November
2023

Spackenkill Road (NY Route 113)

Sidewalk Feasibility Study

DUTCHESS COUNTY
TRANSPORTATION COUNCIL
Better ways from here to there

DISCLAIMER

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

TITLE VI STATEMENT

The Dutchess County Transportation Council (DCTC) is committed to compliance with Title VI of the Civil Rights Act of 1964, Restoration Act of 1987, and all related rules and statutes. DCTC assures that no person or group(s) of persons shall, on the grounds of race, color, age, disability, national origin, gender, or income status, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under all programs, services, or activities administered by the DCTC, whether those programs and activities are federally funded or not. It is also the policy of the DCTC to ensure that all of its programs, policies, and other activities do not have disproportionate adverse effects on minority and low income populations. Additionally, the DCTC will provide meaningful access to services for persons with Limited English Proficiency.

DUTCHESS COUNTY
TRANSPORTATION COUNCIL
Better ways from here to there

85 Civic Center Plaza, Suite 107
Poughkeepsie, NY 12601
(845) 486-3600
dctc@dutchessny.gov
dutchessny.gov/dctc

Table of Contents

Appendices

Appendix A: Concept
- Sidewalk Installation Concept
- Cost Estimate
- Typical Section
- General Plans

Appendix B: Roadway Sections
- Existing
- Sidewalk Installation Concept
- Sidewalk Installation with Bike Lane Concept

Appendix C: Intersection Analyses
- Wilbur Blvd
- Croft Rd
- Friends School Ln

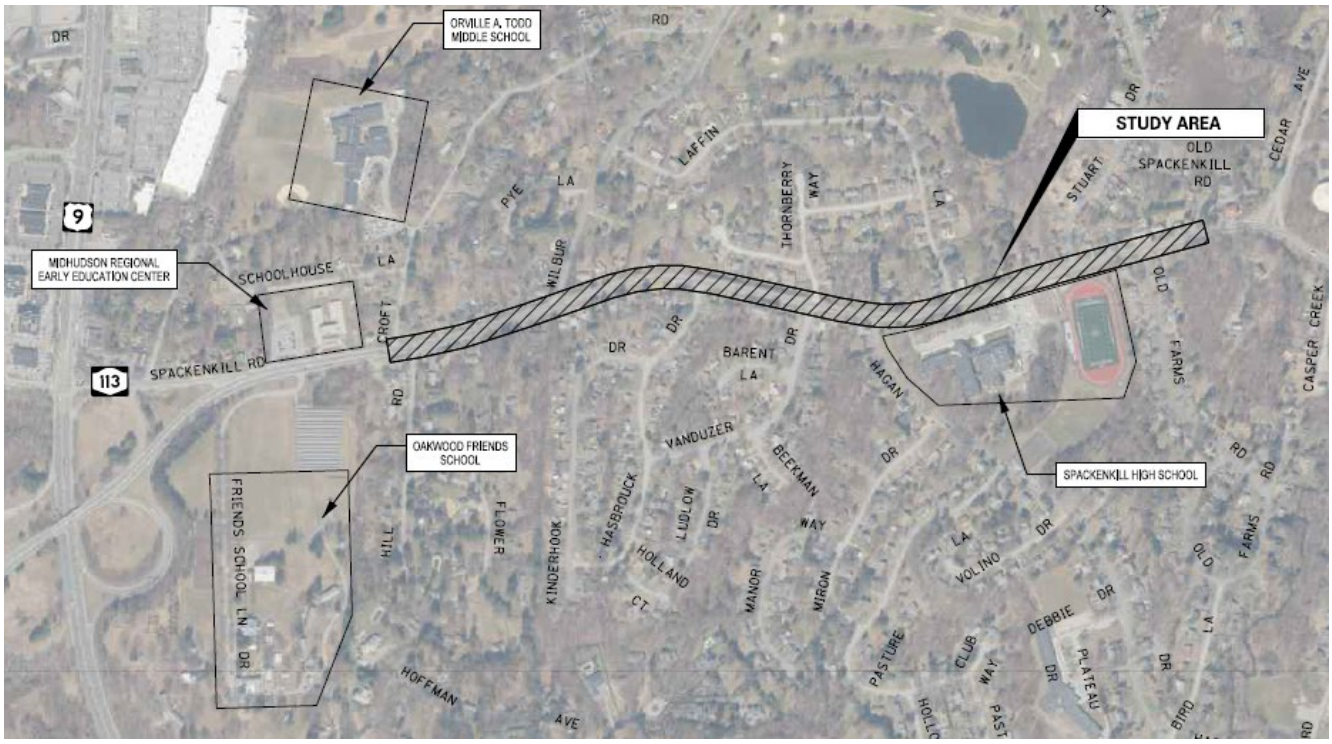
Appendix D: Public Outreach
- Spackenkill High School Student Outreach Summary
- Online Survey Summary
- Draft Report Feedback Summary

Appendix E: Count Data
- Traffic
- Intersection Turning Movements
- Pedestrian & Bicycle

Purpose and Background

This study assesses the feasibility of installing sidewalks along Spackenkill Road (NYS Route 113) from Croft Road to just west of Cedar Avenue (CR 74) in the Town of Poughkeepsie, building upon the community's long-voiced desire to improve walking conditions in this area. A previously programmed project by the New York State Department of Transportation (NYSDOT; PIN 880842[1]) would have added a new sidewalk on the south side of Spackenkill Rd from Oakwood Friends School to Hagan Dr but it was removed due to funding limitations. Since then, the Town of Poughkeepsie and the Dutchess County Transportation Council (DCTC) have received requests to re-evaluate this area due to poor walking conditions.

FIGURE 1: NYS Route 113 (Spackenkill Rd) Sidewalk Feasibility Study Area



This feasibility study considers the installation of sidewalks with curbing, ADA-compliant pedestrian curb ramps, high-visibility crosswalks, and pedestrian signal upgrades, as well as safety improvements at intersections within the study area (see Figure 1). It also considers the potential for drainage needs, utility relocations, and property impacts.

The study should be viewed as a first step towards achieving the Town's goal to improve walking and bicycling throughout the Spackenkill area, including east towards Red Oaks Mill and north to the existing path on Wilbur Blvd and the Vassar Preserve off Boardman Rd/Zack's Way. The analysis and recommendations in the study can help the Town and/or NYSDOT seek funding for a potential detailed design and construction project.

[1] Project identification number from the DCTC's FFY 2008-2012 Transportation Improvement Program (TIP)

The installation of sidewalks along this corridor would provide several benefits for people walking and driving, and for the broader community:

- Safety: Sidewalks and high-visibility crosswalks significantly reduce the risk of pedestrian crashes. Sidewalks can decrease crashes involving people walking by 65% to 89%[2] and high-visibility crosswalks can reduce pedestrian injury crashes by up to 40%.[3] Providing sidewalks on both sides of the street can also significantly reduce mid-block crossing crashes. Roads without sidewalks are more than twice as likely to have pedestrian crashes compared to roads with sidewalks on both sides of the street.[4] For drivers, the presence of sidewalks visually narrows the street, encouraging slower speeds, leading to fewer and less severe crashes.

- Access: Sidewalks serve the needs of non-drivers including children, older adults, and people with disabilities, who typically rely more on walking and public transit. Sidewalks on this corridor would expand access to nearby schools, shopping areas, services, and bus service on Route 9.

- Beautification: Sidewalks enhance the aesthetics of the street, creating a more attractive and community-oriented environment. They can contribute to a greater sense of place and community identity by providing a visual signal to drivers to expect and be mindful of people walking.

- Property values: Walkability is strongly associated with higher housing values, reflecting consumer demand for neighborhoods with convenient and varied pedestrian-friendly amenities.[5]

- Health and environmental benefits: Sidewalks encourage walking, making it easier for people to meet daily exercise recommendations and improve their overall health. Providing comfortable walking facilities can also reduce the number of trips made by car, reducing emissions and improving air quality.[6]

This study begins with a description of existing conditions, followed by a crash analysis, sight distance analysis at major intersections, and pedestrian volume and signal timing observations. It also discusses public outreach efforts and concerns raised by residents about intersection operations, bicycle accommodations, and sidewalk maintenance. The report concludes with recommendations to improve safety and access in the study area.

[2] https://highways.dot.gov/safety/proven-safety-countermeasures/walkways
[3] https://highways.dot.gov/safety/proven-safety-countermeasures/crosswalk-visibility-enhancements
[4] https://safety.fhwa.dot.gov/ped_bike/tools_solve/walkways_brochure/walkways_brochure.pdf
[5] https://nacto.org/publication/urban-street-design-guide/street-design-elements/sidewalks/
[6] https://safety.fhwa.dot.gov/ped_bike/tools_solve/walkways_brochure/walkways_brochure.pdf

Existing Conditions

Spackenkill Rd is classified as an Urban Minor Arterial and is listed in the NYSDOT Truck Book as an access highway from US 9 to NY 376, meaning it must meet specific design criteria, including the accommodation of certain large trucks.[7] The existing facility meets these standards (minimum 11-foot travel lanes, 4-foot shoulders), with travel lanes varying from 11 to 12 feet and shoulder widths between 5 and 8 feet.[8] The corridor has one lane in each direction except for a section between Croft Rd and Wilbur Blvd, which has two westbound lanes and an eastbound left-turn lane at Wilbur Blvd. The Annual Average Daily Traffic (AADT) is approximately 14,000 vehicles, with 3.3% heavy truck traffic, and an 85th percentile speed of 43 mph (the posted speed limit is 40 mph).[9]

Fieldwork and a desktop review were conducted to determine the locations of utilities, landscape features, mailboxes, signage, driveways, drainage, available right-of-way, and other factors that could affect the feasibility of constructing sidewalks along the corridor. Table 1 summarizes some of these existing features. There are overhead utilities (e.g., electric, telephone, and cable) and underground utilities (e.g., fiber, gas, water, storm, and sanitary sewer), as well as fire hydrants on both sides of the road throughout the corridor. The study area is primarily residential in nature, with the typical mix of driveways, landscaping, mailboxes, and signage abutting the road, and several side streets that provide access to residential neighborhoods. The existing geography is relatively flat, with isolated sections that include rock outcrops and steep slopes. Storm sewers consist primarily of closed drainage located within the roadway. Right-of-way was verified against NYSDOT record plans; in general, there is less right-of-way available on the south side of the road than on the north.

TABLE 1: Existing Features within Study Limits

Feature	North Side	South Side
Abutting Parcels	34	28
Utility Poles	29	27
Driveways	22	23
Un-Signalized Intersections	4	4
Signalized Intersections	2	2

Overhead utilities

[7] NYSDOT Truck Book (2022)
[8] NYSDOT Highway Design Manual (Chapter 2; Exhibit 2-4a)
[9] Traffic data collected during September 2023 (see Appendix E)

There is an existing section of sidewalk on the north side of Spackenkill Rd between Route 9 and Croft Rd, and there are four signalized intersections (Croft Rd, Wilbur Blvd, Hagan Dr, and the high school entrance) and eight un-signalized intersections within the study area. At the Croft Rd intersection, there is a crosswalk on the western leg, a curb ramp on the northwest corner, and pedestrian push buttons at the crosswalk. However, the curb ramp is not ADA-compliant, and the crosswalk leads to a grass area on the south side of the road. The intersections at Wilbur Blvd and the high school entrance have no pedestrian accommodations. The Hagan Dr intersection has crosswalks on the western and southern legs, but no curb ramps or pedestrian signals. There are no pedestrian accommodations at the un-signalized intersections.

Croft Rd crosswalk

Wilbur Blvd intersection

Crash Analysis

We evaluated ten years of crash data (2013-2022) from NYSDOT's Crash Data Viewer to determine if there were any crashes that involved pedestrians or bicyclists.[10] Over the ten-year period, 122 total crashes occurred in the study area. There were no crashes involving pedestrians, but one crash in 2013 involved a bicyclist: the crash occurred near Wilbur Blvd, where a southbound right-turning vehicle struck a bicyclist who was crossing from the north to the south side of Spackenkill Rd, causing an injury.

To understand if there were any crash patterns or concentrations in the study area, we looked at the most recent five-year period (2018-2022). We found that significant portions of crashes occurred at three of the signalized intersections: Wilbur Blvd (23%, 16 crashes), Croft Rd/Flower Hill Rd (21%, 15 crashes), and Hagan Dr (14%, 10 crashes). Figure 2 shows where these crashes occurred, and Table 2 and Table 3 summarize the number of crashes, injuries, and crash types during this five-year period.

[10] NYSDOT's Crash Data Viewer contains data for crashes that were reported to the NYS Department of Motor Vehicles (DMV). Unreported crashes and "near misses" are not captured.

FIGURE 2: Crash Map (2018-2022)

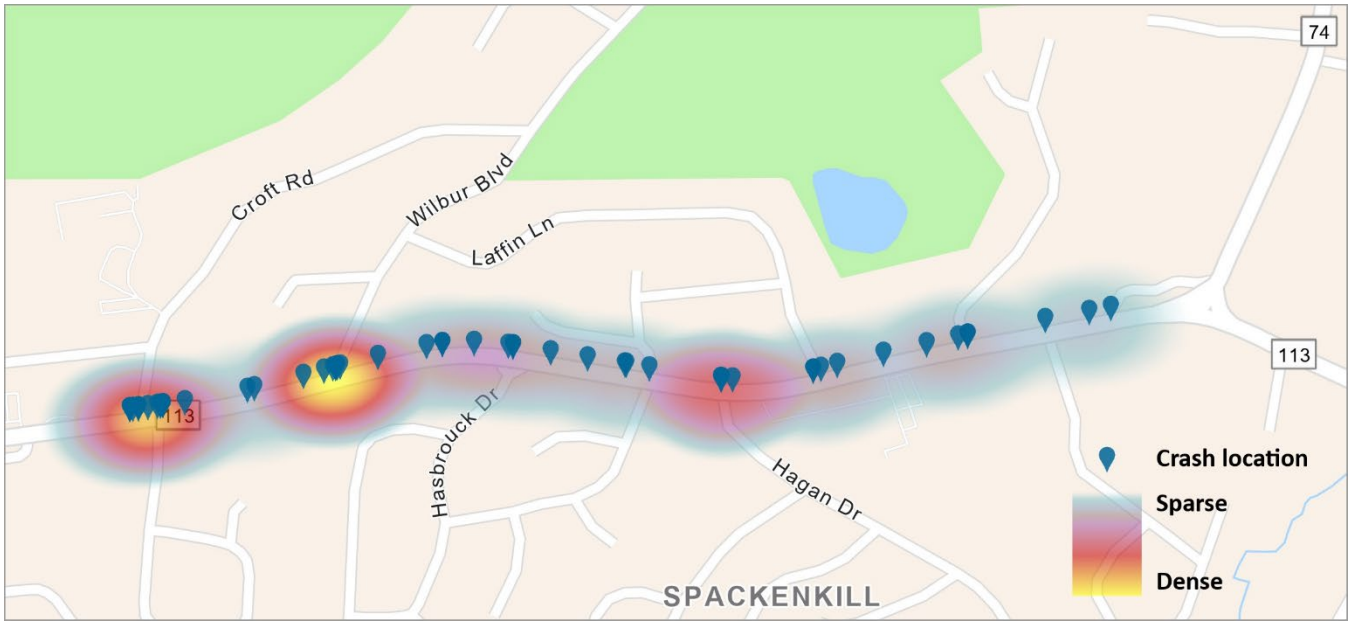


TABLE 2: Crash Summary (2018-2022)

Year	Crashes	Injuries	Fatalities
2018	12	1	0
2019	16	5	0
2020	11	4	0
2021	20	12	0
2022	11	5	0
Total	**70**	**27**	**0**

TABLE 3: Crash Type Summary (2018-2022)

Crash Type	Crashes
Rear End	27
Right Angle	8
Overtaking	8
Collision with Animal	7
Other	7
Turning Movement	4
Collision with Fixed Object	4
Head On	3
Sideswipe	2
Pedestrian/Bicycle	0
Total	**70**

Stopping Sight Distance at Pedestrian Crossings

Field observations identified concerns related to sight distance at some pedestrian crossings in the study area. Stopping sight distance (the distance required for a vehicle to stop before reaching a stationary object in its path[11]) was evaluated for pedestrian crossings at Croft Rd, Wilbur Blvd, and Hagan Dr. Table 4 summarizes the available stopping sight distance at each crossing compared to the recommended stopping sight distance. The evaluation found that stopping sight distance at the existing crosswalk at Croft Rd and at the eastern leg of the Wilbur Blvd intersection is sufficient for all directions.

Looking west towards Hagan Dr intersection

At Hagan Dr, a horizontal curve in the road partially obstructs the view of westbound drivers and could make it difficult to see people standing on the north side of Spackenkill Rd at the western leg (existing crosswalk) and at the eastern leg of the intersection. These locations do not meet the recommended minimum stopping sight distance for westbound traffic. However, because the Hagan Dr intersection is signalized and there is advance warning signage on the westbound approach to the signal, it is anticipated that the sight distance would not be a safety issue.

TABLE 4: Stopping Sight Distance

Intersection	Location	Stopping Sight Distance (ft)[1]			
		SSDN/EB	SSDS/EB	SSDN/WB	SSDS/WB
Croft Rd	Western leg (existing crosswalk)	>400	>400	>400	400
Wilbur Blvd	Eastern leg	>400	>400	>400	400
Hagan Dr	Western leg (existing crosswalk)	>400	>400	**300**	400
Hagan Dr	Eastern leg	>400	>400	**280**	350
Recommended stopping sight distance (ft)[2]		*330*	*330*	*330*	*330*

[1] Stopping sight distance measured at a height of 3.5 feet on each side of the road for eastbound and westbound vehicles.
[2] Sight distance measurements are compared to AASHTO recommended distances for a 50-mph operating speed at Croft and Wilbur and 45-mph at Hagan for non-NHS roadway. This is based on 85th percentile speeds, rounded up.

[11] NYSDOT Highway Design Manual (Chapter 5; Section 5.7.2.1)

Walking and Bicycling Patterns

Within the study area, students walk to and between schools, and residents walk to school events and to the high school track. Students living within one mile of Spackenkill High School, three-quarters of a mile from Todd Middle School, or a half mile from Hagan Elementary are not served by the school district's bus system and must walk to school or find other means of transport. However, the school district does provide transportation for students who would have to walk along Spackenkill Rd, because the road has been designated a hazardous zone for walking.

Automated 12-hour pedestrian and bicycle counts were conducted at key locations and are summarized in Table 5, with detailed and mapped data in Appendix E. The data showed people walking on both sides of Spackenkill Rd, with more use observed on the south side. Pedestrian counts were also conducted in-person during school arrival (6:30-7:30 am) on June 13, 2023 and dismissal (2:30-3:30 pm) on January 19, 2023 in the vicinity of the high school. During these times, students were observed crossing at both signalized intersections (Hagan Dr and the high school entrance) and walking across the grass in front of the high school.

TABLE 5: 12-hr Pedestrian & Bicycle Counts (7am-7pm)

Intersection/Screenline Location[2]	Thursday (10/13/22)		Saturday (10/15/22)	
	Pedestrians	Bikes	Pedestrians	Bikes
Spackenkill Rd & Croft Rd	47	6	14	24
Spackenkill Rd & Wilbur Blvd	24	10	13	16
Spackenkill Rd & Hagan Dr	58	12	13	6
Spackenkill Rd near Stuart Dr (screenline)	48	3	7	1

[1] Intersection counts include people crossing at each leg; screenline count includes only people walking along Spackenkill Rd.

Traffic Signals

Traffic signal timing was observed at Croft Rd, Wilbur Blvd, Hagan Dr, and the high school entrance. Upon initial review, it appears that each of these signals can accommodate additional pedestrian phases. However, all signals would need to be analyzed further during project design to determine what timing changes would be needed.

The age of the existing traffic signal assemblies will also need to be considered during project design. Signals in the study area were installed in 1969 at Croft Rd, and 1989-90 for the remaining signalized intersections.[12] Due to the age and design of the existing signal assemblies, they may not be able to accommodate new signal heads or signage. For any intersection recommendations that involve changes to the approaching lanes, it is possible that the full traffic signal assembly may need to be replaced.

12 NYS GIS Clearinghouse, NYSDOT Traffic Signals, March 2023

Public Outreach

Extensive outreach was conducted for this study to understand the needs and concerns of stakeholders. An Advisory Committee, including staff from the Town of Poughkeepsie, NYSDOT, and Dutchess County Planning Department, provided feedback to DCTC on interim and final products. Public outreach included a presentation to the Spackenkill Union Free School District (SUFSD) Board of Education (BOE), in-classroom discussion with Spackenkill High School students, door to door outreach on Spackenkill Rd, a public online survey, and a presentation of the draft report at a public meeting of the Poughkeepsie Town Board. News about the study and survey was shared by a local newspaper and radio station, posted on the DCTC's website, and provided to local schools, the Spackenkill Parent Teacher Student Association (PTSA), and the Town's public information email list. Table 6 summarizes these outreach efforts. Appendix D contains detailed summaries of in-classroom outreach, the online survey, and feedback received on the draft study and Town Board presentation.

TABLE 6: Public Outreach Summary

Stakeholder Group	Date
Advisory Committee Meeting 1	December 2022
Advisory Committee Meeting 2	March 2023
School District Meeting	April 2023
Town Representatives Meeting	May 2023
School Board Presentation	May 2023
In-class outreach at Spackenkill High School	May 2023
Online Survey	May-June 2023
Door-to-Door Outreach by Town Board member	June 2023
Advisory Committee Meeting 3	July 2023
NYSDOT Meeting	August 2023
Town Board Presentation	October 2023

Key Issues

Our outreach efforts identified several concerns and issues that were further investigated:

Croft Rd

The intersection of Croft Rd and Spackenkill Rd was evaluated due to traffic and safety concerns raised by the public. Vehicles waiting in the eastbound travel lane to turn left onto Croft Rd are reported to cause delays for eastbound through traffic, resulting in dangerous passing on the south side shoulder to avoid backups. If there were sidewalks on the south side of the intersection, it could improve safety by limiting this illegal passing movement.

We considered the possibility of adding a turn lane to accommodate left turns onto Croft Rd, but a review of peak hour traffic volumes and crash patterns indicates that a left-turn lane is not recommended because the location does not meet turning volume or signal warrants (see Appendix C for full assessment). If, however, a left turn lane at Croft Rd were warranted in the future, Spackenkill Rd would need to be widened by an additional 12 feet on the south side of the intersection. The tapered road widening would begin approximately 420 feet on the eastbound and westbound approaches to accommodate the lane shifts and would transition from 0 to 12 feet of widening while approaching the intersection; this would require two new right-of-way acquisitions from adjacent properties. In addition, new signal heads for the turn lane could necessitate a complete replacement of the existing signal assembly.

Wilbur Blvd

The removal of the slip lane from Wilbur Blvd to westbound Spackenkill Rd was evaluated to improve crossing safety for pedestrians. Removing the slip lane and constant green arrow for right turns would allow people to safely cross Wilbur Blvd when vehicles are stopped. A preliminary level of service analysis showed that the intersection would operate well with a signalized right turn lane on Wilbur Blvd instead of a free flowing right turn, though drivers making right turns from Wilbur Blvd would experience some increased delay. This modification would require traffic signal upgrades and reconfiguring the two westbound lanes west of the signal. A full replacement of the existing signal assembly may also be needed, depending on its condition.

Westbound travel lanes, west of Wilbur Blvd

Friends School Ln

Although not within the study are, a traffic signal warrant analysis was completed for the Spackenkill Rd/Friends School Ln intersection due to safety concerns for left turns out of Friends School Ln and the childcare center on the north side of the street. The evaluation determined that none of the five warrants for installing a traffic signal were met, based on the minimum criteria identified in the 2009 MUTCD (see Appendix C). Further evaluation would be needed to identify design improvements, which could include lane restriping on Spackenkill Rd. Public outreach also raised the possibility of extending the sidewalk on the south side of Spackenkill Rd between Croft Rd and Friends School Ln; this should be considered in further evaluation of this area.

Bicycle Accommodations

Feedback from stakeholders pointed to the need to evaluate various bicycle accommodations, including bike lanes, buffered bike lanes, and shared use paths.

Existing wide shoulder on Spackenkill Rd

On Spackenkill Rd, a minimum bike lane width of five feet would be required, though additional width is preferred and would provide more comfort to cyclists and drivers.[13] Bike lanes must be marked according to the MUTCD,[14] but NYSDOT typically will not maintain such markings. As such, marked bike lanes would need to be maintained by the Town.

A buffered bike lane would include the standard five-foot bike lanes, with the addition of a hatched buffer to separate them from the travel lanes. A buffer provides extra protection to cyclists and makes the bike lane more comfortable for many riders. Per NYSDOT standards for this facility type, a minimum buffer of three feet is optimal, but could be modified depending on the context. We evaluated how this treatment would look within the study area alongside sidewalks (see cross-section in Appendix B). Adding a bike lane with a three-foot buffer would require 14 additional right-of-way takings. A bike lane with a varying buffer width (between 0-3 feet depending on available space) or no buffer would reduce the need for additional right-of-way.

NYSDOT standards include the use of wide shoulders as an alternative to marked bike lanes on this facility type. Consistent five-foot shoulders in the study area could accommodate bicyclists and reduce right-of-way needs while providing the opportunity for future dedicated bicycle infrastructure connections to a larger network.

A shared-use path was also considered but is not recommended due to the roadway context. There would be significant conflicts between two-way bicycle traffic and vehicles at the frequent driveways and intersections along the corridor. A path would also limit the potential for improved access since it would only be placed on one side of the road. It would also require additional right-of-way.

Bicycle infrastructure on Spackenkill Rd should be considered in the context of a larger plan. In particular, the Town's comprehensive plan recommends a "Town-wide bike plan that identifies rights of way throughout the Town that are appropriate for bicycle infrastructure".[15] Dedicated bicycle infrastructure should not be limited to the one-mile corridor considered in this study.

[13] NYSDOT Highway Design Manual (Chapter 2)
[14] Manual on Uniform Traffic Control Devices (MUTCD) (Chapter 9)
[15] Town of Poughkeepsie Comprehensive Plan 2021 (p 102, Recommendation 5.1.1)

School Zone Speed Limits

The implementation of a school speed limit in front of the high school was researched as a means to reduce speeds along the corridor and provide safer crossing opportunities for students. Based on NYSDOT's standards, a school speed limit zone is appropriate in areas where students walk or bike to school and there are no traffic control signals or other protected means for crossing the road;[16] a local example is along Hagan Dr in front of the elementary school. Although students walk along Spackenkill Rd to the high school, a school speed limit zone is not recommended because the school frontage is bookended by traffic signals at Hagan Dr and the high school entrance.

In place of a school speed limit, physical changes to the roadway (like the addition of sidewalks and intersection improvements) are effective at reducing speeds. As a supplement, the Town and school could work with NYSDOT to evaluate the effectiveness of existing school signage and determine if the addition of flashing beacons is desired.

Sidewalk Maintenance

Existing sidewalk on Spackenkill Rd, west of study area

Currently, the Town of Poughkeepsie's code places the responsibility of sidewalk maintenance, including clearing snow and ice, on adjacent property owners.[17] Although this is common throughout Dutchess County, there are issues with this approach, and it has arisen as a key concern for residents on Spackenkill Rd, particularly older adults and people with disabilities. A potential solution could involve collaboration between the Town and the school district to establish a cost-sharing agreement for sidewalk maintenance, given the school's substantial property ownership along the corridor and the benefits of sidewalks to the school community. An alternative approach could be the creation of a sidewalk improvement district, where all properties in the area contribute to the cost of sidewalk maintenance, which the Town would manage, similar to existing lighting districts in the Town. Another option would be a volunteer snow clearing program, where residents in need of assistance are matched with volunteers. This could be done in partnership with the school district and enable students who clear snow to receive community service credit.[18] For long-term maintenance, the Town could include sidewalk repairs in its capital planning, alleviating the burden on adjacent property owners.[19]

[16] NYSDOT Traffic Safety and Mobility Instruction (TSMI) 17-05 (p 13)
[17] Town of Poughkeepsie Code (§ 174-2)
[18] Similar programs exist across the country, often run by non-profit service organizations (see Northeastern PA's Snow Angels program for an example). New Jersey has a statute that allows municipalities to establish volunteer snow removal programs, including in coordination with school districts.
[19] https://movingdutchessforward.com/wp-content/uploads/2021/04/DCTC_MovingDutchessForward_Advocate_Local-Actions_Sidewalk-Sidebar.pdf

Findings and Recommendations

Based on our review of existing conditions and analysis of available data, we believe that it is feasible to install sidewalks on both sides of Spackenkill Rd within the study area. Feedback from the public and stakeholders largely supports sidewalks, given their ability to improve safety and access, though concerns about right-of-way needs, maintenance responsibilities, and traffic impacts could affect the final design if such a project were to move forward. In consideration of these findings, the recommended concept, shown in Appendix A, includes the following:

- Install sidewalks on the north side of Spackenkill Rd between Croft Rd and Old Spackenkill Rd and on the south side between Croft Rd and Old Farms Rd. Include sidewalk connections to Spackenkill High School. Sidewalks would be five feet wide with concrete curbing and a 0-to-10-foot maintenance strip. The varying maintenance strip width helps reduce the number of right-of-way acquisitions, utility relocations, and other property related impacts.

- Provide consistent roadway widths by restriping travel lanes to 11 feet and shoulders to five feet.

- Install high-visibility crosswalks with ADA-compliant curb ramps on all legs of signalized intersections and across all side streets to provide an accessible and safe walking environment.

- Make pedestrian signal improvements at Croft Rd, Wilbur Blvd, Hagan Dr, and the high school entrance. Pedestrian signal improvements would include new pedestrian push buttons and countdown timers. Detailed signal evaluations should be completed during the project's design phase.

- Remove the free flow slip lane from Wilbur Blvd to Spackenkill Rd and replace with a signalized right turn lane on Wilbur Blvd to allow for a crosswalk on the north leg, greatly improving pedestrian safety at this intersection.

- Narrow the intersections at Hasbrouck Rd and Van Duzer Dr to provide shorter crossing distances for pedestrians and reduce vehicle turning speeds.

- Relocate utility poles and address existing feature conflicts to accommodate the proposed sidewalk. Utility relocation should be done in coordination with Central Hudson. The removal or relocation of the existing guide rail near the high school track should be done in coordination with NYSDOT and the school district. In addition, mailboxes would need to be relocated, driveway entrances re-paved, and landscaping replaced due to construction impacts; these details would be evaluated during the project's design phase.

- Evaluate the existing drainage system for rehabilitation and/or replacement as needed. A detailed evaluation should be completed during the project's design phase.

The total estimated project cost is between $5.7 and $7.1 million. The high-end of this range is shown below (Table 7) and is consistent with NYSDOT estimates for similar projects. The range accounts for potential variation in final design and construction, including utility relocations, traffic signal replacements, and right-of-way needs. Utility costs vary depending on their location within the right-of-way (i.e., if within State right-of-way, the utility company may bear relocation costs). Three full traffic signal replacements are accounted for, but if retrofits are possible then the cost could be reduced. 16 right-of way acquisitions are accounted for, but this number could be reduced to six by eliminating the sidewalk maintenance strip in areas where there is limited right-of-way. These would be either fee takings[20] or permanent easements.[21]

The detailed cost estimate, typical roadway section, and general plans with potential right-of-way impacts are in Appendix A.

TABLE 7: Cost Estimate

Item	Estimate
Design Engineering (10%)	$500,000
ROW Acquisition and Coordination	$160,000
Utility Involvement (8%)	$400,000
Construction	$5,000,000
Construction Inspection (20%)	$1,000,000
Total	**$7,060,000**

Funding Options

There are a variety of potential funding sources for the recommendations in this study, though maximum award amounts may necessitate project phasing. Options include phasing in sections, such as from Old Spackenkill Rd to Van Duzer Dr (where there is currently more use) and then from Van Duzer to Croft Rd; or one side of the road then the other, such as the north side (where there is more right-of-way available) then the south side. Alternatively, a combination of these approaches may work best depending on available right-of-way and property owner support.

Other funding strategies include combining different sources; however, due to the scope and cost of this study's recommendations, federal funding is likely to be the primary source of funds. That and other key sources are listed below.

[20] Acquiring absolute right, title, or estate to a parcel of land for use by the state for purposes related to highways or other transportation related facilities.

[21] The acquisition of certain rights and interest to use or control a property for a designated purpose. In most cases, the property owner retains the use of the property for other functions which do not interfere with the purpose of the easement.

Federal Transportation Funds

Most federal transportation funding comes from the multi-modal federal transportation law in effect at the time. To use federal transportation funding, a project must be consistent with an overall transportation plan, such as Moving Dutchess Forward, and be added to the DCTC's Transportation Improvement Program (TIP). For more information, see the DCTC's webpage on Federal Highway Funding and the Federal Highway Administration's Pedestrian and Bicycle Funding Opportunities table. In particular, two federal highway programs could be used for the pedestrian and bicycle improvements recommended in this study:

- **Surface Transportation Block Grant Program (STBG):** These funds may be used for projects on any federal-aid eligible road, which includes Spackenkill Rd (NYS Route 113). Besides typical road and bridge repairs and construction work, this program can also support walking and bicycling improvements. A portion of each State's STBG funds must be used for the Transportation Alternatives Set-Aside (see below).

- **Transportation Alternatives Set-Aside**: This program, often referred to as TAP, specifically funds walking and bicycling infrastructure, safe routes to school projects, and trails, as well as related landscaping and other improvements on a public road. Eligible costs can include detailed design, right-of-way acquisition, and construction. Administrative and maintenance costs are not eligible under TAP.

