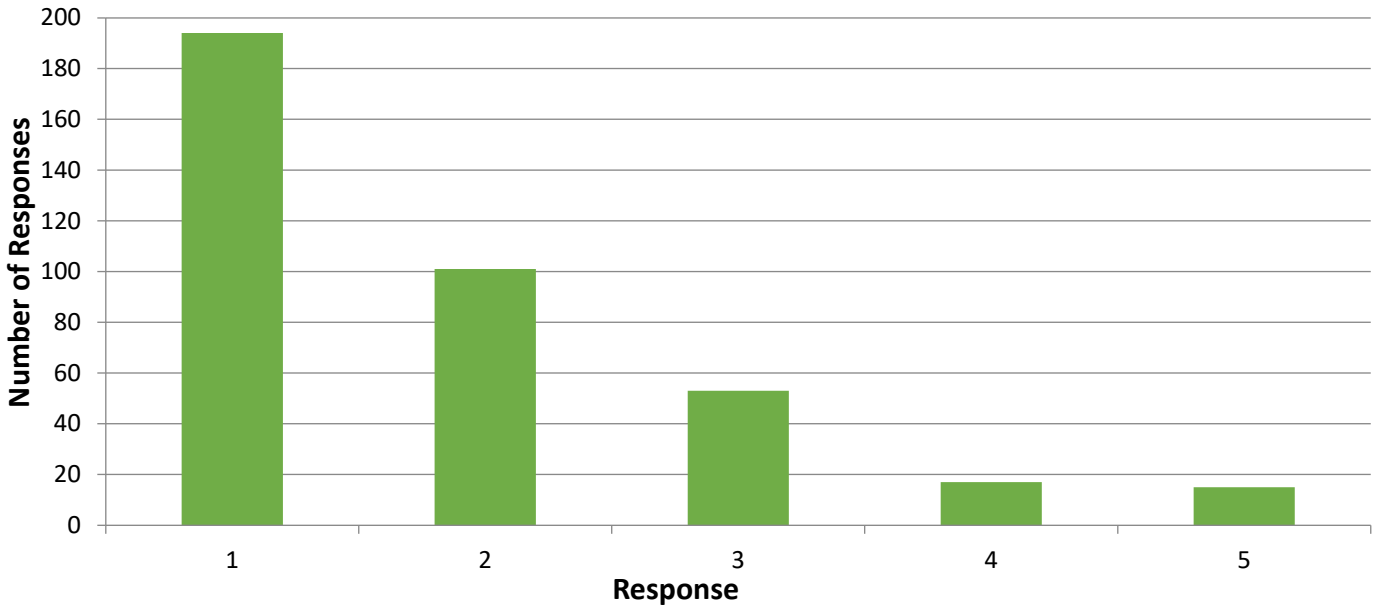
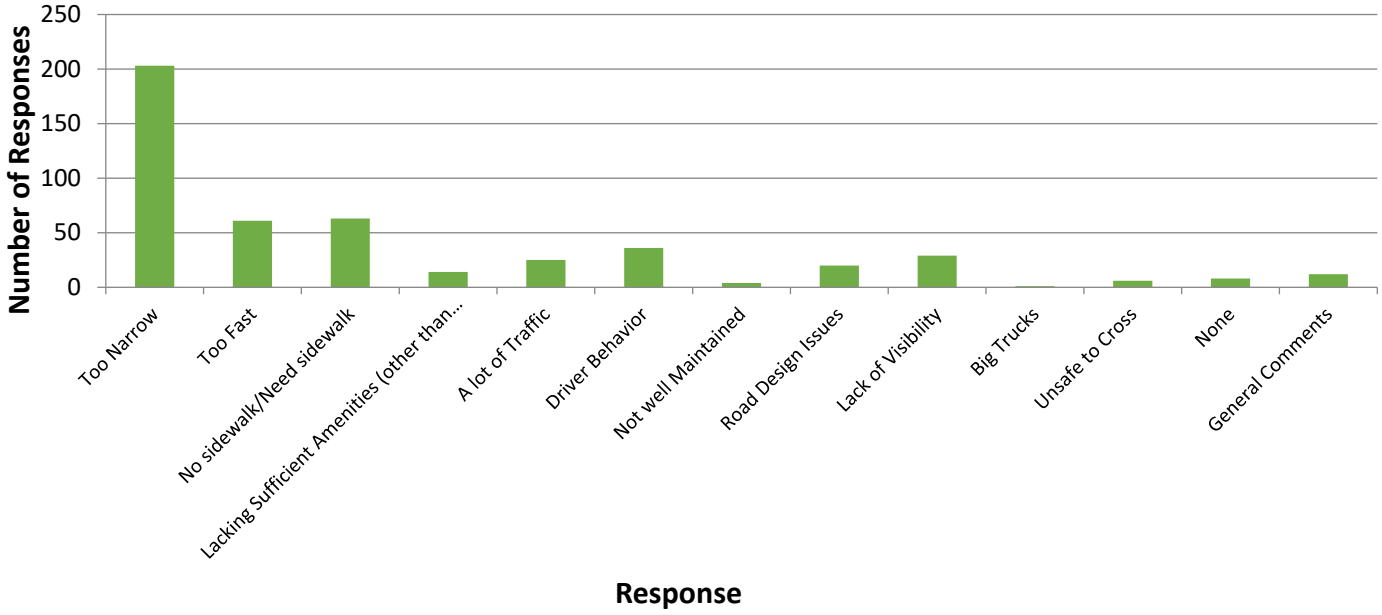


Figure 3.2: What safety issues have you noticed for bicyclists and pedestrians?



meaning pedestrians lack visibility to oncoming traffic as they attempt to cross.

Around 20 percent of survey respondents indicated that they cross Tuscarora Road at least once per week, with some crossing every day, indicating the need for a safe way to make these movements.

Bicyclists

Cyclists face many of the same issues pedestrians do, including narrow shoulders and speeding traffic. Comments from our survey spotlight the need for safe cycling conditions with an emphasis on children who ride around the neighborhood, to the nearby shopping plaza, and to the school grounds. Others have indicated a desire to ride on Tuscarora Road but choose not to due to concerns for their own safety. Over 50 respondents voiced support for bike lanes along the corridor. An additional 68 respondents supporting extending the existing walking/biking trail, helping keep more vulnerable road users, cyclists included, separated from vehicle traffic. Over 60 percent of survey respondents indicated that the presence of bike lanes could make it more likely for them to use a bike along the corridor, with over 40 percent saying that it would increase the likelihood.

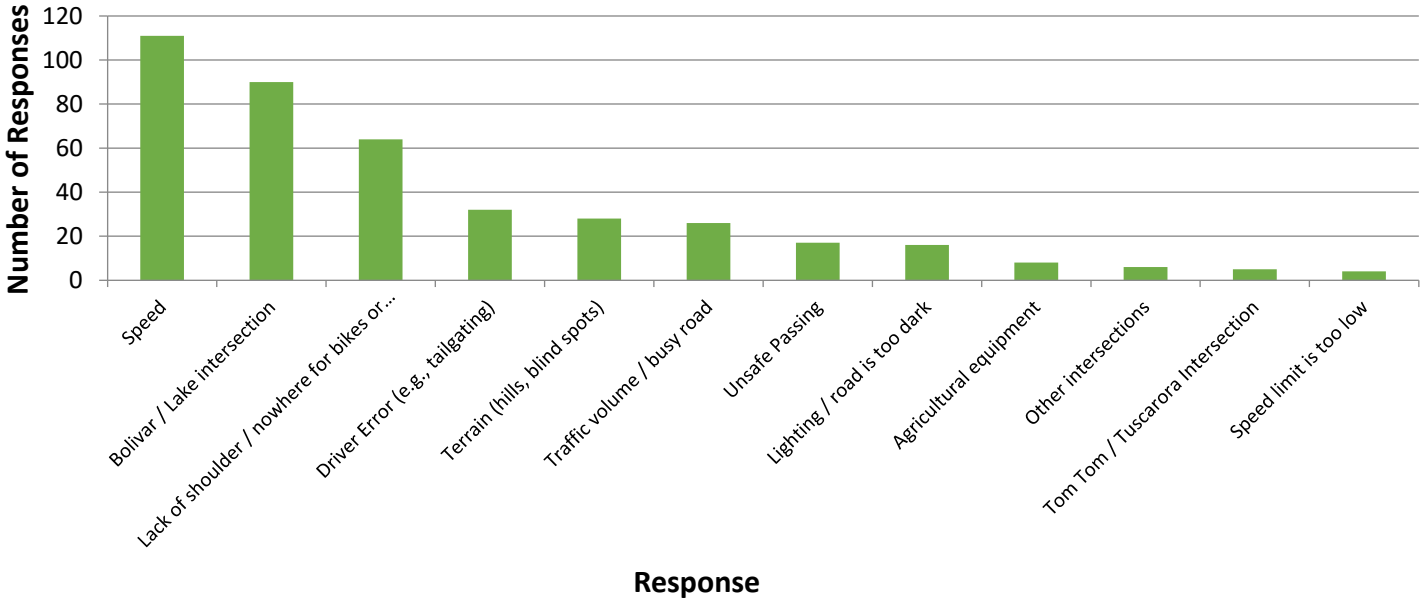
Motor Vehicles

Pedestrians and cyclists often note motor vehicle behavior as one of their top safety concerns, and that holds true for drivers in motor vehicles as well. Vehicle speed and driver error were cited as some of the top safety concerns for drivers, along with poor intersection design and a lack of space for pedestrians/cyclists, as seen in Figure 3.3.

Overall, residents rate Tuscarora Road as fair in terms of motor vehicle safety but believe there are specific areas of concern. One of the most highly cited examples is the Bolivar Road/Lake Street intersection.

Bolivar Road and Lake Street intersect Tuscarora Road at an oblique angle, making it difficult for drivers to view all approaching traffic. Northbound, eastbound, and westbound vehicles descend a grade as they approach the intersection, limiting their visibility. Drivers have

Figure 3.3: What safety issues have you noticed?



indicated that southbound vehicles on Bolivar Road encounter obstructed views due to utility poles and signage clustered near the intersection.

Currently there are two stop signs at the intersection, on Bolivar Road and Lake Street, allowing vehicles on Tuscarora Road to continue unimpeded. An all-way stop was utilized for four years, 1979 to 1983, in response to a significant increase in students walking to school after the school district failed to approve a budget including bus pick-ups. In 1983, concerns were raised by the Public Safety Commissioner Richard Carbery that vehicles may struggle to stop along Tuscarora Road in winter due to wet and icy conditions as they come down the hillsides, resulting in the removal of the two signs. The intersection does not currently meet the crash warrant for an all-way stop to be reinstated.

Other Issues

Chittenango Creek Bridge

Vehicles over five tons are restricted from using Tuscarora Road primarily due to a narrow bridge over the Chittenango Creek on the far eastern edge of the corridor. Signage has been increased at the intersection with Route 5 to emphasize that trucks must continue on Route 5 due to the weight restriction. Some larger vehicles still utilize Tuscarora Road, primarily for access to the Durfee farm.

Neighbors view the bridge as the primary reason more trucks do not use Tuscarora Road as a bypass of the village center, but the narrow bridge does not provide space for pedestrians and cyclists to cross without intermingling with vehicle traffic.

Farm Equipment

Agricultural equipment makes frequent trips along Tuscarora Road from both directions, primarily heading to and from the Durfee family farm. The farm is located along the northern edge of the Village between the North Ridge development and Burning Hollow Drive.

Farm equipment is often longer than traditional tractor trailers with lower clearances, making navigation along narrow roadways and obstacles more difficult. Turning movements around the farm entrance require additional space to accommodate these movements. Due to the slow speeds of many of these vehicles, other drivers have been known to speed up to overtake them although Tuscarora Road does not allow for such maneuvers.

CHAPTER 4 – STAKEHOLDER INVOLVEMENT

Overview

This project was completed between the spring of 2020 and the end of calendar year 2021, meaning that the COVID-19 pandemic prevented face-to-face contact for the entirety of the project. This proved to be an opportunity to explore virtual approaches to public involvement that had not been heavily utilized in past SMTC projects. All SAC meetings were held using the Zoom online meeting platform, a public presentation was posted to the SMTC's YouTube channel, and it was followed up by a live question and answer session, open to the public, that was also held by way of Zoom.

While in-person meetings have an intimacy that is difficult to replicate by way of a computer screen, the public involvement tools that were developed were extremely effective at gathering stakeholder input.

Study Advisory Committee

Five SAC meetings were held as part of this project and overall, SAC member input helped establish existing conditions, define project issues, and provided a sounding board for design concepts. Meeting notes are provided in Appendix A.

Tuscarora Road Advisory Committee

TRAC was initiated four years prior to the start of this study as a grassroots organization focused on traffic calming and safety issues on Tuscarora Road. It has since become an official Village of Chittenango committee that makes periodic presentations to the Village Board.

Two members of the Village of Chittenango's TRAC were also members of the project's SAC. As public involvement opportunities came up for this project, TRAC members' involvement meant that there was a conduit for project-related information to flow to the community, and vice-versa. TRAC members knocked on doors, posted messages on local social media sites, and distributed flyers to ensure that the Chittenango community knew about the online survey, the availability of the project's online presentation, and the date and time of the virtual question and answer session held in October 2021.

Public Involvement Opportunities

Online Survey

An online survey developed in Microsoft Forms was made available to the public from December 10, 2020, to January 9, 2021. The Village of Chittenango advertised the survey's availability on its Facebook page and TRAC members helped advertise it as well.

In total, 387 responses were received, providing valuable input on existing conditions and mobility issues. A complete summary of the survey is included in Appendix B.

Chittenango Rotary

SMTC staff attended a virtual meeting of the Chittenango Rotary on January 21, 2021. This included a brief presentation of the project's purpose and survey results.

Project Website and Video Presentation – YouTube

On September 29, 2021, SMTC staff uploaded a video presentation on this project to the agency's YouTube channel. The presentation summarized the study's purpose, key existing conditions data, survey results, and proposed design concepts.

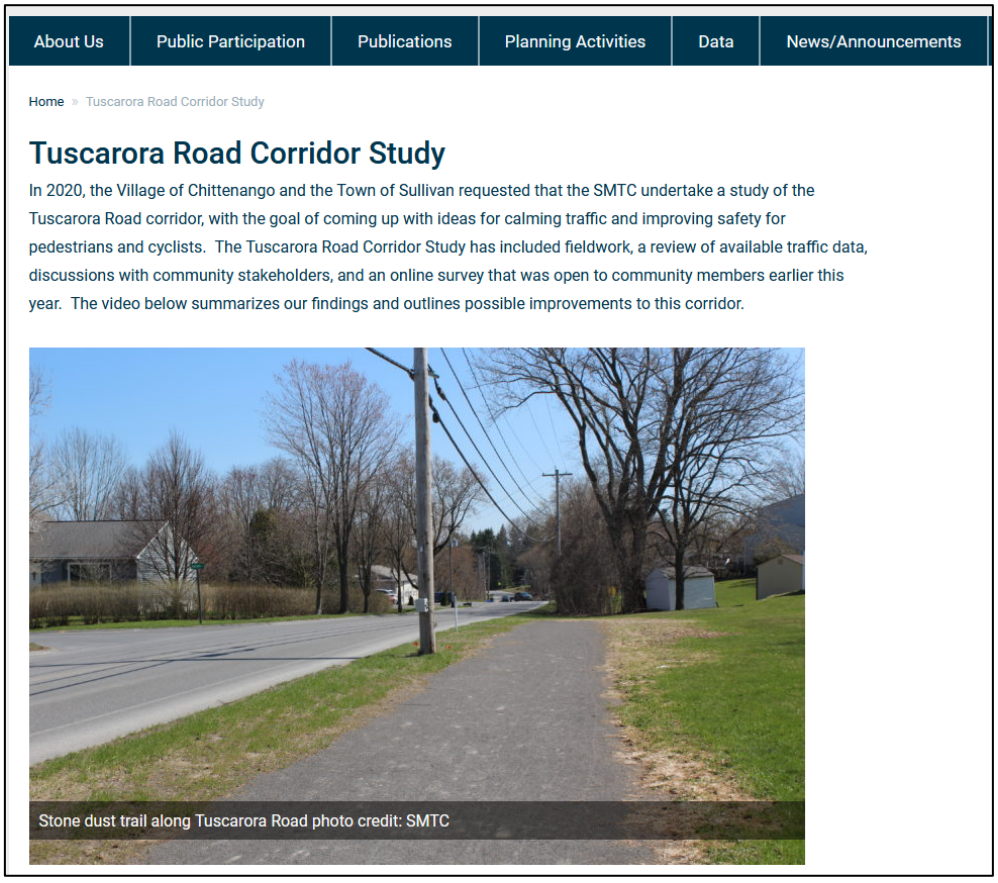
At the same time, a page was added to the SMTC's website to assemble information for the Tuscarora Road Corridor Study, including a link to the YouTube video. This web page also included information on the SMTC and provided members of the public with instructions on how to register for the October 13 virtual public meeting. The web page also included a comment form, which people could use to provide comments on the presentation.

The SMTC received a total of 42 comments by way of email on the video presentation. Comments are summarized by topic in Appendix C.

Virtual Public Meeting

A virtual public meeting, convened by way of the Zoom online meeting platform, was held on October 13, 2021 from 4:00 to 5:30 PM. Meeting attendees were required to register beforehand, with the registration link available on the project's website. The virtual meeting was also live streamed on the SMTC's YouTube channel.

The purpose of this meeting was to respond to comments and questions from the public. Twenty-four people participated in the meeting. A summary of this discussion is included as Appendix D.



Partial screen capture of SMTC's Tuscarora Road Corridor Study web page

CHAPTER 5 – DESIGN OPTIONS

Overview

Resolving the mobility issues on Tuscarora Road is a question of looking for design options that will:

- Provide the safest possible crossing points for pedestrians crossing Tuscarora Road.
- Reinforce the 30 M.P.H. speed limit (traffic calming).
- Improve safety at the intersection with Bolivar Road / Lake Street.
- Provide space for pedestrians and cyclists.

Since widening roadway shoulders has been shown in some cases to promote faster travel speeds, the design options proposed for this project are for off-road facilities for bikes and pedestrians: a combination of trails and sidewalks.

Additionally, creating a pedestrian-friendly Tuscarora Road means making some investments on the corridor's more developed eastern end.

Tuscarora Road's character is largely suburban, but large agricultural areas break up the corridor. To make it easier to think about improvements that will be compatible with the corridor's various development patterns, the study area was split into three sections:

- West End: the portion from West Genesee Street (Route 5) to Talbert Drive;
- Center Section: the portion from Talbert Drive to the Bolivar Road / Lake Street intersection;
- Eastern End: the portion from the Bolivar Road / Lake Street intersection to East Genesee Street (Route 5).

At least one concept was developed for each of these sections.

West End

Common Features

All the concepts proposed for this section of roadway include these two features:

- A raised crosswalk with a Rapid Rectangular Flashing Beacon (RRFB) at the Wheatfield Drive intersection.
    - Sight distance at this location has been measured as greater than 500 feet both eastbound and westbound.
- Landscaping and gateway signage at the Tuscarora Road / West Genesee Street intersection.

Concept 1A

This concept proposes:

- A trail along the south side of Tuscarora Road from West Genesee Street to Talbert Drive.
- A trail along the east side of Tom Tom Street, connecting Tuscarora Road to the Tops Plaza.

Concept 1B

This concept proposes:

- A trail along the south side of Tuscarora Road from West Genesee Street to Talbert Drive.
- A trail along Murray Street, connecting Tuscarora Road to Route 5.

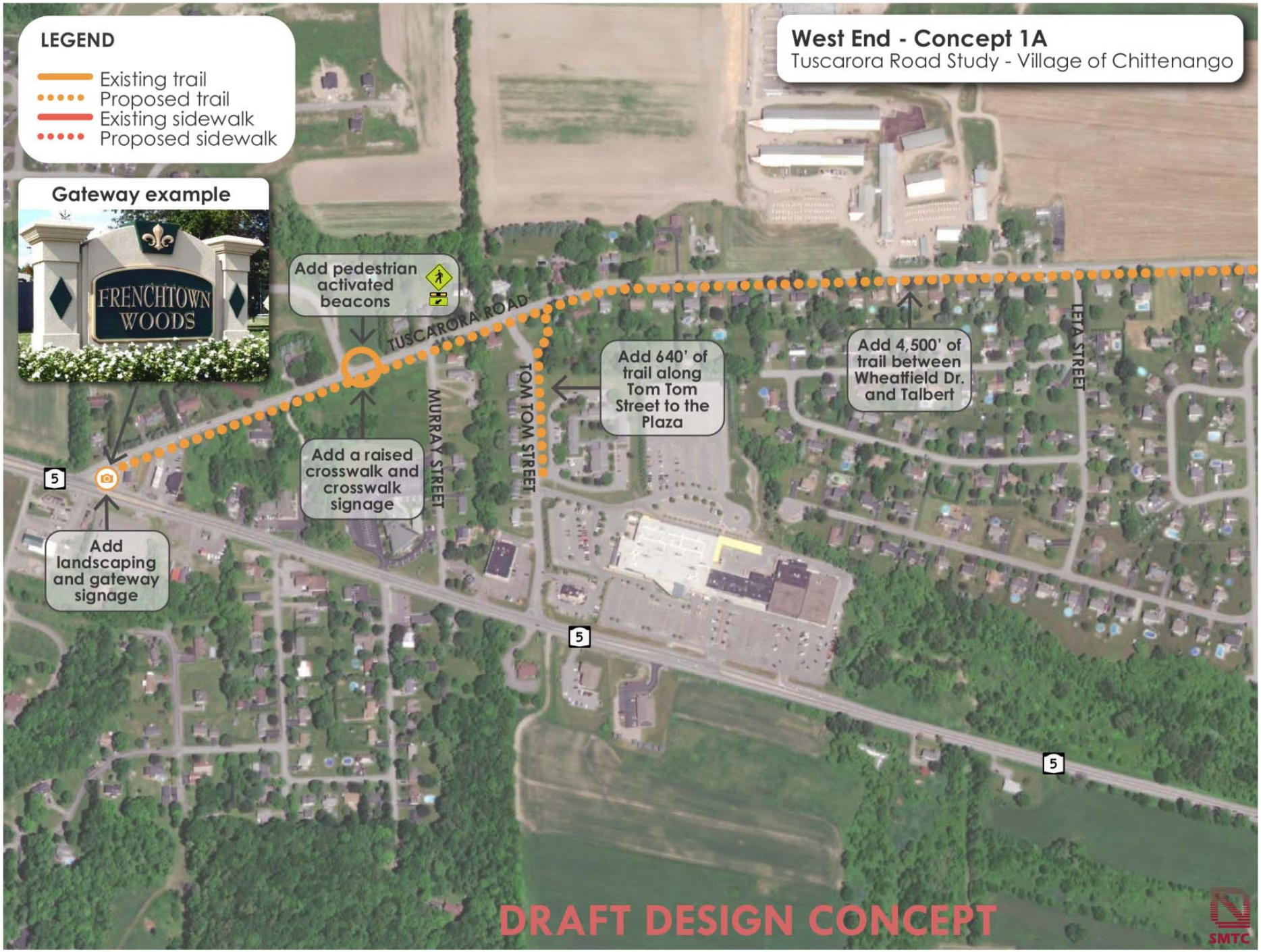


Figure 5.1: West End – Concept 1A

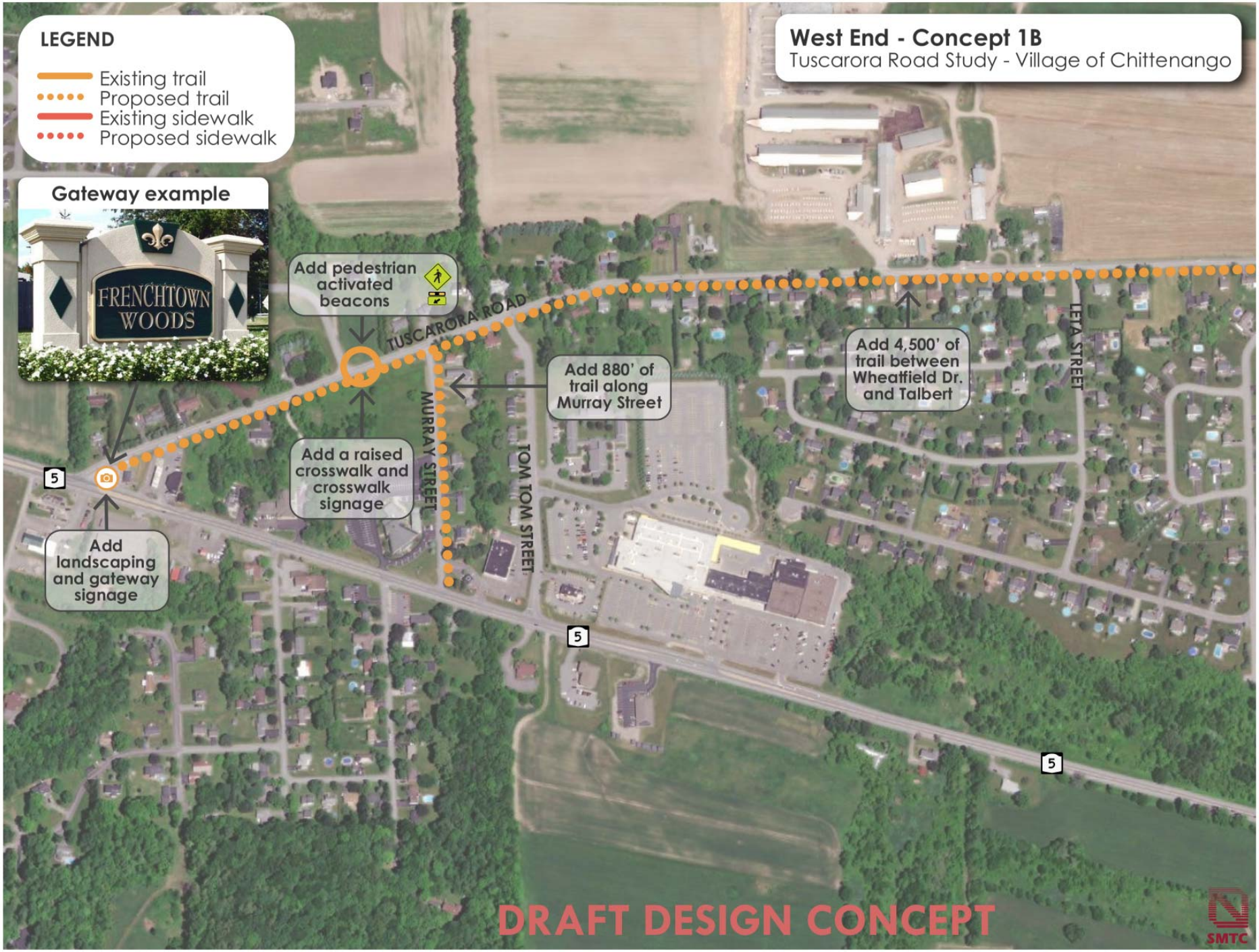


Figure 5.2: West End – Concept 1B

Concept 2A

This concept proposes:

- A sidewalk along the south side of Tuscarora Road from West Genesee Street to Talbert Drive.
- A sidewalk along the east side of Tom Tom Street, connecting Tuscarora Road to the Tops Plaza.

Concept 2B

This concept proposes:

- A sidewalk along the south side of Tuscarora Road from West Genesee Street to Talbert Drive.
- A sidewalk along Murray Street, connecting Tuscarora Road to Route 5.

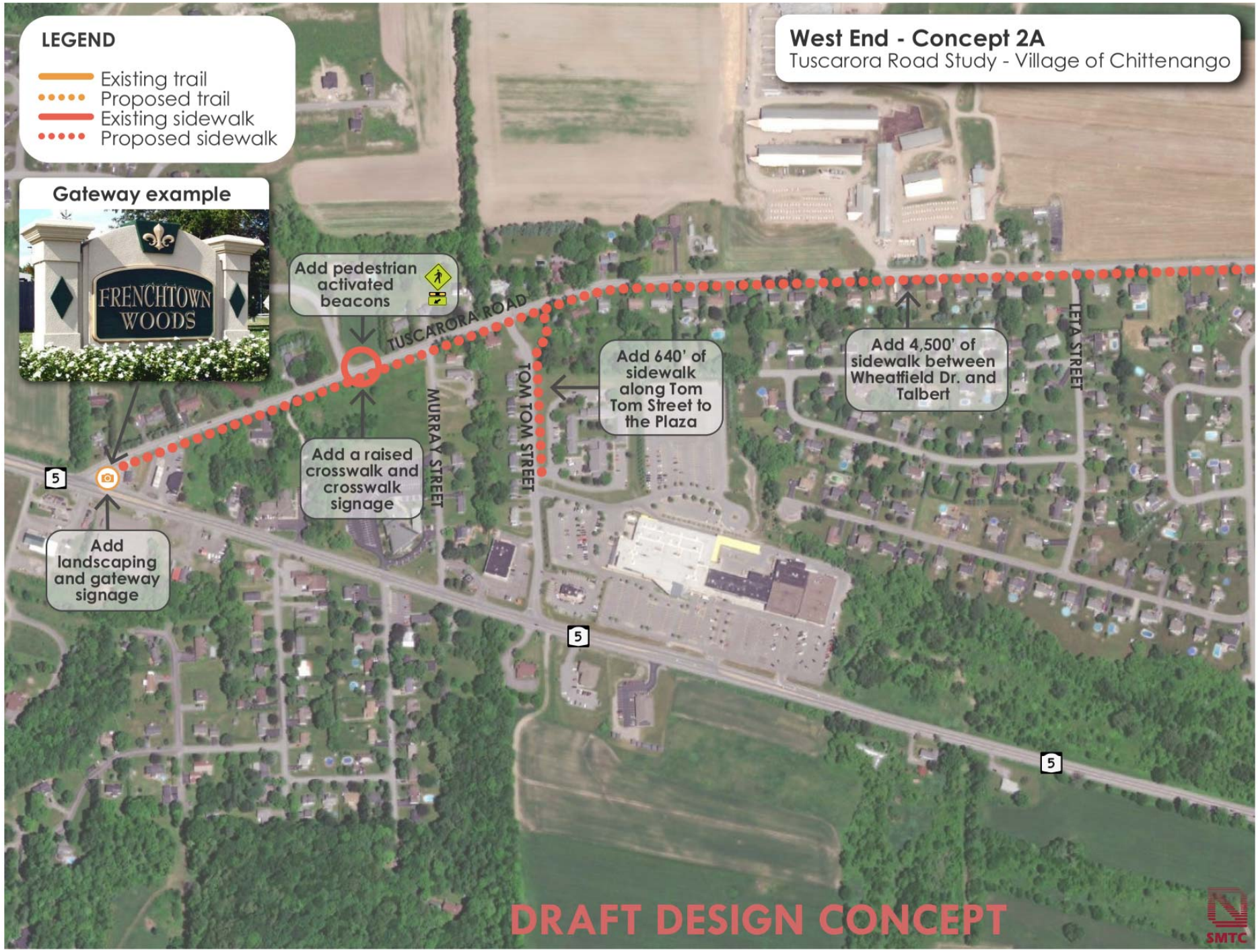


Figure 5.3: West End – Concept 2A

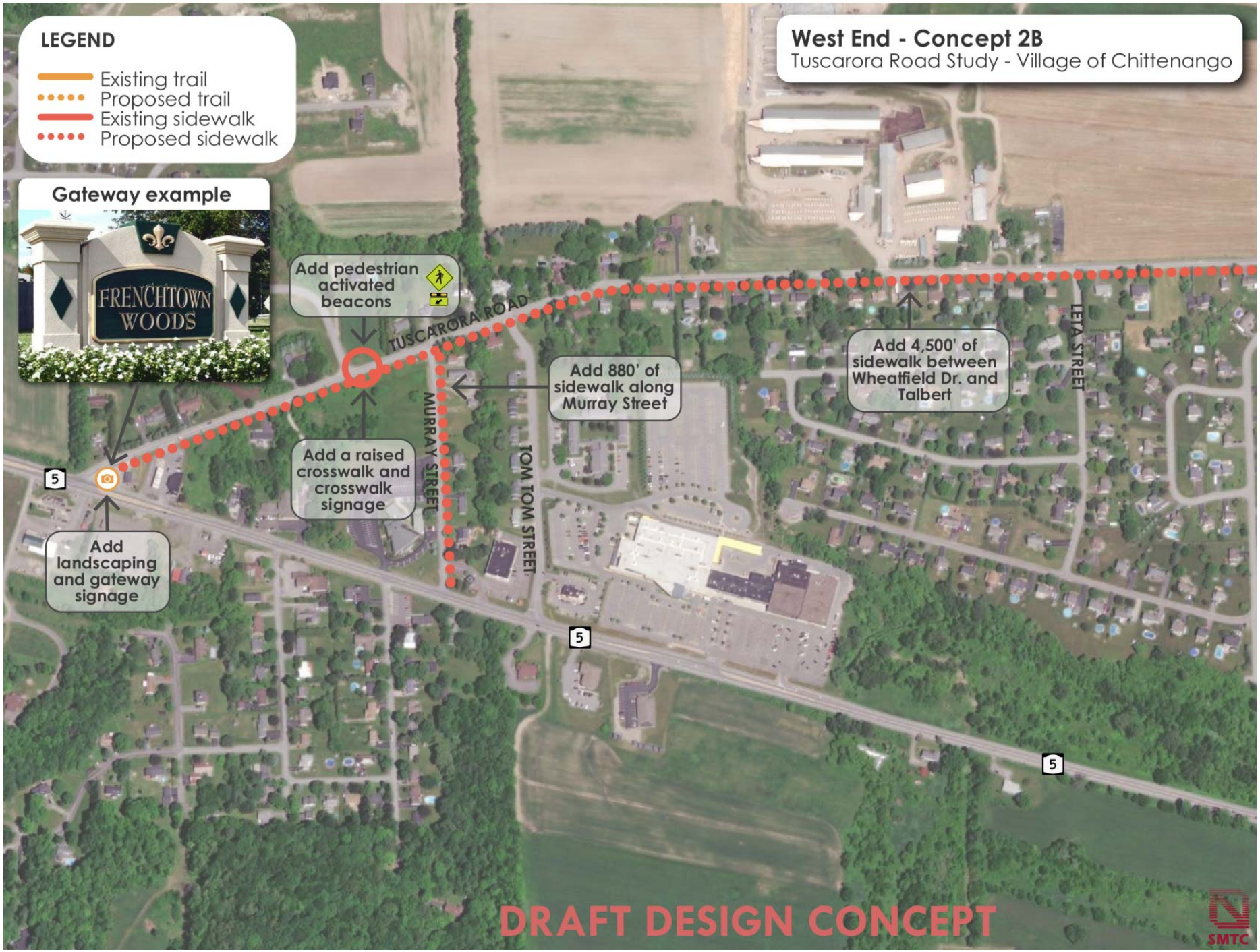


Figure 5.4: West End – Concept 2B

West End: Issues and Opportunities

Trails vs. Sidewalks

Trails

The per-foot cost of a new sidewalk is roughly four times higher than the per-foot cost for a trail made of compacted stone dust. The existing stone dust trail on the south side of Tuscarora Road cost between $40 and $60 per linear foot. Sidewalk cost estimates are typically in the range of $160 per linear foot. Additionally, sidewalks require complete replacement on a 20- to 30-year timeframe; a trail is not likely to need complete reconstruction at any point.

In addition to a cost advantage, trails are more versatile in terms of their design and use. While sidewalks in a suburban context are typically not wider than six feet, trails are often ten feet wide and can accommodate a variety of uses, from wheelchairs and strollers to groups of joggers to bicyclists. Sidewalks, on the other hand, do not typically accommodate cyclists.

Sidewalks

Concrete sidewalks provide a stable surface that can be designed to provide an all-weather walkway for all users. In the Village of Chittenango, the Village Code[8] puts the responsibility for snow removal on the adjacent property owner. This (theoretically) ensures that sidewalks along Tuscarora Road would be kept snow-free through the winter months. Snow clearance is a much more straightforward process for sidewalks than for stone dust trails, which can be damaged by shovels and snowblowers.

Sidewalks are also a good fit, aesthetically, with a residential area. Homeowners who are accustomed to thinking of the portion of the front yard in the public right-of-way as theirs may have fewer objections to a six-foot-wide sidewalk than to a ten-foot-wide stone dust trail. And a trail may present greater challenges in terms of "curb appeal" than a sidewalk, which can be edged and mown over.

Preliminary Recommendation

In terms of safety, a trail is the superior option. Adding standard six-foot sidewalks to this corridor would not resolve the issue of bicycles on Tuscarora Road. A compromise solution might be to consider a wide (eight or ten-foot wide) multi-use trail surfaced with asphalt rather than stone dust. Asphalt is less expensive than concrete and can be more easily maintained in the winter months.

If a stone dust trail is selected, the Town and Village should consider ways to provide edging along the trail.

Rapid Rectangular Flashing Beacon (RRFB)

Example of an RRFB dark (left) and illuminated during the flash period (center and right) mounted with W11-2 sign and W16-7P plaque at an uncontrolled crosswalk. *Source: FHWA Interim Approval for Optional Use of Pedestrian-Actuated Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks, 2018.*

RRFBs are proposed for the Wheatfield Drive crosswalk. These features "consist of two, rectangular-shaped yellow indications, each with a light-emitting diode (LED)-array-based light source. RRFBs flash with an alternating high

[8] While the Village of Chittenango Code is clear on public vs. private maintenance responsibilities, the Town of Sullivan's Code does not specify these responsibilities. Snow clearance and maintenance for sidewalks in the Town portion, west of Tom Tom Street, is unclear.

frequency when activated to enhance conspicuity of pedestrians at the crossing to drivers."[9] They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system.

NYSDOT's 2018 Traffic Safety & Mobility Instruction notes RRFBs "offer significant potential safety and cost benefits because it achieves very high rates of compliance at a very low relative cost in comparison to other more restrictive devices that provide comparable results, such as full midblock signalization." Statistics from FHWA support the potential safety benefit. They note the implementation of RRFBs can reduce crashes up to 47% and increase motorist yielding rates up to 98%.

Raised Crosswalk

All the concepts developed for the West End include the idea of a raised crosswalk at Wheatfield Drive, connecting the residential area west of Tuscarora to the village. Raised crosswalks, also known as speed tables, force all vehicles to slow to 25 M.P.H. and give pedestrians greater visibility to drivers. A more comprehensive discussion of raised crosswalks in this context is provided later in this chapter.

The western end of the Tuscarora Road corridor is not likely to see large numbers of pedestrians. The low density, sprawling nature of the residential development west of Tuscarora Road does not lend itself to walking trips to the grocery store or pharmacy. A raised crosswalk at this location would help calm traffic using Tuscarora Road. Combined with other traffic calming features elsewhere on the corridor, a raised crosswalk here would discourage cut-through traffic.

Landscaped Gateway

Another feature common to all the concepts for this segment of Tuscarora Road is the addition of gateway signage at the Route 5 / Tuscarora Road intersection. The Village and Town should consider ways to upgrade this community gateway.

Center Section

Common Features

Both concepts developed for this section include:

- A raised crosswalk with an RRFB at the Tuscarora Road / Burning Hollow Drive intersection.
    - Sight distance at this location has been measured at more than 500 feet both eastbound and westbound.
- A raised crosswalk with an RRFB at the Tuscarora Road / Naymik Drive intersection.
    - Sight distance at this location has been measured at more than 500 feet for eastbound vehicles and at 399 feet for westbound vehicles.
        - While the available sight distance is adequate, trimming vegetation at this intersection would improve visibility for westbound vehicles.
- A trail along the north side of Tuscarora Road, extending from Naymik Drive to the Bolivar Road / Lake Street intersection.

Concept 1: Roundabout

This concept proposes a roundabout at the Tuscarora Road / Bolivar Road / Lake Street intersection.

[9] https://safety.fhwa.dot.gov/provencountermeasures/rrfb.cfm

Roundabout Concept

Two factors make a roundabout at the Bolivar Road / Lake Street intersection worth contemplating:

1. A roundabout would have a traffic calming effect.
2. Roundabouts have been shown to dramatically improve safety.

The top two safety issues identified by survey respondents were speeding and safety at the Bolivar Road / Lake Street intersection.

Without question, a roundabout is a relatively major transportation investment. Single-lane roundabouts typically cost on the order of $900,000 to $1.5 million. Roundabouts also have a much larger footprint than a standard right-angle intersection: some right-of-way acquisition would be necessary.

There are many public misconceptions about roundabouts that should be clarified.

- Large vehicles, including tractor-trailers, school buses, emergency vehicles, and large pieces of agricultural equipment, *can* use a properly designed roundabout without significant delays. The center island of a roundabout typically includes a mountable curb, designed to be used by large vehicles.
- Roundabouts typically have a vegetated, aesthetically pleasing center island.
- Carrier Circle in Onondaga County is not an example of the kind of roundabout being considered. Carrier Circle's diameter is on the order of 700 feet; a roundabout in this location would have a diameter on the order of 110 feet. Also, Carrier Circle and some other large traffic circles in the region have multiple traffic lanes, which can be difficult for pedestrians and cyclists, and confusing for drivers. A roundabout at the Tuscarora Road / Bolivar Road / Lake Street intersection would have more than enough capacity for existing traffic volumes with a single lane for traffic.

Another issue that was raised in the discussions of the roundabout concept was the grade of the approaches to this intersection.

The Federal Highway Administration's most recent and comprehensive guidance on roundabout designs states that: Entry grade profiles (approximately two car lengths from the outer edge of the circulatory roadway) should not exceed 3%, with 2% being the desirable maximum."[10]

Grades through the existing Tuscarora Road / Bolivar Road / Lake Street intersection and within 150 feet on all approaches is less than three percent. There are moderate grades on adjacent approaches within 200 to 300 feet: the northbound approach being the steepest at 8.2 percent. The Tuscarora Road approaches are relatively gentle, the eastbound approach has a 5.5 percent slope, while the westbound approach has a 4 percent slope.

The steepest slope, the northbound approach, currently has a stop sign at this intersection.

[10] Federal Highway Administration, *Roundabouts: An Informational Guide, Second Edition*. 2010. Available online: https://nacto.org/docs/usdg/nchrprpt672.pdf

Concept 2: Intersection Realignment

This concept proposes realigning the Tuscarora Road / Bolivar Road / Lake Street intersection to create northbound and southbound approaches that are at right-angles to the intersection, rather than the existing skewed approaches.

Intersection Realignment Concept

One of the frequently cited safety issues with the Tuscarora Road / Bolivar Road / Lake Street intersection is the skew of the southbound and northbound approaches. In addition to the intersection's oblique angle, sight distances are obscured by utility poles and the intersection sits at the bottom of a basin drained by a small, unnamed stream. Realigning and possibly re-locating this intersection to create right-angle approaches would likely be significantly less expensive than a roundabout and might correct the intersection's safety issues. While this approach does not provide the traffic calming benefits or safety improvements of a roundabout, it may not require additional right-of-way and would likely require less construction time.

Center Section: Issues and Opportunities

Raised Crosswalks

See the general discussion of the pros and cons of raised crosswalks on this corridor later in this chapter.

Rapid Rectangular Flashing Beacon (RRFB)

RRFBs are recommended to accompany the two crosswalks proposed for this section.

Trail Concept

A trail is proposed in this section, rather than a sidewalk, because of the roadway's rural character. East of Naymik Drive, development along Tuscarora Road is less concentrated and distances between destinations increase. The cost of providing a sidewalk along this section of Tuscarora Road would be substantial. A trail, appropriately designed to be compatible with residential uses, would improve mobility for residents of this area and for bicyclists and pedestrians moving east-west across the village.

