

# **Appendix A**

**Port Cortlandt Appendix Documents**

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4. Signal Timing Plans
5. StreetLight Methodology/Volume Adjustment Factors
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# 1. Capacity Analysis Methodology

# CAPACITY ANALYSIS METHODOLOGY

## SIGNALIZED INTERSECTIONS

The operation of signalized intersections in the study area was analyzed by applying the Percentile Delay Methodology included in the Synchro 10 traffic analysis software. The Percentile Delay Methodology differs from the *Highway Capacity Manual (HCM)* Methodology by calculating vehicle delays for five different percentile scenarios (10th, 30th, 50th, 70th and 90th) and taking the volume weighted average of the scenarios as compared to HCM which calculates delay for a single average scenario. In addition, the Percentile Delay Methodology includes an additional queue delay component to account for the effects of queues and blocking on short links and turning bays. The methodology evaluates signalized intersections for average delay per vehicle and level of service (LOS).

LOS can be characterized for the entire intersection, each intersection approach, and each lane group. Delay alone is used to characterize LOS for the entire intersection or an approach. Total delay and volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. The volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group.

LOS A describes operation with a delay of 10 seconds per vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operation with delay between 10 and 20 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operation with delay between 20 and 35 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operation with delay between 35 and 55 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operation with delay between 55 and 80 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operation with delay exceeding 80 seconds per vehicle or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

A lane group can incur a delay less than 80 seconds per vehicle when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression

is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 seconds per vehicle represents failure from a delay perspective).

The delay criteria for the range of service levels for signalized intersections are shown in **Table A.1-1**.

**Table A.1-1**  
**LOS Criteria for Signalized Intersections**

Total Delay Per Vehicle	Level-of-Service (LOS) <sup>(1)</sup>	
	v/c ratio ≤ 1.0	v/c ratio > 1.0
≤ 10.0 seconds	A	F
>10.0 and ≤ 20.0 seconds	B	F
>20.0 and ≤ 35.0 seconds	C	F
>35.0 and ≤ 55.0 seconds	D	F
>55.0 and ≤ 80.0 seconds	E	F
>80.0 seconds	F	F

**Note:** (1) For approach-based and intersection-wide assessments, LOS is defined solely by delay.  
**Source:** Transportation Research Board. *Highway Capacity Manual, 6th Edition*.

## UNSIGNALIZED INTERSECTIONS

LOS for a two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections is determined by the computed or measured control delay using HCM Methodology. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns at TWSC intersections and for all movements at AWSC intersections. LOS is not defined for the intersection as a whole for TWSC intersections.

The LOS criteria for both TWSC and AWSC unsignalized intersections are summarized in **Table A.1-2**.

Note that the LOS criteria for unsignalized intersections are somewhat different from the criteria used in signalized intersections. At TWSC intersections, drivers on the stop-controlled approaches are required to select gaps in the major-street flow in order to execute crossing or turning maneuvers. In the presence of a queue, each driver on the controlled approach must also use some time to move into the front-of-queue position and prepare to evaluate gaps in the major-street flow. AWSC intersections require drivers on all approaches to stop before proceeding into the intersection.

**Table A.1-2**  
**LOS Criteria for Unsignalized Intersections**

Control Delay Per Vehicle	Level-of-Service (LOS) <sup>(1)</sup>	
	v/c ratio ≤ 1.0	v/c ratio > 1.0
≤ 10.0 seconds	A	F
>10.0 and ≤ 15.0 seconds	B	F
>15.0 and ≤ 25.0 seconds	C	F
>25.0 and ≤ 35.0 seconds	D	F
>35.0 and ≤ 50.0 seconds	E	F
>50.0 seconds	F	F

**Note:** (1) For TWSC intersections, the LOS criteria apply to each lane on a given approach and to each approach on the minor street (for TWSC intersections). LOS is not calculated for major-street approaches or for the intersection as a whole.  
**Source:** Transportation Research Board. *Highway Capacity Manual, 6th Edition*.

## 2. Turning Movement Counts (TMCs)

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Lousia Street	
	STREET (N-S):	John Walsh Blvd/Park Entrance	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	0	0	1	1	21	1	1	23	0	0	27	27	0	0	0	0
7:15 AM - 7:30 AM	0	1	0	1	29	0	0	29	1	0	33	34	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	35	0	3	38	0	0	48	48	0	3	0	3
7:45 AM - 8:00 AM	0	0	0	0	20	0	2	22	0	1	56	57	0	1	0	1
8:00 AM - 8:15 AM	0	0	1	1	23	1	2	26	0	2	37	39	0	1	0	1
8:15 AM - 8:30 AM	0	1	0	1	15	0	1	16	1	0	32	33	1	0	0	1
8:30 AM - 8:45 AM	0	0	0	0	22	0	1	23	0	0	39	39	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	27	0	1	28	0	0	38	38	0	0	0	0
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	0	0	0	0	35	0	3	38	0	0	48	48	0	3	0	3
7:45 AM - 8:00 AM	0	0	0	0	20	0	2	22	0	1	56	57	0	1	0	1
8:00 AM - 8:15 AM	0	0	1	1	23	1	2	26	0	2	37	39	0	1	0	1
8:15 AM - 8:30 AM	0	1	0	1	15	0	1	16	1	0	32	33	1	0	0	1
Peak Hour Total	0	1	1	2	93	1	8	102	1	3	173	177	1	5	0	6
Peak 15 Minute Vol	0	1	1	1	35	1	3	38	1	2	56	57	1	3	0	3
Calculated PHF	N/A	0.25	0.25	0.50	0.66	0.25	0.67	0.67	0.25	0.38	0.77	0.78	0.25	0.42	N/A	0.50
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	0	0	1	1	40	1	0	41	0	1	27	28	0	0	0	0
4:15 PM - 4:30 PM	0	1	0	1	30	0	1	31	1	0	26	27	0	1	0	1
4:30 PM - 4:45 PM	0	0	0	0	36	0	1	37	0	0	33	33	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	20	0	2	22	0	0	27	27	1	2	0	3
5:00 PM - 5:15 PM	0	0	1	1	22	1	1	24	0	3	20	23	0	0	0	0
5:15 PM - 5:30 PM	0	1	0	1	24	0	1	25	1	1	27	29	2	1	0	3
5:30 PM - 5:45 PM	0	0	0	0	31	0	0	31	0	0	21	21	2	0	0	2
5:45 PM - 6:00 PM	0	0	0	0	30	0	2	32	0	0	27	27	1	1	0	2
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	0	0	0	0	20	0	2	22	0	0	27	27	1	2	0	3
5:00 PM - 5:15 PM	0	0	1	1	22	1	1	24	0	3	20	23	0	0	0	0
5:15 PM - 5:30 PM	0	1	0	1	24	0	1	25	1	1	27	29	2	1	0	3
5:30 PM - 5:45 PM	0	0	0	0	31	0	0	31	0	0	21	21	2	0	0	2
Peak Hour Total	0	1	1	2	97	1	4	102	1	4	95	100	5	3	0	8
Peak 15 Minute Vol	0	1	1	1	31	1	2	31	1	3	27	29	2	2	0	3
Calculated PHF	N/A	0.25	0.25	0.50	0.78	0.25	0.50	0.82	0.25	0.33	0.88	0.86	0.63	0.38	N/A	0.67

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Louisa Street	
	STREET (N-S):	Route 9 Southbound Ramps	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM		23	51	74	0	15		15				0	1	0	22	23
7:15 AM - 7:30 AM		27	47	74	0	22		22				0	0	0	17	17
7:30 AM - 7:45 AM		26	49	75	0	23		23				0	0	0	18	18
7:45 AM - 8:00 AM		33	63	96	0	17		17				0	0	0	31	31
8:00 AM - 8:15 AM		34	51	85	0	27		27				0	0	0	31	31
8:15 AM - 8:30 AM		41	55	96	0	30		30				0	0	0	31	31
8:30 AM - 8:45 AM		36	50	86	0	17		17				0	0	0	30	30
8:45 AM - 9:00 AM		28	51	79	0	23		23				0	0	0	27	27
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	0	26	49	75	0	23	0	23	0	0	0	0	0	0	18	18
7:45 AM - 8:00 AM	0	33	63	96	0	17	0	17	0	0	0	0	0	0	31	31
8:00 AM - 8:15 AM	0	34	51	85	0	27	0	27	0	0	0	0	0	0	31	31
8:15 AM - 8:30 AM	0	41	55	96	0	30	0	30	0	0	0	0	0	0	31	31
Peak Hour Total	0	134	218	352	0	97	0	97	0	0	0	0	0	0	111	111
Peak 15 Minute Vol	0	41	63	96	0	30	0	30	0	0	0	0	0	0	31	31
Calculated PHF	N/A	0.82	0.87	0.92	N/A	0.81	N/A	0.81	N/A	N/A	N/A	N/A	N/A	N/A	0.90	0.90
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM		37	14	51	0	18		18				0	0	0	20	20
4:15 PM - 4:30 PM		47	18	65	1	18		19				0	0	0	21	21
4:30 PM - 4:45 PM		41	18	59	0	17		17				0	0	0	27	27
4:45 PM - 5:00 PM		45	19	64	0	21		21				0	0	0	23	23
5:00 PM - 5:15 PM		39	24	63	0	30		30				0	2	0	40	42
5:15 PM - 5:30 PM		47	26	73	1	14		15				0	0	0	24	24
5:30 PM - 5:45 PM		40	21	61	0	27		27				0	0	0	31	31
5:45 PM - 6:00 PM		41	20	61	0	28		28				0	0	0	25	25
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	0	45	19	64	0	21	0	21	0	0	0	0	0	0	23	23
5:00 PM - 5:15 PM	0	39	24	63	0	30	0	30	0	0	0	0	2	0	40	42
5:15 PM - 5:30 PM	0	47	26	73	1	14	0	15	0	0	0	0	0	0	24	24
5:30 PM - 5:45 PM	0	40	21	61	0	27	0	27	0	0	0	0	0	0	31	31
Peak Hour Total	0	171	90	261	1	92	0	93	0	0	0	0	2	0	118	120
Peak 15 Minute Vol	0	47	26	73	1	30	0	30	0	0	0	0	2	0	40	42
Calculated PHF	N/A	0.91	0.87	0.89	0.25	0.77	N/A	0.78	N/A	N/A	N/A	N/A	0.25	N/A	0.74	0.71



**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Louisa Street	
	STREET (N-S):	Route 9 Northbound Ramps	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM TO 9:00 AM	
	PM PEAK PERIOD	4:00 PM TO 6:00 PM	

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	24			24				0	15	0		15				0
7:15 AM - 7:30 AM	27			27				0	22	0		22				0
7:30 AM - 7:45 AM	26			26				0	23	2		25				0
7:45 AM - 8:00 AM	33			33				0	17	1		18				0
8:00 AM - 8:15 AM	34			34				0	27	0		27				0
8:15 AM - 8:30 AM	41			41				0	30	0		30				0
8:30 AM - 8:45 AM	36			36				0	17	1		18				0
8:45 AM - 9:00 AM	28			28				0	23	0		23				0
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	26	0	0	26	0	0	0	0	23	2	0	25	0	0	0	0
7:45 AM - 8:00 AM	33	0	0	33	0	0	0	0	17	1	0	18	0	0	0	0
8:00 AM - 8:15 AM	34	0	0	34	0	0	0	0	27	0	0	27	0	0	0	0
8:15 AM - 8:30 AM	41	0	0	41	0	0	0	0	30	0	0	30	0	0	0	0
Peak Hour Total	134	0	0	134	0	0	0	0	97	3	0	100	0	0	0	0
Peak 15 Minute Vol	41	0	0	41	0	0	0	0	30	2	0	30	0	0	0	0
Calculated PHF	0.82	N/A	N/A	0.82	N/A	N/A	N/A	N/A	0.81	0.38	N/A	0.83	N/A	N/A	N/A	N/A
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	37			37				0	18	0		18				0
4:15 PM - 4:30 PM	47			47				0	19	0		19				0
4:30 PM - 4:45 PM	41			41				0	17	0		17				0
4:45 PM - 5:00 PM	45			45				0	21	0		21				0
5:00 PM - 5:15 PM	41			41				0	30	0		30				0
5:15 PM - 5:30 PM	47			47				0	15	0		15				0
5:30 PM - 5:45 PM	40			40				0	27	0		27				0
5:45 PM - 6:00 PM	41			41				0	28	0		28				0
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	45	0	0	45	0	0	0	0	21	0	0	21	0	0	0	0
5:00 PM - 5:15 PM	41	0	0	41	0	0	0	0	30	0	0	30	0	0	0	0
5:15 PM - 5:30 PM	47	0	0	47	0	0	0	0	15	0	0	15	0	0	0	0
5:30 PM - 5:45 PM	40	0	0	40	0	0	0	0	27	0	0	27	0	0	0	0
Peak Hour Total	173	0	0	173	0	0	0	0	93	0	0	93	0	0	0	0
Peak 15 Minute Vol	47	0	0	47	0	0	0	0	30	0	0	30	0	0	0	0
Calculated PHF	0.92	N/A	N/A	0.92	N/A	N/A	N/A	N/A	0.78	N/A	N/A	0.78	N/A	N/A	N/A	N/A

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Louisa Street	
	STREET (N-S):	Lower South Street	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	6	64	1	71	5	36	0	41	4	4	1	9	9	5	2	16
7:15 AM - 7:30 AM	5	61	0	66	6	36	3	45	4	4	6	14	7	6	1	14
7:30 AM - 7:45 AM	3	63	1	67	9	41	0	50	3	1	3	7	9	9	1	19
7:45 AM - 8:00 AM	5	87	1	93	4	45	1	50	5	1	2	8	7	4	3	14
8:00 AM - 8:15 AM	4	76	2	82	7	55	2	64	6	4	1	11	8	7	4	19
8:15 AM - 8:30 AM	4	88	1	93	3	61	0	64	6	4	2	12	6	3	2	11
8:30 AM - 8:45 AM	3	73	1	77	3	44	2	49	5	3	2	10	11	3	1	15
8:45 AM - 9:00 AM	4	65	0	69	4	48	1	53	4	2	3	9	11	4	1	16
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	3	63	1	67	9	41	0	50	3	1	3	7	9	9	1	19
7:45 AM - 8:00 AM	5	87	1	93	4	45	1	50	5	1	2	8	7	4	3	14
8:00 AM - 8:15 AM	4	76	2	82	7	55	2	64	6	4	1	11	8	7	4	19
8:15 AM - 8:30 AM	4	88	1	93	3	61	0	64	6	4	2	12	6	3	2	11
Peak Hour Total	16	314	5	335	23	202	3	228	20	10	8	38	30	23	10	63
Peak 15 Minute Vol	5	88	2	93	9	61	2	64	6	4	3	12	9	9	4	19
Calculated PHF	0.80	0.89	0.63	0.90	0.64	0.83	0.38	0.89	0.83	0.63	0.67	0.79	0.83	0.64	0.63	0.83
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	11	43	2	56	5	34	2	41	10	11	1	22	7	5	8	20
4:15 PM - 4:30 PM	11	53	1	65	5	34	2	41	8	8	6	22	6	5	7	18
4:30 PM - 4:45 PM	13	53	3	69	6	35	6	47	12	15	3	30	3	6	15	24
4:45 PM - 5:00 PM	11	57	3	71	4	37	6	47	11	7	2	20	5	4	10	19
5:00 PM - 5:15 PM	10	54	2	66	4	61	5	70	7	8	1	16	8	4	6	18
5:15 PM - 5:30 PM	8	64	1	73	3	33	4	40	11	9	2	22	7	3	8	18
5:30 PM - 5:45 PM	7	53	3	63	5	51	4	60	9	11	2	22	6	5	7	18
5:45 PM - 6:00 PM	7	57	1	65	4	49	3	56	11	7	3	21	1	4	8	13
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	11	57	3	71	4	37	6	47	11	7	2	20	5	4	10	19
5:00 PM - 5:15 PM	10	54	2	66	4	61	5	70	7	8	1	16	8	4	6	18
5:15 PM - 5:30 PM	8	64	1	73	3	33	4	40	11	9	2	22	7	3	8	18
5:30 PM - 5:45 PM	7	53	3	63	5	51	4	60	9	11	2	22	6	5	7	18
Peak Hour Total	36	228	9	273	16	182	19	217	38	35	7	80	26	16	31	73
Peak 15 Minute Vol	11	64	3	73	5	61	6	70	11	11	2	22	8	5	10	19
Calculated PHF	0.82	0.89	0.75	0.93	0.80	0.75	0.79	0.78	0.86	0.80	0.88	0.91	0.81	0.80	0.78	0.96

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Bleakley Avenue	
	STREET (N-S):	Broadway	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM TO 9:00 AM	
	PM PEAK PERIOD	4:00 PM TO 6:00 PM	

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM				0	0		8	8		18	19	37	5	18		23
7:15 AM - 7:30 AM				0	4		6	10		18	28	46	8	17		25
7:30 AM - 7:45 AM				0	2		16	18		11	24	35	8	23		31
7:45 AM - 8:00 AM				0	3		7	10		17	28	45	4	12		16
8:00 AM - 8:15 AM				0	1		4	5		18	12	30	4	17		21
8:15 AM - 8:30 AM				0	4		11	15		26	16	42	4	18		22
8:30 AM - 8:45 AM				0	1		14	15		15	22	37	3	17		20
8:45 AM - 9:00 AM				0	7		4	11		18	27	45	4	17		21
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	0	0	0	0	2	0	16	18	0	11	24	35	8	23	0	31
7:45 AM - 8:00 AM	0	0	0	0	3	0	7	10	0	17	28	45	4	12	0	16
8:00 AM - 8:15 AM	0	0	0	0	1	0	4	5	0	18	12	30	4	17	0	21
8:15 AM - 8:30 AM	0	0	0	0	4	0	11	15	0	26	16	42	4	18	0	22
Peak Hour Total	0	0	0	0	10	0	38	48	0	72	80	152	20	70	0	90
Peak 15 Minute Vol	0	0	0	0	4	0	16	18	0	26	28	45	8	23	0	31
Calculated PHF	N/A	N/A	N/A	N/A	0.63	N/A	0.59	0.67	N/A	0.69	0.71	0.84	0.63	0.76	N/A	0.73
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM				0	15		9	24		12	15	27	3	33		36
4:15 PM - 4:30 PM				0	6		7	13		19	14	33	4	24		28
4:30 PM - 4:45 PM				0	10		7	17		23	19	42	2	23		25
4:45 PM - 5:00 PM				0	10		6	16		22	17	39	2	17		19
5:00 PM - 5:15 PM				0	8		5	13		18	22	40	3	15		18
5:15 PM - 5:30 PM				0	7		9	16		17	24	41	7	16		23
5:30 PM - 5:45 PM				0	7		3	10		25	17	42	4	27		31
5:45 PM - 6:00 PM				0	1		4	5		19	18	37	1	22		23
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	0	0	0	0	10	0	6	16	0	22	17	39	2	17	0	19
5:00 PM - 5:15 PM	0	0	0	0	8	0	5	13	0	18	22	40	3	15	0	18
5:15 PM - 5:30 PM	0	0	0	0	7	0	9	16	0	17	24	41	7	16	0	23
5:30 PM - 5:45 PM	0	0	0	0	7	0	3	10	0	25	17	42	4	27	0	31
Peak Hour Total	0	0	0	0	32	0	23	55	0	82	80	162	16	75	0	91
Peak 15 Minute Vol	0	0	0	0	10	0	9	16	0	25	24	42	7	27	0	31
Calculated PHF	N/A	N/A	N/A	N/A	0.80	N/A	0.64	0.86	N/A	0.82	0.83	0.96	0.57	0.69	N/A	0.73

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Bleakley Avenue	
	STREET (N-S):	Route 9A	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM TO 9:00 AM	
	PM PEAK PERIOD	4:00 PM TO 6:00 PM	

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	22		7	29				0	1	33		34		90	11	101
7:15 AM - 7:30 AM	36		12	48				0	1	26		27		81	15	96
7:30 AM - 7:45 AM	30		8	38				0	2	45		47		96	16	112
7:45 AM - 8:00 AM	40		6	46				0	2	64		66		74	12	86
8:00 AM - 8:15 AM	17		10	27				0	4	53		57		72	8	80
8:15 AM - 8:30 AM	22		6	28				0	2	65		67		51	13	64
8:30 AM - 8:45 AM	27		5	32				0	3	58		61		38	10	48
8:45 AM - 9:00 AM	31		6	37				0	1	77		78		26	7	33
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	30	0	8	38	0	0	0	0	2	45	0	47	0	96	16	112
7:45 AM - 8:00 AM	40	0	6	46	0	0	0	0	2	64	0	66	0	74	12	86
8:00 AM - 8:15 AM	17	0	10	27	0	0	0	0	4	53	0	57	0	72	8	80
8:15 AM - 8:30 AM	22	0	6	28	0	0	0	0	2	65	0	67	0	51	13	64
Peak Hour Total	109	0	30	139	0	0	0	0	10	227	0	237	0	293	49	342
Peak 15 Minute Vol	40	0	10	46	0	0	0	0	4	65	0	67	0	96	16	112
Calculated PHF	0.68	N/A	0.75	0.76	N/A	N/A	N/A	N/A	0.63	0.87	N/A	0.88	N/A	0.76	0.77	0.76
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	21		3	24				0	3	119		122		119	12	131
4:15 PM - 4:30 PM	21		3	24				0	1	106		107		103	8	111
4:30 PM - 4:45 PM	17		4	21				0	1	98		99		87	7	94
4:45 PM - 5:00 PM	16		5	21				0	3	106		109		116	5	121
5:00 PM - 5:15 PM	15		3	18				0	4	137		141		108	10	118
5:15 PM - 5:30 PM	20		6	26				0	3	100		103		119	11	130
5:30 PM - 5:45 PM	17		1	18				0	2	113		115		93	10	103
5:45 PM - 6:00 PM	18		6	24				0	2	96		98		104	10	114
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	16	0	5	21	0	0	0	0	3	106	0	109	0	116	5	121
5:00 PM - 5:15 PM	15	0	3	18	0	0	0	0	4	137	0	141	0	108	10	118
5:15 PM - 5:30 PM	20	0	6	26	0	0	0	0	3	100	0	103	0	119	11	130
5:30 PM - 5:45 PM	17	0	1	18	0	0	0	0	2	113	0	115	0	93	10	103
Peak Hour Total	68	0	15	83	0	0	0	0	12	456	0	468	0	436	36	472
Peak 15 Minute Vol	20	0	6	26	0	0	0	0	4	137	0	141	0	119	11	130
Calculated PHF	0.85	N/A	0.63	0.80	N/A	N/A	N/A	N/A	0.75	0.83	N/A	0.83	N/A	0.92	0.82	0.91

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Continental Driveway	
	STREET (N-S):	Broadway	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	2		0	2				0	0	35		35		14	3	17
7:15 AM - 7:30 AM	3		0	3				0	0	44		44		15	3	18
7:30 AM - 7:45 AM	4		0	4				0	0	31		31		20	2	22
7:45 AM - 8:00 AM	2		0	2				0	0	42		42		8	3	11
8:00 AM - 8:15 AM	3		0	3				0	0	26		26		14	4	18
8:15 AM - 8:30 AM	3		0	3				0	0	38		38		19	1	20
8:30 AM - 8:45 AM	2		0	2				0	0	36		36		14	1	15
8:45 AM - 9:00 AM	1		0	1				0	0	44		44		16	4	20
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	4	0	0	4	0	0	0	0	0	31	0	31	0	20	2	22
7:45 AM - 8:00 AM	2	0	0	2	0	0	0	0	0	42	0	42	0	8	3	11
8:00 AM - 8:15 AM	3	0	0	3	0	0	0	0	0	26	0	26	0	14	4	18
8:15 AM - 8:30 AM	3	0	0	3	0	0	0	0	0	38	0	38	0	19	1	20
Peak Hour Total	12	0	0	12	0	0	0	0	0	137	0	137	0	61	10	71
Peak 15 Minute Vol	4	0	0	4	0	0	0	0	0	42	0	42	0	20	4	22
Calculated PHF	0.75	N/A	N/A	0.75	N/A	N/A	N/A	N/A	N/A	0.82	N/A	0.82	N/A	0.76	0.63	0.81
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	6		0	6				0	0	12		12		39	3	42
4:15 PM - 4:30 PM	5		0	5				0	0	23		23		24	1	25
4:30 PM - 4:45 PM	1		0	1				0	0	38		38		28	1	29
4:45 PM - 5:00 PM	2		0	2				0	0	35		35		24	2	26
5:00 PM - 5:15 PM	3		0	3				0	0	37		37		20	2	22
5:15 PM - 5:30 PM	4		0	4				0	0	36		36		16	4	20
5:30 PM - 5:45 PM	1		0	1				0	0	39		39		32	1	33
5:45 PM - 6:00 PM	4		0	4				0	0	31		31		19	1	20
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	2	0	0	2	0	0	0	0	0	35	0	35	0	24	2	26
5:00 PM - 5:15 PM	3	0	0	3	0	0	0	0	0	37	0	37	0	20	2	22
5:15 PM - 5:30 PM	4	0	0	4	0	0	0	0	0	36	0	36	0	16	4	20
5:30 PM - 5:45 PM	1	0	0	1	0	0	0	0	0	39	0	39	0	32	1	33
Peak Hour Total	10	0	0	10	0	0	0	0	0	147	0	147	0	92	9	101
Peak 15 Minute Vol	4	0	0	4	0	0	0	0	0	39	0	39	0	32	4	33
Calculated PHF	0.63	N/A	N/A	0.63	N/A	N/A	N/A	N/A	N/A	0.94	N/A	0.94	N/A	0.72	0.56	0.77