Most federal programs are reimbursement programs, with the federal share making up 80 percent of the total project cost. If federal funds are used, the project sponsor is responsible for the required local match and any costs not covered by federal funds. The design and construction of pedestrian facilities could also be a stand-alone project or combined with another project done on the same road (e.g., road reconstruction). A large project could also be split into several smaller pieces with funding from different programs.

State Funds

- The New York State Department of Transportation (NYSDOT) owns and maintains all State roads, including Spackenkill Road (NYS Route 113). NYSDOT is responsible for the road, as well as intersections along it. This includes maintaining signals, marking crosswalks, and installing signs. NYSDOT uses State and federal funds for its projects.

- **New York State's** Consolidated Funding Application (CFA) is an annual application for funding from various State agencies, including the Department of Environmental Conservation (DEC), Department of State (DOS), Empire State Development (ESD), Homes and Community Renewal (HCR), Parks, Recreation and Historic Preservation (OPRHP), and others. The funding programs and amounts vary by year. The CFA is intended to implement the economic development priorities and strategies developed by the Regional Economic Development Councils, which for the Mid-Hudson, include promoting alternative transportation.

- New York State's Multi-Modal Program provides reimbursement funding for capital projects related to five transportation modes: rail, port, ferry, airport, and State and local highways and bridges. Projects are nominated by the Governor or a State Legislator and must be approved by a State Committee and determined to be eligible by NYSDOT.

- The State and Municipal Facilities Program (SAM), administered by the State's Dormitory Authority (DASNY), can fund sidewalks and other local infrastructure. Projects are nominated by a State Legislator.

- **Legislative Discretionary Funds**: State legislators typically have discretionary funds that can be used for local priority projects.

Local Funds

Municipalities often find that it is less expensive to use local funds than federal sources. This is because federal funding typically requires higher-cost materials, lengthy review and right-of way processes, thorough construction inspection, and detailed grant reporting and administration. Although municipal resources are limited, local funds allow for more flexibility and a faster process. Local funding sources include the following:

- **General Fund/Discretionary Funds**: The Town will need to weigh each project against other local priorities.

- **CHIPS** (Consolidated Local Street and Highway Improvement Program): Municipalities receive annual CHIPS funding from NYSDOT based on their local roadway mileage. CHIPS funds can be used for construction and repair of streets and bridges, as well as sidewalks and traffic calming projects. Capital projects must be paid for by the municipality and then reimbursed by NYSDOT.

- **Local Bond**: The Town could issue a local bond to fund a package of improvements.

- **Sidewalk Improvement District**: Ithaca, NY funds sidewalk installation and maintenance through sidewalk improvement districts. The districts assess an annual maintenance fee on properties, based on the type of property, its size, and the amount of sidewalk work needed in the district. See Ithaca's Sidewalk Policy website for more information. Denver, CO and other locations have implemented similar programs.

Private Funds

- **Public-Private Partnerships**: This would involve working with a private entity, civic organization, or community group to implement a street improvement project. In this case, the school district could serve as an important partner.

- **Non-Profit Organizations**:
  - AARP Community Challenge Grants provide grants for quick actions that can improve walkability, bikeability, wayfinding, and access to transportation options.

  - America Walks' Community Change Micro Grants fund projects or programs to make walking safer, easier, and more fun. These grants have funded walking maps, public art, signage, crosswalks, events, educational materials, and more.

- **Foundation Grants**: Local foundations may have funding for walking and bicycling projects. Nationally, Candid has a database of grant-makers and grants, as well as other tools for grant-seekers.

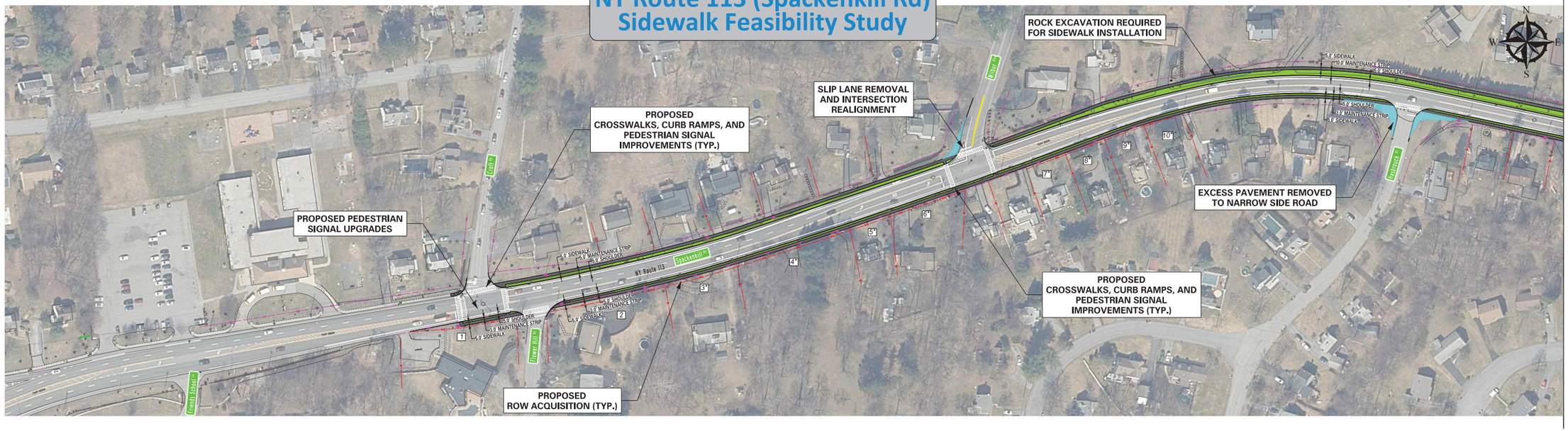
Final Thoughts

This study serves as a starting point for the Town to improve walkability on Spackenkill Rd. The challenges identified here should be addressed during project design, but from a transportation planning perspective, sidewalks are indeed feasible, and would result in a safer, more accessible community, while also creating a better sense of place.

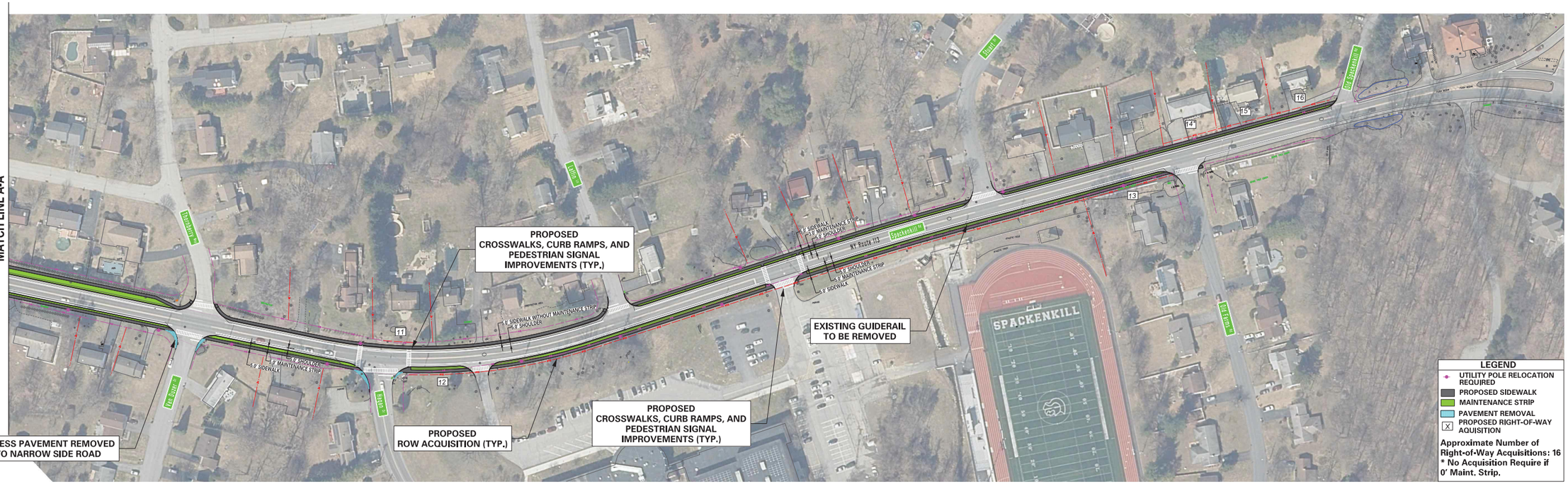
Appendix A

- Sidewalk Installation Concept
- Cost Estimate
- Typical Section
- General Plans

NY Route 113 (Spackenkill Rd) Sidewalk Feasibility Study



MATCH LINE A-A



60 0 60 120 180 240'
1" = 60'

UTCHESS COUNTY
TRANSPORTATION
COUNCIL
Better ways from here to there

Creighton Manning

Spackenkill Road (NY Route 113) Sidewalk Feasibilty Study: Cost Estimate

September 27, 2023

Description:

Cost estimate for sidewalk installation from Croft Rd to Old Spackenkill Rd on north side and south side of roadway, including curb ramps, traffic signal upgrades for pedestrians, lane reduction to 11 feet, and slip lane removal at Wilbur Blvd.

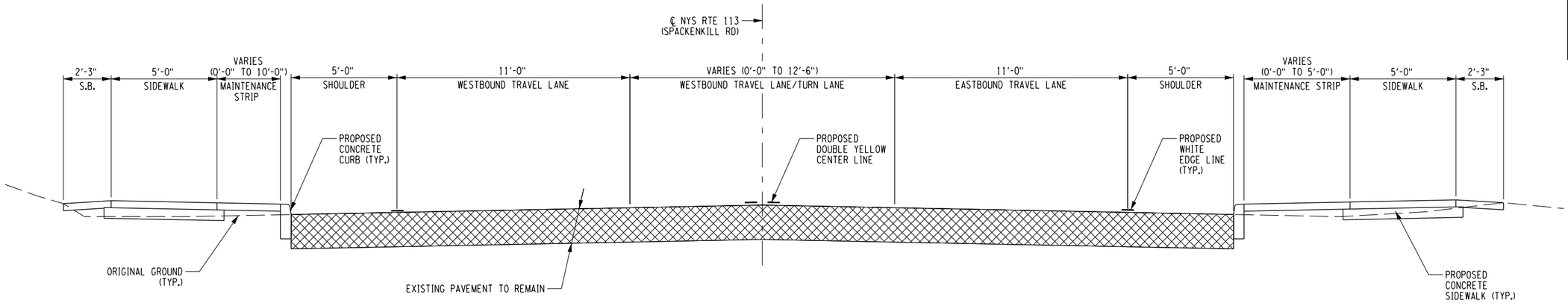
Item Description	Units		Price	Quantity		Total
Unclassified Excavation And Disposal (Pavement)	CY	$	40.00	2841	$	113,640
Embankment In Place	CY	$	65.00	90	$	5,850
Full Depth Pavement And Subbase	SF	$	8.75	26310	$	230,213
Sidewalks	SF	$	21.00	41005	$	861,105
Concrete Curb	LF	$	61.00	8770	$	534,970
Driveway Reconstruction	EACH	$	5,000.00	40	$	200,000
Clearing And Grubbing	LS	$	5,000.00	1	$	5,000
Landscaping - Topsoil And Seed	LS	$	90,000.00	1	$	90,000
Signing And Striping	LS	$	28,800.00	1	$	28,800
Drainage Basins	EA	$	6,000.00	44	$	264,000
Drainage Pipe	LF	$	90.00	8770	$	789,300
Guiderail Removal	LS	$	2,500.00	1	$	2,500
Traffic Signal Replacements (Croft, Wilbur, Hagan)[1]	LS	$	175,000.00	3	$	525,000
Erosion Control - Silt Fence	LS	$	25,000.00	1	$	25,000
Work Zone Traffic Control	LS		8%	1	$	294,030
Survey And Stakeout	LS		4%	1	$	147,015
Mobilization	LS		4%	1	$	147,015
Contingency	LS		20%	1	$	735,076
Construction Subtotal:					**$**	**5,000,000**

Design Engineering (10%)	$	500,000
ROW Acquisition and Coordination[2]	$	160,000
Utility Involvement[3]	$	400,000
Construction	$	5,000,000
Construction Inspection (20%)	$	1,000,000
Project Total:	**$**	**7,060,000**

[1] Total cost reflects 3 full signal replacements. If signal upgrades/retrofits are feasible, lump sum estimate as low as $30,000.

[2] Right-of-way (ROW) cost assumes 16 acquisitions estimated at $10,000 each. ROW acquisitions could be reduced down to 6 ($60,000) by eliminating the maintenance strip in some locations.

[3] Utility involvement cost reflects maximum estimate and may change depending on available ROW. Utilities located within State ROW may be relocated at the cost of the utility instead of the project sponsor.



NY ROUTE 113 (SPACKENKILL ROAD) TYPICAL SECTION

(NOT TO SCALE)

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

NO.	REVISION	DATE	BY

Creighton Manning

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

NY ROUTE 113 (SPACKEKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

TYPICAL SECTION

DATE: AUGUST 2023 | CM No.: 122-359 | SCALE: AS NOTED | DESIGNED: A.D. | DRAWN BY: K.H.D. | CHECKED: C.G.

TYP-01

SHEET NUMBER 1 of 10

FILE NAME = N:\Projects\2022\122-359 OCTC - Spackenkill Sidewalk\Working\CADD\dgn\122-359_cph_tgn_01.dgn
DATE/TIME = 8/31/2023 8:39:00 AM
USER = adepaul
PLOT = NYSDOT_CME_PDF.pltcfg

FILE NAME = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\122-359_cph_grp_01.dgn
DATE/TIME = 8/31/2023 8:39:09 AM
USER = adepaul
PLOT = NYSDOT_CME_PDF.pltcfg

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

GRID NORTH

MIDHUDSON REGIONAL EARLY EDUCATION CENTER

CONC

AHB

MB

TC

DS

AFEE

AP

CROFT ROAD

TO ORVILLE A. TODD MIDDLE SCHOOL

PROPOSED STOP BAR (TYP.)

PROPOSED CROSSWALK (TYP.)

UTILITY POLE TO BE RELOCATED

HYDRANT TO BE RELOCATED

PROPOSED CONCRETE SIDEWALK (TYP.)

PROPOSED CONCRETE CURB (TYP.)

NY ROUTE 113 (SPACKENKILL ROAD)

5.0'
5.0'
5.0'
11.0'
11.0'
11.0'
5.0'
3.0'
5.0'

MATCH LINE, SEE DWG. GNP-02

FLUSH MEDIAN

PARKING

PROPOSED WHITE EDGE LINE (TYP.) (SEE NOTE 1)

UTILITY POLE TO BE RELOCATED

PROPOSED RIGHT-OF-WAY ACQUISITION (TYP.)

PROPOSED PEDESTRIAN SIGNAL IMPROVEMENTS (TYP.)

FLOWER HILL ROAD

UTILITY TO BE RELOCATED

NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5 FOOT SHOULDER.

20 0 20 40 60 80'

1" = 40'

NO.	REVISION	DATE	BY

Creighton Manning

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

DESIGNED: A.D. | DRAWN BY: K.H.D. | CHECKED: C.G.

NY ROUTE 113 (SPACKEKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

GENERAL PLAN

DATE: AUGUST 2023 | CM No.: 122-359 | SCALE: AS NOTED

GNP-01

SHEET NUMBER 2 of 10

FILE NAME = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\122-359_cph_grp_02.dgn
DATE/TIME = 8/31/2023 8:39:10 AM
USER = adepaul
PLOT = NYSDOT_CME_PDF.pltcfg

NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5 FOOT SHOULDER.

20 0 20 40 60 80'
1" = 40'

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

NO.	REVISION	DATE	BY

Creighton Manning

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

DESIGNED: A.D. | DRAWN BY: K.H.D. | CHECKED: C.G.

NY ROUTE 113 (SPACKENKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

GENERAL PLAN

DATE: AUGUST 2023 | CM No.: 122-359 | SCALE: AS NOTED

GNP-02

SHEET NUMBER 3 of 10

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

GRID NORTH

PROPOSED SLIP LANE AND PAVEMENT REMOVAL

PROPOSED STOP BAR (TYP.)

PROPOSED CROSSWALK (TYP.)

PROPOSED CONCRETE SIDEWALK (TYP.)

PROPOSED CONCRETE CURB (TYP.)

WILBUR BLVD

NY ROUTE 113 (SPACKENKILL ROAD)

FLUSH MEDIAN

MATCH LINE, SEE DWG. GNP-02

MATCH LINE, SEE DWG. GNP-04

PROPOSED PEDESTRIAN SIGNAL IMPROVEMENTS (TYP.)

PROPOSED RIGHT-OF-WAY ACQUISITION (TYP.)

PROPOSED WHITE EDGE LINE (TYP.) (SEE NOTE 1)

NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5 FOOT SHOULDER.

20 0 20 40 60 80′

1" = 40′

NO.	REVISION	DATE	BY

Creighton Manning

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

NY ROUTE 113 (SPACKENKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

GENERAL PLAN

DATE:	AUGUST 2023	CM No.: 122-359	SCALE: AS NOTED	DESIGNED: A.D.	DRAWN BY: K.H.D.	CHECKED: C.G.

GNP-03

SHEET NUMBER 4 of 10

FILE NAME = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\122-359_cph_grp_03.dgn
DATE/TIME = 8/31/2023 8:39:13 AM
USER = adapaul
PLOT = NYSDOT_CME_PDF.pltcfg

1" = 40'
20 0 20 40 60 80'

NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5' FOOT SHOULDER.

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

NO.	REVISION	DATE	BY

NY ROUTE 113 (SPACKENKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

GENERAL PLAN

Creighton Manning

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

DATE: AUGUST 2023 | CM No.: 122-359 | SCALE: AS NOTED | DESIGNED: A.D. | DRAWN BY: K.H.D. | CHECKED: C.G.

SHEET NUMBER 5 of 10

GNP-04

FILE NAME = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\122-359_cph_gnp_05.dgn
DATE/TIME = 8/31/2023 8:39:16 AM
USER = adepaul
PLOT = NYSDOT_CME_PDF.pltcfg

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

GRID NORTH

MATCH LINE, SEE DWG. GNP-04

MATCH LINE, SEE DWG. GNP-06

NY ROUTE 113 (SPACKENKILL ROAD)

THORNBERRY ROAD

VAN DUZER DRIVE

PROPOSED CONCRETE SIDEWALK (TYP.)

PROPOSED CONCRETE CURB (TYP.)

PROPOSED STOP BAR (TYP.)

PROPOSED CROSSWALK (TYP.)

PROPOSED WHITE EDGE LINE (TYP.) (SEE NOTE 1)

PROPOSED PAVEMENT REMOVAL (TYP.)

UTILITY POLE TO BE RELOCATED

UTILITY POLE TO BE RELOCATED

UTILITY POLE TO BE RELOCATED

PATIO

POOL

SHADOWS

AHB

UB

MB

AP

DS

RR

5.0′
10.0′
5.0′
11.0′
11.0′
5.0′
3.0′
5.0′

NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5 FOOT SHOULDER.

20 0 20 40 60 80′

1" = 40′

NO.	REVISION	DATE	BY

Creighton Manning

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

DESIGNED:	A.D.	DRAWN BY:	K.H.D.	CHECKED:	C.G.

NY ROUTE 113 (SPACKENKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

GENERAL PLAN

DATE:	AUGUST 2023	CM No.: 122-359	SCALE: AS NOTED

GNP-05

SHEET NUMBER 6 of 10

NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5 FOOT SHOULDER.

20 0 20 40 60 80'

1" = 40'

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

NO.	REVISION	DATE	BY

Creighton Manning

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

DESIGNED: A.D. | DRAWN BY: K.H.D. | CHECKED: C.G.

NY ROUTE 113 (SPACKENKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

GENERAL PLAN

DATE: AUGUST 2023 | CM No.: 122-359 | SCALE: AS NOTED

GNP-06

SHEET NUMBER 7 of 10

FILE NAME = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\122-359_cph_grp_06.dgn
DATE/TIME = 8/31/2023 8:39:19 AM
USER = adepaul
PLOT = NYSDOT_CME_PDF.pltcfg

FILE NAME = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\122-359_cph_gnp_07.dgn
DATE/TIME = 8/31/2023 8:39:22 AM
USER = adapaul
PLOT = NYSDOT_CME_PDF.pltcfg

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

GRID NORTH

CONSTRUCTION AREA

LAFFIN LANE

PROPOSED STOP BAR (TYP.)

PROPOSED CROSSWALK (TYP.)

PROPOSED CONCRETE SIDEWALK (TYP.)

PROPOSED CONCRETE CURB (TYP.)

NY ROUTE 113 (SPACKENKILL ROAD)

MATCH LINE, SEE DWG. GNP-06

MATCH LINE, SEE DWG. GNP-08

AHB

AFEE

AP

MB

DS

IC

CONC

5.0′
5.0′
11.0′
11.0′
5.0′
5.0′
5.0′
3.0′
5.0′
11.0′
11.0′
5.0′
5.0′
5.0′

UTILITY POLE TO BE RELOCATED

PROPOSED WHITE EDGE LINE (TYP.) (SEE NOTE 1)

UTILITY POLE TO BE RELOCATED

PROPOSED RIGHT-OF-WAY ACQUISITION (TYP.)

SPACKENKILL HIGH SCHOOL

PARKING

PROPOSED PEDESTRIAN SIGNAL IMPROVEMENTS (TYP.)

NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5 FOOT SHOULDER.

20 0 20 40 60 80′

1" = 40′

NO.	REVISION	DATE	BY

Creighton Manning

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

DESIGNED: A.D. | DRAWN BY: K.H.D. | CHECKED: C.G.

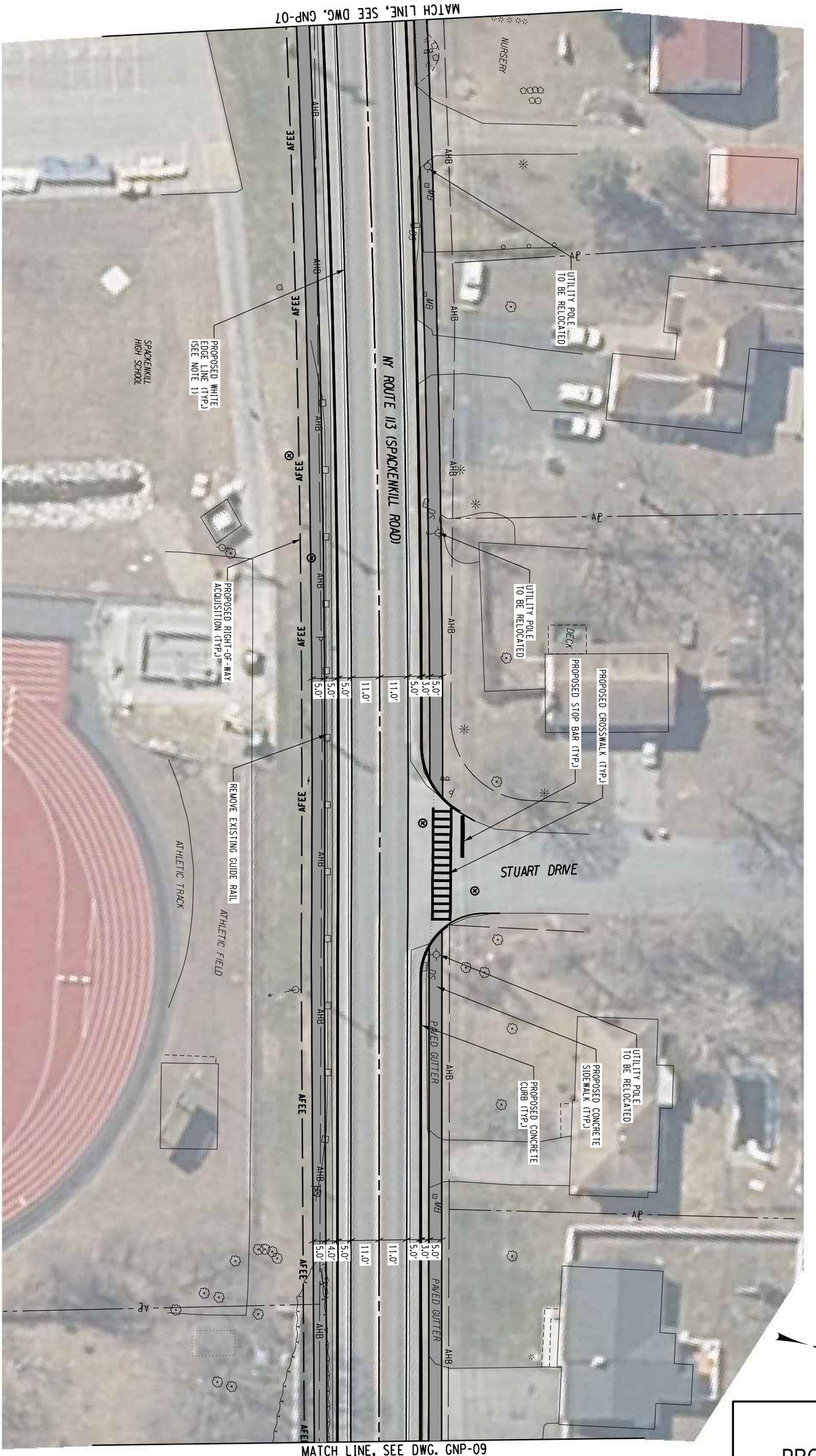
NY ROUTE 113 (SPACKENKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

GENERAL PLAN

DATE: AUGUST 2023 | CM No.: 122-359 | SCALE: AS NOTED

GNP-07

SHEET NUMBER 8 of 10



1" = 40'

NORTH GRID

NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5' FOOT SHOULDER.

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

NO.	REVISION	DATE	BY

NY ROUTE 113 (SPACKENKILL ROAD)
SIDEWALK FEASIBILITY STUDY
DUTCHESS COUNTY, NEW YORK

Creighton Manning

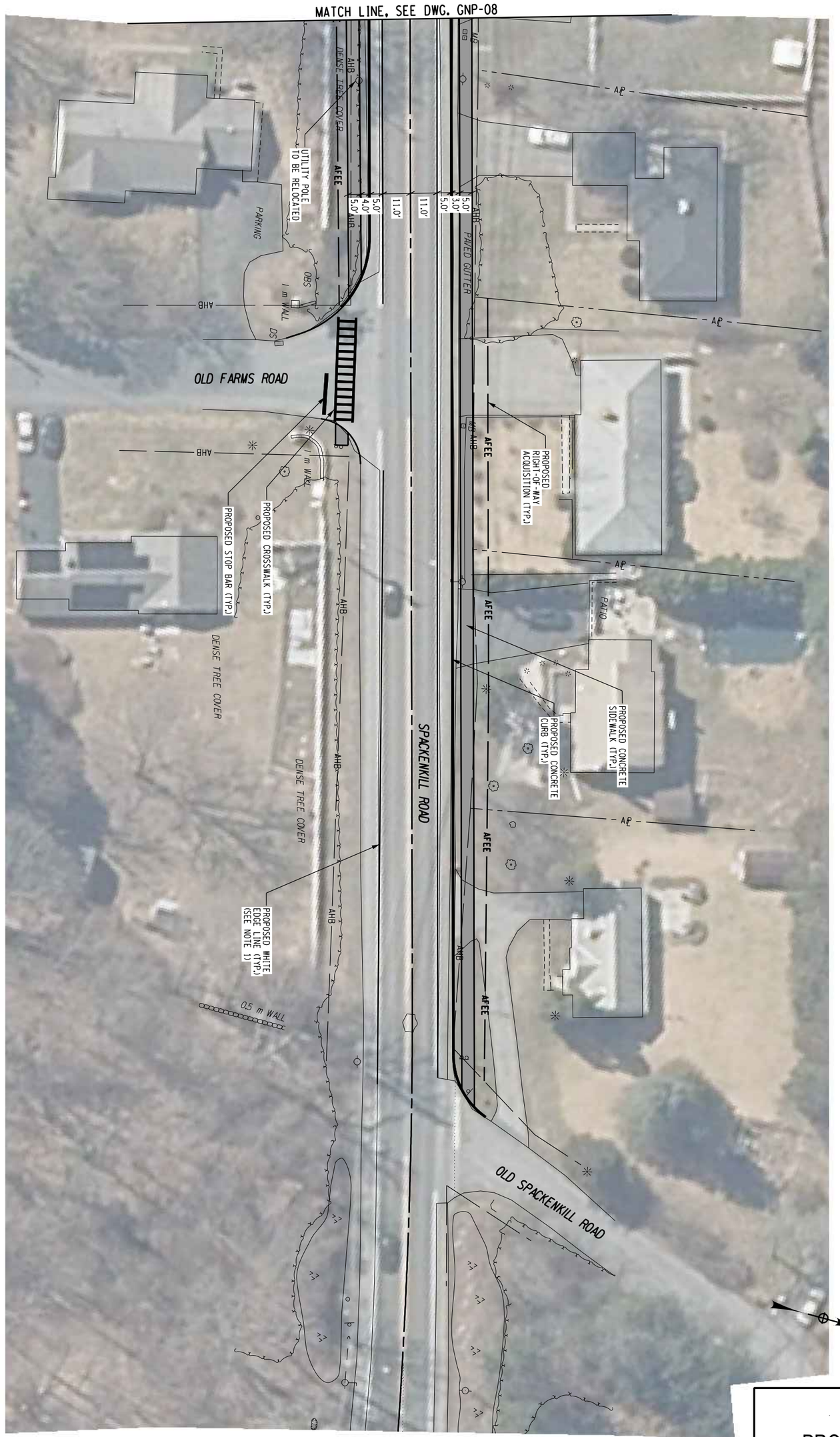
GENERAL PLAN

PREPARED FOR:
DUTCHESS COUNTY TRANSPORTATION CONCIL
85 CIVIC CENTER PLAZA, SUITE 107
POUGHKEEPSIE, NY 12601

DATE: AUGUST 2023 | CM No.: 122-359 | SCALE: AS NOTED | DESIGNED: A.D. | DRAWN BY: K.H.D. | CHECKED: C.G.

GNP-08

SHEET NUMBER 9 of 10



NOTES:

1. LANES TO BE RESTRIPED AS NEEDED TO PROVIDE PROPOSED 5 FOOT SHOULDER.

20 0 20 40 60 80'
1" = 40'

SHEET NUMBER 10 of 10	**GNP-09**	NY ROUTE 113 (SPACKEKILL ROAD) SIDEWALK FEASIBILITY STUDY DUTCHESS COUNTY, NEW YORK	Creighton Manning
		GENERAL PLAN	PREPARED FOR: DUTCHESS COUNTY TRANSPORTATION CONCIL 85 CIVIC CENTER PLAZA, SUITE 107 POUGHKEEPSIE, NY 12601
		DATE: AUGUST 2023 | CM No.: 122-359 | SCALE: AS NOTED	DESIGNED: A.D. | DRAWN BY: K.H.D. | CHECKED: C.G.