Figure 5.5: Center Section – Existing Conditions

Figure 5.6: Center Section – Concept 1

Figure 5.7: Center Section – Concept 2

East End

Concept Features

The design concept for the East End of Tuscarora Road is intended to both capitalize on and reinforce this section's already developed character. In addition to making this area more pedestrian friendly, these improvements would slow vehicles down and convey to drivers that this is a residential street, not a rural cut-through route.

Currently, the eastbound approach to the Tuscarora Road / Route 5 (East Genesee Street) intersection does not signal to drivers that Tuscarora Road is a developed, local road intended primarily for local users. Instead, the road's cross-section is very similar to that of Route 5 further east. The lack of on-street parking and other characteristics of a "village" street, such as a relatively narrow width (many village streets are 20 feet wide, compared to the 40-foot width of Tuscarora Road on its eastern end) and the enclosing elements of curbs, sidewalks, and street trees.

The concept includes:

- Continuing a trail from the Bolivar Road / Lake Street intersection, along the north side of the road.
- Adding streetlights to ensure that the trail and road are illuminated at night.
- Adding a prefabricated pedestrian bridge over Chittenango Creek to allow the continuation of the trail across the creek.
- Creating a raised intersection at the Race Street / Manor Drive intersection.
- Completing the sidewalk on the north side of Tuscarora Road, including converting off-street parking to a sidewalk and green space buffer between the sidewalk and street (also known as a "furniture zone"), and adding on-street parking.

Figure 5.8: East End – Existing Conditions

Figure 5.9: East End – Concept 1

East End: Issues and Opportunities

Trail and Overhead Lighting

The portion of Tuscarora Road between Bolivar Road and Manor Drive is largely undeveloped, making it an ideal location for a trail. While overhead lighting is present in this area, there is a gap of 770 feet with no overhead lighting just west of Chittenango Creek. Given that overhead lights are typically spaced apart by 100 to 200 feet, this section would benefit from the addition of between four and six new overhead lights.

Chittenango Creek Bridge

The existing bridge over Chittenango Creek does not have pedestrian-friendly shoulders. Shoulder width is under three feet, which is insufficient for such simple activities as two people walking abreast, or two bicyclists and two vehicles using the bridge simultaneously.

Replacing this bridge would be costly and, to some extent, undesirable. The existing bridge's condition limits its use by trucks over five tons. If it were replaced with a wider, newer structure, this restriction would be removed and heavy vehicle volume would almost certainly increase.

Adding a prefabricated steel or wooden bridge over the creek may be a more cost-effective and visually appealing solution.

While costs for prefab bridges can vary wildly depending on design and installation specifics, most sources put the cost of a 10-foot wide, 90-foot-long bridge at under $500,000. It should be noted, however, that bridge installation over Chittenango Creek would likely require a hydrological report and a geological evaluation, in addition to the cost of adding abutments and supporting structures.

Raised Intersection

The purpose of a raised intersection at the intersection of Tuscarora Road with Race Street and Manor Drive is twofold: to serve as a traffic calming feature that will deter cut-through traffic, and to highlight the Chittenango Creekwalk's northern leg, running from Tuscarora Road to Chittenango Landing and the Erie Canalway Trail.

Sidewalks and On-Street Parking

Several members of the public noted in their comments on this concept that it seems illogical to sacrifice the off-street parking currently available to the shops and offices on the north side of Tuscarora Road for a sidewalk when there is already a sidewalk on the south side of the road.

Off-street parking adjacent to a building's front entrance clearly has value to individual property owners and to some customers. On the other hand, implementing a more traditional street cross-section, utilizing only property within the existing public right-of-way, would make the street more attractive and could be part of the redevelopment of this part of the village.

Creating a new, more urban cross-section on Tuscarora Road in this area should be a long-term goal for the Village.

General Discussion: Raised Crosswalks and Raised Intersections

Design

Raised crosswalks and intersections are relatively new traffic calming treatments; they are not features found in most communities. Members of the public tend to be more familiar with speed bumps, which have been in use for decades.

NYSDOT's Engineering Instruction 13-018 on Raised Crosswalks[11] provides some important details on the design and effectiveness of these features:

- Effectively, the design provides an algebraic difference in slope of 4% that operates similar to a vehicle crossing the normal crown of a major highway. The concrete approach slabs help provide a visual contrast and the illusion that the vertical change is greater than 4" (100 mm).
- New York State's Complete Streets Law, which became effective in February 2012, identifies raised crosswalks as one of a number of roadway design features that "accommodate and facilitate convenient access and mobility by all users."
- Based on NCHRP 500 Volume 10 A Guide for Reducing Collisions Involving Pedestrians, the risk of auto crashes with pedestrians increases for highways with posted speeds over 30 mph and the chance of death greatly decreases with lower speeds (from 5% at 20 mph, 45% at 30 mph, to around 90% at 40 mph).
- Based on FHWA's Engineering Countermeasures for Reducing Speeds, raised crosswalks (a.k.a. speed tables) have been found to reduce operating speeds 14% to 24%.
- While HDM [Highway Design Manual] Chapter 25 (Table 25-1) only recommends the use of raised crosswalks on local streets and roads, and prohibits the use of speed humps/speed bumps (including all vertical measures) to control speed on New York state highways, it has become evident that raised crosswalks are often appropriate in applications that have been excluded by this chapter.

Photo simulation of a raised crosswalk near Naymik Drive

Emergency Response

Because they require all vehicles to slow down, raised crosswalks should only be installed in cooperation with emergency response providers, including fire and ambulance services.

Traffic Diversion

The Federal Highway Administration's online *Traffic Calming ePrimer*[12] is one of the few sources to identify a measurable change in traffic volumes after installation of raised crosswalks (also known as speed tables). It says:

> Data collected at 58 speed tables demonstrate that they can have a wide-

[11] NYSDOT Engineering Instruction 13-018 - Raised Crosswalks. August 30, 2013. Available online: https://www.dot.ny.gov/portal/pls/portal/mexis_app.pa_ei_eb_admin_app.show_pdf?id=11366

[12] Federal Highway Administration, *Traffic Calming ePrimer*, Module 4: "Effects of Traffic Calming Measures on Motor Vehicle Speed and Volume". Available online: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

ranging effect on traffic volume. The average reduction in the reported daily volumes is 20 percent (the same average as for speed humps), with values ranging between a reduction of 57 percent and an increase of 53 percent of the total traffic.

This data suggests a wide range of possible outcomes for Tuscarora Road, if raised crosswalks are added. While the likelihood of a traffic volume *increase* resulting directly from the addition of raised crosswalks seems remote, it should be acknowledged that the change in volume could be negligible. At the same time, the reported average decrease in volumes of 20 percent is significant. On Tuscarora Road, that would equate to a decrease of more than 1,000 vehicles daily.

Agricultural Equipment

Comments from representatives of Durfee Farm on Tuscarora Road indicate that, while the farm's large pieces of agricultural equipment would likely be able to traverse a standard raised crosswalk – particularly if its vertical profile were only three inches – it might be the case that the equipment would have to come to a complete stop to do so. This introduces additional hazards to the flow of traffic on Tuscarora Road, since the shoulders average only two or three feet, providing insufficient space for large pieces of equipment to get out of the flow of traffic.

This would seem to present a powerful challenge to the use of raised crosswalks: speed and dangerous passing movements have been noted as issues on this corridor. Adding large agricultural vehicles at a full stop to the mix of traffic on Tuscarora Road would run contrary to the intent of adding raised features.

However, the benefits of raised crosswalks and intersections are such that this is a suitable area for further study by the Town and Village, in cooperation with Durfee Farm and other farms in the area. Temporary, rubber speed tables could be installed on a trial basis – possibly on a lower volume street – to test their effects on agricultural equipment.

Snowplows

A frequent objection to raised crosswalks and intersections is that they would either be damaged by or cause damage to snowplows. The experience in other snowy communities that have installed these features is that this is not a major concern. In some cases, signs are installed to remind snowplow operators that a raised feature is present on the street. This can be combined with some additional training for snowplow operators.

CHAPTER 6 – IMPLEMENTATION PLAN, COSTS, AND CONCLUSION

Implementation Plan

This study is an evaluation of the suitability of various design improvements to the Tuscarora Road corridor. Some of the proposed elements are relatively minor: adding crosswalks is a straightforward process that most municipalities can implement easily. Others are far more complicated and expensive, such as adding a roundabout or a new pedestrian bridge over Chittenango Creek. If the Town and/or Village are not able to find funding for all the proposed improvements in a single package, the following presents an approach to piecemeal implementation over time.

Short-Term (1 – 3 years)

Crosswalks and RRFBs

Sight distances are suitable, and residents report sufficient pedestrian demand to justify adding crosswalks at Naymik Drive and Burning Hollow Drive. Given the complications involved with adding raised crosswalks, the Village should plan on implementing at-grade crosswalks in the short term.

Sidewalks or trails (West End, Central Section)

Although further discussions within the community may be necessary to identify which approach to advance, survey results show preference for the installation of sidewalks or trails. Although sidewalks may be the better selection for safety, they do not speak to the interests of bicyclists. A compromise in the West End could be a multi-use path. A trail is recommended for the Central Section.

Bolivar Road / Lake Street re-alignment

If the idea of a roundabout is not fully supported, the re-alignment concept may be a more financially palatable approach. Further engineering analysis and design is necessary to advance the concept.

Mid-Term (3 – 5 years)

Bolivar Road / Lake Street roundabout

As previously noted in Chapter 5, a roundabout would have a traffic calming effect, which is one of the primary purposes for completing this planning level examination. Like the re-alignment concept, further engineering analysis and design will be needed.

East End Trail

The segment of Tuscarora Road between Bolivar Road and Chittenango Creek is predominantly open space and agricultural land. Developing a trail along the north side of the road in this segment is unlikely to encounter opposition from adjacent property owners.

Chittenango Creek Pedestrian Bridge

Adding a pedestrian bridge over Chittenango Creek is likely to be a relatively expensive and time-consuming project. It will require engineering analyses that will likely constrain the design and materials that can be used for a bridge. But this is a critical link in non-motorized accessibility on this corridor: the existing bridge is not conducive to pedestrian or bicycle use. Developing a continuous trail on this corridor should include an additional bridge for non-motorized travel, and this element of the system should be prioritized.

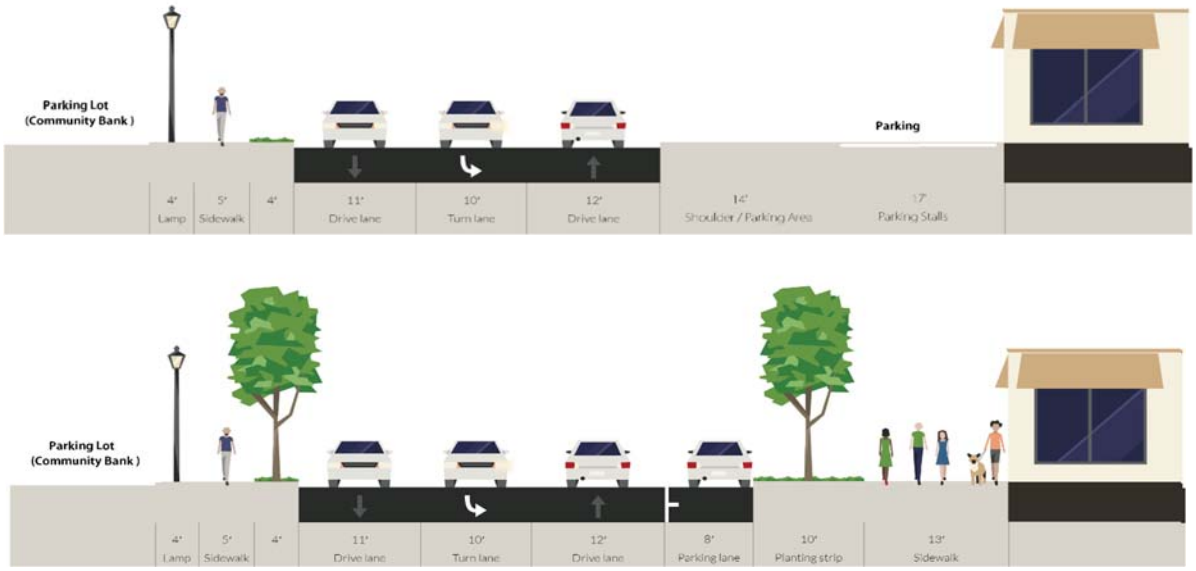
Long-term (5 – 20 years)

East End Streetscape

Through their comments on this project, business owners on the east end of Tuscarora Road, as well as other stakeholders, signaled

their opposition to the loss of off-street parking in this area. It was not within the scope of this study to conduct property boundary surveys to determine the extent of the public right-of-way. The Village should establish the limit of the public right-of-way and develop designs that can more effectively utilize this public space. As ownership and use of the properties in this roadway segment change, the Village should seek opportunities to upgrade this streetscape.

Figure 6.1: Tuscarora Road eastern end cross-section



Cross-section of the existing (top) eastbound Tuscarora Road approach to the Tuscarora Road / Route 5 intersection, with proposed (bottom) features, including street trees and sidewalks.
Source: www.streetmix.net.

Table 6.1: Implementation Approach

Treatment	Short-term	Mid-term	Long-term
Crosswalks and RRFBs	X		
Sidewalk	X (West End multi-use path)		X (East End)
Trail	X (Central)	X (East End)	
Intersection re-alignment	X		
Roundabout		X	
Pedestrian bridge		X	
Streetscape			X

Cost Estimate

At the planning stage, costs are extremely difficult to estimate. The per-item / per-foot costs in Table 6.1 are provided for order of magnitude cost estimating. Sources for these costs vary from discussions with local officials to national publications.

The cost estimates in Table 6.2 can be aggregated into extremely rough costs for the design concepts presented in Chapter 5, as shown in Table 6.3. Refinements to any one concept would necessitate a closer examination and identification of appropriate per item costs.

Table 6.2: Approximate Costs for Design Elements

Item	Per Item Cost	Per Foot Cost
Gateway Signage w/ Landscaping[1]	$5,000	
Rapid Rectangular Flashing Beacon (RRFB)[2]	$22,250	
Raised Crosswalk and Crosswalk Signage[3]	$8,000	
Trail[4]		$41
Sidewalk[5]		$195
Roundabout[3]	$1,075,000	
Intersection Approaches Re-alignment[3]	$11,000	
Overhead Lighting[6]	$7,500	
Prefab Bridge[7]	$1,000,000	
Raised Intersection[3]	$38,000	
On-street Parking[3]	$6,000	

[1]SMTC, City of Syracuse Wayfinding Study - Phase II
[2]UNC Highway Research Center, Costs for Pedestrian and Bicycle Infrastructure Improvements
[3]FHWA, Traffic Calming ePrimer
[4]Chittenango Department of Public Works
[5]NYSDOT, Quick Cost Estimator - May 2018
[6]NYSDOT Region 3
[7]NYSDOT Bid History (Bridge cost estimated at $500,000; engineering analysis and installation estimated at $500,000)

Table 6.3: Order of Magnitude Costs by Design Concept

Tuscarora Road Segment	Concept	Order of Magnitude Cost Estimate
West End	1A	$245,000
	1B	$255,000
	2A	$1,040,000
	2B	$1,085,000
Center Section	1	$1,340,000
	2	$280,000
East End	1	$1,200,000

Additional Research Needs

The scope of the Tuscarora Road Corridor Study does not allow resources for some logical next steps. The Village and Town should consider allocating resources to undertake the following activities in order to develop a clearer sense of the pros and cons of design ideas:

- **Online Survey:** the Village and TRAC were able to foster a remarkable amount of interest in the online survey conducted as part of this project. A follow-up to the SMTC's online survey could include more targeted questions on areas that remain ambiguous, such as the pros and cons of sidewalks and trails, or how residents would react to an asphalt trail.
- **Roundabout – Preliminary Engineering:** There was sufficient interest in the roundabout concept to warrant further study by an engineering firm. Such a study should include various design options, discussions with Durfee Farm regarding vehicle requirements, an analysis of cost savings (for example, in the form of reduced accident rates), and a detailed cost estimate, including right-of-way needs for various designs.
- **Pedestrian Bridge – Preliminary Engineering:** An engineering assessment of the Chittenango Creek channel and depth to bedrock would help clarify the costs associated with this option.

Conclusion

This study's goal is to propose traffic calming and bike- and pedestrian-friendly design concepts for the Tuscarora Road corridor and to get feedback from the residents of Chittenango on these ideas. Thanks in large part to the involvement of the TRAC and the Village's ability to engage residents, this project gathered a substantial amount of public feedback on ways to improve the Tuscarora Road corridor for all users. The attached appendices provide an extensive record of the SAC's discussions and the public's input. This study provides the Village and Town with a starting place for more detailed discussions of how best to improve the corridor.

APPENDICES

APPENDIX A – SAC NOTES

APPENDIX B – SURVEY RESULTS

APPENDIX C – PUBLIC COMMENTS BY EMAIL

APPENDIX D – Q&A NOTES

APPENDIX E – TRAFFIC COUNTS

APPENDIX A – SAC NOTES

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Meeting Notes

Tuscarora Road Corridor Study

Study Advisory Committee Meeting 1

August 24, 2020
Via Zoom
10:00 – 11:00 AM

Attending

Name	Affiliation
Elizabeth Bough-Martin	Mayor, Village of Chittenango
Liz Ross	Co-Chair, Tuscarora Citizens Group
Tim Stell	Co-Chair, Tuscarora Citizens Group
Andy Busa	Highway Supervisor, Town of Sullivan
Russ Wehner	Board Member, Village of Chittenango
Ike Achufusi	NYSDOT Region 3
Beth Watts	NYSDOT Region 2
Julie Baldwin	NYSDOT Region 3
Mario Colone	SMTC
Aaron McKeon	SMTC
Kevin Kosakowski	SMTC
Thomas Bardenett	SMTC

Introductions and Overview
Mr. McKeon started the meeting off with introductions and by stating the project's purpose, which is to reduce volumes and improve safety for cyclists and pedestrians on Tuscarora Road.

Ms. Ross pointed out that it is important to bear in mind that a large proportion (roughly 50 percent) of all village residents are connected to Tuscarora. Safety problems on this route affect many village residents.

Mayor Bough-Martin said that she has noticed an increase in bicyclists and pedestrians using Tuscarora Road in recent months. The Village is in the process of extending the trail along the south side of the road from Hearthstone to Naymik Drive. Currently, there are no crosswalks planned.

Ms. Ross said that non-motorized traffic on Tuscarora consists primarily of joggers, groups of children, and families. Generally, pedestrians seem to travel along Tuscarora from one residential side street to another, rather than traversing its entire length. In addition to the businesses in the village, pedestrians may be destined for special events, such as weekly farmer's markets (in the summer), Oz-Stravaganza, or other community events.

Mr. McKeon pointed out that one advantage that the Town and Village have in this situation (relative to other similar roadways) is that Tuscarora is locally owned. The Town and Village have the authority to implement valid solutions. The road is in relatively good condition, in terms of pavement.

Data Collection

Sight Distance

Mr. Busa said that it would probably be possible to ask the Madison County Department of Transportation for assistance with sight distance measurements.

Locations on Tuscarora discussed:

- Naymik Drive
- Burning Hollow
- Hearthstone
- Wheatfield Drive
- Murray Drive

Heavy Vehicles

Mr. Busa said that one issue that should be looked at is the signage for westbound heavy vehicles on Route 5. Specifically, signage should be improved to prevent heavy vehicles from proceeding straight through this intersection to Tuscarora Road, which has a bridge with a weight limit. Signage on the weight restriction isn't clearly visible until trucks are already on Tuscarora Road, meaning that they must then turn around in the parking areas just east of the bridge – the area in which the Chittenango Creek Walk will cross Tuscarora Road. Ms. Watts mentioned perhaps someone from NYSDOT Region 2 Traffic & Safety could provide input or a review when the time is appropriate.

- Can GPS / Google Maps be adjusted to direct trucks to take Route 5 through the village?

Public Involvement

Mr. McKeon said that the draft Public Involvement Plan would be forwarded to SAC members for their review. As a result of COVID-19 restrictions, this will involve more virtual public participation than normal.

- Mayor Bough-Martin said that many Chittenango residents actively use social media – both the official Village Facebook page and other unofficial Facebook pages – to talk about community issues.

    - Social media could also be a good way to get feedback from residents – people will respond if we put questions on these forums.
- Public participation efforts need to include the school district and civic groups.

Creek Walk
Mayor Bough-Martin said that the Village is not yet in possession of the portion of the planned creek walk corridor between Tuscarora and Chittenango Landing, but this is anticipated soon.

- The existing crosswalks at Race Street / Manor Drive will get pedestrians across Tuscarora Road; there is a sidewalk on the north side of Tuscarora connecting Manor Drive to the proposed creek walk corridor.

Tuscarora / Bolivar
- Known as a dangerous intersection – skewed angle of Bolivar / Lake approaches combined with a grade on both Tuscarora approaches mean problems.
- Past interventions:
    - Stop signs were in place on Tuscarora approaches in the late 70s / early 80s, when budget restrictions at the school district meant more kids walking to school.
        - Stop signs were removed in the early 80s – partly because police were concerned that vehicles on Tuscarora (coming down hills) would have trouble stopping on snowy/icy roads.
    - Larger stop signs on Bolivar / Lake approaches were installed at some point.
- Conditions:
    - The stream that flows through the intersection sometimes floods the roadway.
    - Telephone poles obstruct line of sight.
    - Large farm vehicles drive through the intersection periodically.
- Roundabout concept
    - Would use some adjacent (private?) right-of-way.
    - Traffic calming and safety improvement.

I-81 Viaduct – Community Grid Alternative
Mayor Bough-Martin asked what the likely impacts would be on Route 5 traffic volumes if the current I-481 were to become I-81, as proposed under NYSDOT's Community Grid alternative on the I-81 Viaduct Project.

Ms. Baldwin indicated that she thinks the State's preferred community grid alternative, if built, would likely have a minimal impact on traffic volumes on Route 5 in/through the Town of Sullivan and Village of Chittenango.

Adjournment
Mr. McKeon closed out the meeting.

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Meeting Notes

Tuscarora Road Corridor Study

Study Advisory Committee Meeting 2

February 10, 2021
via Zoom
10:00 – 11:30 AM

Attending

Name	**Affiliation**
Elizabeth Bough-Martin	Mayor, Village of Chittenango
Liz Ross	Co-Chair, Tuscarora Road Advisory Committee
Tim Stell	Co-Chair, Tuscarora Road Advisory Committee
Russ Wehner	Trustee, Village of Chittenango
Katelyn Kriesel	Councilor, Town of Manlius
Andy Busa	Highway Supervisor, Town of Sullivan
Jamie Kowalczk	Madison County Planning Department
Ike Achufusi	NYSDOT Region 3
Beth Watts	NYSDOT Region 2
Mario Colone	Program Manager, SMTC
Aaron McKeon	Project Manager, SMTC
Kevin Kosakowski	Transportation Planner, SMTC
Thomas Bardenett	Junior Transportation Planner, SMTC

Introductions and Overview
Mr. McKeon started the meeting off with introductions and by outlining the meeting's agenda, including a discussion of existing conditions, the results of the online survey, and a discussion of issues and ideas for the corridor.

Existing Conditions
Mr. McKeon presented data on traffic volumes, average speeds, 85th percentile speeds, roadway characteristics, and collision history.

Online Survey
Mr. McKeon presented the results of the online survey, which was advertised to Chittenango residents by way of local Facebook pages and groups. Nearly 400 responses were received, providing an excellent snapshot of residents' views on existing conditions, issues, and suggested improvements.

Mobility Issues Discussion
Western End – Route 5 to Talbert
Mr. McKeon opened the floor to a discussion of mobility issues on the Tuscarora Road corridor, including motor vehicle, pedestrian, and bicycling issues, starting with the westernmost portion of the corridor. A summary of key points follows.

- Ms. Bough-Martin: Commercial development has been proposed on Route 5 just west of Megnin Farms – also, the area south of Route 5 near the Tuscarora intersection is a natural location for future commercial development.
- Mr. Busa: The Lakeport Mini Market (Citgo station) at the Route 5 / Tuscarora intersection recently changed hands – the new owners are looking to change its image and offer more prepared foods, but not expand the building.
- Mr. Stell: The shopping plaza (Dunkin' Donuts, Tops, Walgreens) is a draw for teenagers who are, generally, on foot.
    - There is a pathway that connects the plaza to the local street network. Kids (and other pedestrians) use the path and parking lots to move around in this area.
- Ms. Kriesel: The Town of Manlius and the Town of Sullivan / Village of Chittenango have opportunities to work together to improve east-west connections for bicyclists and pedestrians.
- Mr. Busa: Tuscarora Road is currently a cut-through road and that is not likely to change. What can be done to improve safety?

Central Section – Talbert to Bolivar
Mr. McKeon showed a photo of the walking path on the south side of Tuscarora Road, taken a few days prior to the meeting. The path is covered in snow but tracks in the snow indicate that it is being used even in the winter months.

- Ms. Bough-Martin: The Village didn't think people would use the trail in the winter – it can't be kept clear with a plow, because it's a stone dust trail.
    - Mr. Busa: He is part of a group of a group of joggers that runs a loop through the village, including this section of trail.

- In response to Mr. McKeon's question ("Why use Tuscarora, not village streets to move east-west?"), Mr. Wehner pointed out that the village's residential streets are narrow, generally lack sidewalks, and are not necessarily a "safe" option. Mr. Busa added that the village streets don't provide a direct path between points. Ms. Kriesel said that the

Village of Fayetteville's sidewalk expansions have been popular and the Town of Manlius is willing to invest in further connections.

- Ms. Kriesel: adding sidewalks and crosswalks can help slow drivers down. Mr. Busa added that, as pedestrian activity increases drivers are likely to slow down. Speed is largely a function of how the road "feels" to drivers.

- Ms. Watts: Complete streets conversions have been shown to reduce speeds, including using roundabouts.

Tuscarora / Bolivar / Lake Intersection
Mr. McKeon kicked off discussion of possible improvements to this intersection by introducing the idea of a roundabout. Roundabouts have been shown to reduce collisions, but they are a relatively expensive solution.

- Ms. Watts: NYSDOT has recently added a couple that work well, including one in the Town of Lenox at the intersection of State Routes 13 and 31.

- Ms. Bough-Martin: could the intersection be converted to two T-intersections?
    - Mr. Busa: This might make the situation worse – it would be difficult to get a safe distance between the new Bolivar / Tuscarora and Lake / Tuscarora intersections.
    - An alternative might be to re-configure the southbound approach so that vehicles have to "square up" at the intersection, rather than approaching it obliquely.

- Ms. Bough-Martin: would federal funding be available for a roundabout?
    - Mr. Colone: Municipalities that act on ideas that are generated through an SMTC study have a leg up in terms of obtaining federal funding. NYSDOT has funding opportunities that the Village can apply for.
    - Ms. Bough-Martin asked about the kinds / scope of the SMTC's study's recommendations.
        - Mr. McKeon said that studies generally include a range of short-, mid-, and long-term recommendations. Mr. Colone added that studies typically include a rough cost estimate.

Commercial Section
- The portion of the corridor east of Chittenango Creek is already relatively pedestrian friendly since it has sidewalks and crosswalks. However, Mr. McKeon pointed out that the Village's *Comprehensive Plan* envisions a more pedestrian-oriented streetscape at the eastern Route 5 / Tuscarora Road intersection, creating a village gateway in this area.
    - Ms. Bough-Martin said that, currently, this area is not a high priority for the Village. At the same time, the new section of the Chittenango Creekwalk north

of Tuscarora is closer to becoming a reality. Tying this section into the rest of the trail network will involve adding signage and other improvements.

- Mr. McKeon asked if there was a possibility that the bridge over Chittenango Creek would be replaced in the near future. Ms. Bough-Martin said: no, it is not likely. Also, it may not be preferred, since the existing bridge's weight limit helps keep heavy vehicles off of Tuscarora Road.

Adjournment

The meeting adjourned at 11:40. Mr. McKeon said that, rather than wait several months for another long meeting, he would plan on scheduling a shorter meeting in late March.

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Meeting Notes

Tuscarora Road Corridor Study

Study Advisory Committee Meeting 3

March 22, 2021
via Zoom
1:00 – 2:00 PM

Attending

Name	Affiliation
Liz Ross	Co-Chair, Tuscarora Road Advisory Committee
Tim Stell	Co-Chair, Tuscarora Road Advisory Committee
Russ Wehner	Trustee, Village of Chittenango
Jamie Kowalczk	Madison County Planning Department
Beth Watts	NYSDOT Region 2
Mario Colone	Program Manager, SMTC
Aaron McKeon	Project Manager, SMTC
Kevin Kosakowski	Transportation Planner, SMTC
Thomas Bardenett	Junior Transportation Planner, SMTC

Introductions and Overview
Mr. McKeon started the meeting off with introductions and by outlining the meeting's agenda.

Pedestrian Safety Action Plan
Mr. McKeon presented a brief overview of the New York State Department of Transportation's Pedestrian Safety Action Plan (PSAP) initiative. Tuscarora Road meets the PSAP criteria for "Basic Treatment Package B", but enhancements could be added, such as yield lines and Rectangular Rapid Flashing Beacons (RRFBs).

- Ms. Ross said that a mid-block crossing on Tuscarora might need additional enhancements to get drivers' attention.
- Mr. Stell commented that RRFBs tend to give pedestrians an added sense of safety at mid-block crossings, citing his own experience using an RRFB at a crosswalk across Green Lakes Road.

- Mr. Wehner pointed out that an in-street sign might not work, given Tuscarora's relatively narrow width and its frequent use by large agricultural vehicles.
- Mr. McKeon presented examples of other similar contexts, including an RRFB in place on Warners Road at the Erie Canalway Trail and a crosswalk without an RRFB on Kinne Road in DeWitt.

Raised Crosswalks

- Mr. McKeon presented information on the design and likely effects of using raised crosswalks.
    - Ms. Watts said that she is unaware of raised crosswalks in use in the area but is aware that they are widely discussed and used in other areas.
    - Mr. Stell talked about his experience with this feature in a school zone in Ithaca: it makes him want to avoid the route that has them.
    - Ms. Ross asked about snowplows and their compatibility with raised crosswalks.
        - Mr. McKeon said that, according to the Mayor of Fayetteville, the Fayetteville DPW has no trouble plowing their raised intersections, which have the same design elements as a raised crosswalk. The slope of the approach to a raised crosswalk is gentle – similar to other inclines plows encounter frequently.
    - Mr. Wehner asked about materials: are they made of concrete (which is durable) or asphalt?
        - Mr. McKeon said that he has seen examples of both. Asphalt would be less expensive to install.
- SAC members generally liked the idea of using raised crosswalks if possible, since drivers seem like they would be more likely to stop for pedestrians in a raised crosswalk.

Linear Analysis

The "linear analysis" consists of breaking the study area into segments and evaluating whether roadside conditions favor installing a sidewalk or trail in that segment. Four roadside conditions will be looked at: landscaping, topography, structures, and utilities – specifically, utility poles. The result will be an order of magnitude evaluation of how hard or easy it would be to add a sidewalk or trail in that segment.

- Ms. Ross said that it seems likely that this adding a trail or sidewalk would generally be more difficult on the north side of Tuscarora, given the shallow setbacks of several of the homes.
- Mr. Wehner said that private structures in the public right-of-way is a known issue in the Town and Village – he acknowledged that asserting public ownership can be difficult. On the other hand, creating a safe pedestrian walkway along this corridor would be a major improvement for the whole community.
- Mr. Wehner said that the existing stone dust trail (which is, notably, on the south side of the road) was originally intended to be paved, but the cost was prohibitive. But it has

been a popular and heavily used improvement, to the point where the Village is working to keep snowmobiles from using it.

- Mr. Stell pointed out that a sidewalk along Tuscarora could be part of a larger network of pedestrian facilities, including a sidewalk along Route 5 and a walkway along Bolivar.
    - Mr. Wehner noted that, in some cases, sidewalks are opposed by property owners who perceive sidewalks on their roads as intrusive.

Eastern End

Ms. Ross asked about plans for the eastern end of Tuscarora, including adding signage to notify trucks of the road's weight restriction and streetscape improvements to change how the road is perceived to drivers.

- Mr. McKeon said that this is part of the project. The SMTC has looked at the eastern end of the study area and developed a concept for an improved streetscape cross-section.
- Mr. Wehner commented that it seems like a large proportion of the daily traffic on Tuscarora is made up of commuters, who are unlikely to be deterred by streetscape changes. Traffic calming on the road would seem to be more effective as a deterrent.
- Ms. Ross noted that, with the Creekwalk extension opening soon, this could generate more pedestrian traffic across Tuscarora Road.

Other Questions

Ms. Ross asked about the schedule, specifically, when would some public involvement be likely to occur?

- Mr. McKeon said that this would be likely in July or August.

Mr. Wehner asked about funding opportunities for improvements: are they coming up and, if so, will this plan be needed as a support document?

- Mr. McKeon said that NYSDOT's Transportation Alternatives Program (TAP) is expected to put out a call for projects in the near future.
- Mr. Colone added that the timeline for TAP is unclear and that, while a completed study is helpful, it is not necessary.
- Ms. Kowalczk noted that NYSDOT encouraged Madison County municipalities to apply for TAP funds in the last round of funding, in order to distribute projects throughout the region.

Adjournment

The meeting adjourned at 2:00.

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Meeting Notes

Tuscarora Road Corridor Study

Study Advisory Committee Meeting 4

July 1, 2021
via Zoom
10:00 – 11:30 AM

Attending

Name	Affiliation
Elizabeth Bough-Martin	Mayor, Village of Chittenango
Liz Ross	Co-Chair, Tuscarora Road Advisory Committee
Tim Stell	Co-Chair, Tuscarora Road Advisory Committee
Beth Watts	NYSDOT Region 2
Ike Achufusi	NYSDOT Region 3
Mario Colone	Program Manager, SMTC
Aaron McKeon	Project Manager, SMTC
Kevin Kosakowski	Transportation Planner, SMTC
Thomas Bardenett	Junior Transportation Planner, SMTC

Introductions and Overview
Mr. McKeon started the meeting off with brief introductions and by outlining the meeting's agenda.

Scope and Schedule
Mr. McKeon briefly reiterated the key points of the project's scope, which is focused on pedestrian safety on Tuscarora Road.

The project's schedule anticipates a public meeting in August. Ms. Ross pointed out that August is typically a popular time for vacations. Mr. McKeon said that, in all likelihood, the public meeting would be held in September.

Mr. McKeon provided an overview of the meeting's goal: discuss ideas in three segments of the corridor and come up with ideas to present at a public meeting.

West End Concepts

The West End concepts show a pedestrian connection along the south side of the street extending at least as far as Tom Tom Street.

Comments:

- Mayor Bough-Martin:
    - With regards to the cemetery on the southeast corner of Tuscarora and Tom Tom, it may be that the village owns the cemetery in question and that it is maintained by neighbors across the street. Ownership and maintenance are both unclear.
    - Sidewalk along Tom Tom would have to deal with connecting to the Oneida Indian Nation's sovereign territory. Also, traffic to and from the casino.
- Mr. Stell:
    - A north-south sidewalk on Murray Street would sidestep these issues and get pedestrians to Route 5. A future project could address sidewalks on Route 5.
- Route 5 / Tuscarora Road intersection
    - Mayor: Byrne Dairy was interested in building a store at the Route 5 / Tuscarora intersection at one point, but the traffic impact study suggested that a third lane was going to be needed.
    - Ms. Watts: NYSDOT is monitoring this intersection; currently there is a flashing yellow/red signal here and it is periodically re-evaluated as a possible location for a three-color signal.
    - Mayor: There is a planned project northwest of this area and although Byrne Dairy did not buy the land someone else did and all signs point to increased development at that intersection.
    - Mr. Stell: Once there is a north south path developed, we could work with the DOT to come up with a sidewalk along the northside of Route 5 going east to west.
    - Mr. McKeon: A raised crosswalk just east of Wheatfield Drive could connect pedestrians originating in / destined for the subdivisions to the west of the Village to the village's street and sidewalk system.
- Grocery Plaza access:
    - Mr. McKeon: For pedestrians that want to get to the grocery store, as it stands right now, Tuscarora Road is the only east-west route, other than Route 5.
    - Mayor: The plaza, including the grocery store and Dunkin Donuts, is owned by the Oneida Nation: some access issues (such as the pedestrian trail between Gill Street and the plaza) cannot be resolved by the Village, since the Onedia Nation is a sovereign government.
    - At one point, discussions related to the opening of the Yellow Brick Road Casino included the idea of closing Tom Tom Street, or making it a one-way street, in order to minimize vehicles using Tuscarora Road to get to / from the casino. Neither of these ideas were implemented. [Note: Comparing NYSDOT traffic

counts from 2009 and 2016, volumes on Tuscarora did not increase following the casino's opening in 2015.]

Center Section Concepts

The three Center Section concepts show variations on a pedestrian facility (of varying lengths) along the south side of Tuscarora and a trail running east from the Bolivar / Tuscarora intersection to Chittenango Creek. Concept 1 shows a roundabout at this intersection.

Roundabout concept:

- Mayor: She has discussed this idea with various stakeholders. Neither Andy Busa nor the head of the Village's Department of Works have strong objections to the idea. Many people have questions about its compatibility with agricultural equipment and large numbers of school buses. Talking to these stakeholders might be a wise precaution.

Pedestrian Access across Tuscarora:

- Ms. Ross: Do these concepts address the safety of pedestrians who live on the north side of Tuscarora who want to get to Village amenities to the south?
- Mr. McKeon: Yes, the concepts propose two raised crosswalks to slow vehicles down and increase pedestrians' visibility. Some studies show that a small percentage of vehicles divert to alternate routes when raised crosswalks are added to a facility.
- Mayor: We also support adding rapid rectangular flashing beacons to reinforce these crosswalks.

Path / Sidewalk along Tuscarora:

- Mr. McKeon: a facility along the south side of Tuscarora, connecting to the existing trail, seems logical.
    - Mayor: This has been discussed, and neighbors tend to oppose this idea vigorously. Using the north side of the road is likely to face less opposition. Also, a stone dust trail would create less of a greater long-term maintenance burden than sidewalks.
    - Mr. Stell: We've been discussing a path along the western side of Bolivar Road, north of Tuscarora up to Horizon. This would help connect the neighborhood to the south, but having to deal with fewer property owners.
- Mr. McKeon: What about adding a sidewalk along Tuscarora between Burning Hollow and Naymik?
    - Ms. Ross: It would be an issue for some of those neighbors due to their property size / lack of front yard.

Re-alignment of Tuscarora / Bolivar:

- Mr. McKeon: As Andy Busa pointed out in a previous meeting, a less expensive solution for the Tuscarora / Bolivar intersection is to re-align the intersection approaches. Has this been considered?
    - Mayor: The culverts may be replaced again this year, pushing a roundabout further into the future, but we're reconsidering realigning these streets as a solid Plan B.
- Mr. Stell: There is currently a sidewalk at Button Road and Lake Street. Lake is a fairly steep descent, but there's a decently wide drainage area along it. Would we be able to eventually build a connection from Button to Tuscarora?
    - Mayor: We have already exceeded our ROW in that area by building the large storm water basins, so we don't have room to build those currently. We have put paving Lake Street on hold due to OCWA, so doing anything to assist in connecting into the traffic circle would best be done when that project picks back up.

Upgrading existing trail:

- Mr. McKeon: Have the Village / Town considered adding trees to the landscaped buffer along the trail, helping make the road feel more closed in?
- Mayor: We're limited by the power lines, but we might be planting some non-grass, easy maintenance Stella De Oro day lilies that NYSDOT uses a lot to create a similar feeling.

East End Section

Only one concept was developed for this section, including exchanging off-street parking for on-street parking on the north side of Tuscarora just west of Route 5, adding a raised intersection at Tuscarora / Race, and adding a pedestrian bridge over Chittenango Creek.

Pedestrian Trail along North Side:

- Mr. McKeon: Would a trail along the north side be used?
    - Mr. Stell: A shocking number of people use that portion of the road and it's dangerous at night due to the lack of lighting.
    - Mayor: There's been an increase in usage recently, with a lot of people using the old road bed in the eastern section but using the narrow shoulder further west.
    - Mr. McKeon: Would there be interest in adding a pedestrian bridge over the Creek?
        - Mayor: The Village will control both sides of the Creek in the near future, making this a possibility.

Raised Intersection: Race / Tuscarora:

- Mr. McKeon: Elevates pedestrians with better visibility and acts as a traffic calming measure. Also highlights the Creekwalk connection across Tuscarora.
    - Ms. Ross: That crosswalk is used heavily already, so it would be beneficial

Truck Signage:

- Mr. McKeon: An additional weight warning sign has already been added by NYSDOT.
- Mayor: Whoever was responsible for this: thank you!

Add On-street Parking / Close some Off-Street Parking:

- Mr. McKeon: Closing off off-street parking and adding on-street parking means a net loss of ten parking spots, in exchange for which the Village would gain a sidewalk and green space with trees, as well as a curb extension, reducing the width of the eastbound approach to Route 5.
    - Mayor: I support it, but it's more likely to happen in the long run as the buildings change owner, change land use, etc.

Other Items:

- Feedback Sign – Already existing:
    - Mayor: National Grid has to drop the electric line and we can move them around with that, but we haven't moved them much recently
        - Mr. McKeon: Do you get data from these?
        - Mayor: Not on the ones currently in use
- Mr. McKeon: Will the Creekwalk be lit at night?
    - Mayor: No, it's a more natural trail system, so no lighting along it.
- Ms. Ross: People avoid coming down Naymik to turn left, instead going down Burning Hollow for improved visibility. Are there any short-term ideas on how to improve this issue? We are thinking about one of those Hidden Drive signs.
    - Mr. McKeon: We can investigate the use of a sign for that purpose.

Next Steps

Mr. McKeon: We will take the feedback that was provided today and adjust designs. If we took the current options to the public, would you be comfortable?

- The group was positive about what they were presented.

Public Presentation:

- Mr. McKeon: The plan is to develop a video presentation to be put online to provide people an opportunity to review the ideas and then follow up with a virtual meeting that's interactive.

  Mayor: The village is currently hosting public meetings. New York State's open meeting regulations are no longer allowing them to use virtual-only meetings.
- Mr. McKeon: We could also have a table at the Artisan Market for additional outreach. [**NOTE**: <u>On further internal discussion, the SMTC determined that this is not advisable under current COVID-19 precautions.</u>]
    - Mayor: Markets will be on Tuesdays through August, and will hopefully be moved to a Saturday event in the fall. August would probably be better.
    -

Adjournment

The meeting adjourned at 11:30 AM.

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Meeting Notes

Tuscarora Road Corridor Study

Study Advisory Committee Meeting 5

November 10, 2021
via Zoom
11:00 AM – 12:00 PM

Attending

Name	Affiliation
Liz Ross	Co-Chair, Tuscarora Road Advisory Committee
Tim Stell	Co-Chair, Tuscarora Road Advisory Committee
Phil Teague	Community Stakeholder
Mario Colone	Program Manager, SMTC
Aaron McKeon	Project Manager, SMTC
Kevin Kosakowski	Transportation Planner, SMTC
Thomas Bardenett	Junior Transportation Planner, SMTC

Overview
Mr. McKeon started the meeting off by saying that the project and project report are in its final stages. The design concepts have been reviewed by the SAC members and the public. Comments have been received. The purpose of this meeting is to review comments and conclude the SAC process.