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortland
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Entergy Main Driveway	
	STREET (N-S):	Broadway	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	0		0	0				0	0	37		37		17	1	18
7:15 AM - 7:30 AM	0		0	0				0	1	46		47		18	3	21
7:30 AM - 7:45 AM	0		0	0				0	0	35		35		22	3	25
7:45 AM - 8:00 AM	1		0	1				0	0	44		44		11	4	15
8:00 AM - 8:15 AM	1		0	1				0	0	29		29		18	0	18
8:15 AM - 8:30 AM	2		1	3				0	1	40		41		19	3	22
8:30 AM - 8:45 AM	0		0	0				0	1	37		38		15	3	18
8:45 AM - 9:00 AM	0		0	0				0	0	45		45		20	4	24
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	35	0	35	0	22	3	25
7:45 AM - 8:00 AM	1	0	0	1	0	0	0	0	0	44	0	44	0	11	4	15
8:00 AM - 8:15 AM	1	0	0	1	0	0	0	0	0	29	0	29	0	18	0	18
8:15 AM - 8:30 AM	2	0	1	3	0	0	0	0	1	40	0	41	0	19	3	22
Peak Hour Total	4	0	1	5	0	0	0	0	1	148	0	149	0	70	10	80
Peak 15 Minute Vol	2	0	1	3	0	0	0	0	1	44	0	44	0	22	4	25
Calculated PHF	0.50	N/A	0.25	0.42	N/A	N/A	N/A	N/A	0.25	0.84	N/A	0.85	N/A	0.80	0.63	0.80
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	9		0	9				0	0	18		18		42	6	48
4:15 PM - 4:30 PM	5		0	5				0	0	28		28		25	5	30
4:30 PM - 4:45 PM	3		0	3				0	0	39		39		29	4	33
4:45 PM - 5:00 PM	3		0	3				0	1	36		37		26	1	27
5:00 PM - 5:15 PM	2		1	3				0	2	38		40		21	2	23
5:15 PM - 5:30 PM	1		0	1				0	0	40		40		20	3	23
5:30 PM - 5:45 PM	2		0	2				0	0	40		40		33	1	34
5:45 PM - 6:00 PM	3		0	3				0	1	34		35		20	3	23
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	3	0	0	3	0	0	0	0	1	36	0	37	0	26	1	27
5:00 PM - 5:15 PM	2	0	1	3	0	0	0	0	2	38	0	40	0	21	2	23
5:15 PM - 5:30 PM	1	0	0	1	0	0	0	0	0	40	0	40	0	20	3	23
5:30 PM - 5:45 PM	2	0	0	2	0	0	0	0	0	40	0	40	0	33	1	34
Peak Hour Total	8	0	1	9	0	0	0	0	3	154	0	157	0	100	7	107
Peak 15 Minute Vol	3	0	1	3	0	0	0	0	2	40	0	40	0	33	3	34
Calculated PHF	0.67	N/A	0.25	0.75	N/A	N/A	N/A	N/A	0.38	0.96	N/A	0.98	N/A	0.76	0.58	0.79

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Welcher Avenue	
	STREET (N-S):	Route 9A/Route 9 Southbound Off-Ramp	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM		9	7	16	50	7		57	0		38	38	11	75	20	106
7:15 AM - 7:30 AM		10	6	16	60	7		67	0		38	38	11	76	22	109
7:30 AM - 7:45 AM		6	7	13	74	5		79	0		52	52	19	65	8	92
7:45 AM - 8:00 AM		4	1	5	59	11		70	0		72	72	12	63	19	94
8:00 AM - 8:15 AM		6	10	16	43	7		50	0		53	53	8	57	9	74
8:15 AM - 8:30 AM		8	4	12	36	5		41	2		62	64	13	57	8	78
8:30 AM - 8:45 AM		9	7	16	42	7		49	2		57	59	9	39	7	55
8:45 AM - 9:00 AM		9	3	12	40	15		55	3		77	80	15	28	7	50
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	0	6	7	13	74	5	0	79	0	0	52	52	19	65	8	92
7:45 AM - 8:00 AM	0	4	1	5	59	11	0	70	0	0	72	72	12	63	19	94
8:00 AM - 8:15 AM	0	6	10	16	43	7	0	50	0	0	53	53	8	57	9	74
8:15 AM - 8:30 AM	0	8	4	12	36	5	0	41	2	0	62	64	13	57	8	78
Peak Hour Total	0	24	22	46	212	28	0	240	2	0	239	241	52	242	44	338
Peak 15 Minute Vol	0	8	10	16	74	11	0	79	2	0	72	72	19	65	19	94
Calculated PHF	N/A	0.75	0.55	0.72	0.72	0.64	N/A	0.76	0.25	N/A	0.83	0.84	0.68	0.93	0.58	0.90
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM		8	12	20	59	15		74	4		123	127	12	68	14	94
4:15 PM - 4:30 PM		20	5	25	50	18		68	1		114	115	26	62	16	104
4:30 PM - 4:45 PM		5	5	10	40	12		52	2		95	97	13	56	18	87
4:45 PM - 5:00 PM		17	9	26	60	13		73	4		103	107	10	56	13	79
5:00 PM - 5:15 PM		28	9	37	49	11		60	0		140	140	9	70	16	95
5:15 PM - 5:30 PM		12	5	17	63	13		76	0		105	105	15	73	13	101
5:30 PM - 5:45 PM		26	2	28	57	20		77	0		117	117	14	52	11	77
5:45 PM - 6:00 PM		11	9	20	52	14		66	0		100	100	25	60	17	102
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	0	17	9	26	60	13	0	73	4	0	103	107	10	56	13	79
5:00 PM - 5:15 PM	0	28	9	37	49	11	0	60	0	0	140	140	9	70	16	95
5:15 PM - 5:30 PM	0	12	5	17	63	13	0	76	0	0	105	105	15	73	13	101
5:30 PM - 5:45 PM	0	26	2	28	57	20	0	77	0	0	117	117	14	52	11	77
Peak Hour Total	0	83	25	108	229	57	0	286	4	0	465	469	48	251	53	352
Peak 15 Minute Vol	0	28	9	37	63	20	0	77	4	0	140	140	15	73	16	101
Calculated PHF	N/A	0.74	0.69	0.73	0.91	0.71	N/A	0.93	0.25	N/A	0.83	0.84	0.80	0.86	0.83	0.87

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Welcher Avenue	
	STREET (N-S):	Route 9 Northbound Ramps	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM TO 9:00 AM	
	PM PEAK PERIOD	4:00 PM TO 6:00 PM	

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	30	30		60		42	13	55		15	0	20	35			0
7:15 AM - 7:30 AM	29	30		59		52	14	66		15	0	20	35			0
7:30 AM - 7:45 AM	51	26		77		64	18	82		15	0	8	23			0
7:45 AM - 8:00 AM	52	36		88		56	28	84		14	0	18	32			0
8:00 AM - 8:15 AM	46	21		67		44	13	57		6	0	12	18			0
8:15 AM - 8:30 AM	43	40		83		29	12	41		12	0	6	18			0
8:30 AM - 8:45 AM	44	31		75		34	7	41		15	0	6	21			0
8:45 AM - 9:00 AM	60	41		101		31	19	50		24	0	3	27			0
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	51	26	0	77	0	64	18	82	15	0	8	23	0	0	0	0
7:45 AM - 8:00 AM	52	36	0	88	0	56	28	84	14	0	18	32	0	0	0	0
8:00 AM - 8:15 AM	46	21	0	67	0	44	13	57	6	0	12	18	0	0	0	0
8:15 AM - 8:30 AM	43	40	0	83	0	29	12	41	12	0	6	18	0	0	0	0
Peak Hour Total	192	123	0	315	0	193	71	264	47	0	44	91	0	0	0	0
Peak 15 Minute Vol	52	40	0	88	0	64	28	84	15	0	18	32	0	0	0	0
Calculated PHF	0.92	0.77	N/A	0.89	N/A	0.75	0.63	0.79	0.78	N/A	0.61	0.71	N/A	N/A	N/A	N/A
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	92	51		143		50	26	76		24	0	26	50			0
4:15 PM - 4:30 PM	85	75		160		40	24	64		28	0	18	46			0
4:30 PM - 4:45 PM	94	19		113		36	22	58		16	0	30	46			0
4:45 PM - 5:00 PM	78	52		130		48	24	72		25	0	34	59			0
5:00 PM - 5:15 PM	93	84		177		38	26	64		22	0	21	43			0
5:15 PM - 5:30 PM	79	53		132		54	22	76		22	0	45	67			0
5:30 PM - 5:45 PM	74	83		157		61	29	90		16	0	22	38			0
5:45 PM - 6:00 PM	66	70		136		53	20	73		13	0	18	31			0
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	78	52	0	130	0	48	24	72	25	0	34	59	0	0	0	0
5:00 PM - 5:15 PM	93	84	0	177	0	38	26	64	22	0	21	43	0	0	0	0
5:15 PM - 5:30 PM	79	53	0	132	0	54	22	76	22	0	45	67	0	0	0	0
5:30 PM - 5:45 PM	74	83	0	157	0	61	29	90	16	0	22	38	0	0	0	0
Peak Hour Total	324	272	0	596	0	201	101	302	85	0	122	207	0	0	0	0
Peak 15 Minute Vol	93	84	0	177	0	61	29	90	25	0	45	67	0	0	0	0
Calculated PHF	0.87	0.81	N/A	0.84	N/A	0.82	0.87	0.84	0.85	N/A	0.68	0.77	N/A	N/A	N/A	N/A



**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Belock Ave./Route 9 Southbound On-Ramp	
	STREET (N-S):	Route 9A	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	0	1	0	1				0	0	38	17	55	31	101	0	132
7:15 AM - 7:30 AM	1	0	5	6				0	3	37	22	62	51	91	0	142
7:30 AM - 7:45 AM	1	0	2	3				0	1	51	23	75	36	110	0	146
7:45 AM - 8:00 AM	0	0	3	3				0	2	72	30	104	40	83	0	123
8:00 AM - 8:15 AM	1	1	1	3				0	1	52	17	70	31	79	0	110
8:15 AM - 8:30 AM	0	0	0	0				0	0	64	23	87	33	64	0	97
8:30 AM - 8:45 AM	0	0	1	1				0	1	59	25	85	41	47	0	88
8:45 AM - 9:00 AM	0	0	2	2				0	2	80	26	108	40	31	0	71
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	1	0	2	3	0	0	0	0	1	51	23	75	36	110	0	146
7:45 AM - 8:00 AM	0	0	3	3	0	0	0	0	2	72	30	104	40	83	0	123
8:00 AM - 8:15 AM	1	1	1	3	0	0	0	0	1	52	17	70	31	79	0	110
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	64	23	87	33	64	0	97
Peak Hour Total	2	1	6	9	0	0	0	0	4	239	93	336	140	336	0	476
Peak 15 Minute Vol	1	1	3	3	0	0	0	0	2	72	30	104	40	110	0	146
Calculated PHF	0.50	0.25	0.50	0.75	N/A	N/A	N/A	N/A	0.50	0.83	0.78	0.81	0.88	0.76	N/A	0.82
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	0	1	0	1				0	0	127	13	140	7	131	1	139
4:15 PM - 4:30 PM	0	0	0	0				0	0	115	12	127	6	111	0	117
4:30 PM - 4:45 PM	2	0	0	2				0	0	95	20	115	6	94	1	101
4:45 PM - 5:00 PM	1	0	1	2				0	1	106	15	122	5	120	0	125
5:00 PM - 5:15 PM	0	1	1	2				0	2	140	10	152	11	117	0	128
5:15 PM - 5:30 PM	1	0	0	1				0	1	104	15	120	11	130	0	141
5:30 PM - 5:45 PM	0	0	0	0				0	0	117	13	130	8	103	0	111
5:45 PM - 6:00 PM	0	0	0	0				0	0	100	14	114	7	114	0	121
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	1	0	1	2	0	0	0	0	1	106	15	122	5	120	0	125
5:00 PM - 5:15 PM	0	1	1	2	0	0	0	0	2	140	10	152	11	117	0	128
5:15 PM - 5:30 PM	1	0	0	1	0	0	0	0	1	104	15	120	11	130	0	141
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	117	13	130	8	103	0	111
Peak Hour Total	2	1	2	5	0	0	0	0	4	467	53	524	35	470	0	505
Peak 15 Minute Vol	1	1	1	2	0	0	0	0	2	140	15	152	11	130	0	141
Calculated PHF	0.50	0.25	0.50	0.63	N/A	N/A	N/A	N/A	0.50	0.83	0.88	0.86	0.80	0.90	N/A	0.90

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Route 9 (Jans Peeck Bridge)	
	STREET (N-S):	Route 9 / Bear Mountain Parkway	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	30		155	185				0	113	55		168		76	41	117
7:15 AM - 7:30 AM	41		178	219				0	121	47		168		70	35	105
7:30 AM - 7:45 AM	27		201	228				0	106	70		176		68	36	104
7:45 AM - 8:00 AM	31		217	248				0	99	73		172		77	40	117
8:00 AM - 8:15 AM	33		206	239				0	131	63		194		90	41	131
8:15 AM - 8:30 AM	25		233	258				0	146	76		222		83	55	138
8:30 AM - 8:45 AM	27		241	268				0	137	64		201		80	50	130
8:45 AM - 9:00 AM	36		201	237				0	140	80		220		80	41	121
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	27	0	201	228	0	0	0	0	106	70	0	176	0	68	36	104
7:45 AM - 8:00 AM	31	0	217	248	0	0	0	0	99	73	0	172	0	77	40	117
8:00 AM - 8:15 AM	33	0	206	239	0	0	0	0	131	63	0	194	0	90	41	131
8:15 AM - 8:30 AM	25	0	233	258	0	0	0	0	146	76	0	222	0	83	55	138
Peak Hour Total	116	0	857	973	0	0	0	0	482	282	0	764	0	318	172	490
Peak 15 Minute Vol	33	0	233	258	0	0	0	0	146	76	0	222	0	90	55	138
Calculated PHF	0.88	N/A	0.92	0.94	N/A	N/A	N/A	N/A	0.83	0.93	N/A	0.86	N/A	0.88	0.78	0.89
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	47		181	228				0	177	91		268		101	26	127
4:15 PM - 4:30 PM	78		166	244				0	166	87		253		95	30	125
4:30 PM - 4:45 PM	73		159	232				0	199	88		287		103	36	139
4:45 PM - 5:00 PM	65		178	243				0	201	95		296		87	17	104
5:00 PM - 5:15 PM	61		223	284				0	222	103		325		110	18	128
5:15 PM - 5:30 PM	76		241	317				0	228	111		339		103	20	123
5:30 PM - 5:45 PM	70		231	301				0	213	87		300		90	23	113
5:45 PM - 6:00 PM	59		179	238				0	207	105		312		91	31	122
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	65	0	178	243	0	0	0	0	201	95	0	296	0	87	17	104
5:00 PM - 5:15 PM	61	0	223	284	0	0	0	0	222	103	0	325	0	110	18	128
5:15 PM - 5:30 PM	76	0	241	317	0	0	0	0	228	111	0	339	0	103	20	123
5:30 PM - 5:45 PM	70	0	231	301	0	0	0	0	213	87	0	300	0	90	23	113
Peak Hour Total	272	0	873	1145	0	0	0	0	864	396	0	1260	0	390	78	468
Peak 15 Minute Vol	76	0	241	317	0	0	0	0	228	111	0	339	0	110	23	128
Calculated PHF	0.89	N/A	0.91	0.90	N/A	N/A	N/A	N/A	0.95	0.89	N/A	0.93	N/A	0.89	0.85	0.91

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Route 9 Southbound Ramps	
	STREET (N-S):	Route 6	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM TO 9:00 AM	
	PM PEAK PERIOD	4:00 PM TO 6:00 PM	

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM				0	10		2	12		5	31	36	2	7		9
7:15 AM - 7:30 AM				0	12		3	15		6	35	41	1	6		7
7:30 AM - 7:45 AM				0	13		1	14		4	38	42	3	5		8
7:45 AM - 8:00 AM				0	8		4	12		4	33	37	1	3		4
8:00 AM - 8:15 AM				0	11		2	13		5	40	45	3	8		11
8:15 AM - 8:30 AM				0	10		2	12		5	37	42	1	2		3
8:30 AM - 8:45 AM				0	10		2	12		3	34	37	2	4		6
8:45 AM - 9:00 AM				0	9		2	11		4	30	34	3	1		4
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	0	0	0	0	13	0	1	14	0	4	38	42	3	5	0	8
7:45 AM - 8:00 AM	0	0	0	0	8	0	4	12	0	4	33	37	1	3	0	4
8:00 AM - 8:15 AM	0	0	0	0	11	0	2	13	0	5	40	45	3	8	0	11
8:15 AM - 8:30 AM	0	0	0	0	10	0	2	12	0	5	37	42	1	2	0	3
Peak Hour Total	0	0	0	0	42	0	9	51	0	18	148	166	8	18	0	26
Peak 15 Minute Vol	0	0	0	0	13	0	4	14	0	5	40	45	3	8	0	11
Calculated PHF	N/A	N/A	N/A	N/A	0.81	N/A	0.56	0.91	N/A	0.90	0.93	0.92	0.67	0.56	N/A	0.59
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM				0	12		3	15		5	20	25	4	5		9
4:15 PM - 4:30 PM				0	13		2	15		6	17	23	3	4		7
4:30 PM - 4:45 PM				0	15		1	16		4	16	20	2	3		5
4:45 PM - 5:00 PM				0	10		3	13		7	10	17	2	8		10
5:00 PM - 5:15 PM				0	14		4	18		4	17	21	2	2		4
5:15 PM - 5:30 PM				0	13		3	16		3	14	17	4	3		7
5:30 PM - 5:45 PM				0	17		1	18		3	15	18	1	4		5
5:45 PM - 6:00 PM				0	10		3	13		3	27	30	1	4		5
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	0	0	0	0	10	0	3	13	0	7	10	17	2	8	0	10
5:00 PM - 5:15 PM	0	0	0	0	14	0	4	18	0	4	17	21	2	2	0	4
5:15 PM - 5:30 PM	0	0	0	0	13	0	3	16	0	3	14	17	4	3	0	7
5:30 PM - 5:45 PM	0	0	0	0	17	0	1	18	0	3	15	18	1	4	0	5
Peak Hour Total	0	0	0	0	54	0	11	65	0	17	56	73	9	17	0	26
Peak 15 Minute Vol	0	0	0	0	17	0	4	18	0	7	17	21	4	8	0	10
Calculated PHF	N/A	N/A	N/A	N/A	0.79	N/A	0.69	0.90	N/A	0.61	0.82	0.87	0.56	0.53	N/A	0.65

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	July 30, 2020		
INTERSECTION:	STREET (E-W):	Route 6	
	STREET (N-S):	Route 9 Northbound Ramps	
SURVEY PERIOD:	AM PEAK PERIOD	7:00 AM	TO 9:00 AM
	PM PEAK PERIOD	4:00 PM	TO 6:00 PM

**NOTES:**

1.) 15 minute values should be input by the user.
2.) Time values should be entered in military time.
3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>AM PEAK PERIOD</b>																
7:00 AM - 7:15 AM	5	12		17		37	18	55				0	26		0	26
7:15 AM - 7:30 AM	4	14		18		41	21	62				0	25		2	27
7:30 AM - 7:45 AM	6	12		18		42	18	60				0	27		1	28
7:45 AM - 8:00 AM	5	6		11		37	15	52				0	30		0	30
8:00 AM - 8:15 AM	6	13		19		45	17	62				0	31		0	31
8:15 AM - 8:30 AM	4	8		12		40	11	51				0	35		1	36
8:30 AM - 8:45 AM	3	11		14		37	10	47				0	30		4	34
8:45 AM - 9:00 AM	2	8		10		27	13	40				0	31		3	34
<b>Generalized AM Peak Hour Only</b>																
7:30 AM - 7:45 AM	6	12	0	18	0	42	18	60	0	0	0	0	27	0	1	28
7:45 AM - 8:00 AM	5	6	0	11	0	37	15	52	0	0	0	0	30	0	0	30
8:00 AM - 8:15 AM	6	13	0	19	0	45	17	62	0	0	0	0	31	0	0	31
8:15 AM - 8:30 AM	4	8	0	12	0	40	11	51	0	0	0	0	35	0	1	36
Peak Hour Total	21	39	0	60	0	164	61	225	0	0	0	0	123	0	2	125
Peak 15 Minute Vol	6	13	0	19	0	45	18	62	0	0	0	0	35	0	1	36
Calculated PHF	0.88	0.75	N/A	0.79	N/A	0.91	0.85	0.91	N/A	N/A	N/A	N/A	0.88	N/A	0.50	0.87
<b>PM PEAK PERIOD</b>																
4:00 PM - 4:15 PM	3	14		17		19	13	32				0	43		1	44
4:15 PM - 4:30 PM	2	15		17		22	12	34				0	37		0	37
4:30 PM - 4:45 PM	1	17		18		21	11	32				0	40		4	44
4:45 PM - 5:00 PM	2	16		18		17	17	34				0	45		2	47
5:00 PM - 5:15 PM	4	12		16		15	15	30				0	30		2	32
5:15 PM - 5:30 PM	4	12		16		17	13	30				0	40		0	40
5:30 PM - 5:45 PM	3	18		21		18	10	28				0	27		3	30
5:45 PM - 6:00 PM	2	12		14		29	10	39				0	28		0	28
<b>Generalized PM Peak Hour Only</b>																
4:45 PM - 5:00 PM	2	16	0	18	0	17	17	34	0	0	0	0	45	0	2	47
5:00 PM - 5:15 PM	4	12	0	16	0	15	15	30	0	0	0	0	30	0	2	32
5:15 PM - 5:30 PM	4	12	0	16	0	17	13	30	0	0	0	0	40	0	0	40
5:30 PM - 5:45 PM	3	18	0	21	0	18	10	28	0	0	0	0	27	0	3	30
Peak Hour Total	13	58	0	71	0	67	55	122	0	0	0	0	142	0	7	149
Peak 15 Minute Vol	4	18	0	21	0	18	17	34	0	0	0	0	45	0	3	47
Calculated PHF	0.81	0.81	N/A	0.85	N/A	0.93	0.81	0.90	N/A	N/A	N/A	N/A	0.79	N/A	0.58	0.79

**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Lousia Street</u>	
	STREET (N-S):	<u>John Walsh Blvd/Park Entrance</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	0	0	1	1	27	1	1	29	0	1	23	24	1	0	0	1
12:15 PM - 12:30 PM	0	1	0	1	27	0	0	27	1	0	20	21	0	0	0	0
12:30 PM - 12:45 PM	0	0	0	0	18	0	2	20	0	1	17	18	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	27	0	1	28	0	4	27	31	3	1	0	4
1:00 PM - 1:15 PM	0	0	1	1	28	1	0	29	0	0	23	23	2	1	0	3
1:15 PM - 1:30 PM	0	1	0	1	27	0	2	29	1	2	29	32	0	1	0	1
1:30 PM - 1:45 PM	0	0	0	0	28	0	1	29	0	1	27	28	1	0	0	1
1:45 PM - 2:00 PM	0	0	0	0	27	0	2	29	0	0	24	24	1	0	0	1
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	0	0	0	0	18	0	2	20	0	1	17	18	0	0	0	0
12:45 PM - 1:00 PM	0	0	0	0	27	0	1	28	0	4	27	31	3	1	0	4
1:00 PM - 1:15 PM	0	0	1	1	28	1	0	29	0	0	23	23	2	1	0	3
1:15 PM - 1:30 PM	0	1	0	1	27	0	2	29	1	2	29	32	0	1	0	1
Peak Hour Total	0	1	1	2	100	1	5	106	1	7	96	104	5	3	0	8
Peak 15 Minute Vol	0	1	1	1	28	1	2	29	1	4	29	32	3	1	0	4
Calculated PHF	N/A	0.25	0.25	0.50	0.89	0.25	0.63	0.91	0.25	0.44	0.83	0.81	0.42	0.75	N/A	0.50

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	August 1, 2020		
INTERSECTION:	STREET (E-W):	Louisa Street	
	STREET (N-S):	Route 9 Southbound Ramps	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	12:00 PM	TO 2:00 PM

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM		36	23	59	1	17		18				0	1	0	33	34
12:15 PM - 12:30 PM		26	25	51	0	23		23				0	0	0	31	31
12:30 PM - 12:45 PM		31	27	58	0	19		19				0	0	0	37	37
12:45 PM - 1:00 PM		30	30	60	0	20		20				0	0	0	30	30
1:00 PM - 1:15 PM		27	31	58	2	15		17				0	0	0	31	31
1:15 PM - 1:30 PM		25	31	56	0	24		24				0	0	0	35	35
1:30 PM - 1:45 PM		31	21	52	1	26		27				0	0	0	31	31
1:45 PM - 2:00 PM		27	27	54	0	25		25				0	0	0	27	27
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	0	31	27	58	0	19	0	19	0	0	0	0	0	0	37	37
12:45 PM - 1:00 PM	0	30	30	60	0	20	0	20	0	0	0	0	0	0	30	30
1:00 PM - 1:15 PM	0	27	31	58	2	15	0	17	0	0	0	0	0	0	31	31
1:15 PM - 1:30 PM	0	25	31	56	0	24	0	24	0	0	0	0	0	0	35	35
Peak Hour Total	0	113	119	232	2	78	0	80	0	0	0	0	0	0	133	133
Peak 15 Minute Vol	0	31	31	60	2	24	0	24	0	0	0	0	0	0	37	37
Calculated PHF	N/A	0.91	0.96	0.97	0.25	0.81	N/A	0.83	N/A	N/A	N/A	N/A	N/A	N/A	0.90	0.90

**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Louisa Street</u>	
	STREET (N-S):	<u>Route 9 Northbound Ramps</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	37			37				0	18	0		18				0
12:15 PM - 12:30 PM	26			26				0	23	0		23				0
12:30 PM - 12:45 PM	31			31				0	19	0		19				0
12:45 PM - 1:00 PM	30			30				0	20	4		24				0
1:00 PM - 1:15 PM	27			27				0	17	0		17				0
1:15 PM - 1:30 PM	25			25				0	24	1		25				0
1:30 PM - 1:45 PM	31			31				0	27	0		27				0
1:45 PM - 2:00 PM	27			27				0	25	0		25				0
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	31	0	0	31	0	0	0	0	19	0	0	19	0	0	0	0
12:45 PM - 1:00 PM	30	0	0	30	0	0	0	0	20	4	0	24	0	0	0	0
1:00 PM - 1:15 PM	27	0	0	27	0	0	0	0	17	0	0	17	0	0	0	0
1:15 PM - 1:30 PM	25	0	0	25	0	0	0	0	24	1	0	25	0	0	0	0
Peak Hour Total	113	0	0	113	0	0	0	0	80	5	0	85	0	0	0	0
Peak 15 Minute Vol	31	0	0	31	0	0	0	0	24	4	0	25	0	0	0	0
Calculated PHF	0.91	N/A	N/A	0.91	N/A	N/A	N/A	N/A	0.83	0.31	N/A	0.85	N/A	N/A	N/A	N/A

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	August 1, 2020		
INTERSECTION:	STREET (E-W):	Louisa Street	
	STREET (N-S):	Lower South Street	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	12:00 PM	TO 2:00 PM