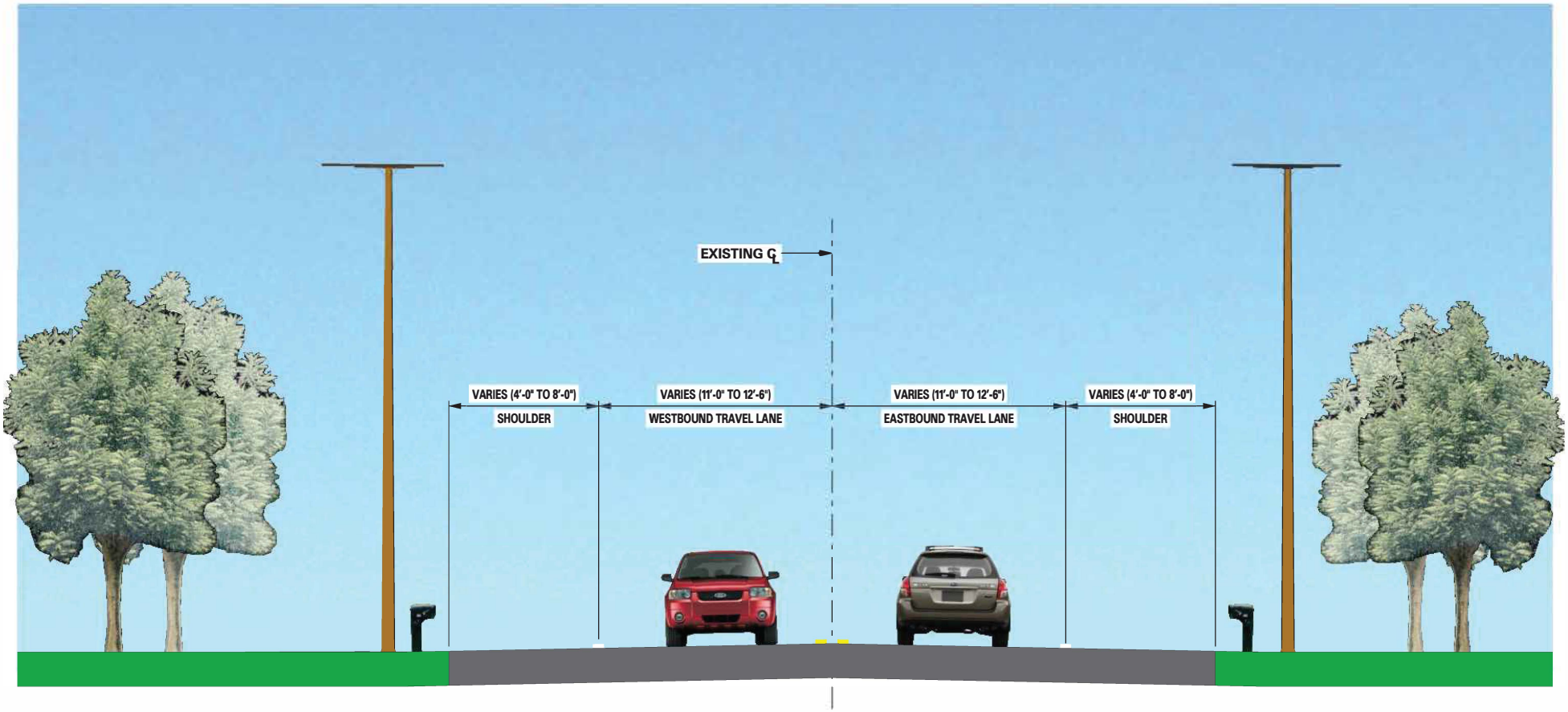
NO.	REVISION	DATE	BY

PROGRESS PRINT NOT FOR CONSTRUCTION

DATE: 1/X/2022

Appendix B

- Roadway Sections:
  - Existing
  - Sidewalk Installation Concept
  - Sidewalk Installation with Bike Lane Concept



For discussion purposes only

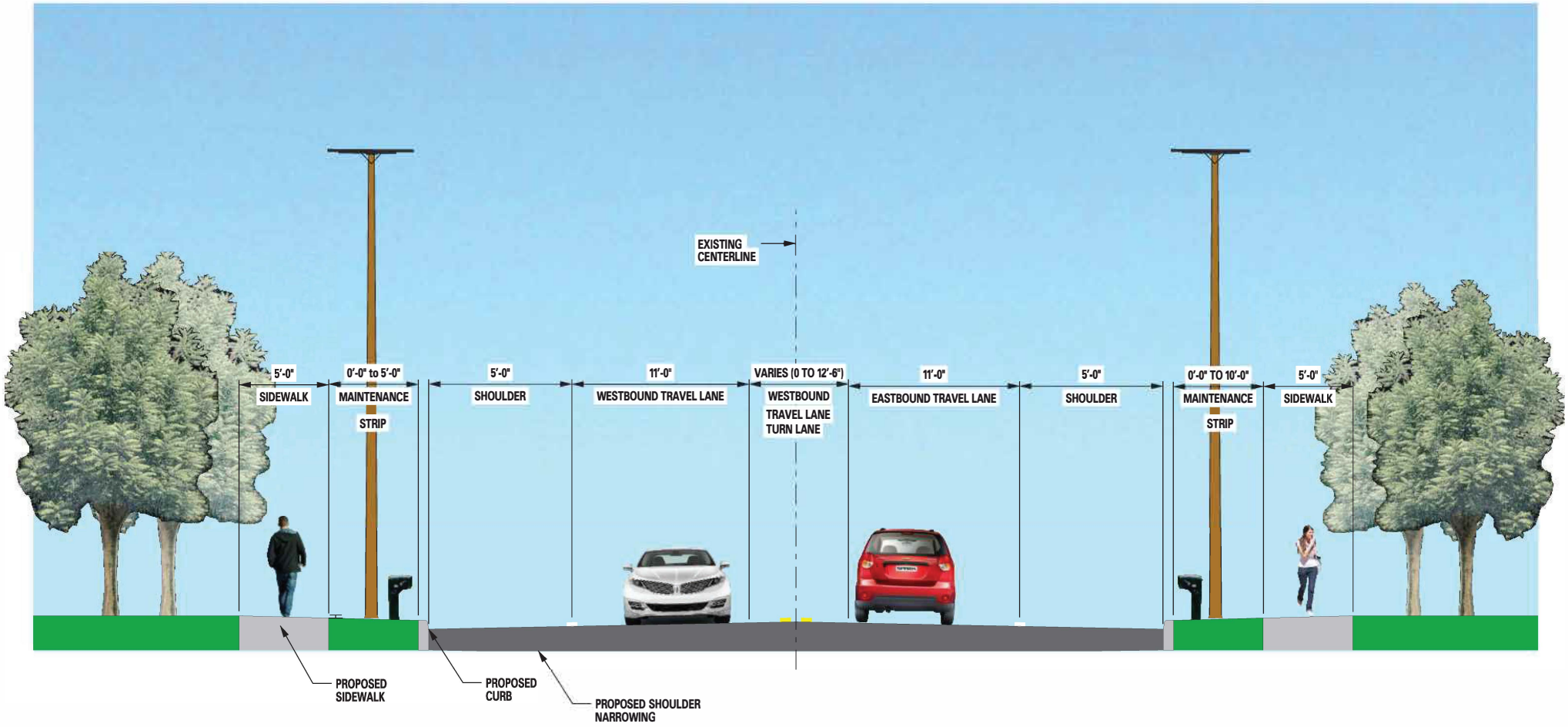
NY 113 (Spackenkill Road)
Sidewalk Feasibility Study
PROJECT: 122-359 DATE: 6/2023

Creighton Manning

2 0 2 4 6 8'
3/16" = 1'

Existing Roadway Section
NY Route 113 (Spackenkill Road)

FILE = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\graphics\122-359_grs_typ_01.dgn



For discussion purposes only

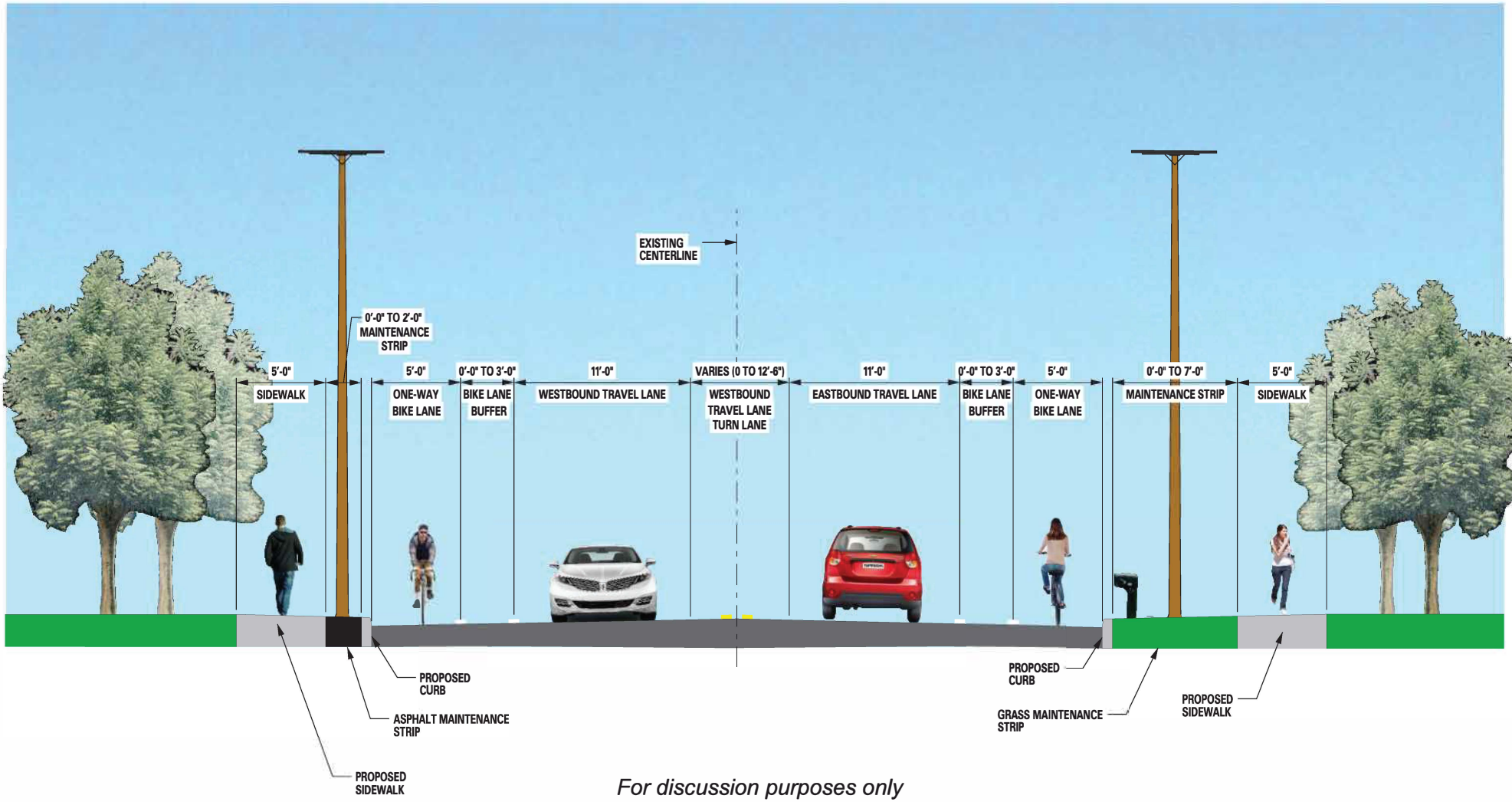
NY 113 (Spackenkill Road)
Sidewalk Feasibility Study
PROJECT: 122-359 DATE: 6/2023

Creighton Manning

2 0 2 4 6 8'
3/16" = 1'

Sidewalk Installation Concept

FILE = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\graphics\122-359_prs_tgp_B2.dgn



For discussion purposes only

NY 113 (Spackenkill Road)
Sidewalk Feasibility Study
PROJECT: 122-359 DATE: 6/2023

Creighton Manning

MID-HUDSON VALLEY TRANSPORTATION COUNCIL

2 0 2 4 6 8'
3/16" = 1'

FILE = N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\CADD\dgn\graphics\122-359_prs_tgp_03.dgn

Sidewalk Installation w/ Buffered Bike Lane Concept

Appendix C

- Intersection Analyses:
  - Wilbur Blvd
  - Croft Rd
  - Friends School Ln

NY Route 113/Wilbur Boulevard Slip Lane and Right-Turn Lane Review

Level of Service Summary

Intersection		Control	2023 Existing	ETC (2025)			ETC+10 (2035)		
				Existing Geometry	No SB RTL, No WB Slip Lane	Signalized SB RTL w/ No WB Slip Lane	Existing Geometry	No SB RTL, No WB Slip Lane	Signalized SB RTL w/ No WB Slip Lane
NY Route 113/Wilbur Boulevard		S	AM Peak Hour						
NY Route 113 EB	L		A (6.2)	A (6.6)	B (19.8)	B (16.6)	A (9.0)	C (33.9)	C (25.9)
	T		A (2.0)	A (2.1)	A (8.3)	A (6.8)	A (2.2)	A (9.5)	A (7.7)
NY Route 113 WB	TR		A (9.4)	A (9.8)	C (31.1)	C (25.1)	B (11.6)	**F (64.2)**	D (45.3)
Wilbur Boulevard SB	L		D (44.9)	D (45.0)	--	C (29.7)	D (45.2)	--	C (27.3)
	R		Free	Free	--	C (31.7)	Free	--	C (31.0)
	[LR]		--	--	D (50.8)	--	--	**E (59.0)**	--
	Overall		A (8.1)	A (8.4)	C (28.9)	C (21.5)		D (48.4)	C (32.4)
NY Route 113/Wilbur Boulevard		S	PM Peak Hour						
NY Route 113 EB	L		A (5.1)	A (5.4)	B (15.2)	B (12.1)	A (7.2)	C (23.7)	B (16.4)
	T		A (3.6)	A (3.7)	B (12.8)	A (9.7)	A (4.4)	B (16.7)	B (12.2)
NY Route 113 WB	TR		A (8.5)	A (8.9)	C (22.6)	B (18.0)	B (10.3)	C (31.0)	C (23.1)
Wilbur Boulevard SB	L		D (47.3)	D (47.6)	--	C (32.6)	D (47.8)	--	C (30.5)
	R		Free	Free	--	C (29.8)	Free	--	C (27.1)
	[LR]		--	--	D (52.4)	--	--	D (53.4)	--
	Overall		A (6.8)	A (7.1)	C (22.1)	B (15.7)	A (8.2)	C (27.6)	B (18.4)

RTL = Right turn lane
S = Signalized intersection
EB, WB, NB, SB = Eastbound, Westbound, Northbound, and Southbound intersection approaches
L, T, R = Left-turn, Through, and/or Right-turn movements, [LR] = Change in Traffic Movement
X (Y.Y) = Level of service (Average delay in seconds per vehicle)

The assessment of the NY Route 113/Wilbur Blvd intersection indicates that the complete removal of the southbound right-turn lane at Wilbur Blvd would cause some movements to operate at LOS E/F during the AM peak hour under ETC+10 traffic volume conditions. The westbound free-flow slip lane on NY Route 113 can be removed; however, a short southbound right-turn lane on Wilbur Blvd should be maintained in order to provide adequate operations at the intersection during peak hours.

With the removal of the slip lane and addition of a signalized right turn lane, the traffic signal timing should be updated to include a southbound right-turn overlap phase with the protected eastbound left-turn phase, and vehicle detection should be provided on the southbound right-turn lane. In addition, he single westbound lane on NY Route 113 from the Wilbur Blvd intersection should flare back out to provide two westbound lanes prior to the Croft Rd intersection.

NY Route 113/Croft Road – Left-Turn Lane Review

Background

From AASHTO 2018

Site-specific conditions need to be evaluated to determine the economic feasibility of adding a turn lane. Physical constraints along the roadside, particularly in urban areas, may make the addition of a turn lane impractical.

The HCM indicates that exclusive left-turn lanes at signalized intersections should be installed as follows:

- Exclusive left-turn lanes should be provided where exclusive left-turn signal phasing is provided;
- Exclusive left-turn lanes should be considered where left-turn volumes exceed 100 veh/h (left-turn lanes may be provided for lower volumes as well based on the roadway agency's assessment of the need, the state of local practice, or both); and
- Double left-turn lanes should be considered where left-turn volumes exceed 300 veh/h.

Local conditions and the cost of right-of-way often influence the type of intersection selected as well as many of the design details. Limited sight distance, for example, may make it desirable to control traffic by yield signs, stop signs, or traffic signals when the traffic densities are less than those ordinarily considered appropriate for such control. The alignment and grade of the intersecting roads and the angle of intersection may make it advisable to channelize or use auxiliary pavement areas, regardless of the traffic densities. In general, traffic service, roadway design designation, physical conditions, and cost of right-of-way are considered jointly in choosing the type of intersection.

From NCHRP Report 279

Signalized capacity analysis procedures should be used to determine lane arrangements. Because of the many variables involved, it is not feasible to develop guidelines for all conditions. However, the following general "rules of thumb" are useful in evaluating left-turn lane needs at specific locations.

Separate treatment of left turns will be required if:

(1) left-turn design volume exceeds 20 percent of total approach volumes; or

(2) left-turn design volume exceeds 100 vehicles per hour in peak periods.

This usually means either separate turning lanes, separate phases for left turns, or both.

Assessment

A review of peak hour traffic volumes at the NY Route 113/Croft Road intersection indicates that the eastbound left-turn movement does not meet the volume-based guidelines for the installation of a left-turn lane. In addition, a protected left-turn phase is only provided during morning and afternoon school peak periods currently to help facilitate the movement of vehicles to and from the school; however, it is noted that this intersection would continue to operate adequately if the left-turn phase was not provided during these conditions. This suggests that the signal phasing guideline is not met.

A review of crashes at this intersection indicates that of the 13 total crashes experienced at this intersection over the last four years, there were six (6) rear-end crashes, two (2) right-angle crashes, three (3) overtaking collisions, and a couple of collisions with either a fixed object or an animal. The types of crashes and their descriptions did not indicate a predominant issue at this intersection with the eastbound left-turn movement.

The review of these guidelines suggests that a left-turn lane is not required at the NY Route 113/Croft Road intersection.

MEMORANDUM

ENGINEERS
PLANNERS
SURVEYORS

Date: March 6, 2023

To: File

From: Mark Nadolny

Project: NY Route 113/Friends School Lane Intersection Evaluation, Hamlet of Spackenkill, Town of Poughkeepsie, Dutchess County, New York

Re: Traffic Signal Warrant Evaluation

The NY Route 113/Friends School Lane intersection located in the Hamlet of Spackenkill was reviewed to determine if existing conditions meet traffic signal warrants provided in the *2009 Manual of Uniform Traffic Control Devices* (National MUTCD), published by the Federal Highway Administration (FHWA) for the installation of a traffic signal. The study area is shown on Figure 1. This assessment includes a review of existing conditions such as traffic volumes, vehicle speeds, crashes, and the physical characteristics of the intersection. The following summarizes the traffic signal warrant assessment.

Figure 1 – NY Route 113/Friends School Lane Intersection

1.0 Existing Conditions

Study Area Intersection

The NY Route 113/Friends School Lane intersection is a four-leg intersection controlled by a stop sign on the northbound Friends School Lane approach which provides access to the *Oakwood Friends School*. The north leg of the intersection is a one-way entering access driveway provided for the *Mid-Hudson Regional Early Education Center*. The northbound approach provides a single lane for shared travel movements while the eastbound and westbound NY Route 113 approaches provide an exclusive left-turn lane and two through lanes with shared right-turn movements. A sidewalk is provided on the north side of NY Route 113. The posted speed limit on NY Route 113 is 40-mph while the posted speed limit on Friends School Lane is 15-mph.

Data Collection

Turning movement counts (TMCs) were conducted at the study area intersection on Tuesday, January 24, 2023 from 6:00 a.m.to 7:00 p.m. to correspond with the peak operational times of local schools and with peak commuter time periods. The observed peak hours generally occurred between 7:30 and 8:30 a.m. during the morning peak period and between 4:30 to 5:30 p.m. during the afternoon peak period.

In addition, traffic volume and travel speed data were collected by the New York State Department of Transportation (NYSDOT) on NY Route 113 in October 2016. NY Route 113 serves approximately 20,390 vehicles per day (vpd) in the project corridor and the 85th percentile operating speed was measured to be approximately 45-mph. The detailed traffic volume and speed data is included under Attachment A.

2.0 Signal Warrant Evaluation

Description of Signal Warrants

The existing traffic conditions and physical characteristics of the intersection were compared to signal warrant criteria contained in the National MUTCD published by FHWA to determine if existing traffic conditions would warrant the installation of a traffic signal. The National MUTCD specifies the minimum criteria that must be met in order for a traffic signal to be justified. The satisfaction of a signal warrant in itself is not necessarily justification for a traffic signal. Other engineering and operational factors must be considered. The National MUTCD contains eight warrants, five of which were applicable and evaluated in detail:

- Warrant 1 – Eight-Hour Vehicular Volume - This warrant is satisfied if for any eight hours of an average day the traffic volumes for Condition A or Condition B specified in Table 4C-1 of the National MUTCD are met for the main arterial and the higher volume side road approach to the intersection.
- Warrant 2 – Four-Hour Vehicular Volume - This warrant is met when for any four hours of an average day, points plotted on the graph presented on Figure 4C-2 of the National MUTCD fall above the appropriate curve.
- Warrant 3 – Peak Hour - This warrant is met when for any one hour of an average day, points plotted on the graph presented on Figure 4C-4 of the National MUTCD fall above the appropriate curve.
- Warrant 4 – Pedestrian Volume - The Pedestrian Volume warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street. This warrant is used when for any four hours of an average day, points plotted on the graph presented on Figure 4C-8 of the National MUTCD fall above the appropriate curve.
- Warrant 7 – Crash Experience - The Crash Experience warrant is intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal. This warrant is used when five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage exceeding the applicable requirements for a reportable crash. In addition, for each of any eight hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Conditions A or B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant.

Detailed Signal Warrant Analysis

- Warrants 1, 2, and 3 – Table 1 (Existing 2023 Traffic Conditions) summarizes the analysis of Warrants 1, 2, and 3 based on the traffic volume data collected by CM. A check mark under the "Signal Warrants Met?" column indicates that the criteria are satisfied for that hour. The detailed evaluation for Warrants 1, 2, and 3 is included under Attachment B.

Table 1 – Summary of Signal Warrant Analysis – Existing (2023) Traffic Volume Conditions

Time Begin (1-hour period)	Existing Volumes[1]			Signal Warrants Met?			
	NY Route 113 EB/WB	Driveway SB	Friends School Lane NB	#1		#2	#3
				Cond. A	Cond. B		
6:00 AM	527	0	2	No	No	No	No
7:00 AM	1,399	0	9	No	No	No	No
8:00 AM	1,492	0	19	No	No	No	No
9:00 AM	1,036	0	4	No	No	No	No
10:00 AM	1,103	0	5	No	No	No	No
11:00 AM	1,190	2	5	No	No	No	No
12:00 PM	1,298	1	4	No	No	No	No
1:00 PM	1,266	0	1	No	No	No	No
2:00 PM	1,447	0	3	No	No	No	No
3:00 PM	1,642	0	18	No	No	No	No
4:00 PM	1,778	0	17	No	No	No	No
5:00 PM	1,895	0	16	No	No	No	No
6:00 PM	1,250	0	23	No	No	No	No
Required Volumes	Two Lane Major Street			420	630	See Figure 4C-2	See Figure 4C-4
	One Lane Minor Street			105	53		
Overall Warrant Met?				No	No	No	No

[1] Volumes at the NY Route 113/Friends School Lane/Driveway intersection per Tri-State TMC data.

Table 1 indicate traffic volumes over the course of a typical day at the study intersection are not high enough under existing traffic volume conditions to meet the minimum traffic signal criteria for Warrants 1, 2, and 3.

- Warrant 4 – Pedestrians were observed during turning movement counts. Table 2 summarizes the analysis of Warrant 4 using this data. A check mark under the "Signal Warrant #4 Met?" column indicates that the criteria are satisfied for that hour.

Table 2 – Summary of Signal Warrant 4 Analysis

Time Begin (1-hour period)	Existing Traffic Volume on NY Route 113[1]	Existing Pedestrian Volume Crossing NY Route 113[1]	Signal Warrant #4 Met?
6:00 AM	527	0	No
7:00AM	1,399	0	No
8:00 AM	1,492	0	No
9:00 AM	1,036	0	No
10:00 AM	1,103	0	No
11:00 AM	1,190	0	No
12:00 PM	1,298	0	No
1:00 PM	1,266	0	No
2:00 PM	1,447	0	No
3:00 PM	1,642	0	No
4:00 PM	1,778	0	No
5:00 PM	1,895	0	No
6:00 PM	1,250	0	No
Required Volumes	Two Lane Major Street – Vehicles		See Figure 4C-8
	Crossing Major Street – Pedestrians		
Overall Warrant Met?			No

1 Traffic volumes on NY Route 113 and pedestrian volumes crossing NY Route 113 per the Tri-State intersection turn movement count data.

Table 2 indicates existing pedestrian volumes observed at the study intersection during the 13 peak hours in the middle of the day are not high enough to meet the minimum traffic signal criteria for Warrant 4. The existing observed pedestrian volumes at the intersection fell well short of the minimum 93 pedestrian threshold associated with mainline traffic volumes during these peak periods. It is not anticipated that this intersection experiences heavy pedestrian usage during the remaining hours of the day or that future pedestrian usage will increase to levels that would warrant the installation of a traffic signal; therefore, Warrant 4 is not satisfied under these conditions.

- Warrant 7 – Table 3 summarizes crash data provided by NYSDOT for nine complete years (2014 through 2022). A check mark under the "Signal Warrant #7 Met?" column would indicate that the warrant is met.

Table 3 – Summary of Signal Warrant 7 Analysis

NY Route 113/ Friends School Lane/ Driveway Intersection	Collision Severity			Collision Type				Signal Warrant #7 Met?
	Property Damage	Injury	Fatal	Right Angle	Left-Turn	Head On	Embankment	
2014	0	0	0	0	0	0	0	No
2015	0	0	0	0	0	0	0	No
2016	0	0	0	0	0	0	0	No
2017	0	0	0	0	0	0	0	No
2018	0	0	0	0	0	0	0	No
2019	0	1	0	0	0	0	1	No
2020	0	0	0	0	0	0	0	No
2021	0	0	0	0	0	0	0	No
2022	0	0	0	0	0	0	0	No
Required Volumes	Two-Lane Major Street One-Lane Minor Street							See Table 4C-1
Overall Warrant Met?								No

Table 3 indicates that the number of crashes experienced at this intersection each year from 2014 to 2022 does not meet the minimum of five accidents required for the warrant. This indicates that Warrant 7 is not satisfied under these conditions.

3.0 Conclusion

A review of the signal warrant criteria contained in the *2009* National MUTCD indicates that none of the five warrants investigated met the minimum criteria for the installation of a traffic signal at the NY Route 113/Friends School Lane/Driveway intersection; therefore, a traffic signal is not recommended at this location.

N:\Projects\2022\122-359 DCTC - Spackenkill Sidewalk\Working\Traffic\Signal Warrant\20230306_traffic signal warrant memo_122359.docx

Attachment A
Automatic Traffic Recorder Data and Turning Movement Counts

NY Route 113/Friends School Lane Intersection Evaluation

Hamlet of Spackenkill, Town of Poughkeepsie, New York

TRI-STATE TRAFFIC DATA

TSTData.com

Project	Creighton Manning
Project Code	11221
Site Name	Route 113 & Friends School
Legs and Movements	All Processed Legs & Mover
Bin Size	15 minutes
Survey Date	2023-01-24, Tuesday
Location	Route 113 & Friends School
Latitude and Longitude	41.658578, -73.925888

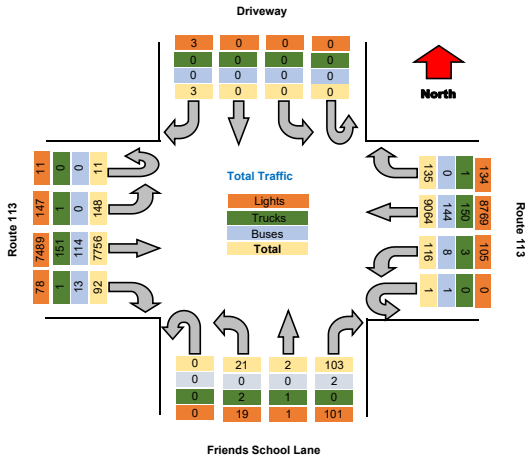
	Start	End	PHF
AM Peak	2023-01-24 07:30:00	2023-01-24 08:30:00	0.922
PM Peak	2023-01-24 16:30:00	2023-01-24 17:30:00	0.938

