VILLAGE OF DOBBS FERRY BOARD OF TRUSTEES
WORKSHOP AGENDA

MEETING DATE: SEPTEMBER 13, 2022
AGENDA ITEM SECTION: PRESENTATIONS
AGENDA ITEM NO. :
DEPARTMENT:
AGENDA ITEM: ROUTE 9 TRAFFIC STUDY
ITEM BACKUP DOCUMENTATION: 1. S. BROADWAY (ROUTE 9) AT DOBBS FERRY HIGH SCHOOL TRAFFIC & PEDESTRIAN ASSESSMENT

S. Broadway (Route 9) at Dobbs Ferry High School Traffic & Pedestrian Assessment

Village of Dobbs Ferry,
New York

Prepared for:
Village of Dobbs Ferry
112 Main Street
Dobbs Ferry, NY 10522

Prepared By:
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FOR COMMENT

Sam Schwartz

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3
EXISTING CONDITIONS 4
Site Description 4
Roadway Network 4
Pedestrian Access & Facilities 6
Transit Facilities 8
2022 EXISTING BASELINE CONDITIONS 9
Existing Traffic Volumes 9
TRIP GENERATION & DISTRIBUTION 9
Trip Generation 9
Trip Distribution 11
Traffic Analysis 13
CONCLUSION 15

ATTACHMENTS

Attachment A: Dobbs Ferry Transit Map
Attachment B: Dobbs Ferry Police Department Traffic Counts
Attachment C: NYSDOT 2021 Seasonal Adjustment Factors
Attachment D: Trip Distribution Diagrams
Attachment E: Synchro 11 Reports
Attachment F: Existing Condition & Conceptual Plans

EXECUTIVE SUMMARY

Sam Schwartz Consulting, L.L.C. (*Sam Schwartz*) has prepared this traffic and pedestrian assessment to investigate and provide recommendations for northbound traffic on S. Broadway (Route 9) turning left into the Dobbs Ferry High School driveway during the morning arrival period. The subject site is located at 505 Broadway, Dobbs Ferry, NY 10522, with the driveway in question located approximately 80 feet north of the Route 9/Belden Avenue intersection.

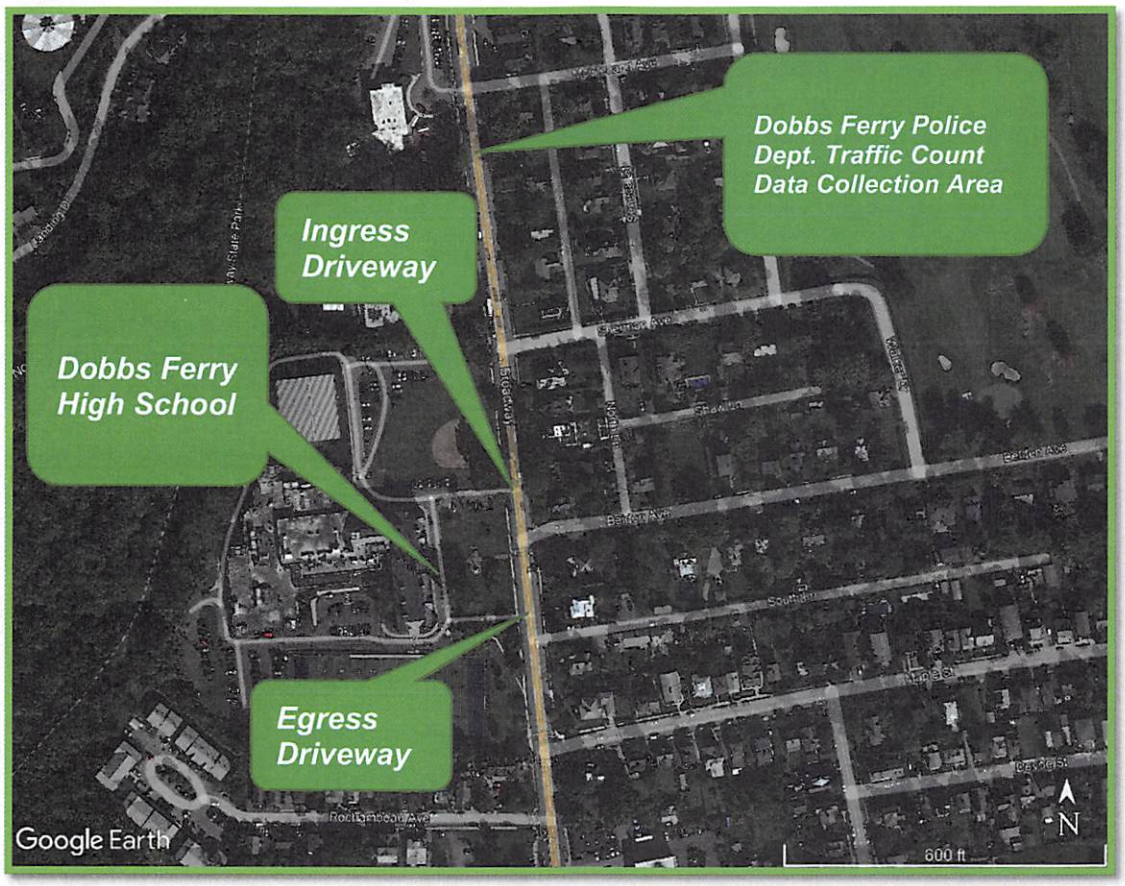
Using traffic count data and aerial mapping of the area, *Sam Schwartz* arrived at a conceptual design to alleviate congestion caused by traffic queuing on Broadway (Route 9) making left-turns into the driveway directly north of Belden Avenue.

EXISTING CONDITIONS

Site Description

The subject site is located at 505 Broadway, Dobbs Ferry, NY 10522, with the driveway in question located approximately 80 feet north of the Broadway (Route 9)/Belden Avenue intersection. **Figure 1** depicts the site on an aerial map.

Figure 1. Site Location & Key Map



Roadway Network

Sam Schwartz conducted a site visit to make measurements and observations, and has collected field data including lane use designations, traffic control and other applicable pavement markings and signing. Pedestrian/bicycle facilities and bus stop locations for the Route 9 corridor were also observed and noted. For the purposes of this study, the study network is defined as intersections between McClelland Avenue and Sherman Avenue.

McClelland Avenue is an eastbound/westbound local road and is under the jurisdiction of Dobbs Ferry. Approximately 750 feet north of the site, the roadway consists of one eastbound and one westbound travel lane and does not have a posted speed limit, so the Village speed limit of 25 MPH governs. On-street parking is provided on the southern side of the street. A "No Commercial Vehicles" (R5-4)/"Except Local Deliveries" (R5-2-3) sign combination is posted facing traffic turning off Route 9, approximately 10 feet from the intersection. A "No Parking Here to Corner" (R7-11) sign is posted in facing traffic turning off Route 9, at the same location.

Sherman Avenue is an eastbound/westbound local road and is under the jurisdiction of Dobbs Ferry. Approximately 245 feet north of the site, the roadway consists of one eastbound and one westbound travel lane and has a posted speed limit of 25 MPH. On-street parking is provided on the both the northern and southern sides of the street. A "No Commercial Vehicles" (R5-4)/"Except Local Deliveries" (R5-2-3) sign combination is posted facing traffic turning off Route 9, approximately 10 feet from the intersection. A "No Parking Here to Corner" (R7-11) sign is posted in facing traffic turning off Route 9, approximately 20 feet from the intersection.

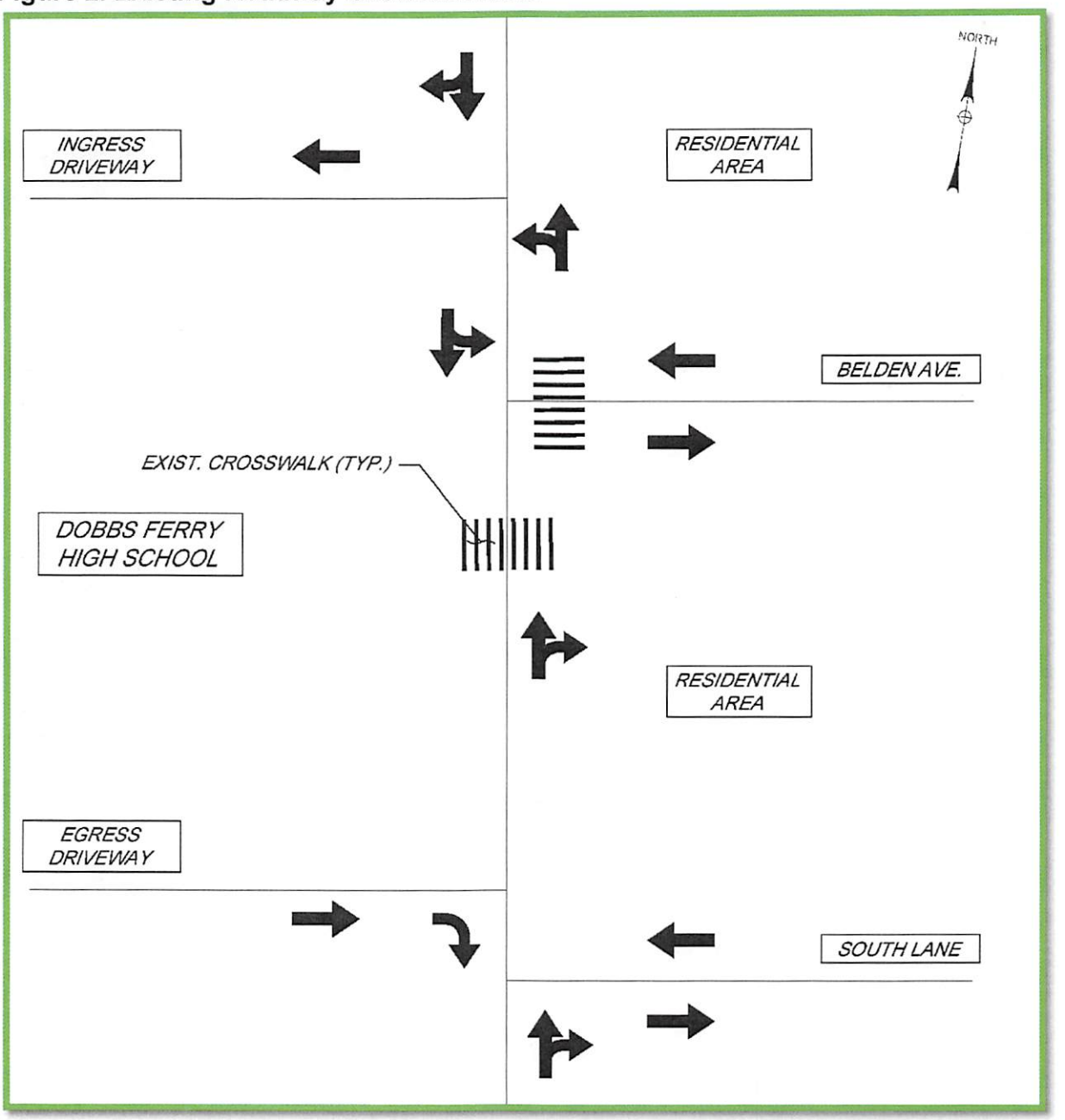
Belden Avenue is an eastbound/westbound local road and is under the jurisdiction of Dobbs Ferry. Approximately 85 feet south of the site, the roadway consists of one eastbound and one westbound travel lane and has a posted speed limit of 25 MPH. On-street parking is provided on the northern and southern sides of the street. A "No Truck" (R5-2) sign is posted facing traffic turning onto Belden Avenue off Route 9. A "Stop" (R1-1) sign is posted facing traffic approaching Route 9. "No Parking Here to Corner" (R7-11) signs are posted in both directions, approximately 20 feet from the intersection with Route 9.

South Lane is an eastbound/westbound local road and is under the jurisdiction of Dobbs Ferry. Approximately 280 feet south of the site, the roadway consists of one travel lane (approximately wide enough for one vehicle to pass, and an opposing vehicle to pull over to wait while passing) and does not have a posted speed limit, so the Village speed limit of 25 MPH governs. A "Dead End" (W14-1) sign is posted facing the intersection with Route 9.

Maple Street is an eastbound/westbound local road and is under the jurisdiction of Dobbs Ferry. Approximately 485 feet south of the site, the roadway consists of one eastbound and one westbound travel lane and has a posted speed limit of 25 MPH. On-street parking is provided on the both the northern and southern sides of the street. "No Parking Here to Corner" (R7-11) signs are posted in both directions, approximately 20 feet from the intersection with Route 9.

Figure 2 depicts the existing roadway characteristics, specifically existing lane configurations.

Figure 2. Existing Roadway Characteristics



Pedestrian Access & Facilities

At the intersection of **Route 9 and McClelland Avenue**, there are high visibility crosswalks present on the east, west, and south legs of the intersection. The crosswalks are in somewhat fair condition.

Approaching the intersection, there are pedestrian crossing ahead warning signs on both the northbound and southbound side of Route 9 as well as yield pedestrian warning signs present closer to the intersection. There are retroreflective pedestrian crossing signs placed on either side of the crosswalk crossing Route 9 warning both northbound and southbound traffic. The

curb ramps on the southeast and southwest corners of the intersection are somewhat deteriorated, but there are detectable warning surfaces (DWS) at all points of the intersection.

At the intersection of **Route 9 and Sherman Avenue**, there are no crosswalks present, but there is a non-retroreflective school crossing sign present warning southbound traffic. There is a deteriorated curb ramp on the southeast corner of the intersection with no corresponding crosswalk as well as a deteriorated curb ramp on the northeast corner.