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	3	55	1	59	1	46	2	49	3	2	1	6	2	1	2	5
12:15 PM - 12:30 PM	4	45	2	51	4	51	3	58	4	3	2	9	3	4	3	10
12:30 PM - 12:45 PM	4	54	0	58	3	52	1	56	4	1	3	8	4	3	4	11
12:45 PM - 1:00 PM	6	51	3	60	2	46	1	49	3	4	4	11	5	2	5	12
1:00 PM - 1:15 PM	3	53	2	58	0	43	2	45	2	3	4	9	5	0	4	9
1:15 PM - 1:30 PM	3	52	1	56	1	53	4	58	4	2	5	11	6	1	1	8
1:30 PM - 1:45 PM	2	46	4	52	2	52	1	55	2	1	4	7	6	2	4	12
1:45 PM - 2:00 PM	1	52	1	54	1	50	2	53	1	2	1	4	6	1	4	11
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	4	54	0	58	3	52	1	56	4	1	3	8	4	3	4	11
12:45 PM - 1:00 PM	6	51	3	60	2	46	1	49	3	4	4	11	5	2	5	12
1:00 PM - 1:15 PM	3	53	2	58	0	43	2	45	2	3	4	9	5	0	4	9
1:15 PM - 1:30 PM	3	52	1	56	1	53	4	58	4	2	5	11	6	1	1	8
Peak Hour Total	16	210	6	232	6	194	8	208	13	10	16	39	20	6	14	40
Peak 15 Minute Vol	6	54	3	60	3	53	4	58	4	4	5	11	6	3	5	12
Calculated PHF	0.67	0.97	0.50	0.97	0.50	0.92	0.50	0.90	0.81	0.63	0.80	0.89	0.83	0.50	0.70	0.83



**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Bleakley Avenue</u>	
	STREET (N-S):	<u>Broadway</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM				0	3		6	9	15	13		28	2	14		16
12:15 PM - 12:30 PM				0	4		5	9	10	19		29	3	14		17
12:30 PM - 12:45 PM				0	1		4	5	16	11		27	4	14		18
12:45 PM - 1:00 PM				0	7		5	12	22	9		31	4	22		26
1:00 PM - 1:15 PM				0	2		4	6	19	12		31	1	18		19
1:15 PM - 1:30 PM				0	4		8	12	17	10		27	2	19		21
1:30 PM - 1:45 PM				0	3		5	8	12	8		20	2	18		20
1:45 PM - 2:00 PM				0	4		4	8	17	17		34	6	19		25
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	0	0	0	0	1	0	4	5	0	16	11	27	4	14	0	18
12:45 PM - 1:00 PM	0	0	0	0	7	0	5	12	0	22	9	31	4	22	0	26
1:00 PM - 1:15 PM	0	0	0	0	2	0	4	6	0	19	12	31	1	18	0	19
1:15 PM - 1:30 PM	0	0	0	0	4	0	8	12	0	17	10	27	2	19	0	21
Peak Hour Total	0	0	0	0	14	0	21	35	0	74	42	116	11	73	0	84
Peak 15 Minute Vol	0	0	0	0	7	0	8	12	0	22	12	31	4	22	0	26
Calculated PHF	N/A	N/A	N/A	N/A	0.50	N/A	0.66	0.73	N/A	0.84	0.88	0.94	0.69	0.83	N/A	0.81

**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Bleakley Avenue</u>	
	STREET (N-S):	<u>Route 9A</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	10		10	20				0	2	56		58		95	2	97
12:15 PM - 12:30 PM	23		14	37				0	2	57		59		115	3	118
12:30 PM - 12:45 PM	12		13	25				0	1	65		66		98	4	102
12:45 PM - 1:00 PM	10		10	20				0	1	62		63		83	5	88
1:00 PM - 1:15 PM	10		16	26				0	1	65		66		85	6	91
1:15 PM - 1:30 PM	10		15	25				0	3	68		71		82	7	89
1:30 PM - 1:45 PM	11		11	22				0	3	55		58		88	6	94
1:45 PM - 2:00 PM	14		14	28				0	2	58		60		93	6	99
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	12	0	13	25	0	0	0	0	1	65	0	66	0	98	4	102
12:45 PM - 1:00 PM	10	0	10	20	0	0	0	0	1	62	0	63	0	83	5	88
1:00 PM - 1:15 PM	10	0	16	26	0	0	0	0	1	65	0	66	0	85	6	91
1:15 PM - 1:30 PM	10	0	15	25	0	0	0	0	3	68	0	71	0	82	7	89
Peak Hour Total	42	0	54	96	0	0	0	0	6	260	0	266	0	348	22	370
Peak 15 Minute Vol	12	0	16	26	0	0	0	0	3	68	0	71	0	98	7	102
Calculated PHF	0.88	N/A	0.84	0.92	N/A	N/A	N/A	N/A	0.50	0.96	N/A	0.94	N/A	0.89	0.79	0.91

**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Continental Driveway</u>	
	STREET (N-S):	<u>Broadway</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	0		0	0				0	0	29		29		15	1	16
12:15 PM - 12:30 PM	1		0	1				0	0	28		28		17	0	17
12:30 PM - 12:45 PM	1		0	1				0	0	24		24		9	2	11
12:45 PM - 1:00 PM	0		0	0				0	0	31		31		26	3	29
1:00 PM - 1:15 PM	1		0	1				0	0	30		30		18	1	19
1:15 PM - 1:30 PM	0		0	0				0	0	25		25		22	1	23
1:30 PM - 1:45 PM	1		0	1				0	0	19		19		19	2	21
1:45 PM - 2:00 PM	0		0	0				0	0	34		34		22	1	23
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	1	0	0	1	0	0	0	0	0	24	0	24	0	9	2	11
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	0	31	0	31	0	26	3	29
1:00 PM - 1:15 PM	1	0	0	1	0	0	0	0	0	30	0	30	0	18	1	19
1:15 PM - 1:30 PM	0	0	0	0	0	0	0	0	0	25	0	25	0	22	1	23
Peak Hour Total	2	0	0	2	0	0	0	0	0	110	0	110	0	75	7	82
Peak 15 Minute Vol	1	0	0	1	0	0	0	0	0	31	0	31	0	26	3	29
Calculated PHF	0.50	N/A	N/A	0.50	N/A	N/A	N/A	N/A	N/A	0.89	N/A	0.89	N/A	0.72	0.58	0.71

**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Entergy Main Driveway</u>	
	STREET (N-S):	<u>Broadway</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	0		0	0				0	1	28		29		16	1	17
12:15 PM - 12:30 PM	0		0	0				0	0	29		29		17	1	18
12:30 PM - 12:45 PM	2		0	2				0	0	25		25		11	4	15
12:45 PM - 1:00 PM	1		0	1				0	1	30		31		29	0	29
1:00 PM - 1:15 PM	0		0	0				0	0	31		31		19	1	20
1:15 PM - 1:30 PM	2		0	2				0	0	25		25		23	0	23
1:30 PM - 1:45 PM	0		0	0				0	0	20		20		21	0	21
1:45 PM - 2:00 PM	0		0	0				0	0	34		34		23	0	23
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	2	0	0	2	0	0	0	0	0	25	0	25	0	11	4	15
12:45 PM - 1:00 PM	1	0	0	1	0	0	0	0	1	30	0	31	0	29	0	29
1:00 PM - 1:15 PM	0	0	0	0	0	0	0	0	0	31	0	31	0	19	1	20
1:15 PM - 1:30 PM	2	0	0	2	0	0	0	0	0	25	0	25	0	23	0	23
Peak Hour Total	5	0	0	5	0	0	0	0	1	111	0	112	0	82	5	87
Peak 15 Minute Vol	2	0	0	2	0	0	0	0	1	31	0	31	0	29	4	29
Calculated PHF	0.63	N/A	N/A	0.63	N/A	N/A	N/A	N/A	0.25	0.90	N/A	0.90	N/A	0.71	0.31	0.75

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	August 1, 2020		
INTERSECTION:	STREET (E-W):	Welcher Avenue	
	STREET (N-S):	Route 9A/Route 9 Southbound Off-Ramp	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	12:00 PM	TO 2:00 PM

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM		11	14	25	40	21		61	7		50	57	8	51	7	66
12:15 PM - 12:30 PM		15	15	30	48	30		78	6		66	72	9	61	9	79
12:30 PM - 12:45 PM		12	13	25	41	25		66	8		61	69	11	55	8	74
12:45 PM - 1:00 PM		13	11	24	37	24		61	9		51	60	7	47	9	63
1:00 PM - 1:15 PM		17	12	29	36	22		58	11		55	66	11	53	10	74
1:15 PM - 1:30 PM		11	9	20	41	21		62	12		56	68	13	50	3	66
1:30 PM - 1:45 PM		9	13	22	40	26		66	11		49	60	9	47	7	63
1:45 PM - 2:00 PM		13	14	27	39	32		71	11		49	60	9	48	7	64
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	0	12	13	25	41	25	0	66	8	0	61	69	11	55	8	74
12:45 PM - 1:00 PM	0	13	11	24	37	24	0	61	9	0	51	60	7	47	9	63
1:00 PM - 1:15 PM	0	17	12	29	36	22	0	58	11	0	55	66	11	53	10	74
1:15 PM - 1:30 PM	0	11	9	20	41	21	0	62	12	0	56	68	13	50	3	66
Peak Hour Total	0	53	45	98	155	92	0	247	40	0	223	263	42	205	30	277
Peak 15 Minute Vol	0	17	13	29	41	25	0	66	12	0	61	69	13	55	10	74
Calculated PHF	N/A	0.78	0.87	0.84	0.95	0.92	N/A	0.94	0.83	N/A	0.91	0.95	0.81	0.93	0.75	0.94

**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Welcher Avenue</u>	
	STREET (N-S):	<u>Route 9 Northbound Ramps</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	30	39		69	50	10		60	11	0	7	18				0
12:15 PM - 12:30 PM	33	57		90	66	11		77	12	0	8	20				0
12:30 PM - 12:45 PM	36	48		84	53	15		68	13	0	11	24				0
12:45 PM - 1:00 PM	41	30		71	47	13		60	14	0	13	27				0
1:00 PM - 1:15 PM	41	42		83	45	10		55	13	0	10	23				0
1:15 PM - 1:30 PM	42	38		80	50	7		57	12	0	11	23				0
1:30 PM - 1:45 PM	37	30		67	53	8		61	13	0	13	26				0
1:45 PM - 2:00 PM	41	30		71	51	1		52	14	0	10	24				0
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	36	48	0	84	0	53	15	68	13	0	11	24	0	0	0	0
12:45 PM - 1:00 PM	41	30	0	71	0	47	13	60	14	0	13	27	0	0	0	0
1:00 PM - 1:15 PM	41	42	0	83	0	45	10	55	13	0	10	23	0	0	0	0
1:15 PM - 1:30 PM	42	38	0	80	0	50	7	57	12	0	11	23	0	0	0	0
Peak Hour Total	160	158	0	318	0	195	45	240	52	0	45	97	0	0	0	0
Peak 15 Minute Vol	42	48	0	84	0	53	15	68	14	0	13	27	0	0	0	0
Calculated PHF	0.95	0.82	N/A	0.95	N/A	0.92	0.75	0.88	0.93	N/A	0.87	0.90	N/A	N/A	N/A	N/A

**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Belock Ave./Route 9 Southbound On-Ramp</u>	
	STREET (N-S):	<u>Route 9A</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

- 1.) 15 minute values should be input by the user.
- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	1	0	1	2				0	0	56	10	66	8	96	1	105
12:15 PM - 12:30 PM	1	1	1	3				0	0	71	9	80	7	117	0	124
12:30 PM - 12:45 PM	0	0	1	1				0	0	69	8	77	8	101	0	109
12:45 PM - 1:00 PM	0	0	0	0				0	1	60	11	72	7	88	0	95
1:00 PM - 1:15 PM	3	0	1	4				0	1	63	11	75	10	90	1	101
1:15 PM - 1:30 PM	0	1	0	1				0	0	68	10	78	11	89	0	100
1:30 PM - 1:45 PM	0	0	0	0				0	0	60	6	66	6	94	0	100
1:45 PM - 2:00 PM	1	0	1	2				0	0	59	13	72	3	98	0	101
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	0	0	1	1	0	0	0	0	0	69	8	77	8	101	0	109
12:45 PM - 1:00 PM	0	0	0	0	0	0	0	0	1	60	11	72	7	88	0	95
1:00 PM - 1:15 PM	3	0	1	4	0	0	0	0	1	63	11	75	10	90	1	101
1:15 PM - 1:30 PM	0	1	0	1	0	0	0	0	0	68	10	78	11	89	0	100
Peak Hour Total	3	1	2	6	0	0	0	0	2	260	40	302	36	368	1	405
Peak 15 Minute Vol	3	1	1	4	0	0	0	0	1	69	11	78	11	101	1	109
Calculated PHF	0.25	0.25	0.50	0.38	N/A	N/A	N/A	N/A	0.50	0.94	0.91	0.97	0.82	0.91	0.25	0.93

**GENERAL INFORMATION**

PROJECT NAME:	Port Cortlandt
PROJECT NO:	190365
DATE:	September 10, 2020
ANALYST:	AA

**INTERSECTION INFORMATION**

SURVEY DATE:	August 1, 2020		
INTERSECTION:	STREET (E-W):	Route 9 (Jans Peeck Bridge)	
	STREET (N-S):	Route 9 / Bear Mountain Parkway	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	12:00 PM	TO 2:00 PM

**NOTES:**

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- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	47		137	184				0	150	47		197		46	41	87
12:15 PM - 12:30 PM	53		141	194				0	160	49		209		55	43	98
12:30 PM - 12:45 PM	58		161	219				0	170	55		225		70	50	120
12:45 PM - 1:00 PM	63		135	198				0	240	67		307		46	55	101
1:00 PM - 1:15 PM	55		141	196				0	197	68		265		66	53	119
1:15 PM - 1:30 PM	47		155	202				0	213	66		279		70	47	117
1:30 PM - 1:45 PM	59		161	220				0	171	71		242		55	46	101
1:45 PM - 2:00 PM	60		141	201				0	165	61		226		53	51	104
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	58	0	161	219	0	0	0	0	170	55	0	225	0	70	50	120
12:45 PM - 1:00 PM	63	0	135	198	0	0	0	0	240	67	0	307	0	46	55	101
1:00 PM - 1:15 PM	55	0	141	196	0	0	0	0	197	68	0	265	0	66	53	119
1:15 PM - 1:30 PM	47	0	155	202	0	0	0	0	213	66	0	279	0	70	47	117
Peak Hour Total	223	0	592	815	0	0	0	0	820	256	0	1,076	0	252	205	457
Peak 15 Minute Vol	63	0	161	219	0	0	0	0	240	68	0	307	0	70	55	120
Calculated PHF	0.88	N/A	0.92	0.93	N/A	N/A	N/A	N/A	0.85	0.94	N/A	0.88	N/A	0.90	0.93	0.95



**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Route 9 Southbound Ramps</u>	
	STREET (N-S):	<u>Route 6</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

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- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM				0	20		2	22		4	12	16	5	4		9
12:15 PM - 12:30 PM				0	11		2	13		5	17	22	1	3		4
12:30 PM - 12:45 PM				0	12		3	15		3	14	17	1	2		3
12:45 PM - 1:00 PM				0	11		4	15		2	19	21	3	3		6
1:00 PM - 1:15 PM				0	9		1	10		4	27	31	3	4		7
1:15 PM - 1:30 PM				0	13		0	13		4	23	27	4	1		5
1:30 PM - 1:45 PM				0	10		4	14		5	20	25	1	1		2
1:45 PM - 2:00 PM				0	10		5	15		6	20	26	4	4		8
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	0	0	0	0	12	0	3	15	0	3	14	17	1	2	0	3
12:45 PM - 1:00 PM	0	0	0	0	11	0	4	15	0	2	19	21	3	3	0	6
1:00 PM - 1:15 PM	0	0	0	0	9	0	1	10	0	4	27	31	3	4	0	7
1:15 PM - 1:30 PM	0	0	0	0	13	0	0	13	0	4	23	27	4	1	0	5
Peak Hour Total	0	0	0	0	45	0	8	53	0	13	83	96	11	10	0	21
Peak 15 Minute Vol	0	0	0	0	13	0	4	15	0	4	27	31	4	4	0	7
Calculated PHF	N/A	N/A	N/A	N/A	0.87	N/A	0.50	0.88	N/A	0.81	0.77	0.77	0.69	0.63	N/A	0.75

**GENERAL INFORMATION**

PROJECT NAME:	<u>Port Cortlandt</u>
PROJECT NO:	<u>190365</u>
DATE:	<u>September 10, 2020</u>
ANALYST:	<u>AA</u>

**INTERSECTION INFORMATION**

SURVEY DATE:	<u>August 1, 2020</u>		
INTERSECTION:	STREET (E-W):	<u>Route 6</u>	
	STREET (N-S):	<u>Route 9 Northbound Ramps</u>	
SURVEY PERIOD:	SATURDAY PEAK PERIOD	<u>12:00 PM</u>	TO <u>2:00 PM</u>

**NOTES:**

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- 2.) Time values should be entered in military time.
- 3.) If there is no volume for a movement or time period, a zero should be entered in the appropriate cell(s).

**TRAFFIC VOLUMES**

Time Period Begin End	Eastbound				Westbound				Northbound				Southbound			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
<b>SATURDAY PEAK PERIOD</b>																
12:00 PM - 12:15 PM	6	18		24	16	13		29				0	21		0	21
12:15 PM - 12:30 PM	5	9		14	23	11		34				0	17		0	17
12:30 PM - 12:45 PM	4	10		14	15	17		32				0	20		0	20
12:45 PM - 1:00 PM	3	11		14	20	16		36				0	23		3	26
1:00 PM - 1:15 PM	2	11		13	30	15		45				0	15		3	18
1:15 PM - 1:30 PM	1	13		14	27	11		38				0	30		0	30
1:30 PM - 1:45 PM	3	8		11	21	10		31				0	11		0	11
1:45 PM - 2:00 PM	1	13		14	21	11		32				0	19		0	19
<b>Generalized Saturday Peak Hour Only</b>																
12:30 PM - 12:45 PM	4	10	0	14	0	15	17	32	0	0	0	0	20	0	0	20
12:45 PM - 1:00 PM	3	11	0	14	0	20	16	36	0	0	0	0	23	0	3	26
1:00 PM - 1:15 PM	2	11	0	13	0	30	15	45	0	0	0	0	15	0	3	18
1:15 PM - 1:30 PM	1	13	0	14	0	27	11	38	0	0	0	0	30	0	0	30
Peak Hour Total	10	45	0	55	0	92	59	151	0	0	0	0	88	0	6	94
Peak 15 Minute Vol	4	13	0	14	0	30	17	45	0	0	0	0	30	0	3	30
Calculated PHF	0.63	0.87	N/A	0.98	N/A	0.77	0.87	0.84	N/A	N/A	N/A	N/A	0.73	N/A	0.50	0.78

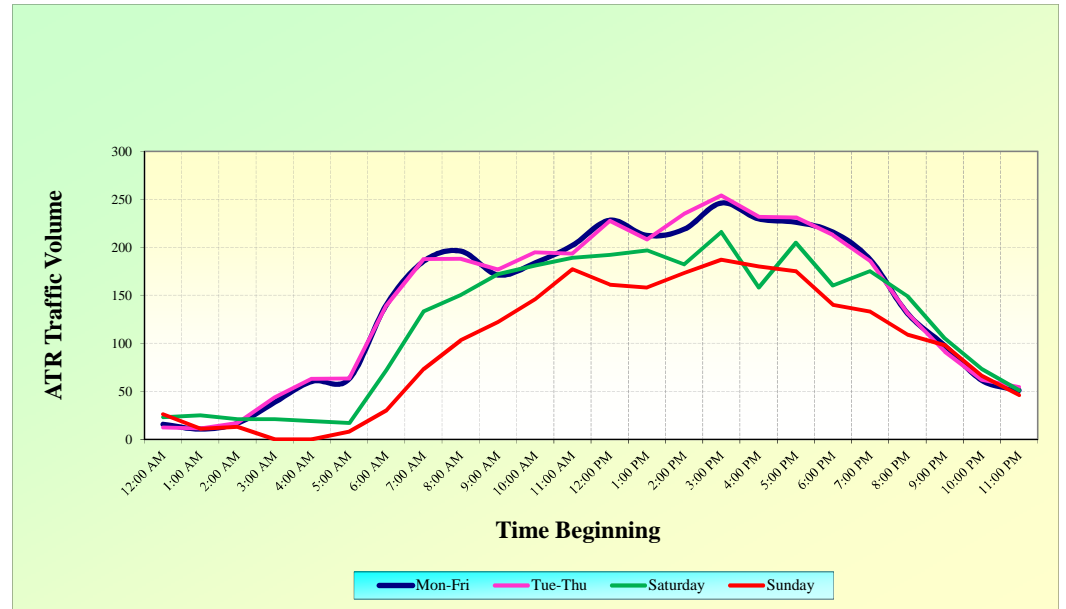
### 3. Automatic Traffic Recorders (ATRs)

## Broadway from Continental Driveway to Entergy W. Driveway - 2-Way - July-Aug, 2020

TIME ENDING	1		2		3		4		5		6		7		8	
	Mon 7/27		Tue 7/28		Wed 7/29		Thu 7/30		Fri 7/31		Sat 8/01		Sun 8/02		Mon 8/03	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
0:15	0	0	2	70	7	59	5	59	10	61	4	43	10	41	5	58
0:30	0	0	4	58	5	46	2	48	4	45	9	44	6	33	5	57
0:45	0	0	1	44	1	70	1	46	7	56	3	55	5	41	2	0
1:00	0	32	1	55	4	68	4	60	6	68	7	50	5	46	3	0
1:15	0	55	1	44	4	49	2	61	4	64	8	59	4	42	4	0
1:30	0	57	2	42	3	53	2	64	2	60	7	47	5	36	0	0
1:45	0	36	5	37	2	62	2	64	1	64	2	55	1	41	3	0
2:00	0	51	4	41	4	47	3	61	2	50	8	36	1	39	9	0
2:15	0	58	4	63	4	61	1	45	1	45	2	38	1	47	5	0
2:30	0	41	3	55	5	56	0	58	5	47	3	59	3	34	2	0
2:45	0	42	5	60	2	64	4	63	2	51	7	49	4	44	2	0
3:00	0	52	6	53	5	67	2	60	10	53	9	36	5	48	6	0
3:15	0	53	10	69	10	60	8	61	7	67	10	56	5	60	2	0
3:30	0	69	5	64	12	80	9	90	14	61	7	59	3	44	2	0
3:45	0	58	12	54	11	68	12	53	8	50	2	47	4	45	7	0
4:00	0	39	8	64	19	50	15	49	17	72	2	54	0	38	5	0
4:15	0	57	22	57	13	63	13	55	9	44	8	37	2	43	7	0
4:30	0	49	12	63	13	51	11	49	18	52	3	31	4	34	9	0
4:45	0	55	14	70	26	63	16	55	10	51	4	45	0	68	15	0
5:00	0	77	9	62	23	52	17	56	19	67	4	45	1	35	26	0
5:15	0	57	30	55	9	58	14	64	11	53	4	47	2	53	18	0
5:30	0	48	9	58	16	66	11	58	18	43	3	52	1	47	13	0
5:45	0	55	23	68	21	65	20	50	13	57	7	58	1	42	22	0
6:00	0	65	15	37	16	44	6	71	14	59	3	48	4	33	16	0
6:15	0	51	19	52	15	53	18	58	25	52	12	39	3	30	19	0
6:30	0	55	23	55	22	49	35	43	30	57	14	31	2	38	34	0
6:45	0	49	42	50	54	55	43	62	31	61	19	42	10	34	44	0
7:00	0	57	49	58	49	56	49	48	45	58	27	48	15	38	55	0
7:15	0	42	43	48	34	59	34	35	42	49	26	65	13	28	44	0
7:30	0	35	52	60	53	47	53	44	48	47	32	45	14	42	40	0
7:45	0	40	46	44	40	53	46	32	45	55	33	35	25	35	51	0
8:00	0	56	56	49	55	49	51	37	41	55	42	30	21	28	53	0
8:15	0	29	58	38	56	55	47	43	60	44	37	30	17	27	46	0
8:30	0	28	45	30	39	42	51	25	49	41	44	35	30	25	48	0
8:45	0	30	32	36	44	27	53	25	49	35	31	41	29	26	63	0
9:00	0	35	49	25	45	25	45	22	52	21	38	43	27	31	49	0
9:15	0	38	42	32	49	31	35	24	35	34	37	25	17	36	36	0
9:30	0	18	52	23	33	27	50	14	35	36	51	28	38	18	46	0
9:45	0	21	55	25	36	22	27	22	34	27	45	22	30	27	50	0
10:00	0	19	55	21	53	10	43	23	51	22	39	30	37	17	39	0
10:15	0	13	44	9	43	20	49	21	39	26	49	17	43	20	44	0
10:30	0	10	51	12	36	15	40	15	33	16	42	19	33	19	46	0
10:45	0	13	45	17	47	12	53	17	45	12	41	16	38	12	54	0
11:00	0	17	53	20	66	18	58	10	47	14	49	21	32	15	26	0
11:15	0	18	44	19	41	19	49	20	51	19	54	20	42	13	50	0
11:30	0	15	41	14	46	17	44	17	68	11	47	16	37	10	54	0
11:45	0	7	58	5	54	20	52	11	45	8	49	12	55	13	53	0
12:00	0	7	43	3	58	8	50	10	53	7	39	3	43	10	56	0
<b>TOTAL</b>	-	1,809	1,304	2,088	1,303	2,211	1,255	2,078	1,265	2,147	1,023	1,863	728	1,626	1,288	115
		1,809		3,392		3,514		3,333		3,412		2,886		2,354		1,403