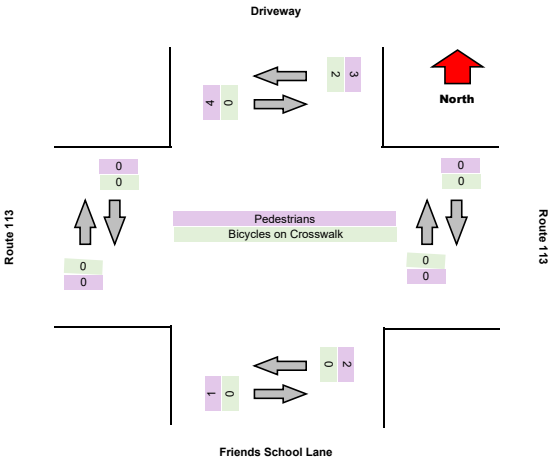
Turning Movement Data

Leg	Driveway							Route 113							Friends School Lane							Route 113							
Direction	Southbound							Westbound							Northbound							Eastbound							
Start Time	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Total
6:00:00	0	0	0	0	**0**	0	0	0	47	0	0	**47**	0	0	1	1	0	0	**2**	0	0	0	26	0	0	**26**	0	0	**75**
6:15:00	0	0	0	0	**0**	0	0	0	79	0	0	**79**	0	0	0	0	0	0	**0**	0	0	0	31	0	0	**31**	0	0	**110**
6:30:00	0	0	0	0	**0**	0	0	0	94	1	0	**95**	0	0	0	0	0	0	**0**	0	0	1	42	0	0	**43**	0	0	**138**
6:45:00	0	0	0	0	**0**	0	0	0	144	0	0	**144**	0	0	0	0	0	0	**0**	0	0	0	60	2	0	**62**	0	0	**206**
Hourly Total	0	0	0	0	**0**	0	0	0	364	1	0	**365**	0	0	1	1	0	0	**2**	0	0	1	159	2	0	**162**	0	0	**529**
7:00:00	0	0	0	0	**0**	0	0	2	143	0	0	**145**	0	0	0	0	0	0	**0**	0	1	0	73	3	0	**76**	0	0	**221**
7:15:00	0	0	0	0	**0**	0	0	4	178	2	0	**184**	0	0	0	0	0	0	**0**	0	0	0	138	3	0	**141**	0	0	**325**
7:30:00	0	0	0	0	**0**	0	0	2	252	5	0	**259**	0	0	4	0	1	0	**5**	0	0	4	151	5	0	**160**	0	0	**424**
7:45:00	0	0	0	0	**0**	0	0	4	282	12	0	**298**	0	0	4	0	0	0	**4**	0	0	2	131	3	0	**136**	0	0	**438**
Hourly Total	0	0	0	0	**0**	0	0	12	855	19	0	**886**	0	0	8	0	1	0	**9**	0	1	6	493	14	0	**513**	0	0	**1408**
8:00:00	0	0	0	0	**0**	0	0	10	233	6	0	**249**	0	0	4	0	2	0	**6**	0	0	8	101	8	0	**117**	0	0	**372**
8:15:00	0	0	0	0	**0**	0	0	24	231	11	0	**266**	0	0	5	0	1	0	**6**	0	0	14	86	10	0	**110**	0	0	**382**
8:30:00	0	0	0	0	**0**	0	0	10	271	1	0	**282**	0	0	4	0	1	0	**5**	0	0	2	119	9	0	**130**	0	0	**417**
8:45:00	0	0	0	0	**0**	0	1	11	210	5	0	**226**	0	0	0	1	1	0	**2**	0	0	1	101	10	0	**112**	0	0	**340**
Hourly Total	0	0	0	0	**0**	0	1	55	945	23	0	**1023**	0	0	13	1	5	0	**19**	0	0	25	407	37	0	**469**	0	0	**1511**
9:00:00	0	0	0	0	**0**	0	0	9	180	3	0	**192**	0	0	2	0	1	0	**3**	0	0	1	80	2	0	**83**	0	0	**278**
9:15:00	0	0	0	0	**0**	0	0	4	171	0	0	**175**	0	0	0	0	0	0	**0**	0	0	1	78	1	0	**80**	0	0	**255**
9:30:00	0	0	0	0	**0**	0	0	2	189	0	0	**191**	0	0	0	0	0	0	**0**	0	0	0	73	2	0	**75**	0	0	**266**
9:45:00	0	0	0	0	**0**	0	0	3	167	0	0	**170**	0	0	1	0	0	0	**1**	1	0	1	69	0	0	**70**	0	0	**241**
Hourly Total	0	0	0	0	**0**	0	0	18	707	3	0	**728**	0	0	3	0	1	0	**4**	1	0	3	300	5	0	**308**	0	0	**1040**
10:00:00	0	0	0	0	**0**	0	0	0	174	1	0	**175**	0	0	0	0	1	0	**1**	0	0	0	89	0	0	**89**	0	0	**265**
10:15:00	0	0	0	0	**0**	0	0	3	182	1	0	**186**	0	0	1	0	0	0	**1**	0	0	0	98	1	1	**100**	0	0	**287**
10:30:00	0	0	0	0	**0**	0	0	0	168	2	0	**170**	0	0	1	0	0	0	**1**	0	0	0	93	2	0	**95**	0	0	**266**
10:45:00	0	0	0	0	**0**	0	0	1	161	0	1	**163**	0	0	2	0	0	0	**2**	0	0	0	120	4	1	**125**	0	0	**290**
Hourly Total	0	0	0	0	**0**	0	0	4	685	4	1	**694**	0	0	4	0	1	0	**5**	0	0	0	400	7	2	**409**	0	0	**1108**
11:00:00	2	0	0	0	**2**	0	0	1	162	0	0	**163**	0	0	1	0	0	0	**1**	0	0	0	120	2	0	**122**	0	0	**288**
11:15:00	0	0	0	0	**0**	0	0	0	152	2	0	**154**	0	0	0	0	0	0	**0**	0	0	2	138	1	0	**141**	0	0	**295**
11:30:00	0	0	0	0	**0**	0	0	0	163	3	0	**166**	0	0	2	0	0	0	**2**	0	0	0	133	1	0	**134**	0	0	**302**
11:45:00	0	0	0	0	**0**	0	0	4	184	1	0	**189**	0	0	2	0	0	0	**2**	0	0	1	117	3	0	**121**	0	0	**312**
Hourly Total	2	0	0	0	**2**	0	0	5	661	6	0	**672**	0	0	5	0	0	0	**5**	0	0	3	508	7	0	**518**	0	0	**1197**
12:00:00	1	0	0	0	**1**	1	0	1	162	2	0	**165**	0	0	1	0	0	0	**1**	0	0	0	163	4	0	**167**	0	0	**334**
12:15:00	0	0	0	0	**0**	0	0	0	155	0	0	**155**	0	0	1	0	0	0	**1**	0	0	1	166	1	0	**168**	0	0	**324**
12:30:00	0	0	0	0	**0**	1	0	1	170	0	0	**171**	0	0	1	0	0	0	**1**	0	0	0	159	3	0	**162**	0	0	**334**
12:45:00	0	0	0	0	**0**	0	0	0	172	1	0	**173**	0	0	0	0	1	0	**1**	0	0	0	134	3	0	**137**	0	0	**311**
Hourly Total	1	0	0	0	**1**	2	0	2	659	3	0	**664**	0	0	3	0	1	0	**4**	0	0	1	622	11	0	**634**	0	0	**1303**
13:00:00	0	0	0	0	**0**	0	0	0	155	3	0	**158**	0	0	0	0	0	0	**0**	0	0	1	168	1	1	**171**	0	0	**329**
13:15:00	0	0	0	0	**0**	0	0	0	153	1	0	**154**	0	0	0	0	0	0	**0**	1	0	0	148	1	0	**149**	0	0	**303**
13:30:00	0	0	0	0	**0**	1	1	1	148	2	0	**151**	0	0	0	0	1	0	**1**	0	0	1	153	3	1	**158**	0	0	**310**
13:45:00	0	0	0	0	**0**	0	0	6	172	1	0	**179**	0	0	0	0	0	0	**0**	0	0	1	140	5	0	**146**	0	0	**325**
Hourly Total	0	0	0	0	**1**	1	1	7	628	7	0	**642**	0	0	0	0	1	0	**1**	1	0	3	609	10	2	**624**	0	0	**1267**
14:00:00	0	0	0	0	**0**	0	1	0	157	0	0	**157**	0	0	0	0	0	0	**0**	0	0	0	151	2	1	**154**	0	0	**311**
14:15:00	0	0	0	0	**0**	0	0	3	153	1	0	**157**	0	0	1	0	0	0	**1**	0	0	1	161	4	1	**167**	0	0	**325**
14:30:00	0	0	0	0	**0**	0	1	5	196	0	0	**201**	0	0	1	0	0	0	**1**	0	0	0	181	4	0	**185**	0	0	**387**
14:45:00	0	0	0	0	**0**	1	0	4	191	0	0	**195**	0	0	1	0	0	0	**1**	0	0	3	217	11	0	**231**	0	0	**427**
Hourly Total	0	0	0	0	**0**	1	2	12	697	1	0	**710**	0	0	3	0	0	0	**3**	0	0	4	710	21	2	**737**	0	0	**1450**
15:00:00	0	0	0	0	**0**	0	0	3	237	4	0	**244**	0	0	3	0	0	0	**3**	0	0	2	194	2	0	**198**	0	0	**445**
15:15:00	0	0	0	0	**0**	0	0	1	182	6	0	**189**	0	0	1	0	1	0	**2**	0	0	7	215	1	0	**223**	0	0	**414**
15:30:00	0	0	0	0	**0**	0	0	2	196	6	0	**204**	0	0	10	0	0	0	**10**	0	0	2	187	2	0	**191**	0	0	**405**
15:45:00	0	0	0	0	**0**	0	0	0	166	4	0	**170**	0	0	2	0	1	0	**3**	0	0	2	219	2	0	**223**	0	0	**396**
Hourly Total	0	0	0	0	**0**	0	0	6	781	20	0	**807**	0	0	16	0	2	0	**18**	0	0	13	815	7	0	**835**	0	0	**1660**
16:00:00	0	0	0	0	**0**	0	0	3	189	0	0	**192**	0	0	4	0	0	0	**4**	0	0	1	231	1	0	**233**	0	0	**429**
16:15:00	0	0	0	0	**0**	0	0	4	186	2	0	**192**	0	0	3	0	0	0	**3**	0	0	3	214	6	1	**224**	0	0	**419**
16:30:00	0	0	0	0	**0**	0	0	1	190	3	0	**194**	0	0	1	0	0	0	**1**	0	0	5	261	5	0	**271**	0	0	**466**
16:45:00	0	0	0	0	**0**	0	0	0	202	5	0	**207**	0	0	8	0	1	0	**9**	0	0	9	250	6	0	**265**	0	0	**481**
Hourly Total	0	0	0	0	**0**	0	1	8	767	10	0	**785**	0	0	16	0	1	0	**17**	0	0	18	956	18	1	**993**	0	0	**1795**
17:00:00	0	0	0	0	**0**	0	0	4	187	4	0	**195**	0	0	8	0	0	0	**8**	0	0	5	294	3	1	**303**	0	0	**506**
17:15:00	0	0	0	0	**0**	0	0	2	198	4	0	**204**	0	0	2	0	0	0	**2**	0	0	3	314	5	0	**322**	0	0	**528**
17:30:00	0	0	0	0	**0**	0	0	0	210	3	0	**213**	0	0	4	0	1	0	**5**	0	0	1	226	0	0	**227**	0	0	**445**
17:45:00	0	0	0	0	**0**	0	0	0	163	0	0	**163**	0	0	1	0	0	0	**1**	0	0	1	266	1	0	**268**	0	0	**432**
Hourly Total	0	0	0	0	**0**	0	0	6	758	11	0	**775**	0	0	15	0	1	0	**16**	0	0	10	1100	9	1	**1120**	0	0	**1911**
18:00:00	0	0	0	0	**0**	0	0	0	183	0	0	**183**	0	0	8	0	3	0	**11**	0	0	0	209	0	1	**210**	0	0	**404**
18:15:00	0	0	0	0	**0**	0	0	0	130	5	0	**135**	0	0	3	0	2	0	**5**	0	0	3	160	0	0	**163**	0	0	**303**
18:30:00	0	0	0	0	**0**	0	0	0	130	1	0	**131**	0	0	3	0	1	0	**4**	0	0	2	173	0	1	**176**	0	0	**311**
18:45:00	0	0	0	0	**0**	0	0	0	114	2	0	**116**	0	0	2	0	1	0	**3**	0	0	0	135	0	1	**136**	0	0	**255**
Hourly Total	0	0	0	0	**0**	0	0	0	557	8	0	**565**	0	0	16	0	7	0	**23**	0	0	5	677	0	3	**685**	0	0	**1273**
Grand Total	3	0	0	0	**3**	4	5	135	9064	116	1	**9316**	0	0	103	2	21	0	**126**	2	1	92	7756	148	11	**8007**	0	0	**17452**
% Approach	100.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	1.4%	97.3%	1.2%	0.0%	**0.0%**	0.0%	0.0%	81.7%	1.6%	16.7%	0.0%	**0.0%**	0.0%	0.0%	1.1%	96.9%	1.8%	0.1%	**0.0%**	0.0%	0.0%	**0.0%**
% Total	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.8%	51.9%	0.7%	0.0%	**53.4%**	0.0%	0.0%	0.6%	0.0%	0.1%	0.0%	**0.7%**	0.0%	0.0%	0.5%	44.4%	0.8%	0.1%	**45.9%**	0.0%	0.0%	**0.0%**
Lights	3	0	0	0	**3**	0	0	134	8769	105	0	**9008**	0	0	101	1	19	0	**121**	0	0	78	7489	147	11	**7725**	0	0	**16857**
% Lights	100.0%	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	99.3%	96.7%	90.5%	0.0%	**96.7%**	0.0%	0.0%	98.1%	50.0%	90.5%	0.0%	**96.0%**	0.0%	0.0%	84.8%	96.6%	99.3%	100.0%	**96.5%**	0.0%	0.0%	**96.6%**
Trucks	0	0	0	0	**0**	0	0	1	150	3	0	**154**	0	0	0	1	2	0	**3**	0	0	1	151	1	0	**153**	0	0	**310**
% Trucks	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.7%	1.7%	2.6%	0.0%	**1.7%**	0.0%	0.0%	0.0%	50.0%	9.5%	0.0%	**2.4%**	0.0%	0.0%	1.1%	1.9%	0.7%	0.0%	**1.9%**	0.0%	0.0%	**1.8%**
Buses	0	0	0	0	**0**	0	0	0	144	8	1	**153**	0	0	2	0	0	0	**2**	0	0	13	114	0	0	**127**	0	0	**282**
% Buses	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	1.6%	6.9%	100.0%	**0.0%**	0.0%	0.0%	1.9%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	14.1%	1.5%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**1.6%**
Pedestrians	0	0	0	0	**0**	4	3	0	0	0	0	**0**	0	0	0	0	0	0	**0**	2	1	0	0	0	0	**0**	0	0	**0**
% Pedestrians	0.0%	0.0%	0.0%	0.0%	**0.0%**	100.0%	60.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**
Bicycles on Crosswalk	0	0	0	0	**0**	0	2	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	**0**
% Bicycles on Crosswalk	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**

TSTData.com

Turning Movement Data Plot





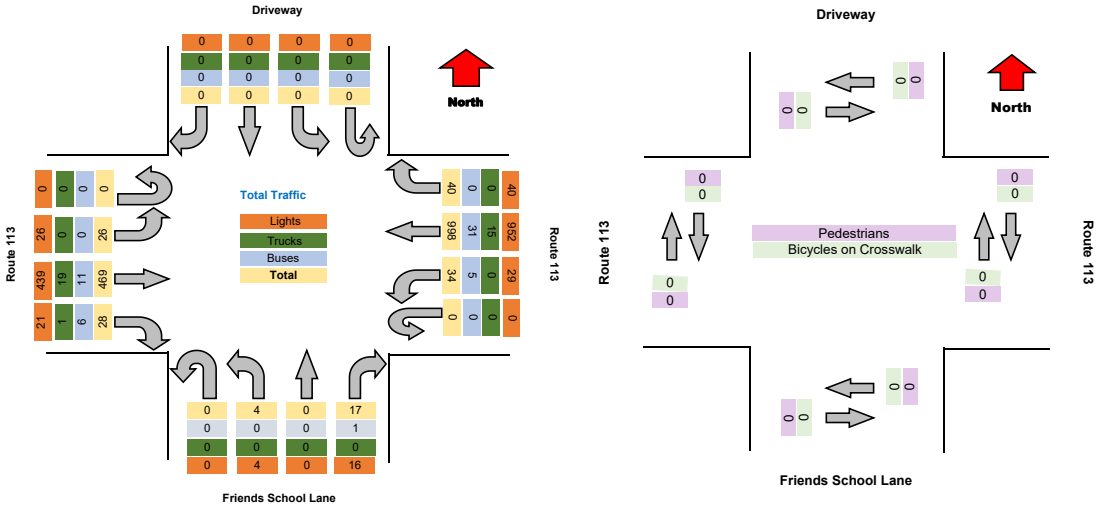
TRI-STATE TRAFFIC DATA

TSTData.com

Turning Movement Peak Hour Data (AM)

7:30:00

Leg	Driveway							Route 113							Friends School Lane							Route 113							
Direction	Southbound							Westbound							Northbound							Eastbound							
Start Time	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Total
7:30:00	0	0	0	0	**0**	0	0	2	252	5	0	**259**	0	0	4	0	1	0	**5**	0	0	4	151	5	0	**160**	0	0	**424**
7:45:00	0	0	0	0	**0**	0	0	4	282	12	0	**298**	0	0	4	0	0	0	**4**	0	0	2	131	3	0	**136**	0	0	**438**
8:00:00	0	0	0	0	**0**	0	0	10	233	6	0	**249**	0	0	4	0	2	0	**6**	0	0	8	101	8	0	**117**	0	0	**372**
8:15:00	0	0	0	0	**0**	0	0	24	231	11	0	**266**	0	0	5	0	1	0	**6**	0	0	14	86	10	0	**110**	0	0	**382**
Grand Total	0	0	0	0	**0**	0	0	40	998	34	0	**1072**	0	0	17	0	4	0	**21**	0	0	28	469	26	0	**523**	0	0	**1616**
% Approach	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	**0.0%**	0.0%	0.0%	3.7%	93.1%	3.2%	0.0%	**0.0%**	0.0%	0.0%	81.0%	0.0%	19.0%	0.0%	**0.0%**	0.0%	0.0%	5.4%	89.7%	5.0%	0.0%	**0.0%**	0.0%	0.0%	
% Total	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	2.5%	61.8%	2.1%	0.0%	**66.3%**	0.0%	0.0%	1.1%	0.0%	0.2%	0.0%	**1.3%**	0.0%	0.0%	1.7%	29.0%	1.6%	0.0%	**32.4%**	0.0%	0.0%	
PHF	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.417	0.885	0.708	0.000	**0.899**	0.000	0.000	0.850	0.000	0.500	0.000	**0.875**	0.000	0.000	0.500	0.776	0.650	0.000	**0.817**	0.000	0.000	**0.922**
Lights	0	0	0	0	**0**	0	0	40	952	29	0	**1021**	0	0	16	0	4	0	**20**	0	0	21	439	26	0	**486**	0	0	**1527**
% Lights	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	100.0%	95.4%	85.3%	0.0%	**95.2%**	0.0%	0.0%	94.1%	0.0%	100.0%	0.0%	**95.2%**	0.0%	0.0%	75.0%	93.6%	100.0%	0.0%	**92.9%**	0.0%	0.0%	**94.5%**
Trucks	0	0	0	0	**0**	0	0	0	15	0	0	**15**	0	0	0	0	0	0	**0**	0	0	1	19	0	0	**20**	0	0	**35**
% Trucks	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	**1.4%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	3.6%	4.1%	0.0%	0.0%	**3.8%**	0.0%	0.0%	**2.2%**
Buses	0	0	0	0	**0**	0	0	0	31	5	0	**36**	0	0	1	0	0	0	**1**	0	0	6	11	0	0	**17**	0	0	**54**
% Buses	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	3.1%	14.7%	0.0%	**0.0%**	0.0%	0.0%	5.9%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	21.4%	2.3%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**3.3%**
Pedestrians	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Pedestrians	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**
Bicycles on Crosswalk	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Bicycles on Crosswalk	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**

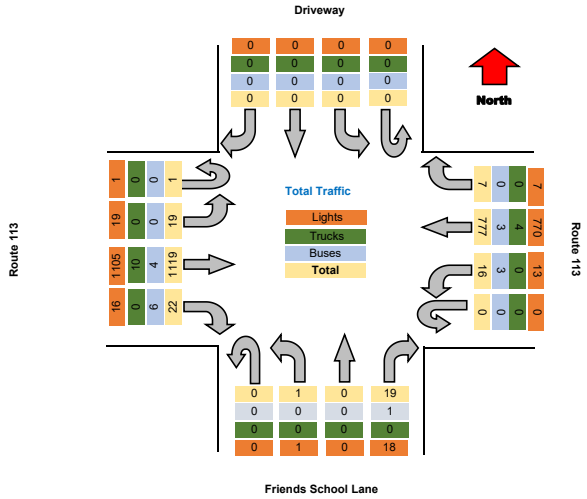


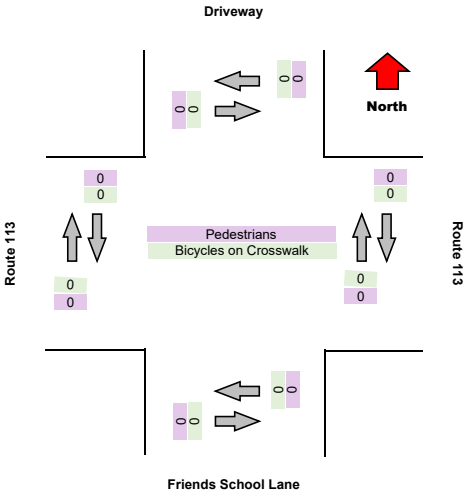
TSTData.com

Turning Movement Peak Hour Data (PM)

16:30:00

Leg	Driveway							Route 113							Friends School Lane							Route 113							
Direction	Southbound							Westbound							Northbound							Eastbound							
Start Time	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Total
16:30:00	0	0	0	0	**0**	0	0	1	190	3	0	**194**	0	0	1	0	0	0	**1**	0	0	5	261	5	0	**271**	0	0	**466**
16:45:00	0	0	0	0	**0**	0	0	0	202	5	0	**207**	0	0	8	0	1	0	**9**	0	0	9	250	6	0	**265**	0	0	**481**
17:00:00	0	0	0	0	**0**	0	0	4	187	4	0	**195**	0	0	8	0	0	0	**8**	0	0	5	294	3	1	**303**	0	0	**506**
17:15:00	0	0	0	0	**0**	0	0	2	198	4	0	**204**	0	0	2	0	0	0	**2**	0	0	3	314	5	0	**322**	0	0	**528**
Grand Total	0	0	0	0	**0**	0	0	7	777	16	0	**800**	0	0	19	0	1	0	**20**	0	0	22	1119	19	1	**1161**	0	0	**1981**
% Approach	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	**0.0%**	0.0%	0.0%	0.9%	97.1%	2.0%	0.0%	**0.0%**	0.0%	0.0%	95.0%	0.0%	5.0%	0.0%	**0.0%**	0.0%	0.0%	1.9%	96.4%	1.6%	0.1%	**0.0%**	0.0%	0.0%	
% Total	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.4%	39.2%	0.8%	0.0%	**40.4%**	0.0%	0.0%	1.0%	0.0%	0.1%	0.0%	**1.0%**	0.0%	0.0%	1.1%	56.5%	1.0%	0.1%	**58.6%**	0.0%	0.0%	
PHF	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.438	0.962	0.800	0.000	**0.966**	0.000	0.000	0.594	0.000	0.250	0.000	**0.556**	0.000	0.000	0.611	0.891	0.792	0.250	**0.901**	0.000	0.000	**0.938**
Lights	0	0	0	0	**0**	0	0	7	770	13	0	**790**	0	0	18	0	1	0	**19**	0	0	16	1105	19	1	**1141**	0	0	**1950**
% Lights	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	100.0%	99.1%	81.3%	0.0%	**98.8%**	0.0%	0.0%	94.7%	0.0%	100.0%	0.0%	**95.0%**	0.0%	0.0%	72.7%	98.7%	100.0%	100.0%	**98.3%**	0.0%	0.0%	**98.4%**
Trucks	0	0	0	0	**0**	0	0	0	4	0	0	**4**	0	0	0	0	0	0	**0**	0	0	0	10	0	0	**10**	0	0	**14**
% Trucks	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	**0.5%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.9%	0.0%	0.0%	**0.9%**	0.0%	0.0%	**0.7%**
Buses	0	0	0	0	**0**	0	0	0	3	3	0	**6**	0	0	1	0	0	0	**1**	0	0	6	4	0	0	**10**	0	0	**17**
% Buses	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.4%	18.8%	0.0%	**0.8%**	0.0%	0.0%	5.3%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	27.3%	0.4%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.9%**
Pedestrians	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Pedestrians	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**
Bicycles on Crosswalk	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Bicycles on Crosswalk	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**

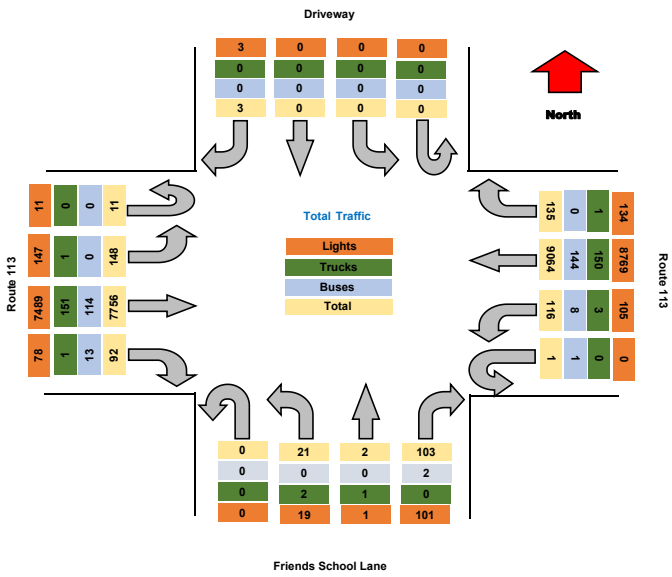


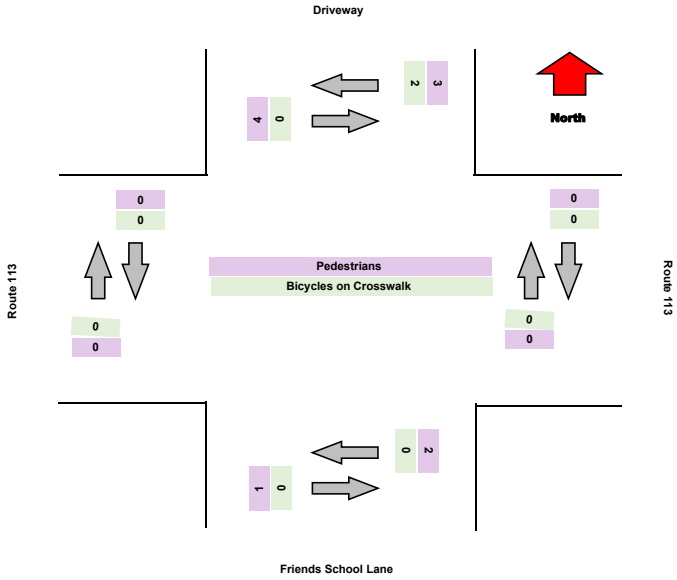


Turning Movement Data

Leg	Driveway							Route 113							Friends School Lane							Route 113							
Direction	Southbound							Westbound							Northbound							Eastbound							
Start Time	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Total
6:00:00	0	0	0	0	**0**	0	0	0	47	0	0	**47**	0	0	1	1	0	0	**2**	0	0	0	26	0	0	**26**	0	0	**75**
6:15:00	0	0	0	0	**0**	0	0	0	79	0	0	**79**	0	0	0	0	0	0	**0**	0	0	0	31	0	0	**31**	0	0	**110**
6:30:00	0	0	0	0	**0**	0	0	0	94	1	0	**95**	0	0	0	0	0	0	**0**	0	0	1	42	0	0	**43**	0	0	**138**
6:45:00	0	0	0	0	**0**	0	0	0	144	0	0	**144**	0	0	0	0	0	0	**0**	0	0	0	60	2	0	**62**	0	0	**206**
Hourly Total	0	0	0	0	**0**	0	0	0	364	1	0	**365**	0	0	1	1	0	0	**2**	0	0	1	159	2	0	**162**	0	0	**529**
7:00:00	0	0	0	0	**0**	0	0	2	143	0	0	**145**	0	0	0	0	0	0	**0**	0	1	0	73	3	0	**76**	0	0	**221**
7:15:00	0	0	0	0	**0**	0	0	4	178	2	0	**184**	0	0	0	0	0	0	**0**	0	0	0	138	3	0	**141**	0	0	**325**
7:30:00	0	0	0	0	**0**	0	0	2	252	5	0	**259**	0	0	4	0	1	0	**5**	0	0	4	151	5	0	**160**	0	0	**424**
7:45:00	0	0	0	0	**0**	0	0	4	282	12	0	**298**	0	0	4	0	0	0	**4**	0	0	2	131	3	0	**136**	0	0	**438**
Hourly Total	0	0	0	0	**0**	0	0	12	855	19	0	**886**	0	0	8	0	1	0	**9**	0	1	6	493	14	0	**513**	0	0	**1408**
8:00:00	0	0	0	0	**0**	0	0	10	233	6	0	**249**	0	0	4	0	2	0	**6**	0	0	8	101	8	0	**117**	0	0	**372**
8:15:00	0	0	0	0	**0**	0	0	24	231	11	0	**266**	0	0	5	0	1	0	**6**	0	0	14	86	10	0	**110**	0	0	**382**
8:30:00	0	0	0	0	**0**	0	0	10	271	1	0	**282**	0	0	4	0	1	0	**5**	0	0	2	119	9	0	**130**	0	0	**417**
8:45:00	0	0	0	0	**0**	0	1	11	210	5	0	**226**	0	0	0	1	1	0	**2**	0	0	1	101	10	0	**112**	0	0	**340**
Hourly Total	0	0	0	0	**0**	0	1	55	945	23	0	**1023**	0	0	13	1	5	0	**19**	0	0	25	407	37	0	**469**	0	0	**1511**
9:00:00	0	0	0	0	**0**	0	0	9	180	3	0	**192**	0	0	2	0	1	0	**3**	0	0	1	80	2	0	**83**	0	0	**278**
9:15:00	0	0	0	0	**0**	0	0	4	171	0	0	**175**	0	0	0	0	0	0	**0**	0	0	1	78	1	0	**80**	0	0	**255**
9:30:00	0	0	0	0	**0**	0	0	2	189	0	0	**191**	0	0	0	0	0	0	**0**	0	0	0	73	2	0	**75**	0	0	**266**
9:45:00	0	0	0	0	**0**	0	0	3	167	0	0	**170**	0	0	1	0	0	0	**1**	1	0	1	69	0	0	**70**	0	0	**241**
Hourly Total	0	0	0	0	**0**	0	0	18	707	3	0	**728**	0	0	3	0	1	0	**4**	1	0	3	300	5	0	**308**	0	0	**1040**
10:00:00	0	0	0	0	**0**	0	0	0	174	1	0	**175**	0	0	0	0	1	0	**1**	0	0	0	89	0	0	**89**	0	0	**265**
10:15:00	0	0	0	0	**0**	0	0	3	182	1	0	**186**	0	0	1	0	0	0	**1**	0	0	0	98	1	1	**100**	0	0	**287**
10:30:00	0	0	0	0	**0**	0	0	0	168	2	0	**170**	0	0	1	0	0	0	**1**	0	0	0	93	2	0	**95**	0	0	**266**
10:45:00	0	0	0	0	**0**	0	0	1	161	0	1	**163**	0	0	2	0	0	0	**2**	0	0	0	120	4	1	**125**	0	0	**290**
Hourly Total	0	0	0	0	**0**	0	0	4	685	4	1	**694**	0	0	4	0	1	0	**5**	0	0	0	400	7	2	**409**	0	0	**1108**
11:00:00	2	0	0	0	**2**	0	0	1	162	0	0	**163**	0	0	1	0	0	0	**1**	0	0	0	120	2	0	**122**	0	0	**288**
11:15:00	0	0	0	0	**0**	0	0	0	152	2	0	**154**	0	0	0	0	0	0	**0**	0	0	2	138	1	0	**141**	0	0	**295**
11:30:00	0	0	0	0	**0**	0	0	0	163	3	0	**166**	0	0	2	0	0	0	**2**	0	0	0	133	1	0	**134**	0	0	**302**
11:45:00	0	0	0	0	**0**	0	0	4	184	1	0	**189**	0	0	2	0	0	0	**2**	0	0	1	117	3	0	**121**	0	0	**312**
Hourly Total	2	0	0	0	**2**	0	0	5	661	6	0	**672**	0	0	5	0	0	0	**5**	0	0	3	508	7	0	**518**	0	0	**1197**
12:00:00	1	0	0	0	**1**	1	0	1	162	2	0	**165**	0	0	1	0	0	0	**1**	0	0	0	163	4	0	**167**	0	0	**334**
12:15:00	0	0	0	0	**0**	0	0	0	155	0	0	**155**	0	0	1	0	0	0	**1**	0	0	1	166	1	0	**168**	0	0	**324**
12:30:00	0	0	0	0	**0**	1	0	1	170	0	0	**171**	0	0	1	0	0	0	**1**	0	0	0	159	3	0	**162**	0	0	**334**
12:45:00	0	0	0	0	**0**	0	0	0	172	1	0	**173**	0	0	0	0	1	0	**1**	0	0	0	134	3	0	**137**	0	0	**311**
Hourly Total	1	0	0	0	**1**	2	0	2	659	3	0	**664**	0	0	3	0	1	0	**4**	0	0	1	622	11	0	**634**	0	0	**1303**
13:00:00	0	0	0	0	**0**	0	0	0	155	3	0	**158**	0	0	0	0	0	0	**0**	0	0	1	168	1	1	**171**	0	0	**329**
13:15:00	0	0	0	0	**0**	0	0	0	153	1	0	**154**	0	0	0	0	0	0	**0**	1	0	0	148	1	0	**149**	0	0	**303**
13:30:00	0	0	0	0	**0**	1	1	1	148	2	0	**151**	0	0	0	0	1	0	**1**	0	0	1	153	3	1	**158**	0	0	**310**
13:45:00	0	0	0	0	**0**	0	0	6	172	1	0	**179**	0	0	0	0	0	0	**0**	0	0	1	140	5	0	**146**	0	0	**325**
Hourly Total	0	0	0	0	**0**	1	1	7	628	7	0	**642**	0	0	0	0	1	0	**1**	1	0	3	609	10	2	**624**	0	0	**1267**
14:00:00	0	0	0	0	**0**	0	1	0	157	0	0	**157**	0	0	0	0	0	0	**0**	0	0	0	151	2	1	**154**	0	0	**311**
14:15:00	0	0	0	0	**0**	0	0	3	153	1	0	**157**	0	0	1	0	0	0	**1**	0	0	1	161	4	1	**167**	0	0	**325**
14:30:00	0	0	0	0	**0**	0	1	5	196	0	0	**201**	0	0	1	0	0	0	**1**	0	0	0	181	4	0	**185**	0	0	**387**
14:45:00	0	0	0	0	**0**	1	0	4	191	0	0	**195**	0	0	1	0	0	0	**1**	0	0	3	217	11	0	**231**	0	0	**427**
Hourly Total	0	0	0	0	**0**	1	2	12	697	1	0	**710**	0	0	3	0	0	0	**3**	0	0	4	710	21	2	**737**	0	0	**1450**
15:00:00	0	0	0	0	**0**	0	0	3	237	4	0	**244**	0	0	3	0	0	0	**3**	0	0	2	194	2	0	**198**	0	0	**445**
15:15:00	0	0	0	0	**0**	0	0	1	182	6	0	**189**	0	0	1	0	1	0	**2**	0	0	7	215	1	0	**223**	0	0	**414**
15:30:00	0	0	0	0	**0**	0	0	2	196	6	0	**204**	0	0	10	0	0	0	**10**	0	0	2	187	2	0	**191**	0	0	**405**
15:45:00	0	0	0	0	**0**	0	0	0	166	4	0	**170**	0	0	2	0	1	0	**3**	0	0	2	219	2	0	**223**	0	0	**396**
Hourly Total	0	0	0	0	**0**	0	0	6	781	20	0	**807**	0	0	16	0	2	0	**18**	0	0	13	815	7	0	**835**	0	0	**1660**
16:00:00	0	0	0	0	**0**	0	1	3	189	0	0	**192**	0	0	4	0	0	0	**4**	0	0	1	231	1	0	**233**	0	0	**429**
16:15:00	0	0	0	0	**0**	0	0	4	186	2	0	**192**	0	0	3	0	0	0	**3**	0	0	3	214	6	1	**224**	0	0	**419**
16:30:00	0	0	0	0	**0**	0	0	1	190	3	0	**194**	0	0	1	0	0	0	**1**	0	0	5	261	5	0	**271**	0	0	**466**
16:45:00	0	0	0	0	**0**	0	0	0	202	5	0	**207**	0	0	8	0	1	0	**9**	0	0	9	250	6	0	**265**	0	0	**481**
Hourly Total	0	0	0	0	**0**	0	1	8	767	10	0	**785**	0	0	16	0	1	0	**17**	0	0	18	956	18	1	**993**	0	0	**1795**
17:00:00	0	0	0	0	**0**	0	0	4	187	4	0	**195**	0	0	8	0	0	0	**8**	0	0	5	294	3	1	**303**	0	0	**506**
17:15:00	0	0	0	0	**0**	0	0	2	198	4	0	**204**	0	0	2	0	0	0	**2**	0	0	3	314	5	0	**322**	0	0	**528**
17:30:00	0	0	0	0	**0**	0	0	0	210	3	0	**213**	0	0	4	0	1	0	**5**	0	0	1	226	0	0	**227**	0	0	**445**
17:45:00	0	0	0	0	**0**	0	0	0	163	0	0	**163**	0	0	1	0	0	0	**1**	0	0	1	266	1	0	**268**	0	0	**432**
Hourly Total	0	0	0	0	**0**	0	0	6	758	11	0	**775**	0	0	15	0	1	0	**16**	0	0	10	1100	9	1	**1120**	0	0	**1911**
18:00:00	0	0	0	0	**0**	0	0	0	183	0	0	**183**	0	0	8	0	3	0	**11**	0	0	0	209	0	1	**210**	0	0	**404**
18:15:00	0	0	0	0	**0**	0	0	0	130	5	0	**135**	0	0	3	0	2	0	**5**	0	0	3	160	0	0	**163**	0	0	**303**
18:30:00	0	0	0	0	**0**	0	0	0	130	1	0	**131**	0	0	3	0	1	0	**4**	0	0	2	173	0	1	**176**	0	0	**311**
18:45:00	0	0	0	0	**0**	0	0	0	114	2	0	**116**	0	0	2	0	1	0	**3**	0	0	0	135	0	1	**136**	0	0	**255**
Hourly Total	0	0	0	0	**0**	0	0	0	557	8	0	**565**	0	0	16	0	7	0	**23**	0	0	5	677	0	3	**685**	0	0	**1273**
Grand Total	3	0	0	0	**3**	4	5	135	9064	116	1	**9316**	0	0	103	2	21	0	**126**	2	1	92	7756	148	11	**8007**	0	0	**17452**
% Approach	100.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	1.4%	97.3%	1.2%	0.0%	**0.0%**	0.0%	0.0%	81.7%	1.6%	16.7%	0.0%	**0.0%**	0.0%	0.0%	1.1%	96.9%	1.8%	0.1%	**0.0%**	0.0%	0.0%	**0.0%**
% Total	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.8%	51.9%	0.7%	0.0%	**53.4%**	0.0%	0.0%	0.6%	0.0%	0.1%	0.0%	**0.7%**	0.0%	0.0%	0.5%	44.4%	0.8%	0.1%	**45.9%**	0.0%	0.0%	**0.0%**
Lights	3	0	0	0	**3**	0	0	134	8769	105	0	**9008**	0	0	101	1	19	0	**121**	0	0	78	7489	147	11	**7725**	0	0	**16857**
% Lights	100.0%	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	99.3%	96.7%	90.5%	0.0%	**96.7%**	0.0%	0.0%	98.1%	50.0%	90.5%	0.0%	**96.0%**	0.0%	0.0%	84.8%	96.6%	99.3%	100.0%	**96.5%**	0.0%	0.0%	**96.6%**
Trucks	0	0	0	0	**0**	0	0	1	150	3	0	**154**	0	0	0	1	2	0	**3**	0	0	1	151	1	0	**153**	0	0	**310**
% Trucks	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.7%	1.7%	2.6%	0.0%	**1.7%**	0.0%	0.0%	0.0%	50.0%	9.5%	0.0%	**2.4%**	0.0%	0.0%	1.1%	1.9%	0.7%	0.0%	**1.9%**	0.0%	0.0%	**1.8%**
Buses	0	0	0	0	**0**	0	0	0	144	8	1	**153**	0	0	2	0	0	0	**2**	0	0	13	114	0	0	**127**	0	0	**282**
% Buses	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	1.6%	6.9%	100.0%	**0.0%**	0.0%	0.0%	1.9%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	14.1%	1.5%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**1.6%**
Pedestrians	0	0	0	0	**0**	4	3	0	0	0	0	**0**	0	0	0	0	0	0	**0**	2	1	0	0	0	0	**0**	0	0	0
% Pedestrians	0.0%	0.0%	0.0%	0.0%	**0.0%**	100.0%	60.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**
Bicycles on Crosswalk	0	0	0	0	**0**	0	2	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Bicycles on Crosswalk	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**