Comment Review

Roundabout

- Ms. Ross: Fascinated by the comments. Split quite a bit. Surprised by the enthusiasm for putting in a roundabout.
- Mr. McKeon: Definitely a controversial concept. People love to talk about the idea. Mr. McKeon asked Mr. Stell and Ms. Ross what they have heard.
    - Mr. Stell: The people who were against the roundabout either had previously bad experiences with them or were unsure how they would work in snow or with larger vehicles. It seems most of the issues were due to a lack of knowledge on how they work. By providing information from Wisconsin (which has the most roundabouts of any state) it seemed to help people become more positive about them

- Ms. Ross: Negative comments, she feels, comes from those who have experienced the Rt. 31 roundabout. She personally loves the roundabouts.

Sidewalks vs. Trails

- Mr. McKeon: We were originally hesitant on whether we should propose a trail or sidewalk along the entire corridor, but there were no objections to a facility along the whole corridor. Sidewalks seem to appease people in terms of looks while the trail appeased those looking for less expensive options. I regret not looking into asphalt paths as a middle option.
- Ms. Ross: Love the idea of a sidewalk. As for the asphalt, as long as there is a way to preventing vehicles from driving on it.
- Mr. Stell: The current stone dust trail was originally intended to be surfaced with asphalt. The Village's original intent was to use old milling scraps and come back and pave it. It seems that neighbors want a finished product, but the objection would be the expense for sidewalks. He feels maybe you start off with stone dust and if a grant comes along update it. We could look at a mix idea, thinking specifically of Bolivar to Dollar General where we would like to use a truck to clear the snow faster.
- Mr. Stell: There are sidewalk segments where the village is using a bobcat to clean them. If a sidewalk is placed the full distance of Tuscarora that is a lot for a bobcat. Most of the homeowners it would directly impact seem to be in favor of pedestrian access and sidewalks. There are those that do not want to be responsible for snow removal.

Raised Crosswalks

- Mr. McKeon: If the Village really wants to pursue this option, it seems as though a raised crosswalk design can be adapted to address the concerns of the nearby farm. It may be worth looking at temporary options at first or possibly work more closely with the family to address this issue.
    - Ms. Ross: Feels the equipment can handle it according to their comments but there is safety issue they are concerned about.
    - Mr. Stell: It can create a safety problem when drivers try to pass a stopped vehicle in the travel lane, because in some cases the stopped vehicle is stopped for a pedestrian. Adding raised crosswalks could introduce ambiguity, and danger, by adding more stopped agricultural equipment to a busy road.

Rumble Strips at Crosswalks

- Mr. McKeon: Intrigued by this idea, but rumble strips can be loud and annoying for neighbors. There is a "mumble strip" concept that does the same thing but with less noise – could be an option. It's not currently used widely.

Crosswalk and RRFB

- Mr. McKeon: What if the best that can be done is a crosswalk and a rapidly flashing rectangular beacon (RRFB)?

- Ms. Ross: Thinks that would be great. There are people though that don't know how to use a crosswalk. She likes the ideas maybe having the flags.
- Mr. Stell: Standard crosswalks are great. We could do Chittenango flags and then if they get taken wouldn't matter. In the absence of parked cars your standard crosswalk with a beacon would work. If you put pedestrians in crosswalks, traffic slows down. Raised crosswalks are cool but if we can't do it than we are still better off than where we were.

Conclusion

- Mr. Colone: One of the things coming out of the Infrastructure Bill is a focus on safety. You may want crosswalk improvements to be the priority. This project and its report should support a competitive grant application.

Adjournment

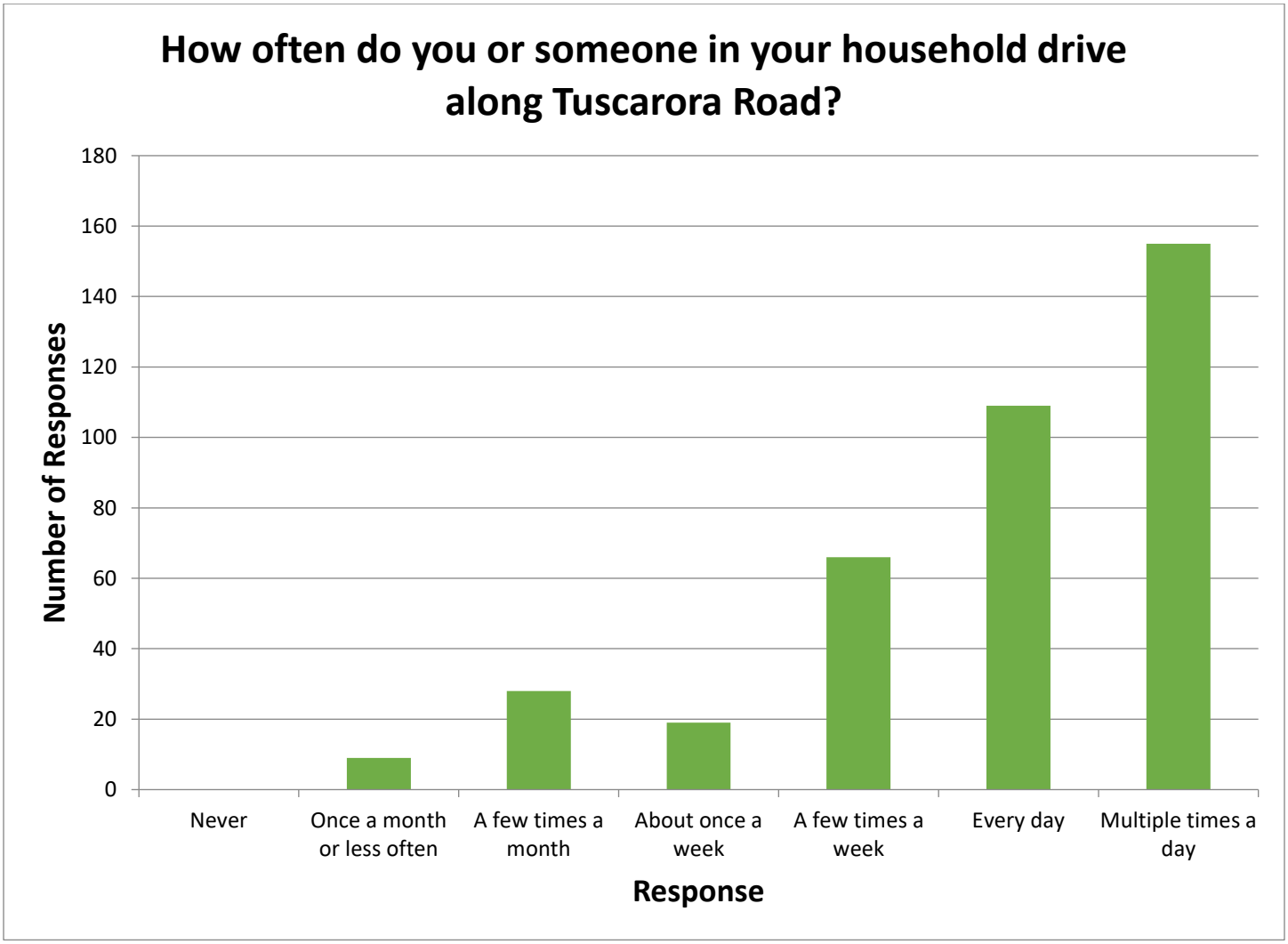
The meeting adjourned at 12:00 PM.

APPENDIX B – SURVEY RESULTS

Q1: How often do you or someone in your household drive along Tuscarora Road?

Response	Number of Responses	% of Total
Never	0	0%
Once a month or less often	9	2%
A few times a month	28	7%
About once a week	19	5%
A few times a week	66	17%
Every day	109	28%
Multiple times a day	155	40%

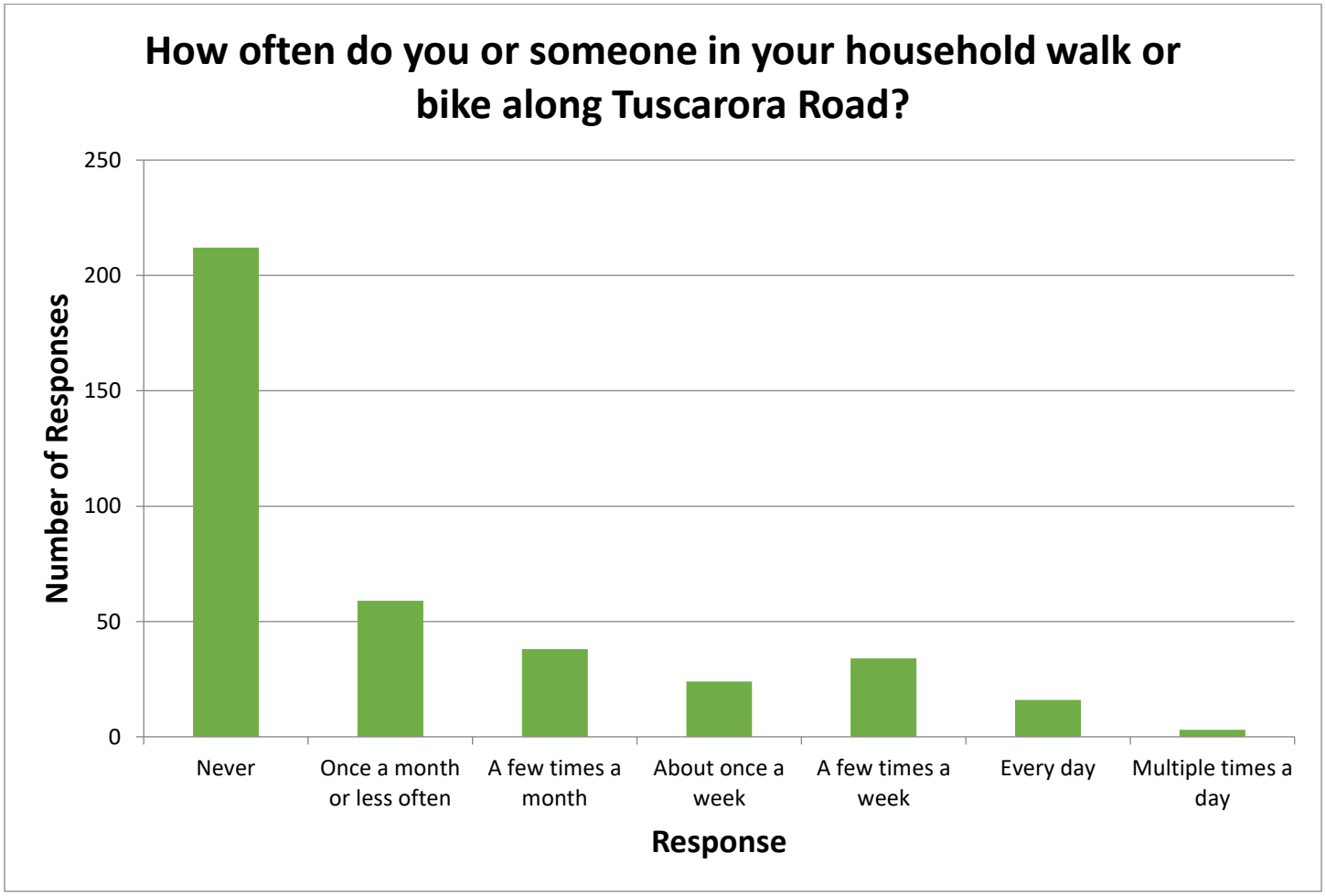
Total Responses:	386
Total Respondents:	386
No Response:	1
Response Rate:	99.7%



Q2: How often do you or someone in your household walk or bike along Tuscarora Road?

Response	Number of Responses	% of Total
Never	212	55%
Once a month or less often	59	15%
A few times a month	38	10%
About once a week	24	6%
A few times a week	34	9%
Every day	16	4%
Multiple times a day	3	1%

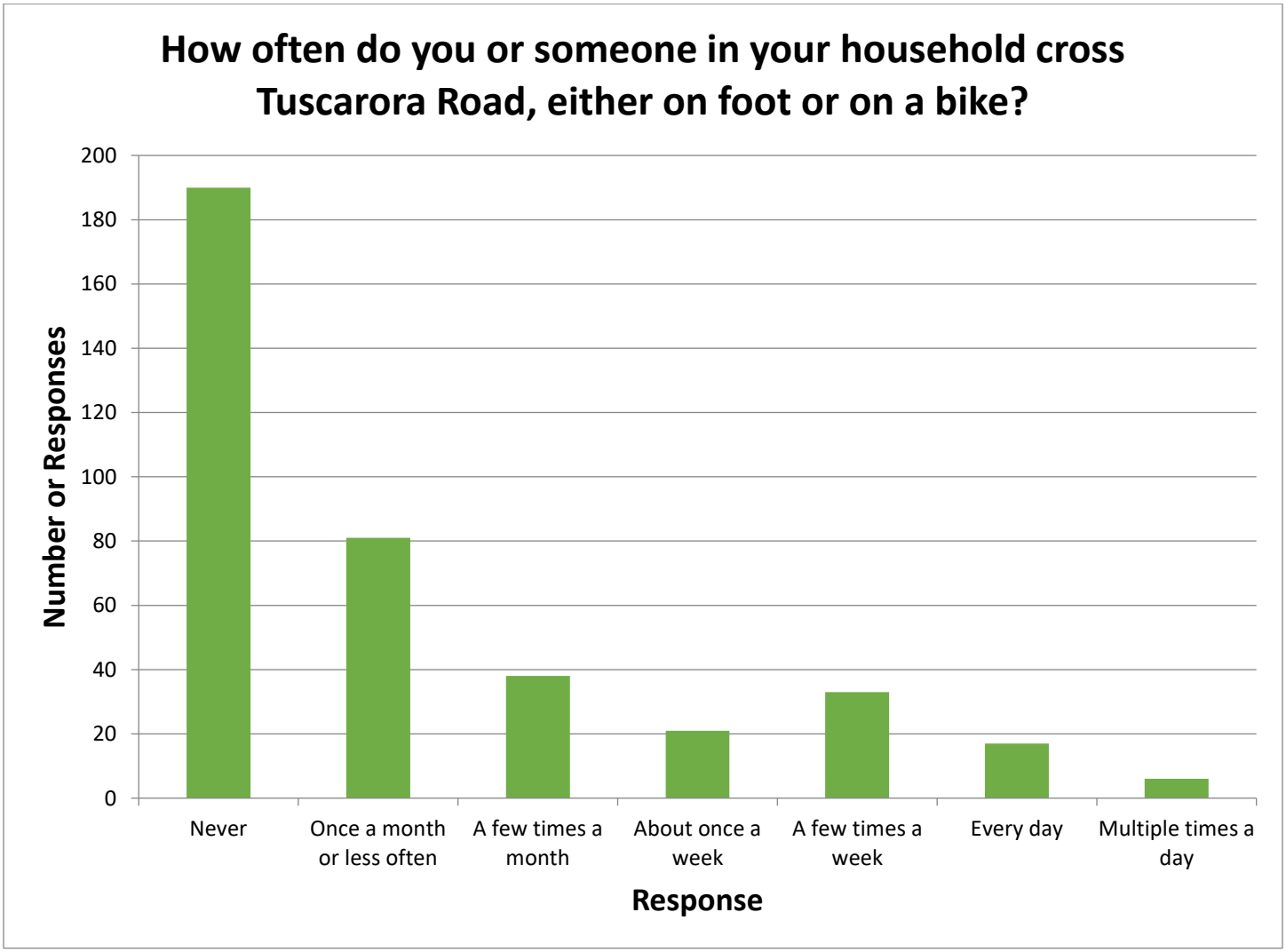
Total Responses:	386
Total Respondents:	386
No Response:	1
Response Rate:	99.7%



Q3: How often do you or someone in your household cross Tuscarora Road, either on foot or on a bike?

Response	Number of Responses	% of Total
Never	190	49%
Once a month or less often	81	21%
A few times a month	38	10%
About once a week	21	5%
A few times a week	33	9%
Every day	17	4%
Multiple times a day	6	2%

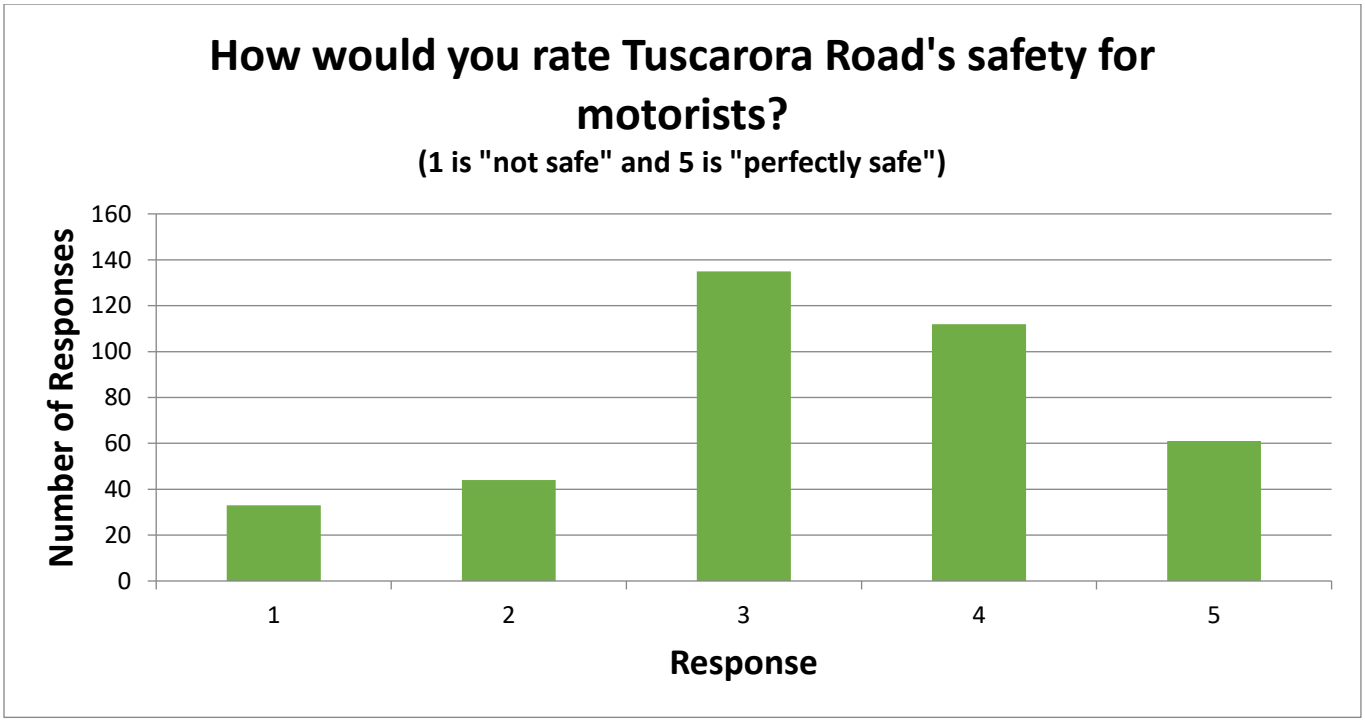
Total Responses:	386
Total Respondents:	386
No Response:	1
Response Rate:	99.7%



Q4: How would you rate Tuscarora Road's safety for motorists? (1 is "not safe" and 5 is "perfectly safe")

Response	Number of Responses	% of Total
1	33	9%
2	44	11%
3	135	35%
4	112	29%
5	61	16%

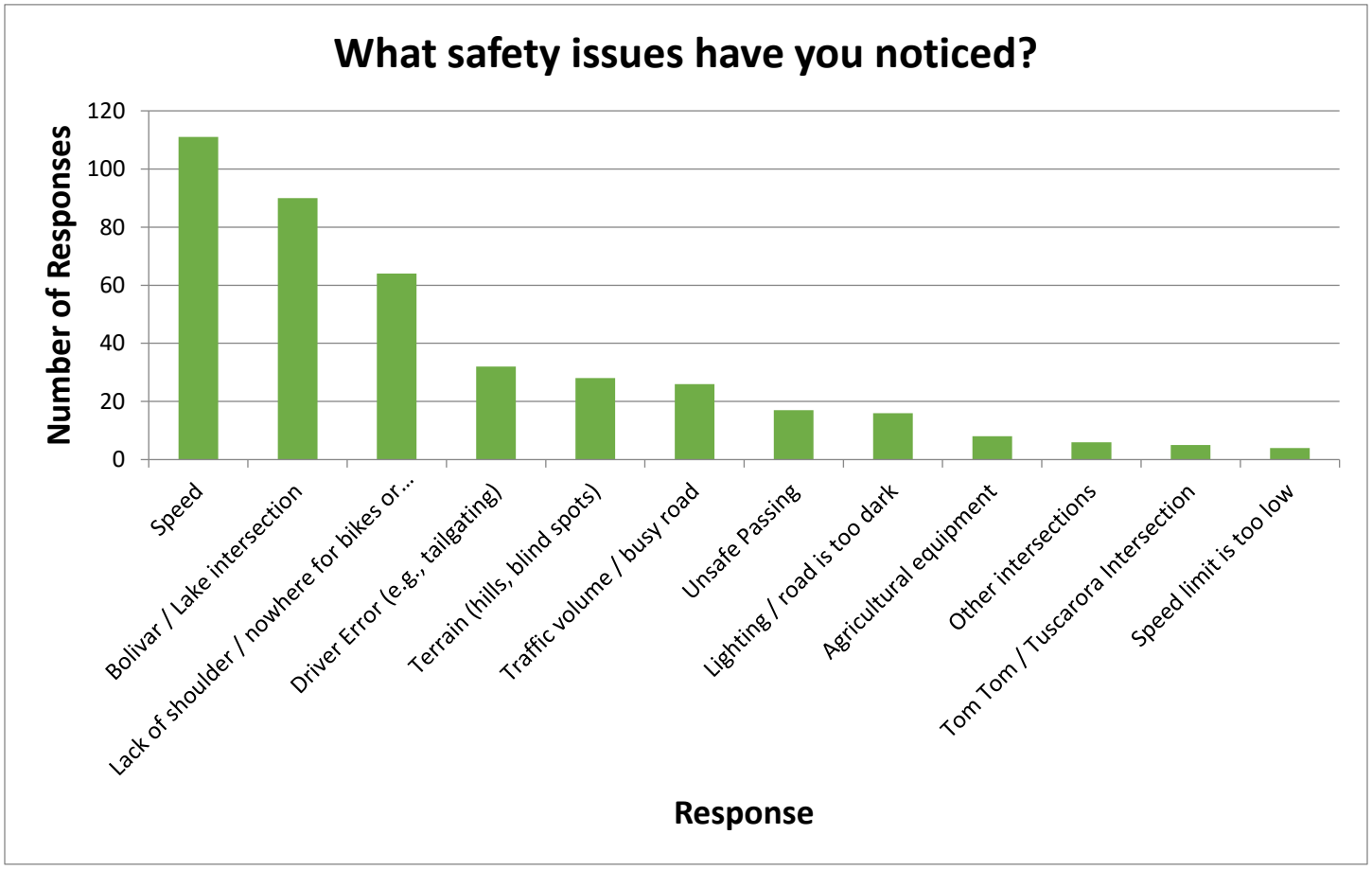
Total Responses:	385
Total Respondents:	385
No Response:	2
Response Rate:	99.5%
Average Rating:	3.3



Q5: What safety issues have you noticed?

Response	Number of Responses	% of Total
Speed	111	39%
Bolivar / Lake intersection	90	31%
Lack of shoulder / nowhere for bikes or pedestrians	64	22%
Driver Error (e.g., tailgating)	32	11%
Terrain (hills, blind spots)	28	10%
Traffic volume / busy road	26	9%
Unsafe Passing	17	6%
Lighting / road is too dark	16	6%
Agricultural equipment	8	3%
Other intersections	6	2%
Tom Tom / Tuscarora Intersection	5	2%
Speed limit is too low	4	1%

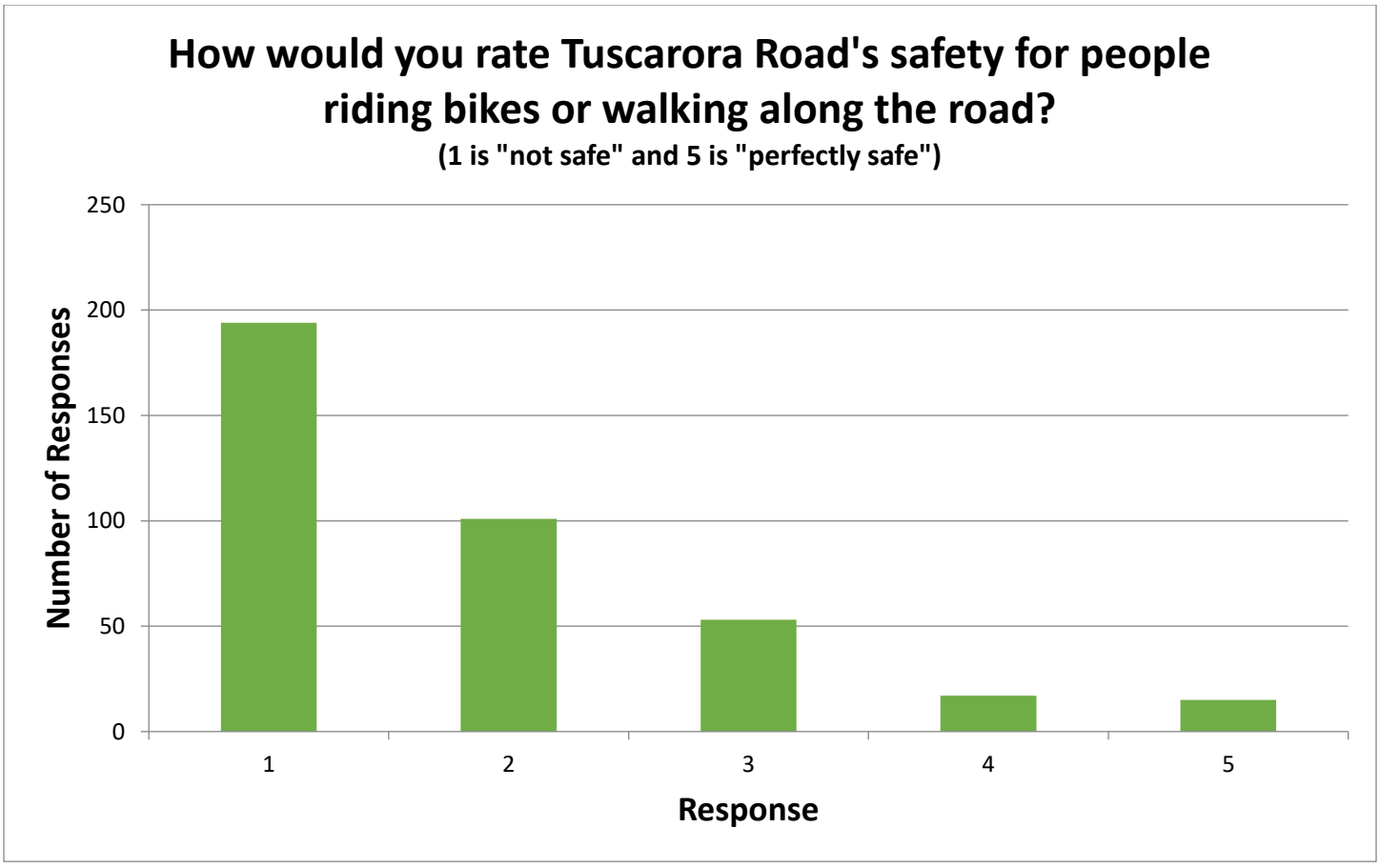
Total Responses:	407
Total Respondents:	287
No Response:	100
Response Rate:	74.2%



Q6: How would you rate Tuscarora Road's safety for people riding bikes or walking along the road? (1 is "not safe" and 5 is "perfectly safe")

Response	Number of Responses	% of Total
1	194	51%
2	101	27%
3	53	14%
4	17	4%
5	15	4%

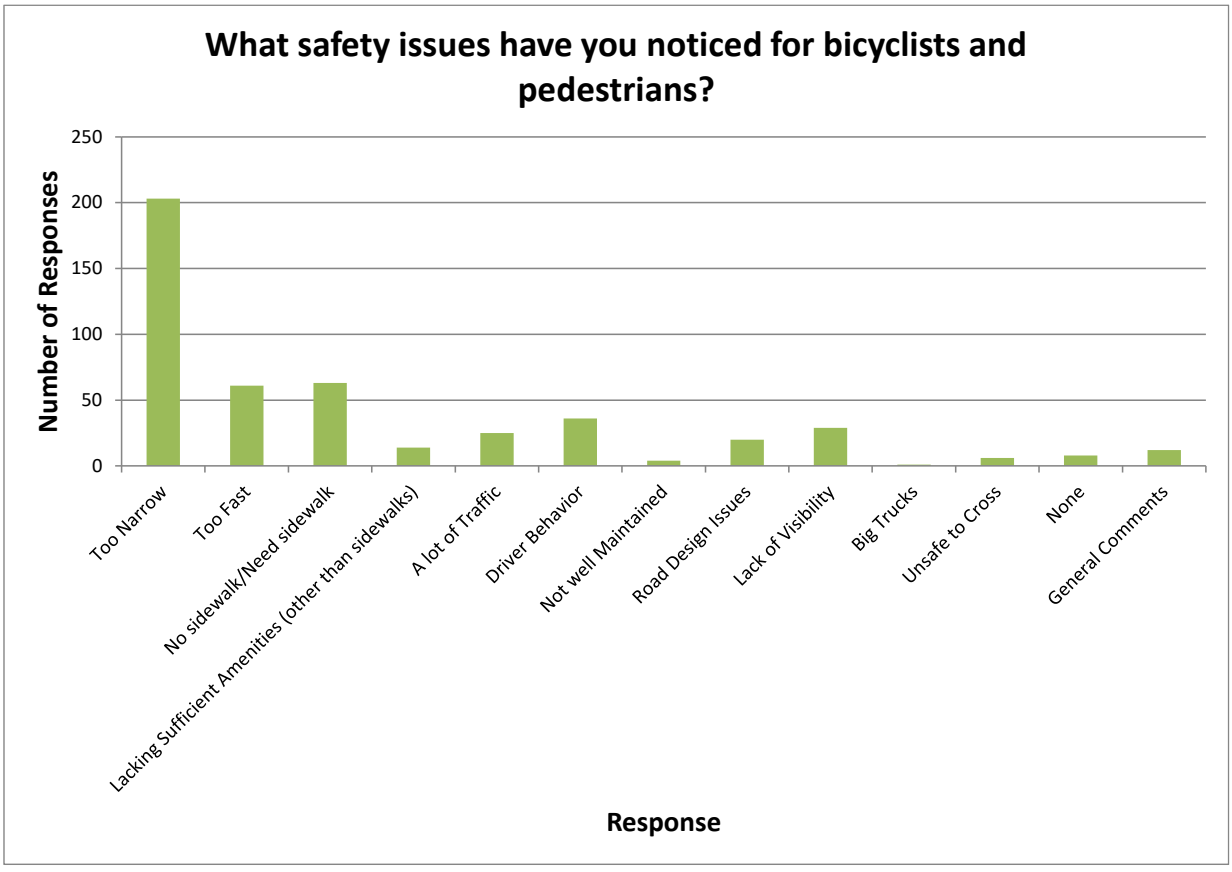
Total Responses:	380
Total Respondents:	380
No Response:	7
Response Rate:	98.2%
Average Rating:	1.8



Q7: What safety issues have you noticed for bicyclists and pedestrians?

Response	Number of Responses	% of Total
Too Narrow	203	42%
Too Fast	61	13%
No sidewalk/Need sidewalk	63	13%
Lacking Sufficient Amenities (other than sidewalks)	14	3%
A lot of Traffic	25	5%
Driver Behavior	36	7%
Not well Maintained	4	1%
Road Design Issues	20	4%
Lack of Visibility	29	6%
Big Trucks	1	0%
Unsafe to Cross	6	1%
None	8	2%
General Comments	12	2%

Total Responses:	482
Total Respondents:	317
No Response:	70
Response Rate:	81.9%



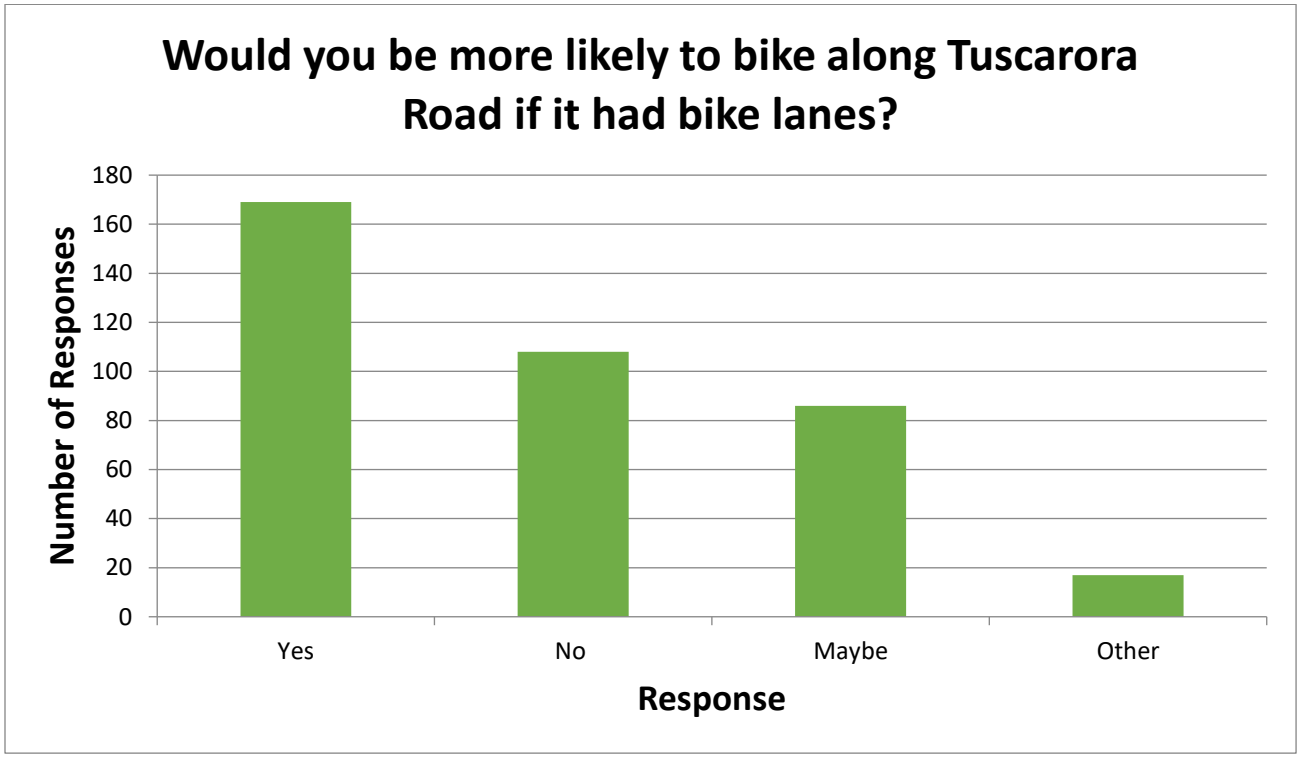
Q8: Would you be more likely to bike along Tuscarora Road if it had bike lanes?

Response	Number of Responses	% of Total
Yes	169	44%
No	108	28%
Maybe	86	23%
Other	17	4%

Total Responses:	380
Total Respondents:	380
No Response:	7
Response Rate:	98.2%

Respondents who answered "Other" by category

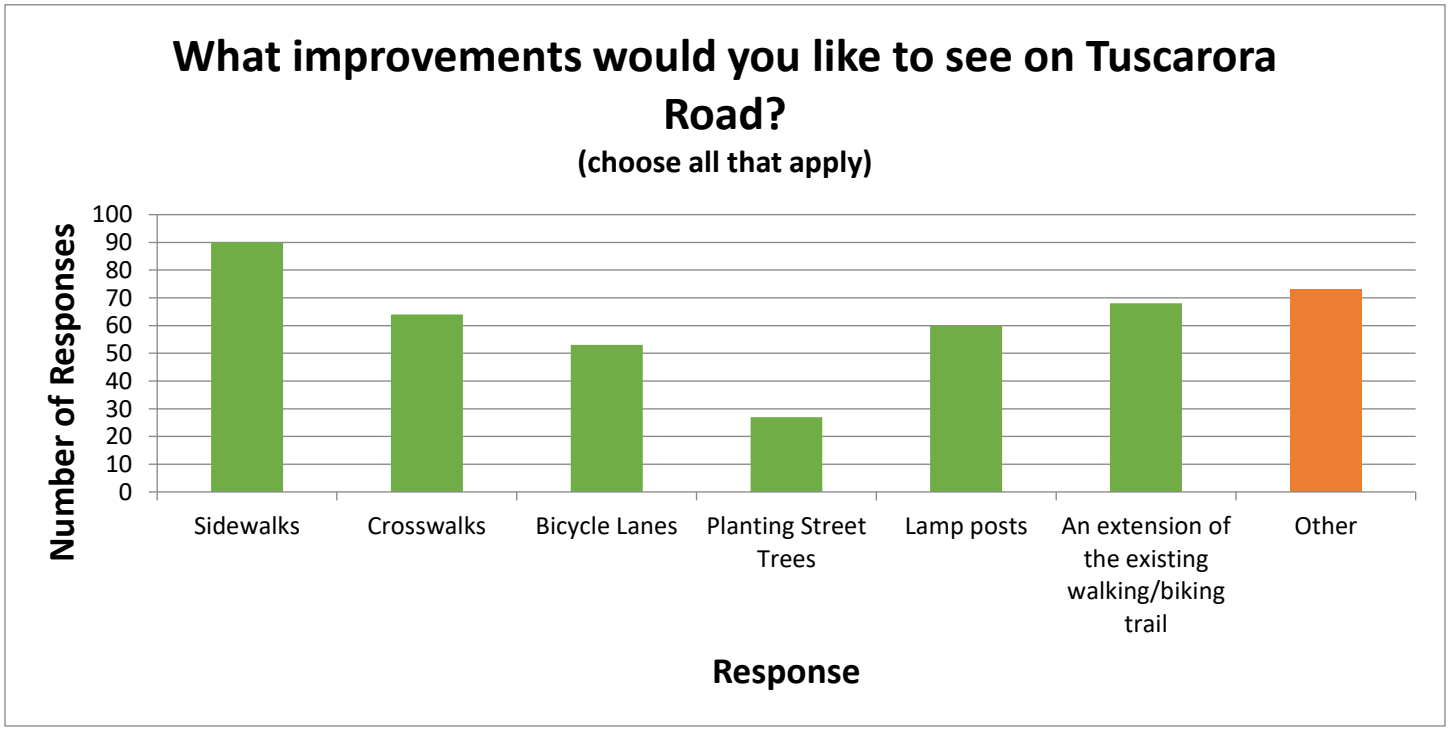
Response Category	Number of Responses
No Issue	1
With Conditions	2
Along something other than a bike lane (i.e. bike path, sidewalk)	3
Don't bike	11



Q9: What improvements would you like to see on Tuscarora Road? (choose all that apply)

Response	Number of Responses	% of Total
Sidewalks	90	21%
Crosswalks	64	15%
Bicycle Lanes	53	12%
Planting Street Trees	27	6%
Lamp posts	60	14%
An extension of the existing walking/biking trail	68	16%
Other	73	17%

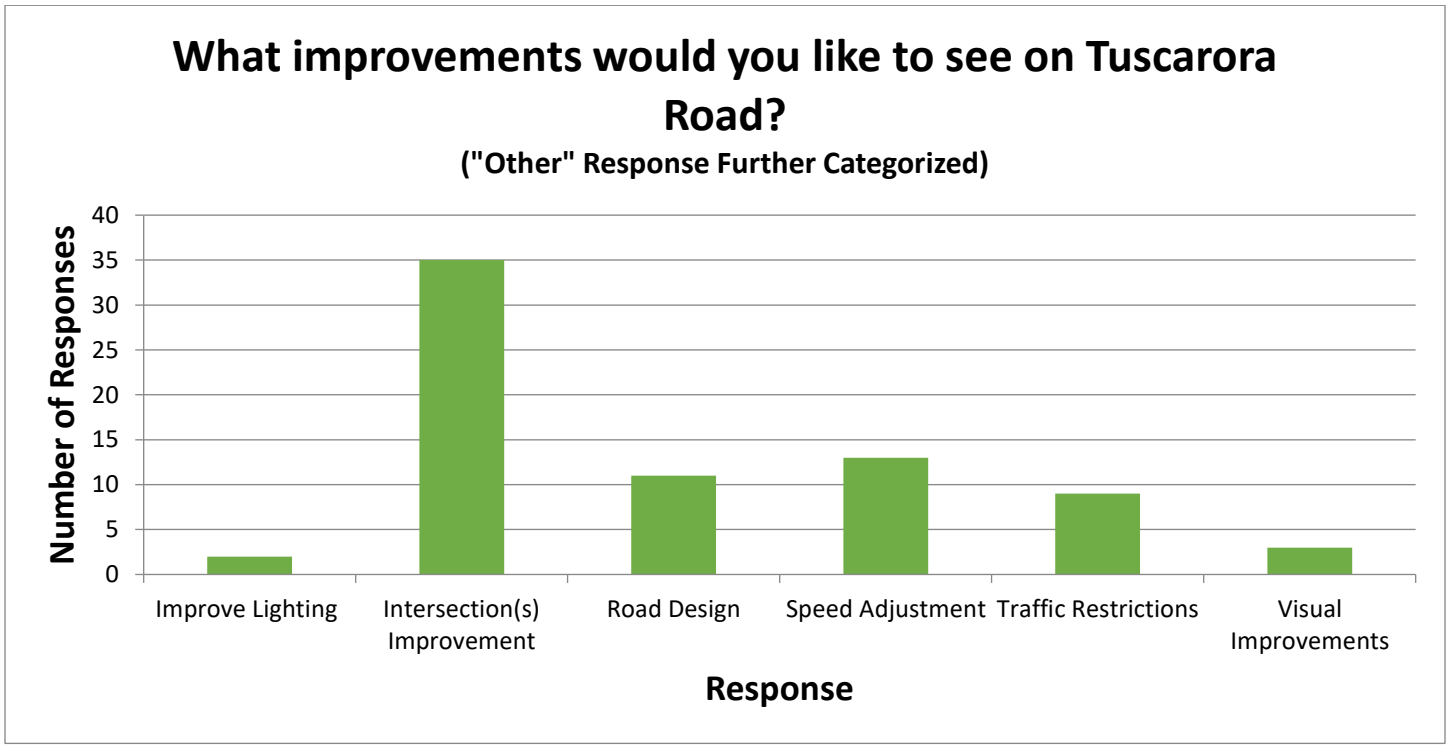
Total Responses:	435
Total Respondents:	367
No Response:	20
Response Rate:	94.8%