Rolling Peak Hour Summary									
AM (Begin)	Mon-Fri	Tue-Thu	Saturday	Sunday	PM (Begin)	Mon-Fri	Tue-Thu	Saturday	Sunday
12:00 AM	16	12	23	26	12:00 PM	228	228	192	161
12:15 AM	13	10	27	20	12:15 PM	221	216	208	162
12:30 AM	11	9	25	19	12:30 PM	226	219	211	165
12:45 AM	11	11	24	15	12:45 PM	219	220	211	165
1:00 AM	11	11	25	11	1:00 PM	212	208	197	158
1:15 AM	11	12	19	8	1:15 PM	212	213	176	163
1:30 AM	15	16	15	6	1:30 PM	208	217	188	161
1:45 AM	15	16	20	9	1:45 PM	212	225	182	164
2:00 AM	17	17	21	13	2:00 PM	219	235	182	173
2:15 AM	21	23	29	17	2:15 PM	226	242	200	186
2:30 AM	25	26	33	17	2:30 PM	248	264	200	196
2:45 AM	32	34	28	17	2:45 PM	248	260	198	197
3:00 AM	39	44	21	0	3:00 PM	246	254	216	187
3:15 AM	44	50	19	0	3:15 PM	239	249	197	170
3:30 AM	48	54	15	0	3:30 PM	219	225	169	160
3:45 AM	54	61	17	0	3:45 PM	222	230	167	183
4:00 AM	60	63	19	0	4:00 PM	230	232	158	180
4:15 AM	64	65	15	0	4:15 PM	232	233	168	190
4:30 AM	65	65	15	0	4:30 PM	234	239	189	203
4:45 AM	68	67	18	5	4:45 PM	234	237	202	177
5:00 AM	63	63	17	8	5:00 PM	226	231	205	175
5:15 AM	66	63	25	9	5:15 PM	222	227	197	152
5:30 AM	81	78	36	10	5:30 PM	219	215	176	143
5:45 AM	104	103	48	19	5:45 PM	216	210	160	135
6:00 AM	140	139	72	30	6:00 PM	216	213	160	140
6:15 AM	160	159	86	40	6:15 PM	209	206	186	138
6:30 AM	181	185	104	52	6:30 PM	204	207	200	142
6:45 AM	184	183	118	67	6:45 PM	193	195	193	143
7:00 AM	185	188	133	73	7:00 PM	187	186	175	133
7:15 AM	199	204	144	77	7:15 PM	182	184	140	132
7:30 AM	197	197	156	93	7:30 PM	169	166	130	115
7:45 AM	199	196	154	97	7:45 PM	155	152	136	106
8:00 AM	196	188	150	103	8:00 PM	131	131	149	109
8:15 AM	182	176	150	103	8:15 PM	121	115	144	118
8:30 AM	179	176	157	111	8:30 PM	112	104	137	111
8:45 AM	171	173	171	112	8:45 PM	104	97	118	112
9:00 AM	171	177	172	122	9:00 PM	98	91	105	98
9:15 AM	176	180	184	148	9:15 PM	84	79	97	82
9:30 AM	174	177	175	143	9:30 PM	74	72	88	83
9:45 AM	182	186	171	151	9:45 PM	65	64	82	68
10:00 AM	184	195	181	146	10:00 PM	61	62	73	66
10:15 AM	187	194	186	145	10:15 PM	63	65	76	59
10:30 AM	196	196	191	149	10:30 PM	64	67	73	50
10:45 AM	200	202	199	166	10:45 PM	60	63	69	51
11:00 AM	202	193	189	177	11:00 PM	51	54	51	46
11:15 AM	216	211	178	176					
11:30 AM	217	218	175	172	Day Total	3,390	3,416	2,886	2,335
11:45 AM	217	217	181	158					

Broadway from Continental Driveway to Entergy W. Driveway - 2-Way - July-Aug, 2020



## 4. Signal Timing Plans

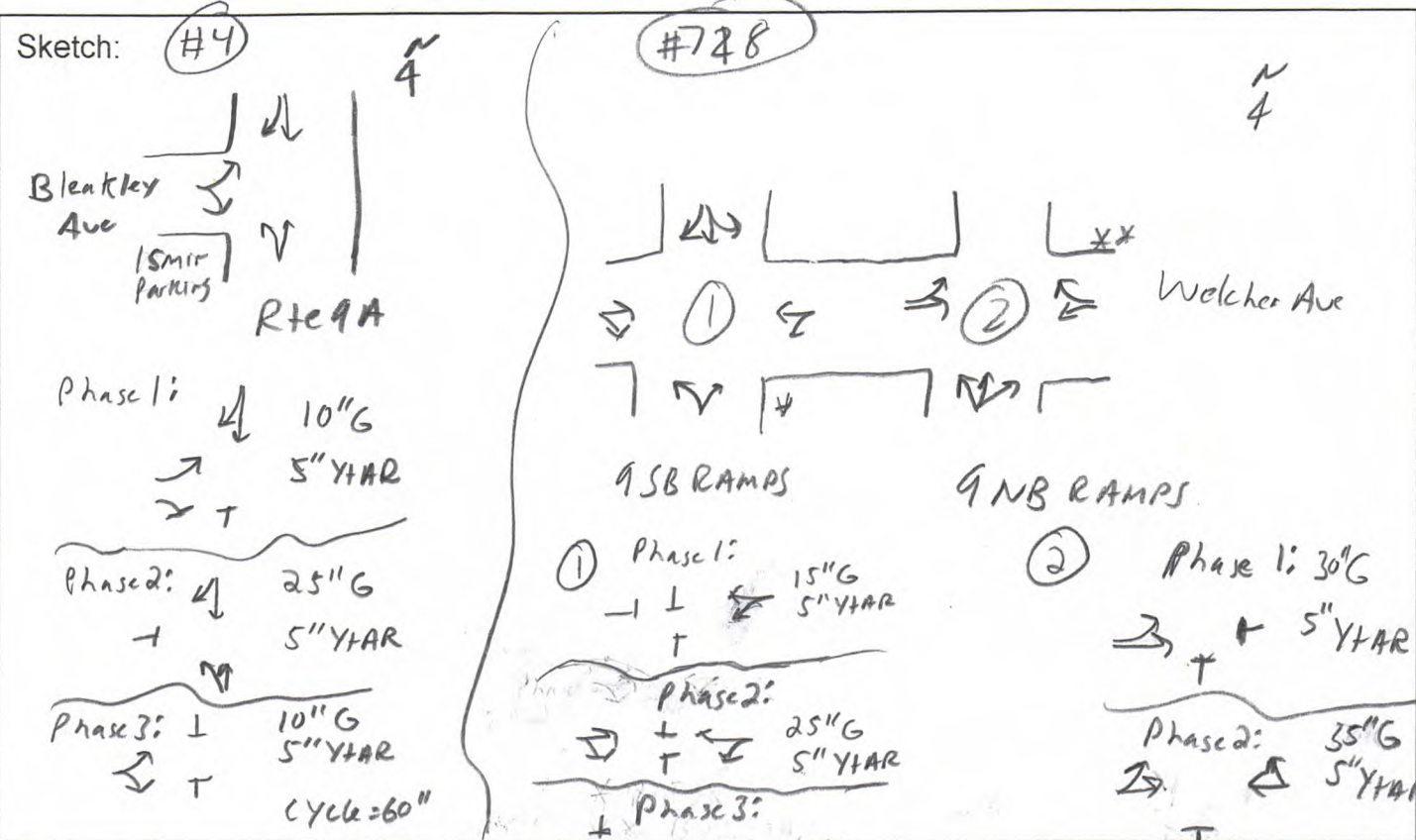


2/2

TRAFFIC & TRANSPORTATION CONSULTANTS

PHYSICAL INVENTORY SHEET:

Project: Port Curthardt Location: See Below Date: 7/20  
 Project #: 20-25 Worker: — Surveyor's Name: —



Phasing: X NTOR  
XX BUSSTOP

Signal Timing: 19" G  
5" Y+AR  
Cycle 100"

Phase 3: 20" G  
5" Y+AR  
Cycle 100"



STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION  
TRAFFIC ENGINEERING & SAFETY DIVISION  
TRAFFIC CONTROL SPECIFICATIONS

Study:  
Contract: D256618  
PIN: 8390.52.321  
File: 55.03-9

W-192  
SIGNAL NO(S)

WESTCHESTER  
COUNTY

PAGE 1 OF 20 PAGES

INTERSECTION ROUTE 6/9/202 AT BEAR MOUNTAIN PARKWAY

CITY  VILLAGE  TOWN OF PEEKSKILL

Department Order filed 8/8/67 as Section 2055.03 Subdivision (a)

Prior specifications hereby superseded  None  May 19, 1995

Purpose: REINSTALLATION OF TRAFFIC SIGNAL UNDER CONTRACT D256618

These specifications will be effective upon the  Installation  Modification of the necessary traffic control device(s) required by and conforming to the State Manual of Uniform Traffic Control Devices

I. This Signal shall

A. Operate in accordance with the Table of Operations and / of Change intervals as shown on page(s) 2 as a:

- Pretimed Signal
- Semi-traffic actuated signal
- Full-traffic actuated signal
- Pedestrian actuated signal
- Other converted to 2070

- B.
- Display vehicular indications
  - Display pedestrian indications
  - Be equipped with vehicle detectors
  - Be equipped with Pedestrian pushbuttons

as shown in the  schematic  scaled drawing on page 3

Be equipped with  pre-emption  interconnection and / or coordination which are described as follows

- cc: ( )  Main Office  
 (1)  Region 8 Traffic Engineer  
 (2)  D.SYWK  
 (1)  Edward A Martch

Date	Signature	RTE Title
Installation Date		
Modification Date		

7-2010

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION  
 TRAFFIC AND SAFETY DIVISION  
 TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

STUDY:  
 CONTRACT: D256618  
 PIN: 8390.27.321  
 FILE: 55.03-9

W-192  
 SIGNAL NO(S)

WESTCHESTER  
 COUNTY

DATE

PAGE 2 OF 20 PAGES

TABLE OF OPERATION						
PHASE	1	2	3&4	5&6	7&8	9
Ø 1	G	G/→	←	R	R	→
Ø 2	R	R	←	G	R	→
Ø 3	R	R	←	R	R	→
Ø 1-Ø 5	G	G/→	←	G	R	→
Ø 2-Ø 5	R	R	←	G	R	→
Ø 3	R	R/→	←	R	G	→
FLASHING OPERATION	FL YEL	FL YEL	DARK	FL YEL	FL RED	DARK

TABLE OF CLEARANCES					
FROM TO	R	G	←	G/→	G/→
R	R/R	Y/R	Y/R	R/→ R	Y/→ R
G	R/R	G/G			
←			← ←		
R/→	R/R			R/→ R/→	Y/→ R/→

KEY	
←	GREEN ARROW
↻	YELLOW ARROW
←	RED ARROW

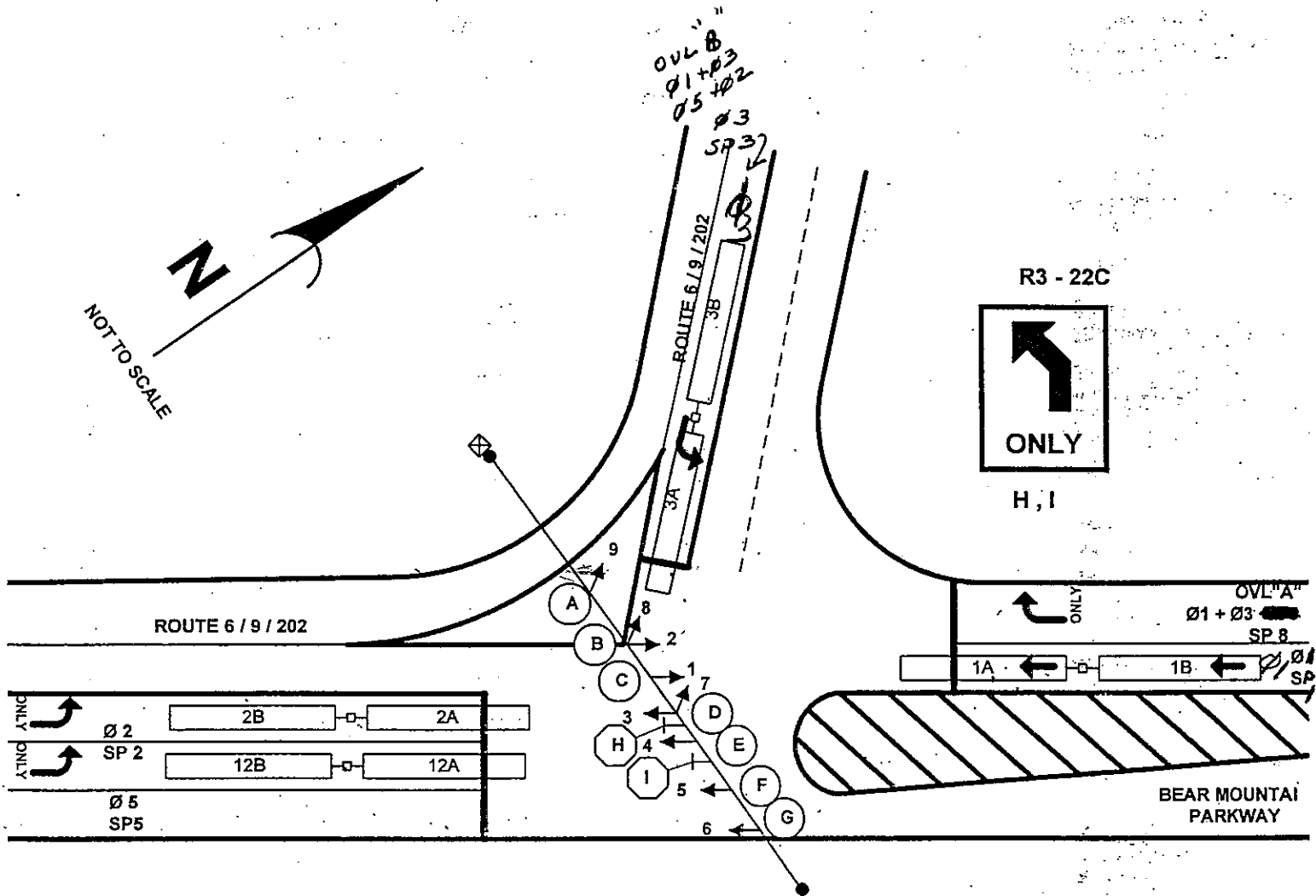
STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION  
 TRAFFIC AND SAFETY DIVISION  
 TRAFFIC CONTROL SPECIFICATIO(S) (CONTINUED)

STUDY:  
 CONTRACT: D256618  
 PIN: 8390.52.321  
 FILE:55.03-6

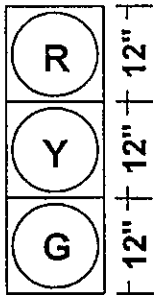
W-192  
 SIGNAL NO(S)

WESTCHESTER  
 COUNTY

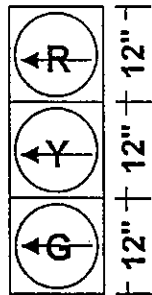
PAGE 3 OF 20 PAGES



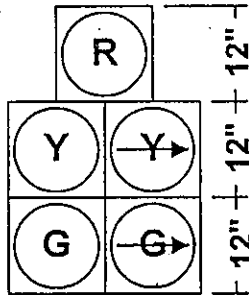
LED Red



1, 5, 6,  
7, 8



3, 4



2



9





**Coord Transition, CoordPhs [2.5]**

**Overlap 1-16 Program Parms & Parm+ [1.5.2.1] [1.5.2.2]**

Overlap	Conflict L	OFF	Overlap Lock Init	OFF	Parent Ph Clearaj	ON	Extra Included P	ON	Pat#	Short	Long	Dwell	No Shortway	E-Yld	Offset	RetHld	Floa	Min Veh	PerH	Min	PerH	Min	PerH	
1	Include Ø	1			NORMAL				1	12	22				EndGRN									
1	Modifier Ø	1			Grr				2	12	22				EndGRN									
A	Conflict Ø				Yel 4				3	12	22				EndGRN									
A	Conflict Olap				Rec 1				4	12	22				EndGRN									
A	Conflict Ped				LG				5	12	22				EndGRN									
2	Include Ø	1	2	3	5				6	12	22				EndGRN									
2	Modifier Ø				Grr				7	12	22				EndGRN									
2	Conflict Ø				Yel 4				8	12	22				EndGRN									
B	Conflict Olap				Rec 1				9	12	22				EndGRN									
B	Conflict Ped				LG				10	12	22				EndGRN									
3	Include Ø				NORMAL				11	12	22				EndGRN									
3	Modifier Ø				Grr				12	12	22				EndGRN									
3	Conflict Ø				Yel 3.5				13	12	22				EndGRN									
C	Conflict Olap				Rec 1.5				14	12	22				EndGRN									
C	Conflict Ped				LG				15	12	22				EndGRN									
4	Include Ø				NORMAL				16	12	22				EndGRN									
4	Modifier Ø				Grr				17	12	22				EndGRN									
4	Conflict Ø				Yel 3.5				18	12	22				EndGRN									
D	Conflict Olap				Rec 1.5				19	12	22				EndGRN									
D	Conflict Ped				LG				20	12	22				EndGRN									
5	Include Ø				NORMAL				21	12	22				EndGRN									
5	Modifier Ø				Grr				22	12	22				EndGRN									
5	Conflict Ø				Yel 3.5				23	12	22				EndGRN									
E	Conflict Olap				Rec 1.5				24	12	22				EndGRN									
E	Conflict Ped				LG				25	0	0				BegGRN									
6	Include Ø				NORMAL				26	0	0				BegGRN									
6	Modifier Ø				Grr				27	0	0				BegGRN									
6	Conflict Ø				Yel 3.5				28	0	0				BegGRN									
F	Conflict Olap				Rec 1.5				29	0	0				BegGRN									
F	Conflict Ped				LG				30	0	0				BegGRN									
7	Include Ø				NORMAL				31	0	0				BegGRN									
7	Modifier Ø				Grr				32	0	0				BegGRN									
7	Conflict Ø				Yel 3.5				33	0	0				BegGRN									
G	Conflict Olap				Rec 1.5				34	0	0				BegGRN									
G	Conflict Ped				LG				35	0	0				BegGRN									
8	Include Ø				NORMAL				36	0	0				BegGRN									
8	Modifier Ø				Grr				37	0	0				BegGRN									
8	Conflict Ø				Yel 3.5				38	0	0				BegGRN									
H	Conflict Olap				Rec 1.5				39	0	0				BegGRN									
H	Conflict Ped				LG				40	0	0				BegGRN									
<b>Channel Settings [1.8.1]</b>																								
Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Phase / Olap #	1	2	3	5																				
Channel Type	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH
Channel Flash	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
Alt Hz																								
<b>Channel+ Settings [1.8.4]</b>																								
Channel ->>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Flash Red+																								
Flash Yellow+																								
Flash Green+																								
Flash Inh Red+																								
Channel Params [1.8.3]	C1	IO	Mode	USER	Single	BIU	Map	SINGLE	Invert	Rail	Input	OFF												



Preemption Times [3.1], Options+ [3.6]			Track Clear Phases [3.2], Track Clear Overlaps+ [3.5]			Alt# 1 Times Table [1.1.6.1]														
Pre #	Enable	Type	Output	Delay	Min	Dura	Pre #	Track Phases	Track Overlaps	Column#	.....	->1	2	3	4	5	6	7	8	
1	ON	RAIL	DWELL				1			Assign Ø										
2	ON	RAIL	DWELL				2			Min Grn										
3	ON	EMERG	DWELL				3			Gap, Ext										
4	ON	EMERG	DWELL				4			Max 1										
5	ON	EMERG	DWELL				5			Max 2										
6	ON	EMERG	DWELL				6			Yel Cir										

Dwell Phases [3.2] and Overlaps+ [3.5]			Alt# 2 Times Table [1.1.6.1]												
Pre #	Max Pres	Min Grn	Min Wlk	Ped Clk	Co+Pre	Column#	.....	->1	2	3	4	5	6	7	8
1					ON	1	Phases								
2					ON	Overlaps									
3					ON	Peds									
4					ON	2 Phases									
5					ON	Overlaps									
6					ON	Peds									

Preemption 1, Options+ [3.6]			Alt# 3 Times Table [1.1.6.1]												
Pre #	Lock	Override	Auto Fish	Override	Higher	Column#	.....	->1	2	3	4	5	6	7	8
1	ON					1	Assign Ø								
2	ON					Min Grn									
3	ON					Gap, Ext									
4	ON					Max									
5	ON					Max 2									
6	ON					Yel Cir									

Exit Phases [3.2]			Alt# 1 Options Table [1.1.6.2]												
Pre #	Exit Phase	Pre #	Lock	Override	Auto Fish	Column#	.....	->1	2	3	4	5	6	7	8
1		1	ON			Assign Ø									
2		2	ON			Lock Calls 1									
3		3	ON			Soft Recall									
4		4	ON			Dual Entry									
5		5	ON			Enabl SimGap1									
6		6	ON			Gaur Passage									

Low Priority Preempts			Channel Parameters [1.8.3]		
Pre #	Type	Min	Max	D Conn Mappings	Pre Invert Rail Input
7	OFF	0	0	NONE	
8	OFF	0	0		
9	OFF	0	0		
10	OFF	0	0		

Unit Parameters [1.2.1]		
Stop Timer Over Preempt	PRE	PRE
Max Seek Track Time	0	
Max Seek Dwell Time	0	









#	Event / Alarm	EVAI	Call Phases [1.1.5]			Redirect Phases [1.1.5]			Inhibit Phases [1.1.5]											
			Ø	Phases Called By	From	To	From	To	From	To	From	To								
1	Power Up Alarm.	1																		
2	Stop Timing	1																		
3	TS1 Cabinet Door																			
4	Coordination Failure	1																		
5	External Alarm # 1	1																		
6	External Alarm # 2	1																		
7	External Alarm # 3																			
8	External Alarm # 4																			
9	Closed Loop Disabled	1																		
10	External Alarm # 5																			
11	External Alarm # 6																			
12	Manual Control Enable	1																		
13	Coord Free Input																			
14	Local Flash Input	1																		
15	MMU Flash																			
16	CMU Flash																			
17	Cycle Fault	1																		

Alt Call & Redirect # 1 [1.1.6.3]			Alt Inhibit Phases # 1 [1.1.6.3]			
Col	Ø	Phases Called By	From	To	From	To
1						
2						
3						
4						
5						
6						
7						
8						

Alt Call & Redirect # 2 [1.1.6.3]			Alt Inhibit Phases # 2 [1.1.6.3]			
Col	Ø	Phases Called By	From	To	From	To
1						
2						
3						
4						
5						
6						
7						
8						

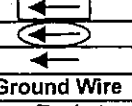


Coord, CIC Plans [2.3]								Unit Parameters [1.2.1]			Advanced Warning [1,1,9]						
CIC	Co	Ø	Grow	1	2	3	4	5	6	7	8	Allow Skip	Yellow	OFF	Max Cycle Time	Cycle Fault Action	ALARM
1	OFF													OFF	0		
2	OFF													OFF			
3	OFF													OFF			
4	OFF													4Ph			
														Backup Time (s)	900		
														Disable Init Ped	OFF		
														Cycle Fault Action	ALARM		
														Enable Run Time	ON		

Aux Out 10	0
Aux Out 20	0

MODEL 179 SIGNAL OPERATION  
PROGRAMMABLE FEATURES  
SIGNAL OPERATION SPECIFICATION

TAPS \_\_\_\_\_  
STUDY # \_\_\_\_\_  
FILE # 55.03-9  
PAGE 18 OF 20

SIGNAL # W-192 COUNTY WEST DATE \_\_\_\_\_

SWITCH PACK	FUNCTION	INDICATIONS	FACE	TERMINAL WIRING BOARD		FACE	TERMINAL WIRING BOARD	
				TERMINAL	WIRE COLOR CODE		TERMINAL	WIRE COLOR CODE
1	Ø 1	Red	1	SP 1 R	14 / 5C - C - R	2	SP 1 R	14 / 15C - B - R / B
		Yellow		SP 1 Y	- O		SP 1 Y	- O / B
		Green		SP 1 G	- G		SP 1 G	- G / B
		Ground Wire		Grnd Bus	- W		Grnd Bus	- W / B
2	Ø 2		3	SP 2 R	14 / 10C - D - R / B	4	SP 2 R	14 / 5C - E - R
				SP 2 Y	- O / B		SP 2 Y	- O
				SP 2 G	- G / B		SP 2 G	- G
		Ground Wire		Grnd Bus	- W / B		Grnd Bus	- W
3	Ø 3	Red	7	SP 3 R	14 / 10C - D - R	8	SP 3 R	14 / 15C - B - R
		Yellow		SP 3 Y	- O		SP 3 Y	- O
		Green		SP 3 G	- G		SP 3 G	- G
		Ground Wire		Grnd Bus	- W		Grnd Bus	- W
4				SP 4 R			SP 4 R	
				SP 4 Y			SP 4 Y	
				SP 4 G			SP 4 G	
		Ground Wire		Grnd Bus			Grnd Bus	
5	Ø 5	Red	5	SP 5 R	14 / 5C - F - R	6	SP 5 R	14 / 5C - G - R
		Yellow		SP 5 Y	- O		SP 5 Y	- O
		Green		SP 5 G	- G		SP 5 G	- G
		Ground Wire		Grnd Bus	- W		Grnd Bus	- W
6				SP 6 R			SP 6 R	
				SP 6 Y			SP 6 Y	
				SP 6 G			SP 6 G	
		Ground Wire		Grnd Bus			Grnd Bus	
7				SP 7 R			SP 7 R	
				SP 7 Y			SP 7 Y	
				SP 7 G			SP 7 G	
		Ground Wire		Grnd Bus			Grnd Bus	
8	OVL "A" Ø1 + Ø3 - Ø1G		2	SP 8 R	-----		SP 8 R	
				SP 8 Y	14 / 15C - B - BL / W		SP 8 Y	
				SP 8 G	- G / W		SP 8 G	
		Ground Wire		Grnd Bus	- B / W		Grnd Bus	
9	OVL "B" Ø3 + Ø1+ Ø2 + Ø5		9	SP 9 R	-----		SP 9 R	
				SP 9 Y	-----		SP 9 Y	
				SP 9 G	14 / 5C - A - G		SP 9 G	
		Ground Wire		Grnd Bus	- W		Grnd Bus	
10				SP 10 R			SP 10 R	
				SP 10 Y			SP 10 Y	
				SP 10 G			SP 10 G	
		Ground Wire		Grnd Bus			Grnd Bus	
11				SP 11 R			SP 11 R	
				SP 11 Y			SP 11 Y	
				SP 11 G			SP 11 G	
		Ground Wire		Grnd Bus			Grnd Bus	
12				SP 12 R			SP 12 R	
				SP 12 Y			SP 12 Y	
				SP 12 G			SP 12 G	
		Ground Wire		Grnd Bus			Grnd Bus	
13				SP 13 R			SP 13 R	
				SP 13 Y			SP 13 Y	
				SP 13 G			SP 13 G	
		Ground Wire		Grnd Bus			Grnd Bus	
14				SP 14 R			SP 14 R	
				SP 14 Y			SP 14 Y	
				SP 14 G			SP 14 G	
		Ground Wire		Grnd Bus			Grnd Bus	