At the intersection of **Route 9 and Belden Avenue**, there are high visibility crosswalks in good condition on the east and south legs of the intersection. Approaching the intersection, there are pedestrian crossing ahead warning signs on both the northbound and southbound side of Route 9. There are retroreflective pedestrian crossing signs placed on either side of the crosswalk crossing Route 9 warning both northbound and southbound traffic. The curb ramp on the southeast corner of the intersection is deteriorated. There is a DWS present on the southwest curb ramp, but it is not high visibility. High visibility DWS are needed at other points of the intersection.

At the intersection of **Route 9 and South Lane**, there is no crosswalk across South Lane, but there are curb ramps on either side. The southeast curb ramp is insufficient as it does not meet with the road.

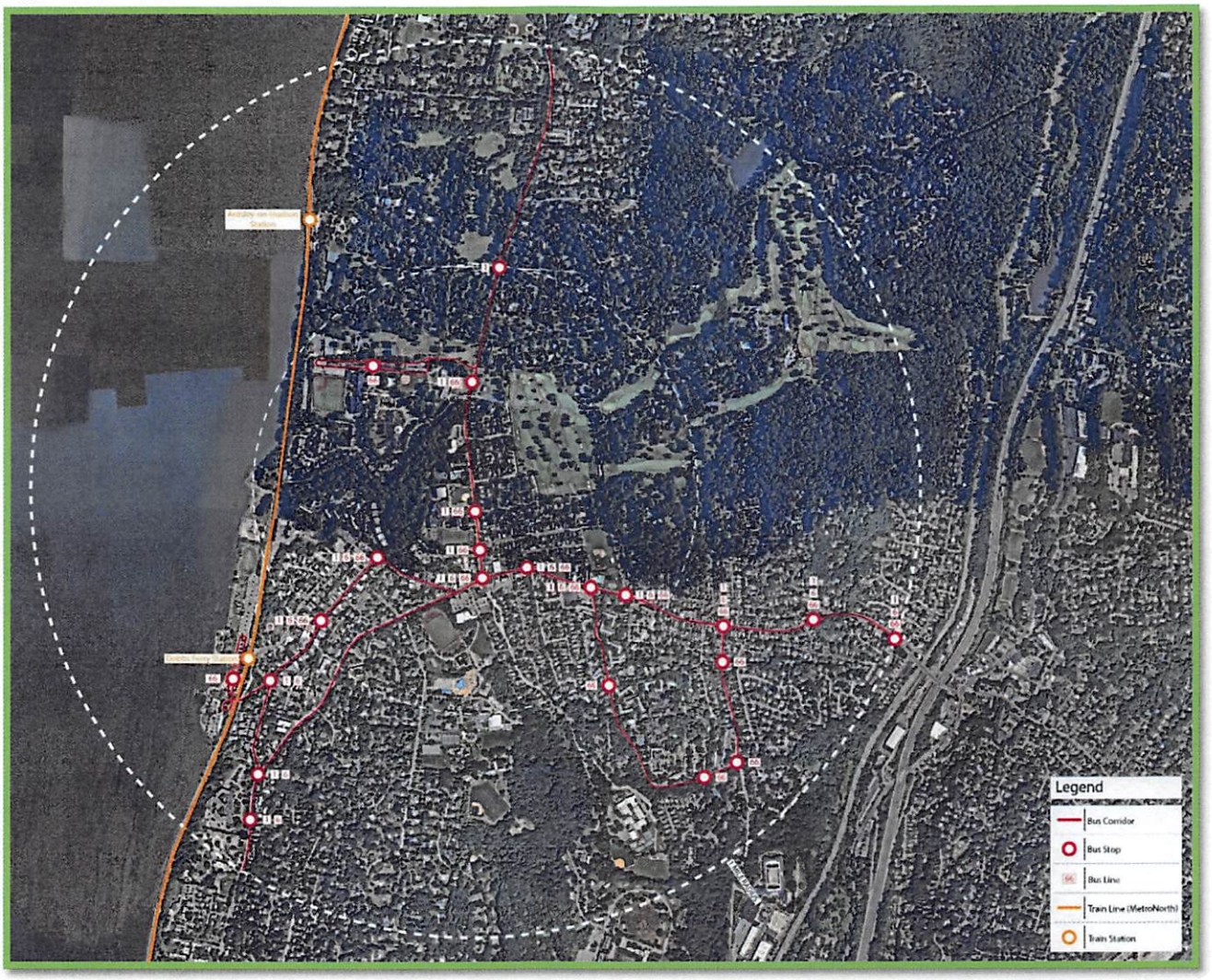
At the intersection of **Route 9 and Maple Street**, there are high visibility crosswalks present on the north, south, and east legs of the intersection. The crosswalks are in good to fair condition. Approaching the intersection, there are pedestrian crossing ahead warning signs on both the northbound and southbound side of Route 9. There are retroreflective pedestrian crossing signs placed on either side of the crosswalks crossing Route 9 warning both northbound and southbound traffic. The curb ramp on the southwest corner of the intersection is deteriorated. There are DWS present on the northeast and northwest corners of the intersections, but they are not high visibility. High visibility DWS are needed on the southeast and southwest corners.

Sidewalks along the east and west sides of Route 9 are in good to fair condition, but some sections of sidewalk may not be wide enough to be ADA compliant (4 feet wide), or imposed upon by hedge bushes.

Transit Facilities

The site is located within proximity to Dobbs Ferry's downtown and is within walking distance of several transit services and stops. Within 1 mile of the site are several Bee-Line bus stops and two MTA train stations. See **Figure 2** for Major Existing Public Transit Facilities (also included as **Attachment A**).

Figure 3. Dobbs Ferry Transit Network



Within a one-mile radius from the site, the following services were identified:

Bee-Line bus routes 1 (1C, 1T, 1W), 6, and 66 provide service to / from the following areas:

- Bronx - Westchester Community College, Tarrytown, White Plains and Westchester Community (Route 1C).
- College Express Bronx - Westchester Community College, Tarrytown, White Plains and Westchester (Route 1T).
- Community College Express (Route 1W).
- Yonkers - White Plains - Pleasantville (Route 6).
- Dobbs Ferry - Scarsdale - Larchmont - New Rochelle (Route 66).

The MTA operated Hudson Line on the Metro-North Railroad has two stops within a one-mile radius of Dobbs Ferry High School. The closest of these stations is the Dobbs Ferry station, which

is approximately a 13-minute walk from the site. The Ardsley-on-Hudson Station is approximately a 18-minute walk from the site. Both stations are serviced by the Hudson Line.

2022 EXISTING BASELINE CONDITIONS

The 2022 Existing Conditions serve as the baseline for which traffic impacts, if any, are due to the proposed conceptual roadway redesigns.

Existing Traffic Volumes

Existing traffic volumes (shown in **Attachment B**) were collected by the Dobbs Ferry Police Department on Broadway (Route 9) just south of its intersection with McClelland Avenue, approximately 780 feet north of the Dobbs Ferry High School ingress driveway.

Specifically, data was collected from Monday, June 20th, 2022 to Tuesday, July 5th, 2022. This data was processed for the study time period in question (7AM to 9AM) and the date of Thursday, June 30th, 2022 selected for specific study. This date was selected due to it being the highest volume taken during a day not associated with weekend (i.e., holiday/irregular) traffic.

During this time, Dobbs Ferry High School was not in session. Seasonal adjustment factors (standard values provided by NYSDOT, shown in **Attachment C**) were used to adjust the Broadway (Route 9) traffic volumes taken – specifically, the seasonal adjustment value for October, which was the highest of all school-year months.

TRIP GENERATION & DISTRIBUTION

Trip Generation

Trip Generation Estimate Methodology
ITE 11th Ed. Trip Generation was used to preliminarily estimate the amount of vehicles entering the Dobbs Ferry High School during the school year.

Table 1. Trip Generation Criteria

Trip Generation Criteria					
Land Use	ITE Land Use Code	Independent Variable (IV)	Time Period	No. of Studies	Coefficient of Determination (R^2-value)
High School	525	469 students[1]	Weekday, Peak Hour of Adjacent Street Traffic Between 7AM – 9AM	42	0.56

Note 1: "469 students" per data.nysed.gov

Table 2. Trip Generation Results

Trip Generation Results			
	Total	Entry	Exit
Average Rate	244	166	78
Fitted Curve	323	219	104

Typical unadjusted ITE 11th Ed. rates ("vehicle trip ends") are based on sites surveyed throughout the United States over a period but often reflect sites where single or low-occupancy vehicle trips are the primary means of transportation, where the development would be at a previously undeveloped site, and where the survey site is often located in a suburban area unless otherwise indicated by the specific ITE study.

It is our understanding that there are only two dedicated school buses for the Dobbs Ferry High School student body (the southbound Q15 and northbound Q80 in the morning). Furthermore, it is our understanding that the High School is very "car busy".

Though the above ITE Trip Generation values would be typically used to estimate the vehicle trips generated by a "High School" land use with 469 students, it is reasonable to assume that these values are based on high schools which may have regular bus services for the student body.

On this basis, we conservatively assumed that each of the 469 students is driven to the school, with 75% coming from the south (and making a left-turn against oncoming traffic on Broadway/Route 9), and 25% coming from the north, and turning right into the driveway.

This is described further in the following section, "Trip Distribution".

Trip Distribution

Going by the ITE values provided, there are at most 219 vehicle trips into the High School during the morning Peak Period (representing only 47% of the student body).

On this basis, we have considered two scenarios:

1. Trip generation and distribution based solely on the "Fitted Curve" values from the ITE Trip Gen 11th Ed.
2. Conservative assumption that the entirety of the student body is driven to the high school in the morning peak period (a value of 399 vehicle trips, rounded up to 400 for analysis purposes).

Given that Dobbs Ferry High School is located north of 75% of the school district area, the vehicle "arrivals" are then split along a 75% / 25% basis.

Table 3. ITE-Based Trip Distribution

ITE-Based Trip Distribution	
Student Body	469 students
Fitted Curve Total	323
Fitted Curve Entry	219
75% NB turn left into Ingress Driveway	165
25% SB turn right into Ingress Driveway	54

Table 4. Conservative "All-Trip" Distribution

Conservative "All-Trip" Distribution	
Student Body	469 students
100% arrive via car	469 students
75% NB turn left into Ingress Driveway	352
25% SB turn right into Ingress Driveway	117

Figures 4 – 6 below show the trip distributions used in the Synchro 11 traffic analysis model (also shown in **Attachment D**).