Turning Movement Data Plot

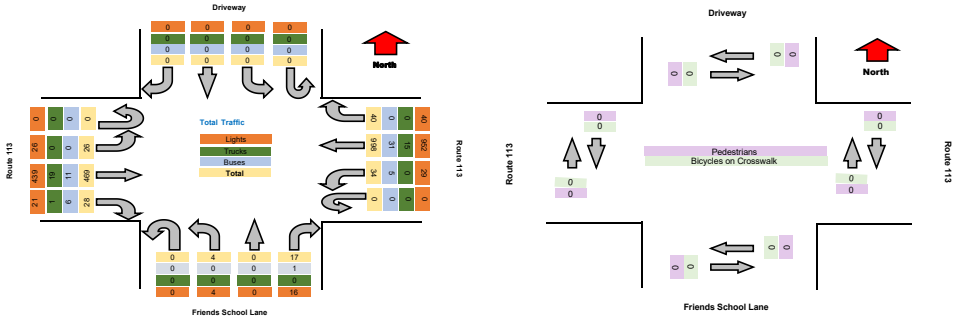




Turning Movement Peak Hour Data (AM)

7:30:00

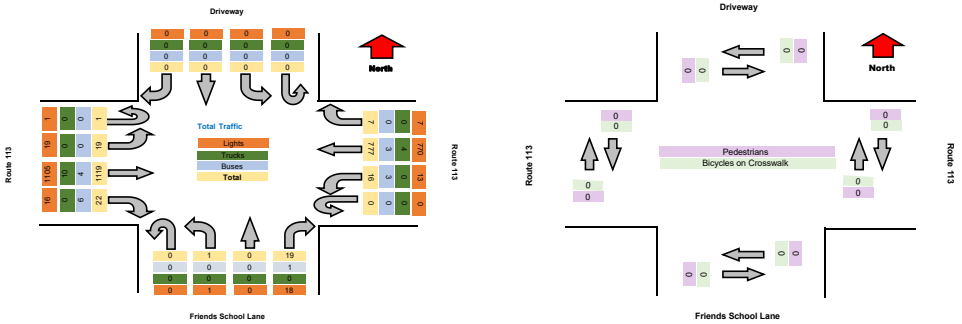
Leg	Driveway							Route 113							Friends School Lane							Route 113							
Direction	Southbound							Westbound							Northbound							Eastbound							
Start Time	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Total
7:30:00	0	0	0	0	**0**	0	0	2	252	5	0	**259**	0	0	4	0	1	0	**5**	0	0	4	151	5	0	**160**	0	0	**424**
7:45:00	0	0	0	0	**0**	0	0	4	282	12	0	**298**	0	0	4	0	0	0	**4**	0	0	2	131	3	0	**136**	0	0	**438**
8:00:00	0	0	0	0	**0**	0	0	10	233	6	0	**249**	0	0	4	0	2	0	**6**	0	0	8	101	8	0	**117**	0	0	**372**
8:15:00	0	0	0	0	**0**	0	0	24	231	11	0	**266**	0	0	5	0	1	0	**6**	0	0	14	86	10	0	**110**	0	0	**382**
Grand Total	0	0	0	0	**0**	0	0	40	998	34	0	**1072**	0	0	17	0	4	0	**21**	0	0	28	469	26	0	**523**	0	0	**1616**
% Approach	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	**0.0%**	0.0%	0.0%	3.7%	93.1%	3.2%	0.0%	**0.0%**	0.0%	0.0%	81.0%	0.0%	19.0%	0.0%	**0.0%**	0.0%	0.0%	5.4%	89.7%	5.0%	0.0%	**0.0%**	0.0%	0.0%	
% Total	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	2.5%	61.8%	2.1%	0.0%	**66.3%**	0.0%	0.0%	1.1%	0.0%	0.2%	0.0%	**1.3%**	0.0%	0.0%	1.7%	29.0%	1.6%	0.0%	**32.4%**	0.0%	0.0%	
PHF	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.417	0.885	0.708	0.000	**0.899**	0.000	0.000	0.850	0.000	0.500	0.000	**0.875**	0.000	0.000	0.500	0.776	0.650	0.000	**0.817**	0.000	0.000	**0.922**
Lights	0	0	0	0	**0**	0	0	40	952	29	0	**1021**	0	0	16	0	4	0	**20**	0	0	21	439	26	0	**486**	0	0	**1527**
% Lights	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	100.0%	95.4%	85.3%	0.0%	**95.2%**	0.0%	0.0%	94.1%	0.0%	100.0%	0.0%	**95.2%**	0.0%	0.0%	75.0%	93.6%	100.0%	0.0%	**92.9%**	0.0%	0.0%	**94.5%**
Trucks	0	0	0	0	**0**	0	0	0	15	0	0	**15**	0	0	0	0	0	0	**0**	0	0	1	19	0	0	**20**	0	0	**35**
% Trucks	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	**1.4%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	3.6%	4.1%	0.0%	0.0%	**3.8%**	0.0%	0.0%	**2.2%**
Buses	0	0	0	0	**0**	0	0	0	31	5	0	**36**	0	0	1	0	0	0	**1**	0	0	6	11	0	0	**17**	0	0	**54**
% Buses	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	3.1%	14.7%	0.0%	**0.0%**	0.0%	0.0%	5.9%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	21.4%	2.3%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**3.3%**
Pedestrians	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Pedestrians	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**
Bicycles on Crosswalk	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Bicycles on Crosswalk	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**



Turning Movement Peak Hour Data (PM)

16:30:00

Leg	Driveway							Route 113							Friends School Lane							Route 113							
Direction	Southbound							Westbound							Northbound							Eastbound							
Start Time	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	App Total	Peds CW	Peds CCW	Total
16:30:00	0	0	0	0	**0**	0	0	1	190	3	0	**194**	0	0	1	0	0	0	**1**	0	0	5	261	5	0	**271**	0	0	**466**
16:45:00	0	0	0	0	**0**	0	0	0	202	5	0	**207**	0	0	8	0	1	0	**9**	0	0	9	250	6	0	**265**	0	0	**481**
17:00:00	0	0	0	0	**0**	0	0	4	187	4	0	**195**	0	0	8	0	0	0	**8**	0	0	5	294	3	1	**303**	0	0	**506**
17:15:00	0	0	0	0	**0**	0	0	2	198	4	0	**204**	0	0	2	0	0	0	**2**	0	0	3	314	5	0	**322**	0	0	**528**
Grand Total	0	0	0	0	**0**	0	0	7	777	16	0	**800**	0	0	19	0	1	0	**20**	0	0	22	1119	19	1	**1161**	0	0	**1981**
% Approach	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	**0.0%**	0.0%	0.0%	0.9%	97.1%	2.0%	0.0%	**0.0%**	0.0%	0.0%	95.0%	0.0%	5.0%	0.0%	**0.0%**	0.0%	0.0%	1.9%	96.4%	1.6%	0.1%	**0.0%**	0.0%	0.0%	
% Total	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.4%	39.2%	0.8%	0.0%	**40.4%**	0.0%	0.0%	1.0%	0.0%	0.1%	0.0%	**1.0%**	0.0%	0.0%	1.1%	56.5%	1.0%	0.1%	**58.6%**	0.0%	0.0%	
PHF	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.438	0.962	0.800	0.000	**0.966**	0.000	0.000	0.594	0.000	0.250	0.000	**0.556**	0.000	0.000	0.611	0.891	0.792	0.250	**0.901**	0.000	0.000	**0.938**
Lights	0	0	0	0	**0**	0	0	7	770	13	0	**790**	0	0	18	0	1	0	**19**	0	0	16	1105	19	1	**1141**	0	0	**1950**
% Lights	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	100.0%	99.1%	81.3%	0.0%	**98.8%**	0.0%	0.0%	94.7%	0.0%	100.0%	0.0%	**95.0%**	0.0%	0.0%	72.7%	98.7%	100.0%	100.0%	**98.3%**	0.0%	0.0%	**98.4%**
Trucks	0	0	0	0	**0**	0	0	0	4	0	0	**4**	0	0	0	0	0	0	**0**	0	0	0	10	0	0	**10**	0	0	**14**
% Trucks	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	**0.5%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.9%	0.0%	0.0%	**0.9%**	0.0%	0.0%	**0.7%**
Buses	0	0	0	0	**0**	0	0	0	3	3	0	**6**	0	0	1	0	0	0	**1**	0	0	6	4	0	0	**10**	0	0	**17**
% Buses	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.4%	18.8%	0.0%	**0.0%**	0.0%	0.0%	5.3%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	27.3%	0.4%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.9%**
Pedestrians	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Pedestrians	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**
Bicycles on Crosswalk	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	0	0
% Bicycles on Crosswalk	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%	**0.0%**



Volume

Station: 820055,2016,Combined Total

COUNT_ID	820055_10182016
REGION	8
REGION_CODE	8
COUNTY_CODE	2
STATION	55
RCSTA	820055
FUNCTIONAL_CLASS	16
FACTOR_GROUP	30
LATITUDE	41.65895
LONGITUDE	-73.92293
SPECIFIC_RECORDER_PLACEMENT	177' E of Fowler Hill Rd
CHANNEL_NOTES	
DATA_TYPE	Volume Statistics
VEHICLE_AXLE_CODE	1
YEAR	2016
MONTH	10
DAY_OF_FIRST_DATA	18
FEDERAL_DIRECTION	Combined Total
FULL_COUNT	Y
AVG_WKDAY_INTERVAL_1	80
AVG_WKDAY_INTERVAL_2	50
AVG_WKDAY_INTERVAL_3	34
AVG_WKDAY_INTERVAL_4	26
AVG_WKDAY_INTERVAL_5	74
AVG_WKDAY_INTERVAL_6	257
AVG_WKDAY_INTERVAL_7	639
AVG_WKDAY_INTERVAL_8	1478
AVG_WKDAY_INTERVAL_9	1657
AVG_WKDAY_INTERVAL_10	1159
AVG_WKDAY_INTERVAL_11	1088
AVG_WKDAY_INTERVAL_12	1189
AVG_WKDAY_INTERVAL_13	1392
AVG_WKDAY_INTERVAL_14	1346
AVG_WKDAY_INTERVAL_15	1576
AVG_WKDAY_INTERVAL_16	1708
AVG_WKDAY_INTERVAL_17	1826
AVG_WKDAY_INTERVAL_18	1964
AVG_WKDAY_INTERVAL_19	1588
AVG_WKDAY_INTERVAL_20	1055
AVG_WKDAY_INTERVAL_21	764
AVG_WKDAY_INTERVAL_22	498
AVG_WKDAY_INTERVAL_23	304
AVG_WKDAY_INTERVAL_24	149
AVG_WKDAY_DAILY_TRAFFIC	21901
SEASONAL_FACTOR	1.074
AXLE_FACTOR	1
AADT	20392
HIGH_HOUR_VALUE	1964
HIGH_HOUR_INTERVAL	18
K_FACTOR	9
D_FACTOR	58
FLAG_FIELD	
BATCH_ID	210871

Speed

Station: 820055, 2016, Combined Total

COUNT_ID	820055_10182016
REGION	8
REGION_CODE	8
COUNTY_CODE	2
STATION	55
RCSTA	820055
FUNCTIONAL_CLASS	16
FACTOR_GROUP	30
LATITUDE	41.65895
LONGITUDE	-73.92293
SPECIFIC_RECORDER_PLACEMENT	177' E of Fowler Hill Rd
CHANNEL_NOTES	
DATA_TYPE	Speed Statistics
SPEED_LIMIT	45
YEAR_	2016
MONTH_	10
DAY_OF_FIRST_DATA	18
FEDERAL_DIRECTION	Combined Total
FULL_COUNT	Y
AVG_WKDAY_BIN_1	1019
AVG_WKDAY_BIN_2	953
AVG_WKDAY_BIN_3	1581
AVG_WKDAY_BIN_4	3485
AVG_WKDAY_BIN_5	5719
AVG_WKDAY_BIN_6	5841
AVG_WKDAY_BIN_7	2627
AVG_WKDAY_BIN_8	563
AVG_WKDAY_BIN_9	90
AVG_WKDAY_BIN_10	12
AVG_WKDAY_BIN_11	3
AVG_WKDAY_BIN_12	0
AVG_WKDAY_BIN_13	0
AVG_WKDAY_BIN_14	0
AVG_WKDAY_BIN_15	2
AVG_WKDAY_UNCLASSIFIED	
AVG_WKDAY_TOTALS	21895
AVG_SPEED	34
FIFTYTH_PERCENTILE_SPEED	39
EIGHTYFIVETH_PERCENTILE_SPEED	45
PERCENTILE_EXCEEDING_55	0
PERCENTILE_EXCEEDING_65	0
FLAG_FIELD	
BATCH_ID	210664

Attachment B
Traffic Signal Warrants

NY Route 113/Friends School Lane Intersection Evaluation
Hamlet of Spackenkill, Town of Poughkeepsie, New York

Creighton Manning

Project:_____

Calculated By:_____
Calculated Date:_____
Checked By:_____
Checked Date: _____

Project:	122-359																																			
Intersection	Rt 113/ Friends School Lane/ Driveway																																			
Date:	2/14/2023																																			
Analyst:	SH																																			
	Select your lane configuration																																			
			4																																		
	Main 2, Side 1		2																																	
			3				100% (a)				80% (b)				70%(c)				56% (d)				100%(a)				80%(b)				70%(c)				56%(d)	
							600				480				420				336				900				720				630				504	
							150				120				105				84				75				60				53				42	
	Add your volumes																																			
Hour	Rt 113	ds School	Driveway	Condition A																Condition B																
Beginning	EB/WB	NB	SB	100%				80%				70%				56%				100%				80%				70%				56%				
				Main	SS 1	SS 2	Overall	Main	SS 1	SS 2	Overall	Main	SS 1	SS 2	Overall	Main	SS 1	SS 2	Overall	Main	SS 1	SS 2	Overall	Main	SS 1	SS 2	Overall	Main	SS 1	SS 2	Overall	Main	SS 1	SS 2	Overall	
12:00 AM																																				
1:00 AM																																				
2:00 AM																																				
3:00 AM																																				
4:00 AM																																				
5:00 AM																																				
6:00 AM	527	2	0					Y				Y				Y																Y				
7:00 AM	1399	9	0	Y				Y				Y				Y				Y				Y				Y				Y				
8:00 AM	1492	19	0	Y				Y				Y				Y				Y				Y				Y				Y				
9:00 AM	1036	4	0	Y				Y				Y				Y				Y				Y				Y				Y				
10:00 AM	1103	5	0	Y				Y				Y				Y				Y				Y				Y				Y				
11:00 AM	1190	5	2	Y				Y				Y				Y				Y				Y				Y				Y				
12:00 PM	1298	4	1	Y				Y				Y				Y				Y				Y				Y				Y				
1:00 PM	1266	1	0	Y				Y				Y				Y				Y				Y				Y				Y				
2:00 PM	1447	3	0	Y				Y				Y				Y				Y				Y				Y				Y				
3:00 PM	1642	18	0	Y				Y				Y				Y				Y				Y				Y				Y				
4:00 PM	1778	17	0	Y				Y				Y				Y				Y				Y				Y				Y				
5:00 PM	1895	16	0	Y				Y				Y				Y				Y				Y				Y				Y				
6:00 PM	1250	23	0	Y				Y				Y				Y				Y				Y				Y				Y				
7:00 PM																																				
8:00 PM																																				
9:00 PM																																				
10:00 PM																																				
11:00 PM																																				
		Hours Met					0				0				0				0				0				0				0				0	
		Required					8				8				8				8				8				8				8				8	
		Warrant Met?					No				No				No				No				No				No				No				No	
NOTES:																																				
(a) Basic minimum hourly volume.																																				
(b) Used for combination of Conditions A and B after adequate trial of other remedial measures.																																				
(c) May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.																																				
(d) May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.																																				
Reference:	Federal Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), 2009 Edition																																			
	New York State Supplement to the MUTCD																																			
Checked:	AMM, KWW on 10/21/2016																																			

Figure 4C-2
Reduced Four-Hour Vehicular Volume Warrant
Source: Federal MUTCD
NY Route 133/Friends School Lane Intersection - Existing Volumes

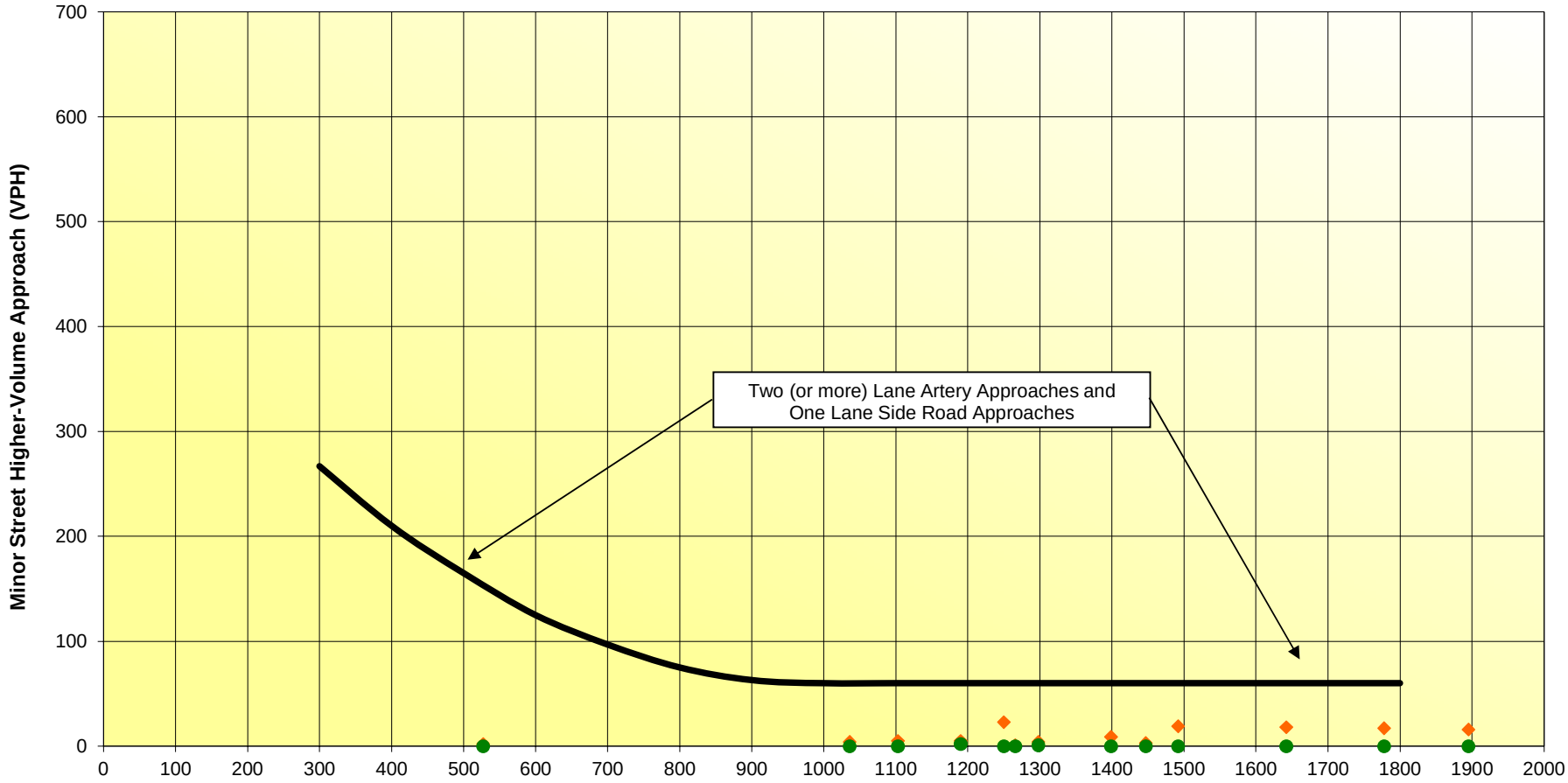
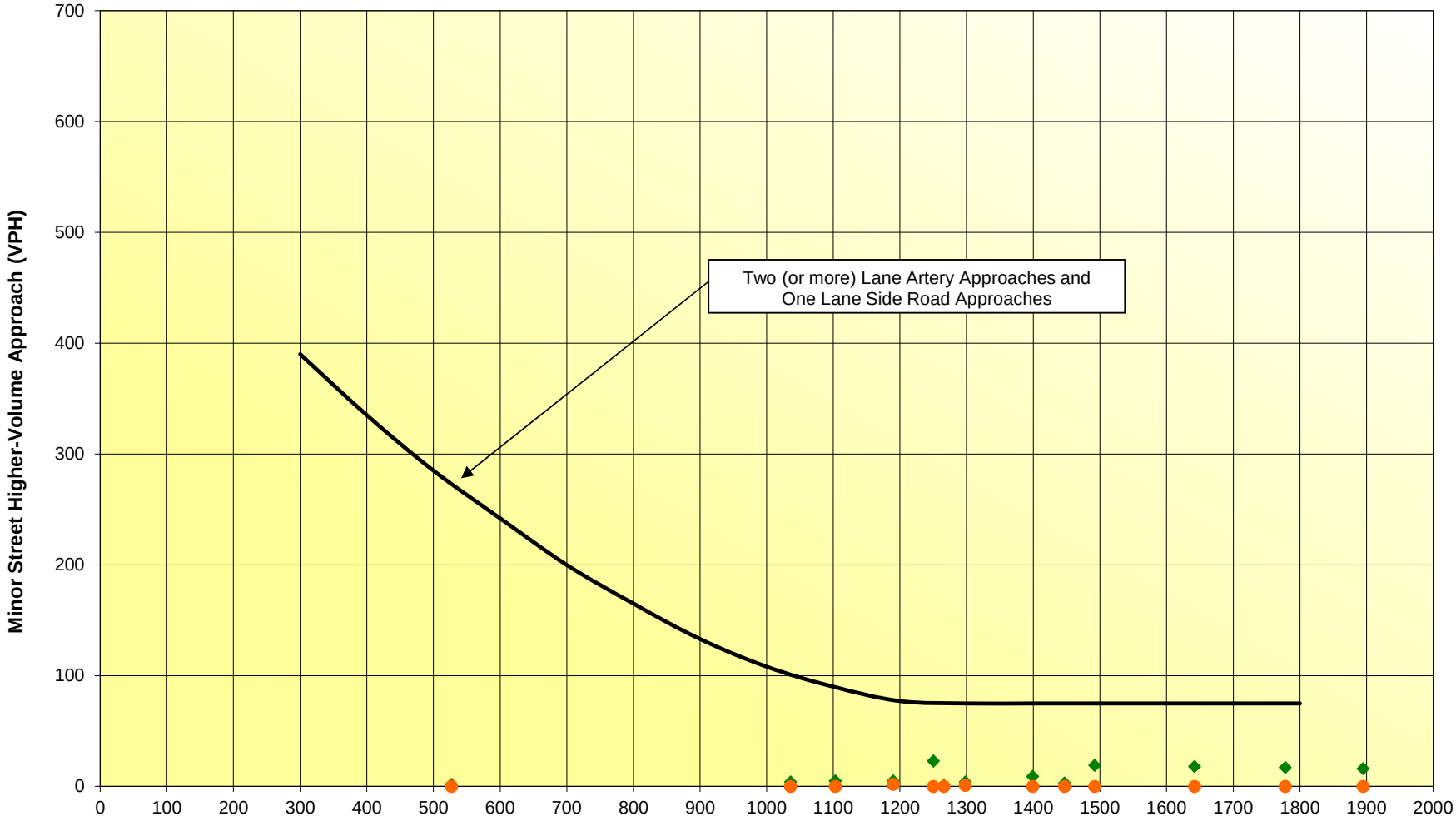


Figure 4C-4
Reduced Peak Hour Volume Warrant
Source: Federal MUTCD
NY Route 133/Friends School Lane Intersection - Existing Volumes



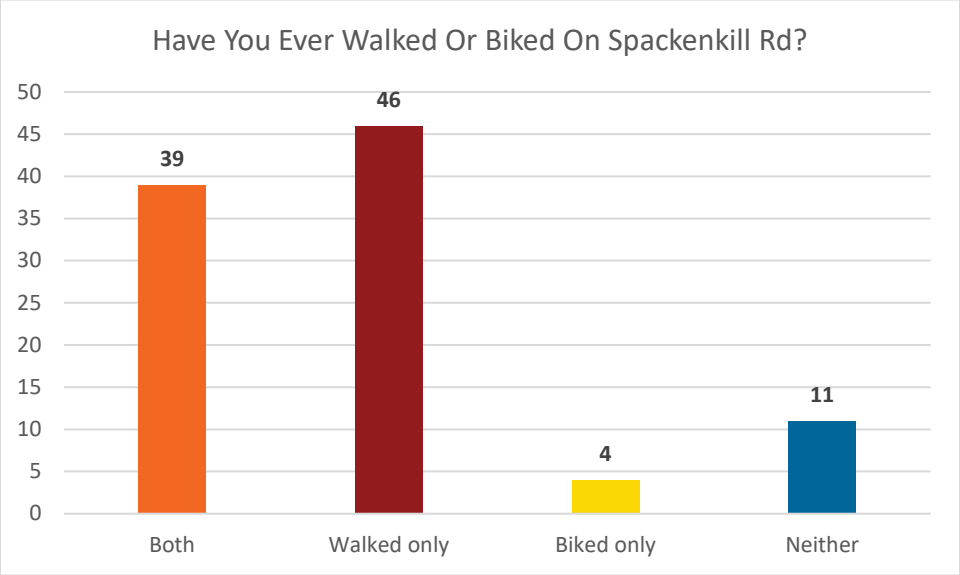
Appendix D

- Public Outreach:
  - Spackenkill High School Student Outreach Summary
  - Online Survey Summary
  - Draft Report Feedback Summary

Spackenkill High School Student Outreach Summary

We had the opportunity to engage with students of Spackenkill High School (SHS) and introduce them to the Spackenkill Rd Sidewalk Feasibility Study, conducting in-person sessions during several Government & Economic classes on May 19, 2023. We held four sessions, attended by over 100 students from six classes. During these sessions, students discussed their use of Spackenkill Rd, including whether they have walked or biked along the road and the specific destinations they frequented. We also asked them about the potential benefits and challenges of adding sidewalks along Spackenkill Rd. Students participated by sharing their thoughts and opinions through in-class discussions and live survey responses (hosted through Slido); teachers also reserved class time during the following week for students to participate in the study's online public survey. Key themes and quotes from our in-class discussions are summarized below.

We began class with a poll to understand if students had ever walked or biked along Spackenkill Rd. Overall, we found that most students had walk or biked on Spackenkill Rd, reinforcing the need to accommodate this type of transportation. The poll results are shown below:



We discussed the various destinations that students walked or biked to. They shared that walking routes commonly included traveling between the high school and middle school, accessing the high school track from their homes, visiting friends' houses, and accessing businesses along Route 9. As for biking, students said they mostly biked for recreational purposes and to visit friends. However, students expressed concerns about safety. In particular, they cited concerns about drivers exceeding speed limits, making hazardous turns, and entering the road shoulder to overtake other vehicles, which made them apprehensive to walk or bike along the road. Additionally, the lack of marked crosswalks was identified as a concern.

When asked about the potential **benefits** of adding sidewalks along Spackenkill Rd, students focused on the following:

1. Enhanced safety: Students noted that sidewalks enhance pedestrian safety by providing a separate walking space, protected from traffic. This is especially important in low light and at night. Sidewalks could also reduce crashes by promoting better driving behavior: if drivers are more conscious of pedestrians they would drive at slower speeds, improving road safety.

2. Improved mobility: Sidewalks facilitate travel for students between schools, sports activities, and other destinations. Sidewalks also allow individuals without cars or drivers' licenses to access destinations in the area.

3. Congestion & environmental benefits: Sidewalks can help reduce our reliance on vehicles. More people are likely to choose walking as a travel mode if there is a safe and accessible sidewalk. This could reduce congestion, including during the busy school drop-off in the morning. Encouraging walking and biking also reduces carbon emissions, promoting a more sustainable community.

4. Community aesthetics, connectivity, & economic boost: Sidewalks enhance the appearance of the road, making it feel more welcoming and community oriented. They encourage exercise, promoting a healthier lifestyle, and foster community connectivity by making it safe and easy for people to walk. Additionally, sidewalks can contribute to economic growth by attracting more activity, visitors, and potential customers to businesses within walking distance.

It would be much safer to walk or bike along Spackenkill Rd, and it would make people feel safer. Cars will be driving slower, so there is a less chance of having an accident.

People without cars or licenses in the area can walk down to the plaza.

More walking will allow for less cars which will create fewer emissions.

Attracts more activity, mobility, way more welcoming.

When asked about the potential **challenges** of adding sidewalks along Spackenkill Rd, students discussed the following:

1. Cost and timing: One of the primary challenges pointed out by students is the cost of constructing and maintaining sidewalks, and potential increases in property taxes to fund their construction. Students also pointed out that it could take a long time for such a project to be implemented. (We discussed that a sidewalk project like this would most likely be funded by a grant, though the Town's code does require that property owners maintain the sidewalks.)

How long it will take to get the sidewalks in place, and the cost of the project.

2. Traffic disruptions: Students thought that the addition of sidewalks might lead to more traffic on the road. Additionally, they wondered if drivers' impatience and the narrower lanes could lead to an increase in crashes, particularly at intersections. (We discussed that narrower lanes typically lead to fewer and less severe crashes because speeds tend to be lower. There could be additional delay at traffic signals due to added pedestrian phases or changes in intersection geometry, though some changes have the potential to improve traffic operations. Any changes to signals and geometry would have to be further evaluated to ensure acceptable traffic operations.)

3. Opposition from property owners: Students stated that some property owners along Spackenkill Rd might resist the idea of sidewalks near their homes. Disputes over property lines and potential land acquisitions could arise. There could be concerns about the long-term maintenance of sidewalks and who would be responsible for them. If sidewalks are not well maintained, they could detract from neighborhood aesthetics.

4. Construction impacts: The construction process could cause traffic congestion and inconvenience for drivers, and homeowners may have concerns about construction noise. During construction, there could be concerns about safety and accessibility for pedestrians, particularly students walking to and from school.

It will make the driving space narrower for drivers.

Community members who own property might not want to have sidewalks, and maintaining the sidewalks would also be required.

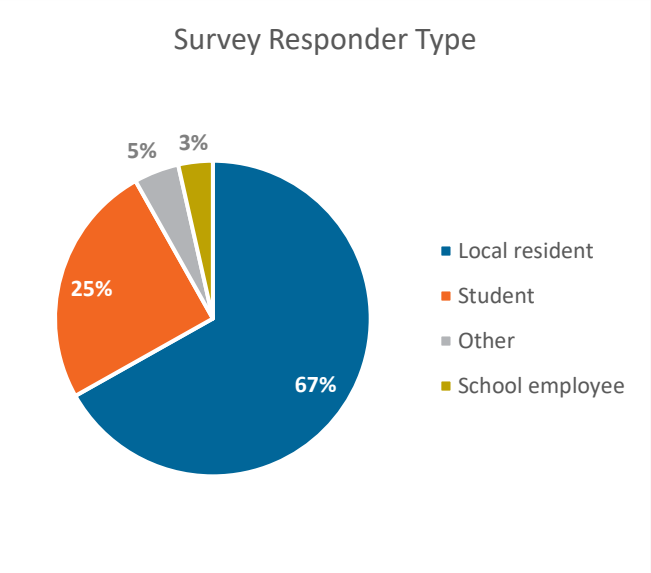
Traffic may increase during the months of construction.
While the sidewalks are being created, how will people walk to and from school?