MODEL 179 SIGNAL OPERATION  
 PROGRAMMABLE FEATURES  
 SIGNAL OPERATION SPECIFICATION

TAPS \_\_\_\_\_  
 STUDY # \_\_\_\_\_  
 FILE # 55.03-9  
 PAGE 20 OF 20

SIGNAL # W-192 COUNTY WEST DATE \_\_\_\_\_

TABLE OF INPUT WIRING

TERM. NUMBER	FUNCTION	DET. NO.	DET. TYPE	DET. AN OVER	REMARKS
1A, 1B	Ø 1	1A, 1B	NORMAL		PRESENCE LOOP
2A, 2B	Ø 2	2A, 2B	NORMAL		PRESENCE LOOP
3A, 3B	Ø 3	3A, 3B	NORMAL		PRESENCE LOOP
4A, 4B					
5A, 5B					
6A, 6B					
7A, 7B					
8A, 8B					
9A, 9B					
10A, 10B					
11A, 11B					
12A, 12B	Ø 2	12A, 12B	NORMAL		PRESENCE LOOP
13A, 13B					
14A, 14B					
15A, 15B					
16A, 16B					
17A, 17B					
18A, 18B					
19A, 19B					
20A, 20B					
21A, 21B					
22A, 22B					
23A, 23B					
24A, 24B					
25A, 25B					
26A, 26B					
27A, 27B					
28A, 28B					

STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION  
TRAFFIC ENGINEERING & SAFETY DIVISION  
TRAFFIC CONTROL SPECIFICATIONS

Study :  
Contract :  
PIN: 8103.23.12  
File: 55.03.91  
PAGE 1 OF 20 PAGES

W229/W229.1 WESTCHESTER  
SIGNAL NO(S) COUNTY

INTERSECTION ROUTE 9 AT WELCHER AVE/ROUTE 9A

CITY  VILLAGE  TOWN OF PEEKSKILL

Department Order filed \_\_\_\_\_ as Section 2055.03 Subdivision (c)

Prior specifications hereby superseded  None

Purpose: INSTALLATION UNDER CONTRACT D 008063

These specifications will be effective upon the  Installation  Modification of the necessary traffic control device(s) required by and conforming to the State Manual of Uniform Traffic Control Devices

I. This Signal shall

A. Operate in accordance with the Table of Operations and / of Change intervals as shown on page(s) 2 as a :

- Pretimed Signal
- Semi-traffic actuated signal
- Full-traffic actuated signal
- Pedestrian actuated signal
- Other \_\_\_\_\_

**DRAFT**

- B.  Display vehicular indications  
 Display pedestrian indications  
 Be equipped with vehicle detectors  
 Be equipped with Pedestrian pushbuttons

as shown in the  schematic  scaled drawing on page 3

C. Be equipped with  pre-emption  interconnection and / or coordination which are described as follows

- cc: ( )  Main Office  
( / )  Region 8 Traffic Engineer  
( )  \_\_\_\_\_  
(3)  D. SUWYK

	Wm. D. FITZPATRICK	RTE
Date	Signature	Title
	Installation Date	_____
	Modification Date	_____



STATE OF NEW YORK - DEPARTMENT OF TRANSPORTATION  
 TRAFFIC AND SAFETY DIVISION  
 TRAFFIC CONTROL SIGNAL SPECIFICATIONS (CONTINUED)

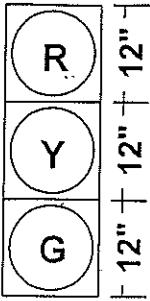
STUDY:  
 CONTRACT: 8103.23.121  
 PIN:  
 FILE: 55.30.9A

W229 / ~~W229A~~  
 SIGNAL NO(S)

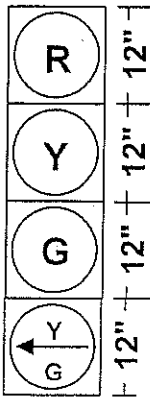
WEST  
 COUNTY

DATE

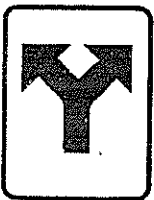
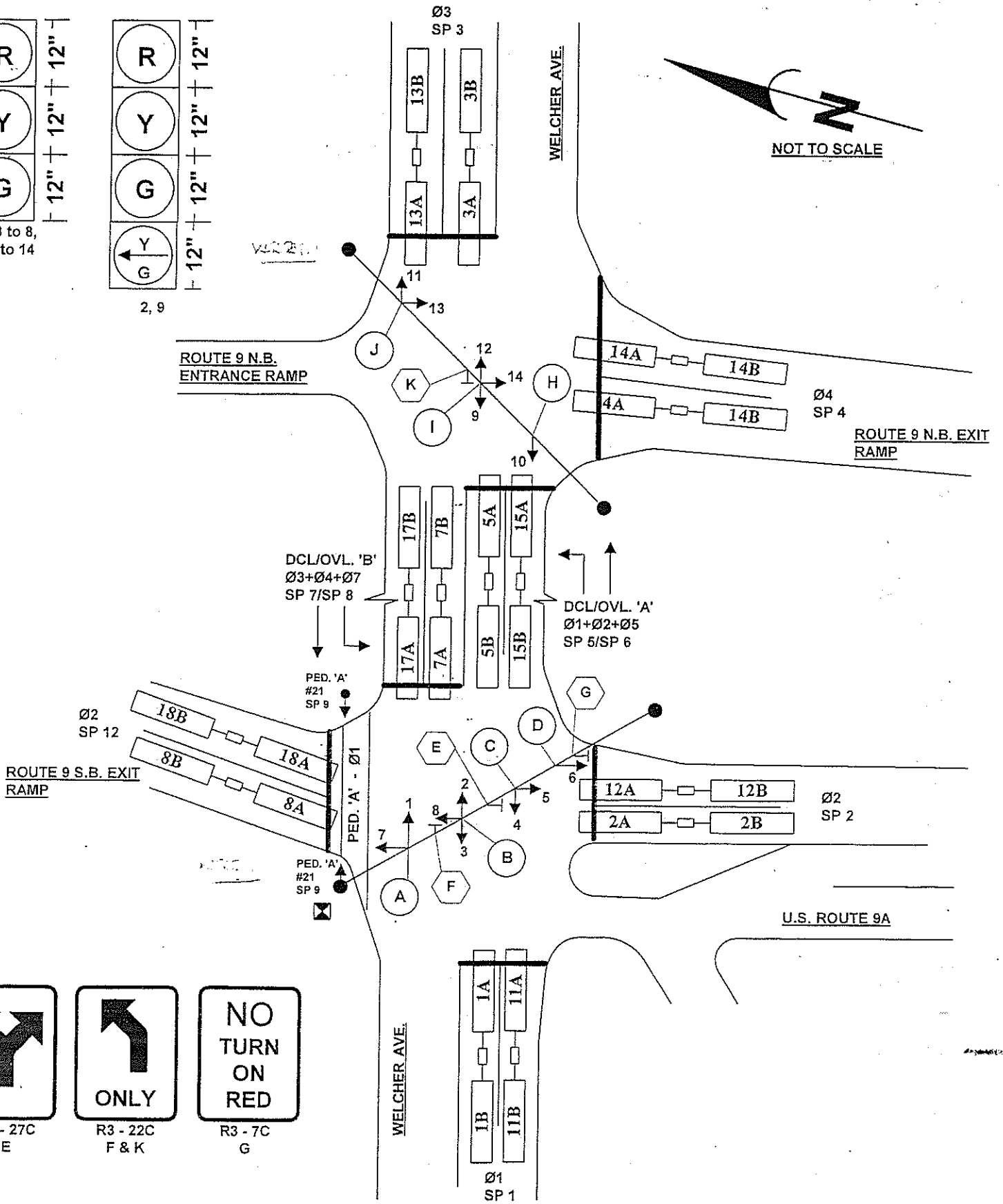
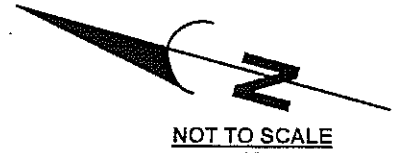
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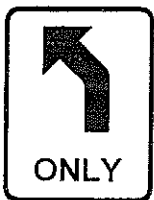
1, 3 to 8,  
 10 to 14



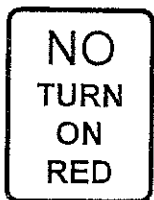
2, 9



R3 - 27C  
 E



R3 - 22C  
 F & K



R3 - 7C  
 G

CCS = 87B      Signal # = 229P      Rte = 9      Rte Seq # = 495  
 DATE: 12/08/02      TIME: 01:04:16

+++++

TE 261 (11/95)

PHASE TIMING DATA/TIMER INTERVALS

INTERVAL	PHASE/ INT. #								
		F1	F2	F3	F4	F5	F6	F7	F8
MEMORY/RECALL	00	000	000	000	000	000	000	000	000
WALK	01	007	---	---	---	---	---	---	---
PEDESTRIAN CLEARANCE	02	015	---	---	---	---	---	---	---
INITIAL	03	005	003	005	003	003	---	003	---
VARIABLE INITIAL	04	---.	---.	---.	---.	---.	---.	---.	---.
VARIABLE INIT. LIMIT	05	050	050	050	050	050	050	050	050
TIME BEFOR REDUCTION	06	---	---	---	---	---	---	---	---
TIME TO REDUCE	07	---	---	---	---	---	---	---	---
MAXIMUM GAP	08	05.0	02.0	05.0	02.0	02.0	00.1	02.0	00.1
MINIMUM GAP	09	---.	---.	---.	---.	---.	---.	---.	---.
GAP CLOCK	10	USED	WITH	DAA	ONLY	USED	WITH	DBB	ONLY
MAXIMUM GREEN 1	11	030	030	030	030	010	---	010	---
MAXIMUM GREEN 2	12	040	040	040	040	---	---	---	---
MAXIMUM GREEN 3	13	---	---	---	---	---	---	---	---
RECALL GREEN	14	020	020	020	020	010	---	010	---
YELLOW CLEARANCE	15	04.0	04.0	04.0	04.0	04.0	---.	04.0	---.
RED CLEARANCE	16	01.0	01.0	01.0	01.0	01.0	---.	01.0	---.
THIRD CLEARANCE	17	---.	04.0	---.	04.0	---.	---.	---.	---.
FOURTH CLEARANCE	18	---.	01.0	---.	01.0	---.	---.	---.	---.
		F1	F2	F3	F4	F5	F6	F7	F8

CCS = 87B      Signal # = 229P                      Rte = 9                      Rte Seq # = 495

DATE: 12/08/02      TIME: 01:04:52

+++++

TE 262-3A (11/95)                      MASTER TIMECLOCK PROGRAMMABLE DATA

001-012	BEGIN DAYLIGHT SAVINGS TIME MONTH	21EC	004
001-012	END DAYLIGHT SAVINGS TIME MONTH	21ED	010
001=FIRST	BEGIN DAYLIGHT SAVINGS TIME WEEK OF MONTH	21EE	001
002=SECOND			
003=THIRD	END DAYLIGHT SAVINGS TIME WEEK OF MONTH	21EF	005
004=FOURTH			
005=LAST OR FIFTH			
001 - 012	*Use "C8" and "C9" commands to display	*MONTH OF YEAR	21F0      xxx
001 - 031		*DAY OF MONTH	21F1      xxx
000 - 099		*YEAR	21F2      xxx
000 - 023		*HOUR OF DAY	21F3      xxx
000 - 059		*MINUTE OF HOUR	21F4      xxx
000 - 059		*SECOND OF MINUTE	21F5      xxx
001 - 007		DAY OF WEEK	21F6      xxx
001 - 053 (READ ONLY)		WEEK OF YEAR	21F7      xxx
001 = To portable card	TRANSFER MASTER CLOCK	21F8	xxx
002 = From portable card			

\* \* \* 21F0-21F8 NOT IMPLEMENTED. USE CLOCK DOWNLOAD FUNCTION. \* \* \*

CCS = 87B Signal # = 229P

Rte = 9

Rte Seq # = 495

DATE: 12/08/02 TIME: 01:05:06

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TE 262-4 (11/95)

PROGRAMMABLE FEATURES

FUNCTION			PHASE WORD								LOC.	CODE
			8	4	2	1	8	4	2	1		
VEHICLE PHASES PERMITTED			$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2200	EE
PEDESTRIAN PHASES PERMITTED			$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2201	80
			SP	SP	SP	SP	SP	SP	SP	SP		
STARTUP	A	OUTPUT	3G	3Y	3R	2G	2Y	2R	1G	1R	2202	26
STARTUP	A	OUTPUT	6G	6Y	6R	5G	5Y	5R	4G	4R	2203	91
STARTUP	A	OUTPUT	9G	9Y	9R	8G	8Y	8R	7G	7R	2204	25
STARTUP	A	OUTPUT	12G	12Y	12R	11G	11Y	11R	10G	10R	2205	—
STARTUP	A	OUTPUT	-	-	-	-	7Y	1Y	10Y	4Y	2206	—
STARTUP	A	OUTPUT	14G	14Y	14R	13G	13Y	13R	-	-	2207	—
STARTUP	B	OUTPUT	3G	3Y	3R	2G	2Y	2R	1G	1R	2208	—
STARTUP	B	OUTPUT	6G	6Y	6R	5G	5Y	5R	4G	4R	2209	—
STARTUP	B	OUTPUT	9G	9Y	9R	8G	8Y	8R	7G	7R	220A	—
STARTUP	B	OUTPUT	12G	12Y	12R	11G	11Y	11R	10G	10R	220B	—
STARTUP	B	OUTPUT	-	-	-	-	7Y	1Y	10Y	4Y	220C	—
STARTUP	B	OUTPUT	14G	14Y	14R	13G	13Y	13R	-	-	220D	—
STARTUP PHASES			$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	220E	—

CCS = 87B Signal # = 229P

Rte = 9

Rte Seq # = 495

DATE: 12/08/02 TIME: 01:05:23

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TE 262-5 (11/95) DETECTOR INPUT WORDS

INPUT NUMBER	LOC.	FUNC CODE	INPUT NUMBER	LOC.	FUNC CODE
INPUT # 1	2214	18	INPUT #16	2223	---
INPUT # 2	2215	28	INPUT #17	2224	78
INPUT # 3	2216	38	INPUT #18	2225	28
INPUT # 4	2217	48	INPUT #19	2226	---
INPUT # 5	2218	58	INPUT #20	2227	---
INPUT # 6	2219	---	INPUT #21	2228	---
INPUT # 7	221A	78	INPUT #22	2229	---
INPUT # 8	221B	28	INPUT #23	222A	---
INPUT # 9	221C	12	INPUT #24	222B	---
INPUT #10	221D	---	INPUT #25	222C	---
INPUT #11	221E	18	INPUT #26	222D	---
INPUT #12	221F	28	INPUT #27	222E	---
INPUT #13	2220	38	INPUT #28	222F	---
INPUT #14	2221	48			
INPUT #15	2222	58			

INPUT FUNC CODES

PED BUTTON	=	X2
CALLING DET	=	X4
NORMAL DET	=	X8
EX PED	=	02
PREEMPT C	=	21
PREEMPT B	=	41
PREEMPT A	=	81
φ SLCT OMT A	=	B1
φ SLCT OMT B	=	B2
φ SLCT OMT C	=	B4
φ SLCT OMT D	=	B8
CYCLE 1	=	C8
CYCLE 2	=	C9
CYCLE 3	=	CA
SYNC	=	CB
OFFSET 1	=	CC
OFFSET 2	=	CD
OFFSET 3	=	CE
FREE	=	CF

CCS = 87B      Signal # = 229P      Rte = 9      Rte Seq # = 495

DATE: 12/08/02      TIME: 01:05:40

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TE 262-7 (10/96)      OUTPUT CONTROL WORDS  
 COMBINE FUNCTION (X) AND SPECIFIER (Y) TO FORM CODE WORD (XY)

FUNCTION (X)	SPECIFIER (Y)	SWITCH PACK	LOC.	CODE	
0 = PHASE	1-8 = PHASE				
1 = PED ***	1 (9) = PEDA	4 (C) = PEDD	SP1	2270	01
	2 (A) = PEDE	5 (D) = PEDE	SP2	2271	02
	3 (B) = PEDC	6 (E) = PEDF	SP3	2272	03
			SP4	2273	04
2 = OVERLAP	1 = OVLA	4 = OVLD	SP5	2274	61
	2 = OVLB	5 = OVLE	SP6	2275	61
	3 = OVLC	6 = OVLF	SP7	2276	62
			SP8	2277	62
4 = DOUBLE CLR	1 = DCA	2 = DCB	SP9*	2278	11
	3 = DCC	4 = DCD	SP10	2279	—
	5 = DCE	6 = DCF			
6 = DC/OVL	1 = DC/OVLA	2 = DC/OVLB	SP11**	227A	—
			SP12	227B	02
C = MASTER OUTPUTS (R/Y/G)	0 = UNUSED/OFF2/OFF3		SP13	227C	—
	C = CYC1/CYC2/CYC3		SP14	227D	—
	F = FREE/SYNC/OFF1				—

NOTES: \* SP9 (YELLOW) Outputs Aux Output by Timeclock  
 \*\* SP11 (YELLOW) Outputs Blue Light  
 \*\*\* Choose value in ( ) for solid yellow output during DON'T WALK

CCS = 87B Signal # = 229P

Rte = 9

Rte Seq # = 495

DATE: 12/08/02 TIME: 01:05:47

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TE 262-7A (11/95)

OVERLAPS

FUNCTION	PHASE WORD								LOC.	CODE
	8	4	2	1	8	4	2	1		
OVERLAP A GREEN PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	227E	—
OVERLAP B GREEN PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	227F	—
OVERLAP C GREEN PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2280	—
OVERLAP D GREEN PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2281	—
OVERLAP E GREEN PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2282	—
OVERLAP F GREEN PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2283	—
OVERLAP A CLEARANCE PHASE	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2284	—
OVERLAP B CLEARANCE PHASE	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2285	—
OVERLAP C CLEARANCE PHASE	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2286	—
OVERLAP D CLEARANCE PHASE	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2287	—
OVERLAP E CLEARANCE PHASE	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2288	—
OVERLAP F CLEARANCE PHASE	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	2289	—
DC/OVL A DBL. CLEAR PHASE	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	228A	40
DC/OVL B DBL. CLEAR PHASE	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	228B	04
DC/OVL A OVL GREEN PHASES	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	228C	E0
DC/OVL B OVL GREEN PHASES	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	228D	0E
DC/OVL A CLEARANCE PHASES	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	228E	C0
DC/OVL B CLEARANCE PHASES	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	228F	0C

CCS = 87B Signal # = 229P

Rte = 9

Rte Seq # = 495

DATE: 12/08/02 TIME: 01:05:52

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TE 262-8 (11/95)

OUTPUT CONTROL WORDS

FUNCTION	PHASE WORD								LOC.	CODE
	8	4	2	1	8	4	2	1		
PEDESTRIAN										
PEDESTRIAN A PHASE WORD	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2290	80
PEDESTRIAN B PHASE WORD	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2291	---
PEDESTRIAN C PHASE WORD	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2292	---
PEDESTRIAN D PHASE WORD	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2293	---
PEDESTRIAN E PHASE WORD	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2294	---
PEDESTRIAN F PHASE WORD	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2295	---
FLASHING WALK PHASE WORD										
FLASHING WALK PHASE WORD	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2296	---
PEDESTRIAN PHASE REST N WALK	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2297	---
EXTENDED PED CLEARANCE WORD	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2298	---
DOUBLE CLEARANCE										
DOUBLE CLEARANCE A PHASE	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	2299	---
DOUBLE CLEARANCE B PHASE	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	229A	---
DOUBLE CLEARANCE C PHASE	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	229B	---
DOUBLE CLEARANCE D PHASE	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	229C	---
DOUBLE CLEARANCE E PHASE	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	229D	---
DOUBLE CLEARANCE F PHASE	φ 1	φ 2	φ 5	φ 6	φ 3	φ 4	φ 7	φ 8	229E	---



CCS = 87B Signal # = 229P

Rte = 9

Rte Seq # = 495

DATE: 12/08/02 TIME: 01:06:15

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TE 262-10 (11/95)

TIMECLOCK FUNCTIONS

FUNCTION	8	4	2	1	8	4	2	1	LOC.	CODE
		SP	SP		SP	SP	SP	SP		
FLASH OUTPUT	-	3Y	3R	-	2Y	2R	-	1R	22CE	---
FLASH OUTPUT	-	6Y	6R	-	5Y	5R	-	4R	22CF	---
FLASH OUTPUT	-	9Y	9R	-	8Y	8R	-	7R	22D0	---
FLASH OUTPUT	-	12Y	12R	-	11Y	11R	-	10R	22D1	---
FLASH OUTPUT	-	-	-	-	7Y	1Y	10Y	4Y	22D2	---
FLASH OUTPUT	-	14Y	14R	-	13Y	13R	-	-	22D3	---
OMIT A PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	22D4	---
OMIT B PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	22D5	---
REST IN RED	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	22D6	---
MAX GRN II PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	22D7	CC
MAX GRN III PHASE WORD	$\phi$ 1	$\phi$ 2	$\phi$ 5	$\phi$ 6	$\phi$ 3	$\phi$ 4	$\phi$ 7	$\phi$ 8	22D8	---
INPUT 1-16 BY TIMECLOCK	1	3	5	7	9	11	13	15		
	2	4	6	8	10	12	14	16	22D9	---
INPUT 17-28 BY TIMECLOCK	17	19	21	23	25	27				
	18	20	22	24	26	28			22DA	---

CCS = 87B      Signal # = 229P                      Rte = 9                      Rte Seq # = 495

DATE: 12/08/02      TIME: 01:06:35

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TE 263-3 (11/95)                      COORDINATION MODE PROGRAMMABLE FEATURES

PROGRAMMING MODE WORD	00 = SECONDARY, 21 = PRIMARY	2300	—
MANUAL PATTERN SELECT	ENTER TIMING PLAN NUMBER (HEX) (NOTE: FF = FREE )	2301	—
COORDINATION BACK-UP	00 = FREE                      01 = T.B.C.	2302	—
COORDINATION MODES (MAY NOT BE COMBINED)	00 = TBC 01 = SPARE 02 = 7 WIRE INPUT VIA DETECTOR FILE 04 = 9 WIRE INPUT VIA DETECTOR FILE 08 = SPARE 10 = PATT. ID/SYNC INPUT VIA MODEM 20,40 = SPARES 80 = TBC MASTER OUTPUT	2303	—
RETURN TO ARTERY WORD/ ARTERY PED RECYCLE WORD	00 = RETURN AFTER FORCE OFF #1 /NO EARLY ARTERY PED RECYCLE 01 = RETURN TO ARTERY EARLY 10 = EARLY ARTERY PED RECYCLE	2304	—

EVENT #	A	B	C	D	EVENT #	A	B	C	D
	DAY PROG. #	PATT. #	TIME CLOCK FUNCT	TIME HR : MIN.		DAY PROG. #	PATT. #	TIME CLOCK FUNCT	TIME HR : MIN.
E001	001	000	008	06:3	E007	---	---	---	__:_
E002	001	000	000	09:0	E008	---	---	---	__:_
E003	001	000	008	15:3	E009	---	---	---	__:_
E004	001	000	000	18:0	E010	---	---	---	__:_
E005	---	---	---	__:_	E011	---	---	---	__:_
E006	---	---	---	__:_	E012	---	---	---	__:_



MODEL 179 SIGNAL OPERATION  
PROGRAMMABLE FEATURES  
SIGNAL OPERATION SPECIFICATION

TAPS \_\_\_\_\_  
STUDY # \_\_\_\_\_  
FILE # 55.03.9A  
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SIGNAL # W229 COUNTY # WEST. DATE \_\_\_\_\_

SWITCH PACK	FUNCTION	INDICATIONS	FACE	TERMINAL WIRING BOARD		FACE	TERMINAL WIRING BOARD	
				TERMINAL	WIRE COLOR CODE		TERMINAL	WIRE COLOR CODE
1	Ø1	RED	3	SP 1 R	14 / 19C - B - R/B	4	SP 1 R	14 / 10C - C - R
		YELLOW		SP 1 Y	- O/B		SP 1 Y	- O
		GREEN		SP 1 G	- G/B		SP 1 G	- G
		Ground Wire		Grnd Bus	- W/B		Grnd Bus	- W
2	Ø2	RED	5	SP 2 R	14 / 10C - C - R/B	6	SP 2 R	14 / 5C - D - R
		YELLOW		SP 2 Y	- O/B		SP 2 Y	- O
		GREEN		SP 2 G	- G/B		SP 2 G	- G
		Ground Wire		Grnd Bus	- W/B		Grnd Bus	- W
3	Ø3	RED	11	SP 3 R	14 / 10C - J - R	12	SP 3 R	14 / 19C - I - R/B
		YELLOW		SP 3 Y	- O		SP 3 Y	- O/B
		GREEN		SP 3 G	- G		SP 3 G	- G/B
		Ground Wire		Grnd Bus	- W		Grnd Bus	- W/B
4	Ø4	RED	13	SP 4 R	14 / 10C - J - R/B	14	SP 4 R	14 / 19C - I - B/R
		YELLOW		SP 4 Y	- O/B		SP 4 Y	- O/R
		GREEN		SP 4 G	- G/B		SP 4 G	- BL/R
		Ground Wire		Grnd Bus	- W/B		Grnd Bus	- W/R
5	DCL/OVL 'A' Ø1+Ø2+Ø5	RED	9	SP 5 R	14 / 19C - I - R	10	SP 5 R	14 / 5C - H - R
		YELLOW		SP 5 Y	- O		SP 5 Y	- O
		GREEN		SP 5 G	- G		SP 5 G	- G
		Ground Wire		Grnd Bus	- W		Grnd Bus	- W
6	DCL/OVL 'A' Ø1+Ø2+Ø5		9	SP 6 R	-----		SP 6 R	-----
				SP 6 Y	14 / 19C - I - BL/W		SP 6 Y	-----
				SP 6 G	- G/W		SP 6 G	-----
		Ground Wire		Grnd Bus	- B/W		Grnd Bus	-----
7	DCL/OVL 'B' Ø3+Ø4+Ø7	RED	1	SP 7 R	14 / 10C - A - R	2	SP 7 R	14 / 19C - B - R
		YELLOW		SP 7 Y	- O		SP 7 Y	- O
		GREEN		SP 7 G	- G		SP 7 G	- G
		Ground Wire		Grnd Bus	- W		Grnd Bus	- W
8	DCL/OVL 'B' Ø3+Ø4+Ø7		2	SP 8 R	-----		SP 8 R	-----
				SP 8 Y	14 / 19C - B - BL/W		SP 8 Y	-----
				SP 8 G	- G/W		SP 8 G	-----
		Ground Wire		Grnd Bus	- B/W		Grnd Bus	-----
9	PED 'A' Ø1	DONT WALK	21	SP 9 R	14 / 5C - 1P - R		SP 9 R	-----
		-----		SP 9 Y	-----		SP 9 Y	-----
		WALK		SP 9 G	- G		SP 9 G	- G
		Ground Wire		Grnd Bus	- W		Grnd Bus	- W
10		-----		SP 10 R	-----		SP 10 R	-----
		-----		SP 10 Y	-----		SP 10 Y	-----
		-----		SP 10 G	-----		SP 10 G	-----
		Ground Wire		Grnd Bus	-----		Grnd Bus	-----
11		-----		SP 11 R	-----		SP 11 R	-----
		-----		SP 11 Y	-----		SP 11 Y	-----
		-----		SP 11 G	-----		SP 11 G	-----
		Ground Wire		Grnd Bus	-----		Grnd Bus	-----
12	Ø2	-----	7	SP 12 R	14 / 10C - A - R/B	8	SP 12 R	14 / 19C - B - B/R
		-----		SP 12 Y	- O/B		SP 12 Y	- O/R
		-----		SP 12 G	- G/B		SP 12 G	- BL/R
		Ground Wire		Grnd Bus	- W/B		Grnd Bus	- W/R
13		-----		SP 13 R	-----		SP 13 R	-----
		-----		SP 13 Y	-----		SP 13 Y	-----
		-----		SP 13 G	-----		SP 13 G	-----
		Ground Wire		Grnd Bus	-----		Grnd Bus	-----
14		-----		SP 14 R	-----		SP 14 R	-----
		-----		SP 14 Y	-----		SP 14 Y	-----
		-----		SP 14 G	-----		SP 14 G	-----
		Ground Wire		Grnd Bus	-----		Grnd Bus	-----