Q9: Continued…

Respondents who answered "Other" by category

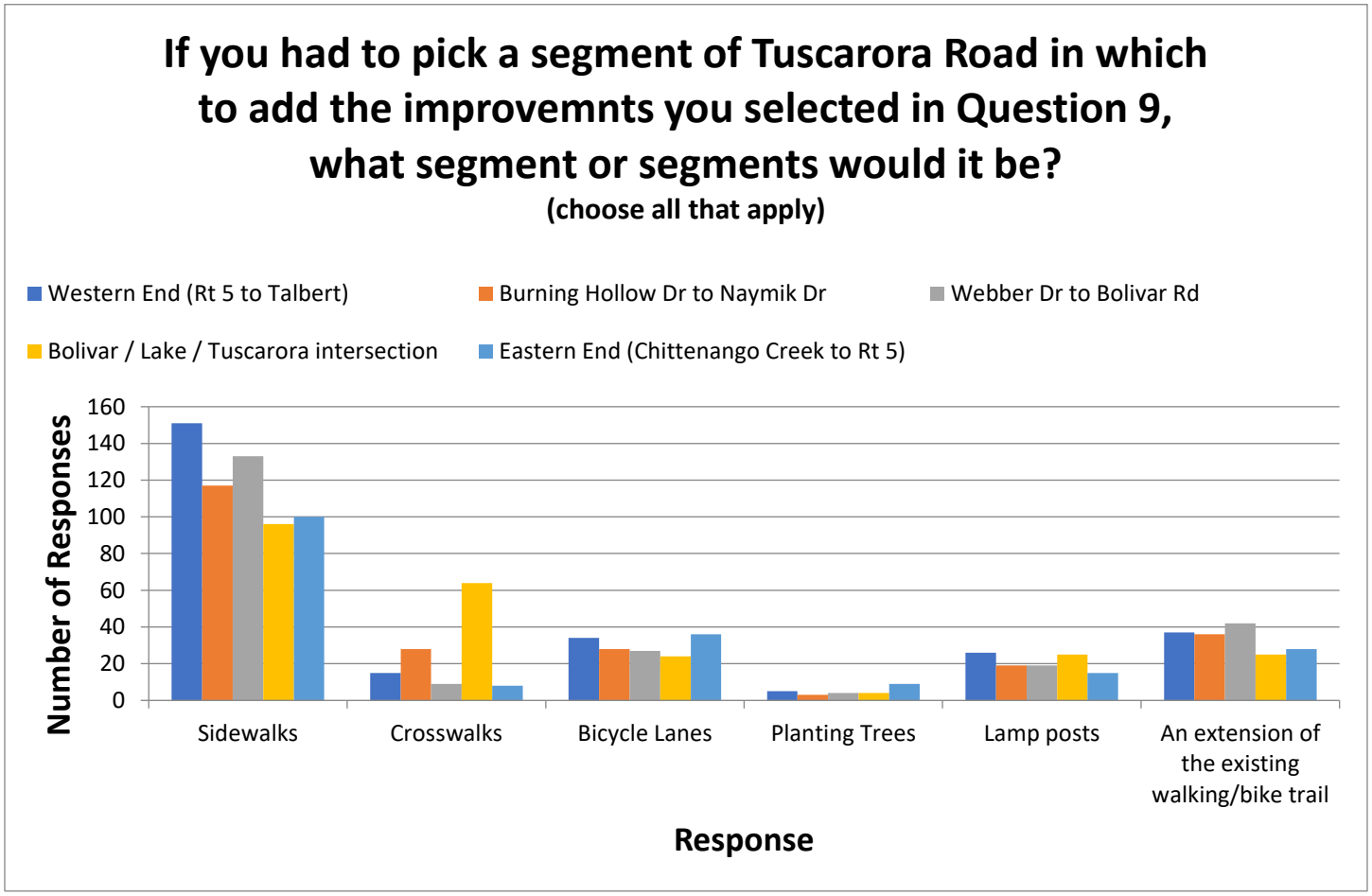
"Other" Response Further Categorized	Number of Responses	% of Total
Improve Lighting	2	3%
Intersection(s) Improvement	35	48%
Road Design	11	15%
Speed Adjustment	13	18%
Traffic Restrictions	9	12%
Visual Improvements	3	4%



Q10: If you had to pick a segment of Tuscarora Road in which to add the improvements you selected in Question 9, what segment or segments would it be? (choose all that apply)

Tuscarora Road Segment	Sidewalks	Crosswalks	Bicycle Lanes	Planting Trees	Lamp posts	An extension of the existing walking/bike trail	Total
Western End (Rt 5 to Talbert)	151	15	34	5	26	37	268
Burning Hollow Dr to Naymik Dr	117	28	28	3	19	36	231
Webber Dr to Bolivar Rd	133	9	27	4	19	42	234
Bolivar / Lake / Tuscarora intersection	96	64	24	4	25	25	238
Button Road to Chittenango Creek	115	4	33	5	16	30	203
Eastern End (Chittenango Creek to Rt 5)	100	8	36	9	15	28	196

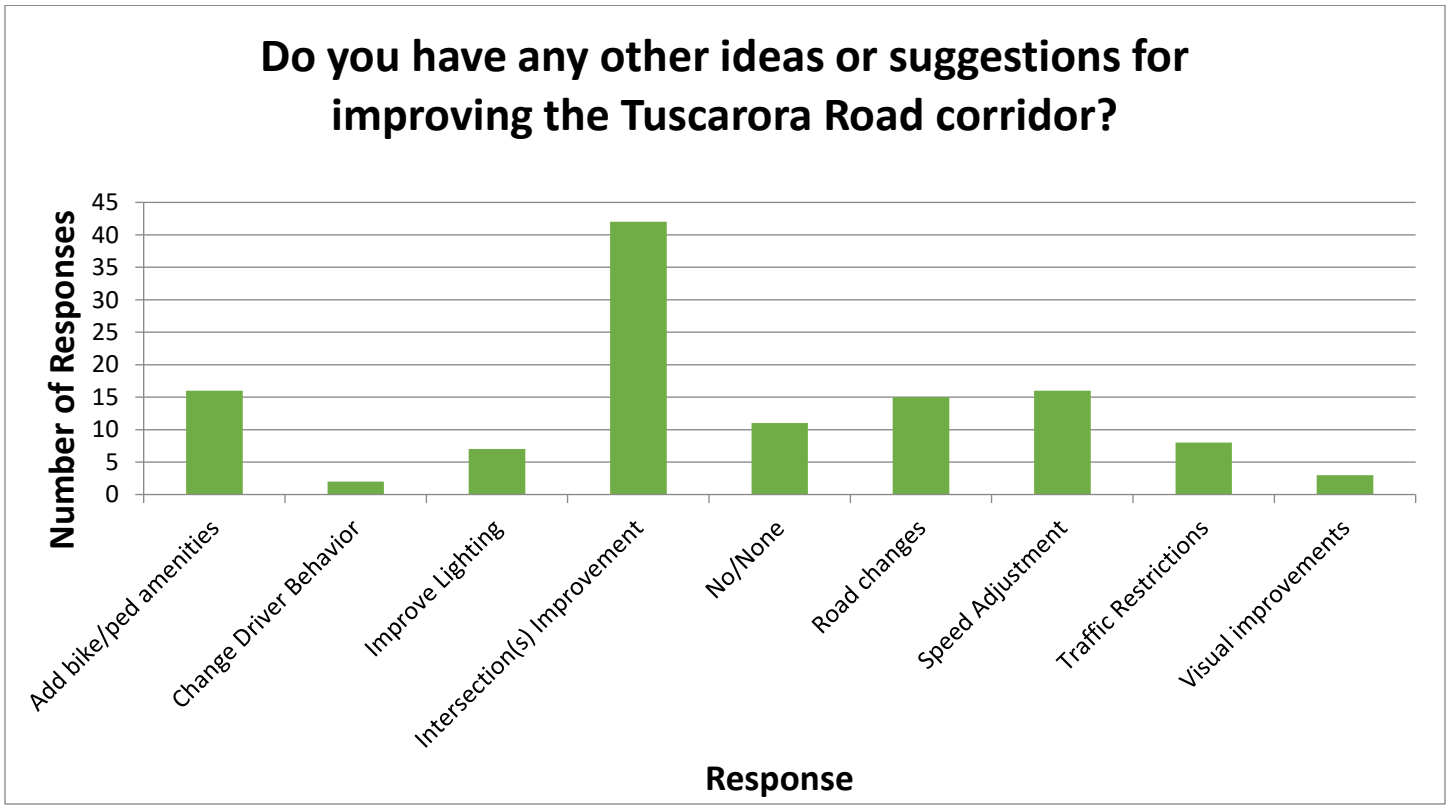
Total Responses:	1370
Total Respondents:	311
No Response:	76
Response Rate:	80%



Q11: Do you have any other ideas or suggestions for improving the Tuscarora Road corridor?

Response	Number of Responses	% of Total
Add bike/ped amenities	16	13%
Change Driver Behavior	2	2%
Improve Lighting	7	6%
Intersection(s) Improvement	42	35%
No/None	11	9%
Road changes	15	13%
Speed Adjustment	16	13%
Traffic Restrictions	8	7%
Visual improvements	3	3%

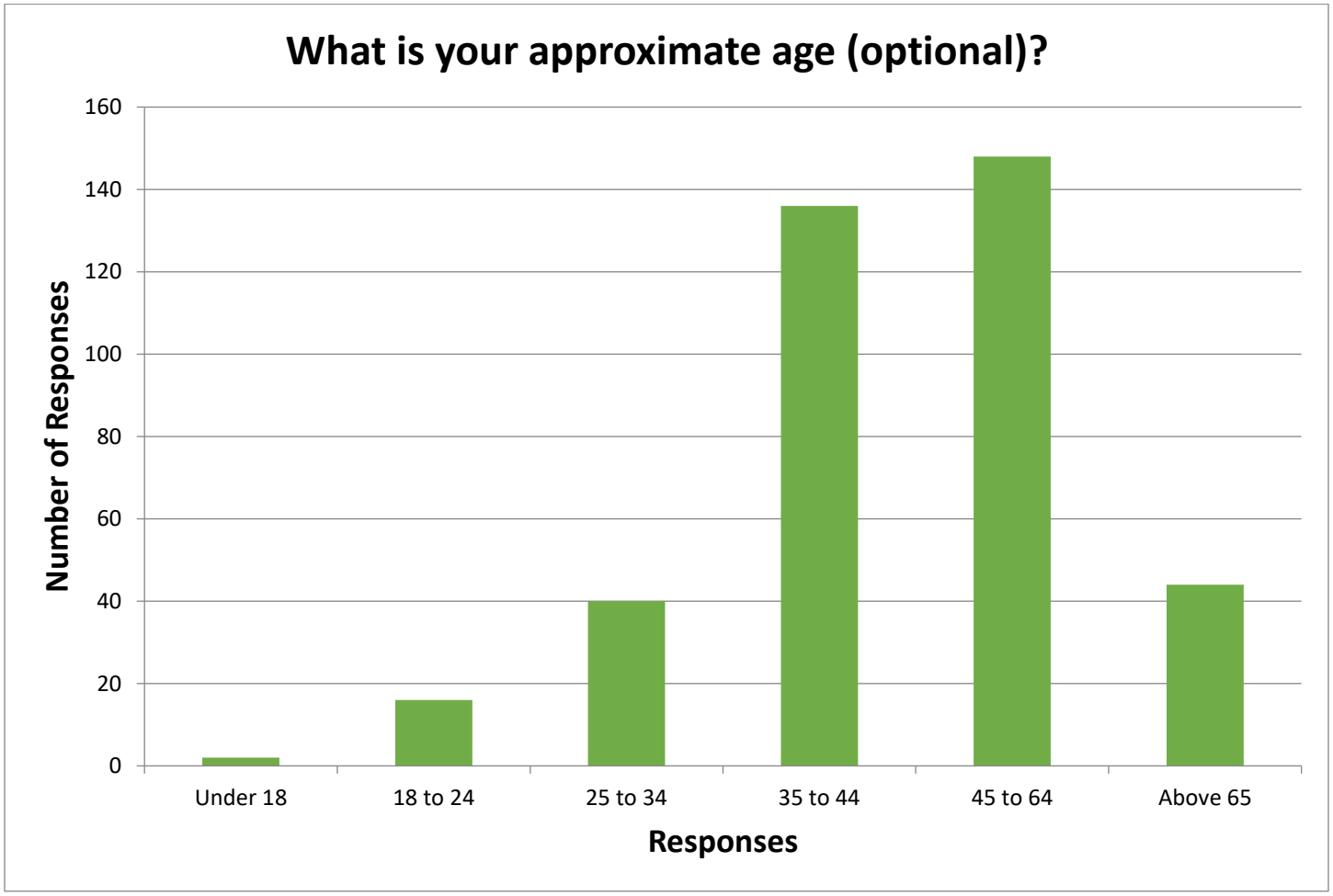
Total Responses:	120
Total Respondents:	108
No Response:	279
Response Rate:	27.9%



Q12: What is your approximate age (optional)?

Response	Number of Responses	% of Total
Under 18	2	1%
18 to 24	16	4%
25 to 34	40	10%
35 to 44	136	35%
45 to 64	148	38%
Above 65	44	11%

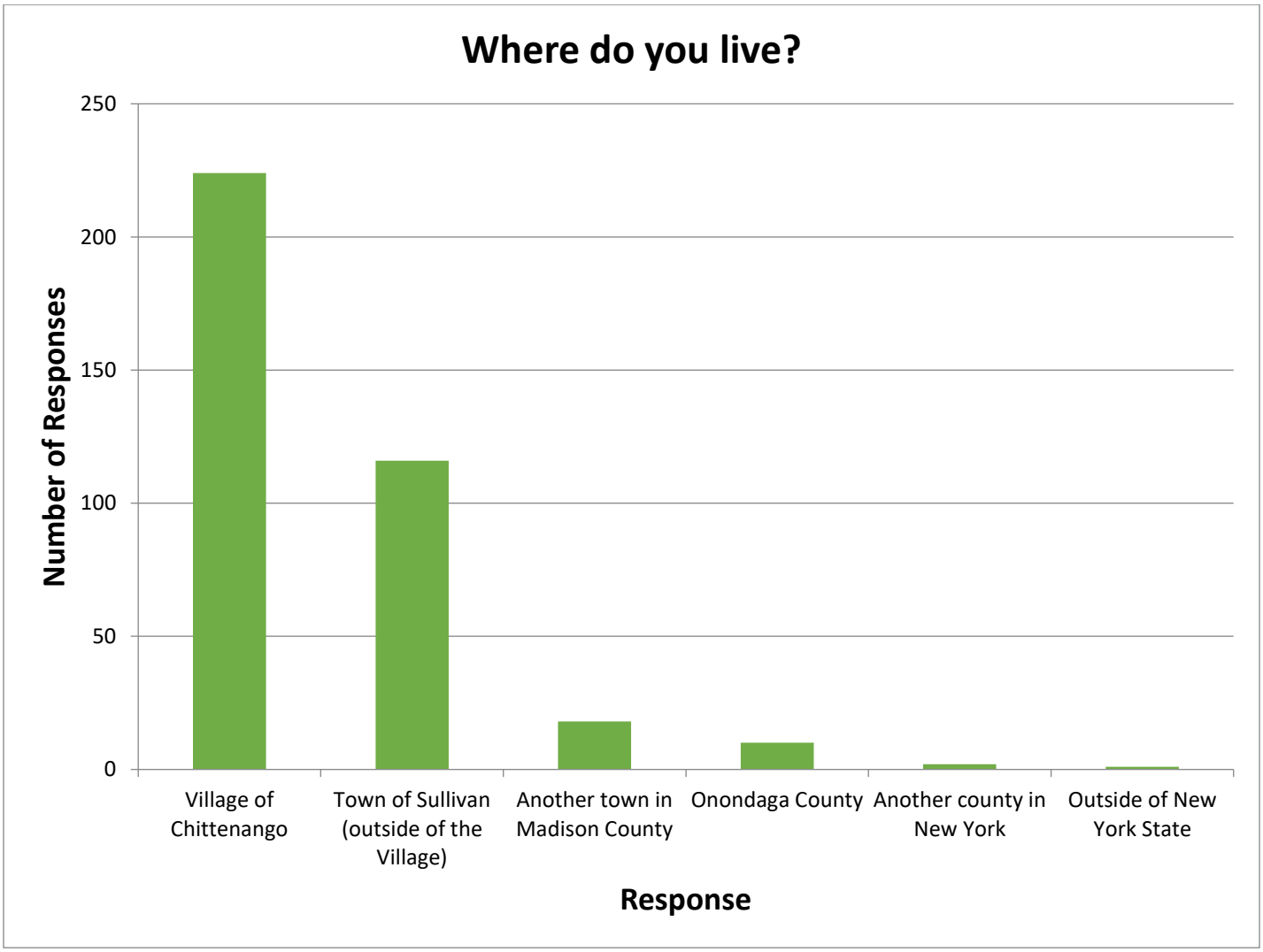
Total Responses:	386
Total Respondents:	386
No Response:	1
Response Rate:	99.7%



Q15: Where do you live?

Response	Number of Responses	% of Total
Village of Chittenango	224	60%
Town of Sullivan (outside of the Village)	116	31%
Another town in Madison County	18	5%
Onondaga County	10	3%
Another county in New York	2	1%
Outside of New York State	1	0%

Total Responses:	371
Total Respondents:	380
No Response:	7
Response Rate:	98.2%



Syracuse Metropolitan Transportation Council
The Metropolitan Planning Organization for the Greater Syracuse area.

Tuscarora Road User's Survey

The Syracuse Metropolitan Transportation Council, at the request of the Town of Sullivan and the Village of Chittenango, is studying the Tuscarora Road corridor. We are looking for ways to improve the road's safety and accessibility for motorists, bicyclists, and pedestrians.

Residents of Chittenango and the surrounding area have identified a wide variety of issues with Tuscarora Road, including the need for traffic calming, suggestions for the Tuscarora / Bolivar Road intersection, and the desire for sidewalks and bicycle lanes. Some of these ideas may be practical in the short-term, some in the long-term, and some may not be compatible with the community's overall vision for this corridor.

This survey is intended as a first step in the process of coming up with a vision for the Tuscarora Road corridor. Please provide your ratings and your comments using the form below. If you want to receive information on future events and outreach, please include your email address at the bottom of the form.

1. How often do you or someone in your household drive along Tuscarora Road?

- ◯ Never
- ◯ Once a month or less often
- ◯ A few times a month
- ◯ About once a week
- ◯ A few times a week
- ◯ Every day
- ◯ Multiple times a day
- ◯ Other

2. How often do you or someone in your household walk or bike along Tuscarora Road?

- ◯ Never
- ◯ Once a month or less often
- ◯ A few times a month
- ◯ About once a week
- ◯ A few times a week
- ◯ Every day
- ◯ Multiple times a day
- ◯ Other

3. How often do you or someone in your household cross Tuscarora Road, either on foot or on a bike?

- ◯ Never
- ◯ Once a month or less often
- ◯ A few times a month
- ◯ About once a week
- ◯ A few times a week
- ◯ Every day
- ◯ Multiple times a day

4. How would you rate Tuscarora Road's safety for motorists? (1 is "not safe" and 5 is "perfectly safe")

1	2	3	4	5
◯	◯	◯	◯	◯

5. What safety issues have you noticed?

6. How would you rate Tuscarora Road's safety for people riding bikes or walking along the road? (1 is "not safe" and 5 is "perfectly safe")

1 2 3 4 5

7. What safety issues have you noticed for bicyclists and pedestrians?

8. Would you be more likely to bike along Tuscarora Road if it had bike lanes?

- Yes
- No
- Maybe
- Other

9. What improvements would you like to see on Tuscarora Road? (choose all that apply)

- [ ] Sidewalks
- [ ] Crosswalks
- [ ] Bicycle Lanes (for example, see: https://bit.ly/2JENIxH (https://bit.ly/2JENIxH))
- [ ] Planting Street Trees (for example, see: http://www.pedbikeimages.org/details.php?picid=2558 (http://www.pedbikeimages.org/details.php?picid=2558))
- [ ] Lamp posts (for example, see: https://bit.ly/3nqjYUc (https://bit.ly/3nqjYUc))
- [ ] An extension of the existing walking / biking trail
- [ ] Other

10. If you had to pick a segment of Tuscarora Road in which to add the improvements you selected in Question 9, what segment or segments would it be? (choose all that apply)

	Sidewalks	Crosswalks	Bike Lanes	Street Trees	Lamp posts	Extend existing trail
Western End (Rt. 5 to Talbert)	○	○	○	○	○	○
Burning Hollow Dr. to Naymik Dr.	○	○	○	○	○	○
Webber Dr. to Bolivar Rd	○	○	○	○	○	○
Bolivar / Lake / Tuscarora intersection	○	○	○	○	○	○
Button Road to Chittenango Creek	○	○	○	○	○	○
Eastern End (Chittenango Creek to Rt. 5)	○	○	○	○	○	○

11. Do you have any other ideas or suggestions for improving the Tuscarora Road corridor?

12. What is your approximate age (optional)?

- ◯ Under 18
- ◯ 18 to 24
- ◯ 25 to 34
- ◯ 35 to 44
- ◯ 45 to 64
- ◯ Above 65

13. Your name (optional):

14. If you would like to be notified of future SMTC activities or to receive the SMTC's newsletter, please provide your email address (optional):

15. Where do you live?

- ◯ Village of Chittenango
- ◯ Town of Sullivan (outside of the Village)
- ◯ Another town in Madison County
- ◯ Onondaga County
- ◯ Another county in New York
- ◯ Outside of New York State
- ◯ Other

APPENDIX C – PUBLIC COMMENTS BY EMAIL

TUSCARORA ROAD CORRIDOR PROJECT

COMMENTS RECEIVED BY EMAIL, SEPTEMBER 29, 2021 – OCTOBER 29, 2021

Trails and Sidewalks

- The crushed stone trails are a sufficient resolution for pedestrian traffic.
- The small stretch of trail has been a bit of relief for most of us parents knowing our kids can safely walk to that other side of Tuscarora.
- One issue I see with the current trail is vehicles being on it, a few times I've seen commercial landscaping trucks and trailers on it. I'm pretty sure laws prevent parking on sidewalks, do the same laws apply to trails? This should be enforced to prevent accidents with pedestrians.
- I like the trails, although they look like an eyesore for people driving through the village.
- All of the other proposed safety measures and trails/sidewalks will be excellent improvements for this corridor. I hope these improvements find a way to be funded and constructed.
- We live on Tuscarora Rd. and would prefer sidewalks as opposed to stone-dust paths.
- These are all excellent suggestions. Personally, I prefer the sidewalk options because I feel the trails look "sloppy". If there were a way to edge the trails so they didn't bleed out into the adjacent grass, it would be more appealing. Sidewalks would improve safe access to those spaces as well as improving the appearance.
- I watched the Tuscarora Road corridor study video. I am a resident on Margot Ave, and use Tuscarora road on a daily basis, both as a driver and a pedestrian. I support extending a pedestrian walkway made from rock dust, as this is most cost effective.
- I live on Tuscarora, and I think a sidewalk would be great. A dust trail- not so much. There is no way I would want one of those going through my front yard. Especially if it is as wide as the ones further down the road.
- Would go for the sidewalks instead of the trail since this is a developed village.
- I prefer the trail over the sidewalk but that's just my preference. I love the idea of ultimately having a pedestrian loop around the village.
- East end of Tuscarora Rd no new sidewalks which remove parking in front of business, we are supposed to be business friendly so let’s not take away the parking. Sidewalks already run opposite side of road.
- What side of the road would the proposed trail be on at the west end of Tuscarora road? There is a graveyard at the intersection of Tom Tom and Tuscarora. Also, the existing trail runs at the backyard of people's property (used to be trees and brush). Between Talbot and Tom Tom, there are houses closed to the road on the south side of the street and farmland on the north side. With either sidewalks or a trail, how much would homeowners expect to lose of their front property? Would they be compensated for this?
- I think Murry would be a better option for the sidewalk down. And I love off street parking in front of business.
- Sidewalks from the beginning to the end of Tuscarora would be fantastic.
- I am a frequent pedestrian on Tuscarora, living on Burning Hollow and running/walking most days of the year. I love the idea of adding sidewalks. I know it is more expensive and maintenance is more, but the paths that we have in the center section of Tuscarora are not useful for many months of the year. Tuscarora becomes even more dangerous in the winter months due to snowbanks narrowing the road even further and the paths are inaccessible at that time. We really need sidewalks for an all-season solution.

- As a resident in a neighborhood off Tuscarora Road this study is very important to my everyday travel. I like the idea of the raised sidewalks. I don't feel like this would be a major change for the people who live in the area assuming they are not driving the whole length of Tuscarora each trip but may deter those who use the road as an alternative to Rt. 5.
- I think having a sidewalk is a great idea. I know a lot of people, including myself use that road to run, walk or bike on.
- All concepts look great! However, the maintenance/cost of sidewalks is definitely something to consider.
- I drive this section daily, and as the second most heavily trafficked road in the village, and the only road connecting many developments to downtown, there needs to be a full sidewalk the entire length of Tuscarora.
- We think south-side pedestrian walkways are a great potential improvement; as it is, many pedestrians walk through the lawns of properties on that side of the road in order to stay out of traffic. We feel that keeping the walkway on the south side keeps pedestrians from crossing over the busy farm entrances, which would create potential safety concerns.

Roundabout / Bolivar Road Intersection

- I am not in favor of a traffic circle.
- I like the roundabout idea.
- Thank you for conducting this study on behalf of the Town of Sullivan and the Village of Chittenango! As a resident who lives nearby and a Traffic/Transportation Engineer myself, I have long thought that the intersection of Bolivar/Lake/Tuscarora needed improvement. Although probably not well received by the community initially, I am highly in favor of the roundabout alternative for this intersection, and I think the community will love it also once they get used to it. I have always thought this would be a great location for a roundabout.
- I am interested in learning the pros and cons of turning the Bolivar Rd-Lake Street Tuscarora intersection into a four way stop. Has that been discussed?
- I'm most interested in the improvement of the Lake Street/Bolivar Road crossing. It's currently unsafe and there are a fair number of accidents here.
- Rerouting and Sensor traffic light or 4-way stop at the Lake Street/Bolivar intersection would help tremendously with the safety issue. Very major concern for mine. The light might be better solution as it will not slow down traffic as much on Tuscarora when there are no cars on the Lake Street
- The visibility at Lake and Bolivar is awful when coming from Lake. If the skew would address this, I would prefer it, but if not, the roundabout would be better.
- I have frequently driven through different size round abouts locally and in other states and am in favor where they make sense. The larger size ones being the best, so I do wonder about the amount of space one would need at Bolivar and Lake St. to make it the best choice.
- In the central section, I prefer the roundabout to the realignment of the Bolivar/Lake intersection. The roundabout dovetails more nicely with the long-term vision of having a pedestrian trail/sidewalk up to Bolivar Road Elementary as well as a sidewalk connecting the existing Lake Street sidewalk to Tuscarora.
- I agree that the Bolivar/Lake Street intersection can be problematic, and that Tuscarora currently does not work for walking/biking. The suggestions in the video seem well thought out and they all would be nice improvements.
- I live and teach in the district. My husband and I use Tuscarora Road multiple times a day. I think having a roundabout at the Lake Street and Bolivar corner is a good idea. I was in an accident at that intersection years ago.
- I support the proposal for a sidewalk the entire duration of Tuscarora and TomTom (option 2A), as well as a roundabout at the intersection of Lake/Bolivar.
- I do not think a roundabout is a good idea at all. The local farmers use Tuscarora and Bolivar often and I don't think they could use the roundabout I think a regular cross walk is fine but not the raised cross walk. It would be very expensive and with all the snow we get would probably need to be replaced and would be much more expensive than paint.
- I am curious as to why a 4-way streetlight at the Bolivar Rd/ Tuscarora Rd/ Lake St. intersection has not been brought up as a viable solution to an extremely dangerous intersection as well as slowing traffic on Tuscarora in general. A Steet light seems like a far more affordable idea.
- I love the roundabout.
  Lake Street and bolivar road would be great as a roundabout. Anyone who says they need to adjust is just dumb it's not hard to use it.
- Not sure about roundabout.

- I strongly support improvements at the Bolivar/Lake intersection. Note that a realignment will also require additional ROW. With a realignment, safety may still be an issue due to poor site distance over the hill to the east. A roundabout may be the best solution with a warning beacon on the upgrade as you come over the hill from the east (sight distance). Initial costs may be higher but safety costs over time are likely lower.
- I think we need a roundabout for the intersection of Lake St and Tuscarora.
- A big no on the roundabout the intersection can be squared much easier. Big vehicles will always be on the road due to the farm so why make it tougher for them. Also, I feel for the amount of traffic which travels this road a day has not increased in 15 years since the last study and there has been very few accidents at this intersection also a lot of money for traffic 2 times a day.
- The intersection with Lake/Bolivar would also be much safer, and likely quicker to navigate, with a roundabout installed. Most of the concerns with a roundabout do not seem to be based on facts, but instead based on fear of the unknown. There is plenty of data from worldwide sources showing that roundabouts are safer, more efficient to traffic, and more fuel efficient than the current intersection.
- A roundabout to accommodate farm machinery and the tractor trailers that service our farm would have to be as large as the roundabout at the intersection of Routes 13 and 31 and would require a very large amount of property. Much less land would be needed to square up Lake St/Bolivar and Tuscarora Rd, and we think that squaring the intersection makes much more sense. A squared intersection would greatly improve visibility and would allow traffic to cross at more natural right angles.

General Comments (about the process / presentation in general)

- In minute 2:45 of the presentation numbers are presented for MPH on the road followed by 2013 for Eastern and 2015 for Western, are these dates? And how can you possibly use dates that far back to discuss current conditions. The YRB casino opened in 2015 and has expanded a ton since then. There's way more traffic on the road now. Also, there's a ton of new homes on the Northern Side with Poolsbrook and Bolivar Heights since 2013 or2015. The data would be stale at this point.
- I sent an email with comments. I hope there is some way of filtering actual community members with those who may live outside our village and are unaware of what is going on here.
- In the west end, I prefer 1B/2B for its NYS Route 5 connection.
  I love how the presentation came together. Thank you to everyone involved for all the work you have done so far.
  Thank you again for all of your hard work. I look forward to hearing the summary of all of the responses!
- Maybe an easier way is possible.
- Good report.
- Looks great.
- Your presentation was very good. Thank you.

Route 5 Safety

- If traffic is reduced on Tuscarora by encouraging it to flow through the village, will a new study be done to address RT 5/west Genesee St? This has a school zone that very FEW people adhere to. Passing of school buses on this stretch of road is also a LARGE issue. It is remise to address traffic on one side of the village without acknowledging that it will negatively impact villagers on the only other road through our village. A through road that can be extremely heavy with traffic at times. Trucks with weight bearing restrictions must take it.
  While excited to see the village more connected, I am concerned this will exacerbate the huge traffic issue we already have in the village.

- I am a resident on West Genesee St. in the Village of Chittenango. I watched your presentation on changes that have been recommended for Tuscarora Rd. While I am certainly a fan of making that road safer, it will, as you state, detour traffic from using it as a bypass for Rt 5. I interpret this to mean that traffic will then increase in front of my home. I find this very disconcerting.
  West Genesee St has changed a lot over the last 15 years. However, minimal changes have been made to improve the safety on this stretch of state road through the village. Drivers speed through here continuously. We a have a school zone speed limit that literally no one adheres to. Buses are passed constantly. It is a very unsafe stretch of road in our village. As evidence by, a car being rear ended and flipped into oncoming traffic in front of the High School earlier this year. Our mayor has worked closely with our police to improve safety in this area. Travelers on this road still show lack of knowledge or blatant disregard for the speed limits and basic rules of the road.
  I would like to know how the traffic increase you are purposing to place upon West Genesee St. will be controlled given that very little follow the speed limits currently. I would also like to see it in a format that gives me a clear understanding on how the traffic control will take place. Who will be responsible for the follow through to make sure the safety measures are implemented? This is a state road through our village and is often a hot potato situation. Thank you for your time. I look forward to hearing how you can help make our village safer overall.

- I understand that route 5 can be thought of as a superior road in theory. However, traffic speeds through the village here and buses are passed frequently. Increasing traffic through an area where there is already an issue will only compound the issue, will it not?
  I am curious as to how this Tuscarora study came about and how to get a similar study done for the impact that it will have on the state road through the village? This stretch of road is well known to be an issue. One that has felt the impact of not one but two casinos. The trucks and construction vehicles alone that barrel through here is concerning.
  Thank you for the encouragement. I do intend to figure out exactly how to make the State Road in front of my home of 15 years go back to being one that does not have such a high number of drivers disregarding the speed limits and creating unsafe roads. This is a venture I have been on for roughly five years now. I wish I had been aware that such studies were available. Maybe with your help, this is an issue that can finally be solved.

Speed

- Current speed limit on the road is 30 mph, at each end of Tuscarora there is a sign stating the speed limit of 30 mph is strictly enforced. Is it? I can tell you NO WAY. Step one to the speeding issue is to get a grasp around it with our current means. Additional patrols on the road or call it what you will "speed trap" Make it known by posting on the community Facebook page or the electronic marquee at the corner of RT5 and Tuscarora RD in front of the bank. Enforce the current laws so that people coming from outside the village know this isn't going to be tolerated.
  I've witnessed cars being passed on the stretch from Chittenango Creek bridge heading out of the village. This is what has become known in our community as the launching point. The section between Naymik and the Durfee farm in each direction is also known for excessive speed. The village knows this, that's why they post their electric speeder signs in these locations. We need to use our current resources including the Village Police, Madison County Sheriffs, Oneida Nation Police and State Police. All these agencies and we are putting money into "how do we reduce speeding".
- We are also very concerned about the vehicles driving in excess of the speed limit nearly all the time.
- It must be pointed out that while a primary goal of this project was to discourage use of Tuscarora as a bypass of route 5, the village has simultaneously put an absurd 20mph speed zone on route 5, therefore encouraging use of Tuscarora road as a bypass. The village also has used route 5 as an infamous speed trap for decades, therefore encouraging use of Tuscarora as a bypass. I would suggest that the village end the counterproductive practices that I noted while also considering the nice improvements that were illustrated in the video.
- Get rid of the unnecessary 20 mph school zone with the crosswalk for 1 pedestrian per month on Route 5 and change Tuscarora to 20 mph.
- The Village does an excellent job patrolling Tuscarora Rd and this causes most people to obey the speed limit.
- I have traveled Tuscarora at 30 mph each time and I get drivers behind me aggressively trying to speed me up.

Heavy Vehicles

- Current concern too many big trucks, other than farm trucks, using bridge by Dollar Store.
- The Large Factory farm on Tuscarora has lg. Tractor-trailers coming to and from the Farm factory utilizing what are called residential roads, freq. driving over the 5 Ton capacity bridge. There is a 1-lane bridge on Bolivar Rd. that must be 100 yrs. old that all the full-size school buses use as a shortcut back to the bus garage 1- 2 x's/day M-F. I`d be interested to know the weight capacity of that bridge as well.
- We are glad to see that thought has gone into the plan to accommodate agricultural traffic; Tuscarora Rd is an essential transportation link that connects our cows with their food supplies and our farm with the community.
  We understand that some thought has gone into agricultural accessibility; but we want to make sure that the planners understand the scale of our equipment and farm traffic so that any improvements are able to safely accommodate them without causing traffic disruptions. Some of the equipment is even longer than tractor trailers, and much of it has very low clearances. Additionally, farm traffic makes thousands of trips on the road every year. We also point out that historically all Rt 5 traffic has been routed down Tuscarora Rd during the annual Oz parade, and that any modifications should consider this traffic as well.

Safety

- 3 downhill grades with limited sight distance in an area that generally floods with heavy rains, and ices up in the winters is a recipe for body work.
- We need to lower the volume of traffic and make our neighborhoods safer. I am hoping that this will benefit business owners in the village of Chittenango also
- As a runner and cyclist, I have never felt safe on this road. Safety improvements has been a LONG time coming.
- I support anyway to make this road safer as I know many children who bike on it to get to the village or go towards Dunkin Donuts.
- It seems to me that the proposed ideas will slow down the already slow-moving farm equipment using Tuscarora Road, making the motorist even more angry causing in unsafe passing. Please address my concerns at the ZOOM meeting.
- We are grateful to our wonderful neighbors who have been a true blessing to us. We always try to operate our equipment in a safe and mindful manner; and are pleased that the community has respected these efforts, as very few survey respondents identified agricultural traffic as a problem. When we started farming here, we were one of eight farms on the road; but now are the only one left. We have tried to be considerate of the changing nature of the surrounding parcels over the years, and hope that any changes in the road will allow us to continue to operate our equipment in a safe and courteous manner.
  Currently people do sometimes get impatient with our slow agricultural speeds and pass us in unsafe locations, such as next to the Baptist churches and by the curve just East of Tom Tom St. We believe that forcing us to stop or slow to a crawl would cause more people to pass us in dangerous situations.

Crosswalks and/or Raised Crosswalks/Intersections

- I'm in favor of Raised crosswalks at every location they are proposed.
- I also support a raised cross walk at the two locations mentioned.
- The only downside is there isn't a safe way to cross. I love the idea of raised crosswalks. This will be a big deal to safely walk across Tuscarora Rd.
  I like raised Crosswalks
- The ideas regarding the raised crosswalk and gateway are very promising. I'm relieved that this project/issue was not buried. I commend the Tuscarora committee for not giving up, thank you!
- My family uses the stone dust path and having the crosswalks would help additionally with more safety crossing the road.
- Raised crosswalks are not needed to see pedestrians the areas are open and have ample vision, except by Manor Dr but that's because of the bridge, don't know how raised crosswalks will help there.
- I love the raised crosswalk concept. I walk around Manor drive area and was almost hit by a car turning from race on to Tuscarora road. Something needs to be done with the crossing. As well as I've had to walk from Manor to Bolivar for work and it's not safe. There's no safe crossing on the bridge from dollar General to Lake Street/ Bolivar Way.
  I watched the video. I love the concept to Manor Drive area. I was almost hit in that crosswalk. I love the raised crosswalk as even in our village we have the pedestrian push to light up cross walk and cars still don't stop.
  I live on Manor, I walk and drive the village. I love this idea.
- I would be happy to have any of the improvements discussed but here are my personal preferences. I love the concept of raised crosswalks and raised intersections. In the East end, I specifically like idea of the raised intersection as a gateway.
- We are particularly concerned about the ability of low-clearance and extra-long equipment to navigate raised pedestrian crossings. We have issues with some railroad crossings and have to travel miles out of the way to cross in alternate locations. If we lost accessibility of Tuscarora Rd, we would be forced to route Eastbound farm traffic through downtown Chittenango and Lake Street. Currently we avoid these locations as much as possible out of respect for the community and because they are not well suited for agricultural traffic. We are also concerned about the possibility of farm equipment bottoming out and becoming stuck on or damaging crosswalks. Additionally, as farm equipment does not possess suspension, we would likely have to come to a full stop at each crosswalk, aggravating motorists and tempting them to make unsafe choices. Thank you for taking the time to read this, and for all the time the village and town have spent discussing this with us to date.

Miscellaneous Comments

- The rolling terrain of the corridor does not lend itself well to bicycle activity. I have never seen a bicyclist on this corridor. Consider an origin-destination study to identify existing ped/bike routes and short car trips to help prioritize pedestrian and bicycle improvement areas.
- I watched the presentation, and I would like to share thoughts and ask questions. My background -I lived on Tuscarora Rd from 1988 - until 2014 roughly as my parents still live there. I now reside on Naymik Rd and travel this stretch of Tuscarora daily. I have 3 children who play in our neighborhood and the neighborhoods on the other side of the road.
- I look forward to being a voice in my community.
- What about school buses?
- Interested Village Board member and Town Board member.
- Please add me to the list of Zoom participants.
- Should bring my AASHTO book and MUTCD manual to the meeting to have back up to show this is the dumbest idea ever?
- 100% behind all of the recommendations.

APPENDIX D – Q&A NOTES

Tuscarora Road Corridor Study

Live Question and Answer Session

October 13, 2021

Session Notes

Mr. Phillip Teague

Mr. Teague: Representing his business (Teague Accountant Experts) and is speaking for his tenants located in the plaza on the east end of Tuscarora Road. Beyond his accountant office, his tenants include nine residential apartments, a hair salon, a pediatrist, the OZ museum office, the Sullivan Food Cupboard, and the largest childcare facility in the area.

Will the project use eminent domain to seize my property?

Mr. McKeon: The project is at the planning stage, and nothing has been engineered. So far we have only made very broad recommendations. The only concept that is anticipated to require land would be the Bolivar/Lake intersection to do a roundabout. What is being proposed on the east end would be able to be taken care of in the right of way.

Mr. Teague: But it is being proposed to put on street parking and sidewalks that would seem to require more space than is available on the street side of the building.

Mr. McKeon: We have not done survey work to exactly know what right of way is available there. Normally the width of roadway shoulder up to the existing sidewalk, which is a bit further west, is the alignment we are looking at.

Mr. Teague: Not practical to do this project because it affects us so drastically. Feels that there is already a sidewalk on the southside of the road that gives access to the trail system. Seems a lot of work that would harm the businesses for the recreational benefit of few.

Mr. McKeon: Part of the thought was to give drivers the feeling visually that Tuscarora is more of a residential road and to close it off in order to try to reduce the cut through traffic. Not sure if it pencils out that the businesses in question would have sufficient parking according to zoning if the ideas put forth are implemented.

Mr. Teague: Also need to consider handicap access and property values too.

Mr. Colone: One item that we are talking about regarding the eastern end, is that we are envisioning it being a longer term idea, several years down the line. It's a larger conversation of what we envision the corridor being.

Mr. Teague: Who gets the final say on this?

Mr. Colone: Final sign off on what gets implemented would be the facility owner which in this case is the Village, assuming, in consultation with the business owners.

Mr. Teague: When can we expect more visuals?

Mr. McKeon: Does not get more detailed than what is being presented.

Ms. Kelly Hawk

Ms. Hawk: At the Bolivar/Lake Intersection is there any consideration for a streetlight vs. a roundabout?

Mr. McKeon: That is a comment we have seen quite a bit from the online survey. None of the concepts proposed an all way stop or a streetlight there because of the engineering consideration known as warrants. This intersection did not meet the warrants for either stop signs or a streetlight mainly because those streets do not have that much traffic.

Ms. Hawk: Was just wondering why. She said it seems like roundabouts are the trend now anywhere she goes. Not sure if tractor trailers and big farm equipment are agile enough to make it around the roundabouts.

Mr. Earl Denny

Mr. Denny: His mother owns the building at the five corners intersection [eastern end of Tuscarora Road]. Same concerns as Mr. Teague has because they have parking. Will there be a rendering of what the thoughts will be as far as parking and the rest. He understands the desire to make it look more suburban. Feels roundabout is costly but speed bumps are not. It will slow things down.

Mr. McKeon: Valuable input. As for the question of a more detailed rendering, that is not part of our scope of work. Speed bumps vs. roundabouts, there are objections to both. Trying to achieve safety and traffic control. You are correct about the cost of the two. In theory the village could apply for funding.

Mr. Denny: How many people are registered for the meeting?

Mr. Colone: 35 registrants, 27 participating in the zoom at the moment.

Mr. Denny: As the village makes more decisions will we be brought in to do more engineering?

Mr. McKeon: No, our job is to identify the issues of the corridor and to identify viable solutions with the input of community support. That is our function. Concluding with a report with suggested ideas.

Mr.Rahme

Mr. Rahme: Thanked SMTC for doing what they have done. Obviously have done our homework. Wants to know what affect it will have on the Burning Hollow Neighborhood. There is a lot of traffic already. Sees a lot of people cutting from Tuscarora through the neighborhood to get to Bolivar Road. So, if you are going to put the elevated walkways in, which he feels is a real good idea, and then the roundabout, which is he not too fond of, that will encourage more people to cut through a residential neighborhood then going down Tuscarora and then west onto Bolivar.