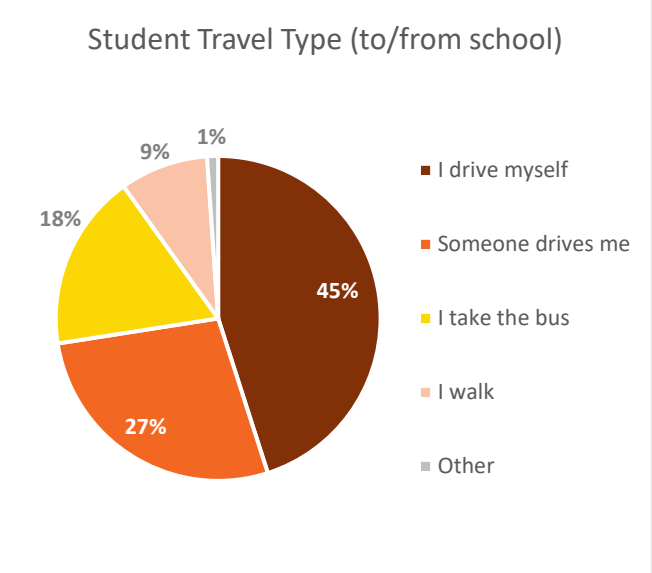
In summary, students pointed out that adding sidewalks on Spackenkill Rd offers a wide range of benefits, including increased safety, improved mobility, environmental sustainability, enhanced community connections, and local economic benefits. Students also identified some important challenges of adding sidewalks on Spackenkill Rd, including cost, traffic disruptions, community opposition, construction impacts, safety and access during construction, limited space and property encroachment, long construction timelines, maintenance concerns, and potential impacts on traffic.

These sessions helped us hear perspectives from the youth population, a group that is often left out of the transportation planning process. In turn, we shed light on the workings of local government and how a sidewalk project could impact them.

Online Survey Summary

We hosted an online survey to understand residents' current use of Spackenkill Road and to gather feedback on the need for walking and bicycling infrastructure. The results are summarized below and will help inform the Spackenkill Rd Sidewalk Feasibility Study. Individual responses were shared with the Town of Poughkeepsie to help inform their decision making.





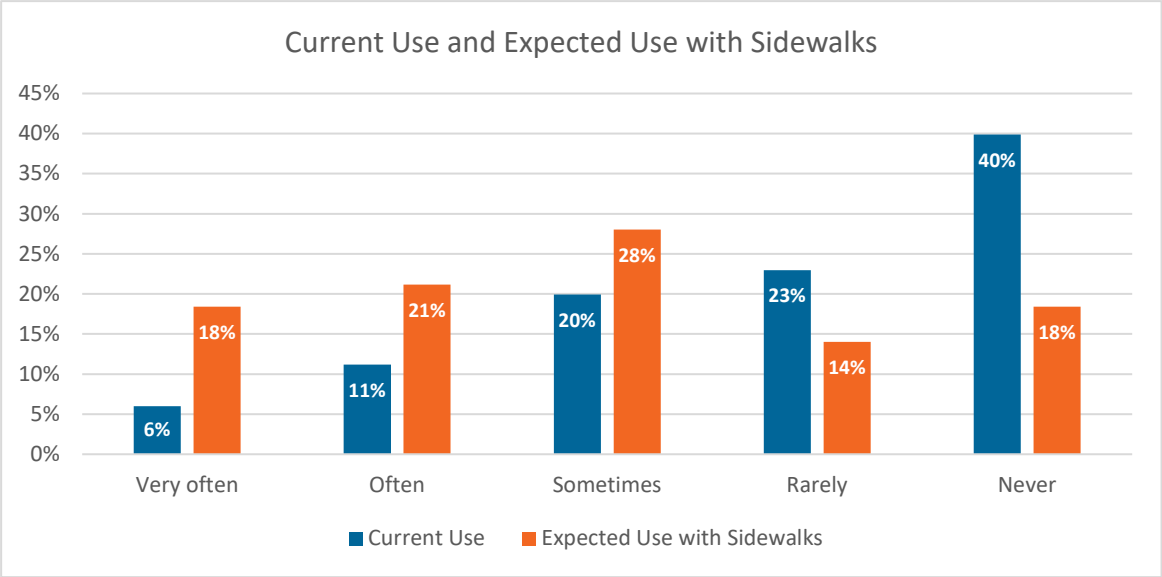
The survey was open from May 19 – July 3, 2023 through the ArcGIS Survey123 platform. It was posted on DCTC's website and the Spackenkill Union Free School District's website and newsletter, and shared with local schools and the PTA and to the broader community via the Town's public information email list, a local newspaper, and a local radio station. In addition, a Town Council member conducted door-to-door outreach and distributed flyers to homes along the study area.

In total, we received 368 responses from the community. Over 65 percent of respondents identified as residents, 25 percent as students, 5 percent as other, and 3 percent as school employees. Most or all the student responses are assumed to be seniors from Spackenkill High School with whom we conducted in-class outreach and who had class time to respond to the survey. Of the 91 students that responded, 9 percent reported that they walk to school and 18 percent take the bus. Most other students (72 percent) either drive to school or are driven by someone else.

Walking

How often do you walk on Spackenkill Rd?

If there were sidewalks, how often do you think you would walk on Spackenkill Rd?

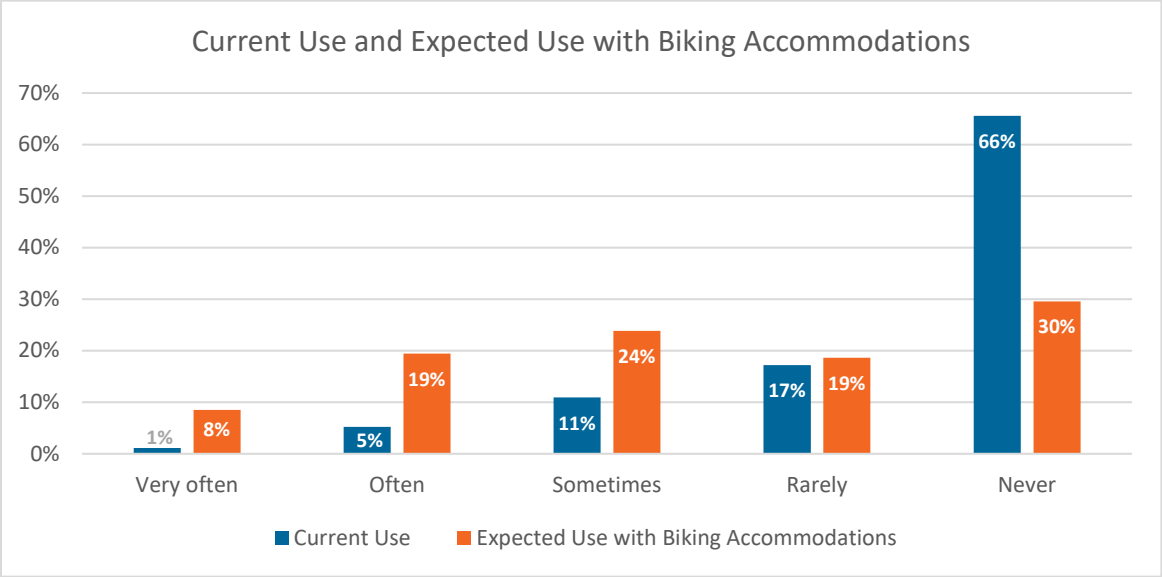


We asked how frequently the community currently walks on Spackenkill Rd, and how their use would change if there were sidewalks. Current walking on Spackenkill Rd varies, with a significant portion (63 percent) reporting that they rarely or never walk. However, if sidewalks were provided, a majority (68 percent) predicted they would walk sometimes, often, or very often.

Reasons for currently walking include exercise, school-related activities, park visits, socializing, shopping, and leisure. Safety concerns, such as the lack of sidewalks, heavy traffic, and a perceived dangerous environment, deter people from walking. Even if there were sidewalks, some individuals cited traffic volume and concerns about traffic conflicts, personal transportation preferences, the absence of relevant destinations, and alternative locations for leisure walking as reasons for not choosing to walk on Spackenkill Rd.

Bicycling

How often do you bike on Spackenkill Rd?
If Spackenkill Rd was designed differently to better accommodate bikes, how often do you think you would bike on Spackenkill Rd?

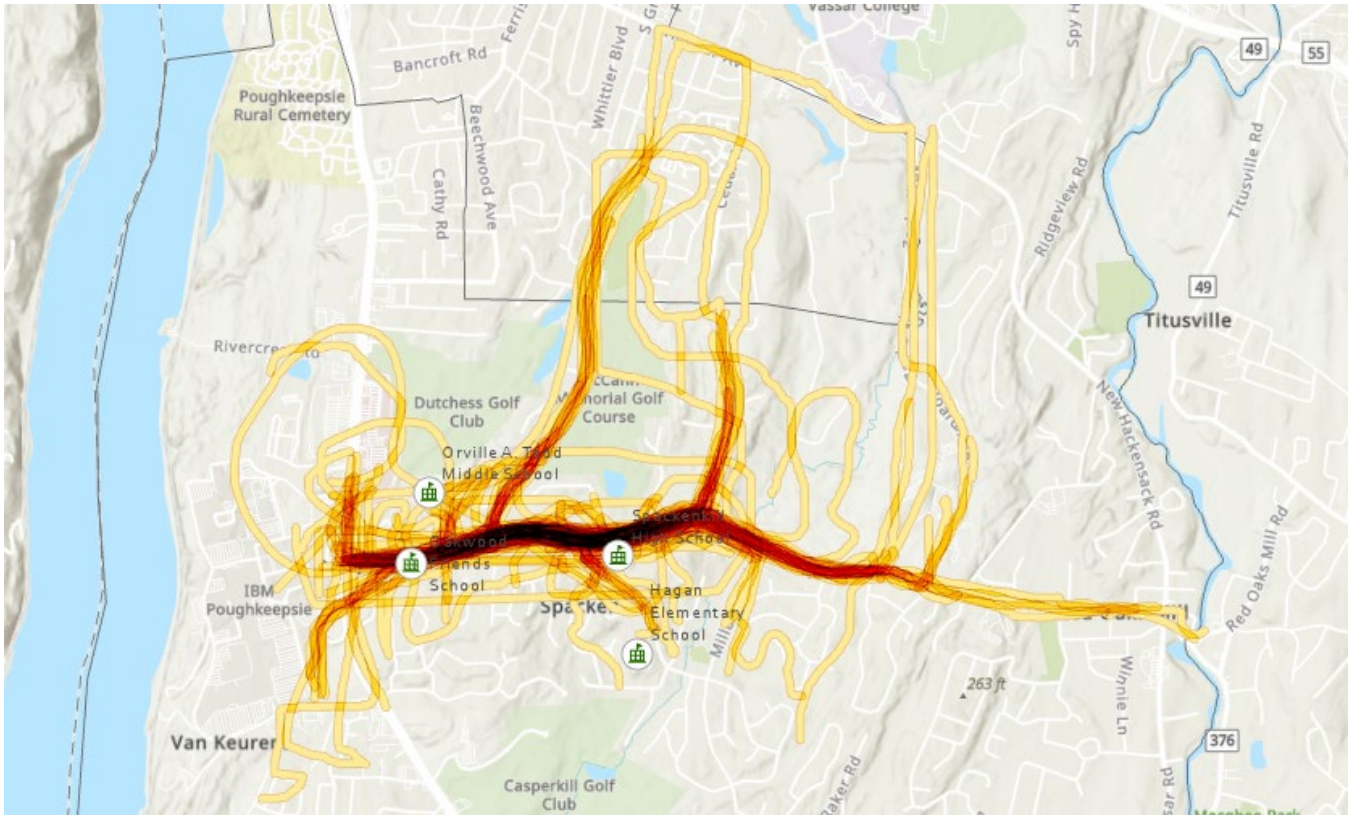


When it comes to bicycling on Spackenkill Rd, a small percentage of respondents currently bike sometimes, often, or very often (17 percent), while the majority rarely or never bike (83 percent). However, if bicycling accommodations were available, a slight majority (52 percent) predicted they would bike sometimes, often, or very often.

Current bicyclists ride on Spackenkill Rd for exercise, to access jobs and school, and for recreation. Safety concerns, lack of infrastructure, personal preferences, alternate transportation options, and distance to destinations were the main reasons cited for not biking on Spackenkill Rd. Even with bicycle accommodations, some respondents expressed a lack of interest or desire to bike due to personal preferences and safety concerns.

Destinations

Where would you walk or bike?



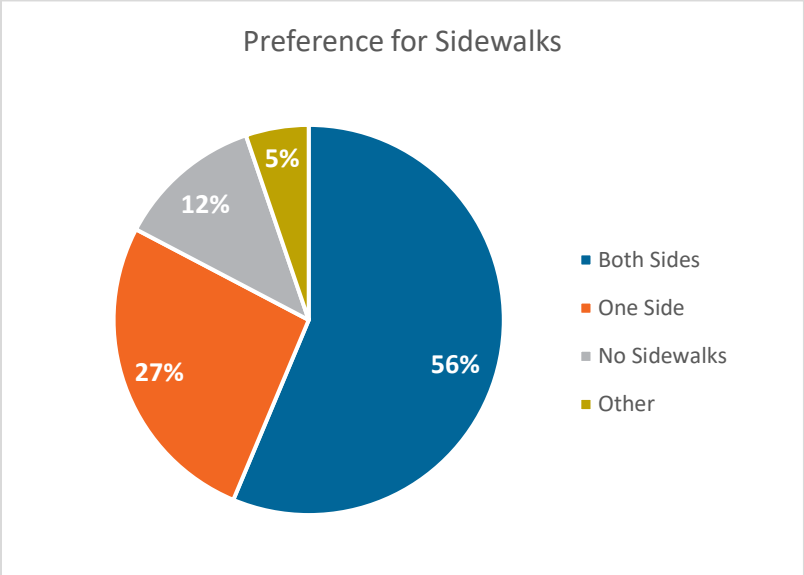
We asked the community to use a mapping tool to draw where they would walk or bike and describe the different routes they would use and destinations they would go to. Those results are shown on the map above, with darker areas showing the most common routes. Based on the mapping responses, there is a strong desire for walking and biking between Croft Rd and Cedar Ave (the focus area of this study), but people are also interested in destinations along and across Route 9, as well as connections along Wilbur Blvd, Hagan Dr, and Cedar Ave. There was also interest in destinations further east along Spackenkill Rd, including up Boardman Rd and out to Red Oaks Mill, especially for people who bike.

Specific destinations mentioned included schools and parks in the area, the high school track and tennis courts, the Boardman library, trails at Vassar Farms and the Wilbur Blvd path, and businesses along Route 9. Some people said that although they would not walk along Spackenkill Rd, they felt strongly that there should be safe options for people that do walk, including children who walk to and from school and around Hagan Dr.

Preference for Sidewalks

Which statement do you most agree with?

- *Sidewalks should be installed on **both sides** of Spackenkill Rd between Croft Rd (near middle school) and Cedar Ave (near high school)*
- *Sidewalks should be installed on **one side** of Spackenkill Rd between Croft Rd (near middle school) and Cedar Ave (near high school)*
- *Sidewalks **should not be installed** on Spackenkill Rd*
- ***Other** (please explain)*



More than 80 percent of respondents supported the installation of sidewalks on Spackenkill Rd in some form, with a majority (56 percent) preferring sidewalks on both sides of the road. Safety was the primary reason cited, as sidewalks would provide a safe space for pedestrians, particularly students. Some respondents noted that sidewalks would encourage walking and biking, increase accessibility to schools and local businesses, and create a more connected community. Respondents that preferred sidewalks on one side only highlighted the cost and space-saving benefits, including leaving room for other improvements like bicycle accommodations.

Of the 5 percent "Other" responses, nearly all supported sidewalks in some form, but many emphasized the importance of considering all travel modes and a concern that sidewalks alone would not address the needs of bicyclists. Others suggested switching the sidewalk from one side of the road to the other depending on available space and crossing opportunities. Some concerns were raised about the limited study area and the need to expand safe connections through the entire community or to higher priority areas first.

Of the 12 percent of respondents (44 total) who preferred no sidewalks on Spackenkill Rd, many questioned the need for sidewalks, suggesting it would be a waste of resources or detract from the aesthetics of the area. They also pointed to concerns about maintenance responsibilities and legal liability, and the Town's ability to maintain other existing infrastructure. Overall, while there is strong support for sidewalks on Spackenkill Rd, there are differing opinions on the best approach and some concerns about maintenance and cost.

Draft Report Feedback Summary

A draft version of the Spackenkill Sidewalk Feasibility Study was posted online on September 29, 2023 and promoted by the Dutchess County Transportation Council (DCTC) to people who participated in previous outreach for the study. The draft report was also shared broadly via the Town of Poughkeepsie's email list and the Spackenkill Union Free School District's webpage and newsletter. The DCTC presented the draft report at a public meeting of the Poughkeepsie Town Board on October 11, 2023, and shared a comment form to collect feedback. The comment form was open through October 31, 2023. In total, 33 responses were received from 29 households.

Feedback on the draft report varied. Out of the 29 respondents, 19 expressed strong support, citing improved safety, accessibility, and overall quality of life; several of these suggested additional improvements. However, seven respondents were not supportive, including four who indicated that they live on Spackenkill Rd. Several other respondents raised questions but did not take a clear position. The main feedback topics are summarized below:

Maintenance: Concerns were raised about the need to secure external funding and agreements to ease the maintenance burden on adjacent property owners and ensure that sidewalks stay in good condition. Several respondents felt reliance on property owners was unfair and questioned the feasibility of the maintenance options presented in the report.

Extending Sidewalks**:** Many responses suggested extending sidewalks beyond the recommended study area, including on the north side of Spackenkill Rd to Boardman Rd and along Boardman Rd and Zack's Way. There was also interest in extending the walking path along Wilbur Blvd and improving walkability in the Red Oaks Mill area.

Cost: Some residents worried about overall cost to benefit ratio and potential tax increases. One respondent suggested reducing the scope of sidewalk recommendations to help lower the cost.

Intersection Improvements**:** Respondents suggested the need to improve intersections regardless of sidewalk recommendations, including by narrowing the Hagan Dr intersection and aligning Flower Hill and Croft Rd. One respondent suggested considering roundabouts throughout the area. Another pointed out potential traffic slowdowns if the Hasbrouck Rd intersection were narrowed.

Property Values**:** Four respondents who indicated that they live on Spackenkill Rd expressed concerns about potential impacts on their property values and taxes, including that sidewalks would lower their property value due to land being taken. There were also questions about how property taxes would be affected. One was concerned that sidewalks would reduce their privacy. Others said walking should occur elsewhere and that the crash history does not justify sidewalks. One respondent suggested that previous public outreach efforts did not capture the views of people who live on Spackenkill Rd.

This summary, along with the raw feedback, was shared with Town officials for their consideration in pursuing recommendations from the study.

Appendix E

- Count Data:
  - Traffic
  - Intersection Turning Movements
  - Pedestrian & Bicycle

Dutchess County

Traffic Count Hourly Report

ROUTE #: **NY 113** ROAD NAME: **SPACKENKILL RD** FROM: **WILBUR BLVD** TO: **CEDAR AVE CR 74** COUNTY: **Dutchess**

DIRECTION: Eastbound FACTOR GROUP: 30 REC. SERIAL #: SE92 FUNC. CLASS: 16 TOWN:

STATE DIR CODE: 6 WK OF YR: 38 PLACEMENT: 209ft W/O Van Duzer Dr NHS: no LION#:

DATE OF COUNT: 09/18/2023 @ REF MARKER: 113 82011008 JURIS: City BIN:

NOTES LANE 1: ADDL DATA: Class Speed CC Stn: RR CROSSING:

COUNT TYPE: VEHICLES BATCH ID: DCTC List 1 HPMS SAMPLE:

COUNT TAKEN BY: ORG CODE: NDS INITIALS: KCA PROCESSED BY: ORG CODE: NDS INITIALS: LBR

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																											
13	W																											
14	T																											
15	F																											
16	S																											
17	S																											
18	M															**590**	**645**	**760**	**785**	**421**	**292**	**215**	**138**	**75**	**51**			
19	T	**20**	**10**	**9**	**12**	**19**	**42**	**131**	**452**	**396**	**320**	**331**	**387**	**426**	**482**	**634**	**641**	**813**	**873**	**547**	**414**	**305**	**153**	**103**	**42**	7562	873	17
20	W	**27**	**14**	**10**	**8**	**19**	**32**	**166**	**455**	**352**	**247**	**340**	**428**	**440**	**462**	**632**	**715**	**772**	**808**	**494**	**439**	**375**	**173**	**101**	**41**	7550	808	17
21	T	**22**	**15**	**10**	**8**	**17**	**50**	**156**	**484**	**395**	**319**	**311**	**411**	**454**	**460**	**636**	**700**	**821**	**847**	**542**	**517**	**336**	**205**	**106**	**66**	7888	847	17
22	F	**27**	**12**																									
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											

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

																									ADT
24	**13**	**10**	**9**	**18**	**41**	**151**	**464**	**381**	**295**	**327**	**409**	**440**	**468**	**623**	**675**	**792**	**828**	**501**	**416**	**308**	**167**	**96**	**50**	**7506**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
4	84	4	84	828	11%	1.000	1.077

ESTIMATED

AADT

6969

Dutchess County
Traffic Count Hourly Report

ROUTE #: **NY 113** ROAD NAME: **SPACKENKILL RD** FROM: **WILBUR BLVD** TO: **CEDAR AVE CR 74** COUNTY: **Dutchess**
DIRECTION: Westbound FACTOR GROUP: 30 REC. SERIAL #: SE92 FUNC. CLASS: 16 TOWN:
STATE DIR CODE: 7 WK OF YR: 38 PLACEMENT: 209ft W/O Van Duzer Dr NHS: no LION#:
DATE OF COUNT: 09/18/2023 @ REF MARKER: 113 82011008 JURIS: City BIN:
NOTES LANE 1: ADDL DATA: Class Speed CC Stn: RR CROSSING:
COUNT TYPE: VEHICLES BATCH ID: DCTC List 1 HPMS SAMPLE:
COUNT TAKEN BY: ORG CODE: NDS INITIALS: KCA PROCESSED BY: ORG CODE: NDS INITIALS: LBR

		AM												PM													
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
1	F																										
2	S																										
3	S																										
4	M																										
5	T																										
6	W																										
7	T																										
8	F																										
9	S																										
10	S																										
11	M																										
12	T																										
13	W																										
14	T																										
15	F																										
16	S																										
17	S																										
18	M													**455**	**603**	**572**	**485**	**506**	**404**	**191**	**166**	**109**	**53**	**28**			
19	T	**13**	**3**	**10**	**6**	**37**	**84**	**316**	**728**	**859**	**531**	**476**	**448**	**509**	**506**	**547**	**609**	**536**	**512**	**453**	**405**	**261**	**116**	**57**	**36**	8058	859	8
20	W	**21**	**7**	**6**	**10**	**39**	**94**	**313**	**730**	**876**	**525**	**467**	**455**	**458**	**491**	**604**	**565**	**506**	**581**	**567**	**336**	**218**	**103**	**65**	**35**	8072	876	8
21	T	**19**	**9**	**3**	**13**	**31**	**97**	**294**	**694**	**856**	**534**	**523**	**455**	**546**	**490**	**547**	**639**	**561**	**582**	**584**	**381**	**218**	**109**	**68**	**43**	8296	856	8
22	F	**16**	**12**																								
23	S																										
24	S																										
25	M																										
26	T																										
27	W																										
28	T																										
29	F																										
30	S																										

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

																								ADT
17	**8**	**6**	**10**	**36**	**92**	**308**	**717**	**864**	**530**	**489**	**453**	**504**	**486**	**575**	**596**	**522**	**545**	**502**	**328**	**216**	**109**	**61**	**36**	**8010**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
5	85	5	85	864	11%	1.000	1.077

ESTIMATED

AADT

7437

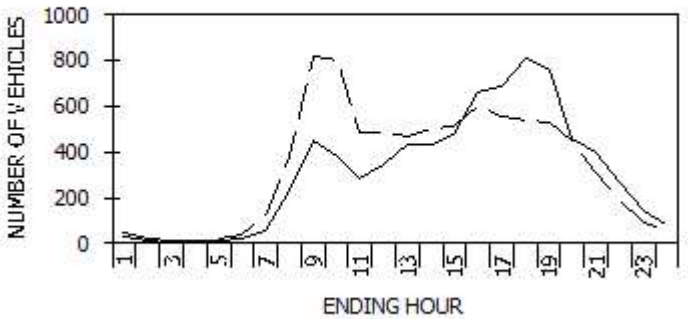
Dutchess County
Classification Count Average Weekday Data Report

ROUTE #: NY 113 ROAD NAME: SPACKENKILL RD YEAR: 2023 STATION: 829904
COUNTY NAME: Dutchess MONTH: September
REGION CODE: 8
FROM: WILBUR BLVD
TO: CEDAR AVE CR 74
REF-MARKER: 113 82011008
END MILEPOINT: 139 NO. OF LANES: 2
FUNC-CLASS: 16 HPMS NO:
STATION NO: 9904 LION#:
COUNT TAKEN BY: ORG CODE: NDS INITIALS: KCA
PROCESSED BY: ORG CODE: NDS INITIALS: LBR BATCH ID: DCTC List 1

DIRECTION	East	West	TOTAL
NUMBER OF VEHICLES	**7473**	**8000**	**15473**
NUMBER OF AXLES	**15020**	**16055**	**31075**
% HEAVY VEHICLES (F4-F13)	**3.64%**	**2.91%**	**3.26%**
% TRUCKS AND BUSES (F3-F13)	**14.17%**	**12.63%**	**13.37%**
AXLE CORRECTION FACTOR	**1.00**	**1.00**	**1.00**

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	42	1	0	0	0	0	0	0	0	0	0	0	**43**
	2:00	0	17	0	0	1	0	0	0	0	0	0	0	0	**18**
	3:00	0	10	1	0	1	0	0	0	0	0	0	0	0	**12**
	4:00	0	10	0	0	1	0	0	0	0	0	0	0	0	**11**
	5:00	0	7	2	0	1	0	0	0	0	0	0	0	0	**10**
	6:00	0	18	4	0	0	0	0	0	0	0	0	0	0	**22**
	7:00	0	49	8	0	1	0	0	0	0	0	0	0	0	**58**
	8:00	0	184	29	7	9	0	0	0	0	0	0	0	0	**229**
	9:00	1	381	45	8	11	1	0	1	0	0	0	0	0	**448**
	10:00	0	300	50	10	18	0	0	2	0	0	0	0	0	**380**
DIRECTION	11:00	0	230	38	2	13	0	0	2	0	0	0	0	0	**285**
East	12:00	0	283	49	1	10	1	0	1	0	0	0	0	0	**345**
	13:00	1	352	52	2	22	1	0	2	0	0	0	0	0	**432**
	14:00	0	370	49	3	13	0	0	1	0	0	0	0	0	**436**
	15:00	0	403	55	2	18	2	0	1	0	0	0	0	0	**481**
	16:00	1	564	66	8	14	3	1	1	0	0	0	0	0	**658**
	17:00	2	571	77	11	19	4	2	0	0	0	0	0	0	**686**
	18:00	1	718	77	2	7	1	1	1	0	0	0	0	0	**808**
	19:00	1	690	55	2	7	1	2	0	0	0	0	0	0	**758**
	20:00	0	408	48	0	6	0	0	0	0	0	0	0	0	**462**
	21:00	1	352	37	2	3	0	0	0	0	0	0	0	0	**395**
	22:00	0	245	22	0	2	0	0	0	0	0	0	0	0	**269**
	23:00	0	132	14	0	2	0	0	0	0	0	0	0	0	**148**
	24:00	0	70	8	0	1	0	0	0	0	0	0	0	0	**79**
TOTAL VEHICLES		**8**	**6406**	**787**	**60**	**180**	**14**	**6**	**12**	**0**	**0**	**0**	**0**	**0**	**7473**
TOTAL AXLES		16	12812	1574	150	360	42	24	42	0	0	0	0	0	15020
ENDING HOUR	1:00	0	28	3	0	0	0	0	0	0	0	0	0	0	**31**
	2:00	0	12	1	0	1	0	0	0	0	0	0	0	0	**14**
	3:00	0	5	0	0	0	0	0	0	0	0	0	0	0	**5**
	4:00	0	5	0	0	1	0	0	0	0	0	0	0	0	**6**
	5:00	0	12	4	0	1	0	0	0	0	0	0	0	0	**17**
	6:00	0	32	6	0	1	0	0	0	0	0	0	0	0	**39**
	7:00	0	99	15	0	6	0	0	0	0	0	0	0	0	**120**
	8:00	0	311	49	11	9	0	0	0	0	0	0	0	0	**380**
	9:00	1	721	70	8	11	1	0	3	0	0	0	0	0	**815**
	10:00	0	696	82	9	14	0	0	2	0	0	0	0	0	**803**
	11:00	0	418	49	2	16	0	0	1	0	0	0	0	0	**486**
DIRECTION	12:00	0	416	55	2	11	0	0	1	1	0	0	0	0	**486**
West	13:00	0	405	49	1	13	0	0	1	0	0	0	0	0	**469**
	14:00	0	437	47	2	14	1	0	3	0	0	0	0	0	**504**
	15:00	0	435	54	9	11	0	0	1	0	0	0	0	0	**510**
	16:00	0	524	57	6	14	1	0	0	0	0	0	0	0	**602**
	17:00	0	486	57	7	8	0	0	0	0	0	0	0	0	**558**
	18:00	0	486	44	2	6	0	0	1	0	0	0	0	0	**539**
	19:00	0	482	40	1	7	0	0	0	0	0	0	0	0	**530**
	20:00	0	403	40	1	5	0	0	0	0	0	0	0	0	**449**
	21:00	0	281	25	0	2	0	0	0	0	0	0	0	0	**308**
	22:00	0	164	18	0	2	0	0	0	0	0	0	0	0	**184**
	23:00	0	86	6	0	0	0	0	0	0	0	0	0	0	**92**
	24:00	0	45	6	0	2	0	0	0	0	0	0	0	0	**53**
TOTAL VEHICLES		**1**	**6989**	**777**	**61**	**155**	**3**	**0**	**13**	**1**	**0**	**0**	**0**	**0**	**8000**
TOTAL AXLES		2	13978	1554	152	310	9	0	46	5	0	0	0	0	16055
GRAND TOTAL VEHICLES		**9**	**13395**	**1564**	**121**	**335**	**17**	**6**	**25**	**1**	**0**	**0**	**0**	**0**	**15473**
GRAND TOTAL AXLES		18	26790	3128	302	670	51	24	88	5	0	0	0	0	31075

TRAFFIC FLOW BY DIRECTION



--- East - -West

PEAK HOUR DATA

DIRECTION	HOUR	COUNT	2-WAY	HOUR	COUNT
East	**18**	**808**	**A.M.**	**9**	**1263**
West	**9**	**815**	**P.M.**	**18**	**1347**

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

Dutchess County
Speed Count Average Weekday Report

Station:	829904	Start date:	Mon 09/18/2023 13:00	Count duration:	86 hours
Route #: NY 113	Road name: SPACKENKILL RD	End date:	Fri 09/22/2023 02:45	Functional class:	16
From:	WILBUR BLVD	County:	Dutchess	Factor group:	30
To:	CEDAR AVE CR 74	Town:		Batch ID:	DCTC List 1
Direction:	East	Speed limit:	40	Count taken by:	Org: NDS Init: KCA
		LION#:		Processed by:	Org: NDS Init: LBR