MODEL 179 SIGNAL OPERATION  
 PROGRAMMABLE FEATURES  
 SIGNAL OPERATION SPECIFICATION

TAPS \_\_\_\_\_  
 STUDY # \_\_\_\_\_  
 FILE # 55.03.9A  
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SIGNAL # W229/4229.1 COUNTY # WEST. DATE \_\_\_\_\_

CONFLICT/CURRENT MONITOR PROGRAMMING

CONFLICT MONITOR DIODES TO BE CUT		CONFLICT MONITOR YELLOW JUMPERS TO BE INSTALLED	CURRENT MONITOR DIODES TO BE CUT
SP1 - SP5	SP6 - SP12	SP9	6, 8 to 11, 13, 14
SP1 - SP6	<i>SP5 - SP6</i>		
SP1 - SP9	<i>SP7 - SP8</i>		
SP2 - SP5			
SP2 - SP6			
SP2 - SP12			
SP3 - SP7			
SP3 - SP8			
SP4 - SP7			
SP4 - SP8			
SP5 - SP9			
SP5 - SP12			
SP6 - SP9			

NOTES: \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

MODEL 179 SIGNAL OPERATION  
 PROGRAMMABLE FEATURES  
 SIGNAL OPERATION SPECIFICATION

TAPS \_\_\_\_\_  
 STUDY # \_\_\_\_\_  
 FILE # 55.03.9A  
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SIGNAL # W229/vs229 COUNTY # WEST. DATE \_\_\_\_\_

TABLE OF INPUT WIRING

TERM NUMBER	FUNCTION	DET. NO.	DET. TYPE	DET. AN OVER	REMARKS
1A, 1B	Ø1	1A, 1B	NORMAL		PRESENCE LOOPS
2A, 2B	Ø2	2A, 2B	NORMAL		PRESENCE LOOPS
3A, 3B	Ø3	3A, 3B	NORMAL		PRESENCE LOOPS
4A, 4B	Ø4	4A, 4B	NORMAL		PRESENCE LOOPS
5A, 5B	Ø5	5A, 5B	NORMAL		PRESENCE LOOPS
6A, 6B					
7A, 7B	Ø7	7A, 7B	NORMAL		PRESENCE LOOPS
8A, 8B	Ø2	8A, 8B	NORMAL		PRESENCE LOOPS
9A, 9B	PED. 'A' - Ø1	21	PUSH BUTTONS		PEDESTRIAN BUTTONS (2)
10A, 10B					
11A, 11B	Ø1	11A, 11B	NORMAL		PRESENCE LOOPS
12A, 12B	Ø2	12A, 12B	NORMAL		PRESENCE LOOPS
13A, 13B	Ø3	13A, 13B	NORMAL		PRESENCE LOOPS
14A, 14B	Ø4	14A, 14B	NORMAL		PRESENCE LOOPS
15A, 15B	Ø5	15A, 15B	NORMAL		PRESENCE LOOPS
16A, 16B					
17A, 17B	Ø7	17A, 17B	NORMAL		PRESENCE LOOPS
18A, 18B	Ø2	18A, 18B	NORMAL		PRESENCE LOOPS
19A, 19B					
20A, 20B					
21A, 21B					
22A, 22B					
23A, 23B					
24A, 24B					
25A, 25B					
26A, 26B					
27A, 27B					
28A, 28B					

## 5. StreetLight Methodology / Volume Adjustment Factors



## STREETLIGHT DATA METHODOLOGY

### OVERVIEW

StreetLight is a web-based software product that allows planners, modelers and engineers in the US and Canada to dynamically and flexibly run core transportation analytics based on billions of bits of travel information gathered from multiple sources (referred to as Big Data). It allows transportation experts to design, generate, visualize, and download customized Travel Metrics such as origin-destination matrices, trip time, trip length, and more in minutes. These analytics are based on billions of trips derived from archival, anonymous, trace data generated by millions of mobile devices, such as smart phones, in-car navigation systems, and truck fleet management systems.

The following two attached White Papers from StreetLight provide an overview of the technical methodologies utilized within the StreetLight platform to derive traffic volume data:

- “StreetLight Volume Methodology & Validation White Paper” (August, 2019)
- “Turning Movement Validation White Paper” (December, 2018)

In order to develop a comparison ratio between pre-pandemic and summer 2020 traffic volumes, turning movement count (TMC) data was obtained from the StreetLight platform from a 4-month period (the recommended data timespan by StreetLight) of 2019 count data and from the then-available summer months (June and July) of 2020. This data was obtained for the Route 9 (Jans Peeck Bridge)/Bear Mountain Parkway intersection. Based on the algorithms utilized by StreetLight, the data at this location was anticipated to be the least susceptible to stray data points which could potentially skew the data due to its isolated location. Additionally, this intersection also carries some of the highest traffic volumes in the study area which also reduces the margin of error.

The summer 2020 AKRF traffic volumes at this intersection were compared with the StreetLight summer 2020 traffic volumes and the AKRF volumes were found to be comparable or lower than the StreetLight data for the peak periods examined. Therefore, the ratio between the StreetLight 2019 and AKRF summer 2020 volumes would be higher than the ratio between the StreetLight 2019 and StreetLight 2020 volumes, and can be considered as conservative.

To further validate the StreetLight data, a comparison of the turning movement percentages of vehicles in each direction (left, through, right) between the two data sets were compared for each of the peak periods examined and were found to generally be comparable.

**Table A.5-1** shows the factors that were applied to the study area AKRF summer 2020 volumes to approximate 2020 pre-pandemic baseline conditions based on the volume comparisons outlined above.

**Table A.5-1**  
**StreetLight versus AKRF Traffic Volume Summary**  
**Route 9 (Jans Peeck Bridge) / Bear Mountain Parkway Intersection**

	<b>Weekday AM Peak Hour</b>	<b>Weekday PM Peak Hour</b>	<b>Saturday Midday (Weekend) Peak Hour</b>
StreetLight 2019 Data <sup>1</sup>	3,898	4,020	4,057
<i>StreetLight Summer 2020 Data<sup>1</sup></i>	2,679	3,162	3,343
AKRF Summer 2020 Data	2,227	2,873	2,348
Ratio - StreetLight 2019 versus AKRF Summer 2020 Volume Data	<b>1.75</b>	<b>1.40</b>	<b>1.73</b>

**Notes:**

1. StreetLight data only provides on-hour volume data (e.g. 7-8 AM, 4-5 PM). Data was further calibrated to coincide with off-hour (e.g. 7:30 - 8:30 AM, 4:45 - 5:45 PM) peak hours established from the AKRF data.
2. Factors applied to the AKRF Summer 2020 data for the respective peak hours to establish the 2020 Existing Conditions Baseline traffic volumes.



**STREETLIGHT**

**InSight**

**StreetLight Volume  
Methodology & Validation  
White Paper**

Updated August 2019

This white paper provides technical detail about the methodology, algorithm development, validation, and data sources used in StreetLight Data’s Volume output. This white paper was first published in August 2019 and is updated periodically as new validation is performed.

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## Introduction

StreetLight's underlying data sample varies month to month, and the resulting trip counts and normalized Index values, while valuable for cross zone or cross project comparison, do not represent estimated trip counts. The goal of the new StreetLight Volume output is to provide an estimate of average daily traffic, and to allow for time-series analysis, or comparison of actual traffic changes over time. This Volume output provides a quick, easy, and cost-effective way to measure traffic at the yearly, monthly, daily, and even hourly level. Volume estimates can be derived for any location, such as a road, park, TAZ or user-defined special area. It can also be used to estimate zone-to-zone traffic, providing accurate estimates for work like turning movement studies and travel demand models. StreetLight Volume is available for analyses in the U.S., and soon for Canada.

## Methodology

### *Estimated Volume for Roads*

#### DATA SOURCES

In order to create an estimate of the actual number of cars on the road at a variety of points in time, the analysis combined multiple models to create optimal results. At a high level: StreetLight's machine-learning models predict expected seasonal changes at a location over time, and use the Streetlight Data AADT (annual average daily traffic) to calibrate seasonal changes to an estimated volume.

Following is a brief overview of StreetLight AADT methodology and data sources. To get more detailed information, please refer to the [StreetLight AADT white paper](#).

The StreetLight AADT blends together the following data sources to provide the best prediction of annual average daily traffic at a given location:

1. Location-Based Services trips.
2. Navigation GPS trips - personal and commercial.
3. U.S. Census and Manifold super demographics which are derived from Statistics Canada.
4. Open Street Maps data reflecting road classification, density of commercial activity, and more.
5. Weather data.
6. AADT counts, derived from permanent traffic recorders, including a mix of small and large, urban and rural locations. StreetLight uses 11,000+ counts across the U.S. and Canada to develop and validate AADT.

Using a combination of the features described above, the analysis applied a Random Forest model to estimate AADT at each location. It then performed several types of cross-validation to ensure the model worked well in different scenarios (across states, road types etc.) The validation work proved that the actual and estimated AADT values through the cross validation were correlated with a very high  $R^2$  (.96) which indicates that the performance of the model is excellent without bias.

In order to estimate variation in traffic volume across time, analysis relied on permanent traffic recorders (PTR) deployed on roads across the U.S. which count the number of cars constantly. This constant counting allows StreetLight to evaluate monthly average daily traffic (MADT) metrics to assess monthly variation in trip volume at a particular location.

Creating a monthly traffic model demanded promptly published data on how many cars were historically present on a road each month. Quality data at the monthly level is not readily available from all states, thus StreetLight had to narrow PTR counters to those that met a high standard of frequency and quality. This left 474 counters across eight states: Colorado, Georgia, Indiana, Michigan, Massachusetts, Montana, Ohio, and Rhode Island. This is a subset of those used in the AADT calibration process.

## ALGORITHM DETAILS

With the MADT data derived from counter locations across the county, a distinct linear model was trained and generated for each month of the year. Using a series of spatial and temporal features, the linear model predicts a seasonal factor for the expected change in traffic for that month relative to the yearly average for 2018 (AADT). Seasonal factors are represented as a percent change from the yearly average, so a month with more traffic than the yearly average will have a positive seasonal factor (say +10%), while a month with less traffic than the yearly average will have a negative seasonal factor (say -15%).

The resulting model allows us to ingest monthly data samples that vary in size, and then predict monthly trip volumes that correspond with seasonal variation. In Figure 1, LBS trips at a single location are translated into “seasonal change” in LBS across months (left, green). Each dot represents data from a different month at a specified location. In running the model, the seasonal factor can be translated into MADT (right, blue).

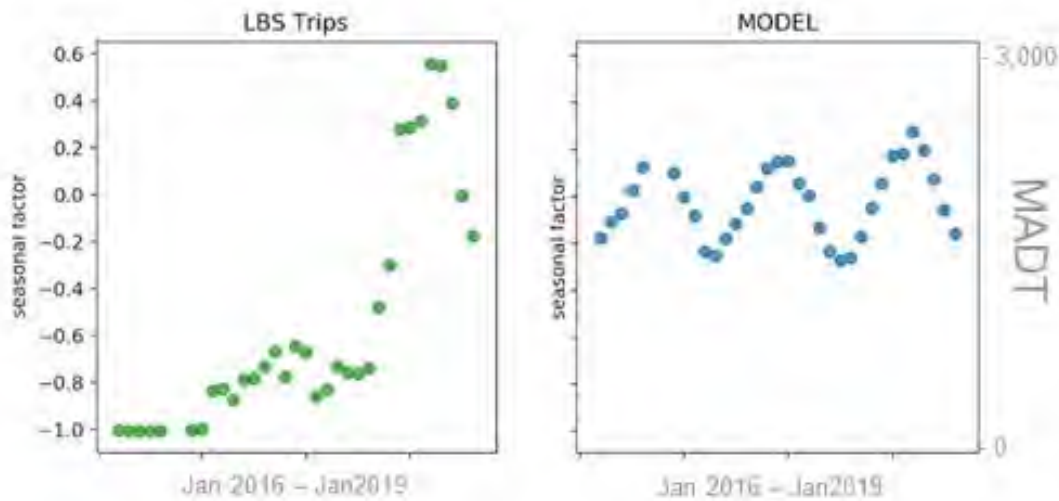


Figure 1: Unadjusted LBS sample trip counts (left) show sample growth over time vs. MADT model output, which corrects and normalizes the input data.

## Estimated Volume for Areas

### DATA SOURCES

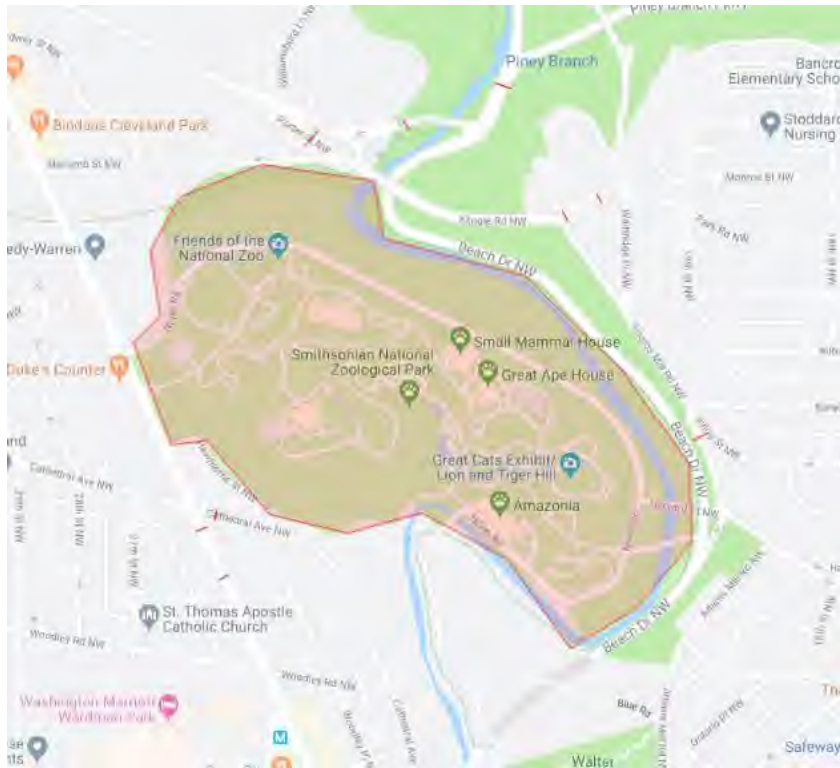
Calibrating LBS data to the volume of large areas is less straightforward than calibrating to expected road volume without reliable "truth" data representing the real-world number of trips that start or end in large areas. The most consistent and reliable validation and training data available is for roads. Thus, StreetLight used its well-validated method of estimating traffic on roads to infer expected volume to areas.

In order to estimate trips to or from an area, the process followed this high-level method:

1. Sample nearby roads with trips in the zone area.
2. Obtain an estimate of MADT for the sampled road, as described previously.
3. Use the estimated MADTs from the roads near the area to calibrate and generate an estimate of volume in the area.

### ALGORITHM DETAILS

In order to estimate volume for a specified area, the algorithm selects a subset of roads with trips that start, end, or pass through the zone area. See Figure 2 for an example, where a specified area (shaded) is accompanied by a subset of randomly sampled roads (orange gates) in the surrounding area. The number of sample roads will depend on the size and location of the area zone.



*Figure 2: Example area zone with selected gates (red lines) used to calculate MADT for trip starts and stops to the area.*

For each sampled road, the system will do the following:

1. Run a pass-through Zone Activity analysis for an estimate of MADT from each sampled road.
2. Use the ratio of LBS through the road, and LBS trips through the zone area to estimate zone area volume. This is based on the assumption that:  $LBS\ road / LBS\ area = actual\ road / actual\ area$ .
3. Calculate the weighted average volume estimate from all the sub-sampled roads to choose a final estimated StreetLight Volume.

Based on seasonal factors associated with the months included in the analysis, this results in an estimated volume for the defined area based on trip starts and ends.

### ***Estimated Volume for Origin-Destination Analyses***

Once Volume outputs were estimated for individual zones (both pass-through and area zones) these were applied to origin-destination analyses, which allowed for evaluating how many trips span between locations. The goal is to generate an O-D Volume that allows for comparisons across time, and provides a number that represents a reasonable estimate of the real-world number of trips.



This was accomplished via the following approach:

1. Calculate the total Zone Activity Volume for each O-D zone (described in the previous sections).
2. Return the LBS trip counts between each O-D zone.
3. Use Iterative Proportional Fitting (IPF) to scale the LBS O-D counts to Volume based on the estimated volume at each O-D.

Iterative Proportional Fitting is a technique used to adjust the counts in a table so that they add up to specified totals (or "marginal totals") for both columns and rows. In this case, the adjusted data (called "seed" cells) is the LBS trip counts between each O-D pair. Using an adjusted Zone Activity Volume for each O-D as the marginal totals, then scaling the LBS trip counts with IPF adds up to the expected Zone Activity Volumes. This approach follows well-established practices in the transportation industry.<sup>1</sup>

In addition to a two-dimensional matrix used in an O-D project, the IPF technique can also be applied to a three-dimensional matrix to derive volume estimates for an Origin-Destination with Middle Filter (ODMF) zone configuration.

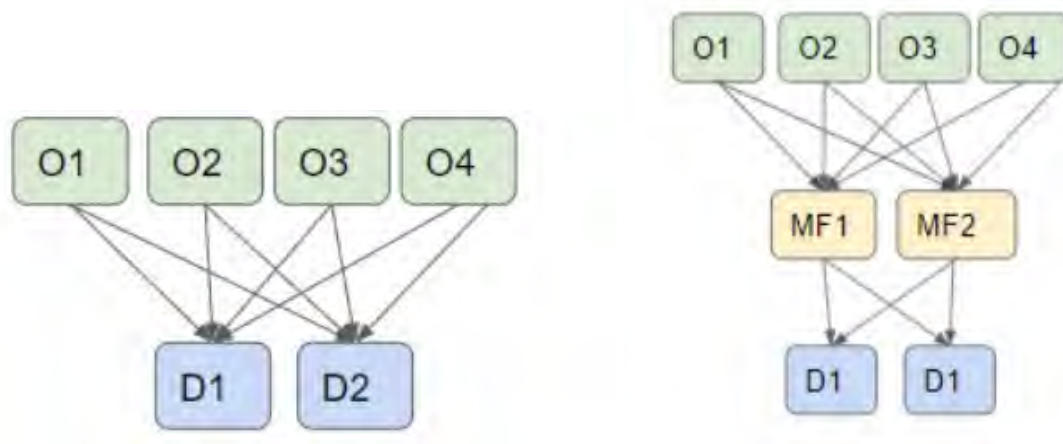


Figure 3: Example Origin-Destination analysis configuration (left) and Origin-Destination analysis with Middle Filter configuration (right) used in IPF calculations.

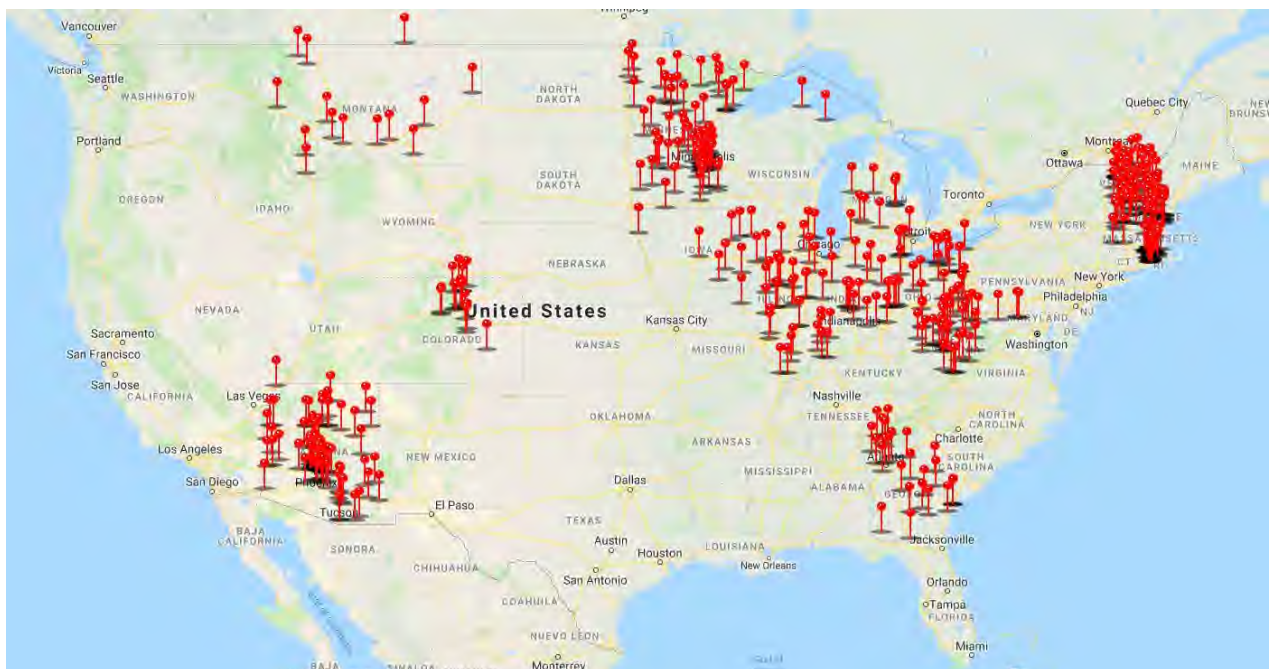
<sup>1</sup> CDM Smith, A. Horowitz, T. Creasey, R. Pendyalam, and M. Chen. NCHRP Report 765: *Highway Traffic Data for Urbanized Area Project Planning and Design*. TRB, National Research Council, Washington, D.C., 2014. Pg 161

## Validation

### Zone Activity Volume for Roads

#### DATA SOURCES AND METHODS

In order to validate monthly Volume output, we created a zone set that contained 495 permanent counter locations across the continental U.S. These locations were not used to train the original model, but had sufficient MADT data reported across time so they could be used as a direct point of comparison. These locations, obtained from state DOTs, included counters dispersed across 15 U.S. states, including urban, suburban, and rural locations, as well as a variety of road sizes and classifications. Figure 4 shows those zone locations.



*Figure 4: Counter locations across the U.S. used for MADT validation.*

Validation was performed using these 495 counter zones in a series of Zone Activity Volume analyses within StreetLight InSight® for each calendar month in 2018. StreetLight Volume results were directly compared to the MADT values for accuracy. In total there were 5074 data points for comparison (each counter included data for a subset of months with 2018, but not necessarily all months within the calendar year).

#### VALIDATION RESULTS: ZONE ACTIVITY VOLUME

Directly comparing the StreetLight Volume results to the reported MADT, there is a very high correlation. With no outlier deletion, the  $R^2$  value is 0.979, indicating a strong relationship between StreetLight Volume estimates and real-world counts.

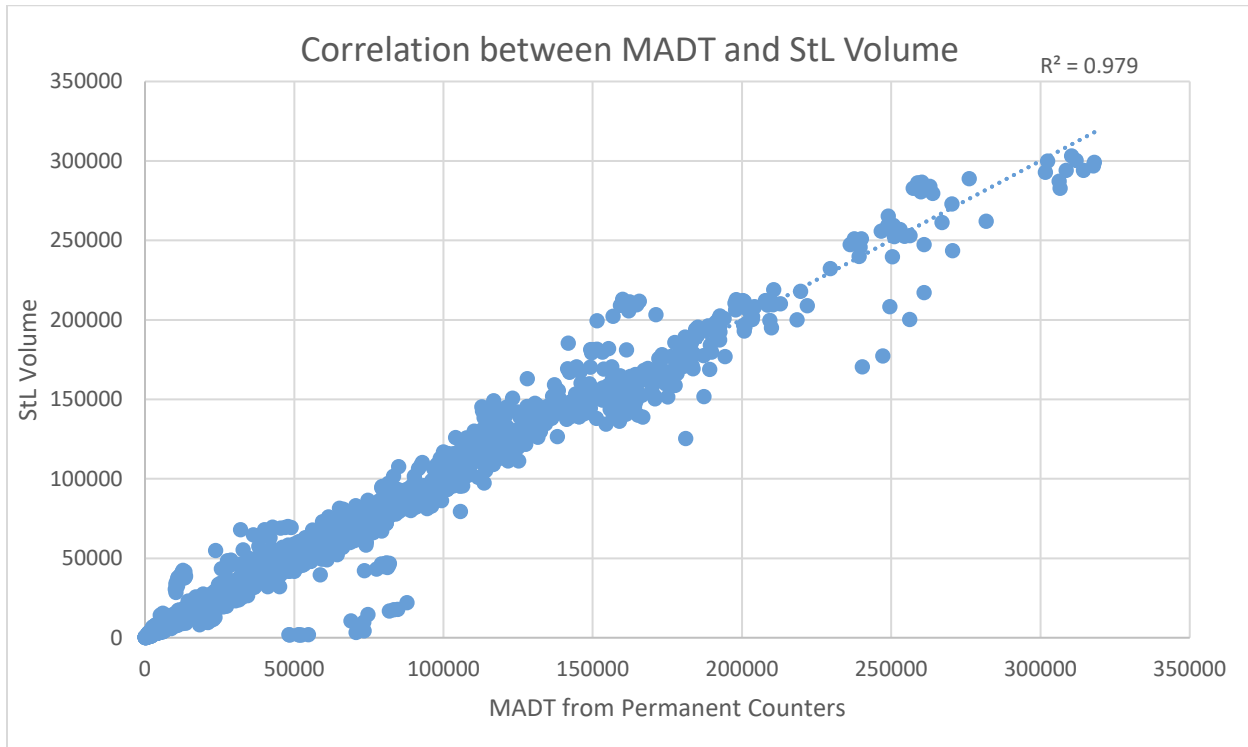


Figure 5: StreetLight Volume compared to published MADT values.