Mr. McKeon: That's a good one, not a comment he has heard before.

Chat Comment/Question/Opinion

Mr. Colone spoke to a comment that has come into the chat. It reads:

Close to what Mr. Rahme was just talking about…. what is the effect of level crosswalks on traffic speed and through put? Would level, non-raised, crosswalks with pedestrian beacons have more effect on traffic?

Mr. McKeon: In other words, would it affect traffic operations? Answer is no, there is no indication that it would. There is not enough pedestrian traffic. Would not be concerned about it affecting roadway operations.

Mr. Colone: Shared a follow up question. **Regarding a comparison of a raised crosswalk vs. a level crosswalk and what impacts or not it would have on larger equipment.**

Mr. McKeon: One of the comments we had on the video is from Durfee's farm. Their comment mentioned their equipment has very little height clearance and that that may be a reason to not consider raised crosswalks. Raised crosswalks have about a three-inch clearance and if folks at Durfee farms note there is issues with that height that is a very strong reason to not consider using raised crosswalks in that location. But the question is should that exclude it from consideration at all locations.

Mr. Steve and Ben Durfee

Mr. Steve Durfee: He thanked the village and the Town for plowing and controlling the speed on the road. Regarding the question about the raised sidewalks [crosswalks], a three-inch height they could probably clear. He thought in the study it said five to six inches. He is more concerned about the manhole covers in front of the Baptist church that are recessed an inch or two. With a raise of three inches our farm equipment would have to come to a complete stop and ease their way across. They have no suspension on farm equipment. It would be a very slow process. Cars look to pass them when they are going down the hill toward Bolivar Road. Passing them at the Baptist church. When they get to about Webber Road people are sick and tired of following them and they are looking for any opportunity to pass. If putting anything in that would slow them down it might cause people to make poor decisions.

Mr. Ben Durfee: He believes a lot of the cutting through the neighborhood has a lot to do with when cars get backed up behind the farm equipment. That is when time is saved cutting through neighborhoods. It makes it a more tempting option.

Mr. Steve Durfee: The Bolivar/Lake intersection is definitely a poor intersection. They have talked about it for the 60 years he has lived on Tuscarora road. For the equipment and tractor trailers that use the road you would need a large roundabout like the one on Route 13 in Sylvan Beach. That would take a lot of eminent domain. Don't know how practical it would be. More practical to square the roads up. They are also concerned about the safety on the road for both vehicles and pedestrians. Putting up level crosswalks with beacons would help the people at Burning Hollow wanting to cross. Crossing the road is difficult.

Mr. McKeon: Four raised features have been thrown out in the design concepts. Two of them are right in the center section. He is wondering if the idea of the crosswalk near Race and Manor would affect the equipment? Wants to know how often does the equipment go that far east?

Mr. Steve Durfee: If they are going east on Tuscarora, 99% of the time they are going all the way down to the light.

Mr. Ben Durfee: They own more land at Canaseraga then they do at Bolivar.

Mr. McKeon: What about the western end by Wheatfield just up from the gas station?

Mr. Steve Durfee: They go that way a lot.

Mr. Ben Durfee: Geographically they are right in the middle of where they farm so they go in every direction to get to the field to feed the cows.

Mr. Steve Durfee: Is there that much pedestrian traffic at that location that warrants a crosswalk at this time?

Mr. McKeon: At that end of the road the goal is to make that shopping plaza have pedestrian accessibility. On the very far western end it is because it is the logical continuation of the path to route 5. In terms of, is there pedestrian demand on the western end, the answer is it is more for traffic calming purposes. More so an amenity.

Mr. Steve Durfee: You mentioned there is a guidebook. How about lowering the speed for some stretches of the road from 20 to 25 mph. Maybe from Weber drive to Naymik to deter traffic?

Mr. McKeon: Theoretically the answer is yes. In terms of standards and guidelines the speed limit is based on how most people use the road, which is called the 85th percentile (the speed at or below which 85 percent of vehicles travel). On Tuscarora Road the 85th percentile speed is more like 35 MPH. Keeping it to 30 MPH is preferable. Changing the speed limit can create more problems than it solves.

Mr. McKeon asked what is the hugest piece of equipment and the vertical clearance?

Mr. Steve Durfee: Thinks 5 to 6 inches is safe. His biggest concern is that they would literally have to come to a stop. Anytime they stop people could make stupid choices.

Mr. Ben Durfee: They have been passed, during rush hour, on the left when they are trying to turn left onto Canaseraga Road.

<u>Mr. Bob Freunscht</u>

Mr. Freunscht: Comments are based on comments relayed to him earlier from the Fire Chief, Jason Baker. His number one concern was the raised crosswalks. No problem with the flat crosswalks and the signs. When they respond to a call on Tuscarora Road they try to stay on the main road and go down Route 5 and take a left on Tuscarora to respond to the neighborhoods off Tuscarora. General speed depending upon the severity of the alarm would probably be 30 plus MPH. The Chief was

worried what would happen going over a raised crosswalk at that speed with the ladder truck or the bumper. Concerned he would have to slow down or stop when going across them and he just wanted everyone to be reminded that a fire doubles every 30 seconds. It may not seem a lot to a normal person that it may take a minute or two more to get there but a fire doubles every 30 seconds. That was his number one concern. His second concern is regarding the roundabout. He mentioned that it is raised on a portion. What happens in the winter when it is not cleared off. Need to consider the length of the fire equipment when designing it.

Mr. McKeon: The design of the roundabout is designed to accommodate tractor trailers and emergency response equipment. This concern has been brought up in other communities. Fayetteville has two raised intersections. He has talked with the Fire Chief in Fayetteville and asked whether it effects response time and he said it does not. When looking at guidance of where to use raised crosswalks emergency vehicle response time is always something you should keep in mind.

Mr. Mark Pulver

Mr. Pulver: Likes the report and commented on the great job done and the explanation of things. He was involved at the beginning and came into this to see if he could help at all. When first talking about this the biggest concern was pedestrian safety, then bike safety and third the issue of people getting in and out of the adjacent neighborhoods during rush hour. It is largely because of cut through traffic. His point is that it is important that we keep our eye on the goal which is to keep people from cutting through Tuscarora to avoid Route 5 and going through the neighborhoods. He believes that it is a measurable goal and it will impact all the safety issues we are all concerned about. The other thing is he does not see this as a single project but one that would be done in phases. Some phases such as crosswalks have tremendous support and as you do the phases you can take measures of the impact and you may not have to even get to any of the objectionable phases.

Mr. McKeon: The roundabout concept is more controversial. Whereas there is consensus around building the crosswalks as well support for building the off-road trails or sidewalks.

Mr. Pulver: A trail needs to be plowed during the winter because the safety issues for pedestrians are even more so in the winter.

Mr. McKeon: Noted that he was out there last winter and it seemed people were trudging through it.

Mr. Colone: read off comments/questions/opinions that were in line with a lot of what was already discussed.

Chat Comment/Question/Opinion

Regarding the proposed or suggested roundabout a commenting person has heard complaints about the one in Lakeport [commentor likely referring to Bridgeport] **being too small and the one on Route**

13 being too large. The question asked is do we have a sense of what size roundabout we may include?

Mr. McKeon: Can't over emphasize we are not anywhere close to showing an engineering level design. It's a rough concept and should not be looked at as a final design. Generally regarding how big and how small, a 105 feet dimension from curb to curb on the circulating roadway is workable. If the community were to pursue it, you would bring in an engineer that would throw in a couple of ideas that would take into consideration factors such as draining etc. Ideally you would like to have something in the center of the roundabout, such as vegetation. What you get for the cost of a roundabout is something that looks nice with a grass center, for example, and a mountable center island that enables the larger vehicles to cross the roundabout more efficiently.

Chat Comment/Question/Opinion

There is also concern that if speed limits were changed would that presumably make Lake Street a cut through street?

Mr. Colone: Feels that it may or may not have the potential. Starting the study out we are looking at ways to slow traffic. There is some speeding that occurs on the roadway. We are looking at enhancement opportunities to perhaps slow traffic down and we are also looking at opportunities to improve the bike and pedestrian activity mobility along the corridor. We are trying to build up that "complete street."

Mr. McKeon: The function of Tuscarora Road from a regional perspective is as a cut through for commuter traffic. Spikes occur in the morning and afternoon. Anything that will result in making it more difficult for cut through traffic on Tuscarora will inevitably result in more vehicles on Route 5. Route 5 is designed to accommodate more vehicles, Tuscarora not so much.

Chat Comment/Question/Opinion

If there were crosswalks installed what would the adherence to the signage be? There is an opinion that the existing crosswalk on Route 5 through the commercial main street district isn't really adhered to.

Mr. McKeon: Valid concern. We have proposed a raised crosswalk along with a rectangular flashing beacon. You push a button and a light starts flashing signifying someone wants to cross the street. Compliance is not guaranteed. Studies show that you get a measurable reduction in crashes by adding those beacons. It is a demonstrated safety intervention used widely in situations just like this. There is sufficient sight distance and drivers should be able to see the flashing beacons.

Mr. Jim English

Mr. English: As an alternative to raised crosswalks how about using rumble strips preceding a crosswalk to get people's attention to those flashing lights. They will wake them up and get their attention, hopefully.

Mr. McKeon: Great comment, will have to do some research on that. Has never heard about placing rumble strips on either side of a crosswalk to get people's attention. He understands that rumble strips are a bit noisy for adjacent properties. He will have to look into it.

Mr. English: That type of rumble strip will alleviate the concern that is had with the elevated crossings. There may be a bit of noise, but we could have green buffer space with trees that could alleviate it.

Mr. McKeon: Really interesting concept. Will definitely look into it.

Mr. Ben Durfee: With the rumble strips you may want to look into the road maintenance. The rumble strip areas deteriorate more than the rest of the road surface.

Mr. Colone:

Chat Comment/Question/Opinion

Where are cars supposed to stop today, at the stop sign or up to Tuscarora Road? The stop signs are set back from the intersection proper.

Mr. McKeon: A stop bar may be a good treatment where there is ambiguity like this. If we are going to talk about reducing skew, throw in a stop bar.

Mr. Pulver: Responded to this saying that as you drive through there it is dictated by the circumstances of that intersection. Even if a stop bar is placed you still must creep up to see. With the skew on that intersection, he personally has to get real close.

Mr. McKeon: Looking at the 5-year collision data for this intersection shows a high number of right-angle collisions. Makes up 2/3 of the crashes as this intersection. A lot of those crashes are from one car going northbound and the other going westbound.

Mr. Pulver: The other issue there is that you are coming down the hill, especially if it is slippery.

Mr. McKeon: Some people have pointed out, with the roundabout, whether it is a wise idea seeing as though you are coming down that grade.

Ms. Donna Lynch

Ms. Lynch: She is with the Creekwalk Advisory Committee in the Village of Chittenango. Our big concern is for the safety of those using the creek walk and the neighborhood trails crossing Tuscarora Road. Way back when they started thinking about this section, she ordered material from the cross-alert systems. It is different from the one they have downtown. She has seen people go through that

including herself. She likes the cross-alert system because it has large lights that will flash for both the trail users and the drivers on the highway and is activated on both sides, the road, and the trail. On the trail side it would alert them to stop for the traffic. She particularly is a fan of those.

Mr. McKeon: In other words does the person on the trail push a button to cross?

Ms. Lynch: Yes, they can push a button to cross but there is an activated automated camara that sees the pedestrian. This is different than the in-pavement lights on Route 5.

Mr. and Mrs. Michael McCabe

Mr. McCabe: Going back to the trail that is being proposed to go on the Northside of Tuscarora:as it gets to the bridge you are adding a bridge over the creek so that people can access the eastside so that people do not have to access the traffic zone.

Mr. McKeon: Yes. In the comments received to date no one has commented on an additional bridge at that location. Do you have additional thoughts on that as an idea?

Mr. McCabe: As a walker around Town, he cuts through Tuscarora Road down Route 5 and walks back on Route 5. Coming down that road the bridge is always something he comes up to and stops to make sure there is no westbound traffic and then takes a chance and walks across but has been caught and has tried to get really skinny so that they could see him. People may be looking ahead but they can sway six inches. So, he is glad to see that in the recommendations.

Mrs. McCabe: Wanted to be reminded of the Tuscarora website Mr. McKeon referenced earlier.

Mr. McKeon: www.smtcmpo.org/Tuscarora

Mr. Colone: Will look to place it into the chat.

Mr. McCabe: Going back to the most eastern side where you have the Salvation Army and across the street you have some buildings. Looking at the picture it shows an entrance between two buildings on the northside where there is the Chittenango food cupboard where drop offs occur. There needs to be a wide enough driveway. The residential area next door has cars parked behind the buildings and this traffic would need to come into this small driveway area. Will it be a problem, site vision wise, having cars parked on the street? When the food trucks come, they are sizeable.

Mr. McKeon: Could some of the traffic go via Manor Drive?

Mr. McCabe: It is a childcare area where they have historically set up cones in the back to prevent people from cutting through, because they cross the kids over. That would not be feasible.

Mr. McKeon: Great input. This design in general does not mesh if this width of the driveway remains.

Mr. McCabe: A wider driveway would result in a safer environment at all times. The space between the small building and the longer one currently serves as an exit to those cars parked for residential purposes that he noted before.

Chat Comment/Question/Opinion

Wondering what the next steps will be?

Mr. McKeon: As noted we started this project about a year ago with data collection and an online survey to find out what the real problems on Tuscarora are. That all went into the concepts. From here we plan to take your input and other information to date and compile it into a report. We will work with an advisory committee to package up the rest of the report. It will then be presented to the Planning and Policy Committees of the SMTC and when approved it will be released to the public, go on our website and be broadly disseminated. It will be several months out yet hopefully be wrapped up by February or March of next year.

Mr. Michael McCabe

Mr. McCabe: Would be wonderful at the Tuscarora, Lake and Route 5 intersection if that empty building on the southeast corner could be made better and altered for the bigger vehicles to better make the turn. It's owned by the Oneida Nation. If something can be done to make it better and to look better that would be great.

Mr. McKeon: Thanked him for the comment. Unfortunately, not in the study's purview.

Ms. Liz Ross

Ms. Ross: Thank you for doing this. Hopefully those that are listening have been able to get more information. She is co-chair to the Tuscarora Road Advisory Committee. There was as 2020 study that was done by SU, that showed if they could have more traffic stay on Route 5 vs. going west on Tuscarora it could bring business into the community. She has talked to business owners about how they felt about having more traffic on Route 5 vs. going on Tuscarora and they were 100% for it. They were thrilled of the idea that they could get more exposure. When doing the construction on the east end of Tuscarora some of the restaurants said they saw an increase in business. She just wanted to mention this to people that they have taken into consideration businesses and especially Durfee farm, emergency vehicles and the comments made by all.

Mr. McKeon: Hearing all the comments is very valuable to us. Thank you all for your time an input.

APPENDIX E – TRAFFIC COUNTS

TUSCARORA / BOLIVAR – TURNING MOVEMENT COUNTS (2021)

National Data and Surveying Services

333 Delaware Ave. Suite 6
Delmar, NY 12054
<www.ndsdata.com>

Bolivar Rd & Tuscarora Rd, Chittenango
Counter: NDS via camera
Tuscarora Corridor Study
Note: N/A

File Name : Bolivar_Tuscarora_101221_Formatted
Site Code : 10122102
Start Date : 10/12/2021
Page No : 1

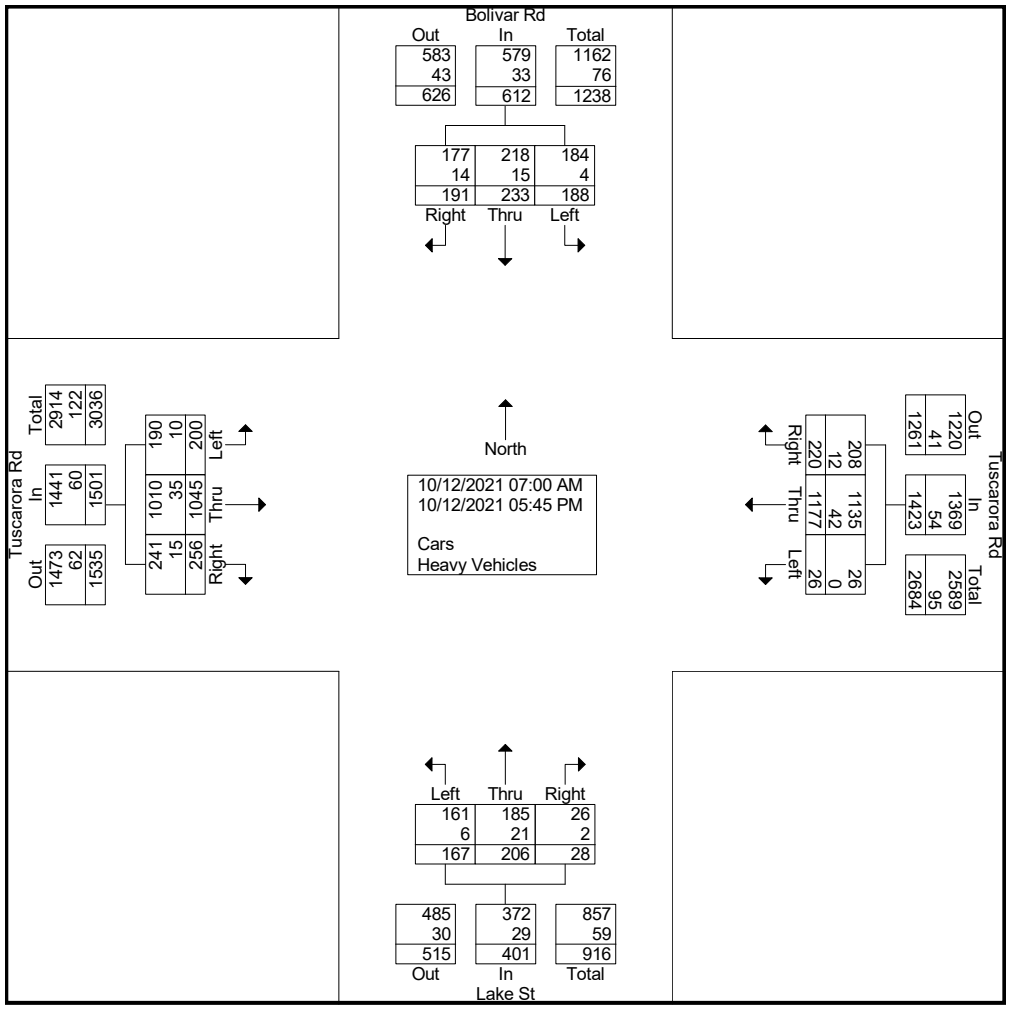
Groups Printed- Cars - Heavy Vehicles

	Tuscarora Rd Eastbound				Tuscarora Rd Westbound				Lake St Northbound				Bolivar Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	9	44	22	75	0	44	4	48	8	6	2	16	3	10	4	17	156
07:15 AM	11	40	35	86	1	37	4	42	15	15	1	31	3	17	5	25	184
07:30 AM	9	34	18	61	0	51	2	53	10	6	2	18	5	8	5	18	150
07:45 AM	7	32	12	51	0	39	6	45	4	9	0	13	4	12	3	19	128
Total	36	150	87	273	1	171	16	188	37	36	5	78	15	47	17	79	618
08:00 AM	19	32	13	64	0	42	21	63	8	21	0	29	4	5	7	16	172
08:15 AM	16	25	3	44	0	39	8	47	4	13	0	17	14	12	17	43	151
08:30 AM	9	29	5	43	0	40	6	46	3	5	2	10	9	8	14	31	130
08:45 AM	3	35	7	45	1	48	5	54	5	8	0	13	8	6	4	18	130
Total	47	121	28	196	1	169	40	210	20	47	2	69	35	31	42	108	583
*** BREAK ***																	
02:00 PM	7	47	15	69	0	40	7	47	7	4	1	12	5	5	3	13	141
02:15 PM	6	44	6	56	0	53	9	62	5	12	2	19	7	5	5	17	154
02:30 PM	15	36	6	57	0	54	9	63	10	3	0	13	6	4	5	15	148
02:45 PM	9	44	6	59	2	49	15	66	9	11	0	20	10	5	7	22	167
Total	37	171	33	241	2	196	40	238	31	30	3	64	28	19	20	67	610
03:00 PM	11	51	5	67	3	56	13	72	3	18	1	22	13	12	21	46	207
03:15 PM	6	39	11	56	0	48	6	54	11	12	1	24	18	24	23	65	199
03:30 PM	5	47	10	62	4	44	14	62	6	4	0	10	8	11	7	26	160
03:45 PM	8	46	10	64	3	56	14	73	5	2	0	7	10	11	4	25	169
Total	30	183	36	249	10	204	47	261	25	36	2	63	49	58	55	162	735
04:00 PM	3	57	8	68	1	53	11	65	9	7	1	17	8	9	3	20	170
04:15 PM	7	55	11	73	1	76	3	80	5	4	2	11	11	6	7	24	188
04:30 PM	6	56	4	66	4	59	11	74	6	7	1	14	8	14	9	31	185
04:45 PM	13	52	10	75	2	46	13	61	9	8	1	18	9	9	5	23	177
Total	29	220	33	282	8	234	38	280	29	26	5	60	36	38	24	98	720
05:00 PM	4	44	6	54	0	73	8	81	7	9	4	20	5	16	10	31	186
05:15 PM	4	61	16	81	1	51	9	61	5	6	3	14	4	10	10	24	180
05:30 PM	8	50	10	68	1	42	13	56	10	8	2	20	7	5	7	19	163
05:45 PM	5	45	7	57	2	37	9	48	3	8	2	13	9	9	6	24	142
Total	21	200	39	260	4	203	39	246	25	31	11	67	25	40	33	98	671
Grand Total	200	1045	256	1501	26	1177	220	1423	167	206	28	401	188	233	191	612	3937
Apprch %	13.3	69.6	17.1		1.8	82.7	15.5		41.6	51.4	7		30.7	38.1	31.2		
Total %	5.1	26.5	6.5	38.1	0.7	29.9	5.6	36.1	4.2	5.2	0.7	10.2	4.8	5.9	4.9	15.5	
Cars	190	1010	241	1441	26	1135	208	1369	161	185	26	372	184	218	177	579	3761
% Cars	95	96.7	94.1	96	100	96.4	94.5	96.2	96.4	89.8	92.9	92.8	97.9	93.6	92.7	94.6	95.5
Heavy Vehicles	10	35	15	60	0	42	12	54	6	21	2	29	4	15	14	33	176
% Heavy Vehicles	5	3.3	5.9	4	0	3.6	5.5	3.8	3.6	10.2	7.1	7.2	2.1	6.4	7.3	5.4	4.5

National Data and Surveying Services

333 Delaware Ave. Suite 6
Delmar, NY 12054
<www.ndsdata.com>

File Name : Bolivar_Tuscarora_101221_Formatted
Site Code : 10122102
Start Date : 10/12/2021
Page No : 2



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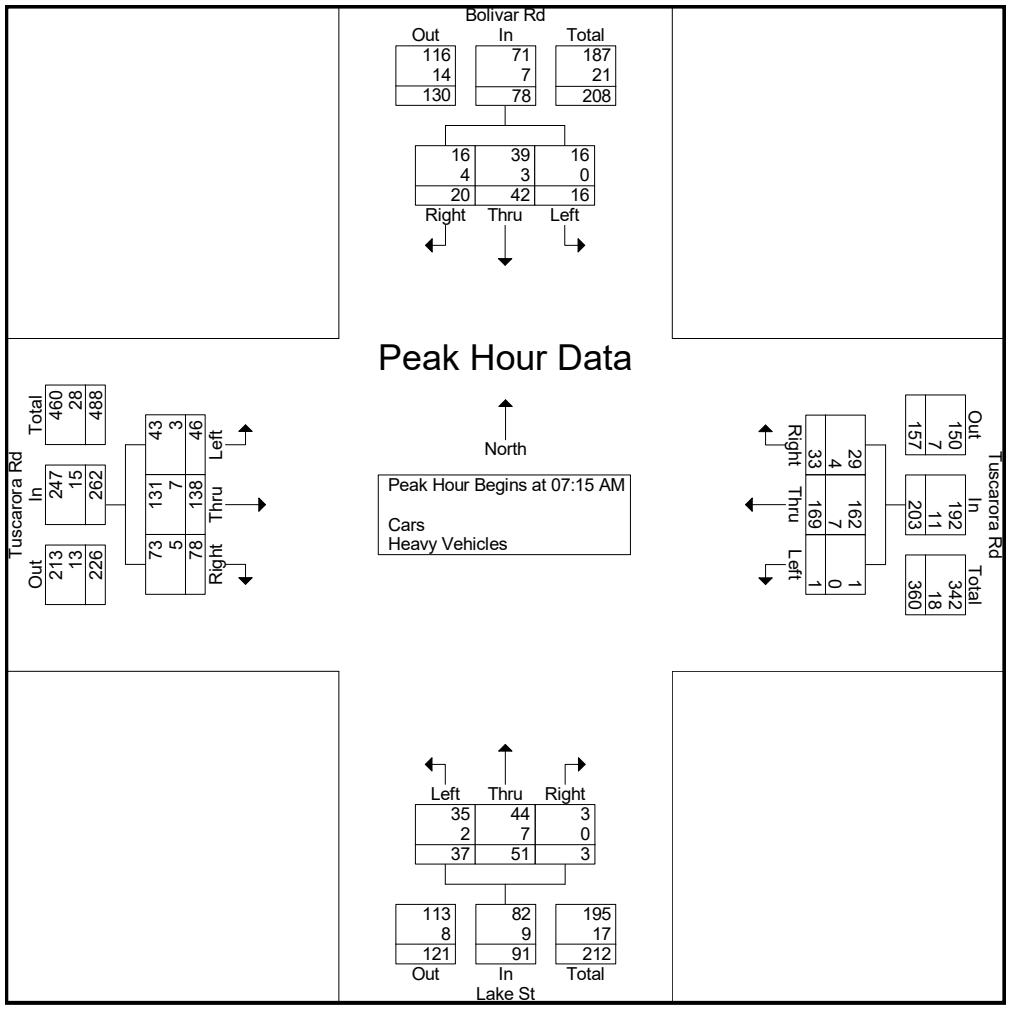
Site Code : 10122102
Start Date : 10/12/2021

	Tuscarora Rd Eastbound				Tuscarora Rd Westbound				Lake St Northbound				Bolivar Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	11	**40**	**35**	**86**	**1**	37	4	42	**15**	15	1	**31**	3	**17**	5	**25**	**184**
07:30 AM	9	34	18	61	0	**51**	2	53	10	6	**2**	18	**5**	8	5	18	150
07:45 AM	7	32	12	51	0	39	6	45	4	9	0	13	4	12	3	19	128
08:00 AM	**19**	32	13	64	0	42	**21**	**63**	8	**21**	0	29	4	5	**7**	16	172
Total Volume	46	138	78	262	1	169	33	203	37	51	3	91	16	42	20	78	634
% App. Total	17.6	52.7	29.8		0.5	83.3	16.3		40.7	56	3.3		20.5	53.8	25.6		
PHF	.605	.863	.557	.762	.250	.828	.393	.806	.617	.607	.375	.734	.800	.618	.714	.780	.861
Cars	43	131	73	247	1	162	29	192	35	44	3	82	16	39	16	71	592
% Cars	93.5	94.9	93.6	94.3	100	95.9	87.9	94.6	94.6	86.3	100	90.1	100	92.9	80.0	91.0	93.4
Heavy Vehicles	3	7	5	15	0	7	4	11	2	7	0	9	0	3	4	7	42
% Heavy Vehicles	6.5	5.1	6.4	5.7	0	4.1	12.1	5.4	5.4	13.7	0	9.9	0	7.1	20.0	9.0	6.6



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Site Code : 10122102
Start Date : 10/12/2021
Page No : 4

	Tuscarora Rd Eastbound				Tuscarora Rd Westbound				Lake St Northbound				Bolivar Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
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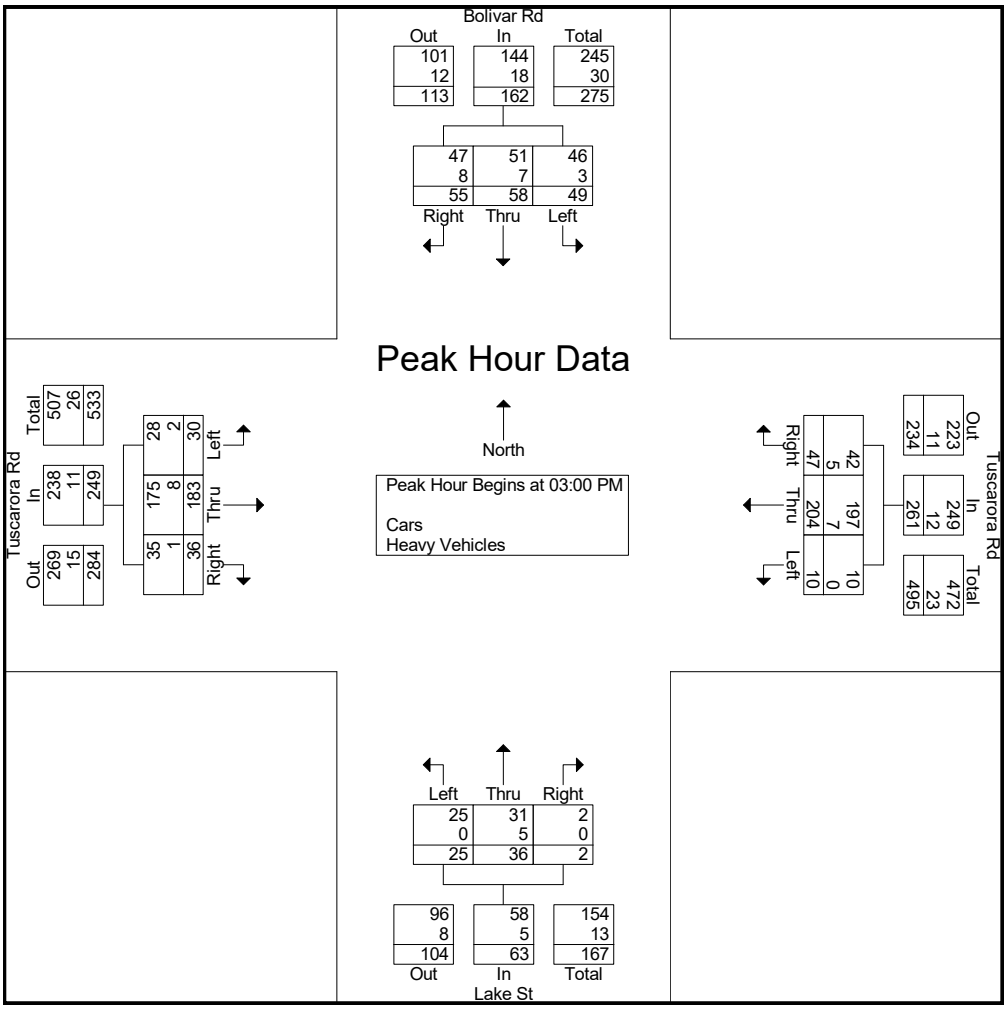
03:15 PM	6	39	**11**	56	0	48	6	54	**11**	12	1	**24**	**18**	**24**	**23**	**65**	199
03:30 PM	5	47	10	62	**4**	44	**14**	62	6	4	0	10	8	11	7	26	160
03:45 PM	8	46	10	64	3	56	14	**73**	5	2	0	7	10	11	4	25	169
Total Volume	30	183	36	249	10	204	47	261	25	36	2	63	49	58	55	162	735
% App. Total	12	73.5	14.5		3.8	78.2	18		39.7	57.1	3.2		30.2	35.8	34		
PHF	.682	.897	.818	.929	.625	.911	.839	.894	.568	.500	.500	.656	.681	.604	.598	.623	.888
Cars	28	175	35	238	10	197	42	249	25	31	2	58	46	51	47	144	689
% Cars	93.3	95.6	97.2	95.6	100	96.6	89.4	95.4	100	86.1	100	92.1	93.9	87.9	85.5	88.9	93.7
Heavy Vehicles	2	8	1	11	0	7	5	12	0	5	0	5	3	7	8	18	46
% Heavy Vehicles	6.7	4.4	2.8	4.4	0	3.4	10.6	4.6	0	13.9	0	7.9	6.1	12.1	14.5	11.1	6.3



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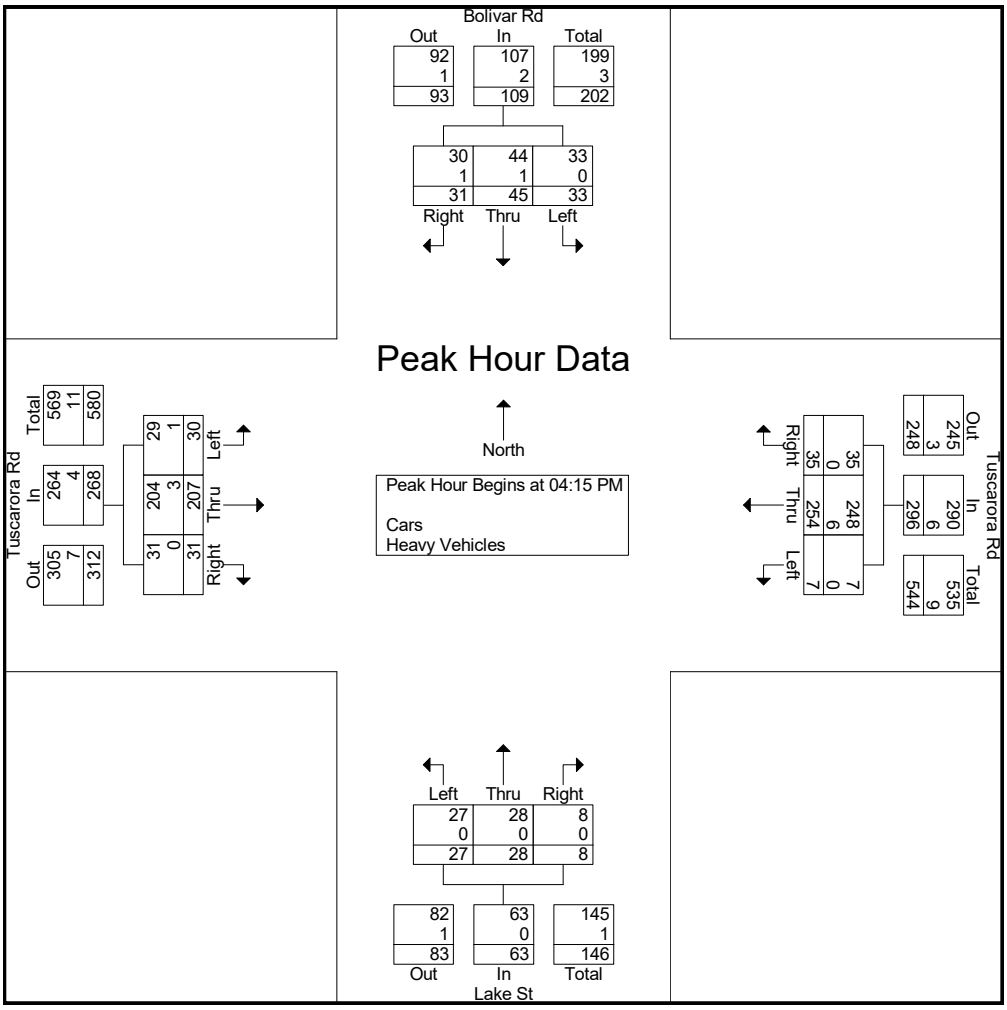
	Tuscarora Rd Eastbound				Tuscarora Rd Westbound				Lake St Northbound				Bolivar Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	7	55	**11**	73	1	**76**	3	80	5	4	2	11	**11**	6	7	24	**188**
04:30 PM	6	**56**	4	66	**4**	59	11	74	6	7	1	14	8	14	9	**31**	185
04:45 PM	**13**	52	10	**75**	2	46	**13**	61	**9**	8	1	18	9	9	5	23	177
05:00 PM	4	44	6	54	0	73	8	**81**	7	**9**	**4**	**20**	5	**16**	**10**	31	186
Total Volume	30	207	31	268	7	254	35	296	27	28	8	63	33	45	31	109	736
% App. Total	11.2	77.2	11.6		2.4	85.8	11.8		42.9	44.4	12.7		30.3	41.3	28.4		
PHF	.577	.924	.705	.893	.438	.836	.673	.914	.750	.778	.500	.788	.750	.703	.775	.879	.979
Cars	29	204	31	264	7	248	35	290	27	28	8	63	33	44	30	107	724
% Cars	96.7	98.6	100	98.5	100	97.6	100	98.0	100	100	100	100	100	97.8	96.8	98.2	98.4
Heavy Vehicles	1	3	0	4	0	6	0	6	0	0	0	0	0	1	1	2	12
% Heavy Vehicles	3.3	1.4	0	1.5	0	2.4	0	2.0	0	0	0	0	0	2.2	3.2	1.8	1.6



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Bolivar Rd & Tuscarora Rd, Chittenango
Counter: NDS via camera
Tuscarora Corridor Study
Note: N/A

File Name : Bolivar_Tuscarora_101221_Formatted
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Groups Printed- Heavy Vehicles

	Tuscarora Rd Eastbound				Tuscarora Rd Westbound				Lake St Northbound				Bolivar Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	2	1	3	0	2	0	2	0	0	0	0	0	2	0	2	7
07:15 AM	0	1	1	2	0	1	0	1	1	0	0	1	0	0	1	1	5
07:30 AM	0	3	0	3	0	3	0	3	0	0	0	0	0	1	0	1	7
07:45 AM	0	2	4	6	0	2	0	2	0	1	0	1	0	2	2	4	13
Total	0	8	6	14	0	8	0	8	1	1	0	2	0	5	3	8	32
08:00 AM	3	1	0	4	0	1	4	5	1	6	0	7	0	0	1	1	17
08:15 AM	0	0	0	0	0	1	1	2	1	4	0	5	0	1	0	1	8
08:30 AM	0	2	0	2	0	3	0	3	0	0	0	0	0	0	0	0	5
08:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
Total	3	3	0	6	0	8	5	13	2	10	0	12	0	2	1	3	34
*** BREAK ***																	
02:00 PM	0	0	7	7	0	3	0	3	1	0	1	2	0	0	0	0	12
02:15 PM	0	1	0	1	0	0	0	0	0	3	1	4	0	0	0	0	5
02:30 PM	3	2	1	6	0	5	0	5	2	1	0	3	0	0	1	1	15
02:45 PM	1	3	0	4	0	0	2	2	0	1	0	1	0	0	0	0	7
Total	4	6	8	18	0	8	2	10	3	5	2	10	0	0	1	1	39
03:00 PM	0	2	0	2	0	1	2	3	0	5	0	5	0	0	3	3	13
03:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	2	6	5	13	15
03:30 PM	1	3	1	5	0	2	3	5	0	0	0	0	1	0	0	1	11
03:45 PM	1	3	0	4	0	2	0	2	0	0	0	0	0	1	0	1	7
Total	2	8	1	11	0	7	5	12	0	5	0	5	3	7	8	18	46
04:00 PM	0	4	0	4	0	1	0	1	0	0	0	0	0	0	0	0	5
04:15 PM	1	1	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
04:30 PM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	1	7	0	8	0	5	0	5	0	0	0	0	0	0	1	1	14
05:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
05:15 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:30 PM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	2
Total	0	3	0	3	0	6	0	6	0	0	0	0	1	1	0	2	11
Grand Total	10	35	15	60	0	42	12	54	6	21	2	29	4	15	14	33	176
Apprch %	16.7	58.3	25		0	77.8	22.2		20.7	72.4	6.9		12.1	45.5	42.4		
Total %	5.7	19.9	8.5	34.1	0	23.9	6.8	30.7	3.4	11.9	1.1	16.5	2.3	8.5	8	18.8	

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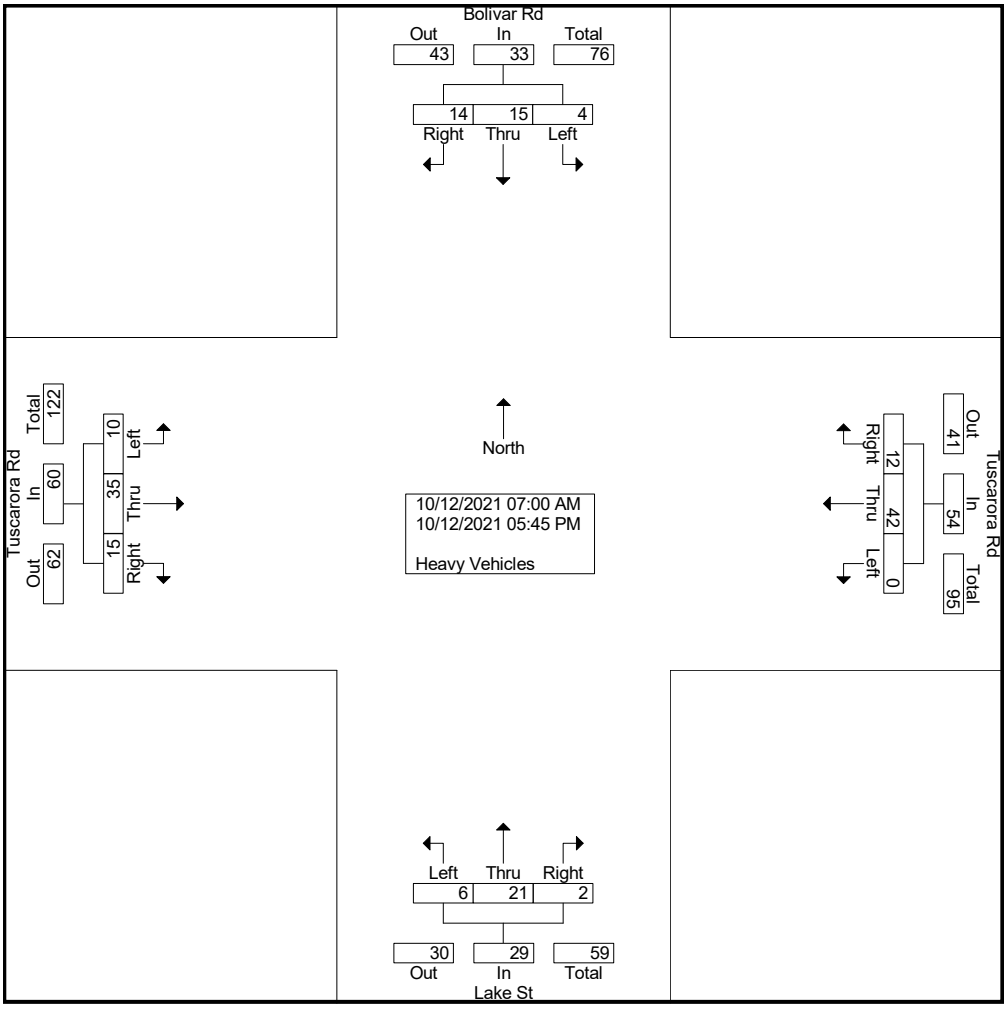