Figure 4. Existing Baseline Configuration

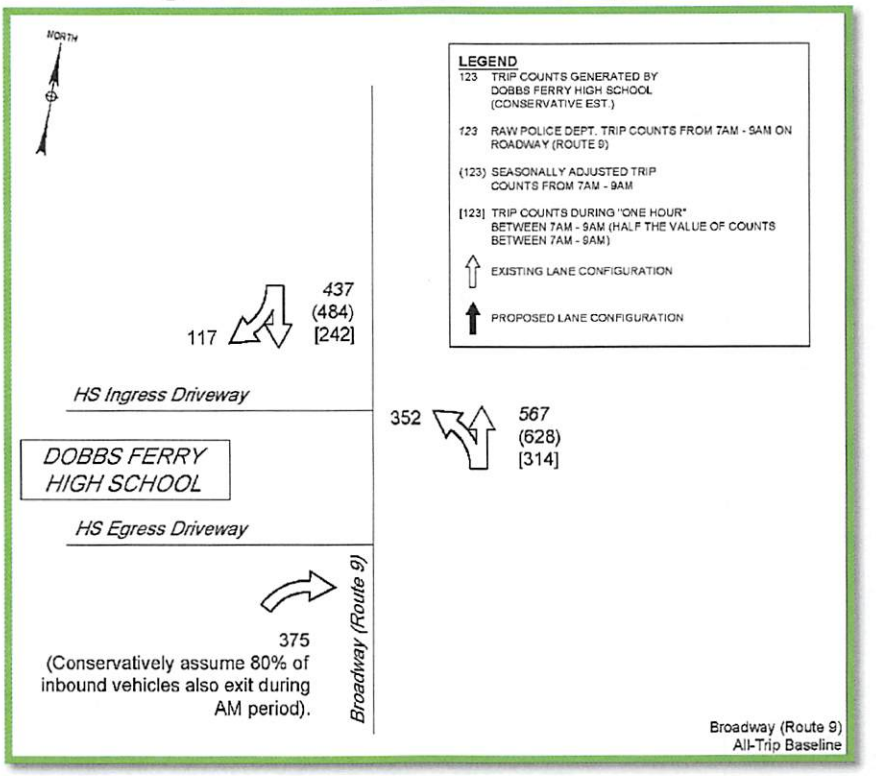


Figure 5. Left-Turn Lane Configuration Concept

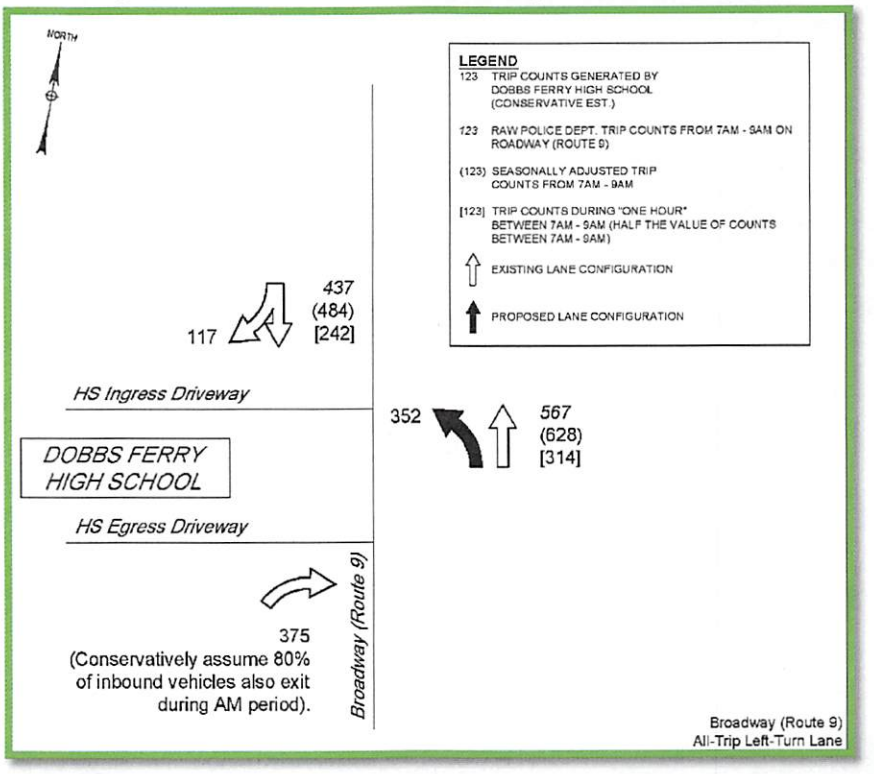
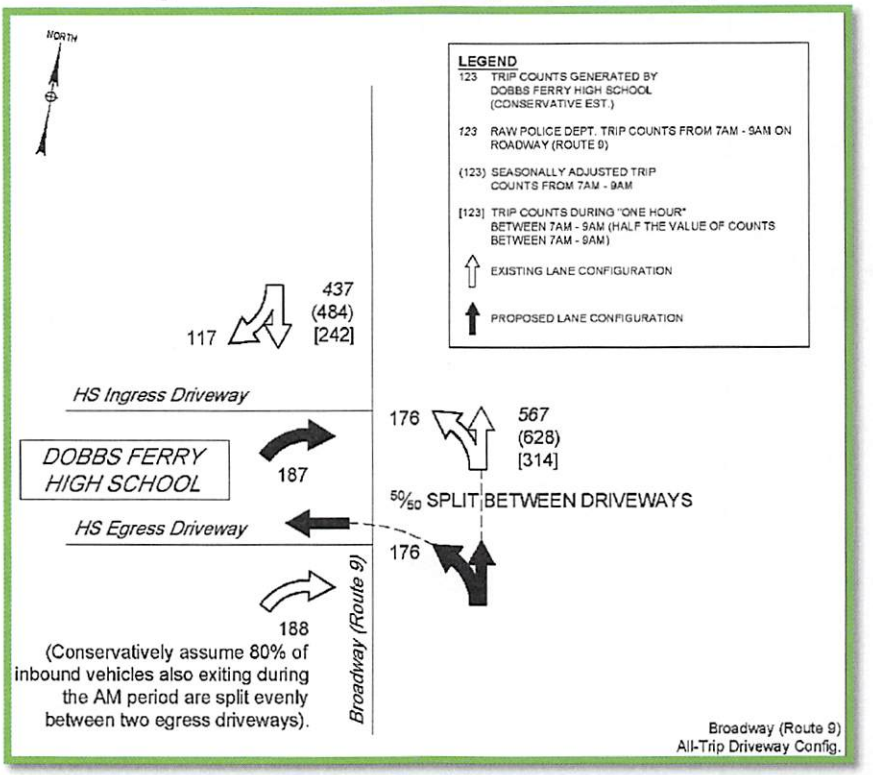


Figure 6. Driveway Configuration Concept



Traffic Analysis

Trafficware's Synchro 11 software was used to generate capacity analysis results at the study intersections, all of which are unsignalized. The traffic analysis models were calibrated to reflect real world conditions with respect to roadway geometry, lane configuration, and posted roadway speeds.

Capacity is measured in terms of Levels-of-Service (LOS) which describe delay and capacity conditions at an intersection. There are six LOS ranging from LOS A, which indicates the best operating condition, to LOS F which indicates conditions with high delay, queuing, and/or over-capacity conditions.

Several key results are organized in the following **Table 5**, and shown fully in **Attachment E**.

Table 5. Synchro 11 Results

Study Intersections	Synchro 11 Results	*Existing Condition*	Proposed Concepts	
		Baseline	Left-Turn Lane Concept	Driveway Configuration Concept
Broadway (Route 9) / Egress Driveway	Driveway NB-Entry Travel Time (s)	N/A	N/A	2.1
	Driveway SB-Entry Travel Time (s)	N/A	N/A	5.3
	Driveway NB-Exit Travel Time (s)	N/A	N/A	N/A
	Driveway SB-Exit Travel Time (s)	2.8	2.8	2.8
	Intersection Capacity Utilization (ICU) %	42.6%	47.3%	45.7%
	ICU Level of Service (LOS)	A	A	A
Broadway (Route 9) / Ingress Driveway	Driveway NB-Entry Travel Time (s)	5.3	5.3	5.3
	Driveway SB-Entry Travel Time (s)	6.5	6.5	6.5
	Driveway NB-Exit Travel Time (s)	N/A	N/A	N/A
	Driveway SB-Exit Travel Time (s)	N/A	N/A	3.6
	Intersection Capacity Utilization (ICU) %	63.8%	47.3%	54.1%
	ICU Level of Service (LOS)	B	A	A

CONCLUSION

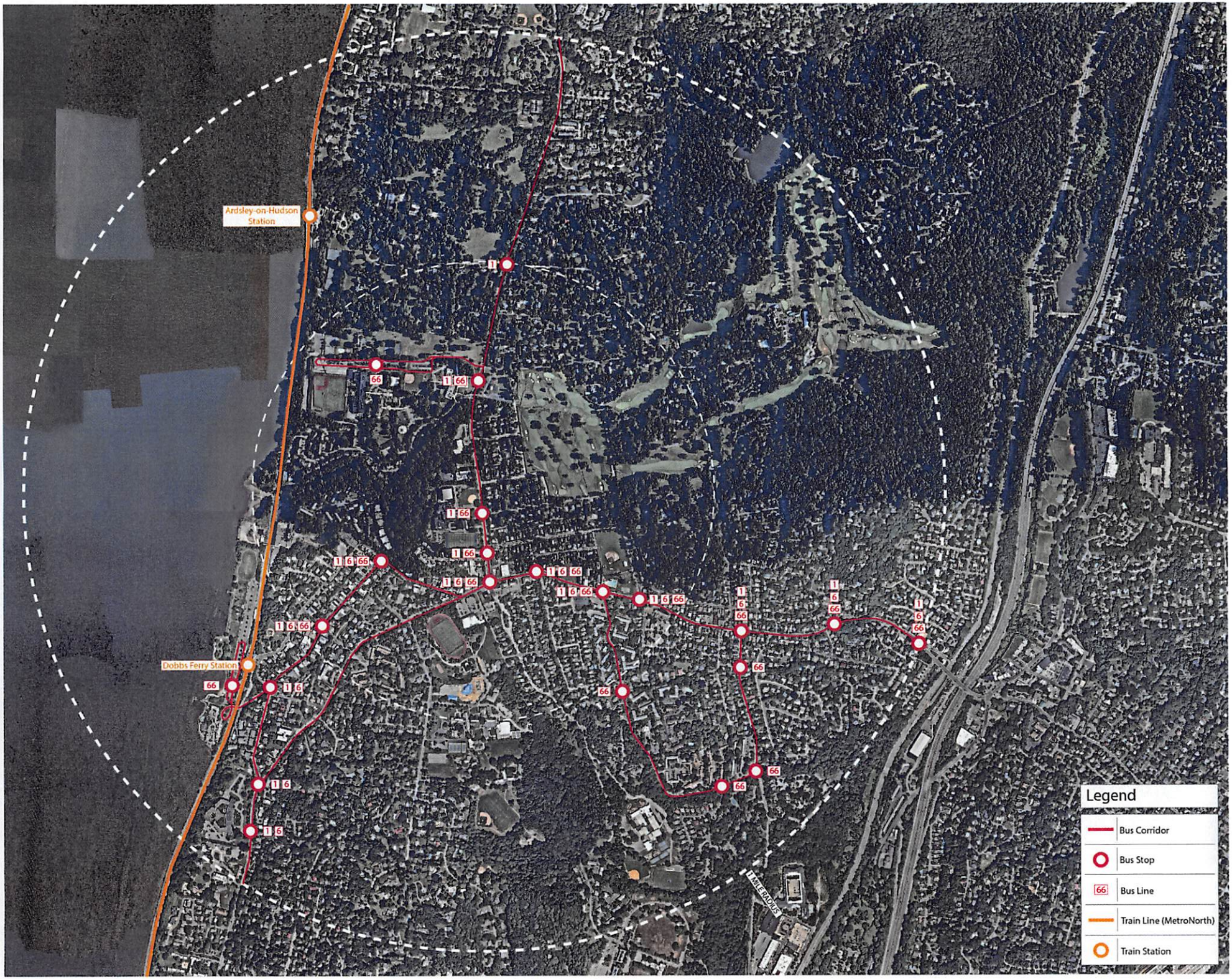
In our analysis, Intersection Capacity Utilization (ICU) was observed to indicate operation of the driveway intersections with Broadway (Route 9). Between the Left-Turn Lane Concept and the Driveway Configuration Concept, the former redesign indicates a better reduction in capacity at the existing Ingress Driveway.

Though specific detailed design is not included in this study, overall measurements of the site indicate that a dedicated left-turn lane with a storage length of approximately 50 feet is possible between the Ingress Driveway and the intersection of Broadway (Route 9) with Belden Avenue.

Given that Dobbs Ferry's qualitative observation is excessive queuing in the existing single-lane heading northbound, this result indicates that the preferrable solution is to create a dedicated left-turn lane letting into the Ingress Driveway. The existing condition and these conceptual solutions are shown fully in **Attachment F**.

Attachment A

Dobbs Ferry Transit Map


Ardsley-on-Hudson Station
Dobbs Ferry Station
1 MILE RADIUS
Legend
Bus Corridor
Bus Stop
Bus Line
Train Line (MetroNorth)
Train Station

Attachment B

Dobbs Ferry Police Department

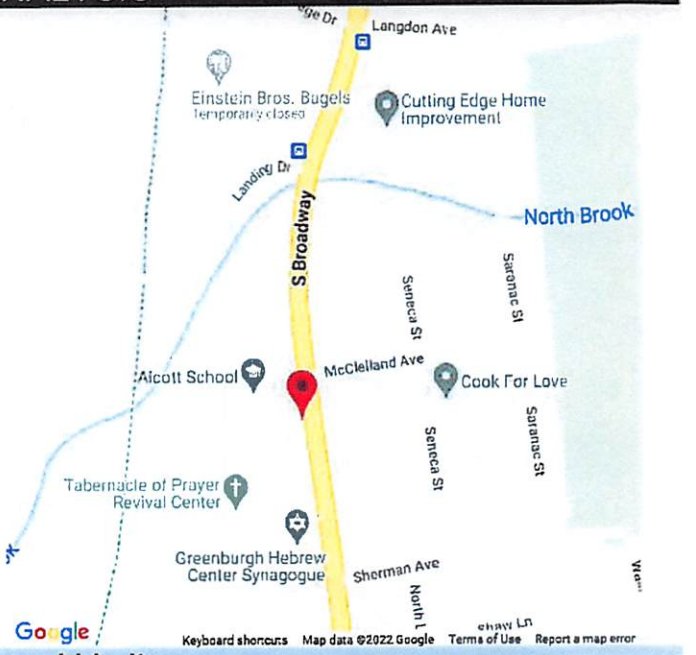
Traffic Counts

Dobbs Ferry Police Department
112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500

SPEED DATA ANALYSIS

Location

Broadway
McClelland Ave
Latitude: 41.019729
Longitude: -73.869847



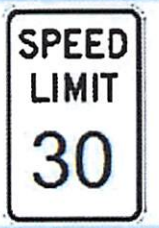
Analysis Time Period

Start	End
6/20/2022 6:57 PM	6/28/2022 9:20 AM

Vehicles Analyzed

59,408

Speed Limit



30

Average Speed

27

% Enforceable Violations

1%

Enforcement Rating

LOW

85th Percentile Speed

32

Dobbs Ferry Police Department
112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500

Speed Enforcement Evaluator

Location
Broadway

Closest Cross Street
McClelland Ave

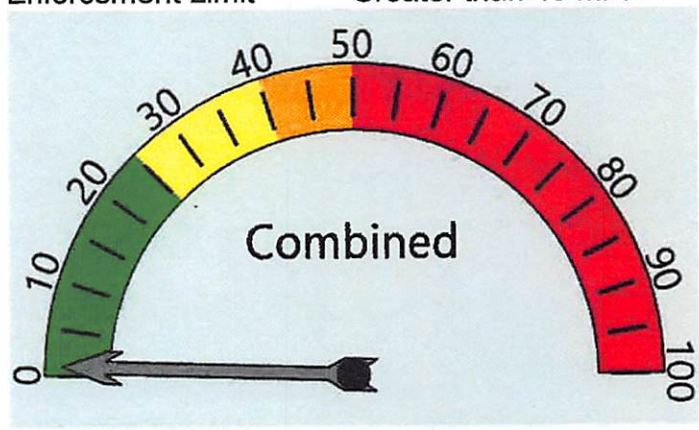
Analysis Dates
Start: 6/20/2022
End: 6/28/2022