In addition to correlation, we also evaluated the mean absolute percentage error (MAPE) and root means square error as percent of average MADT (RMSE as %) by road size, expecting to have more accurate estimations on larger roads with higher MADT values. Table 1 compares the MAPE and RMSE to published target errors. The results fall within the target error range across all road sizes.

Road Size	Count	Target MAPE	MAPE	Target RMSE/Average MADT	RMSE/Average MADT
<2.5K	594	Not available	31%	47%	37%
2.5K-5K	586	Not available	12%	36%	17%
5K-10K	1011	20%	15%	29%	20%
10K-25K	1336	20%	13%	25%	25%
25K-50K	647	16%	10%	22%	17%
50K+	900	12%	8%	21%	13%

<sup>2</sup> See Table 2 in: Gadda, S., A. Mangoon, and K. Kockelman. Estimates of AADT: Quantifying the Uncertainty. 11th World Conference on Transport Research, Berkeley CA, 6-24-2007 to 6-28-2007.

## VALIDATION RESULTS: SEASONALITY

In addition to evaluating the direct comparison between StreetLight Volume output and MADT across all locations, the analysis also examined some specific locations to validate the model’s ability to accurately capture seasonal trends. Counter locations were randomly selected that had 11 or 12 monthly counts in 2018. In comparing results, trend lines reflected a similar seasonal pattern, while also being closely aligned in volume.

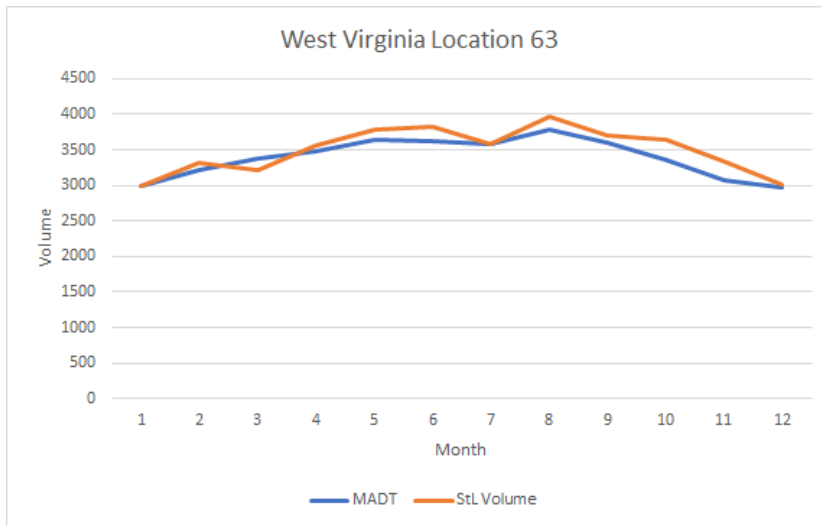


Figure 6: Monthly variation in StreetLight Volume and MADT across 2018 – sample mid-volume West Virginia location.

Testing both high- and low-volume roads confirmed the ability to report seasonal trends across all types of locations. Figure 7 below shows a higher volume road (~20K MADT). In this case, the StreetLight Volume estimate aligns very closely with the MADT values.

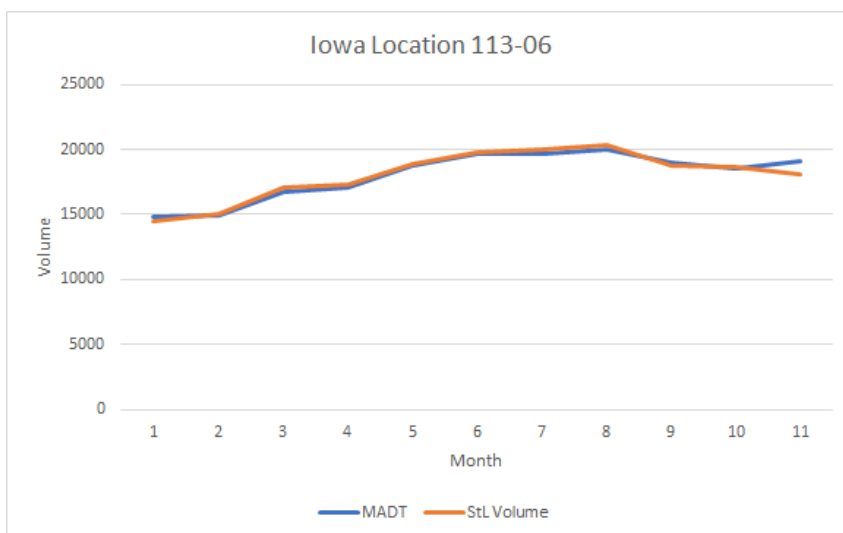


Figure 7: Monthly variation in StreetLight Volume and MADT across 11 months in 2018 – sample high-volume Iowa location.

Figure 8 depicts a very low-volume rural road in Montana with an MADT range between 200 and 1000 across the year. In this case, while slightly less extreme than the reported MADT numbers, the StreetLight Volume is still able to capture the seasonal peaks very accurately, with lows in the winter months and clear peak in July. These results give confidence in the model’s ability to accurately predict seasonal trends, even when locations experience low-traffic volumes.

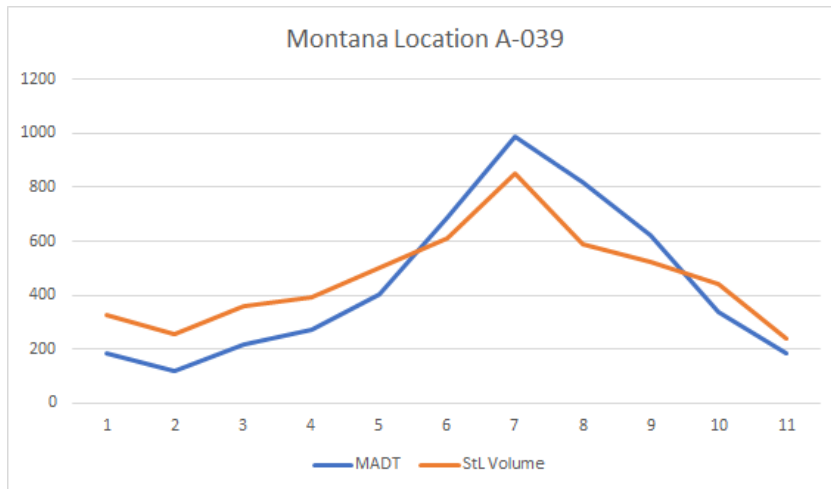


Figure 8: Monthly variation in StreetLight Volume and MADT across 11 months in 2018 – sample low-volume rural Montana location.

## Origin-Destination Volume for Roads

### DATA SOURCES AND METHODS

For validating Volume performance in an O-D analysis, StreetLight Volume results were compared to turning-movement counts published by Hennepin County in Minnesota<sup>3</sup>. A turning movement is an O-D study where each inbound road is the origin and each outbound road is the destination. Turning movements were chosen because validation data for turning movement studies is far more readily available than other types of O-D data.

The validation used data from five locations throughout the county, all of which were gathered on different dates in 2017. For each location, trips were manually counted between 6:00 a.m. and 6:00 p.m.

In order to perform a direct comparison between the Hennepin County locations and the StreetLight Volume output, we created zones in the *StreetLight InSight* platform that mirrored these five intersections. Then the platform ran an O-D analysis for the calendar year, structuring the query to match the specific weekday and hourly period from which the data were collected.

<sup>3</sup>

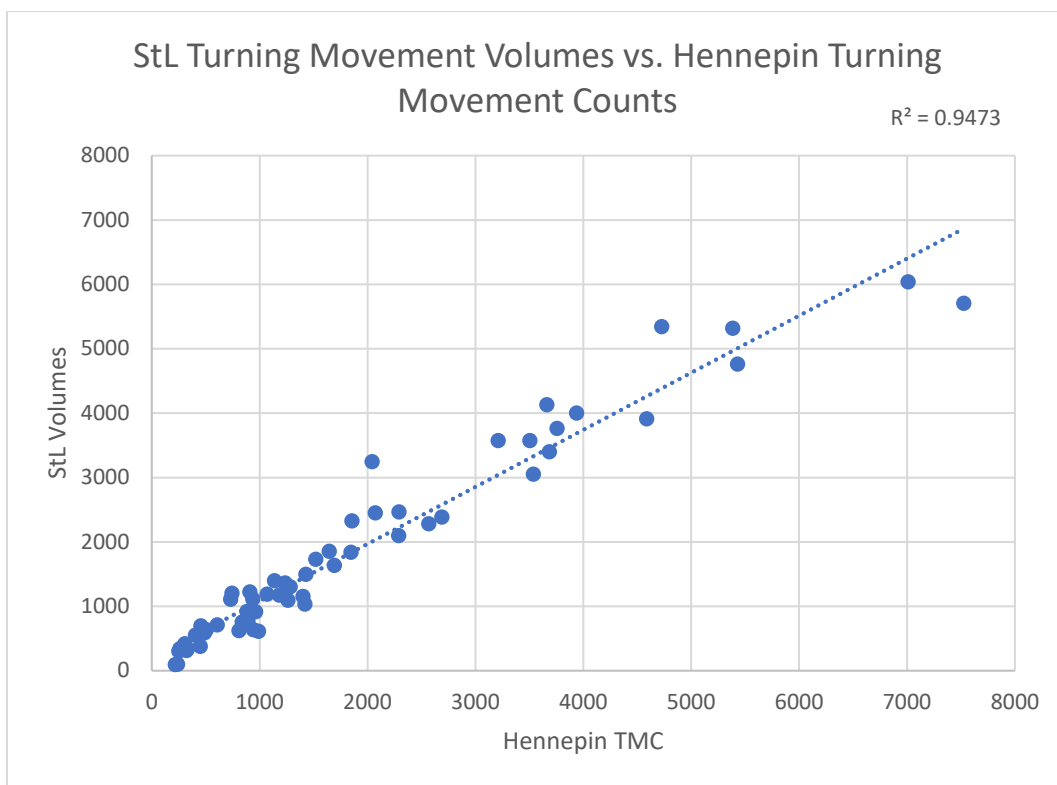
<http://hennepin.maps.arcgis.com/apps/webappviewer/index.html?id=14c650982d904132a4854f399c71e1f2>

For example, if site A used a Tue-Thu 8:00 a.m. to 10:00 a.m. definition of peak, the validation also used this definition of peak. The analysis closely mirrored the original study for direct comparison of turning movement counts and ratios.

### VALIDATION RESULTS: ORIGIN-DESTINATION VOLUME

At each of the five locations, data was evaluated for eastbound, westbound, northbound, and southbound traffic as the origin, with left, right, and thru traffic as the destination. In total, this created 60 data points for comparison.

Without deleting any outliers, there was a high correlation between StreetLight Volume and the Hennepin turning movement counts, with an  $R^2$  value of 0.947.



*Figure 9: Correlation between Hennepin turning movement counts and StreetLight Volume.*

In addition to the turning movement counts, the analysis also directly compared the turning movement ratios, represented as percentages of total origin zone traffic that traveled left, right, or directly through the intersection. The correlation for turning movement ratios was even higher, with an  $R^2$  value of 0.976.

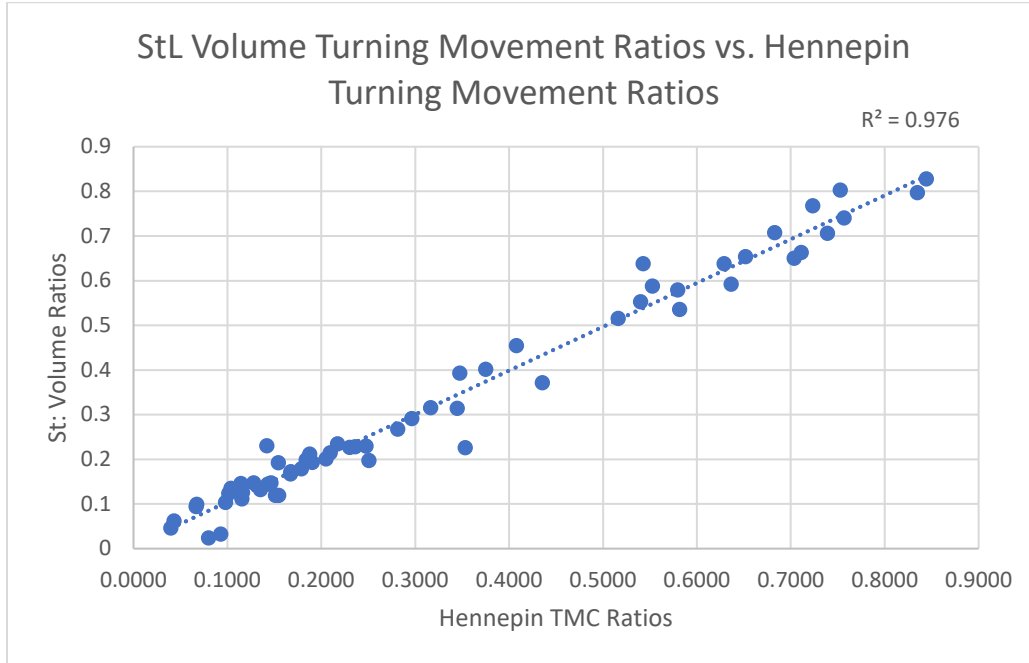


Figure 10: Correlation between Hennepin turning movement counts and StreetLight Volume.

The image below illustrates an individual intersection and the comparison between StreetLight Volume and turning movement counts along with turning movement ratios. Turning movement counts are very close, while turning movement ratios are nearly identical.

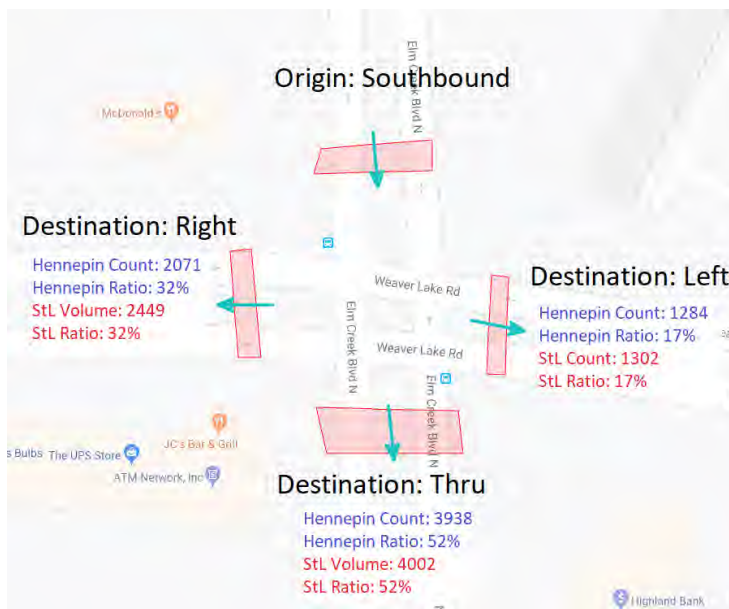


Figure 11: Southbound turning movement counts and ratios at location 4538.

Overall, these results are very promising and suggest that StreetLight Volume reliably captures seasonal trends, as well as O-D patterns.

In future iterations of the validation study, StreetLight will incorporate Zone Activity and O-D results for area zones, looking at validating trip counts that start or stop in the area (not pass-through). StreetLight welcomes any partner who has empirically measured counts for area zones that would like to share them for the purposes of validation.

## **About StreetLight Data**

StreetLight Data pioneered the use of Big Data analytics to help transportation professionals solve their biggest problems. Applying proprietary machine-learning algorithms to over four trillion spatial data points, StreetLight measures diverse travel patterns and makes them available on-demand via the world's first SaaS platform for mobility, StreetLight InSight®. From identifying sources of congestion to optimizing new infrastructure to planning for autonomous vehicles, StreetLight powers more than 3,000 global projects every month.





# STREETLIGHT DATA

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STREETLIGHT

InSight

# Turning Movements Validation White Paper

Version 1.0

Published December 2018

# Validation of Turning Movement Accuracy with StreetLight InSight<sup>®</sup> Metrics

This white paper provides technical detail about use of *StreetLight InSight* to calculate turning movement ratios. It focuses on validation of these unique, Big-Data derived travel pattern analytics against publicly available turning movement ratios derived from traffic counts. This paper assumes the reader has basic familiarity with StreetLight methodology and Metrics. This and other background can be found at [streetlightdata.com](http://streetlightdata.com).

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## Overview and Motivation

This white paper describes the results of an accuracy validation study comparing Metrics derived from *StreetLight InSight* to public, external data sources. For this white paper, we validated link origin-destination data from *StreetLight InSight* for intersections against publicly available intersection turning movement counts from the Champaign County Regional Planning Commission's Champaign Urbana Urbanized Area Transportation Study (CUUTAS) in Illinois and the Maryland State Highway Administration (MDSHA).

Turning movement counts are performed regularly by many throughout the transportation industry. They are a key input to signal timing or retiming efforts, traffic impact studies, corridor studies, and more. Traditionally, they require temporary set up and maintenance of specialized

video or other equipment, which can cost ~\$1,200/intersection to measure for a two-day count.<sup>1</sup> Collection costs can be so high that many agencies only collect data for a few hours (e.g: only from 4 to 5 PM). This leaves agencies blind to travel patterns at a time when peak periods are expanding and congestion occurs over several hours during the day. In addition, the temporary sampling requires “expanding” the sample to represent an entire year, which creates inaccuracies and is not sensitive to variation from seasons or special events. Finally, collecting these counts can put staff in harm’s way near busy roads.

Deriving intersection turning movements from Big Data can save the industry money and time while reducing risk of injury to staff. In addition, when turning counts are easily and readily available, they can be utilized for more studies and ultimately enable better transportation decisions.

## Data Sources and Methods

### CUUTAS Intersection Counts

CUUTAS provides an open data portal that includes vehicle turning movement counts for particular intersections in Champaign and Urbana.<sup>2</sup> The turning movement counts are provided at each intersection for three select hours of the day during the AM, noon, and PM periods. For this white paper, we used intersections with relatively recent counts (2015 or 2016).

### Maryland State Highway Administration Intersection Counts

MDSHA provided 15-minute turning movement counts for intersections located along Maryland State Highways and U.S. Highways.<sup>3</sup> The counts were collected for 24 hours on a Tuesday, Wednesday, or Thursday. To compare against StreetLight’s analytics, we aggregated Maryland SHA’s 15-minute counts to hourly counts for one full day.

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<sup>1</sup> <http://www.mikeontraffic.com/traffic-data-inc-2016-price-list/>

<sup>2</sup> <https://ccrpc.org/data/vehicle-turning-movement-counts/>

<sup>3</sup> [http://maps.roads.maryland.gov/itms\\_public/](http://maps.roads.maryland.gov/itms_public/)

# StreetLight InSight Origin-Destination Analysis

For this validation work, we ran *StreetLight InSight* Origin-Destination Analyses (which allows calculation of turning movements) twice for each intersection in order to utilize two different data sources: Location-Based Services (LBS) data, which is created by smartphone apps, and Navigation-GPS data, which is created by connected cars and trucks as well as turn-by-turn navigation tools. StreetLight's Origin-Destination Analysis describes relative trip volumes between designated Zones. As described below, it can be used to calculate turning movements. For a full description of StreetLight data sources and methodology, see the detailed documentation available on the StreetLight website.<sup>4</sup>

Both Navigation-GPS and LBS data have strengths and weaknesses. Known sources of error, differences, and methods to deal with them include:

1. Potential demographic bias and other sampling issues with the LBS data: For LBS data used to derive turning movements and other metrics, StreetLight normalizes for bias using the US Census. There are details of this method in other resources on the StreetLight Data website.<sup>5</sup> In short, if ten devices "live" on a block with 100 people, each of those devices is scaled up by a factor of 10. If ten devices "live" on a block with 50 people, each is scaled by a factor of 5. This adjusts for variation in geographic distribution of mobile devices captured, which is correlated with demographic factors such as income.
2. GPS sample size and bias – For Navigation-GPS data from personal devices, the sample size is smaller and we cannot follow a device for more than one trip. Therefore, we cannot normalize it as described above for the LBS data. Thus, we expect to find more demographic and geographic bias with the navigation-GPS data.
3. Short sampling window for CUUTAS & MDSHA data – MDSHA and CUUTAS only collected turning movement data for a few hours on one day. We mitigated this source of difference by matching the time-of-day window. However, since StreetLight's data was for several months, we cannot mitigate bias that comes from any irregularities on that single-day when CUUTAS and MDSHA counts were collected. This may introduce bias if that particular day was unusual, that year had dramatic seasonal variations, etc.
4. Different years: All StreetLight analytics covered 2017, whereas MDSHA and CUUTAS data covered 2015-2017. Since conditions at the intersections may have changed during this time, this may introduce some error.

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<sup>4</sup> <https://www.streetlightdata.com/methodology-data-sources-white-paper>

<sup>5</sup> <https://www.streetlightdata.com/methodology-data-sources-white-paper>

In short, none of the sources can be called “ground truth” since all are samples. Thus, we do not speak of “error” when comparing one source to another, instead we speak in terms of “difference”. We do not expect the results to be exactly the same. We consider the validation successful if the results are highly correlated and the mean difference is relatively small.

## Data Collection and Analysis: Single Intersection at University / Goodwin

In this section, we present a detailed look at the methodology for one intersection. We repeated the process 11 additional intersections for this validation study.

We performed an Origin-Destination analysis within the *StreetLight InSight* platform to create a turning movement analysis. Four zones were drawn for each intersection, one for each leg of the intersection, and marked as both an origin and destination, as shown below in Figure 1. A vehicle driving through the intersection will be seen on the inbound road as the origin, and on the outbound road as the destination. The Origin-Destination Analysis results can then easily be reorganized as hourly intersection turning movements.

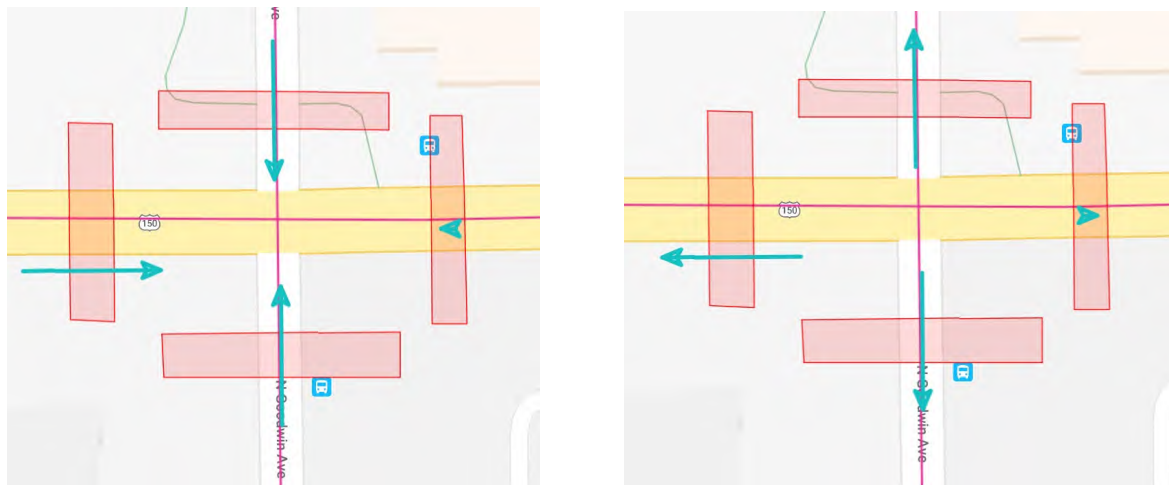


Figure 1: Left - Origin Zones for University Ave/Goodwin Ave. Right - Destination Zones for University Ave/Goodwin Ave

The *StreetLight InSight* Origin-Destination Analyses were run using 10 months of data in 2017; data was segmented by type of day (weekday vs weekend) and by each hour of the day.

*StreetLight InSight* can provide estimated trip counts for each turning movement if an analysis is calibrated with existing count data for intersection legs or StreetLight AADT Metrics. If no calibration is used, the output is a normalized index describing the relative volume of trips is given for each Origin-Destination pair. As this volume estimation process would introduce a second potential

source of error, the validation was completed by using turning ratios to compare CUUTAS and StreetLight's data. More information about StreetLight AADT is available online<sup>6</sup>, as are detailed instructions on calibrating Origin-Destination analyses using StreetLight AADT or local traffic count data.

After running the Origin-Destination Analysis for each intersection in *StreetLight InSight*, we calculated a turning ratio for each turning movement on an inbound road for each hour. The ratio is equal to the StreetLight index for that movement, divided by the sum of all indices for that road during that hour. This is described by the equation:

$$Ratio = \frac{T_l}{\sum T_{l,r,s}}$$

where T is the indexed value of the vehicles making each turn, and the subscripts "l, r, s" designate all possible left-turn, right-turn, and straight-ahead movements.

We repeated this process for the CUUTAS counts to obtain turning ratios, and compared these ratios for the hours of 7 AM, 12 PM, and 5 PM (when CUUTAS took measurements) against the StreetLight ratios for the same hours.