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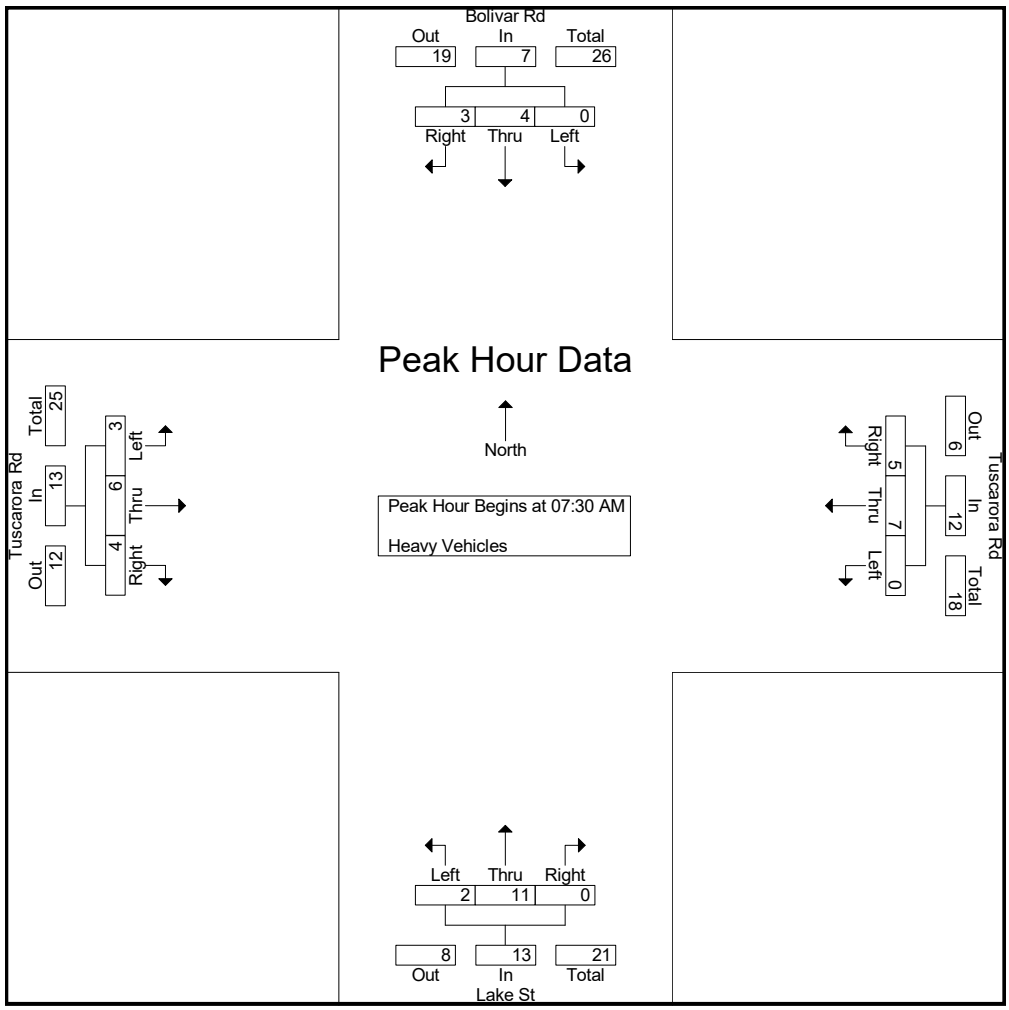
	Tuscarora Rd Eastbound				Tuscarora Rd Westbound				Lake St Northbound				Bolivar Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	**3**	0	3	0	**3**	0	3	0	0	0	0	0	1	0	1	7
07:45 AM	0	2	**4**	**6**	0	2	0	2	0	1	0	1	0	**2**	**2**	**4**	13
08:00 AM	**3**	1	0	4	0	1	**4**	**5**	**1**	**6**	0	**7**	0	0	1	1	**17**
08:15 AM	0	0	0	0	0	1	1	2	1	4	0	5	0	1	0	1	8
Total Volume	3	6	4	13	0	7	5	12	2	11	0	13	0	4	3	7	45
% App. Total	23.1	46.2	30.8		0	58.3	41.7		15.4	84.6	0		0	57.1	42.9		
PHF	.250	.500	.250	.542	.000	.583	.313	.600	.500	.458	.000	.464	.000	.500	.375	.438	.662



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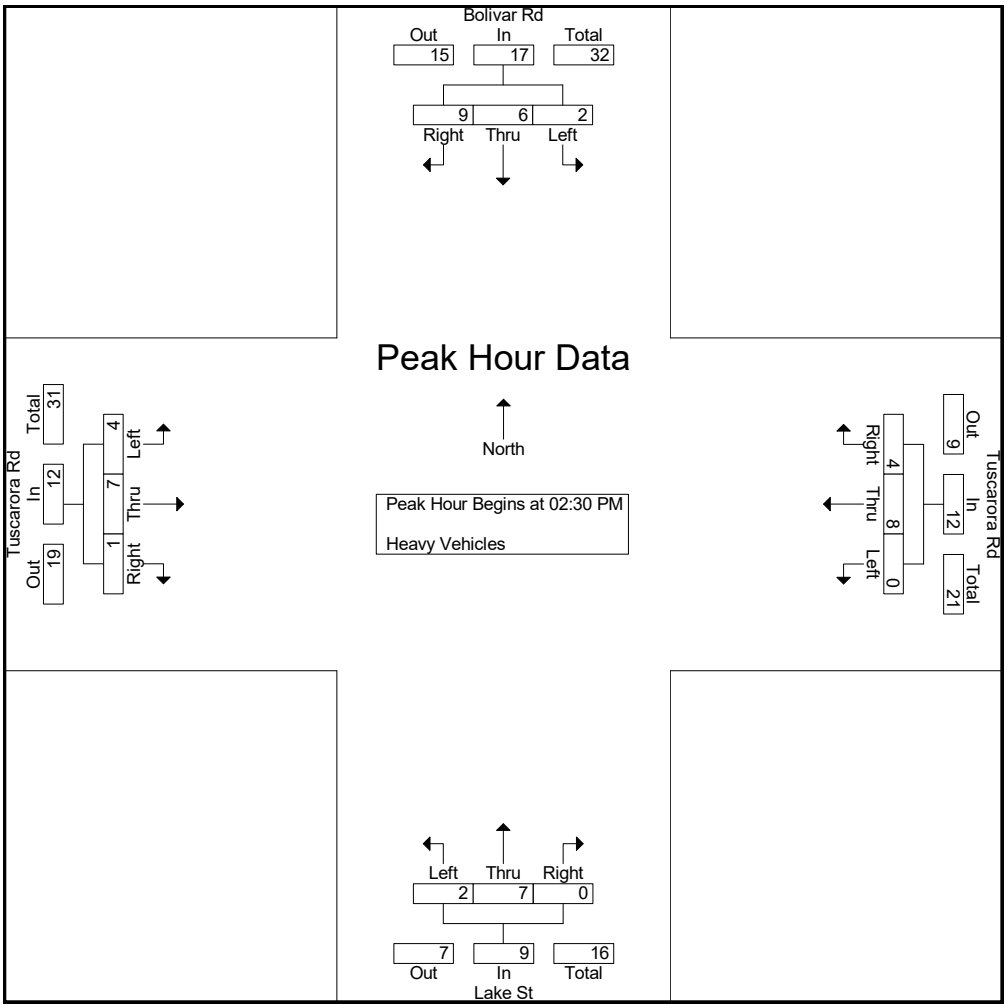
	Tuscarora Rd Eastbound				Tuscarora Rd Westbound				Lake St Northbound				Bolivar Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:30 PM																	
02:30 PM	**3**	2	**1**	**6**	0	**5**	0	**5**	**2**	1	0	3	0	0	1	1	**15**
02:45 PM	1	**3**	0	4	0	0	**2**	2	0	1	0	1	0	0	0	0	7
03:00 PM	0	2	0	2	0	1	2	3	0	**5**	0	**5**	0	0	3	3	13
03:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	**2**	**6**	**5**	**13**	15
Total Volume	4	7	1	12	0	8	4	12	2	7	0	9	2	6	9	17	50
% App. Total	33.3	58.3	8.3		0	66.7	33.3		22.2	77.8	0		11.8	35.3	52.9		
PHF	.333	.583	.250	.500	.000	.400	.500	.600	.250	.350	.000	.450	.250	.250	.450	.327	.833



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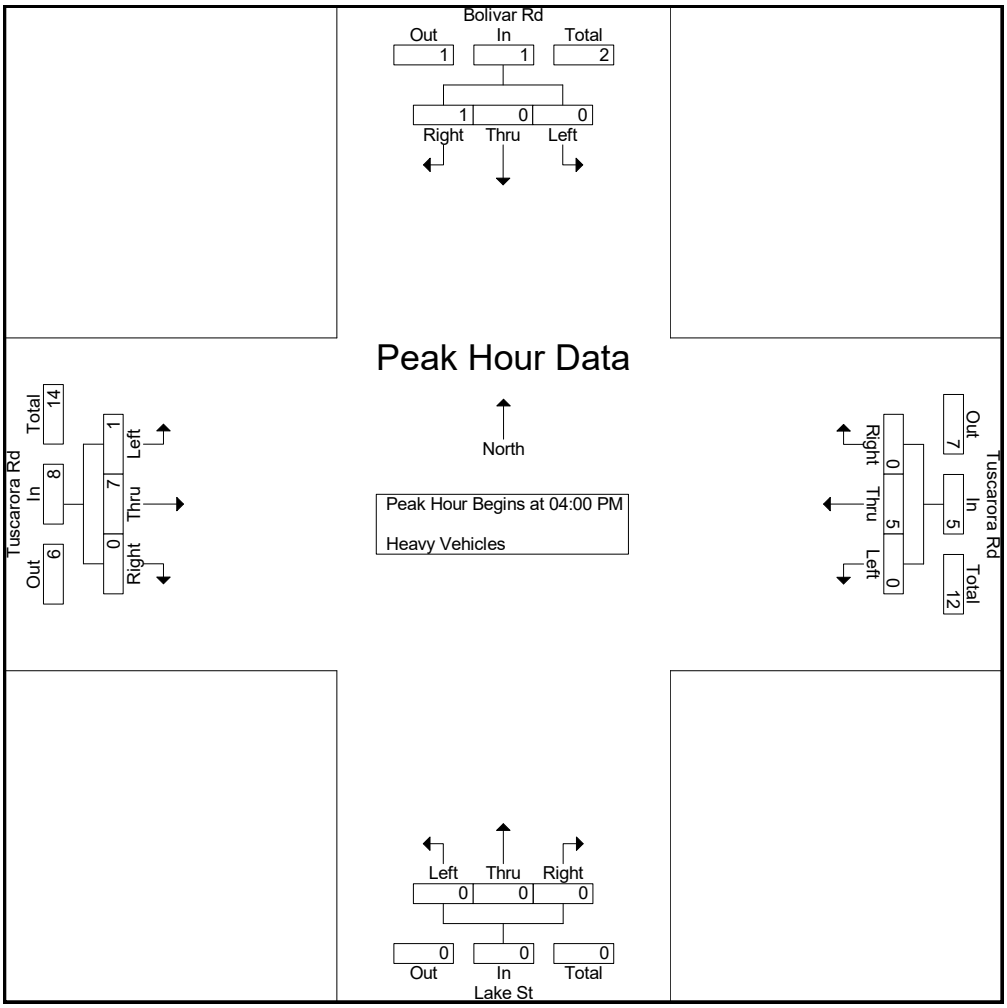
	Tuscarora Rd Eastbound				Tuscarora Rd Westbound				Lake St Northbound				Bolivar Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**4**	0	**4**	0	1	0	1	0	0	0	0	0	0	0	0	**5**
04:15 PM	**1**	1	0	2	0	**2**	0	**2**	0	0	0	0	0	0	0	0	4
04:30 PM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**	1
Total Volume	1	7	0	8	0	5	0	5	0	0	0	0	0	0	1	1	14
% App. Total	12.5	87.5	0		0	100	0		0	0	0		0	0	100		
PHF	.250	.438	.000	.500	.000	.625	.000	.625	.000	.000	.000	.000	.000	.000	.250	.250	.700



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Bolivar Rd & Tuscarora Rd, Chittenango
Counter: NDS via camera
Tuscarora Corridor Study
Note: N/A

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Groups Printed- Bikes_Peds

	Tuscarora Rd Eastbound					Tuscarora Rd Westbound					Lake St Northbound					Bolivar Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
*** BREAK ***																					
08:45 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
*** BREAK ***																					
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	2
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
*** BREAK ***																					
03:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3
*** BREAK ***																					
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
*** BREAK ***																					
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3
Grand Total	0	0	1	1	2	0	0	0	1	1	0	1	0	1	2	0	3	2	0	5	10
Apprch %	0	0	50	50		0	0	0	100		0	50	0	50		0	60	40	0		
Total %	0	0	10	10	20	0	0	0	10	10	0	10	0	10	20	0	30	20	0	50	

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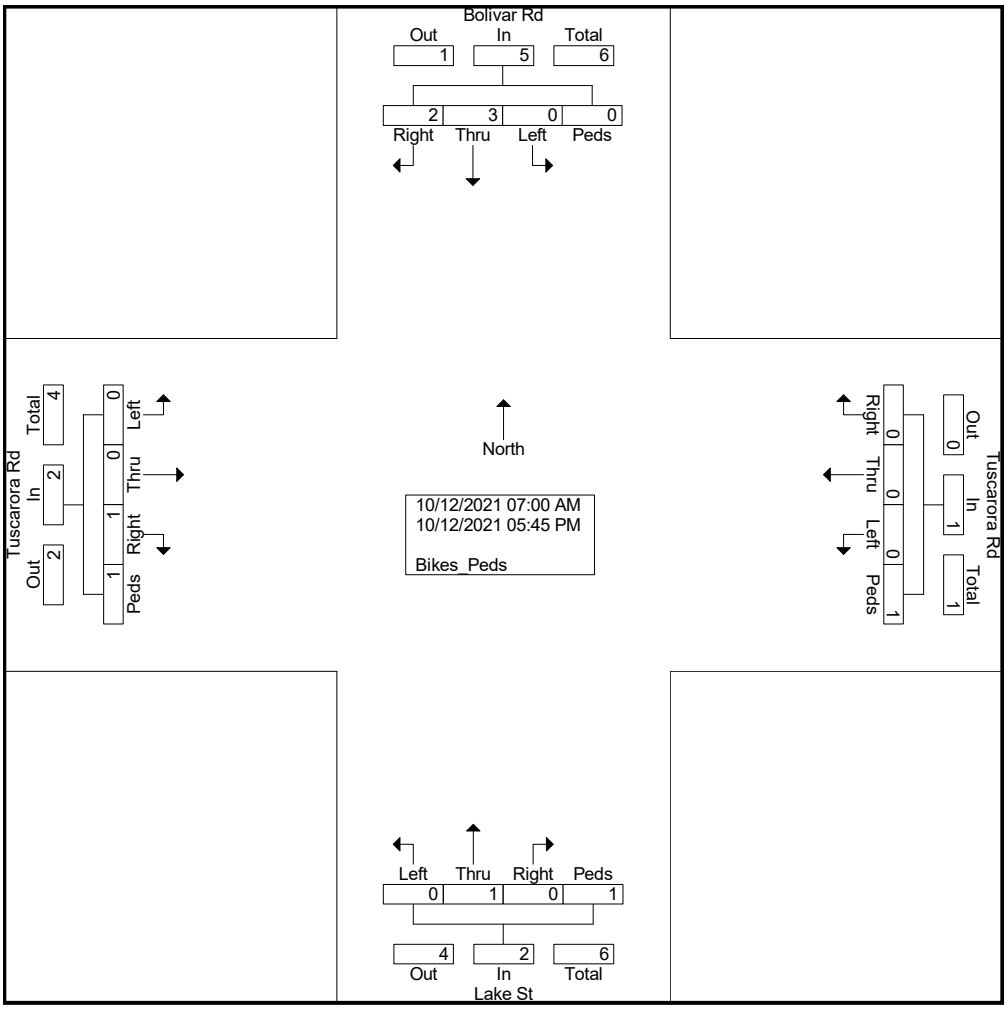

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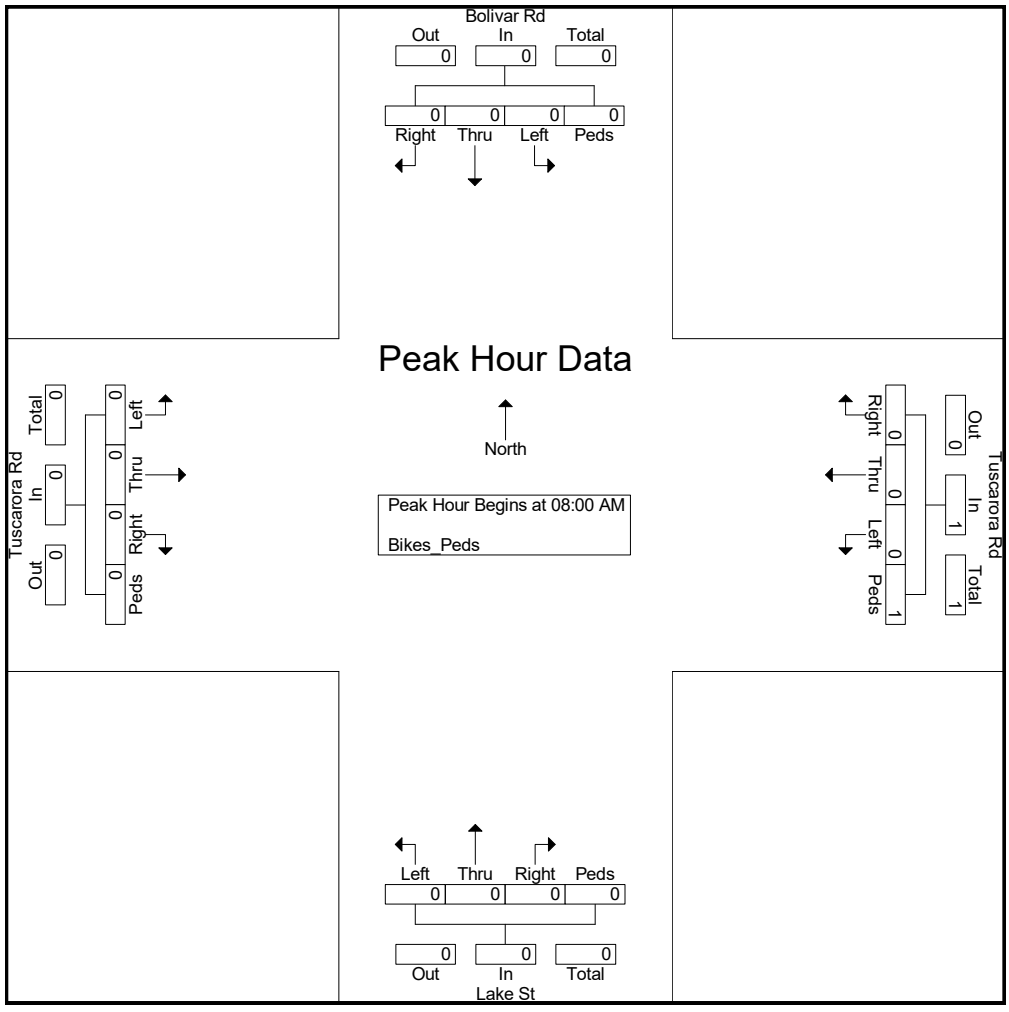
	Tuscarora Rd Eastbound					Tuscarora Rd Westbound					Lake St Northbound					Bolivar Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	**1**
Total Volume	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0	0		0	0	0	100		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250



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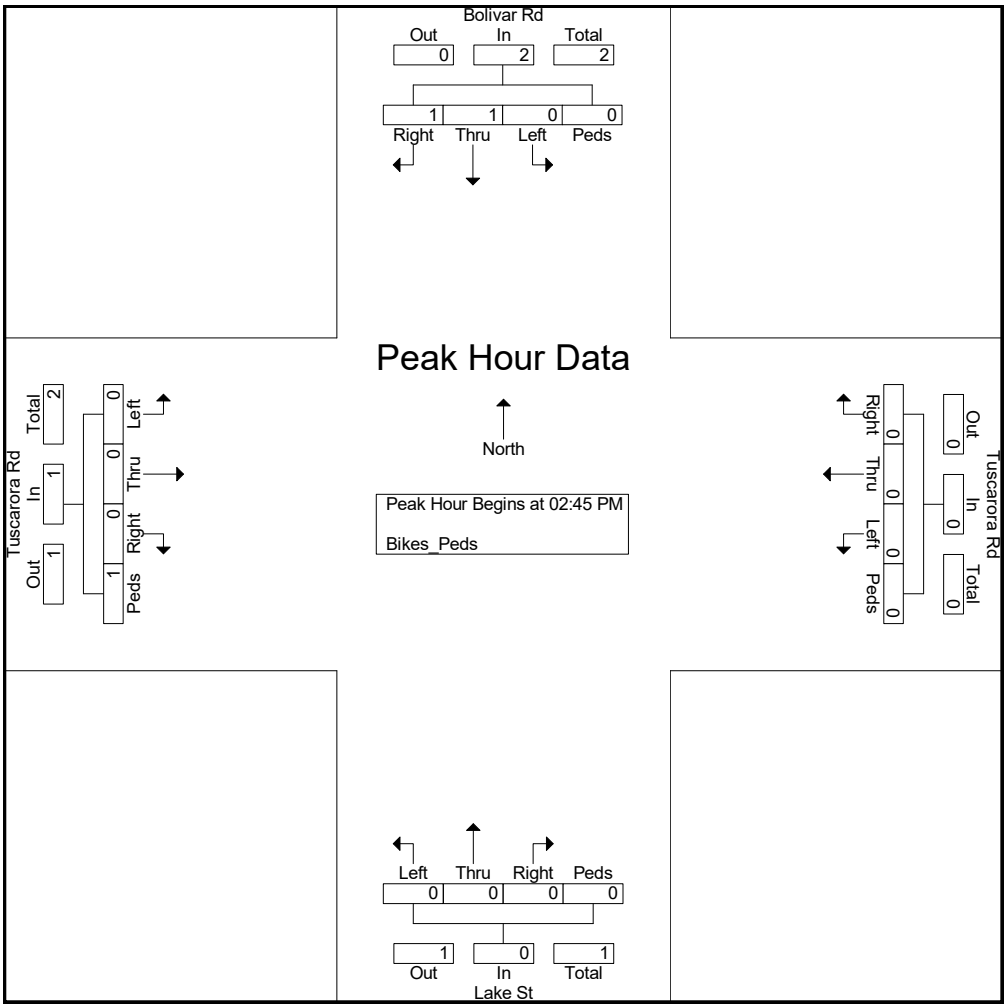
	Tuscarora Rd Eastbound					Tuscarora Rd Westbound					Lake St Northbound					Bolivar Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	**1**
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	1	1
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3
% App. Total	0	0	0	100		0	0	0	0		0	0	0	0		0	50	50	0		
PHF	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.500	.750



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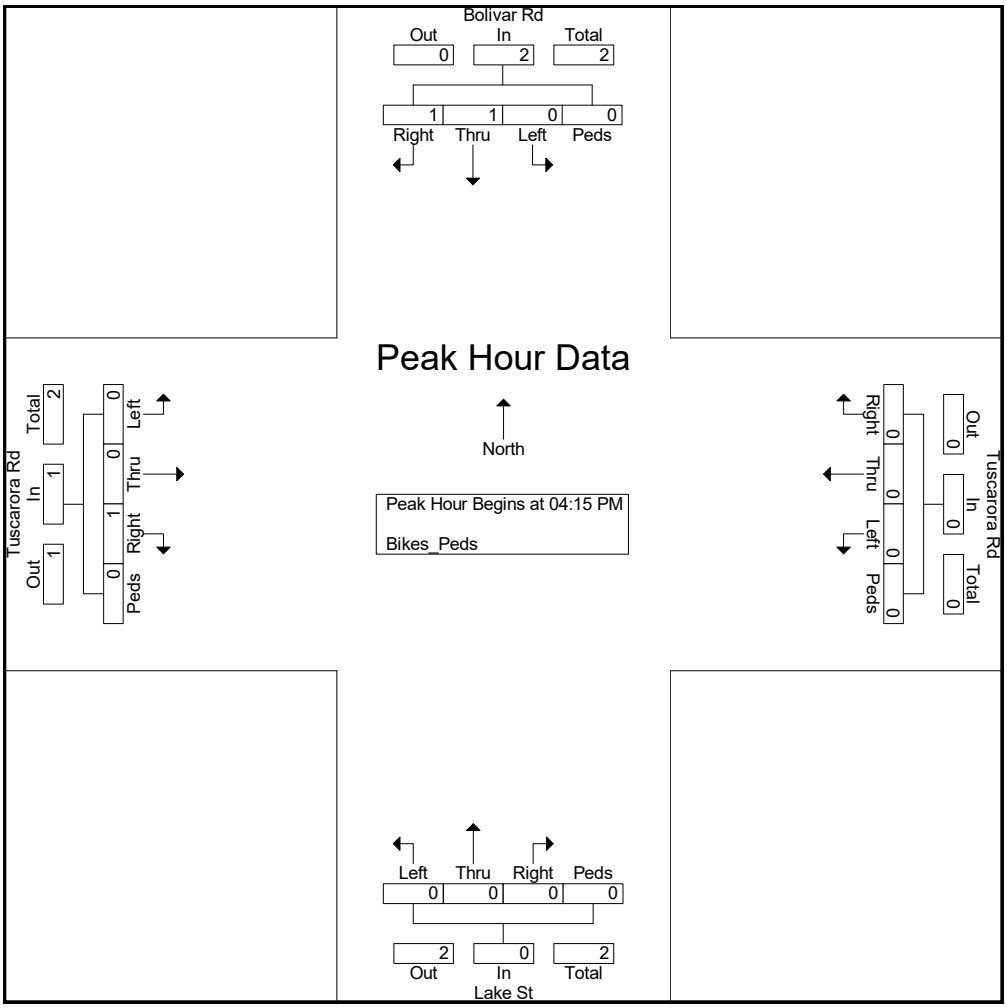
	Tuscarora Rd Eastbound					Tuscarora Rd Westbound					Lake St Northbound					Bolivar Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	1
05:00 PM	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	1	**2**
Total Volume	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3
% App. Total	0	0	100	0		0	0	0	0		0	0	0	0		0	50	50	0		
PHF	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.500	.375



TUSCARORA / WEST GENESEE – TURNING MOVEMENT COUNTS (2021)

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Delmar, NY 12054
<www.ndsdata.com>

Tuscarora Rd & Rte 5, Chittenango
Counter: NDS via camera
Tuscarora Corridor Study
Note: N/A

File Name : Tuscarora_Rte 5_101221_Formatted
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Groups Printed- Cars - Heavy Vehicles

	Rte 5 Eastbound				Rte 5 Westbound				Private Dwy Northbound				Tuscarora Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	30	43	1	74	4	93	0	97	0	1	3	4	0	1	61	62	237
07:15 AM	37	41	2	80	0	100	0	100	0	0	1	1	0	0	58	58	239
07:30 AM	36	30	1	67	0	122	2	124	1	0	0	1	0	0	62	62	254
07:45 AM	24	37	0	61	0	73	0	73	1	0	1	2	0	0	47	47	183
Total	127	151	4	282	4	388	2	394	2	1	5	8	0	1	228	229	913
08:00 AM	29	48	0	77	1	87	0	88	0	0	1	1	0	0	63	63	229
08:15 AM	19	38	0	57	0	77	0	77	0	0	0	0	0	1	45	46	180
08:30 AM	23	51	0	74	1	63	0	64	0	0	2	2	1	0	46	47	187
08:45 AM	23	66	0	89	0	57	0	57	0	0	0	0	0	1	37	38	184
Total	94	203	0	297	2	284	0	286	0	0	3	3	1	2	191	194	780
*** BREAK ***																	
04:00 PM	53	116	0	169	1	76	1	78	0	0	1	1	0	0	39	39	287
04:15 PM	58	114	0	172	0	73	1	74	0	0	1	1	0	0	45	45	292
04:30 PM	56	138	0	194	0	71	1	72	0	0	0	0	1	0	44	45	311
04:45 PM	58	119	0	177	0	79	2	81	0	0	0	0	0	0	42	42	300
Total	225	487	0	712	1	299	5	305	0	0	2	2	1	0	170	171	1190
05:00 PM	61	108	0	169	1	89	1	91	0	1	0	1	0	0	53	53	314
05:15 PM	53	111	1	165	1	73	2	76	0	0	4	4	0	0	37	37	282
05:30 PM	64	130	1	195	0	84	0	84	0	1	1	2	0	0	42	42	323
05:45 PM	55	105	0	160	0	63	3	66	0	0	1	1	0	0	29	29	256
Total	233	454	2	689	2	309	6	317	0	2	6	8	0	0	161	161	1175
Grand Total	679	1295	6	1980	9	1280	13	1302	2	3	16	21	2	3	750	755	4058
Apprch %	34.3	65.4	0.3		0.7	98.3	1		9.5	14.3	76.2		0.3	0.4	99.3		
Total %	16.7	31.9	0.1	48.8	0.2	31.5	0.3	32.1	0	0.1	0.4	0.5	0	0.1	18.5	18.6	
Cars	657	1253	6	1916	9	1235	13	1257	2	3	16	21	2	3	728	733	3927
% Cars	96.8	96.8	100	96.8	100	96.5	100	96.5	100	100	100	100	100	100	97.1	97.1	96.8
Heavy Vehicles	22	42	0	64	0	45	0	45	0	0	0	0	0	0	22	22	131
% Heavy Vehicles	3.2	3.2	0	3.2	0	3.5	0	3.5	0	0	0	0	0	0	2.9	2.9	3.2

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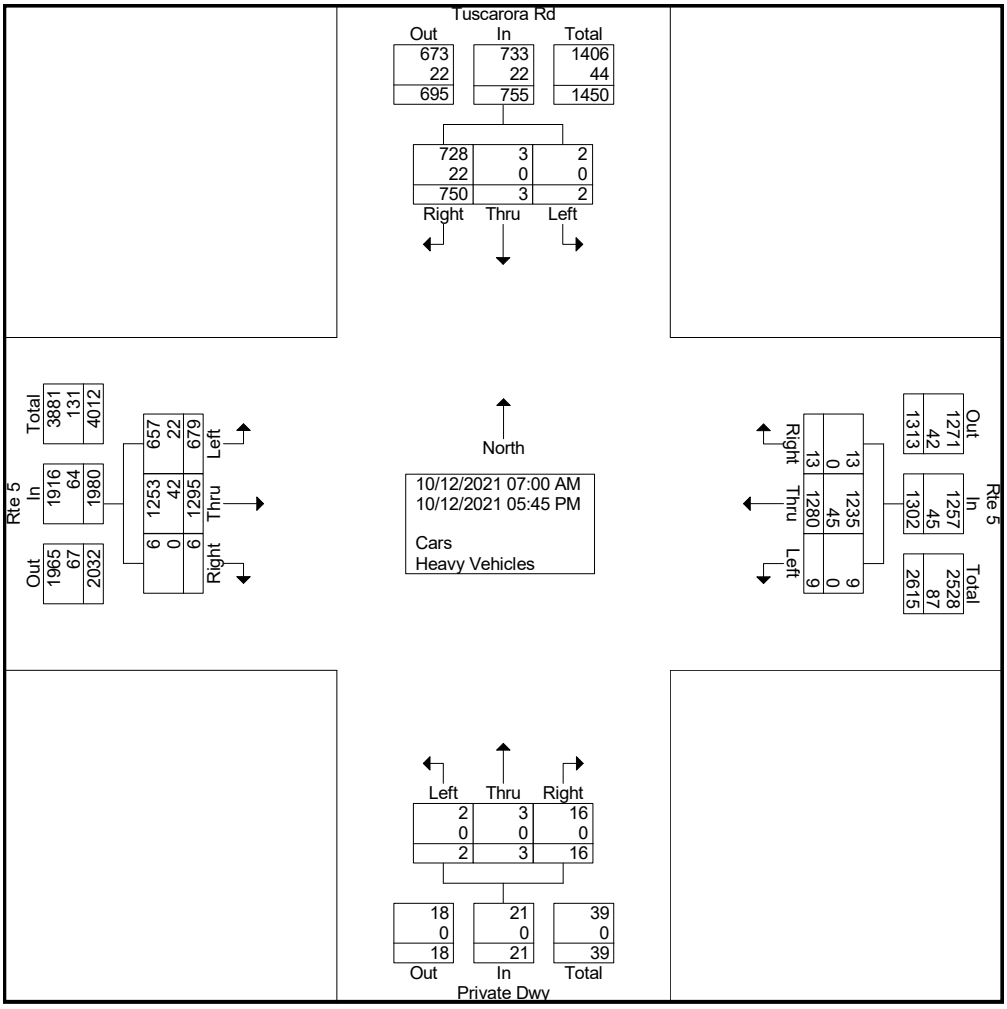

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Site Code : 10122101
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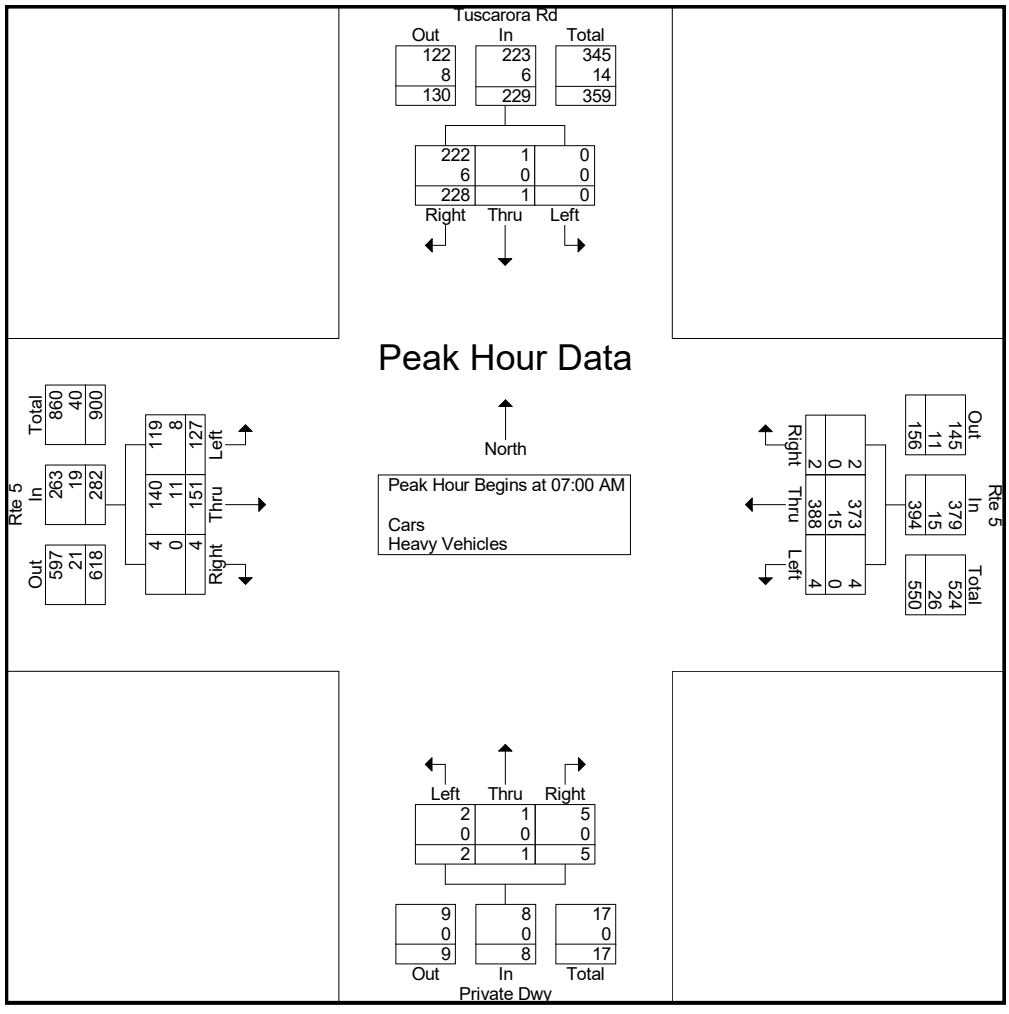
	Rte 5 Eastbound				Rte 5 Westbound				Private Dwy Northbound				Tuscarora Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	30	**43**	1	74	**4**	93	0	97	0	**1**	**3**	**4**	0	**1**	61	**62**	237
07:15 AM	**37**	41	**2**	**80**	0	100	0	100	0	0	1	1	0	0	58	58	239
07:30 AM	36	30	1	67	0	**122**	**2**	**124**	**1**	0	0	1	0	0	**62**	62	**254**
07:45 AM	24	37	0	61	0	73	0	73	1	0	1	2	0	0	47	47	183
Total Volume	127	151	4	282	4	388	2	394	2	1	5	8	0	1	228	229	913
% App. Total	45	53.5	1.4		1	98.5	0.5		25	12.5	62.5		0	0.4	99.6		
PHF	.858	.878	.500	.881	.250	.795	.250	.794	.500	.250	.417	.500	.000	.250	.919	.923	.899
Cars	119	140	4	263	4	373	2	379	2	1	5	8	0	1	222	223	873
% Cars	93.7	92.7	100	93.3	100	96.1	100	96.2	100	100	100	100	0	100	97.4	97.4	95.6
Heavy Vehicles	8	11	0	19	0	15	0	15	0	0	0	0	0	0	6	6	40
% Heavy Vehicles	6.3	7.3	0	6.7	0	3.9	0	3.8	0	0	0	0	0	0	2.6	2.6	4.4



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File Name : Tuscarora_Rte 5_101221_Formatted
Site Code : 10122101
Start Date : 10/12/2021
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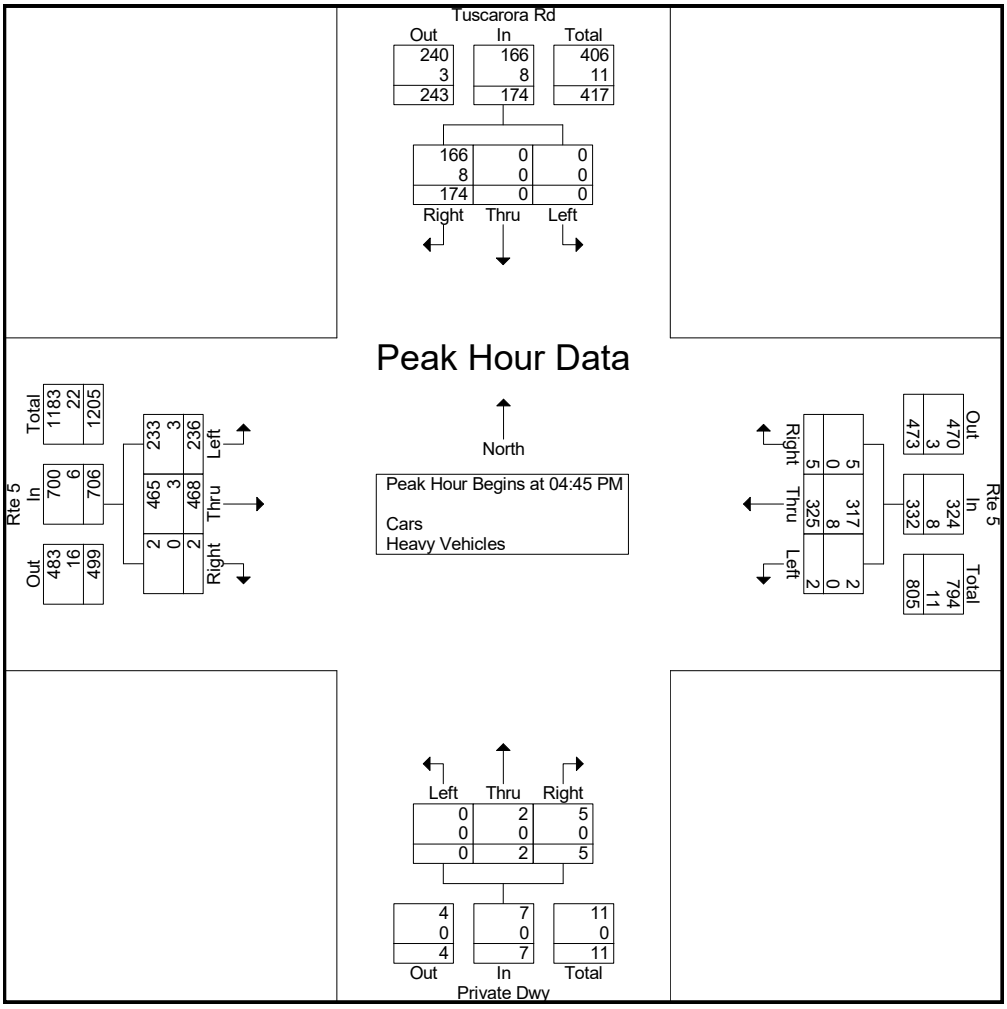
	Rte 5 Eastbound				Rte 5 Westbound				Private Dwy Northbound				Tuscarora Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	58	119	0	177	0	79	**2**	81	0	0	0	0	0	0	42	42	300
05:00 PM	61	108	0	169	**1**	**89**	1	**91**	0	**1**	0	1	0	0	**53**	**53**	314
05:15 PM	53	111	**1**	165	1	73	2	76	0	0	**4**	**4**	0	0	37	37	282
05:30 PM	**64**	**130**	1	**195**	0	84	0	84	0	1	1	2	0	0	42	42	**323**
Total Volume	236	468	2	706	2	325	5	332	0	2	5	7	0	0	174	174	1219
% App. Total	33.4	66.3	0.3		0.6	97.9	1.5		0	28.6	71.4		0	0	100		
PHF	.922	.900	.500	.905	.500	.913	.625	.912	.000	.500	.313	.438	.000	.000	.821	.821	.943
Cars	233	465	2	700	2	317	5	324	0	2	5	7	0	0	166	166	1197
% Cars	98.7	99.4	100	99.2	100	97.5	100	97.6	0	100	100	100	0	0	95.4	95.4	98.2
Heavy Vehicles	3	3	0	6	0	8	0	8	0	0	0	0	0	0	8	8	22
% Heavy Vehicles	1.3	0.6	0	0.8	0	2.5	0	2.4	0	0	0	0	0	0	4.6	4.6	1.8



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Tuscarora Rd & Rte 5, Chittenango
Counter: NDS via camera
Tuscarora Corridor Study
Note: N/A

File Name : Tuscarora_Rte 5_101221_Formatted
Site Code : 10122101
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Groups Printed- Heavy Vehicles

	Rte 5 Eastbound				Rte 5 Westbound				Private Dwy Northbound				Tuscarora Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	0	3	0	1	0	1	0	0	0	0	0	0	0	0	4
07:15 AM	2	3	0	5	0	2	0	2	0	0	0	0	0	0	2	2	9
07:30 AM	4	2	0	6	0	7	0	7	0	0	0	0	0	0	3	3	16
07:45 AM	2	3	0	5	0	5	0	5	0	0	0	0	0	0	1	1	11
Total	8	11	0	19	0	15	0	15	0	0	0	0	0	0	6	6	40
08:00 AM	1	10	0	11	0	11	0	11	0	0	0	0	0	0	0	0	22
08:15 AM	1	5	0	6	0	1	0	1	0	0	0	0	0	0	3	3	10
08:30 AM	3	6	0	9	0	0	0	0	0	0	0	0	0	0	1	1	10
08:45 AM	1	4	0	5	0	5	0	5	0	0	0	0	0	0	1	1	11
Total	6	25	0	31	0	17	0	17	0	0	0	0	0	0	5	5	53
*** BREAK ***																	
04:00 PM	3	2	0	5	0	2	0	2	0	0	0	0	0	0	1	1	8
04:15 PM	1	1	0	2	0	1	0	1	0	0	0	0	0	0	0	0	3
04:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
04:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	2	2	4
Total	5	4	0	9	0	4	0	4	0	0	0	0	0	0	4	4	17
05:00 PM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	4	4	6
05:15 PM	1	1	0	2	0	4	0	4	0	0	0	0	0	0	0	0	6
05:30 PM	1	0	0	1	0	3	0	3	0	0	0	0	0	0	2	2	6
05:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	1	1	3
Total	3	2	0	5	0	9	0	9	0	0	0	0	0	0	7	7	21
Grand Total	22	42	0	64	0	45	0	45	0	0	0	0	0	0	22	22	131
Apprch %	34.4	65.6	0		0	100	0		0	0	0		0	0	100		
Total %	16.8	32.1	0	48.9	0	34.4	0	34.4	0	0	0	0	0	0	16.8	16.8	