Equipment Used
JAMAR Black Cat Radar

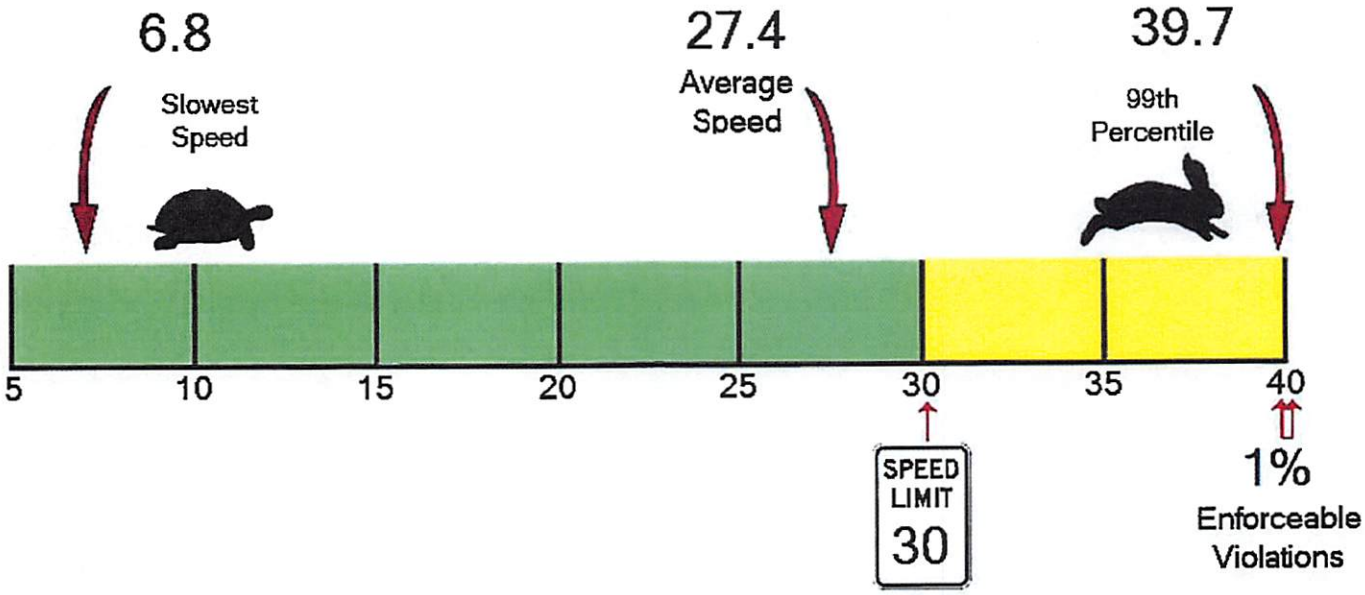
Requested By
Chief M. Guevara

Total Percentage of Enforceable Violations

Posted Speed Limit	30 MPH
Enforcement Tolerance	10 MPH
Enforcement Limit	Greater than 40 MPH



Percent Speeding: 1%
Rating: Low



Dobbs Ferry Police Department

112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500

Vehicle Totals - Combined

<= 10	<= 12	<= 14	<= 16	<= 18	<= 20	<= 22	<= 24	<= 26	<= 28	<= 30	<= 32	<= 34	<= 36	<= 38	<= 40	<= 42	<= 44	<= 46	<= 48	<= 50	<= 52	<= 54	<= 56	<= 58	<= 60	<= 62	<= 64	<= 66	> 66
133	59	118	305	779	2255	3270	5496	8737	12400	10003	7198	3860	2426	1440	459	232	105	61	24	18	10	12	9	2	1	2	1	3	0

85th Percentile: 31.6

Vehicle Totals - Direction X, Lane 1

<= 10	<= 12	<= 14	<= 16	<= 18	<= 20	<= 22	<= 24	<= 26	<= 28	<= 30	<= 32	<= 34	<= 36	<= 38	<= 40	<= 42	<= 44	<= 46	<= 48	<= 50	<= 52	<= 54	<= 56	<= 58	<= 60	<= 62	<= 64	<= 66	> 66
31	37	62	210	601	1710	2360	3579	5318	5308	3112	1996	857	544	258	93	56	21	14	6	9	4	6	5	0	1	2	1	1	0

85th Percentile: 29.7

Vehicle Totals - Direction X, Lane 2

<= 10	<= 12	<= 14	<= 16	<= 18	<= 20	<= 22	<= 24	<= 26	<= 28	<= 30	<= 32	<= 34	<= 36	<= 38	<= 40	<= 42	<= 44	<= 46	<= 48	<= 50	<= 52	<= 54	<= 56	<= 58	<= 60	<= 62	<= 64	<= 66	> 66
102	22	56	95	178	545	910	1917	3419	7092	6891	5202	3003	1882	1182	366	176	84	47	18	9	6	6	4	2	0	0	0	2	0

85th Percentile: 32.8

Dobbs Ferry Police Department
112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500

Best Times for Speed Enforcement

Location
Broadway

Closest Cross Street
McClelland Ave

Analysis Dates
Start: 6/20/2022
End: 6/28/2022

Equipment Used
JAMAR Black Cat Radar

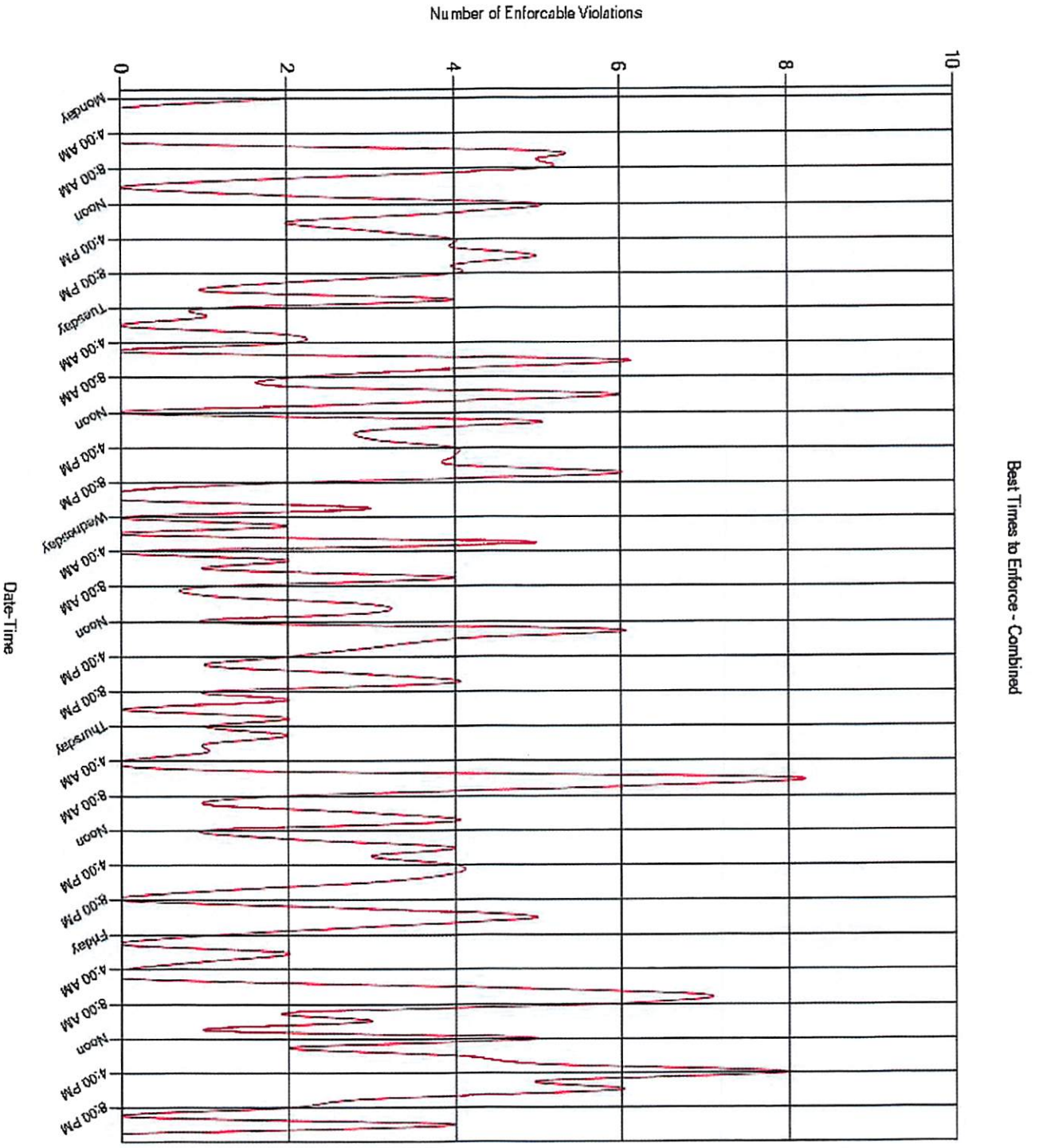
Requested By
Chief M. Guevara

	Combined		Direction X, Lane 1		Direction X, Lane 2	
	AM	PM	AM	PM	AM	PM
Monday	6:00 - 8:00	12:00 - 2:00	6:00 - 8:00	12:00 - 2:00	7:00 - 9:00	6:00 - 8:00
Tuesday	6:00 - 8:00	7:00 - 9:00	6:00 - 8:00	1:00 - 3:00	10:00 - 12:00	7:00 - 9:00
Wednesday	3:00 - 5:00	1:00 - 3:00	10:00 - 12:00	2:00 - 4:00	3:00 - 5:00	1:00 - 3:00
Thursday	6:00 - 8:00	2:00 - 4:00	1:00 - 3:00	1:00 - 3:00	6:00 - 8:00	5:00 - 7:00
Friday	7:00 - 9:00	4:00 - 6:00	8:00 - 10:00	6:00 - 8:00	7:00 - 9:00	4:00 - 6:00
Saturday	7:00 - 9:00	3:00 - 5:00	7:00 - 9:00	6:00 - 8:00	7:00 - 9:00	3:00 - 5:00
Sunday	9:00 - 11:00	5:00 - 7:00	12:00 - 2:00	1:00 - 3:00	9:00 - 11:00	5:00 - 7:00

	Combined	Direction X, Lane 1	Direction X, Lane 2
Monday	6:00AM - 10:00AM	6:00AM - 10:00AM	6:00PM - 10:00PM
Tuesday	6:00AM - 10:00AM	1:00PM - 5:00PM	7:00PM - 11:00PM
Wednesday	1:00PM - 5:00PM	2:00PM - 6:00PM	1:00PM - 5:00PM
Thursday	6:00AM - 10:00AM	1:00PM - 5:00PM	6:00AM - 10:00AM
Friday	4:00PM - 8:00PM	6:00PM - 10:00PM	4:00PM - 8:00PM
Saturday	3:00PM - 7:00PM	7:00AM - 11:00AM	3:00PM - 7:00PM
Sunday	9:00AM - 1:00PM	12:00AM - 4:00AM	9:00AM - 1:00PM

Dobbs Ferry Police Department

112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500



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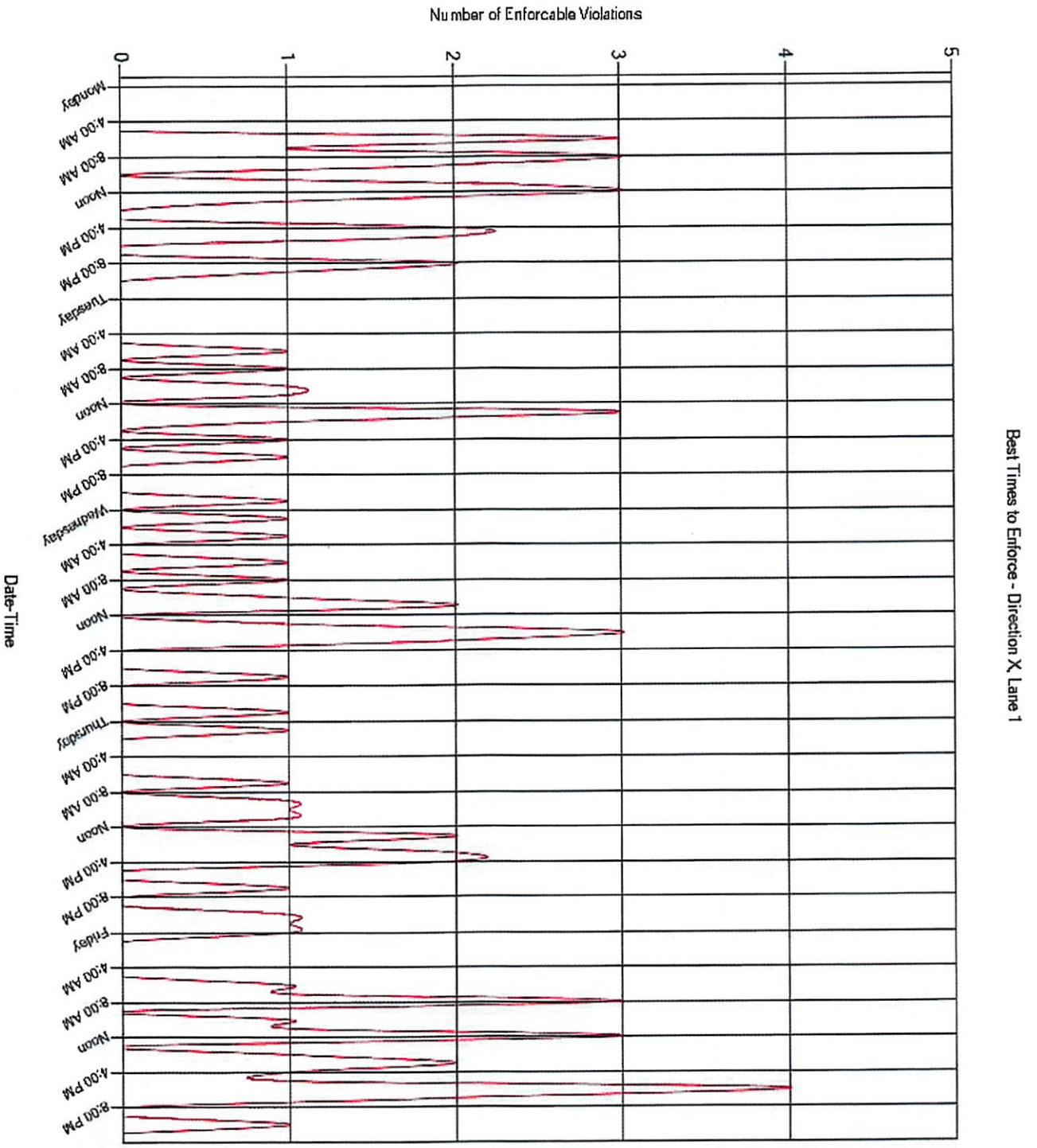