Speeds, mph

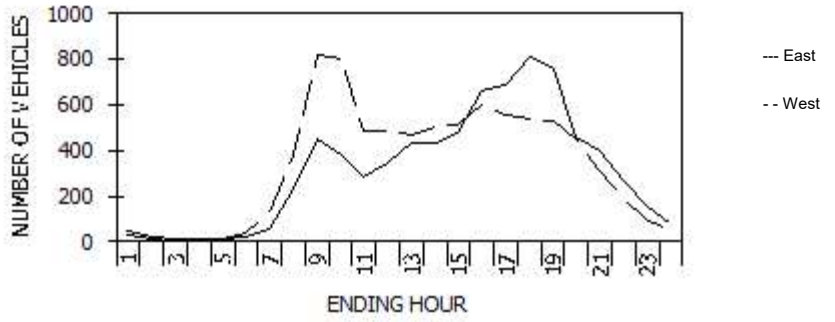
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	0	1	7	20	10	5	1	0	0	0	0	36.4	13.6	2.3	0.0	0.0	43.5	43.6	49.8	44
2:00	0	0	0	1	4	8	4	1	0	0	0	0	0	27.8	5.6	0.0	0.0	0.0	42.0	42.6	47.9	18
3:00	0	0	0	0	1	6	4	0	0	0	0	0	0	36.4	0.0	0.0	0.0	0.0	43.6	43.8	48.0	11
4:00	0	0	0	1	2	5	3	1	0	0	0	0	0	33.3	8.3	0.0	0.0	0.0	42.3	43.0	48.7	12
5:00	0	0	1	0	1	5	2	0	0	0	0	0	0	22.2	0.0	0.0	0.0	0.0	40.4	42.6	46.7	9
6:00	0	0	0	0	3	8	6	2	1	0	0	0	0	45.0	15.0	5.0	0.0	0.0	44.4	44.4	50.0	20
7:00	0	0	0	4	15	24	10	3	0	0	0	0	0	23.2	5.4	0.0	0.0	0.0	41.3	41.9	47.4	56
8:00	8	2	14	37	71	70	23	4	1	0	0	0	0	12.2	2.2	0.4	0.0	0.0	35.6	38.9	44.6	230
9:00	34	42	61	100	137	65	10	1	0	0	0	0	0	2.4	0.2	0.0	0.0	0.0	29.8	34.4	40.7	450
10:00	10	14	39	83	128	91	16	1	0	0	0	0	0	4.5	0.3	0.0	0.0	0.0	33.9	36.8	42.8	382
11:00	0	0	11	41	92	97	36	7	0	0	0	0	0	15.1	2.5	0.0	0.0	0.0	39.0	39.9	45.1	284
12:00	2	7	17	44	116	114	40	4	0	0	0	0	0	12.8	1.2	0.0	0.0	0.0	37.7	39.4	44.7	344
13:00	4	8	23	75	144	131	41	4	2	0	0	0	0	10.9	1.4	0.5	0.0	0.0	36.9	38.7	44.4	432
14:00	2	4	23	73	161	122	44	6	1	0	0	0	0	11.7	1.6	0.2	0.0	0.0	37.5	38.7	44.5	436
15:00	16	26	37	103	167	104	24	3	1	0	0	0	0	5.8	0.8	0.2	0.0	0.0	33.5	36.8	42.9	481
16:00	125	98	109	124	136	56	10	1	0	0	0	0	0	1.7	0.2	0.0	0.0	0.0	24.7	29.9	38.9	659
17:00	112	106	114	131	136	74	13	2	0	0	0	0	0	2.2	0.3	0.0	0.0	0.0	25.5	30.5	39.5	688
18:00	110	110	135	184	177	79	14	0	0	0	0	0	0	1.7	0.0	0.0	0.0	0.0	26.5	31.4	39.2	809
19:00	156	124	119	153	127	68	12	2	0	0	0	0	0	1.8	0.3	0.0	0.0	0.0	24.1	29.3	38.8	761
20:00	5	12	48	112	159	100	25	2	0	0	0	0	0	5.8	0.4	0.0	0.0	0.0	34.9	36.8	42.9	463
21:00	5	11	30	81	143	96	24	4	0	0	0	0	0	7.1	1.0	0.0	0.0	0.0	35.5	37.5	43.4	394
22:00	0	2	10	30	94	98	33	4	0	0	0	0	0	13.7	1.5	0.0	0.0	0.0	38.9	40.0	44.9	271
23:00	0	1	2	10	38	66	24	7	2	0	0	0	0	22.0	6.0	1.3	0.0	0.0	40.9	41.9	47.2	150
24:00	0	0	0	4	18	32	20	5	0	0	0	0	0	31.6	6.3	0.0	0.0	0.0	42.2	42.8	48.3	79
Avg. Daily Total	589	567	793	1392	2077	1539	448	69	9	0	0	0	0	7.0	1.0	0.1	0.0	0.0	30.7	36.0	43.1	7483
Percent	7.9%	7.6%	10.6%	18.6%	27.8%	20.6%	6.0%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	7.9%	15.4%	26.0%	44.6%	72.4%	93.0%	99.0%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	25	24	33	58	87	64	19	3	0	0	0	0	0									312

	Avg. Speed	50th% Speed	85th% Speed
East	30.7	36.0	43.1
West	36.5	38.1	43.5

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	18	809	A.M.	9	1266
West	9	816	P.M.	18	1348

TRAFFIC FLOW BY DIRECTION



Dutchess County
Speed Count Average Weekday Report

Station:	829904	Start date:	Mon 09/18/2023 13:00	Count duration:	86 hours
Route #: NY 113	Road name: SPACKENKILL RD	End date:	Fri 09/22/2023 02:45	Functional class:	16
From:	WILBUR BLVD	County:	Dutchess	Factor group:	30
To:	CEDAR AVE CR 74	Town:		Batch ID:	DCTC List 1
Direction:	West	Speed limit:	40	Count taken by:	Org: NDS Init: KCA
		LION#:		Processed by:	Org: NDS Init: LBR

Speeds, mph

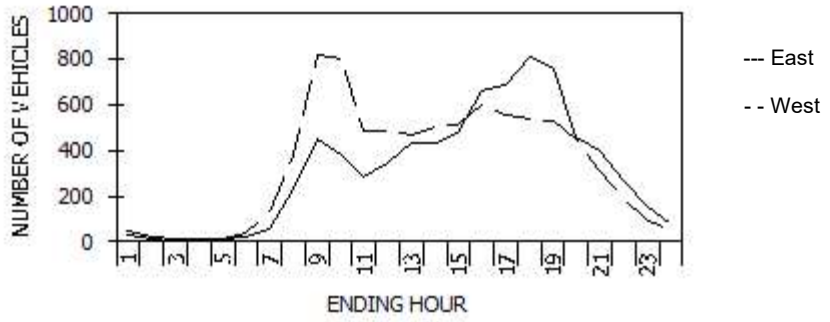
Hour	0.0-20.0	20.1-25.0	25.1-30.0	30.1-35.0	35.1-40.0	40.1-45.0	45.1-50.0	50.1-55.0	55.1-60.0	60.1-65.0	65.1-70.0	70.1-75.0	75.1-95.0	% Exc 45.0	% Exc 50.0	% Exc 55.0	% Exc 60.0	% Exc 65.0	Avg	50th%	85th%	Total
1:00	0	0	0	2	6	14	4	2	0	0	0	0	0	21.4	7.1	0.0	0.0	0.0	41.6	42.2	47.3	28
2:00	0	0	0	1	3	6	2	2	0	0	0	0	0	28.6	14.3	0.0	0.0	0.0	42.2	42.6	49.8	14
3:00	0	0	0	0	2	2	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	39.8	40.0	43.6	4
4:00	0	0	0	1	1	3	1	0	0	0	0	0	0	16.7	0.0	0.0	0.0	0.0	40.2	41.7	45.6	6
5:00	0	0	0	1	3	7	4	1	0	0	0	0	0	31.3	6.3	0.0	0.0	0.0	42.2	42.9	48.3	16
6:00	0	0	1	2	6	15	10	3	2	0	0	0	0	38.5	12.8	5.1	0.0	0.0	42.7	43.6	49.6	39
7:00	0	0	2	4	32	53	24	5	2	0	0	0	0	25.4	5.7	1.6	0.0	0.0	41.6	42.2	47.7	122
8:00	2	4	16	66	140	117	30	5	1	0	0	0	0	9.4	1.6	0.3	0.0	0.0	37.5	38.7	44.1	381
9:00	13	13	46	234	354	142	12	1	1	0	0	0	0	1.7	0.2	0.1	0.0	0.0	34.7	36.5	41.2	816
10:00	39	24	48	182	307	168	32	3	1	0	0	0	0	4.5	0.5	0.1	0.0	0.0	33.2	36.8	42.5	804
11:00	0	1	5	58	188	188	43	3	1	0	0	0	0	9.7	0.8	0.2	0.0	0.0	39.2	39.8	44.4	487
12:00	0	2	7	60	218	159	35	4	0	0	0	0	0	8.0	0.8	0.0	0.0	0.0	38.6	39.0	44.0	485
13:00	0	1	7	45	207	177	29	3	0	0	0	0	0	6.8	0.6	0.0	0.0	0.0	39.0	39.4	44.0	469
14:00	0	2	13	75	208	165	38	4	0	0	0	0	0	8.3	0.8	0.0	0.0	0.0	38.3	39.0	44.0	505
15:00	0	2	14	96	230	142	22	3	1	0	0	0	0	5.1	0.8	0.2	0.0	0.0	37.6	38.2	43.3	510
16:00	30	16	56	160	232	89	19	1	0	0	0	0	0	3.3	0.2	0.0	0.0	0.0	32.4	35.9	41.1	603
17:00	9	8	27	107	245	138	24	2	0	0	0	0	0	4.6	0.4	0.0	0.0	0.0	35.8	37.7	42.9	560
18:00	5	4	18	117	242	130	22	1	0	0	0	0	0	4.3	0.2	0.0	0.0	0.0	36.4	37.6	42.8	539
19:00	8	7	25	113	223	134	18	2	0	1	0	0	0	4.0	0.6	0.2	0.2	0.0	35.8	37.6	42.9	531
20:00	0	2	15	92	198	116	24	2	0	0	0	0	0	5.8	0.4	0.0	0.0	0.0	37.4	38.0	43.3	449
21:00	0	1	8	52	134	91	21	3	0	0	0	0	0	7.7	1.0	0.0	0.0	0.0	38.0	38.6	43.8	310
22:00	0	1	5	21	71	60	22	4	0	0	0	0	0	14.1	2.2	0.0	0.0	0.0	39.0	39.6	44.9	184
23:00	0	1	1	6	27	42	13	2	0	0	0	0	0	16.3	2.2	0.0	0.0	0.0	40.3	41.4	45.5	92
24:00	0	0	2	3	14	22	8	2	1	0	0	0	0	21.2	5.8	1.9	0.0	0.0	40.6	41.6	47.0	52
Avg. Daily Total	106	89	316	1498	3291	2180	457	58	10	1	0	0	0	6.6	0.9	0.1	0.0	0.0	36.5	38.1	43.5	8006
Percent	1.3%	1.1%	3.9%	18.7%	41.1%	27.2%	5.7%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%									
Cum. Percent	1.3%	2.4%	6.4%	25.1%	66.2%	93.4%	99.1%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%									
Average hour	4	4	13	62	137	91	19	2	0	0	0	0	0									334

	Avg. Speed	50th% Speed	85th% Speed
East	30.7	36.0	43.1
West	36.5	38.1	43.5

Peak Hour Data

Direction	Hour	Count	2-way	Hour	Count
East	18	809	A.M.	9	1266
West	9	816	P.M.	18	1348

TRAFFIC FLOW BY DIRECTION

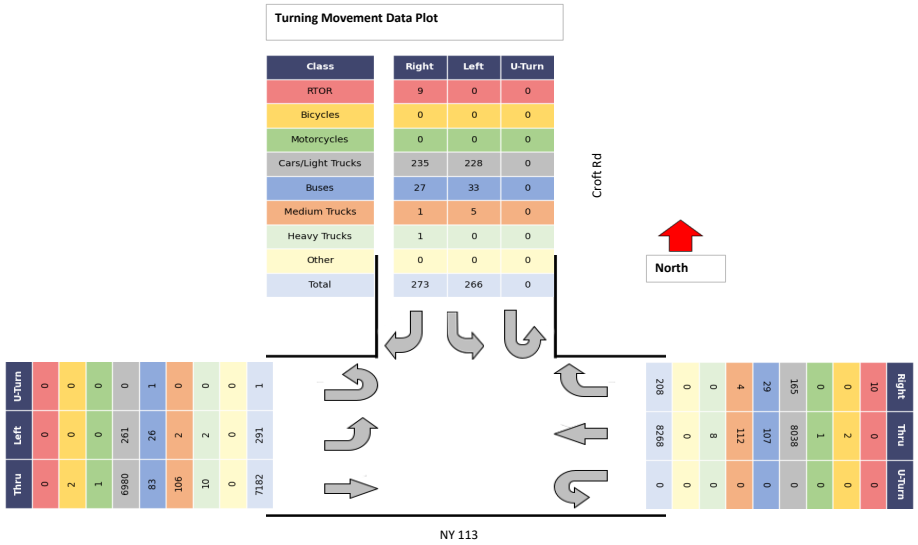


SUMMARY	
Project	DCTC
Project Code	WW42
Site Name	BIKEPEDC04a
Legs and Movements	All Processed Legs & Movements
Bin Size	15.0
Start Time	07:00
End Time	18:45
Location	NY 113 and Croft Rd
Latitude and Longitude	41.65882927005452, -73.9239460658827

	Start	End	PHF
AM Peak	2022-10-13 07:30:00	2022-10-13 08:30:00	0.93
PM Peak	2022-10-13 16:30:00	2022-10-13 17:30:00	0.95

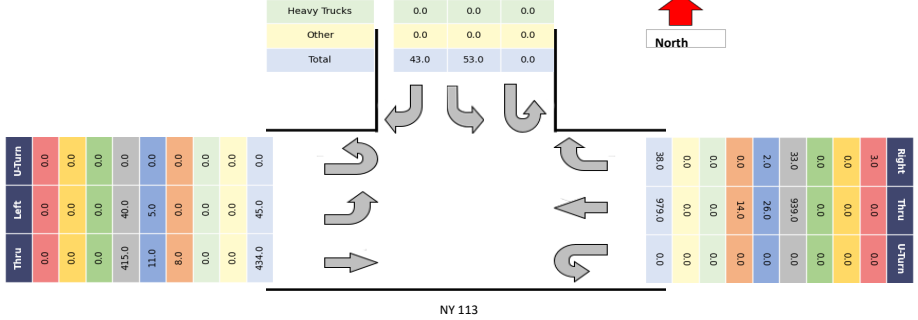
Turning Movement Data Plot

Class	Right	Left	U-Turn
RTOR	9	0	0
Bicycles	0	0	0
Motorcycles	0	0	0
Cars/Light Trucks	235	228	0
Buses	27	33	0
Medium Trucks	1	5	0
Heavy Trucks	1	0	0
Other	0	0	0
Total	273	266	0



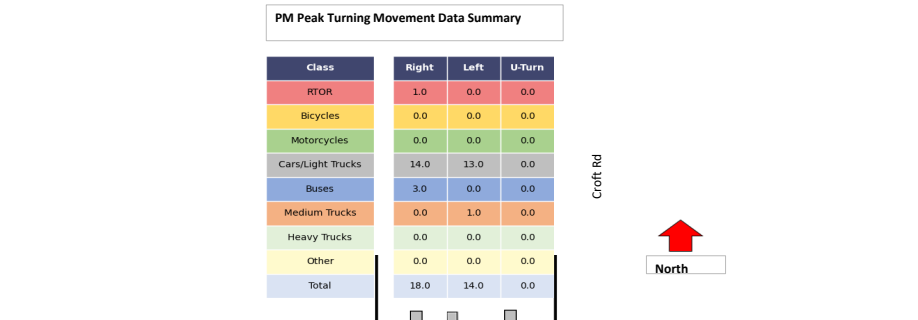
AM Peak Turning Movement Data Summary

Class	Right	Left	U-Turn
RTOR	1.0	0.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	35.0	48.0	0.0
Buses	7.0	5.0	0.0
Medium Trucks	0.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Other	0.0	0.0	0.0
Total	43.0	53.0	0.0



PM Peak Turning Movement Data Summary

Class	Right	Left	U-Turn
RTOR	1.0	0.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	14.0	13.0	0.0
Buses	3.0	0.0	0.0
Medium Trucks	0.0	1.0	0.0
Heavy Trucks	0.0	0.0	0.0
Other	0.0	0.0	0.0
Total	18.0	14.0	0.0

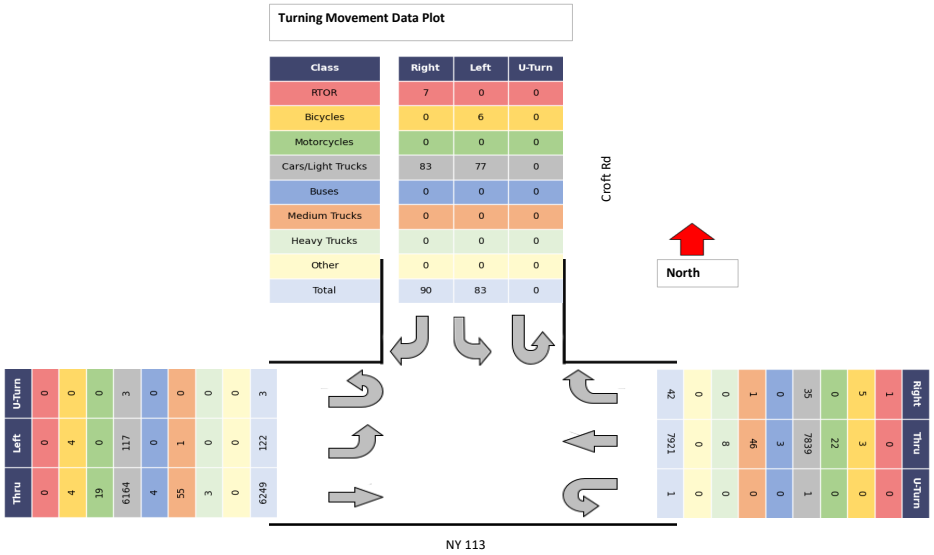


SUMMARY	
Project	DCTC
Project Code	WW42
Site Name	BIKEPEDC04a
Legs and Movements	All Processed Legs & Movements
Bin Size	15.0
Start Time	07:00
End Time	18:45
Location	NY 113 and Croft Rd
Latitude and Longitude	41.65882927005452, -73.9239460658827

	Start	End	PHF
AM Peak	2022-10-15 11:00:00	2022-10-15 12:00:00	0.96
PM Peak	2022-10-15 14:30:00	2022-10-15 15:30:00	0.93

Turning Movement Data Plot

Class	Right	Left	U-Turn
RTOR	7	0	0
Bicycles	0	6	0
Motorcycles	0	0	0
Cars/Light Trucks	83	77	0
Buses	0	0	0
Medium Trucks	0	0	0
Heavy Trucks	0	0	0
Other	0	0	0
Total	90	83	0



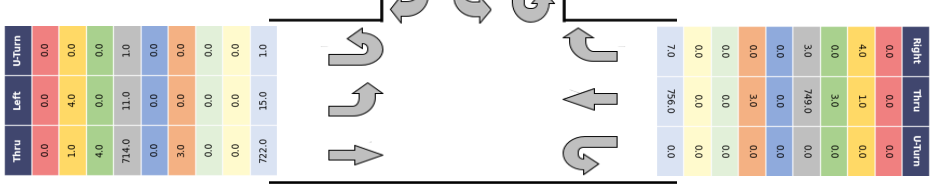
AM Peak Turning Movement Data Summary

Class	Right	Left	U-Turn
RTOR	1.0	0.0	0.0
Bicycles	0.0	1.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	10.0	4.0	0.0
Buses	0.0	0.0	0.0
Medium Trucks	0.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Other	0.0	0.0	0.0
Total	11.0	5.0	0.0

NY 113

PM Peak Turning Movement Data Summary

Class	Right	Left	U-Turn
RTOR	0.0	0.0	0.0
Bicycles	0.0	5.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	8.0	14.0	0.0
Buses	0.0	0.0	0.0
Medium Trucks	0.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Other	0.0	0.0	0.0
Total	8.0	19.0	0.0

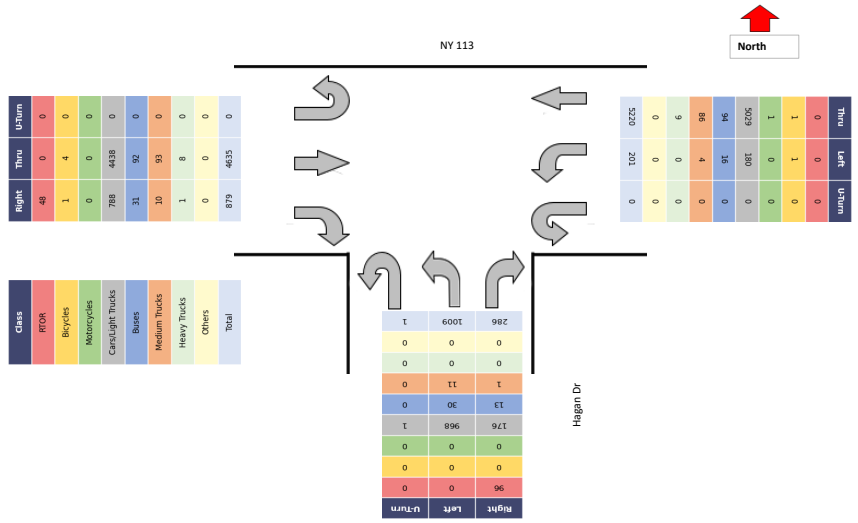


NY 113

SUMMARY	
Project	DCTC
Project Code	WW42
Site Name	BIKEPEDC01a
Legs and Movements	All Processed Legs & Movements
Bin Size	15.0
Start Time	07:00
End Time	18:45
Location	NY 113 and Hagan Dr
Latitude and Longitude	41.659346995227146, -73.9146516274128

	Start	End	PHF
AM Peak	2022-10-13 07:15:00	2022-10-13 08:15:00	0.89
PM Peak	2022-10-13 14:30:00	2022-10-13 15:30:00	0.9

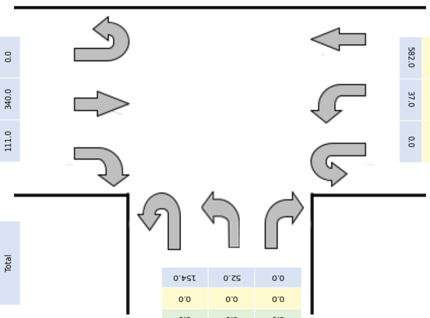
Turning Movement Data Plot



AM Peak Turning Movement Data Summary

NY 113

North



Hagan Dr

Eastbound (NY 113)

Class	U-Turn	Thru	Right
RTOR	0.0	0.0	1.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	0.0	321.0	106.0
Buses	0.0	13.0	3.0
Medium Trucks	0.0	6.0	1.0
Heavy Trucks	0.0	0.0	0.0
Others	0.0	0.0	0.0
Total	0.0	340.0	111.0

Westbound (NY 113)

Class	Thru	Left	U-Turn
RTOR	0.0	0.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	557.0	29.0	0.0
Buses	16.0	8.0	0.0
Medium Trucks	9.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Others	0.0	0.0	0.0
Total	582.0	37.0	0.0

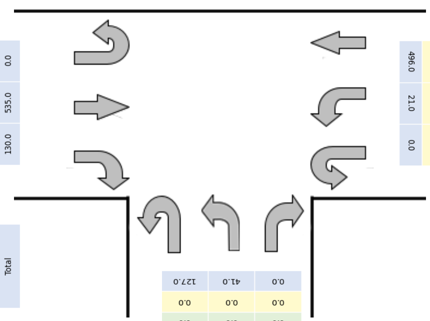
Northbound (Hagan Dr)

Class	Left	Right	U-Turn
RTOR	0.0	6.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	146.0	44.0	0.0
Buses	6.0	2.0	0.0
Medium Trucks	2.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Others	0.0	0.0	0.0
Total	154.0	52.0	0.0

PM Peak Turning Movement Data Summary

NY 113

North



Hagan Dr

Eastbound (NY 113)

Class	U-Turn	Thru	Right
RTOR	0.0	0.0	4.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	0.0	501.0	118.0
Buses	0.0	24.0	8.0
Medium Trucks	0.0	10.0	0.0
Heavy Trucks	0.0	0.0	0.0
Others	0.0	0.0	0.0
Total	0.0	535.0	130.0

Westbound (NY 113)

Class	Thru	Left	U-Turn
RTOR	0.0	0.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	470.0	19.0	0.0
Buses	19.0	2.0	0.0
Medium Trucks	5.0	0.0	0.0
Heavy Trucks	2.0	0.0	0.0
Others	0.0	0.0	0.0
Total	496.0	21.0	0.0

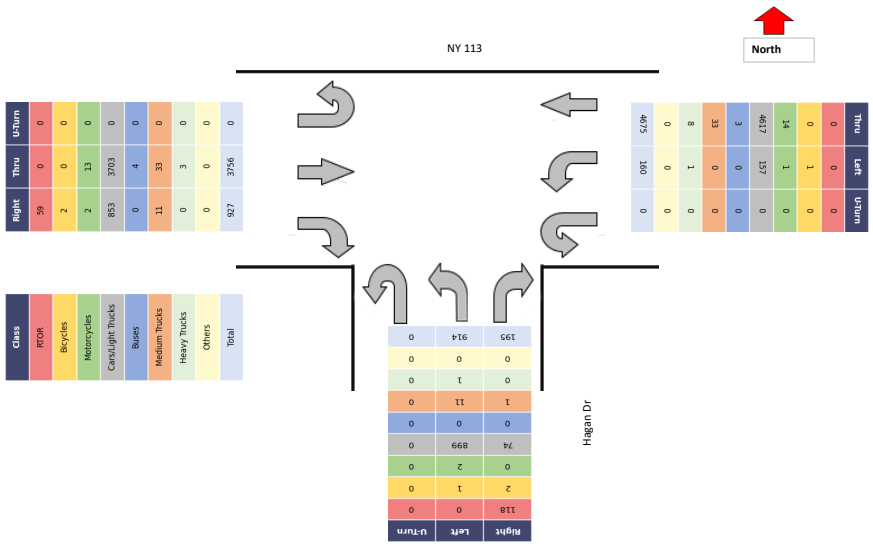
Northbound (Hagan Dr)

Class	Left	Right	U-Turn
RTOR	0.0	6.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	121.0	30.0	0.0
Buses	6.0	5.0	0.0
Medium Trucks	0.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Others	0.0	0.0	0.0
Total	127.0	41.0	0.0

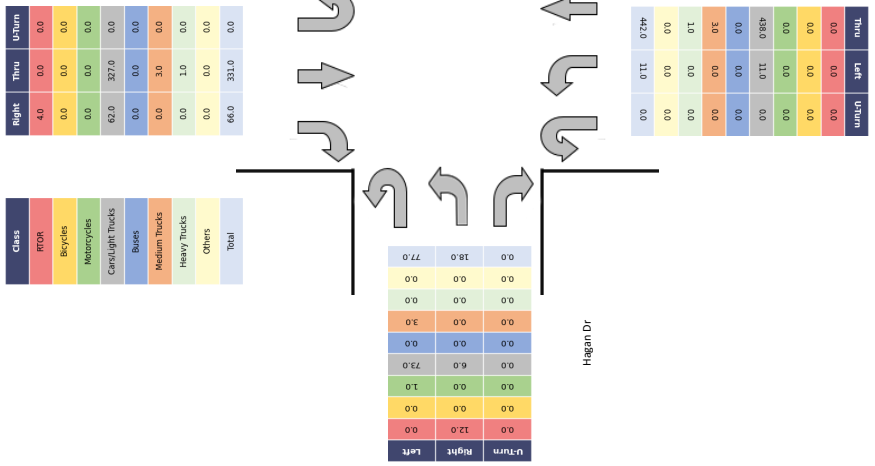
SUMMARY	
Project	DCTC
Project Code	WW42
Site Name	BIKEPEDC01a
Legs and Movements	All Processed Legs & Movements
Bin Size	15.0
Start Time	07:00
End Time	18:45
Location	NY 113 and Hagan Dr
Latitude and Longitude	41.659346995227146, -73.9146516274128

	Start	End	PHF
AM Peak	2022-10-15 10:30:00	2022-10-15 11:30:00	0.96
PM Peak	2022-10-15 14:15:00	2022-10-15 15:15:00	0.97

Turning Movement Data Plot



AM Peak Turning Movement Data Summary

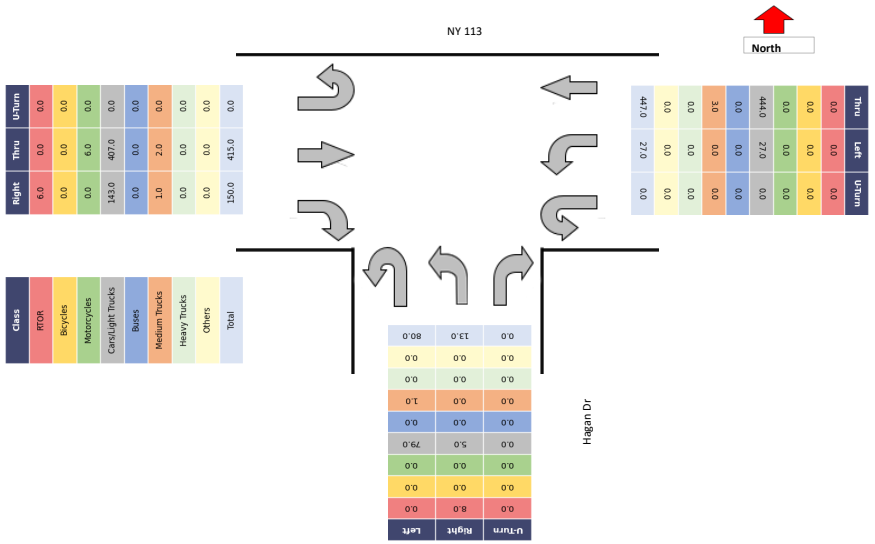


Class	RTOR	Bicycles	Motorcycles	Cars/Light Trucks	Buses	Medium Trucks	Heavy Trucks	Others	Total
UTurn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thru	0.0	0.0	0.0	327.0	0.0	3.0	1.0	0.0	331.0
Right	4.0	0.0	0.0	62.0	0.0	0.0	0.0	0.0	66.0

UTurn	Left	Thru
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	11.0	438.0
0.0	0.0	3.0
0.0	0.0	1.0
0.0	0.0	0.0
0.0	0.0	442.0

U-Turn	Right	Left
0.0	18.0	77.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	3.0
0.0	0.0	0.0
0.0	6.0	73.0
0.0	0.0	1.0
0.0	0.0	0.0
0.0	12.0	0.0
0.0	0.0	0.0

PM Peak Turning Movement Data Summary



Class	RTOR	Bicycles	Motorcycles	Cars/Light Trucks	Buses	Medium Trucks	Heavy Trucks	Others	Total
UTurn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thru	0.0	0.0	6.0	407.0	0.0	2.0	0.0	0.0	415.0
Right	6.0	0.0	0.0	143.0	0.0	1.0	0.0	0.0	150.0

UTurn	Left	Thru
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	27.0	444.0
0.0	0.0	3.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	27.0	447.0

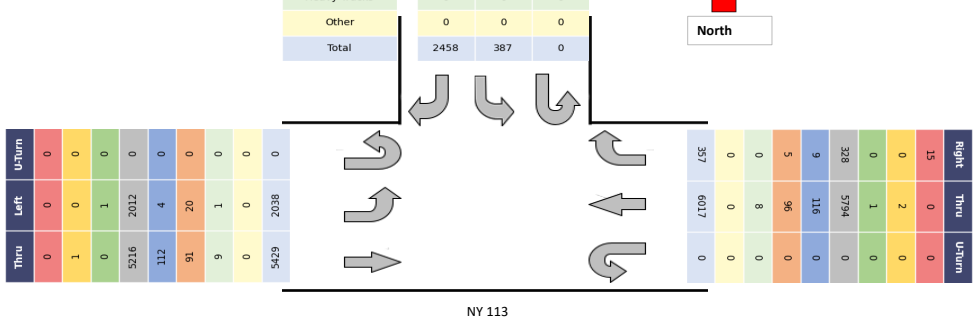
U-Turn	Right	Left
0.0	13.0	80.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	0.0	1.0
0.0	0.0	0.0
0.0	5.0	79.0
0.0	0.0	0.0
0.0	0.0	0.0
0.0	8.0	0.0
0.0	0.0	0.0

SUMMARY	
Project	DCTC
Project Code	WW42
Site Name	BIKEPEDC02a
Legs and Movements	All Processed Legs & Movements
Bin Size	15.0
Start Time	07:00
End Time	18:45
Location	NY 113 and Wilbur Blvd
Latitude and Longitude	41.65947765306973, -73.92076647025654

	Start	End	PHF
AM Peak	2022-10-13 07:30:00	2022-10-13 08:30:00	0.97
PM Peak	2022-10-13 16:30:00	2022-10-13 17:30:00	0.94

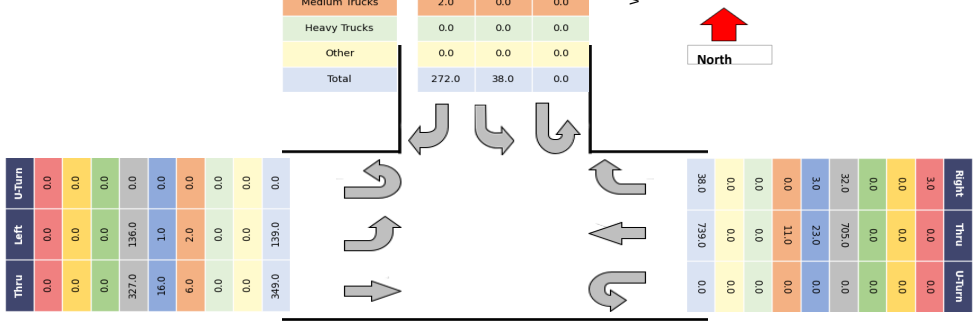
Turning Movement Data Plot

Class	Right	Left	U-Turn
RTOR	0	0	0
Bicycles	0	0	0
Motorcycles	0	0	0
Cars/Light Trucks	2416	369	0
Buses	22	10	0
Medium Trucks	20	8	0
Heavy Trucks	0	0	0
Other	0	0	0
Total	2458	387	0



AM Peak Turning Movement Data Summary

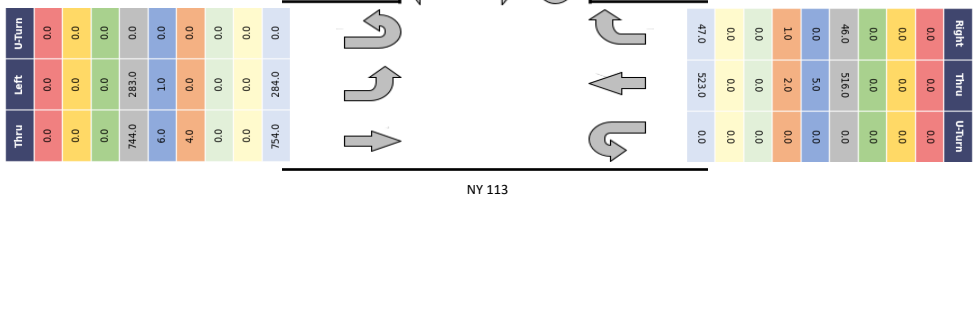
Class	Right	Left	U-Turn
RTOR	0.0	0.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	264.0	36.0	0.0
Buses	6.0	2.0	0.0
Medium Trucks	2.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Other	0.0	0.0	0.0
Total	272.0	38.0	0.0