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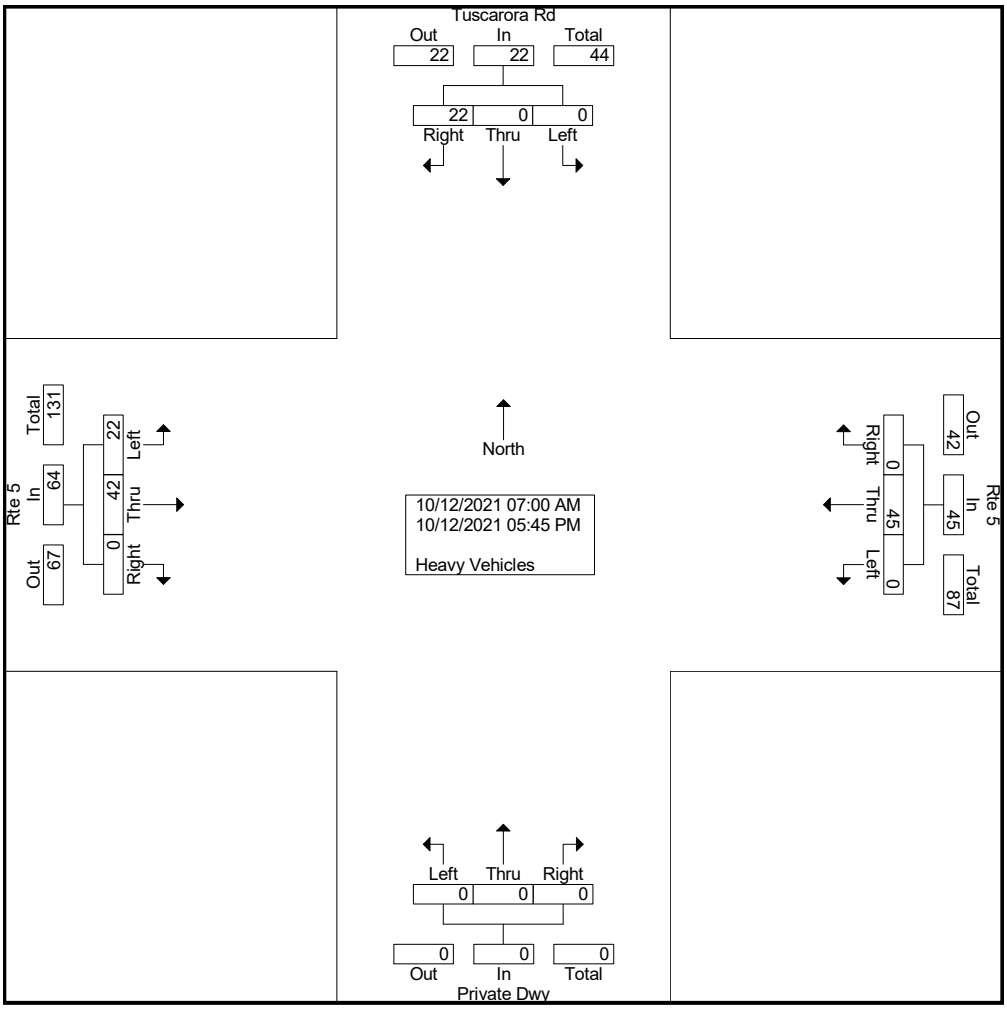

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File Name : Tuscarora_Rte 5_101221_Formatted
Site Code : 10122101
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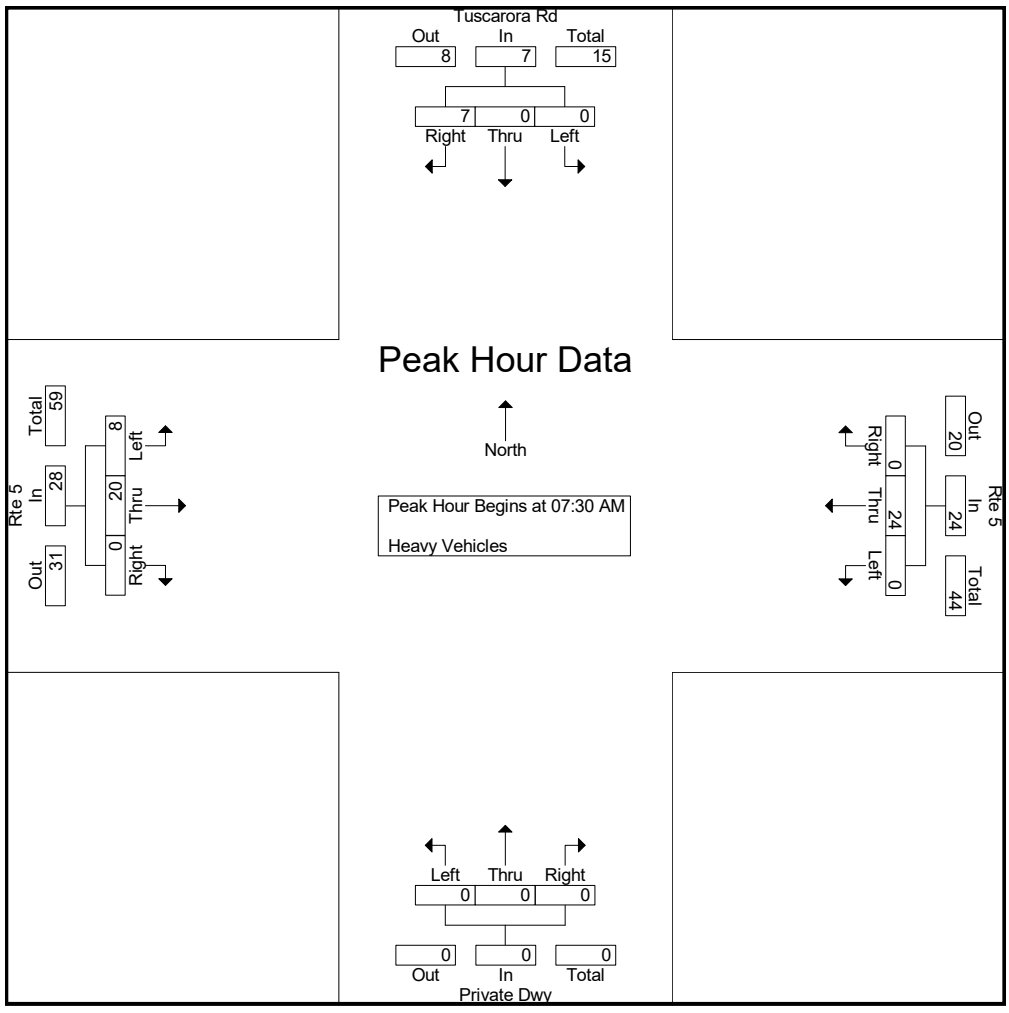
	Rte 5 Eastbound				Rte 5 Westbound				Private Dwy Northbound				Tuscarora Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**4**	2	0	6	0	7	0	7	0	0	0	0	0	0	**3**	**3**	16
07:45 AM	2	3	0	5	0	5	0	5	0	0	0	0	0	0	1	1	11
08:00 AM	1	**10**	0	**11**	0	**11**	0	**11**	0	0	0	0	0	0	0	0	**22**
08:15 AM	1	5	0	6	0	1	0	1	0	0	0	0	0	0	3	3	10
Total Volume	8	20	0	28	0	24	0	24	0	0	0	0	0	0	7	7	59
% App. Total	28.6	71.4	0		0	100	0		0	0	0		0	0	100		
PHF	.500	.500	.000	.636	.000	.545	.000	.545	.000	.000	.000	.000	.000	.000	.583	.583	.670



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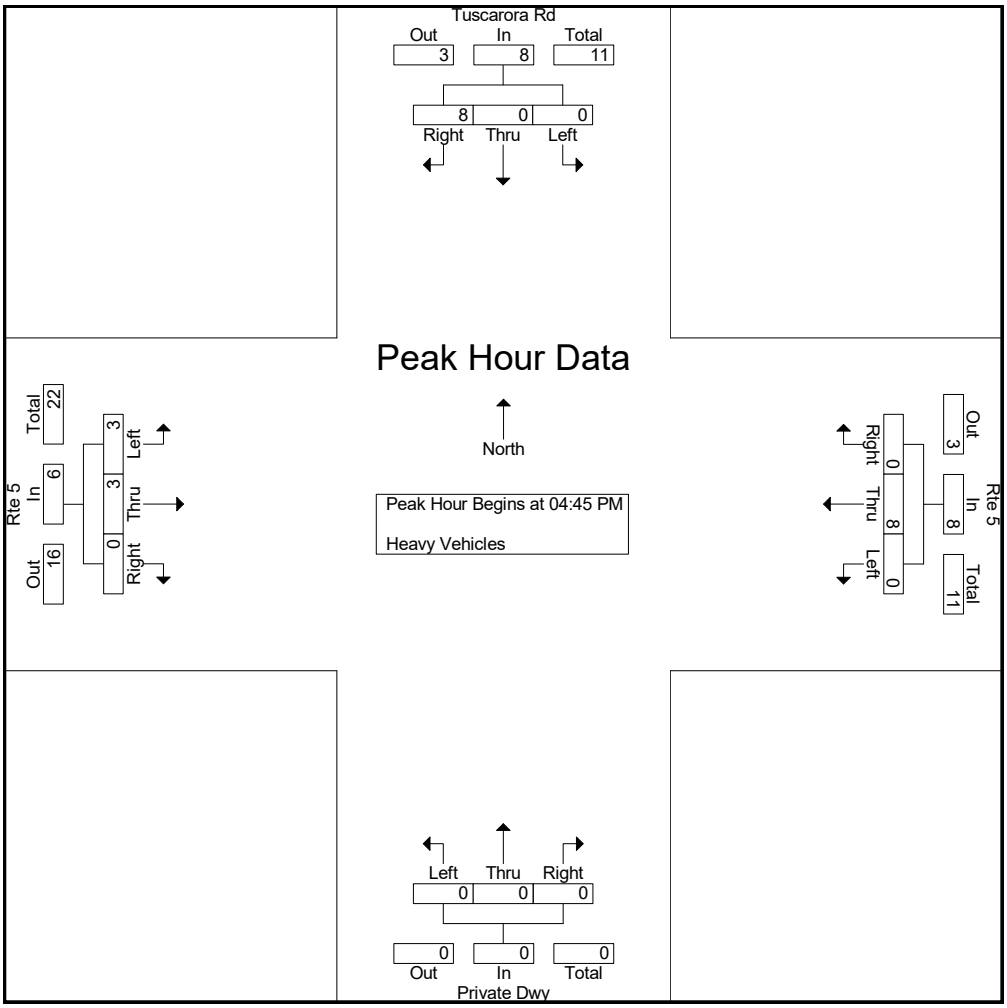
	Rte 5 Eastbound				Rte 5 Westbound				Private Dwy Northbound				Tuscarora Rd Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	**1**	0	1	0	1	0	1	0	0	0	0	0	0	2	2	4
05:00 PM	**1**	1	0	**2**	0	0	0	0	0	0	0	0	0	0	**4**	**4**	**6**
05:15 PM	1	1	0	2	0	**4**	0	**4**	0	0	0	0	0	0	0	0	6
05:30 PM	1	0	0	1	0	3	0	3	0	0	0	0	0	0	2	2	6
Total Volume	3	3	0	6	0	8	0	8	0	0	0	0	0	0	8	8	22
% App. Total	50	50	0		0	100	0		0	0	0		0	0	100		
PHF	.750	.750	.000	.750	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.500	.500	.917



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Tuscarora Rd & Rte 5, Chittenango
Counter: NDS via camera
Tuscarora Corridor Study
Note: N/A

File Name : Tuscarora_Rte 5_101221_Formatted
Site Code : 10122101
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Groups Printed- Bikes_Peds

	Rte 5 Eastbound					Rte 5 Westbound					Private Dwy Northbound					Tuscarora Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
*** BREAK ***																					
07:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
04:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	2
*** BREAK ***																					
Total	0	1	0	0	1	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	3
Grand Total	0	3	0	0	3	0	2	0	0	2	0	0	0	1	1	0	0	0	0	0	6
Apprch %	0	100	0	0		0	100	0	0		0	0	0	100		0	0	0	0		
Total %	0	50	0	0	50	0	33.3	0	0	33.3	0	0	0	16.7	16.7	0	0	0	0	0	

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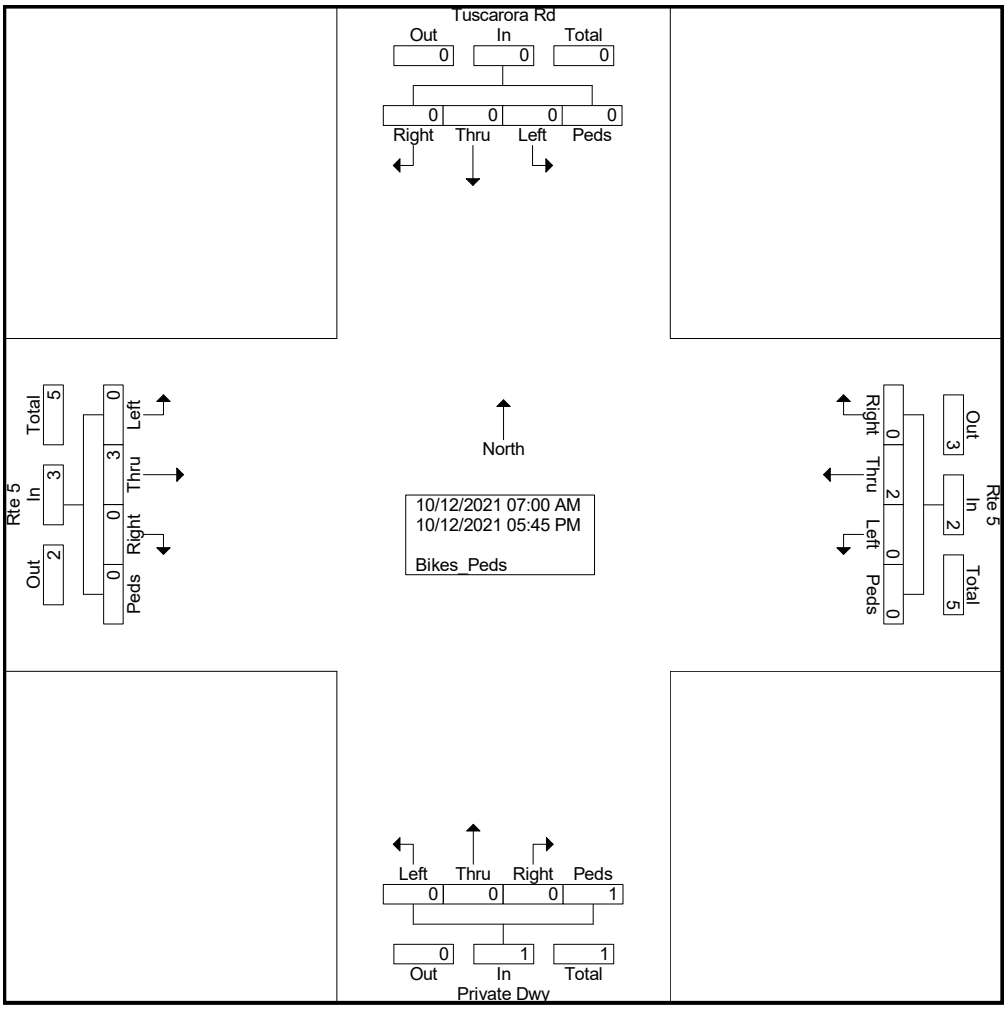

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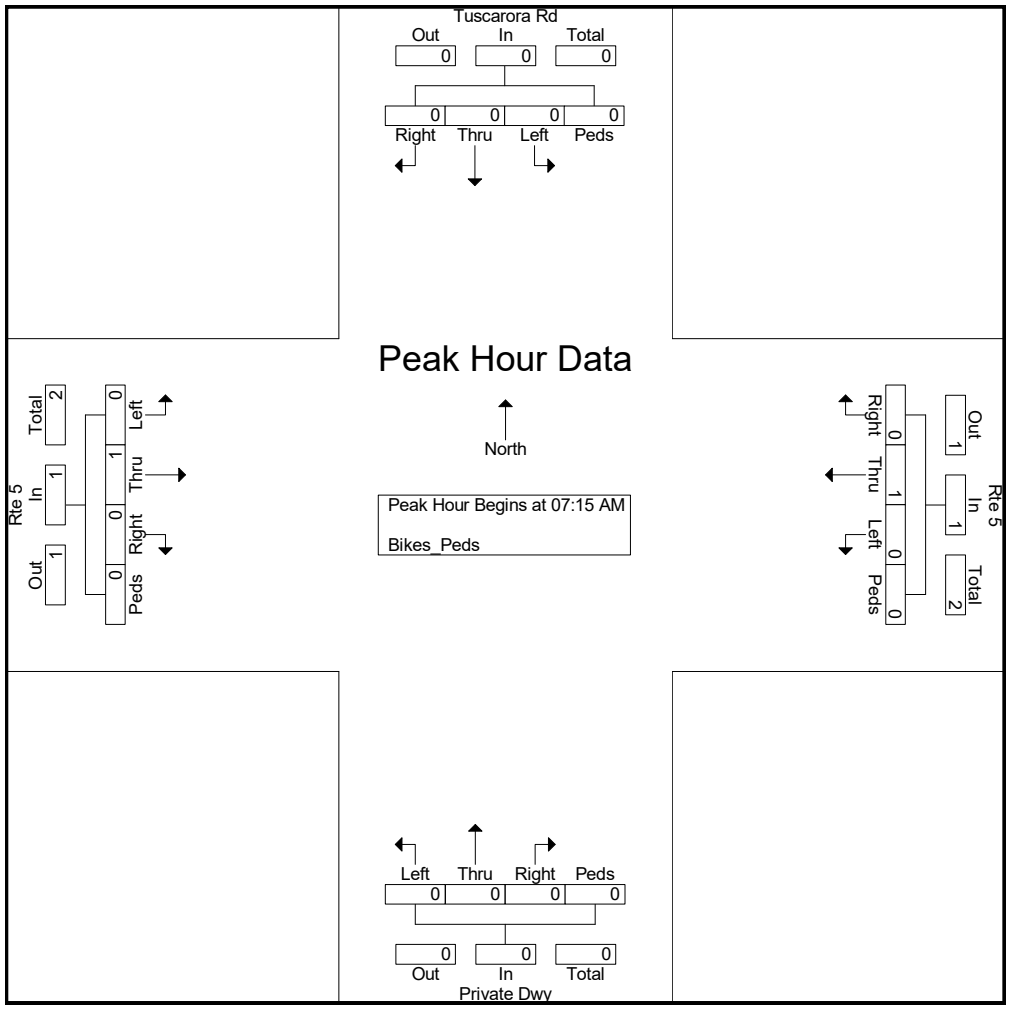
	Rte 5 Eastbound					Rte 5 Westbound					Private Dwy Northbound					Tuscarora Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.250	.000	.000	.250	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

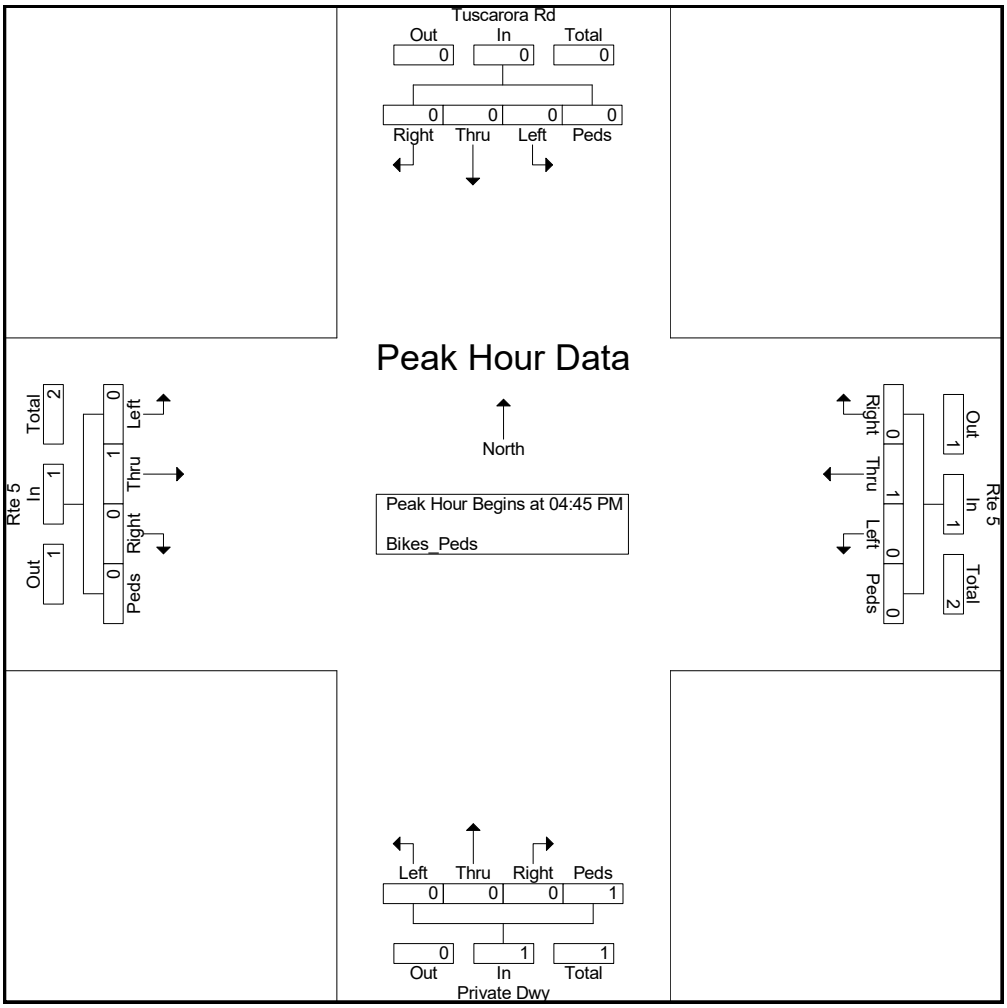


National Data and Surveying Services

333 Delaware Ave. Suite 6
Delmar, NY 12054
<www.ndsdata.com>

File Name : Tuscarora_Rte 5_101221_Formatted
Site Code : 10122101
Start Date : 10/12/2021
Page No : 4

	Rte 5 Eastbound					Rte 5 Westbound					Private Dwy Northbound					Tuscarora Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	**1**	**1**	0	0	0	0	0	**2**
Total Volume	0	1	0	0	1	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	3
% App. Total	0	100	0	0		0	100	0	0		0	0	0	100		0	0	0	0		
PHF	.000	.250	.000	.000	.250	.000	.250	.000	.000	.250	.000	.000	.000	.250	.250	.000	.000	.000	.000	.000	.375



TUSCARORA / EAST GENESEE – TURNING MOVEMENT COUNTS (2020)

Syracuse Metropolitan Transportation Council

126 N. Salina Street
Syracuse, NY, 13202
www.smtcmpo.org

Rt. 5 & Lakeport Rd. - Chittenango
Counter: KK (*Taken during Pandemic)
Tuscarora Rd Corridor Study
Note: Right Turns Include RTOR

File Name : Rt.5_Lakeport_111920_Formatted
Site Code : 11192006
Start Date : 11/19/2020
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
07:00 AM	6	32	2	1	41	25	27	1	0	53	1	26	39	6	72	6	31	9	4	50	216
07:15 AM	7	29	2	1	39	30	35	8	2	75	2	40	48	6	96	5	42	8	0	55	265
07:30 AM	13	29	3	2	47	37	29	6	0	72	4	35	37	6	82	6	35	12	2	55	256
07:45 AM	5	24	9	3	41	38	31	4	0	73	2	19	47	8	76	6	23	15	4	48	238
Total	31	114	16	7	168	130	122	19	2	273	9	120	171	26	326	23	131	44	10	208	975
08:00 AM	7	33	4	1	45	25	22	8	0	55	3	24	44	5	76	4	14	3	0	21	197
08:15 AM	5	20	1	1	27	37	28	7	1	73	6	16	61	2	85	8	26	6	1	41	226
08:30 AM	2	19	4	1	26	28	33	10	2	73	3	10	48	4	65	7	23	5	2	37	201
08:45 AM	7	30	2	1	40	31	33	7	0	71	7	16	31	2	56	6	25	9	1	41	208
Total	21	102	11	4	138	121	116	32	3	272	19	66	184	13	282	25	88	23	4	140	832
*** BREAK ***																					
04:00 PM	12	46	3	2	63	43	40	14	4	101	6	28	55	10	99	9	41	12	4	66	329
04:15 PM	14	35	11	2	62	38	59	11	2	110	8	34	54	12	108	10	30	10	2	52	332
04:30 PM	9	53	14	5	81	55	46	7	1	109	10	24	65	6	105	6	28	13	3	50	345
04:45 PM	13	40	10	3	66	62	50	7	0	119	9	31	58	4	102	11	32	11	3	57	344
Total	48	174	38	12	272	198	195	39	7	439	33	117	232	32	414	36	131	46	12	225	1350
05:00 PM	9	48	5	1	63	60	42	9	1	112	13	23	58	8	102	7	26	11	3	47	324
05:15 PM	9	42	13	1	65	56	46	10	0	112	9	34	53	10	106	2	22	6	3	33	316
05:30 PM	9	30	12	1	52	59	45	7	1	112	9	29	55	9	102	7	28	8	2	45	311
05:45 PM	7	32	10	1	50	36	28	6	1	71	6	20	45	6	77	6	21	9	2	38	236
Total	34	152	40	4	230	211	161	32	3	407	37	106	211	33	387	22	97	34	10	163	1187
Grand Total	134	542	105	27	808	660	594	122	15	1391	98	409	798	104	1409	106	447	147	36	736	4344
Apprch %	16.6	67.1	13	3.3		47.4	42.7	8.8	1.1		7	29	56.6	7.4		14.4	60.7	20	4.9		
Total %	3.1	12.5	2.4	0.6	18.6	15.2	13.7	2.8	0.3	32	2.3	9.4	18.4	2.4	32.4	2.4	10.3	3.4	0.8	16.9	
Cars	131	537	102	27	797	616	578	105	12	1311	93	378	768	102	1341	95	413	139	33	680	4129
% Cars	97.8	99.1	97.1	100	98.6	93.3	97.3	86.1	80	94.2	94.9	92.4	96.2	98.1	95.2	89.6	92.4	94.6	91.7	92.4	95.1
Heavy Vehicles	3	5	3	0	11	44	16	17	3	80	5	31	30	2	68	11	34	8	3	56	215
% Heavy Vehicles	2.2	0.9	2.9	0	1.4	6.7	2.7	13.9	20	5.8	5.1	7.6	3.8	1.9	4.8	10.4	7.6	5.4	8.3	7.6	4.9

Syracuse Metropolitan Transportation Council

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Syracuse, NY, 13202
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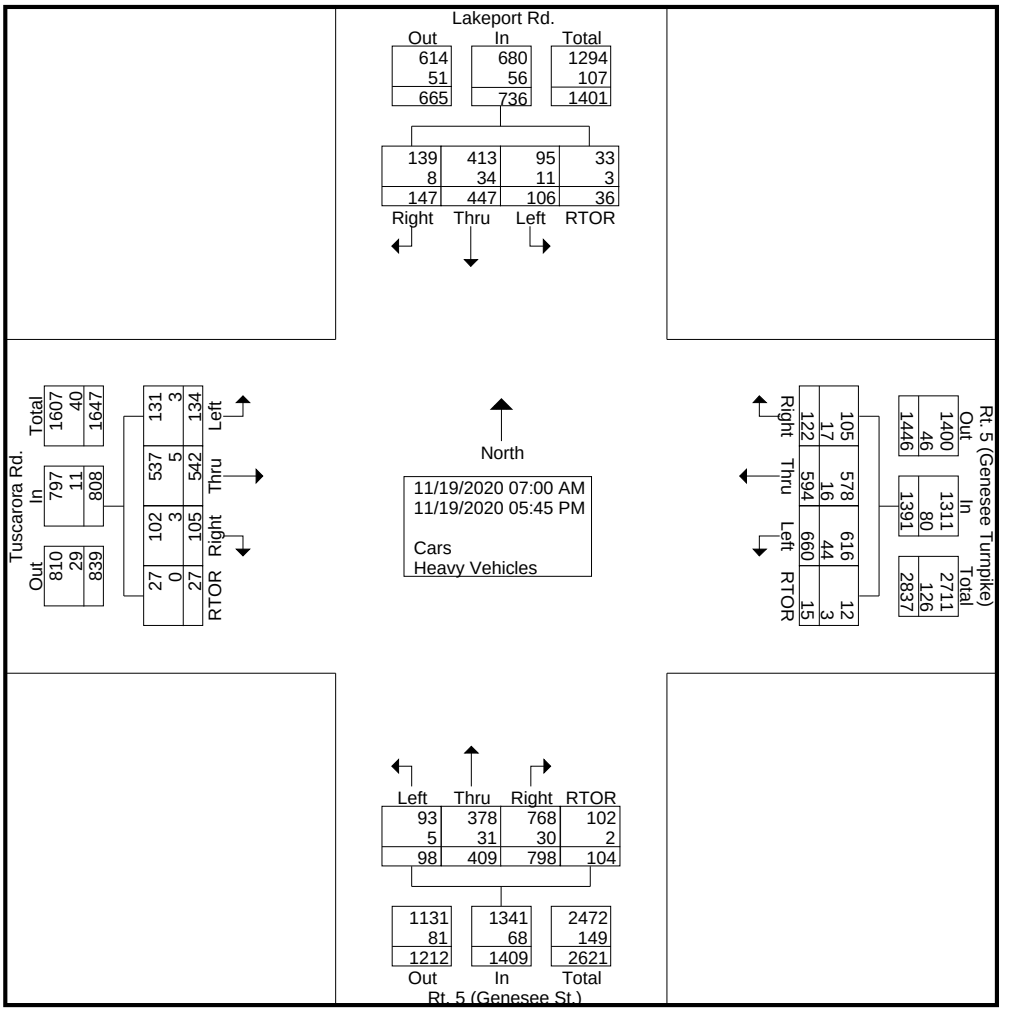
Rt. 5 & Lakeport Rd. - Chittenango
Counter: KK (*Taken during Pandemic)
Tuscarora Rd Corridor Study
Note: Right Turns Include RTOR

File Name : Rt.5_Lakeport_111920_Formatted
Site Code : 11192006
Start Date : 11/19/2020
Page No : 2



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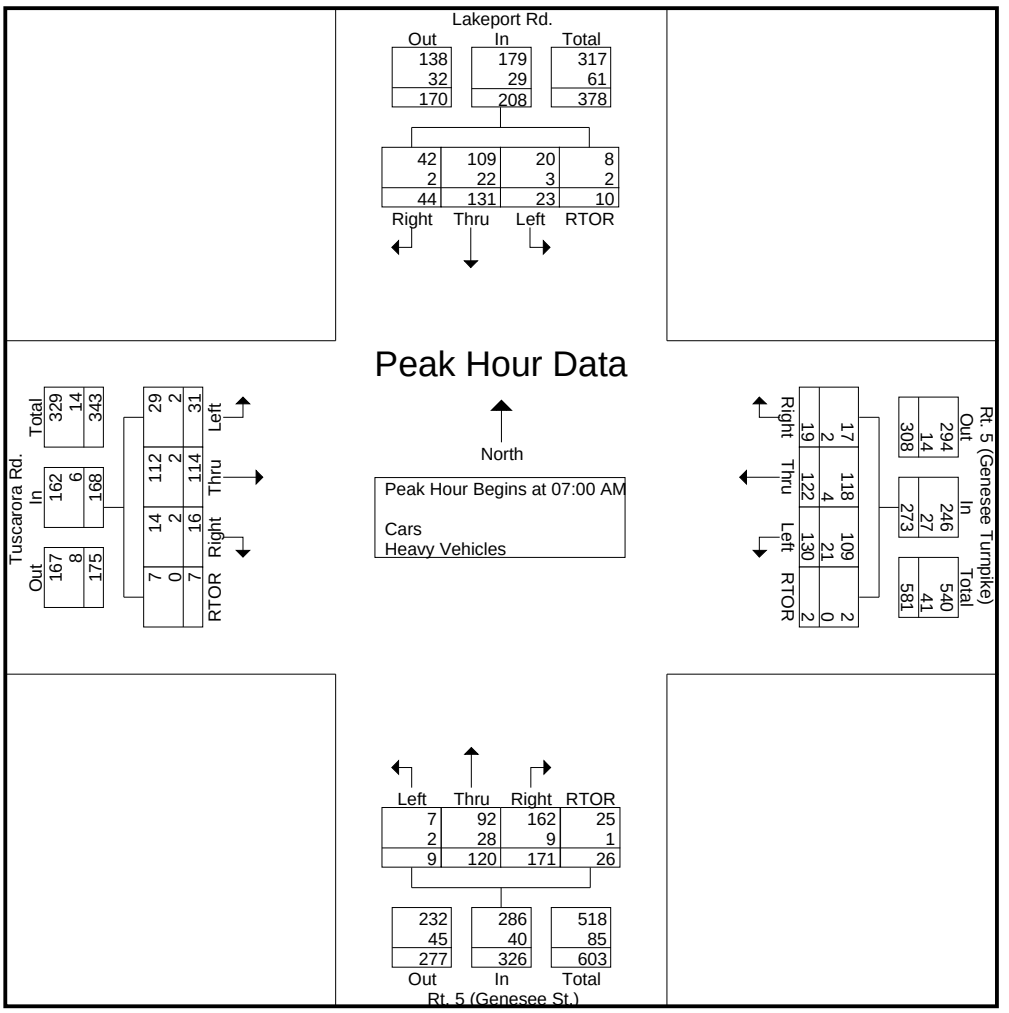
	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	6	**32**	2	1	41	25	27	1	0	53	1	26	39	6	72	**6**	31	9	**4**	50	216
07:15 AM	7	29	2	1	39	30	**35**	**8**	**2**	**75**	2	**40**	**48**	6	**96**	5	**42**	8	0	**55**	**265**
07:30 AM	**13**	29	3	2	**47**	37	29	6	0	72	**4**	35	37	6	82	6	35	12	2	55	256
07:45 AM	5	24	**9**	**3**	41	**38**	31	4	0	73	2	19	47	**8**	76	6	23	**15**	4	48	238
Total Volume	31	114	16	7	168	130	122	19	2	273	9	120	171	26	326	23	131	44	10	208	975
% App. Total	18.5	67.9	9.5	4.2		47.6	44.7	7	0.7		2.8	36.8	52.5	8		11.1	63	21.2	4.8		
PHF	.596	.891	.444	.583	.894	.855	.871	.594	.250	.910	.563	.750	.891	.813	.849	.958	.780	.733	.625	.945	.920
Cars	29	112	14	7	162	109	118	17	2	246	7	92	162	25	286	20	109	42	8	179	873
% Cars	93.5	98.2	87.5	100	96.4	83.8	96.7	89.5	100	90.1	77.8	76.7	94.7	96.2	87.7	87.0	83.2	95.5	80.0	86.1	89.5
Heavy Vehicles																					
% Heavy Vehicles	6.5	1.8	12.5	0	3.6	16.2	3.3	10.5	0	9.9	22.2	23.3	5.3	3.8	12.3	13.0	16.8	4.5	20.0	13.9	10.5



Syracuse Metropolitan Transportation Council

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Rt. 5 & Lakeport Rd. - Chittenango
Counter: KK (*Taken during Pandemic)
Tuscarora Rd Corridor Study
Note: Right Turns Include RTOR

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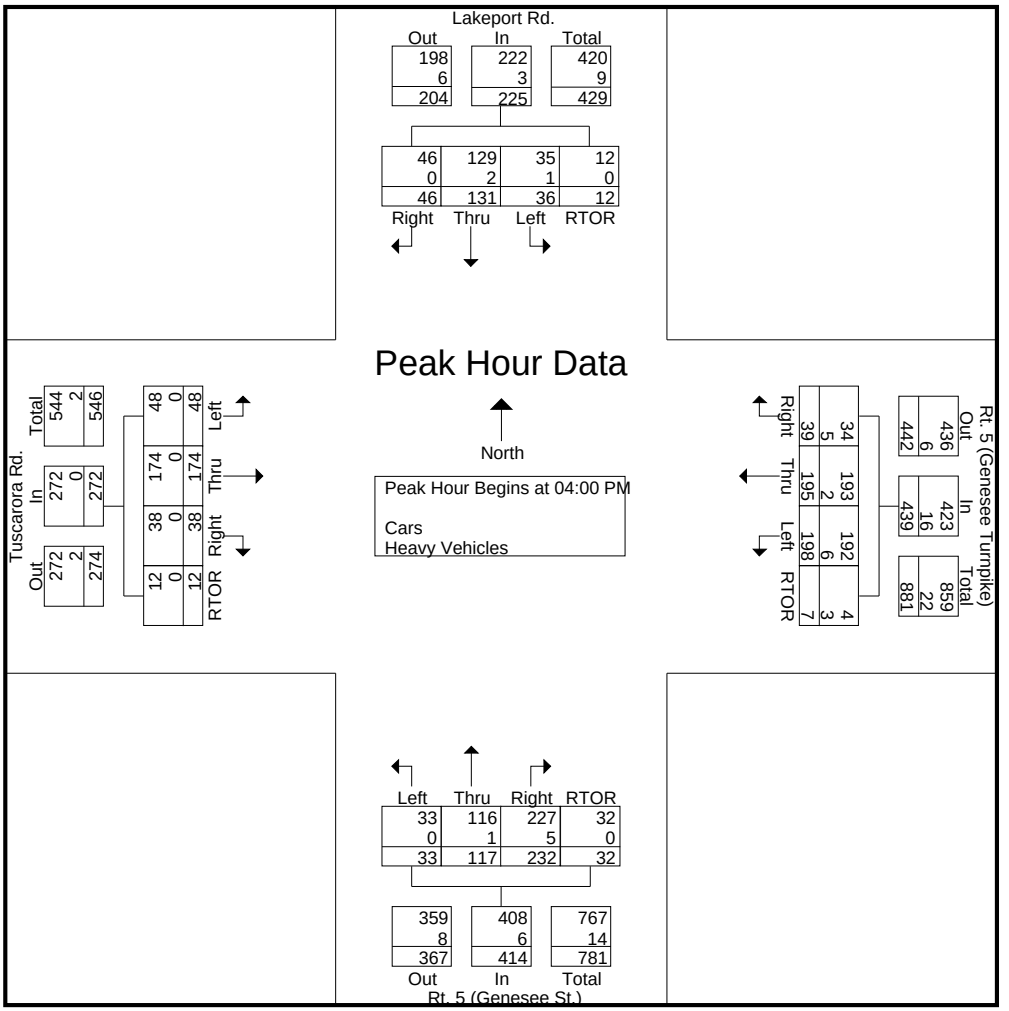
Site Code : 11192006
Start Date : 11/19/2020

	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	12	46	3	2	63	43	40	**14**	**4**	101	6	28	55	10	99	9	**41**	12	**4**	**66**	329
04:15 PM	**14**	35	11	2	62	38	**59**	11	2	110	8	**34**	54	**12**	**108**	10	30	10	2	52	332
04:30 PM	9	**53**	**14**	**5**	**81**	55	46	7	1	109	**10**	24	**65**	6	105	6	28	**13**	3	50	**345**
04:45 PM	13	40	10	3	66	**62**	50	7	0	**119**	9	31	58	4	102	**11**	32	11	3	57	344
Total Volume	48	174	38	12	272	198	195	39	7	439	33	117	232	32	414	36	131	46	12	225	1350
% App. Total	17.6	64	14	4.4		45.1	44.4	8.9	1.6		8	28.3	56	7.7		16	58.2	20.4	5.3		
PHF	.857	.821	.679	.600	.840	.798	.826	.696	.438	.922	.825	.860	.892	.667	.958	.818	.799	.885	.750	.852	.978
Cars	48	174	38	12	272	192	193	34	4	423	33	116	227	32	408	35	129	46	12	222	1325
% Cars	100	100	100	100	100	97.0	99.0	87.2	57.1	96.4	100	99.1	97.8	100	98.6	97.2	98.5	100	100	98.7	98.1
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	3.0	1.0	12.8	42.9	3.6	0	0.9	2.2	0	1.4	2.8	1.5	0	0	1.3	1.9



Syracuse Metropolitan Transportation Council

126 N. Salina Street
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Rt. 5 & Lakeport Rd. - Chittenango
Counter: KK (*Taken during Pandemic)
Tuscarora Rd Corridor Study
Note: Right Turns Include RTOR

File Name : Rt.5_Lakeport_111920_Formatted
Site Code : 11192006
Start Date : 11/19/2020
Page No : 1

Groups Printed- Heavy Vehicles

	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
07:00 AM	0	2	0	0	2	3	2	0	0	5	0	2	4	1	7	2	8	1	1	12	26
07:15 AM	1	0	0	0	1	5	1	1	0	7	0	17	2	0	19	0	8	0	0	8	35
07:30 AM	1	0	0	0	1	6	1	0	0	7	2	9	2	0	13	0	6	1	1	8	29
07:45 AM	0	0	2	0	2	7	0	1	0	8	0	0	1	0	1	1	0	0	0	1	12
Total	2	2	2	0	6	21	4	2	0	27	2	28	9	1	40	3	22	2	2	29	102
08:00 AM	0	1	0	0	1	1	1	3	0	5	0	1	0	0	1	1	1	0	0	2	9
08:15 AM	0	0	0	0	0	3	3	1	0	7	2	0	5	0	7	3	5	2	0	10	24
08:30 AM	0	0	1	0	1	4	4	2	0	10	1	0	5	1	7	2	2	1	0	5	23
08:45 AM	1	1	0	0	2	6	2	3	0	11	0	0	4	0	4	1	1	2	0	4	21
Total	1	2	1	0	4	14	10	9	0	33	3	1	14	1	19	7	9	5	0	21	77
*** BREAK ***																					
04:00 PM	0	0	0	0	0	4	0	3	2	9	0	0	3	0	3	0	1	0	0	1	13
04:15 PM	0	0	0	0	0	1	1	0	1	3	0	1	1	0	2	0	1	0	0	1	6
04:30 PM	0	0	0	0	0	0	1	2	0	3	0	0	1	0	1	1	0	0	0	1	5
04:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	6	2	5	3	16	0	1	5	0	6	1	2	0	0	3	25
05:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	3
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	0	1	1	1	3	6
05:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	3	0	1	0	4	0	1	2	0	3	0	1	1	1	3	11
Grand Total	3	5	3	0	11	44	16	17	3	80	5	31	30	2	68	11	34	8	3	56	215
Apprch %	27.3	45.5	27.3	0		55	20	21.2	3.8		7.4	45.6	44.1	2.9		19.6	60.7	14.3	5.4		
Total %	1.4	2.3	1.4	0	5.1	20.5	7.4	7.9	1.4	37.2	2.3	14.4	14	0.9	31.6	5.1	15.8	3.7	1.4	26	