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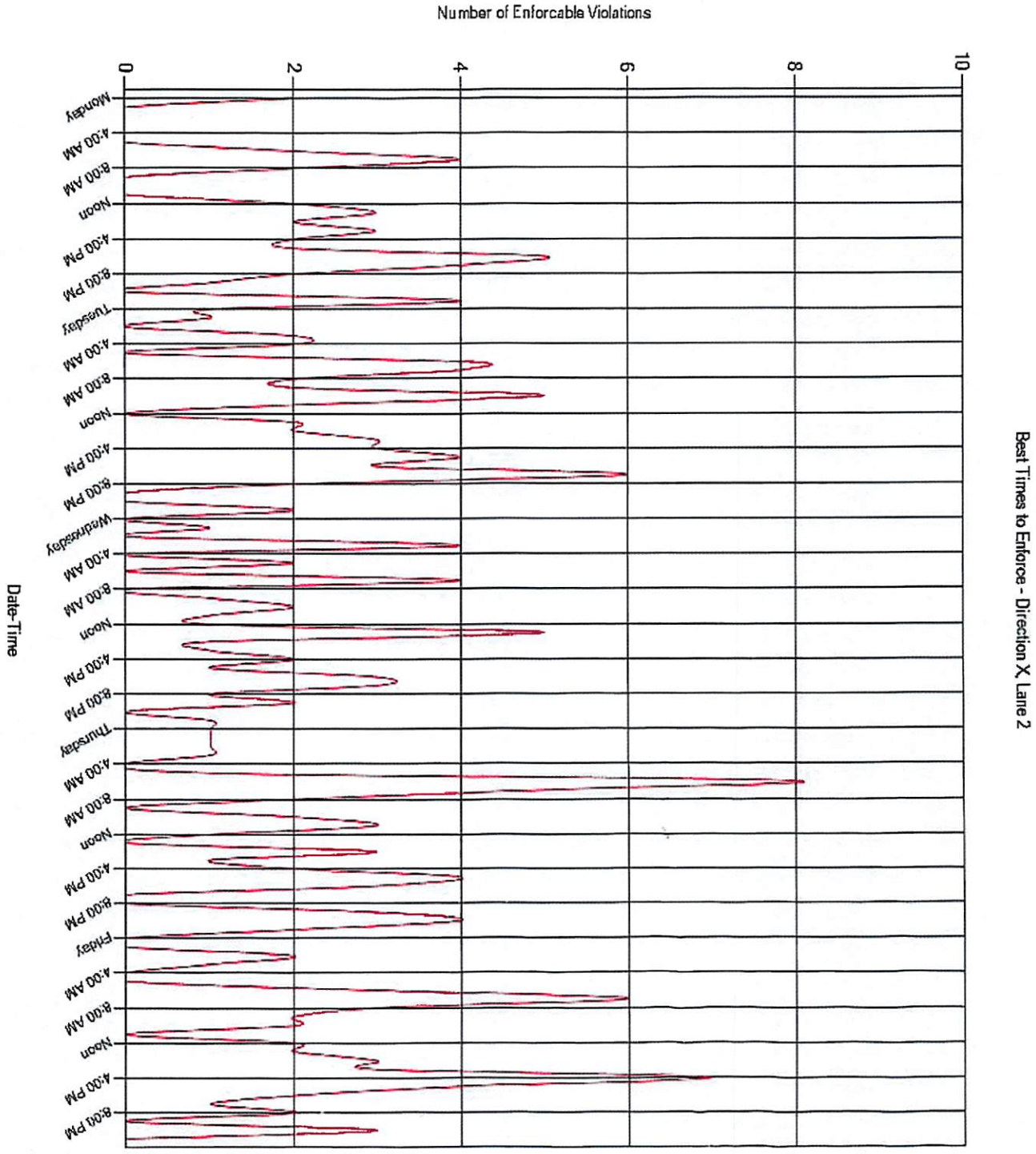

Dobbs Ferry Police Department
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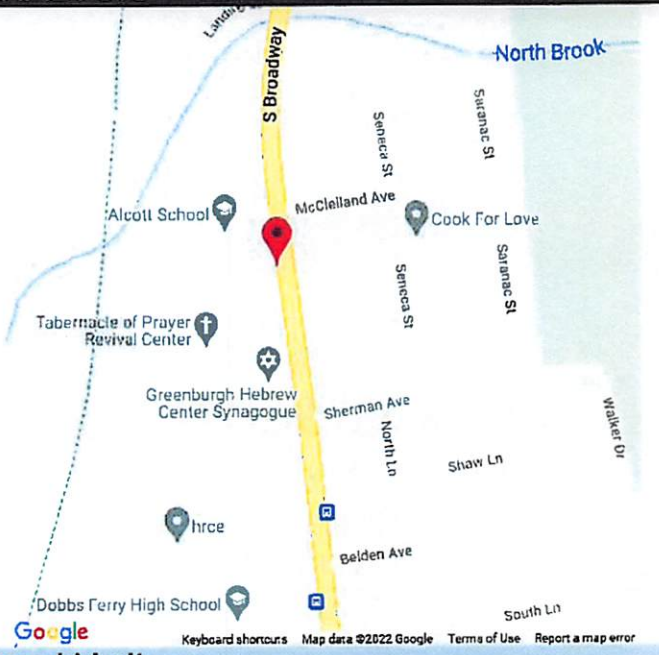
Dobbs Ferry, NY 10522
(914) 693 - 5500

SPEED DATA ANALYSIS

Location

Broadway
McClelland Ave
Latitude: 41.019665
Longitude: -73.869815



Analysis Time Period

Start	End
6/28/2022	7/5/2022
9:41 AM	2:54 PM

Vehicles Analyzed

53,962

Speed Limit

30

Average Speed

29

% Enforceable Violations

1%

Enforcement Rating

LOW

85th Percentile Speed

34

Dobbs Ferry Police Department
112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500

Speed Enforcement Evaluator

Location
Broadway

Closest Cross Street
McClelland Ave

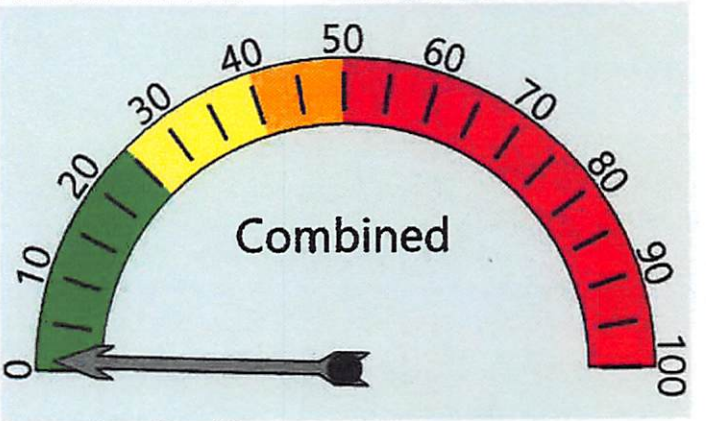
Analysis Dates
Start: 6/28/2022
End: 7/5/2022

Equipment Used
JAMAR Black Cat Radar

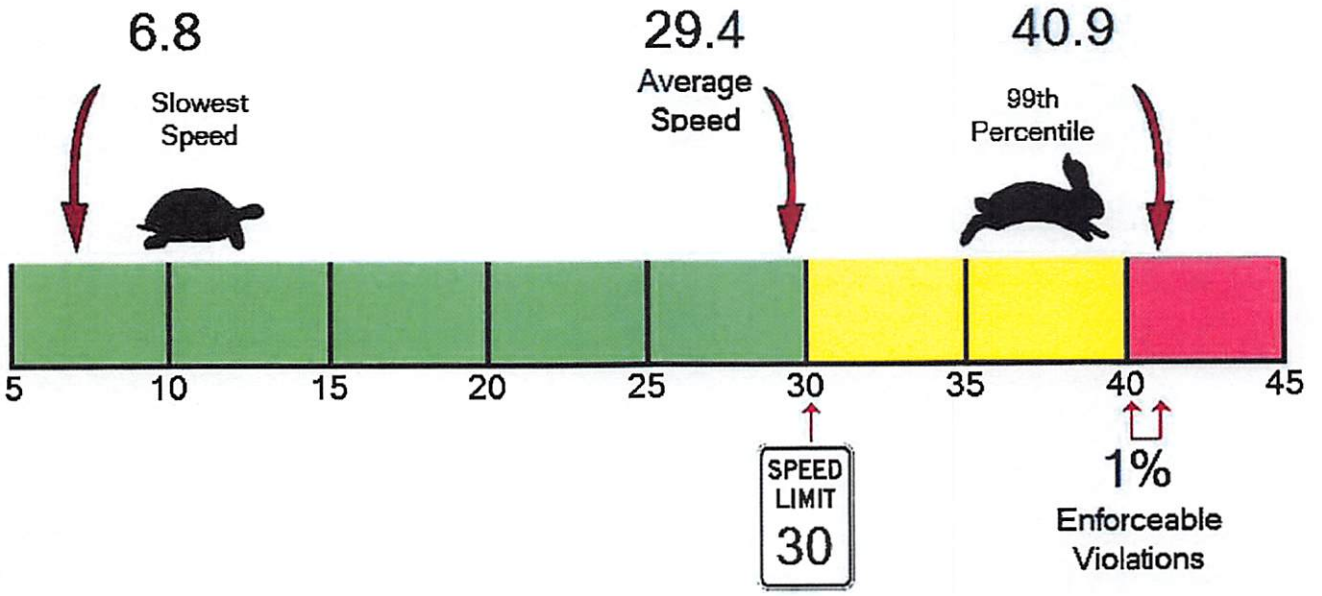
Requested By
Chief M. Guevara

Total Percentage of Enforceable Violations

Posted Speed Limit	30 MPH
Enforcement Tolerance	10 MPH
Enforcement Limit	Greater than 40 MPH



Percent Speeding: 1%
Rating: Low



Dobbs Ferry Police Department

112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500

Vehicle Totals - Combined

<= 10	<= 12	<= 14	<= 16	<= 18	<= 20	<= 22	<= 24	<= 26	<= 28	<= 30	<= 32	<= 34	<= 36	<= 38	<= 40	<= 42	<= 44	<= 46	<= 48	<= 50	<= 52	<= 54	<= 56	<= 58	<= 60	<= 62	<= 64	<= 66	> 66
52	31	67	118	286	976	1503	2529	5633	11351	10473	9570	6144	4339	2724	825	420	177	105	38	21	15	8	5	1	4	1	2	2	0

85th Percentile: 34.1

Vehicle Totals - Direction X, Lane 1

<= 10	<= 12	<= 14	<= 16	<= 18	<= 20	<= 22	<= 24	<= 26	<= 28	<= 30	<= 32	<= 34	<= 36	<= 38	<= 40	<= 42	<= 44	<= 46	<= 48	<= 50	<= 52	<= 54	<= 56	<= 58	<= 60	<= 62	<= 64	<= 66	> 66
33	16	34	56	158	619	1035	1871	3997	6854	4319	3101	1625	982	548	191	91	39	25	8	4	1	2	3	1	2	0	1	2	0

85th Percentile: 31.6

Vehicle Totals - Direction X, Lane 2

<= 10	<= 12	<= 14	<= 16	<= 18	<= 20	<= 22	<= 24	<= 26	<= 28	<= 30	<= 32	<= 34	<= 36	<= 38	<= 40	<= 42	<= 44	<= 46	<= 48	<= 50	<= 52	<= 54	<= 56	<= 58	<= 60	<= 62	<= 64	<= 66	> 66
19	15	33	62	128	357	468	658	1636	4497	6154	6469	4519	3357	2176	634	329	138	80	30	17	14	6	2	0	2	1	1	0	0

85th Percentile: 34.7

Dobbs Ferry Police Department
112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500