NY 113

PM Peak Turning Movement Data Summary

Class	Right	Left	U-Turn
RTOR	0.0	0.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	237.0	48.0	0.0
Buses	1.0	0.0	0.0
Medium Trucks	2.0	1.0	0.0
Heavy Trucks	0.0	0.0	0.0
Other	0.0	0.0	0.0
Total	240.0	49.0	0.0



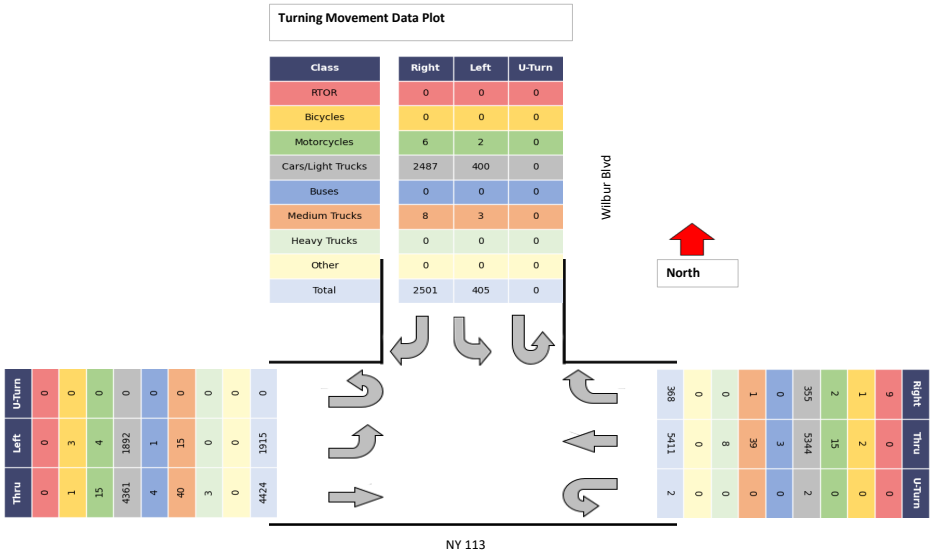
NY 113

SUMMARY	
Project	DCTC
Project Code	WW42
Site Name	BIKEPEDC02a
Legs and Movements	All Processed Legs & Movements
Bin Size	15.0
Start Time	07:00
End Time	18:45
Location	NY 113 and Wilbur Blvd
Latitude and Longitude	41.65947765306973, -73.92076647025654

	Start	End	PHF
AM Peak	2022-10-15 11:00:00	2022-10-15 12:00:00	0.98
PM Peak	2022-10-15 14:15:00	2022-10-15 15:15:00	0.96

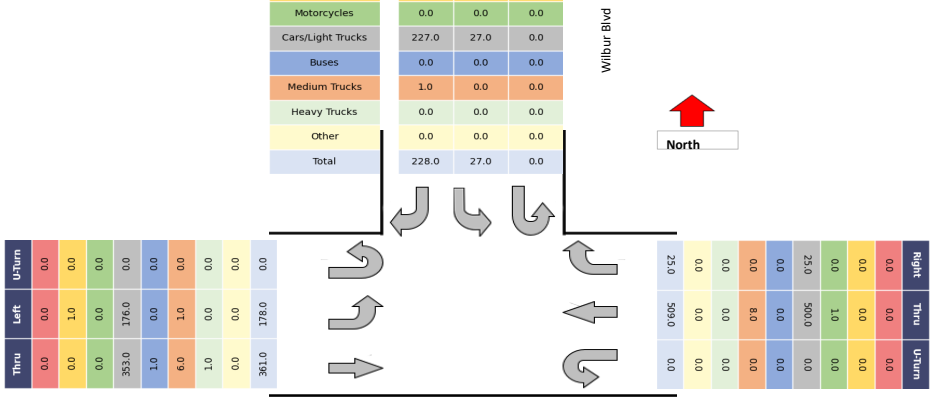
Turning Movement Data Plot

Class	Right	Left	U-Turn
RTOR	0	0	0
Bicycles	0	0	0
Motorcycles	6	2	0
Cars/Light Trucks	2487	400	0
Buses	0	0	0
Medium Trucks	8	3	0
Heavy Trucks	0	0	0
Other	0	0	0
Total	2501	405	0



AM Peak Turning Movement Data Summary

Class	Right	Left	U-Turn
RTOR	0.0	0.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0
Cars/Light Trucks	227.0	27.0	0.0
Buses	0.0	0.0	0.0
Medium Trucks	1.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Other	0.0	0.0	0.0
Total	228.0	27.0	0.0



NY 113

PM Peak Turning Movement Data Summary

Class	Right	Left	U-Turn
RTOR	0.0	0.0	0.0
Bicycles	0.0	0.0	0.0
Motorcycles	2.0	0.0	0.0
Cars/Light Trucks	258.0	66.0	0.0
Buses	0.0	0.0	0.0
Medium Trucks	1.0	0.0	0.0
Heavy Trucks	0.0	0.0	0.0
Other	0.0	0.0	0.0
Total	261.0	66.0	0.0

NY 113

Dutchess County Transportation Council

Year	2022
Month	October
Count Type	Video
Duration	2-Day/24-Hour
Location Type	Intersection
Municipality	T/Poughkeepsie
Location	Spackenkill Rd and Croft Rd
Location Description	89' E/O Flower Hill Rd
Site ID, Address, or Station #	BIKEPEDC04a
GPS Latitude	41.65898005
GPS Longitude	-73.92351326
Week	10/10/2022

Survey Dates		**High Temp**	**Low Temp**	**Weather**
Thursday	13-Oct	73	46	Cloudy
Saturday	15-Oct	70	39	Partly Cloudy

Data summary - all movements

	2 hr*			**12 hr****		
	Ped	**Bike**	**Total**	**Ped**	**Bike**	**Total**
Thursday	10	1	11	47	6	53
Saturday	1	1	2	14	24	38

* Weekday is 4-6pm, weekend is 12-2pm **7am-7pm

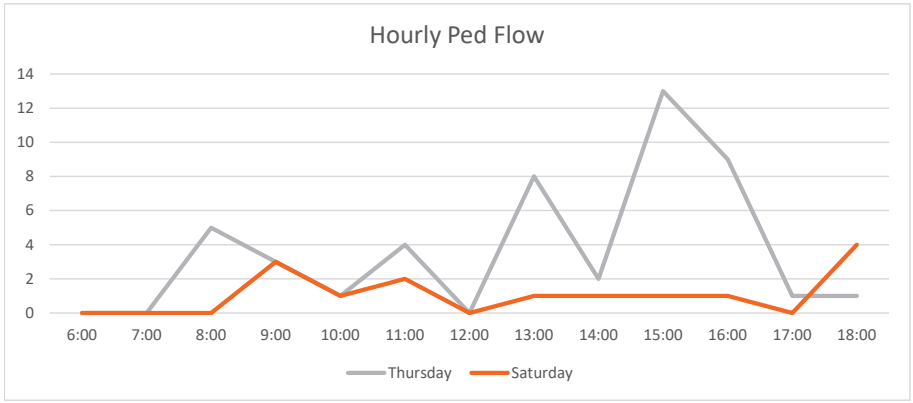
2-Day/24-Hour Total

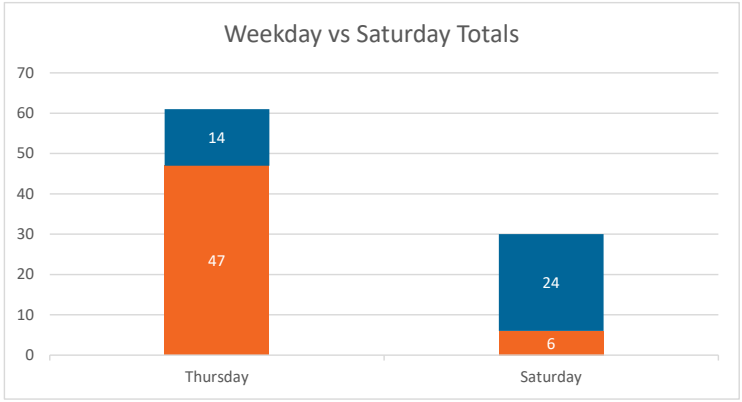
Class	**Total**
Ped	61
Bike	30
Total	91

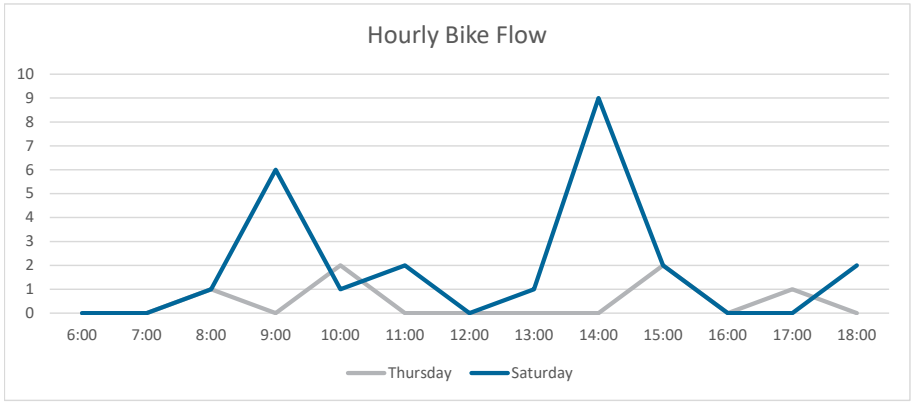
	Intersection leg (for ped counts only)				
	South	**East**	**North**	**West**	**Total**
Thursday	23	2	7	15	47
Saturday	8	0	2	4	14
2-Day Total	**31**	**2**	**9**	**19**	**61**

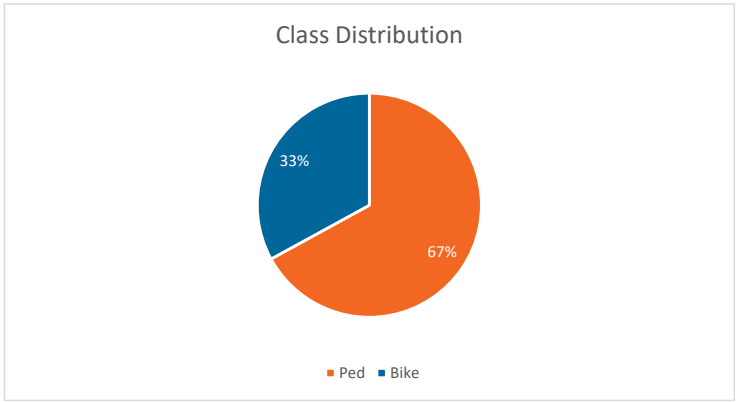
Dutchess County Transportation Council

Year	2022
Month	October
Count Type	Video
Duration	2-Day/24-Hour
Location Type	Intersection
Municipality	T/Poughkeepsie
Location	Spackenkill Rd and Croft Rd
Location Description	89' E/O Flower Hill Rd
Site ID, Address, or Station #	BIKEPEDC04a
GPS Latitude	41.65898005
GPS Longitude	-73.92351326
Week	10/10/2022









Dutchess County Transportation Council

Year	2022
Month	October
Count Type	Video
Duration	2-Day/24-Hour
Location Type	Intersection
Municipality	T/Poughkeepsie
Location	Spackenkill Rd and Hagan Dr
Location Description	69' E/O Hagan Dr
Site ID, Address, or Station #	BIKEPEDC01a
GPS Latitude	41.65923073
GPS Longitude	-73.91416277
Week	10/10/2022

Survey Dates		**High Temp**	**Low Temp**	**Weather**
Thursday	13-Oct	73	46	Cloudy
Saturday	15-Oct	70	39	Partly Cloudy

Data summary - all movements

	2 hr*			**12 hr****		
	Ped	**Bike**	**Total**	**Ped**	**Bike**	**Total**
Thursday	11	10	21	58	12	70
Saturday	2	1	3	13	6	19

* Weekday is 4-6pm, weekend is 12-2pm **7am-7pm

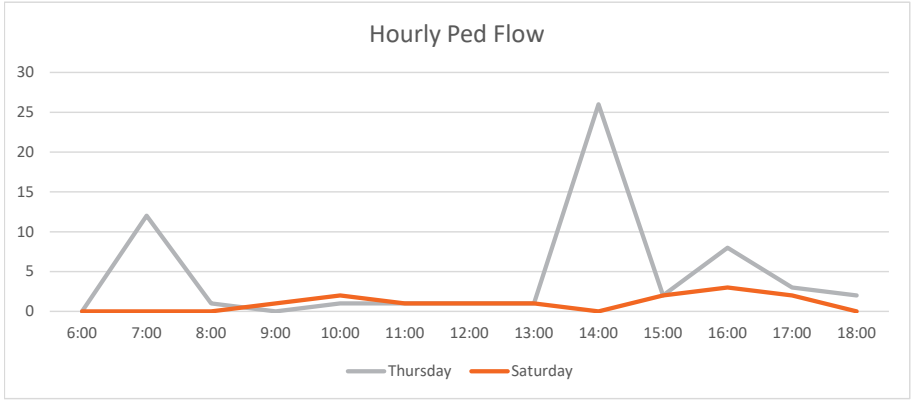
2-Day/24-Hour Total

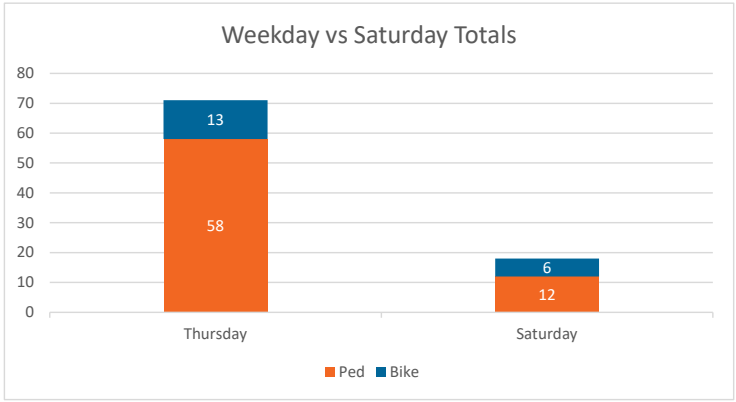
Class	**Total**
Ped	71
Bike	18
Total	89

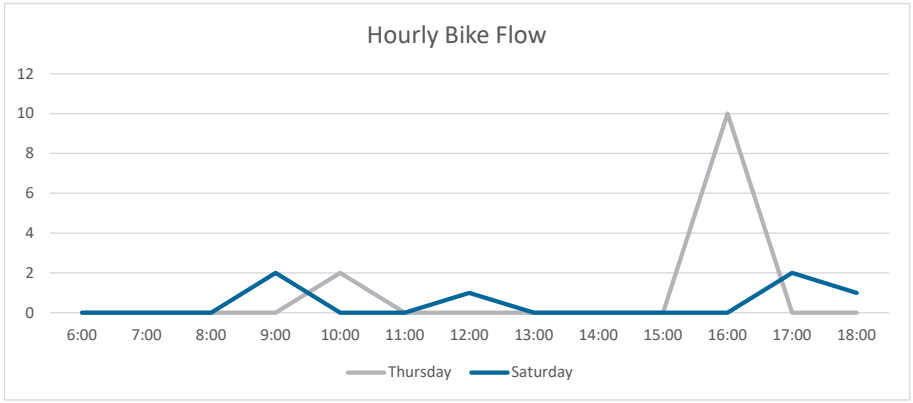
	Intersection leg (for ped counts only)				
	South	**East**	**North**	**West**	**Total**
Thursday	40	1	11	6	58
Saturday	8	0	5	0	13
2-Day Total	**48**	**1**	**16**	**6**	**71**

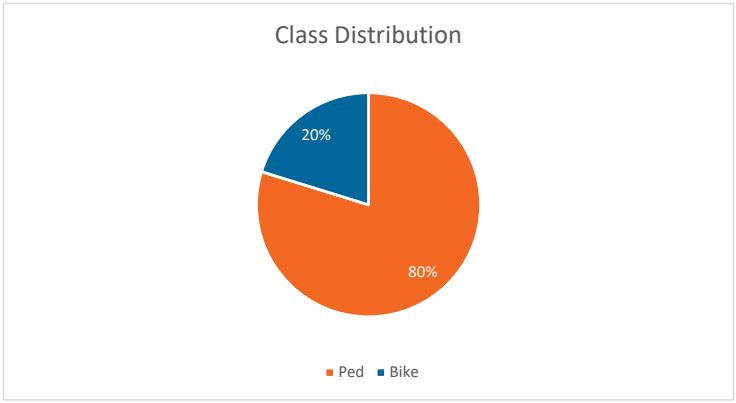
Dutchess County Transportation Council

Year	2022
Month	October
Count Type	Video
Duration	2-Day/24-Hour
Location Type	Intersection
Municipality	T/Poughkeepsie
Location	Spackenkill Rd and Hagan Dr
Location Description	69' E/O Hagan Dr
Site ID, Address, or Station #	BIKEPEDC01a
GPS Latitude	41.65923073
GPS Longitude	-73.91416277
Week	10/10/2022









Dutchess County Transportation Council

Year	2022
Month	October
Count Type	Video
Duration	2-Day/24-Hour
Location Type	Intersection
Municipality	T/Poughkeepsie
Location	NY 113 and Wilbur Blvd
Location Description	158' E/O Wilbur Blvd
Site ID, Address, or Station #	BIKEPEDC02a
GPS Latitude	41.65973051
GPS Longitude	-73.92011983
Week	10/10/2022

Survey Dates		**High Temp**	**Low Temp**	**Weather**
Thursday	13-Oct	73	46	Cloudy
Saturday	15-Oct	70	39	Partly Cloudy

	Data summary - all movements					
	2 hr*			**12 hr****		
	Ped	**Bike**	**Total**	**Ped**	**Bike**	**Total**
Thursday	5	3	8	24	10	34
Saturday	3	1	4	13	16	29

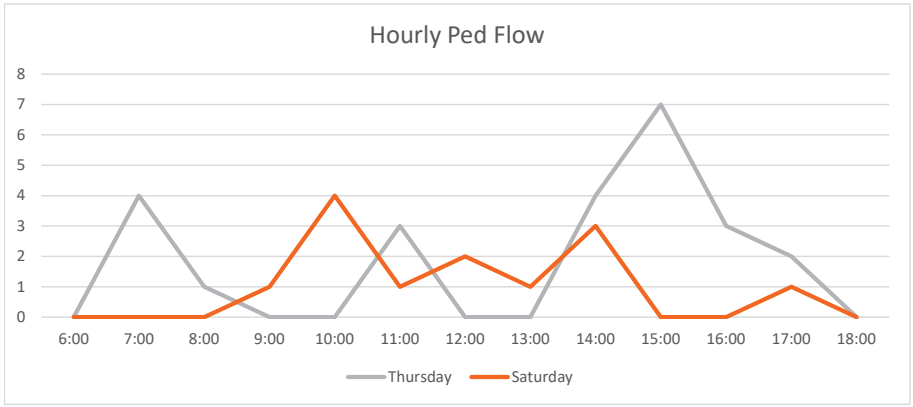
* Weekday is 4-6pm, weekend is 12-2pm **7am-7pm

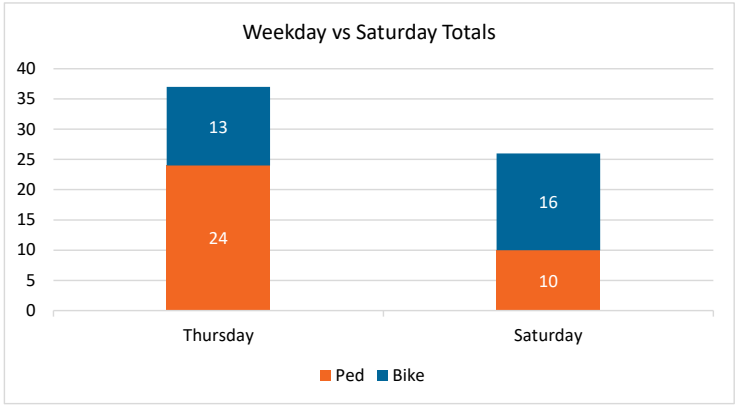
2-Day/24-Hour Total	
Class	**Total**
Ped	37
Bike	26
Total	63

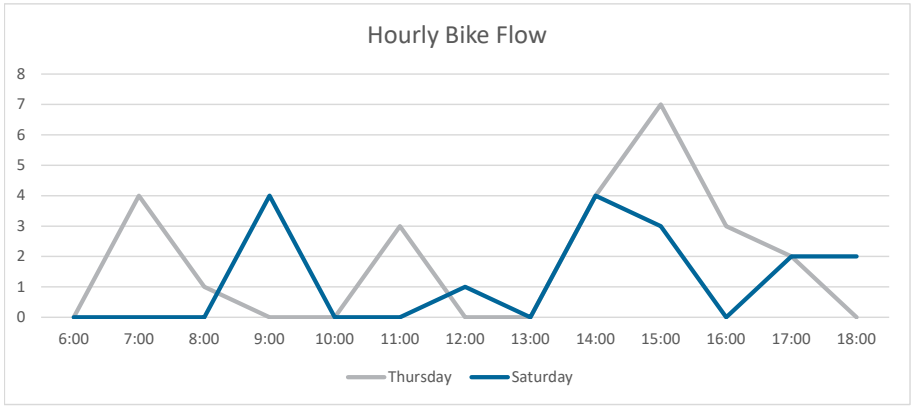
	Intersection leg (for ped counts only)				
	South	**East**	**North**	**West**	**Total**
Thursday	15	0	7	2	24
Saturday	10	1	2	0	13
2-Day Total	**25**	**1**	**9**	**2**	**37**

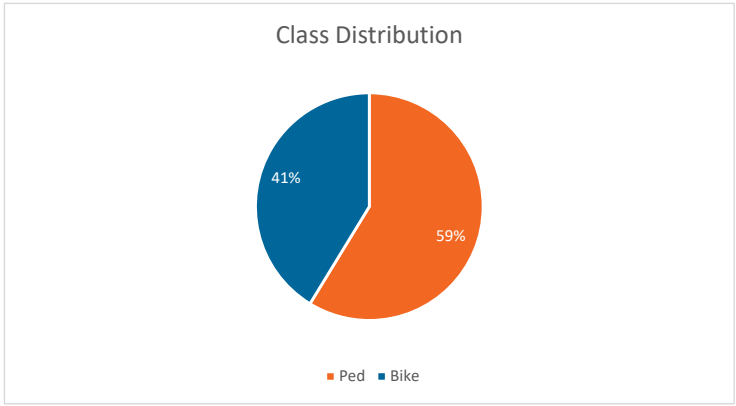
Dutchess County Transportation Council

Year	2022
Month	October
Count Type	Video
Duration	2-Day/24-Hour
Location Type	Intersection
Municipality	T/Poughkeepsie
Location	NY 113 and Wilbur Blvd
Location Description	158’ E/O Wilbur Blvd
Site ID, Address, or Station #	BIKEPEDC02a
GPS Latitude	41.65973051
GPS Longitude	-73.92011983
Week	10/10/2022









Dutchess County Transportation Council

Year	2022
Month	October
Count Type	Video
Duration	2-Day/24-Hour
Location Type	Screenline (on-road)
Municipality	T/Poughkeepsie
Location	NY 113 near Stuart Dr
Location Description	161' W/O Stuart Dr
Site ID, Address, or Station #	BIKEPEDC03a
GPS Latitude	41.65986575
GPS Longitude	-73.91081943
Week	10/10/2022

Survey Dates		**High Temp**	**Low Temp**	**Weather**
Thursday	13-Oct	73	46	Cloudy
Saturday	15-Oct	70	39	Partly Cloudy

Data summary - all movements

	2 hr*			**12 hr****		
	Ped	**Bike**	**Total**	**Ped**	**Bike**	**Total**
Thursday	7	0	7	48	3	51
Saturday	1	0	1	7	1	8

* Weekday is 4-6pm, weekend is 12-2pm **7am-7pm

2-Day/24-Hour Total

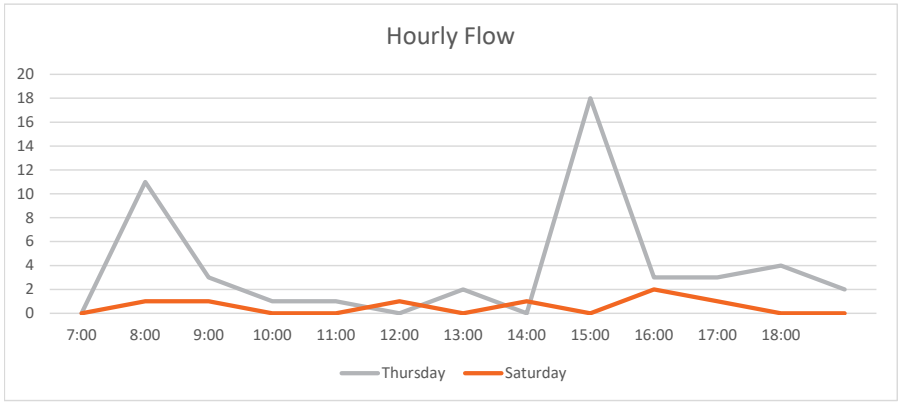
Class	**Total**
Ped	55
Bike	4
Total	59

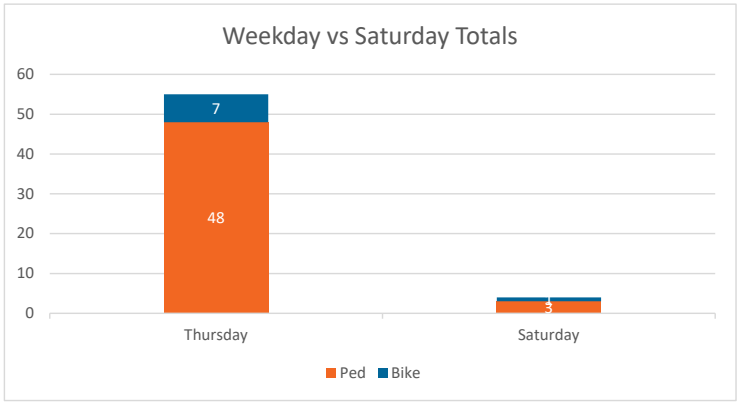
	Travel Direction - Peds		
	East	**West**	**Total**
Thursday	17	31	48
Saturday	2	5	7
2-Day Total	**19**	**36**	**55**

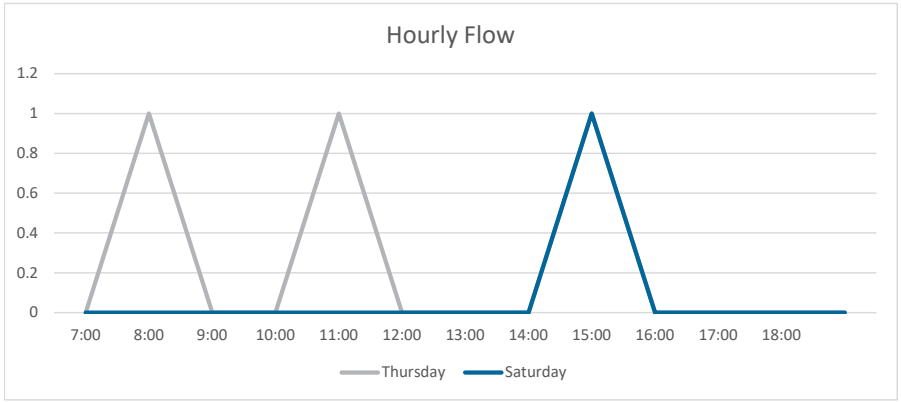
Travel Direction - Bikes		
East	**West**	**Total**
2	1	3
1	0	1
3	**1**	**4**

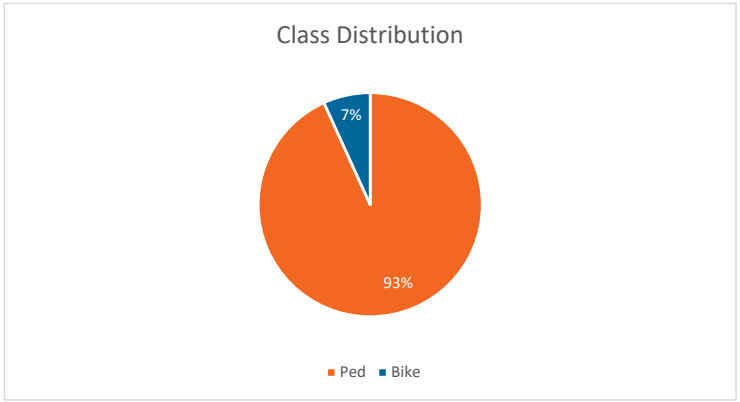
Dutchess County Transportation Council

Year	2022
Month	October
Count Type	Video
Duration	2-Day/24-Hour
Location Type	Screenline (on-road)
Municipality	T/Poughkeepsie
Location	NY 113 near Stuart Dr
Location Description	161' W/O Stuart Dr
Site ID, Address, or Station #	BIKEPEDC03a
GPS Latitude	41.65986575
GPS Longitude	-73.91081943
Week	10/10/2022

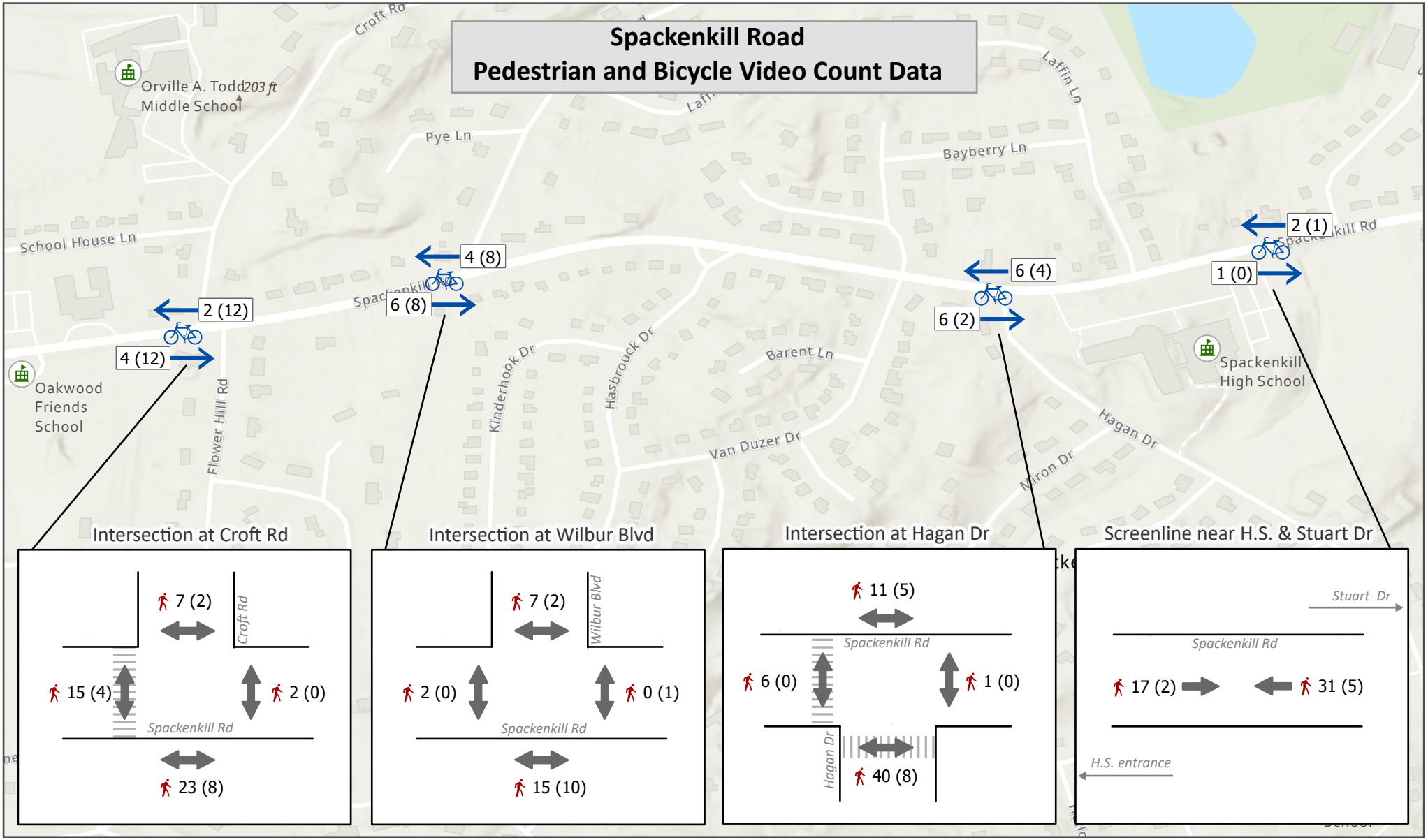








Spackenkill Road
Pedestrian and Bicycle Video Count Data



XX (XX) Weekday (Saturday)
7am-7pm video-based count

Bicycle Count

Pedestrian Count

Existing Crosswalk

School

0 0.06 0.13 0.25 Miles

N

DUTCHESS COUNTY TRANSPORTATION COUNCIL
Better ways from here to there

This map is intended for planning purposes only.
The DCTC shall not be held liable for any misuse or misrepresentation of this information.
Map contents and data are subject to change.
Source: Dutchess County GIS, 2023;
Count data collected October 13 and 15, 2022.