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Note: Right Turns Include RTOR

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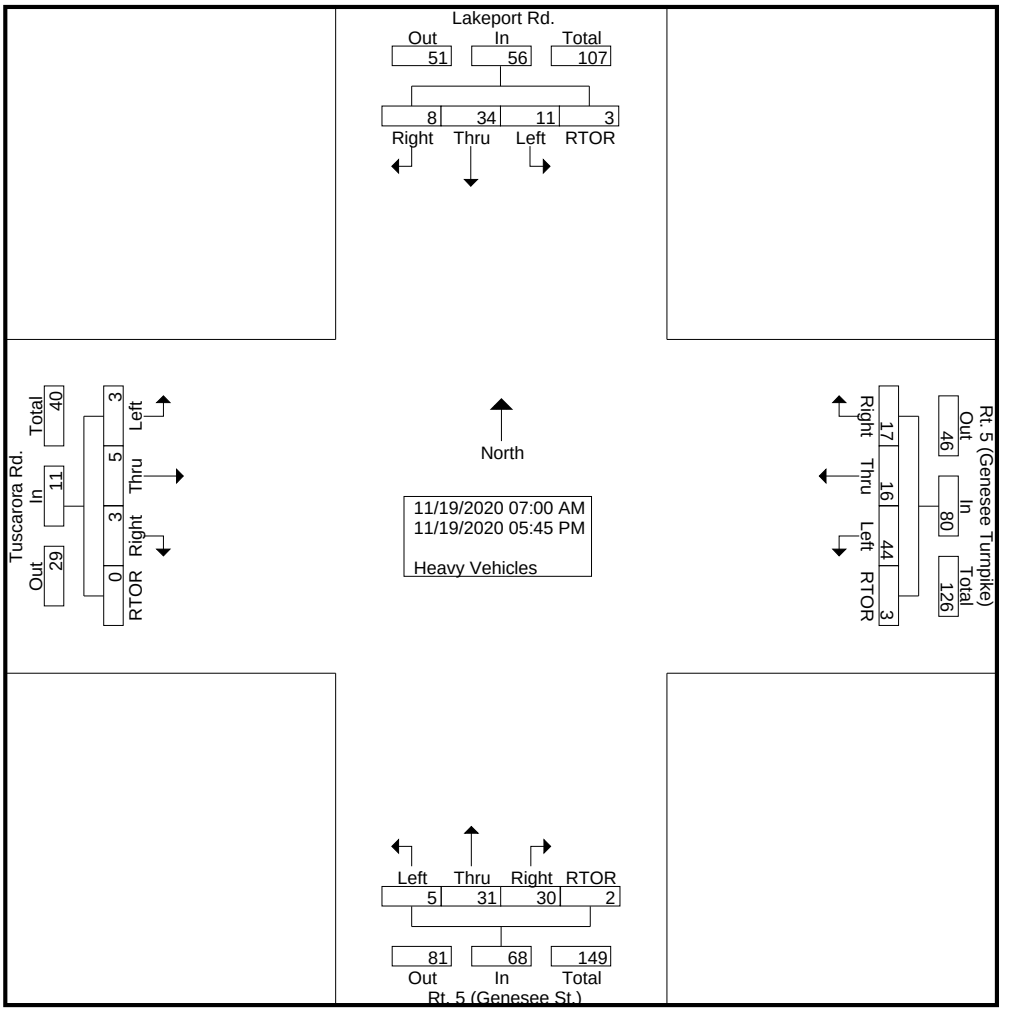
Page No : 2



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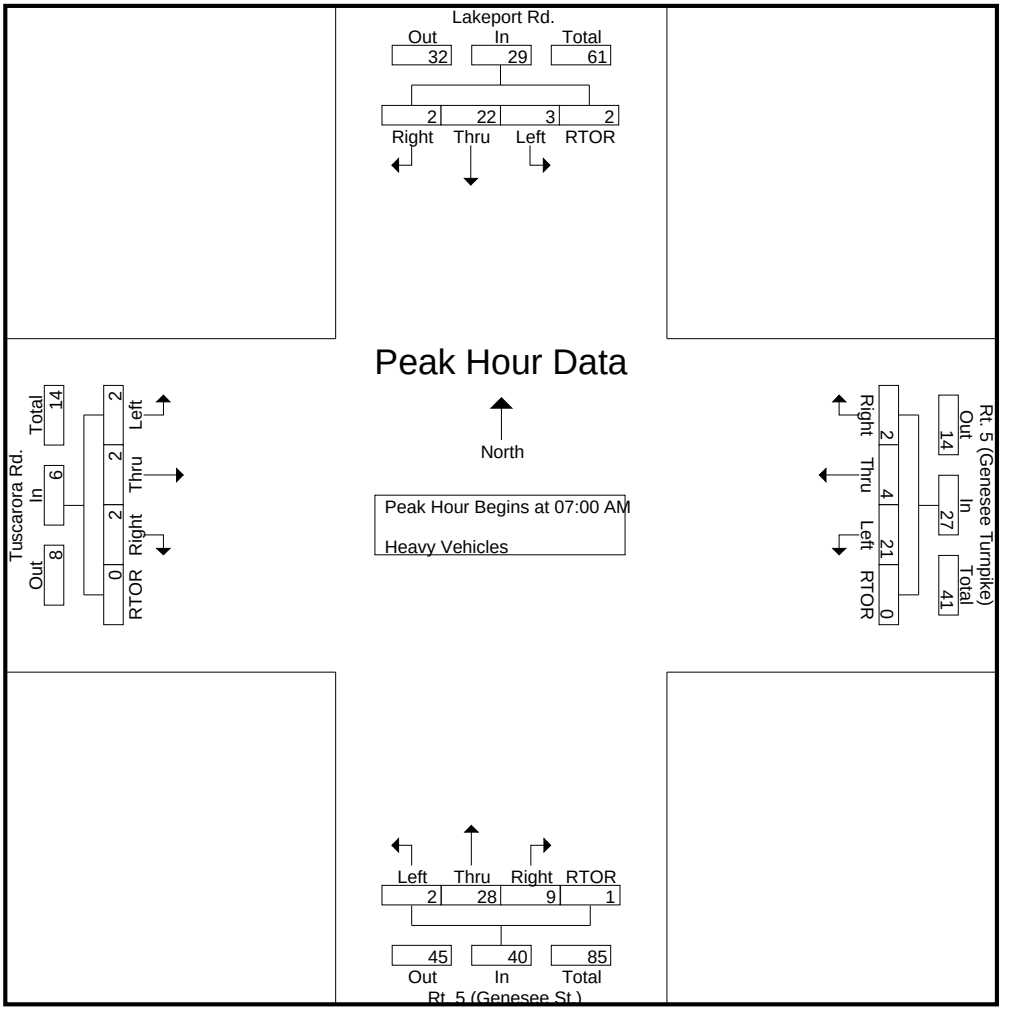
Page No : 3

	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**2**	0	0	**2**	3	**2**	0	0	5	0	2	**4**	**1**	7	**2**	**8**	**1**	**1**	**12**	26
07:15 AM	**1**	0	0	0	1	5	1	**1**	0	7	0	**17**	2	0	**19**	0	8	0	0	8	**35**
07:30 AM	1	0	0	0	1	6	1	0	0	7	**2**	9	2	0	13	0	6	1	1	8	29
07:45 AM	0	0	**2**	0	2	**7**	0	1	0	**8**	0	0	1	0	1	1	0	0	0	1	12
Total Volume	2	2	2	0	6	21	4	2	0	27	2	28	9	1	40	3	22	2	2	29	102
% App. Total	33.3	33.3	33.3	0		77.8	14.8	7.4	0		5	70	22.5	2.5		10.3	75.9	6.9	6.9		
PHF	.500	.250	.250	.000	.750	.750	.500	.500	.000	.844	.250	.412	.563	.250	.526	.375	.688	.500	.500	.604	.729



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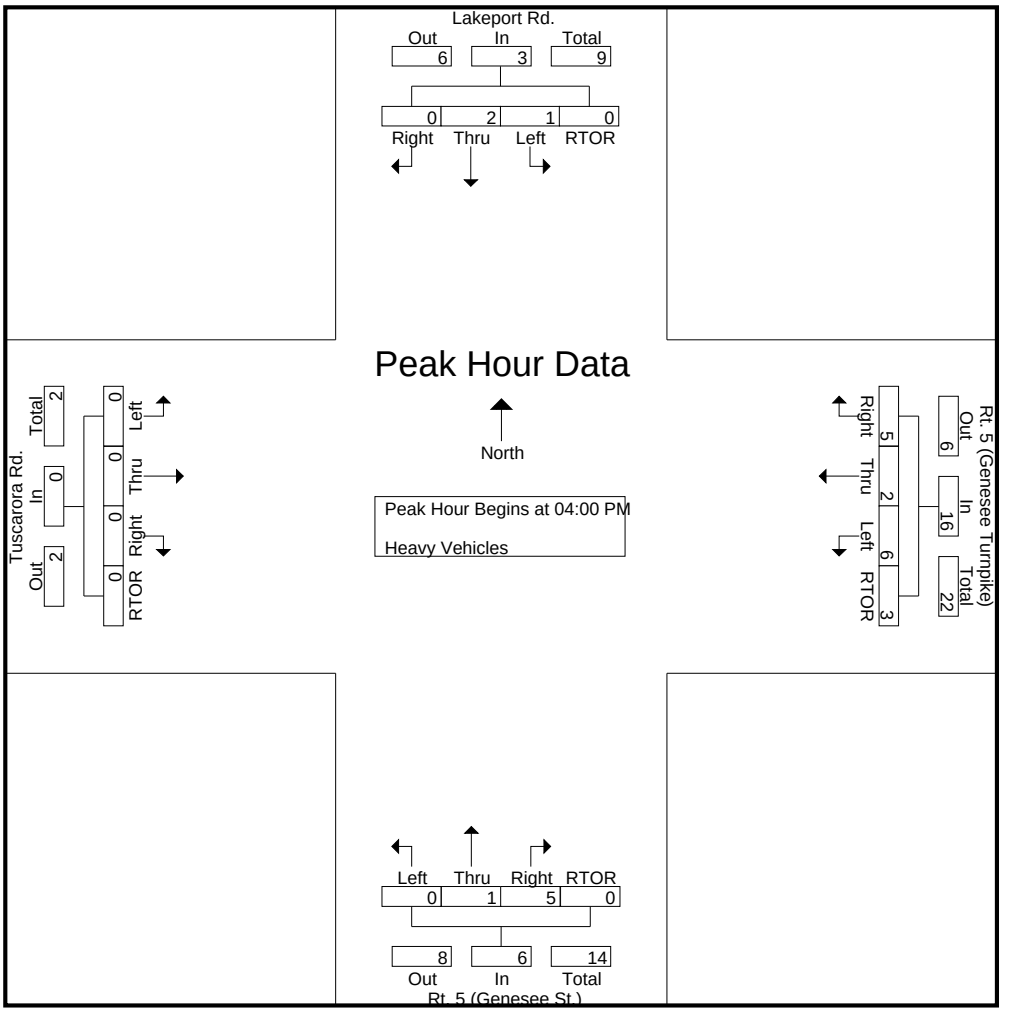
	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	**4**	0	**3**	**2**	**9**	0	0	**3**	0	**3**	0	**1**	0	0	**1**	**13**
04:15 PM	0	0	0	0	0	1	**1**	0	1	3	0	**1**	1	0	2	0	1	0	0	1	6
04:30 PM	0	0	0	0	0	0	1	2	0	3	0	0	1	0	1	**1**	0	0	0	1	5
04:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	6	2	5	3	16	0	1	5	0	6	1	2	0	0	3	25
% App. Total	0	0	0	0		37.5	12.5	31.2	18.8		0	16.7	83.3	0		33.3	66.7	0	0		
PHF	.000	.000	.000	.000	.000	.375	.500	.417	.375	.444	.000	.250	.417	.000	.500	.250	.500	.000	.000	.750	.481



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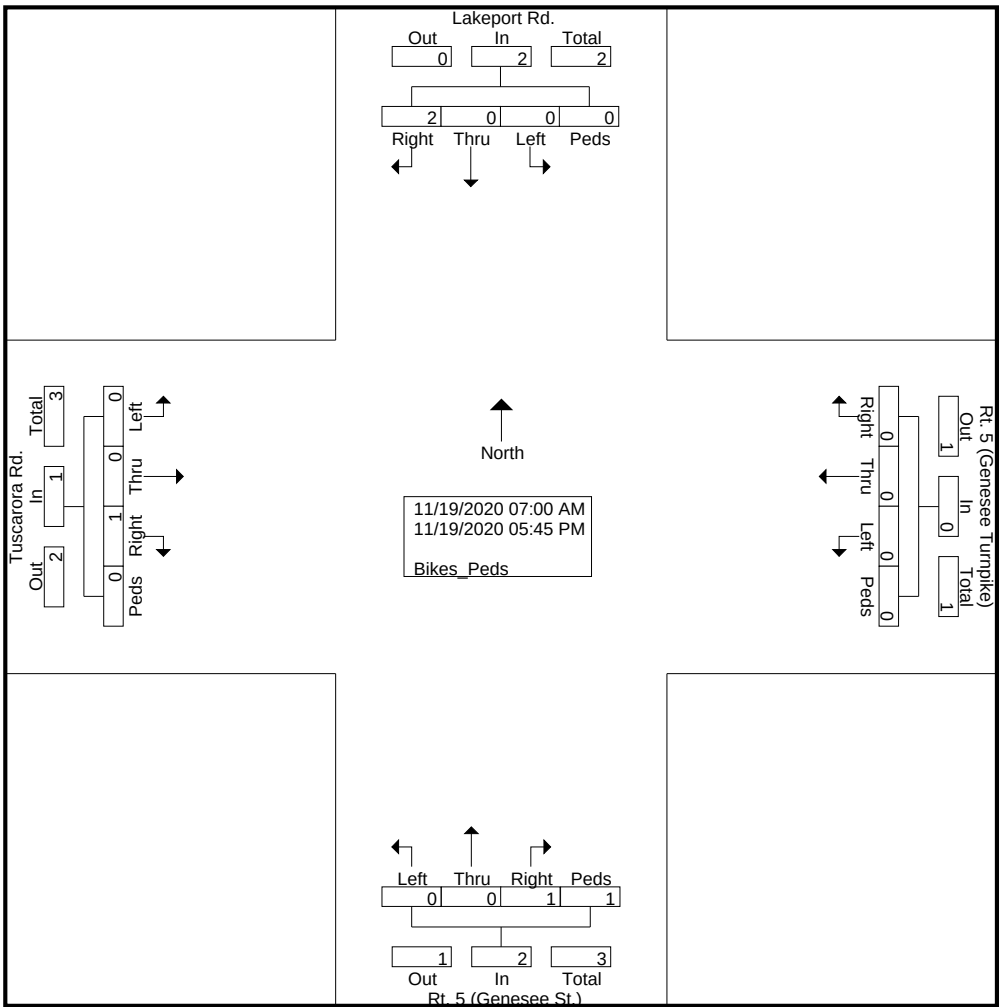
126 N. Salina Street
Syracuse, NY, 13202
www.smtcmpo.org

Rt. 5 & Lakeport Rd. - Chittenango
Counter: KK (*Taken during Pandemic)
Tuscarora Rd Corridor Study
Note: Right Turns Include RTOR

File Name : Rt.5_Lakeport_111920_Formatted
Site Code : 11192006
Start Date : 11/19/2020
Page No : 1

Groups Printed- Bikes_Peds

	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
*** BREAK ***																					
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
*** BREAK ***																					
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
05:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	1	0	1	0	0	0	0	0	0	0	1	1	2	0	0	2	0	2	5
Apprch %	0	0	100	0		0	0	0	0		0	0	50	50		0	0	100	0		
Total %	0	0	20	0	20	0	0	0	0	0	0	0	20	20	40	0	0	40	0	40	



Syracuse Metropolitan Transportation Council

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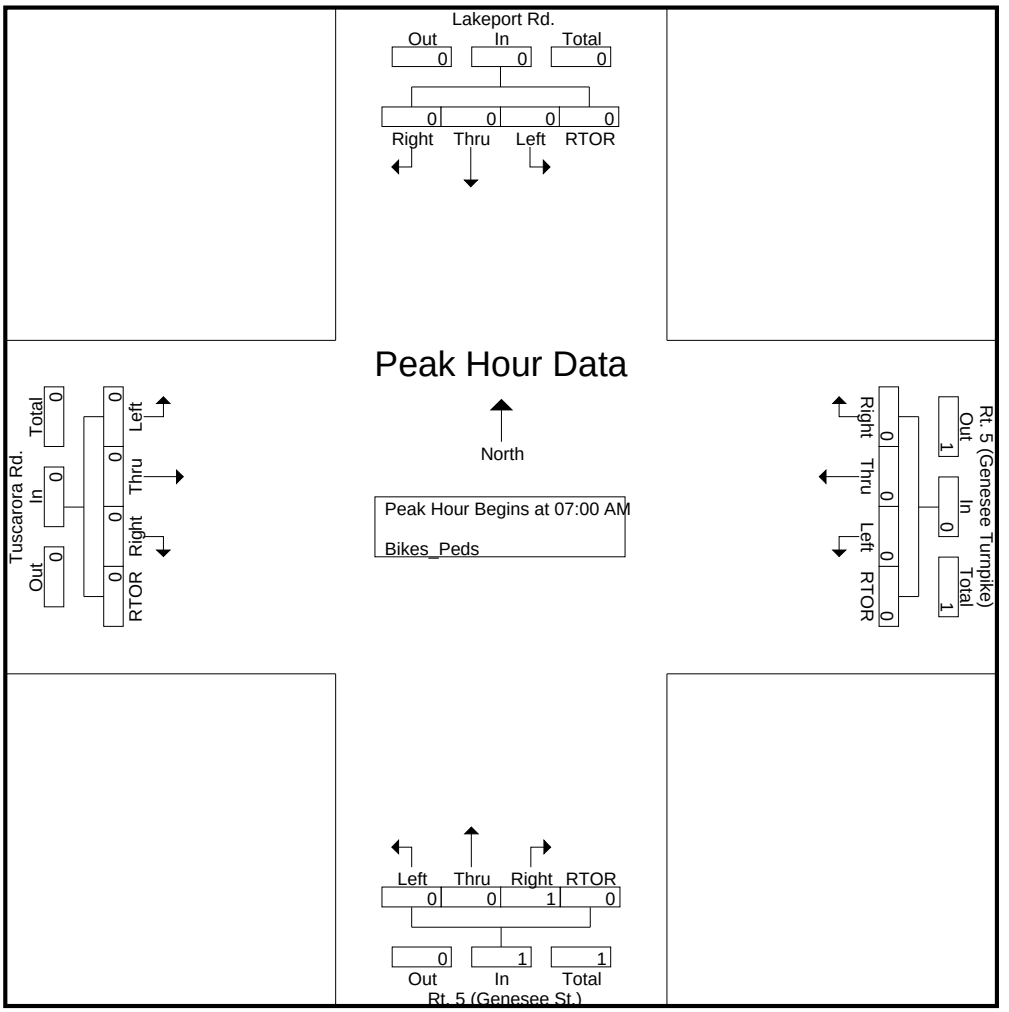
	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
% App. Total	0	0	0	0		0	0	0	0		0	0	100	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250



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Site Code : 11192006
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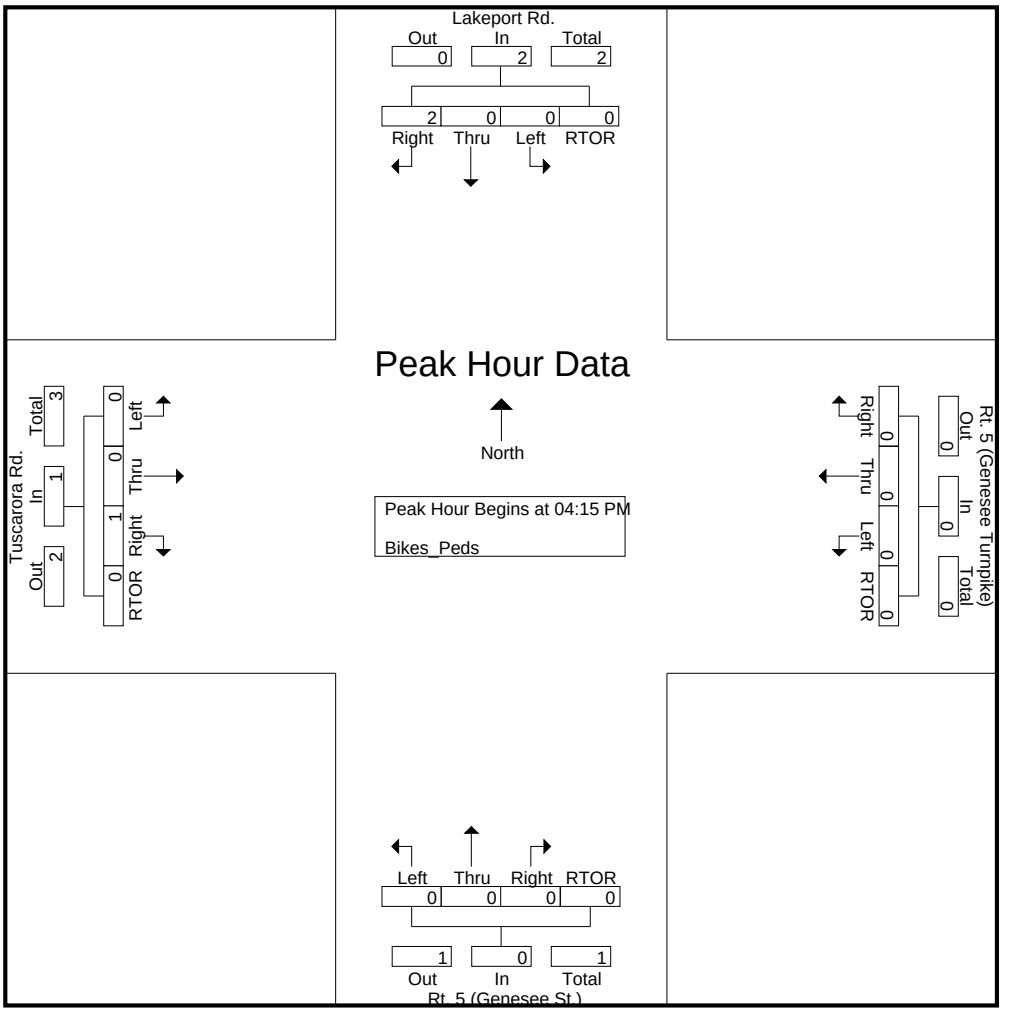
Page No : 3

	Tuscarora Rd. Eastbound					Rt. 5 (Genesee Turnpike) Westbound					Rt. 5 (Genesee St.) Northbound					Lakeport Rd. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0	**2**	**2**
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3
% App. Total	0	0	100	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.375



TUSCARORA ROAD – TUBE COUNTS (2021)

National Data and Surveying Services

Traffic Count Hourly Report

Source: Classification Data

ROAD #: ROAD NAME: **TUSCARORA RD** FROM: **GENESEE ST** TO: **MURRAY DR** COUNTY: **Madison**
DIRECTION: Eastbound FACTOR GROUP: 30 REC. SERIAL #: VB03 FUNC. CLASS: 17 VILLAGE:
STATE DIR CODE: 6 WK OF YR: 42 PLACEMENT: 379ft E/O Leta St NHS: no LION#:
DATE OF COUNT: 10/11/2021 @ REF MARKER: JURIS: County BIN: 2309120
NOTES LANE 1: ADDL DATA: Class Speed CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: List A HPMS SAMPLE:

COUNT TAKEN BY: ORG CODE: NDS INITIALS: KRL PROCESSED BY: ORG CODE: NDS INITIALS: APT

DATE	DAY	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
		AM												PM														
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T																											
8	F																											
9	S																											
10	S																											
11	M																											
12	T	**15**	**6**	**7**	**3**	**6**	**16**	**34**	**155**	**171**	**137**	**147**	**152**	**167**	**203**	**229**	**240**	**280**	**301**	**237**	**165**	**99**	**63**	**49**	**39**	2921	301	17
13	W	**18**	**6**	**1**	**4**	**6**	**13**	**34**	**158**	**183**	**125**	**130**	**166**	**195**	**180**	**213**	**282**	**279**	**304**	**275**	**184**	**119**	**87**	**41**	**40**	3043	304	17
14	T	**20**	**4**	**11**	**2**	**12**	**14**	**37**	**169**	**198**	**131**	**128**	**172**	**222**	**192**	**175**	**297**	**286**	**368**	**299**	**181**	**102**	**72**	**53**	**43**	3188	368	17
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																											
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	12 TO 1	1 TO 2	2 TO 3	3 TO 4	4 TO 5	5 TO 6	6 TO 7	7 TO 8	8 TO 9	9 TO 10	10 TO 11	11 TO 12	ADT
18	**5**	**6**	**3**	**8**	**14**	**35**	**161**	**184**	**131**	**135**	**163**	**195**	**192**	**206**	**273**	**282**	**324**	**270**	**177**	**107**	**74**	**48**	**41**	**3052**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	72	3	72	324	11%	1.000	1.079

ESTIMATED

AADT

2829

National Data and Surveying Services

Traffic Count Hourly Report

Source: Classification Data

ROAD #: ROAD NAME: **TUSCARORA RD** FROM: **GENESEE ST** TO: **MURRAY DR** COUNTY: **Madison**
DIRECTION: Westbound FACTOR GROUP: 30 REC. SERIAL #: VB03 FUNC. CLASS: 17 VILLAGE:
STATE DIR CODE: 7 WK OF YR: 42 PLACEMENT: 379ft E/O Leta St NHS: no LION#:
DATE OF COUNT: 10/11/2021 @ REF MARKER: JURIS: County BIN: 2309120
NOTES LANE 1: ADDL DATA: Class Speed CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: List A HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: NDS INITIALS: KRL PROCESSED BY: ORG CODE: NDS INITIALS: APT

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T																											
8	F																											
9	S																											
10	S																											
11	M																											
12	T	**8**	**5**	**5**	**5**	**19**	**49**	**116**	**285**	**274**	**226**	**228**	**217**	**203**	**193**	**183**	**241**	**240**	**243**	**180**	**123**	**71**	**40**	**26**	**11**	3191	285	7
13	W	**7**	**9**	**8**	**5**	**16**	**50**	**110**	**287**	**293**	**233**	**167**	**189**	**216**	**205**	**177**	**215**	**246**	**249**	**202**	**109**	**72**	**47**	**31**	**20**	3163	293	8
14	T	**18**	**7**	**11**	**5**	**11**	**45**	**118**	**295**	**279**	**213**	**193**	**196**	**188**	**182**	**206**	**238**	**221**	**279**	**218**	**108**	**75**	**51**	**33**	**31**	3221	295	7
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																											
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
11	**7**	**8**	**5**	**15**	**48**	**115**	**289**	**282**	**224**	**196**	**201**	**202**	**193**	**189**	**231**	**236**	**257**	**200**	**113**	**73**	**46**	**30**	**21**	**3192**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
3	72	3	72	289	9%	1.000	1.079

ESTIMATED

AADT

2958

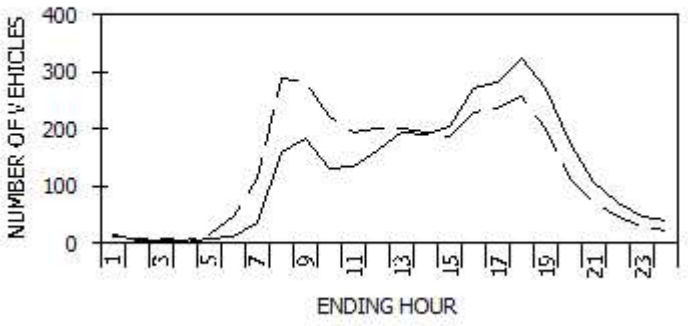
National Data and Surveying Services
Classification Count Average Weekday Data Report

ROAD #:
ROAD NAME: TUSCARORA RD
YEAR: 2021
STATION: 246042
COUNTY NAME: Madison
MONTH: October
REGION CODE: 2
FROM: GENESEE ST
TO: MURRAY DR
REF-MARKER:
END MILEPOINT: 198
NO. OF LANES: 2
FUNC-CLASS: 17
HPMS NO:
STATION NO: 6042
LION#:
COUNT TAKEN BY: ORG CODE: NDS INITIALS: KRL
PROCESSED BY: ORG CODE: NDS INITIALS: APT
BATCH ID: List A

DIRECTION	East	West	TOTAL
NUMBER OF VEHICLES	**3046**	**3188**	**6234**
NUMBER OF AXLES	**6155**	**6427**	**12583**
% HEAVY VEHICLES (F4-F13)	**3.35%**	**3.89%**	**3.63%**
% TRUCKS AND BUSES (F3-F13)	**18.58%**	**21.46%**	**20.05%**
AXLE CORRECTION FACTOR	**0.99**	**0.99**	**0.99**

VEHICLE CLASS		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	TOTAL
NO. OF AXLES		2	2	2	2.5	2	3	4	3.5	5	6	5	6	8.75	
ENDING HOUR	1:00	0	14	3	0	0	0	0	0	0	0	0	0	0	**17**
	2:00	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
	3:00	0	6	0	0	0	0	0	0	0	0	0	0	0	**6**
	4:00	0	2	1	0	0	0	0	0	0	0	0	0	0	**3**
	5:00	0	4	3	0	1	0	0	0	0	0	0	0	0	**8**
	6:00	0	11	1	0	1	0	0	0	0	0	0	0	0	**13**
	7:00	0	28	7	0	1	0	0	0	0	0	0	0	0	**36**
	8:00	0	138	19	0	3	0	0	1	0	0	0	0	0	**161**
	9:00	0	145	26	5	6	1	0	0	1	0	0	0	0	**184**
	10:00	0	104	23	1	1	1	0	1	0	0	0	0	0	**131**
DIRECTION	11:00	0	108	23	0	2	0	0	0	1	0	0	0	0	**134**
East	12:00	1	131	27	1	1	1	0	1	1	0	0	0	0	**164**
	13:00	1	156	29	1	5	2	0	1	0	0	0	0	0	**195**
	14:00	0	158	25	2	3	2	0	0	2	0	0	0	0	**192**
	15:00	0	167	27	7	1	3	0	0	1	0	0	0	0	**206**
	16:00	1	213	46	2	6	3	0	2	0	0	0	0	0	**273**
	17:00	2	228	41	0	6	3	0	1	1	0	0	0	0	**282**
	18:00	1	262	54	1	3	2	0	1	0	0	0	0	0	**324**
	19:00	0	216	49	1	2	1	0	1	0	0	0	0	0	**270**
	20:00	1	145	27	0	3	0	0	0	0	0	0	0	0	**176**
	21:00	0	94	12	0	0	0	0	0	0	0	0	0	0	**106**
	22:00	0	64	9	0	0	0	0	0	0	0	0	0	0	**73**
	23:00	0	39	7	0	1	0	0	0	0	0	0	0	0	**47**
	24:00	0	35	5	0	0	0	0	0	0	0	0	0	0	**40**
TOTAL VEHICLES		**7**	**2473**	**464**	**21**	**46**	**19**	**0**	**9**	**7**	**0**	**0**	**0**	**0**	**3046**
TOTAL AXLES		14	4946	928	52	92	57	0	32	35	0	0	0	0	6155
ENDING HOUR	1:00	0	10	1	0	0	0	0	0	0	0	0	0	0	**11**
	2:00	0	6	1	0	0	0	0	0	0	0	0	0	0	**7**
	3:00	0	5	2	0	0	0	0	0	0	0	0	0	0	**7**
	4:00	0	4	1	0	0	0	0	0	0	0	0	0	0	**5**
	5:00	0	12	3	0	0	0	0	0	0	0	0	0	0	**15**
	6:00	0	30	18	0	0	0	0	0	0	0	0	0	0	**48**
	7:00	1	79	26	1	6	0	0	0	1	0	0	0	0	**114**
	8:00	1	223	54	1	9	1	0	0	0	0	0	0	0	**289**
	9:00	0	213	54	0	11	3	0	0	0	0	0	0	0	**281**
	10:00	0	169	44	1	7	1	0	2	0	0	0	0	0	**224**
	11:00	0	151	37	0	6	0	0	0	1	0	0	0	0	**195**
DIRECTION	12:00	2	161	33	0	4	0	0	0	0	0	0	0	0	**200**
West	13:00	1	160	32	2	6	1	0	0	0	0	0	0	0	**202**
	14:00	1	150	35	1	2	2	0	1	2	0	0	0	0	**194**
	15:00	0	147	33	2	4	1	0	0	1	0	0	0	0	**188**
	16:00	1	179	36	4	8	2	0	1	0	0	0	0	0	**231**
	17:00	1	187	37	2	8	1	0	0	0	0	0	0	0	**236**
	18:00	1	206	41	1	5	2	0	1	1	0	0	0	0	**258**
	19:00	1	169	26	0	3	0	0	0	1	0	0	0	0	**200**
	20:00	1	91	20	0	1	0	0	0	0	0	0	0	0	**113**
	21:00	0	58	13	0	1	1	0	0	0	0	0	0	0	**73**
	22:00	0	40	5	0	1	0	0	0	0	0	0	0	0	**46**
	23:00	0	25	5	0	0	0	0	0	0	0	0	0	0	**30**
	24:00	0	18	3	0	0	0	0	0	0	0	0	0	0	**21**
TOTAL VEHICLES		**11**	**2493**	**560**	**15**	**82**	**15**	**0**	**5**	**7**	**0**	**0**	**0**	**0**	**3188**
TOTAL AXLES		22	4986	1120	38	164	45	0	18	35	0	0	0	0	6427
GRAND TOTAL VEHICLES		**18**	**4966**	**1024**	**36**	**128**	**34**	**0**	**14**	**14**	**0**	**0**	**0**	**0**	**6234**
GRAND TOTAL AXLES		36	9932	2048	90	256	102	0	49	70	0	0	0	0	12582

TRAFFIC FLOW BY DIRECTION



--- East - -West

PEAK HOUR DATA

DIRECTION	HOUR	COUNT	2-WAY	HOUR	COUNT
East	**18**	**324**	**A.M.**	**9**	**465**
West	**8**	**289**	**P.M.**	**18**	**582**

VEHICLE CLASSIFICATION CODES:

F1. Motorcycles
F2. Autos*
F3. 2 Axle, 4-Tire Pickups, Vans, Motorhomes*
F4. Buses
F5. 2 Axle, 6-Tire Single Unit Trucks
F6. 3 Axle Single Unit Trucks
F7. 4 or More Axle Single Unit Trucks
F8. 4 or Less Axle Vehicles, One Unit is a Truck
F9. 5 Axle Double Unit Vehicles, One Unit is a Truck
F10. 6 or More Double Unit Vehicles, One Unit is a Truck
F11. 5 or Less Axle Multi-Unit Trucks
F12. 6 Axle Multi-Unit Trucks
F13. 7 or More Axle Multi-Unit Trucks

* INCLUDING THOSE HAULING TRAILERS

FUNCTIONAL CLASS CODES:

RURAL	URBAN	SYSTEM
01	11	PRINCIPAL ARTERIAL-INTERSTATE
02	12	PRINCIPAL ARTERIAL-EXPRESSWAY
02	14	PRINCIPAL ARTERIAL-OTHER
06	16	MINOR ARTERIAL
07	17	MAJOR COLLECTOR
08	17	MINOR COLLECTOR
09	19	LOCAL SYSTEM

SOURCE: NYSDOT DATA SERVICES BUREAU

Station:	246042	Start date:	Mon 10/11/2021 13:00	Count duration:	127 hours
Road #:	Road name: TUSCARORA RD	End date:	Sat 10/16/2021 19:45	Functional class:	17
From:	GENESEE ST	County:	Madison	Factor group:	30
To:	MURRAY DR	Town:		Batch ID:	List A
Direction:	East	Speed limit:	30	Count taken by:	Org: NDS Init: KRL
		LION#:		Processed by:	Org: NDS Init: APT

Speeds, mph

Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	2	10	4	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.7	33.6	39.2	18
2:00	0	0	1	2	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.1	33.8	38.2	5
3:00	0	0	0	4	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.4	33.2	36.3	5
4:00	0	0	0	2	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	34.0	33.8	37.8	3
5:00	0	0	3	4	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.9	31.3	34.8	8
6:00	0	0	2	7	4	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.5	33.6	38.7	14
7:00	0	1	7	20	6	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.9	32.4	36.5	35
8:00	0	1	26	95	31	6	1	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	32.6	32.8	37.3	160
9:00	0	0	34	100	37	10	2	0	0	0	0	0	0	1.1	0.0	0.0	0.0	0.0	32.8	32.9	38.0	183
10:00	3	1	24	69	26	7	1	0	0	0	0	0	0	0.8	0.0	0.0	0.0	0.0	31.6	32.8	37.8	131
11:00	0	0	21	77	32	3	1	0	0	0	0	0	0	0.7	0.0	0.0	0.0	0.0	32.9	33.0	37.5	134
12:00	1	2	20	88	39	11	2	0	0	0	0	0	0	1.2	0.0	0.0	0.0	0.0	33.0	33.4	38.6	163
13:00	2	2	25	104	52	9	0	1	0	0	0	0	0	0.5	0.5	0.0	0.0	0.0	32.7	33.3	38.2	195
14:00	1	1	22	101	55	10	2	0	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	33.3	33.6	38.5	192
15:00	0	1	22	135	38	10	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.0	33.0	37.3	206
16:00	4	11	43	157	53	4	1	0	0	0	0	0	0	0.4	0.0	0.0	0.0	0.0	31.3	32.6	36.7	273
17:00	1	7	46	161	58	7	1	0	0	0	0	0	0	0.4	0.0	0.0	0.0	0.0	32.1	32.7	37.1	281
18:00	0	3	41	200	74	5	1	0	0	0	0	0	0	0.3	0.0	0.0	0.0	0.0	32.8	33.0	37.2	324
19:00	0	3	48	158	54	6	1	0	0	0	0	0	0	0.4	0.0	0.0	0.0	0.0	32.4	32.7	36.9	270
20:00	0	1	32	108	32	3	1	0	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	32.3	32.6	36.5	177
21:00	0	1	17	69	17	2	1	0	0	0	0	0	0	0.9	0.0	0.0	0.0	0.0	32.4	32.6	36.2	107
22:00	0	0	15	42	14	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.4	32.7	37.2	74
23:00	0	0	7	27	10	3	1	0	0	0	0	0	0	2.1	0.0	0.0	0.0	0.0	33.2	33.2	38.4	48
24:00	0	0	5	22	9	3	1	0	0	0	0	0	0	2.5	0.0	0.0	0.0	0.0	33.6	33.5	38.9	40
Avg. Daily Total	12	35	463	1762	650	106	17	1	0	0	0	0	0	0.6	0.0	0.0	0.0	0.0	32.5	32.9	37.5	3046
Percent	0.4%	1.1%	15.2%	57.8%	21.3%	3.5%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	0.4%	1.5%	16.7%	74.6%	95.9%	99.4%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	0	1	19	73	27	4	1	0	0	0	0	0	0									127

	Avg. Speed	50th% Speed	85th% Speed
East	32.5	32.9	37.5
West	31.9	32.6	37.1

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	18	324	A.M.	9	465
West	8	289	P.M.	18	580

TRAFFIC FLOW BY DIRECTION

Station:	246042	Start date:	Mon 10/11/2021 13:00	Count duration:	127 hours
Road #:	Road name: TUSCARORA RD	End date:	Sat 10/16/2021 19:45	Functional class:	17
From:	GENESEE ST	County:	Madison	Factor group:	30
To:	MURRAY DR	Town:		Batch ID:	List A
Direction:	West	Speed limit:	30	Count taken by:	Org: NDS Init: KRL
		LION#:		Processed by:	Org: NDS Init: APT

Speeds, mph

Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	1	6	3	1	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	33.9	33.8	39.0	11
2:00	0	0	1	4	2	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.9	33.2	37.4	7
3:00	0	0	2	5	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	30.9	31.6	34.0	7
4:00	0	0	1	3	1	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.2	32.6	36.3	5
5:00	0	0	1	8	4	2	1	0	0	0	0	0	0	6.3	0.0	0.0	0.0	0.0	35.0	34.4	41.6	16
6:00	0	1	8	25	10	2	1	0	0	0	0	0	0	2.1	0.0	0.0	0.0	0.0	32.7	33.0	38.0	47
7:00	1	1	18	73	18	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.9	32.6	36.1	114
8:00	0	5	62	173	44	5	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.8	32.3	35.7	289
9:00	0	6	57	163	50	5	1	0	0	0	0	0	0	0.4	0.0	0.0	0.0	0.0	31.9	32.4	36.4	282
10:00	3	5	48	117	40	10	1	0	0	0	0	0	0	0.4	0.0	0.0	0.0	0.0	31.5	32.4	37.2	224
11:00	1	1	40	113	37	3	1	0	0	0	0	0	0	0.5	0.0	0.0	0.0	0.0	32.0	32.5	36.6	196
12:00	3	2	39	110	38	8	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.7	32.6	37.2	200
13:00	0	1	41	110	41	9	1	0	0	0	0	0	0	0.5	0.0	0.0	0.0	0.0	32.5	32.8	37.6	203
14:00	3	1	27	111	42	8	1	0	0	0	0	0	0	0.5	0.0	0.0	0.0	0.0	32.2	33.0	37.7	193
15:00	1	1	25	111	42	8	1	0	0	0	0	0	0	0.5	0.0	0.0	0.0	0.0	32.7	33.1	37.7	189
16:00	6	10	49	112	48	5	1	0	0	0	0	0	0	0.4	0.0	0.0	0.0	0.0	30.6	32.3	37.1	231
17:00	1	7	45	126	44	11	2	0	0	0	0	0	0	0.8	0.0	0.0	0.0	0.0	32.0	32.6	37.5	236
18:00	1	3	38	149	53	10	1	1	0	0	0	0	0	0.8	0.4	0.0	0.0	0.0	32.6	32.9	37.6	256
19:00	3	9	45	110	25	6	2	0	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	30.8	32.0	35.6	200
20:00	1	1	21	64	25	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.0	32.7	37.0	114
21:00	0	0	12	42	15	3	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.7	32.9	37.4	72
22:00	0	1	8	26	9	1	1	0	0	0	0	0	0	2.2	0.0	0.0	0.0	0.0	32.4	32.7	37.3	46
23:00	0	0	7	15	6	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	32.5	32.7	38.0	30
24:00	0	0	6	9	4	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	31.6	32.0	36.5	19
Avg. Daily Total	24	55	602	1785	601	104	15	1	0	0	0	0	0	0.5	0.0	0.0	0.0	0.0	31.9	32.6	37.1	3187
Percent	0.8%	1.7%	18.9%	56.0%	18.9%	3.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	0.8%	2.5%	21.4%	77.4%	96.2%	99.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	1	2	25	74	25	4	1	0	0	0	0	0	0									133

	Avg. Speed	50th% Speed	85th% Speed
East	32.5	32.9	37.5
West	31.9	32.6	37.1

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	18	324	A.M.	9	465
West	8	289	P.M.	18	580

TRAFFIC FLOW BY DIRECTION