Best Times for Speed Enforcement

Location
Broadway

Closest Cross Street
McClelland Ave

Analysis Dates
Start: 6/28/2022
End: 7/5/2022

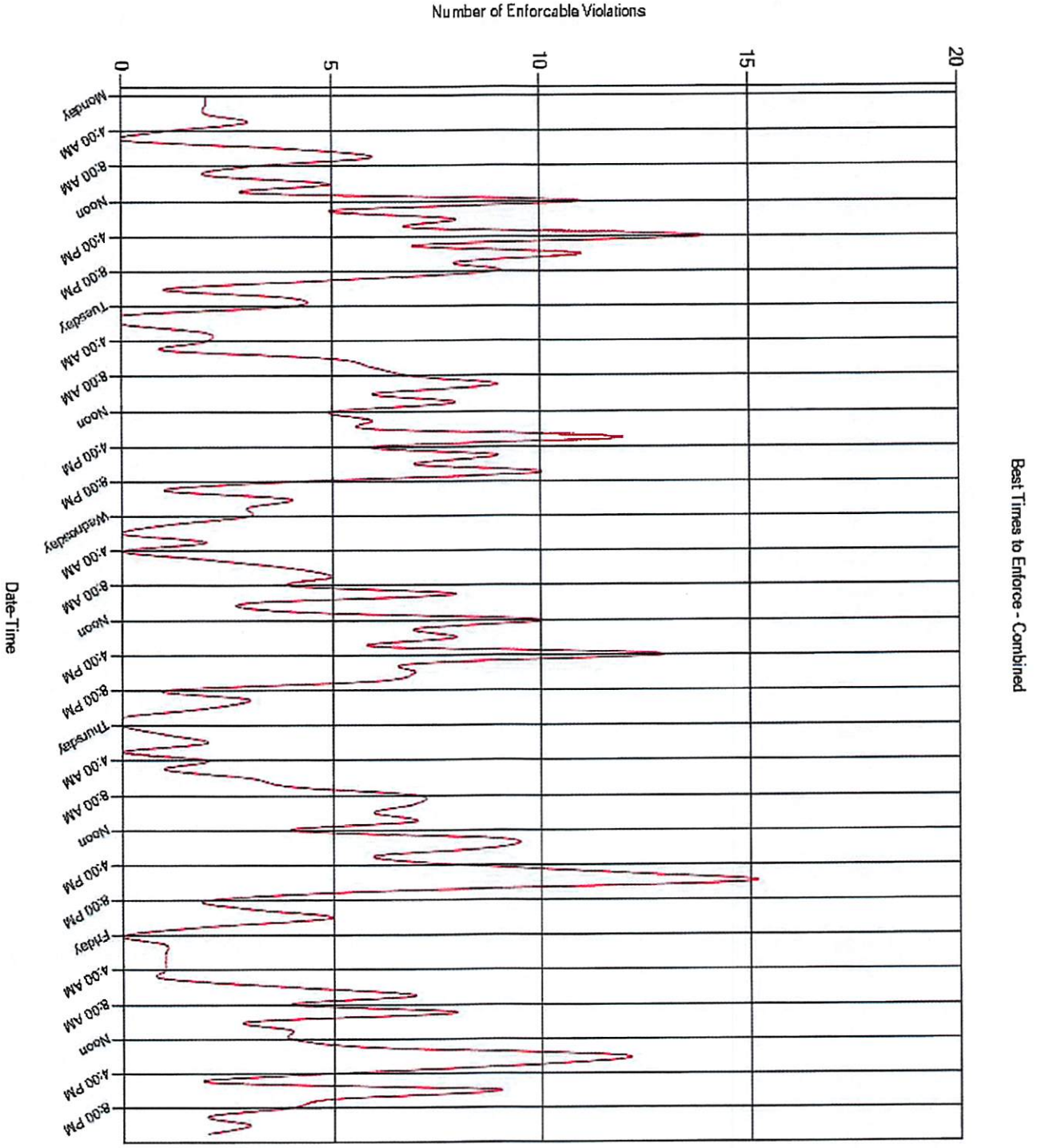
Equipment Used
JAMAR Black Cat Radar

Requested By
Chief M. Guevara

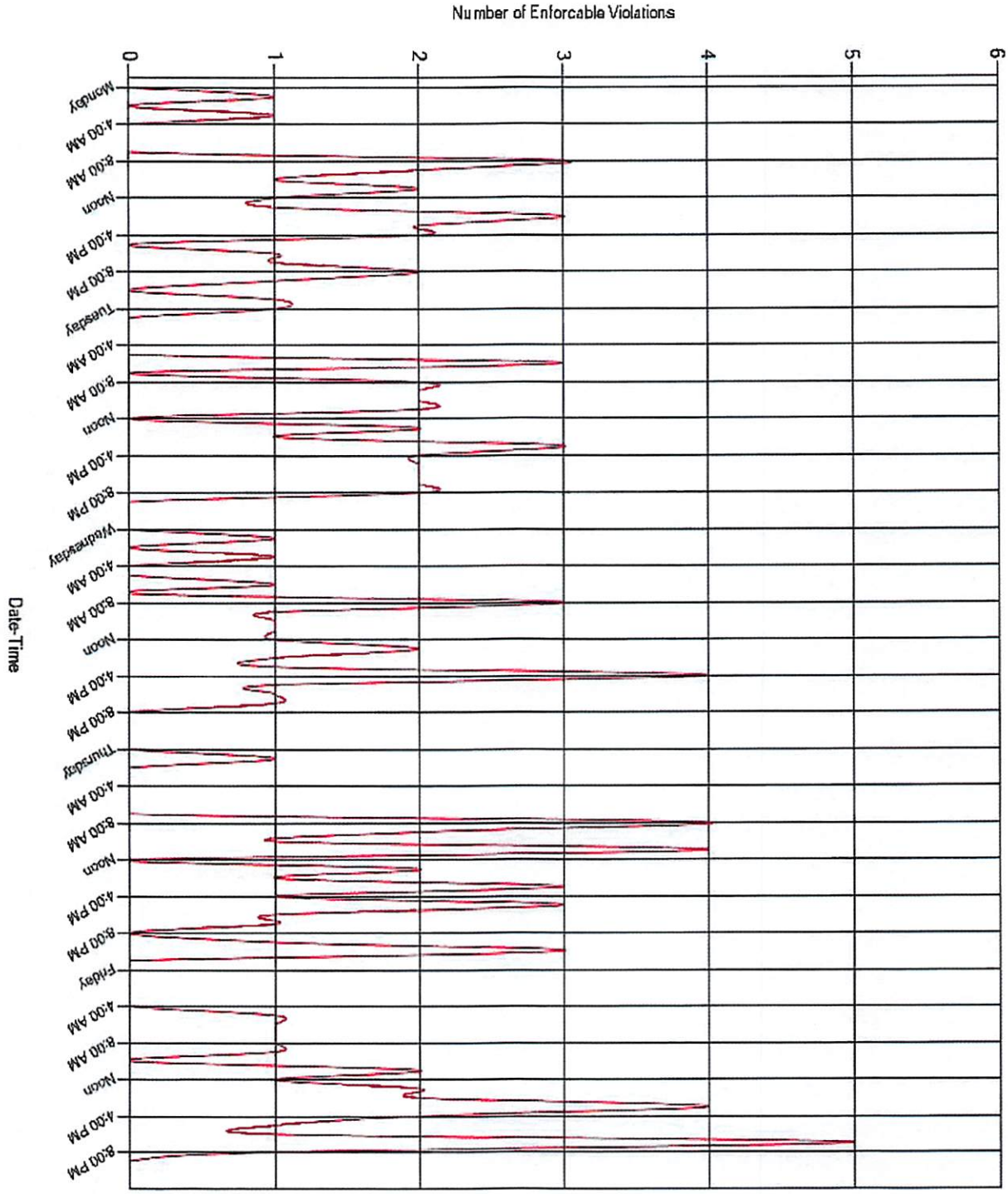
	Combined		Direction X, Lane 1		Direction X, Lane 2	
	AM	PM	AM	PM	AM	PM
Monday	7:00 - 9:00	4:00 - 6:00	8:00 - 10:00	2:00 - 4:00	7:00 - 9:00	4:00 - 6:00
Tuesday	9:00 - 11:00	3:00 - 5:00	6:00 - 8:00	3:00 - 5:00	9:00 - 11:00	3:00 - 5:00
Wednesday	9:00 - 11:00	4:00 - 6:00	8:00 - 10:00	4:00 - 6:00	9:00 - 11:00	12:00 - 2:00
Thursday	8:00 - 10:00	6:00 - 8:00	8:00 - 10:00	3:00 - 5:00	9:00 - 11:00	6:00 - 8:00
Friday	9:00 - 11:00	2:00 - 4:00	10:00 - 12:00	7:00 - 9:00	9:00 - 11:00	2:00 - 4:00
Saturday	10:00 - 12:00	7:00 - 9:00	4:00 - 6:00	7:00 - 9:00	10:00 - 12:00	1:00 - 3:00
Sunday	6:00 - 8:00	6:00 - 8:00	12:00 - 2:00	12:00 - 2:00	6:00 - 8:00	6:00 - 8:00

	Combined	Direction X, Lane 1	Direction X, Lane 2
Monday	4:00PM - 8:00PM	8:00AM - 12:00PM	4:00PM - 8:00PM
Tuesday	3:00PM - 7:00PM	6:00AM - 10:00AM	3:00PM - 7:00PM
Wednesday	4:00PM - 8:00PM	4:00PM - 8:00PM	12:00PM - 4:00PM
Thursday	6:00PM - 10:00PM	8:00AM - 12:00PM	6:00PM - 10:00PM
Friday	2:00PM - 6:00PM	7:00PM - 11:00PM	2:00PM - 6:00PM
Saturday	7:00PM - 11:00PM	7:00PM - 11:00PM	1:00PM - 5:00PM
Sunday	6:00PM - 10:00PM	12:00PM - 4:00PM	6:00AM - 10:00AM

Dobbs Ferry Police Department
112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500

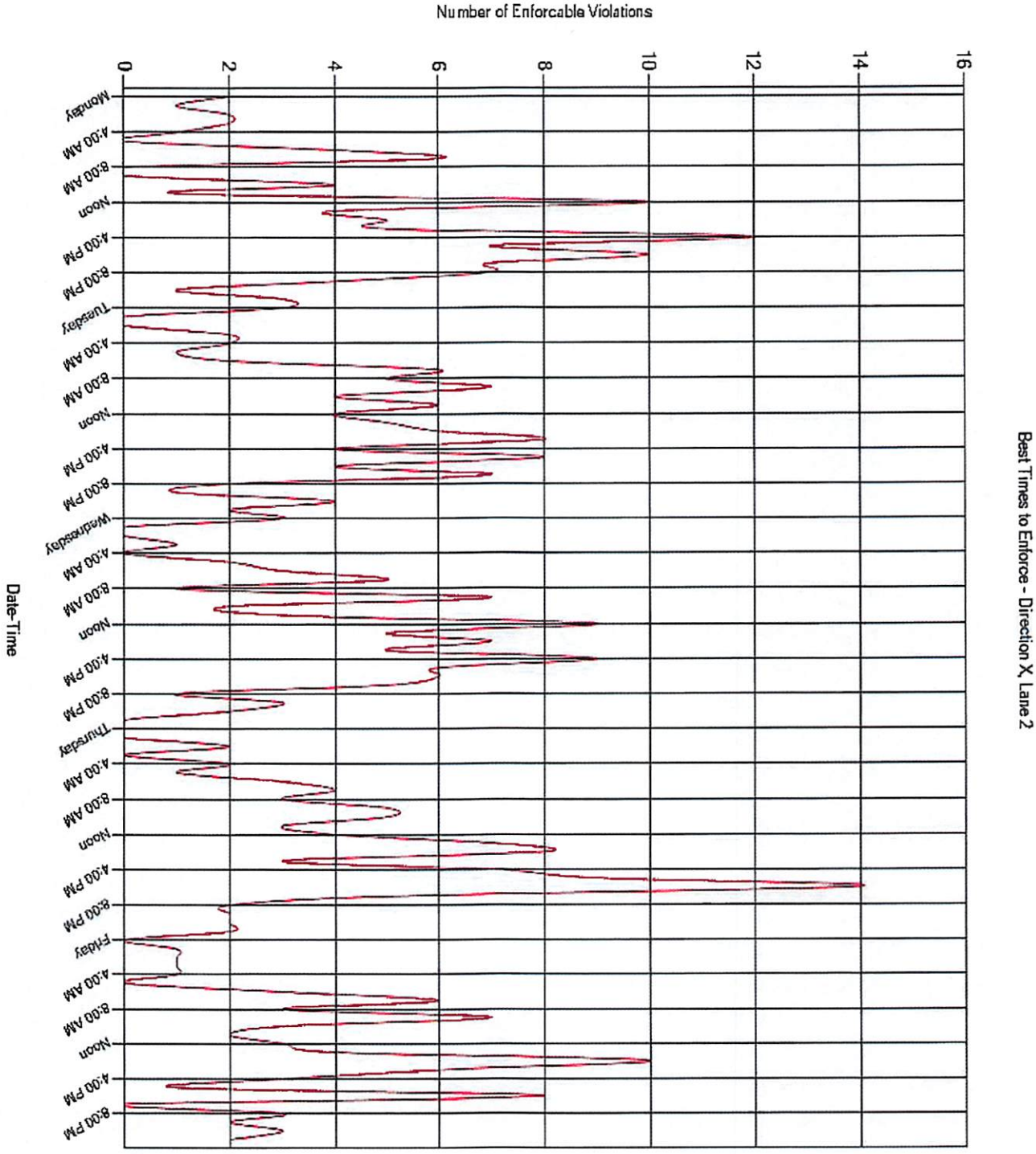


Dobbs Ferry Police Department
112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500



Dobbs Ferry Police Department

112 Main Street
Dobbs Ferry, NY 10522
(914) 693 - 5500



Attachment C

NYSDOT 2021 Seasonal Adjustment Factors

SEASONAL ADJUSTMENT FACTORS 2021

Based on Continuous Count Site Data 2021

FULL WEEK

FACTOR GROUP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Commuter Dominated—30	0.842	0.847	0.965	1.003	1.054	1.089	1.066	1.065	1.069	1.061	0.992	0.958
Non-Commuter Dominated—40	0.759	0.776	0.887	0.950	1.053	1.150	1.212	1.209	1.120	1.057	0.942	0.874
Recreational—60	0.609	0.660	0.718	0.771	1.047	1.345	1.607	1.610	1.275	1.092	0.748	0.677

WORK WEEK

FACTOR GROUP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Commuter Dominated—30	0.901	0.879	1.009	1.047	1.102	1.128	1.112	1.113	1.103	1.107	1.039	1.026
Non-Commuter Dominated—40	0.792	0.781	0.901	0.964	1.055	1.127	1.191	1.184	1.091	1.058	0.957	0.927
Recreational—60	0.610	0.638	0.694	0.733	0.965	1.242	1.542	1.500	1.153	1.020	0.740	0.713

WEEKEND

FACTOR GROUP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Commuter Dominated—30	0.692	0.725	0.826	0.863	0.911	0.962	0.916	0.916	0.941	0.906	0.858	0.761
Non-Commuter Dominated—40	0.654	0.709	0.795	0.861	0.984	1.128	1.176	1.191	1.100	0.982	0.881	0.725
Recreational—60	0.571	0.653	0.682	0.728	1.061	1.460	1.756	1.739	1.423	1.111	0.707	0.559

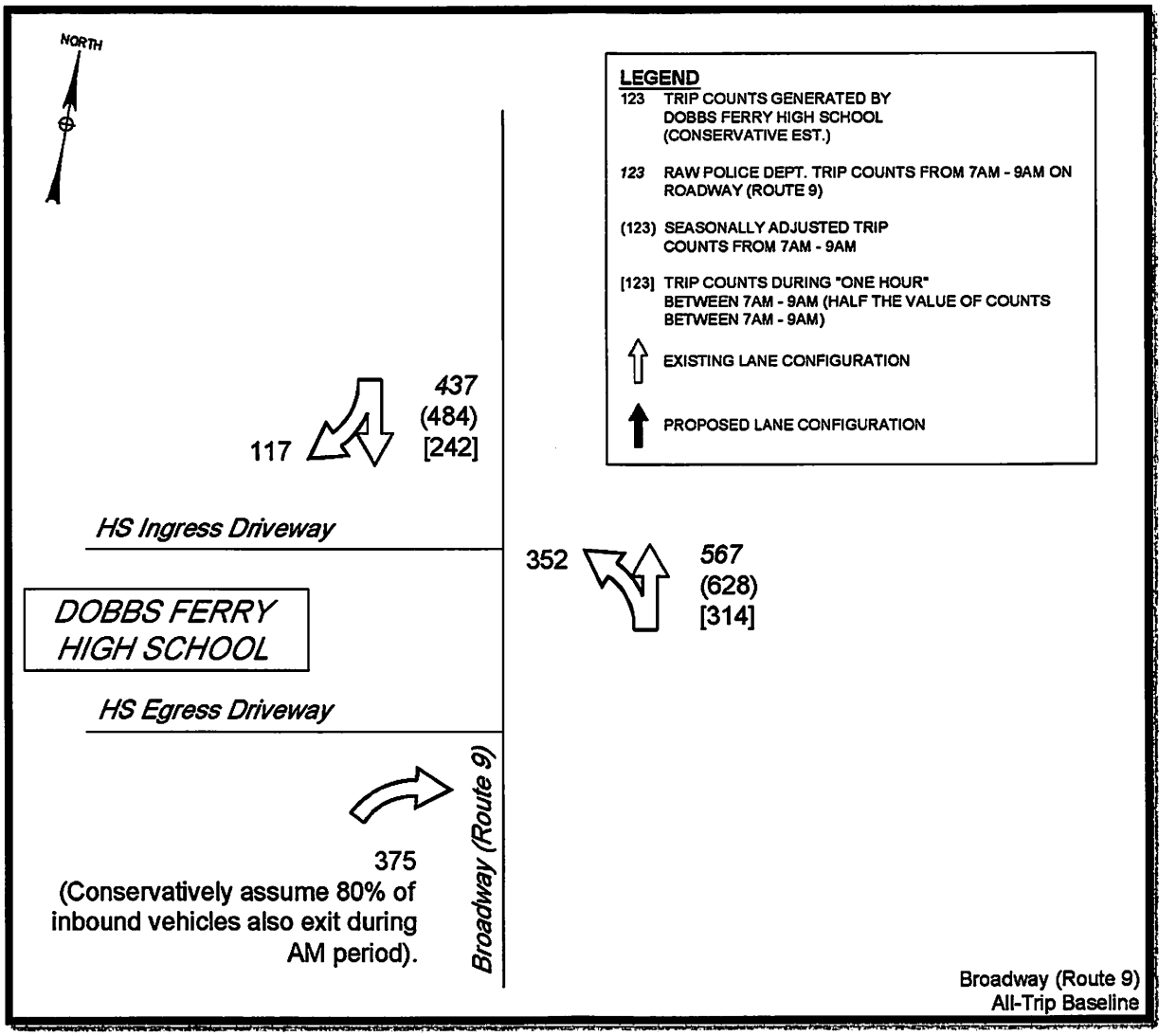
New York State Department of Transportation
Highway Data Services Bureau
MO-TrafficDataViewer@dot.ny.gov
(518) 457-1965

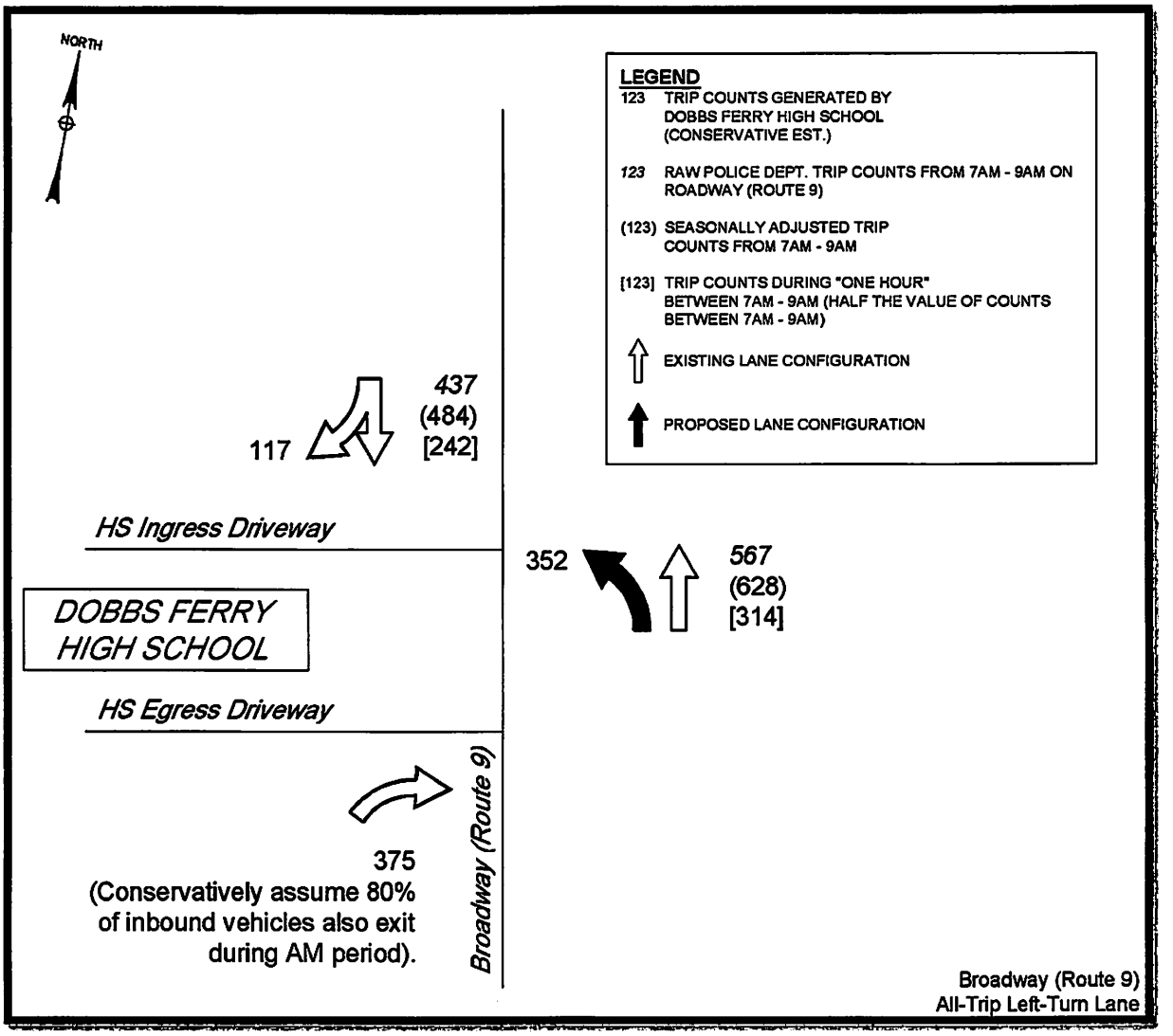
NYSDOT uses the Work Week factors when processing data from short term traffic counts.

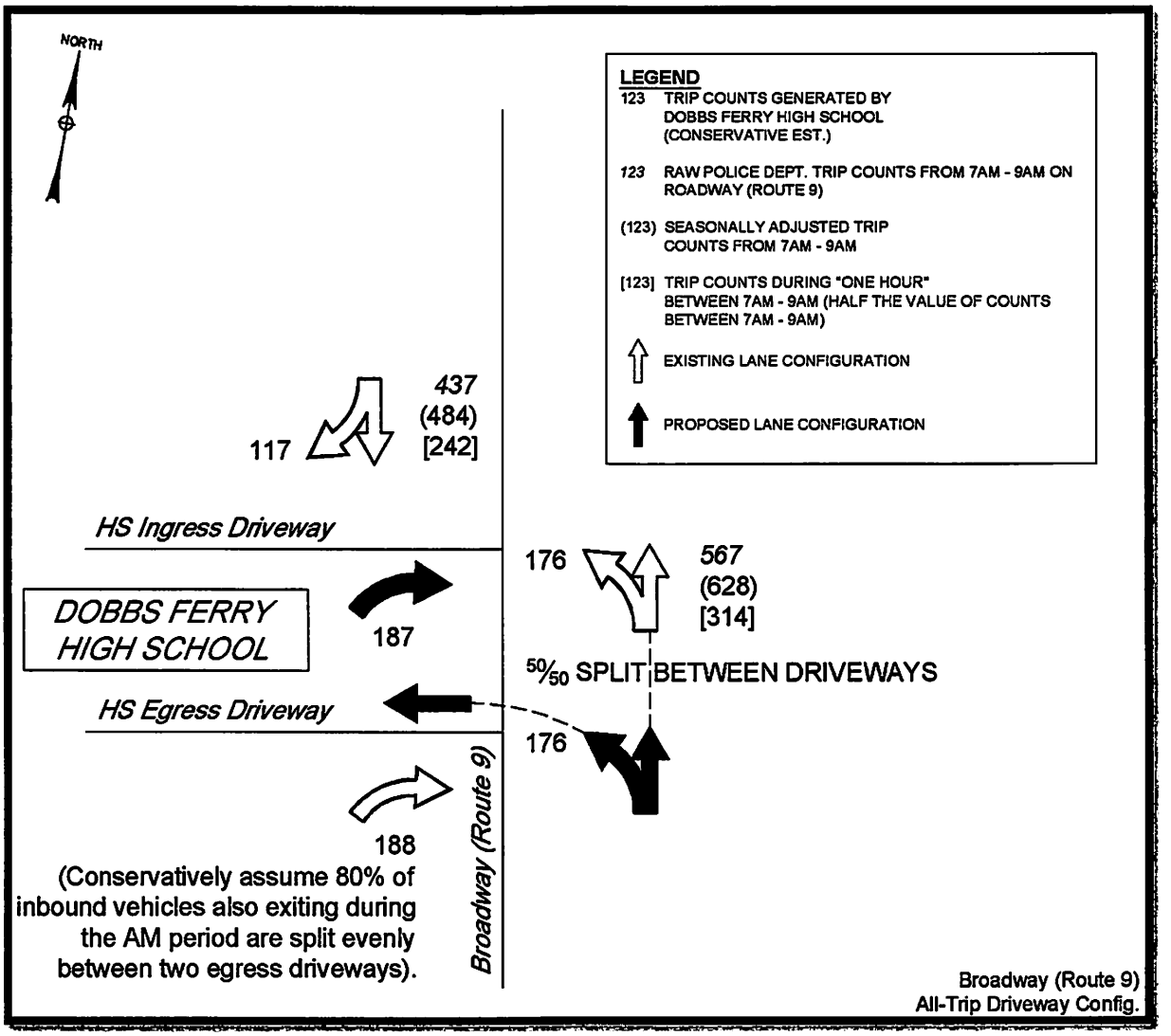
MAY 2022

Attachment D

Trip Distribution Diagrams


NORTH
LEGEND
123 TRIP COUNTS GENERATED BY DOBBS FERRY HIGH SCHOOL (CONSERVATIVE EST.)
123 RAW POLICE DEPT. TRIP COUNTS FROM 7AM - 9AM ON ROADWAY (ROUTE 9)
(123) SEASONALLY ADJUSTED TRIP COUNTS FROM 7AM - 9AM
[123] TRIP COUNTS DURING "ONE HOUR" BETWEEN 7AM - 9AM (HALF THE VALUE OF COUNTS BETWEEN 7AM - 9AM)
EXISTING LANE CONFIGURATION
PROPOSED LANE CONFIGURATION
117
437
(484)
[242]
HS Ingress Driveway
352
567
(628)
[314]
DOBBS FERRY HIGH SCHOOL
HS Egress Driveway
375
(Conservatively assume 80% of inbound vehicles also exit during AM period).
Broadway (Route 9)
Broadway (Route 9)
All-Trip Baseline


NORTH
LEGEND
123 TRIP COUNTS GENERATED BY DOBBS FERRY HIGH SCHOOL (CONSERVATIVE EST.)
123 RAW POLICE DEPT. TRIP COUNTS FROM 7AM - 9AM ON ROADWAY (ROUTE 9)
(123) SEASONALLY ADJUSTED TRIP COUNTS FROM 7AM - 9AM
[123] TRIP COUNTS DURING "ONE HOUR" BETWEEN 7AM - 9AM (HALF THE VALUE OF COUNTS BETWEEN 7AM - 9AM)
EXISTING LANE CONFIGURATION
PROPOSED LANE CONFIGURATION
117
437
(484)
[242]
HS Ingress Driveway
352
567
(628)
[314]
DOBBS FERRY HIGH SCHOOL
HS Egress Driveway
375
(Conservatively assume 80% of inbound vehicles also exit during AM period).
Broadway (Route 9)
Broadway (Route 9)
All-Trip Left-Turn Lane


NORTH
LEGEND
123 TRIP COUNTS GENERATED BY DOBBS FERRY HIGH SCHOOL (CONSERVATIVE EST.)
123 RAW POLICE DEPT. TRIP COUNTS FROM 7AM - 9AM ON ROADWAY (ROUTE 9)
(123) SEASONALLY ADJUSTED TRIP COUNTS FROM 7AM - 9AM
[123] TRIP COUNTS DURING "ONE HOUR" BETWEEN 7AM - 9AM (HALF THE VALUE OF COUNTS BETWEEN 7AM - 9AM)
EXISTING LANE CONFIGURATION
PROPOSED LANE CONFIGURATION
117
437
(484)
[242]
HS Ingress Driveway
DOBBS FERRY HIGH SCHOOL
187
HS Egress Driveway
188
(Conservatively assume 80% of inbound vehicles also exiting during the AM period are split evenly between two egress driveways).
Broadway (Route 9)
176
567
(628)
[314]
50/50 SPLIT BETWEEN DRIVEWAYS
176
Broadway (Route 9)
All-Trip Driveway Config.

Attachment E

Synchro 11 Reports

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	375	0	314	242	0
Future Volume (vph)	0	375	0	314	242	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	124			94	232	
Travel Time (s)	2.8			2.1	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	408	0	341	263	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	408	0	341	263	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	352	314	242	117
Future Volume (vph)	0	0	352	314	242	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.956	
Flt Protected				0.974		
Satd. Flow (prot)	0	0	0	1633	1781	0
Flt Permitted				0.974		
Satd. Flow (perm)	0	0	0	1633	1781	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	158			232	285	
Travel Time (s)	3.6			5.3	6.5	
Confl. Peds. (#/hr)			50			50
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)				0		
Adj. Flow (vph)	0	0	383	341	263	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	724	390	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.8%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	375	0	314	242	0
Future Volume (vph)	0	375	0	314	242	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	124			94	232	
Travel Time (s)	2.8			2.1	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	408	0	341	263	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	408	0	341	263	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	352	314	242	117
Future Volume (vph)	0	0	352	314	242	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.956	
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	1676	1781	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	1676	1781	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	158			232	285	
Travel Time (s)	3.6			5.3	6.5	
Confl. Peds. (#/hr)			50			50
Confl. Bikes (#/hr)						10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)				0		
Adj. Flow (vph)	0	0	383	341	263	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	383	341	390	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	188	176	314	242	0
Future Volume (vph)	0	188	176	314	242	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected				0.982		
Satd. Flow (prot)	0	1611	0	1829	1863	0
Flt Permitted				0.982		
Satd. Flow (perm)	0	1611	0	1829	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	124			94	232	
Travel Time (s)	2.8			2.1	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	204	191	341	263	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	204	0	532	263	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.7%		ICU Level of Service A	
Analysis Period (min) 15			

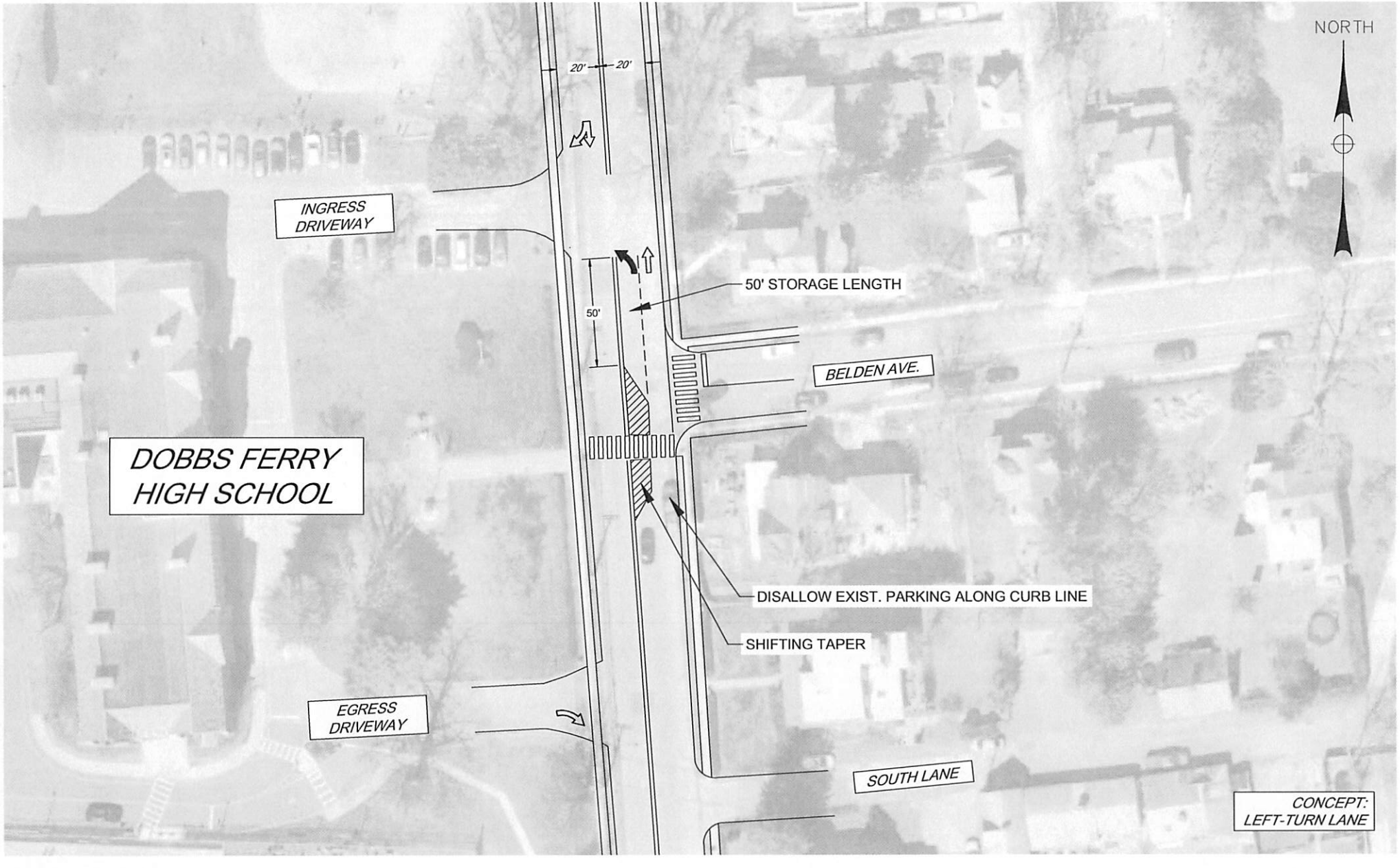
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	187	176	314	242	117
Future Volume (vph)	0	187	176	314	242	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.956	
Flt Protected				0.982		
Satd. Flow (prot)	0	1611	0	1646	1781	0
Flt Permitted				0.982		
Satd. Flow (perm)	0	1611	0	1646	1781	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	158			232	285	
Travel Time (s)	3.6			5.3	6.5	
Confl. Peds. (#/hr)			50			50
Confl. Bikes (#/hr)						10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)				0		
Adj. Flow (vph)	0	203	191	341	263	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	203	0	532	390	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.14	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

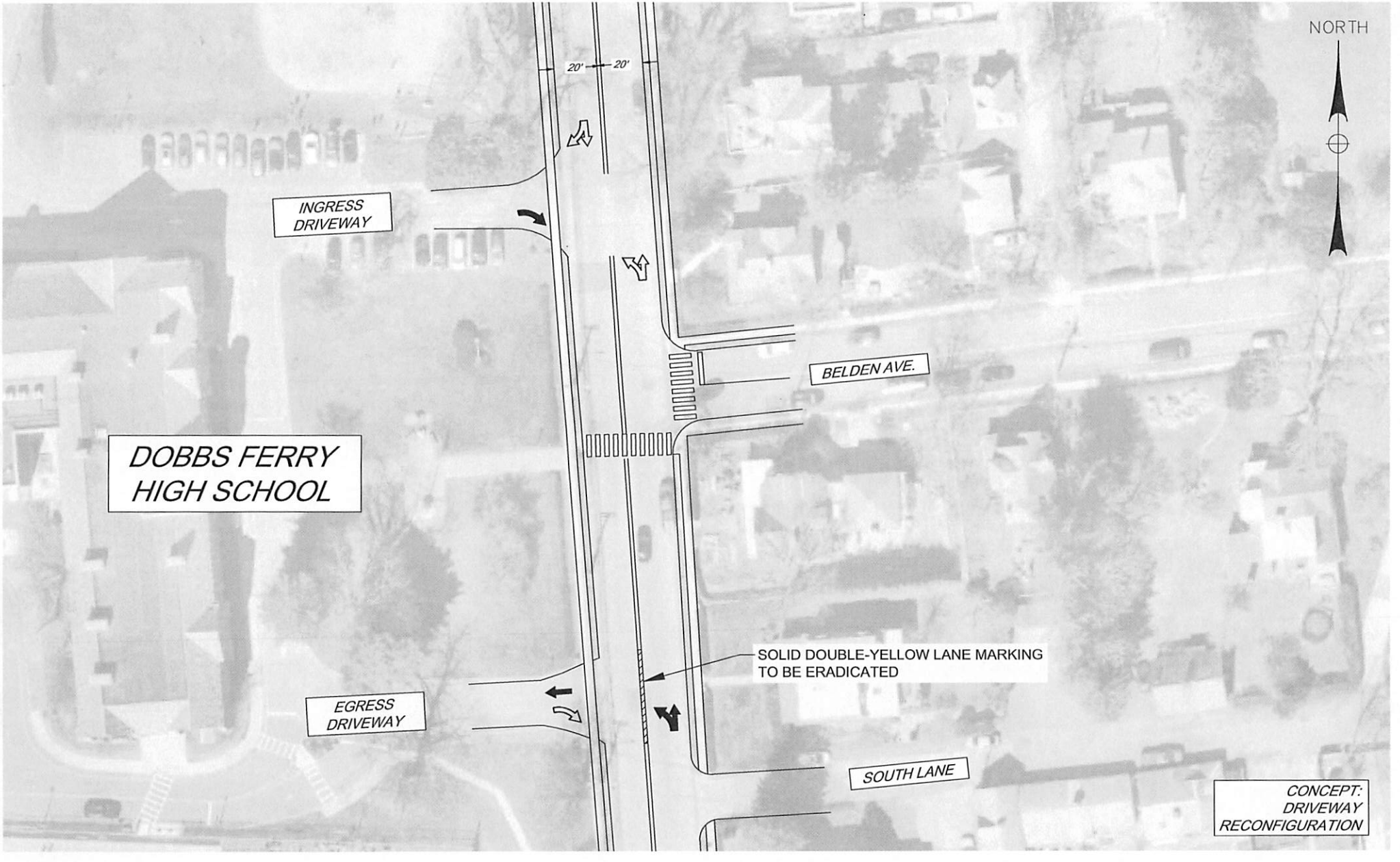
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.1%		ICU Level of Service A	
Analysis Period (min) 15			

Attachment F

Existing Condition & Conceptual Plans

NORTH
20'
20'
INGRESS DRIVEWAY
BELDEN AVE.
DOBBS FERRY HIGH SCHOOL
EGRESS DRIVEWAY
SOUTH LANE
EXISTING BASELINE CONFIGURATION


NORTH
20'
20'
INGRESS DRIVEWAY
50'
50' STORAGE LENGTH
BELDEN AVE.
DOBBS FERRY HIGH SCHOOL
DISALLOW EXIST. PARKING ALONG CURB LINE
SHIFTING TAPER
EGRESS DRIVEWAY
SOUTH LANE
CONCEPT: LEFT-TURN LANE


NORTH
20'
20'
INGRESS DRIVEWAY
BELDEN AVE.
DOBBS FERRY HIGH SCHOOL
SOLID DOUBLE-YELLOW LANE MARKING TO BE ERADICATED
EGRESS DRIVEWAY
SOUTH LANE
CONCEPT: DRIVEWAY RECONFIGURATION