Each analysis had a different sample size. In general, LBS data had 25x the sample size as the CUUTAS counts, and GPS Data had 2-3x the sample size, as reflected in the University Ave example shown in Table 1:

Table 1: Sample Size for Three Data Sources for University Ave/Goodwin Ave

Source	Sample Trips Analyzed (counts/hour * hours * days)	Time Period Analyzed
O-D with Navigation-GPS (Personal) via <i>StreetLight InSight</i>	41,910	January - December 2017
O-D with LBS via <i>StreetLight InSight</i>	375,654	January - October 2017
CUUTAS	14,941	1 day, 2017

## Results: University / Goodwin

Location- Based Services data showed a strong, positive correlation ( $R^2 = 0.94$ ) between the intersection Origin-Destination Analysis and CUUTAS turning movement ratios, as shown in Figure 2

<sup>6</sup> <https://www.streetlightdata.com/aadt-white-paper>

below. We calculated  $R^2$  as follows: Each turning movement for each time period studied creates a point. For example, northbound turning left between 7 and 8 AM is one point and northbound turning right between 7 and 8AM is a second point.

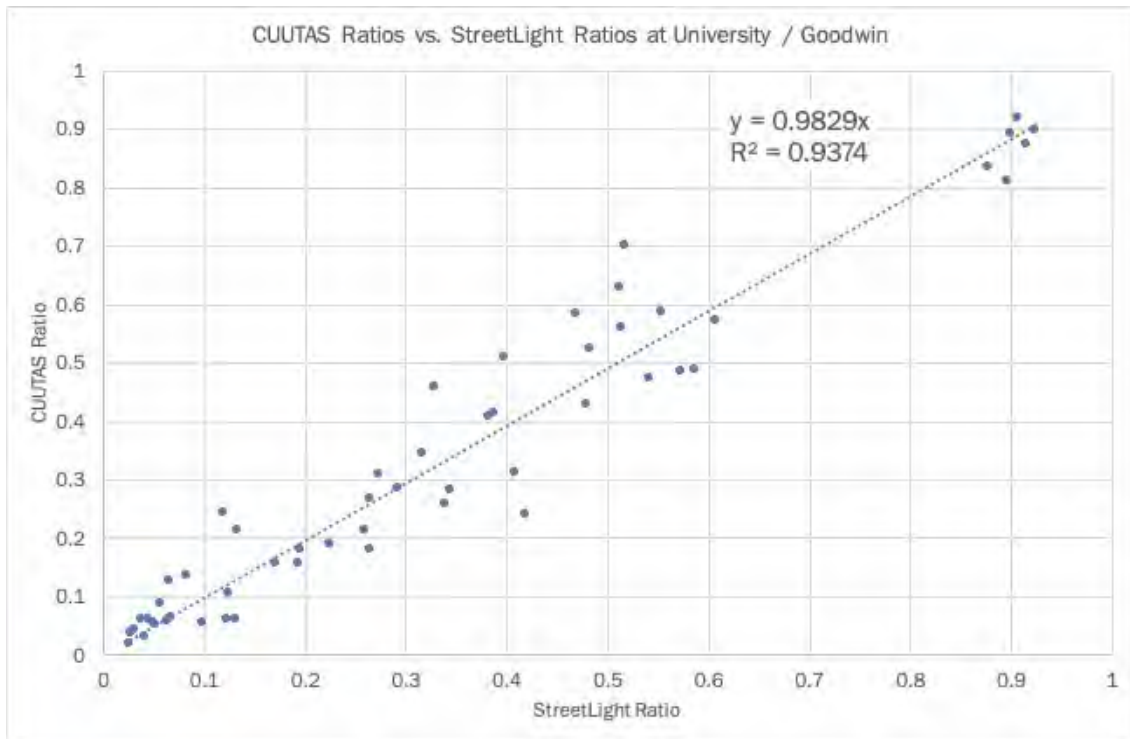


Figure 2: Correlation between StreetLight LBS OD and CUUTAS Turning Ratios for University and Goodwin Avenue. Each dot represents a turning movement ratio for an hour. For example “NB turning left, 7-8AM.”

In addition, we calculated the Route Mean Square Difference (RMSD) between the CUUTAS ratios and the StreetLight ratios. The equation for this is:

$$RMSD = \sqrt{\frac{\sum_{i=1}^n (S_i - MC_i)^2}{n}}$$

where  $S_i$  is the StreetLight measured ratio, and  $MC_i$  is the ratio measured by MDSHA or CUUTAS.

The result for this intersection is 0.066. This means that the average difference between CUUTAS and StreetLight for an individual turning ratio is +/- 0.066 (Note that turning ratios range between 0 and 1). The average turning ratio is 0.34 for both sources. This does not mean that StreetLight has an average error or 6.6%, as we do not know which source is more correct, StreetLight or CUUTAS. Instead, it indicates that, in general, the two results are quite close.

Note that the GPS turning ratios had worse results with an  $R^2$  of 0.63 and an RMSD of 0.19. This performance was similar to that for other intersections, especially smaller intersections where the



low GPS sample size became more of a constraint. Therefore, we do not include GPS results for the remainder of the paper and recommend LBS data when doing generalized turning movements.

## Expanding the Sample of Intersections

For further validation, we ran Origin–Destination Analyses on three more CUUTAS intersections and on seven intersections in Maryland. Next, we compared the turning ratios for each turning movement-day part combination. As each intersection had an average of twelve turning movements, and between three and twenty-four comparison hours, in total, this covered over 2,480 points of comparison.<sup>7</sup>

Again, as shown in Figure 3, the correlation is very strong with an  $R^2$  of 0.9.

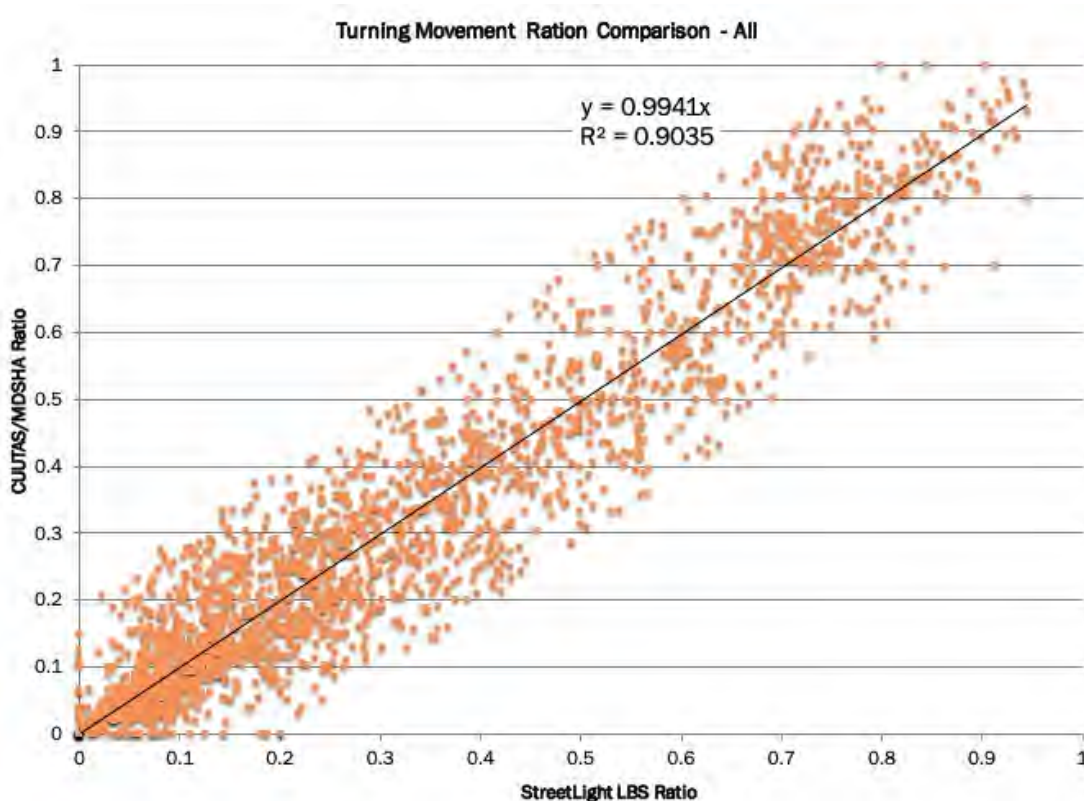


Figure 3: Correlation between StreetLight LBS OD and CUUTAS/MDSHA Turning Ratios for eleven intersections. Each dot represents a turning movement ratio for an hour. For example, "NB turning left, 7-8AM."

<sup>7</sup> NB: In the course of running all intersection, some missing or inaccurate data was detected. For example, left-turn ratios were reported by MDSHA and CUUTAS where no left turn was possible. We carefully removed these intersections from comparison where possible, since they were probably mis-labeled. Because it is not possible to check each movement within a reasonable time frame, we also eliminated the top and bottom 2% of differences from our comparison as outliers probably resulting from human error.

The RMSD for all points is 0.079, similar to the result for University/Goodwin. As shown in Table 2, below, the results are reasonably consistent for Maryland and CUUTAS data.

Table 2 – R2 and RMSD broken out by comparison source data.

	Turning Movement/Day Part Combinations	RMSD	R2
Maryland	2187	0.078	0.91
CUUTAS	171	0.086	0.88
ALL	2358	0.079	0.90

## Conclusions

We conclude that *StreetLight InSight's* Origin-Destination Analysis with LBS data is a good method for finding intersection turning movement ratios. It delivers additional value because practitioners can gather the information using an entire year of travel data with only a few minutes of set-up. This makes it a good alternative to temporary turning ratio data collection, especially when combined with local AADT/traffic count data or with StreetLight AADT to generate turning counts. Using LBS data for the O-D Analysis produces better results than with GPS personal data, as was expected due to LBS' larger and better normalized sample.

Please contact us at [info@streetlightdata.com](mailto:info@streetlightdata.com) if you have questions or suggestions for further validation work.

## 6. Existing Synchro Outputs

Intersection												
Int Delay, s/veh	11.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	2	2	263	2	14	2	5	483	2	9	1
Future Vol, veh/h	1	2	2	263	2	14	2	5	483	2	9	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	67	67	67	78	78	78	50	50	50
Heavy Vehicles, %	2	3	3	33	3	2	3	2	21	2	2	2
Mvmt Flow	2	4	4	393	3	21	3	6	619	4	18	2

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	24	0	0	8	0	0	820	820	6	1123	812	14
Stage 1	-	-	-	-	-	-	10	10	-	800	800	-
Stage 2	-	-	-	-	-	-	810	810	-	323	12	-
Critical Hdwy	4.12	-	-	4.43	-	-	7.13	6.52	6.41	5.4	5.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.497	-	-	3.527	4.018	3.489	3.518	4.018	3.318
Pot Cap-1 Maneuver	1591	-	-	1432	-	-	293	310	1024	313	394	1066
Stage 1	-	-	-	-	-	-	1008	887	-	379	397	-
Stage 2	-	-	-	-	-	-	372	393	-	689	886	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1591	-	-	1432	-	-	219	223	1024	95	284	1066
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	223	-	95	284	-
Stage 1	-	-	-	-	-	-	1007	886	-	379	286	-
Stage 2	-	-	-	-	-	-	251	283	-	270	885	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	8	13.8	23
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	222	1024	1591	-	-	1432	-	-	224
HCM Lane V/C Ratio	0.04	0.605	0.001	-	-	0.274	-	-	0.107
HCM Control Delay (s)	21.9	13.7	7.3	0	-	8.5	0	-	23
HCM Lane LOS	C	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	4.2	0	-	-	1.1	-	-	0.4

Intersection

Intersection Delay, s/veh	10.6
Intersection LOS	B



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↔		
Traffic Vol, veh/h	235	0	170	5	0	0
Future Vol, veh/h	235	0	170	5	0	0
Peak Hour Factor	0.82	0.82	0.83	0.83	0.92	0.92
Heavy Vehicles, %	10	2	15	5	2	2
Mvmt Flow	287	0	205	6	0	0
Number of Lanes	1	0	0	1	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	10.9	10.3
HCM LOS	B	B

Lane	NBLn1	EBLn1
Vol Left, %	97%	100%
Vol Thru, %	3%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	175	235
LT Vol	170	235
Through Vol	5	0
RT Vol	0	0
Lane Flow Rate	211	287
Geometry Grp	1	1
Degree of Util (X)	0.297	0.385
Departure Headway (Hd)	5.078	4.83
Convergence, Y/N	Yes	Yes
Cap	708	745
Service Time	3.109	2.856
HCM Lane V/C Ratio	0.298	0.385
HCM Control Delay	10.3	10.9
HCM Lane LOS	B	B
HCM 95th-tile Q	1.2	1.8

Port Cortlandt  
4: Lower S St & Louisa St

Existing 2020  
Weekday AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	550	9	40	319	5	35	18	14	53	40	18
Future Volume (vph)	28	550	9	40	319	5	35	18	14	53	40	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.998			0.998				0.850			0.850
Flt Protected		0.998			0.995			0.968			0.972	
Satd. Flow (prot)	0	3146	0	0	3110	0	0	1786	1463	0	1733	1516
Flt Permitted		0.922			0.844			0.810			0.829	
Satd. Flow (perm)	0	2906	0	0	2638	0	0	1494	1463	0	1478	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3				44			44
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.79	0.79	0.79	0.83	0.83	0.83
Heavy Vehicles (%)	3%	11%	3%	3%	17%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	31	611	10	45	358	6	44	23	18	64	48	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	652	0	0	409	0	0	67	18	0	112	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		20.0			20.0			20.0	20.0		20.0	20.0

Port Cortlandt  
4: Lower S St & Louisa St

Existing 2020  
Weekday AM Peak Hour

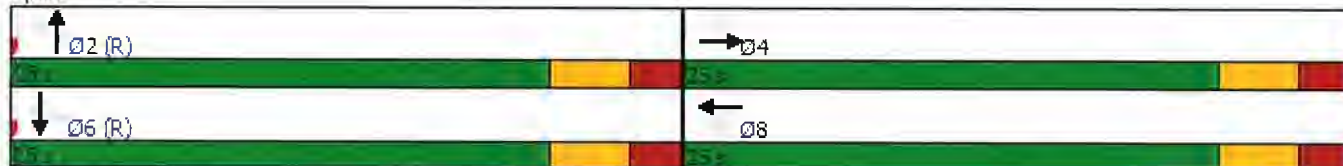
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.56			0.39			0.11	0.03		0.19	0.03
Control Delay		13.8			11.9			10.1	1.6		10.9	2.0
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		13.8			11.9			10.1	1.6		10.9	2.0
LOS		B			B			B	A		B	A
Approach Delay		13.8			11.9			8.3			9.4	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.56  
 Intersection Signal Delay: 12.4  
 Intersection Capacity Utilization 50.6%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortland  
5: Broadway & Bleakley Ave

Existing 2020  
Weekday AM Peak Hour

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↖			↓
Traffic Volume (vph)	18	67	126	140	35	123
Future Volume (vph)	18	67	126	140	35	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894		0.929			
Flt Protected	0.989					0.989
Satd. Flow (prot)	1740	0	1456	0	0	1401
Flt Permitted	0.989					0.883
Satd. Flow (perm)	1740	0	1456	0	0	1251
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	100					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.67	0.67	0.84	0.84	0.73	0.73
Heavy Vehicles (%)	3%	3%	50%	3%	3%	43%
Adj. Flow (vph)	27	100	150	167	48	168
Shared Lane Traffic (%)						
Lane Group Flow (vph)	127	0	317	0	0	216
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.20		0.44			0.35
Control Delay	6.0		12.0			11.1





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay	0.0		0.0			0.0
Total Delay	6.0		12.0			11.1
LOS	A		B			B
Approach Delay	6.0		12.0			11.1
Approach LOS	A		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.44  
 Intersection Signal Delay: 10.5  
 Intersection Capacity Utilization 41.2%  
 Analysis Period (min) 15











Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 5: Broadway & Bleakley Ave



Port Cortlandt  
6: Rt 9A & Bleakley Ave

Existing 2020  
Weekday AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	191	53	18	397	513	86
Future Volume (vph)	191	53	18	397	513	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.971					0.850
Flt Protected	0.962			0.998		
Satd. Flow (prot)	1781	0	0	1714	1801	1463
Flt Permitted	0.962			0.965		
Satd. Flow (perm)	1781	0	0	1657	1801	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	29					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.76	0.76	0.88	0.88	0.76	0.76
Heavy Vehicles (%)	3%	3%	3%	11%	9%	3%
Adj. Flow (vph)	251	70	20	451	675	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	321	0	0	471	675	113
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%

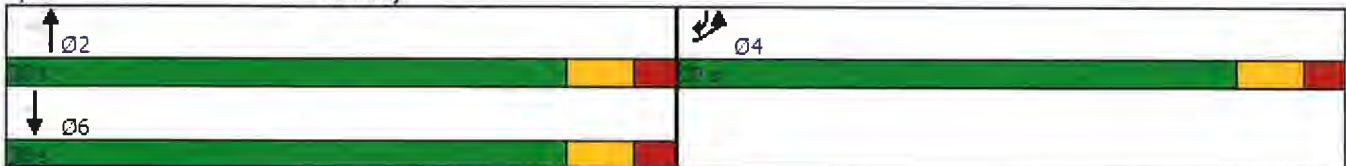


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	13.3			25.9	25.9	49.3
Actuated g/C Ratio	0.27			0.53	0.53	1.00
v/c Ratio	0.64			0.54	0.71	0.08
Control Delay	20.1			11.9	16.6	0.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	20.1			11.9	16.6	0.1
LOS	C			B	B	A
Approach Delay	20.1			11.9	14.3	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 49.3  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 14.7  
 Intersection Capacity Utilization 57.7%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 6: Rt 9A & Bleakley Ave



**Intersection**

Int Delay, s/veh	0.8					
<b>Movement</b>	<b>EBL</b>	<b>EBR</b>	<b>NBL</b>	<b>NBT</b>	<b>SBT</b>	<b>SBR</b>
Lane Configurations	↖	↗		↖	↗	
Traffic Vol, veh/h	21	1	1	240	107	18
Future Vol, veh/h	21	1	1	240	107	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	82	82	81	81
Heavy Vehicles, %	75	3	3	20	37	75
Mvmt Flow	28	1	1	293	132	22

**Major/Minor**

	<b>Minor2</b>	<b>Major1</b>		<b>Major2</b>		
Conflicting Flow All	438	143	154	0	-	0
Stage 1	143	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Critical Hdwy	7.15	6.23	4.13	-	-	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	461	902	1420	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	461	902	1420	-	-	-
Mov Cap-2 Maneuver	461	-	-	-	-	-
Stage 1	732	-	-	-	-	-
Stage 2	615	-	-	-	-	-

**Approach**

	<b>EB</b>	<b>NB</b>	<b>SB</b>
HCM Control Delay, s	13.1	0	0
HCM LOS	B		

**Minor Lane/Major Mvmt**

	<b>NBL</b>	<b>NBT</b>	<b>EBLn1</b>	<b>EBLn2</b>	<b>SBT</b>	<b>SBR</b>
Capacity (veh/h)	1420	-	461	902	-	-
HCM Lane V/C Ratio	0.001	-	0.061	0.001	-	-
HCM Control Delay (s)	7.5	0	13.3	9	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

Port Cortlandt  
8: Broadway & Entergy Driveway

Existing 2020  
Weekday AM Peak Hour

Intersection

Int Delay, s/veh 0.5

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	7	2	2	259	123	18
Future Vol, veh/h	7	2	2	259	123	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	42	85	85	80	80
Heavy Vehicles, %	3	3	3	24	43	3
Mvmt Flow	17	5	2	305	154	23

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	475	166	177	0	-	0
Stage 1	166	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	546	876	1393	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	545	876	1393	-	-	-
Mov Cap-2 Maneuver	545	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	742	-	-	-	-	-

Approach EB NB SB






















HCM Control Delay, s	11.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1393	-	595	-	-
HCM Lane V/C Ratio	0.002	-	0.036	-	-
HCM Control Delay (s)	7.6	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

Existing 2020  
Weekday AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						 			 	
Traffic Volume (vph)	0	42	39	371	49	0	4	0	418	91	424	77
Future Volume (vph)	0	42	39	371	49	0	4	0	418	91	424	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	12	12	11	13	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Frt		0.928						0.853	0.850		0.980	
Flt Protected				0.950				0.999			0.992	
Satd. Flow (prot)	0	3144	0	1646	1845	0	0	1378	1468	0	3342	0
Flt Permitted				0.681							0.798	
Satd. Flow (perm)	0	3144	0	1180	1845	0	0	1379	1468	0	2689	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		54									15	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		556			270			315			565	
Travel Time (s)		15.2			7.4			8.6			15.4	
Peak Hour Factor	0.72	0.72	0.72	0.76	0.76	0.76	0.84	0.84	0.84	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	3%	6%	3%	2%	3%	2%	8%	5%	5%	5%
Adj. Flow (vph)	0	58	54	488	64	0	5	0	498	101	471	86
Shared Lane Traffic (%)									49%			
Lane Group Flow (vph)	0	112	0	488	64	0	0	249	254	0	658	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1	1	2	
Detector Template		Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)		100		20	100		20	100	20	20	100	
Trailing Detector (ft)		0		0	0		0	0	0	0	0	
Detector 1 Position(ft)		0		0	0		0	0	0	0	0	
Detector 1 Size(ft)		6		20	6		20	6	20	20	6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		D.P+P	NA		custom	NA	custom	Perm	NA	

Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

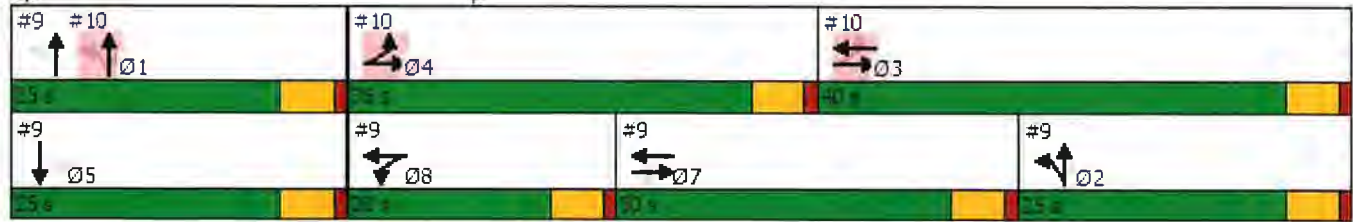
Existing 2020  
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2				5
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5		5
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0		5.0
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0		23.0
Total Split (s)		30.0		20.0			25.0		25.0	25.0		25.0
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%		25.0%
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0		20.0
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0		4.0
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0					0.0			0.0
Total Lost Time (s)		5.0		5.0					5.0			5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0		3.0
Recall Mode		None		None			Max		Max	Max		Max
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		7.1		22.1	27.2			46.2	21.2			20.0
Actuated g/C Ratio		0.09		0.26	0.33			0.55	0.25			0.24
v/c Ratio		0.35		1.23	0.11			0.33	0.68			1.00
Control Delay		23.9		161.6	37.4			11.7	38.7			68.8
Queue Delay		0.0		0.0	0.0			0.0	0.0			33.8
Total Delay		23.9		161.6	37.4			11.8	38.7			102.6
LOS		C		F	D			B	D			F
Approach Delay		23.9			147.2			25.4				102.6
Approach LOS		C			F			C				F

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 83.4  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.23  
 Intersection Signal Delay: 90.0  
 Intersection Capacity Utilization 65.4%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service C

Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave





Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Port Cortlandt  
10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

Existing 2020  
Weekday AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	336	215	0	0	338	124	82	0	77	0	0	0
Future Volume (vph)	336	215	0	0	338	124	82	0	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt					0.960				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1646	1613	0	0	3081	0	0	1719	1538	0	0	0
Flt Permitted	0.356							0.950				
Satd. Flow (perm)	617	1613	0	0	3081	0	0	1719	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					58				185			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.71	0.71	0.71	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	2%	2%	5%	5%	5%	5%	5%	2%	2%	2%
Adj. Flow (vph)	378	242	0	0	428	157	115	0	108	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	378	242	0	0	585	0	0	115	108	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			

Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				

Port Cortlandt  
 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

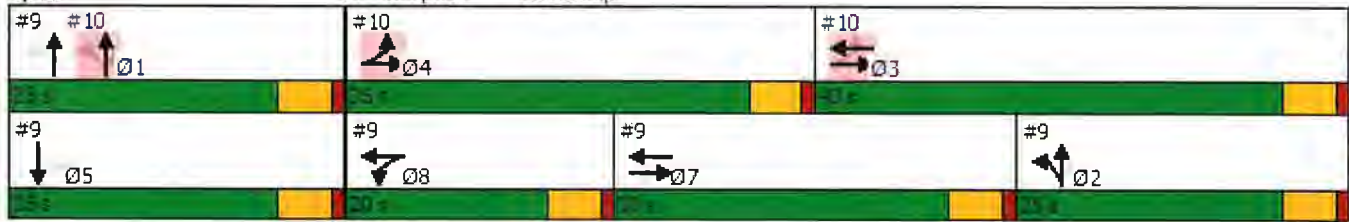
Existing 2020  
 Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1	1	1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0			0.0	0.0			
Total Lost Time (s)	5.0				5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	48.3	53.3			32.0			20.0	20.0			
Actuated g/C Ratio	0.58	0.64			0.38			0.24	0.24			
v/c Ratio	0.68	0.23			0.48			0.28	0.21			
Control Delay	26.8	6.4			19.9			29.0	1.3			
Queue Delay	0.2	0.6			0.4			2.6	0.0			
Total Delay	27.0	7.0			20.3			31.5	1.3			
LOS	C	A			C			C	A			
Approach Delay		19.2			20.3			16.9				
Approach LOS		B			C			B				

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 83.4  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.23  
 Intersection Signal Delay: 19.3  
 Intersection Capacity Utilization 49.0%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
<b>Intersection Summary</b>				

Port Cortlandt  
11: Rt 9A & Belock Ave/Rt 9 SB On-Ramp

Existing 2020  
Weekday AM Peak Hour

Intersection												
Int Delay, s/veh	2.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↕↕		↔	↕↕	
Traffic Vol, veh/h	4	2	11	0	0	0	7	418	163	245	589	0
Future Vol, veh/h	4	2	11	0	0	0	7	418	163	245	589	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	92	92	92	81	81	81	82	82	82
Heavy Vehicles, %	3	5	3	2	2	2	3	8	7	5	7	3
Mvmt Flow	5	3	15	0	0	0	9	516	201	299	718	0














Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1592	2051	359	718	0	0	717	0	0
Stage 1	1316	1316	-	-	-	-	-	-	-
Stage 2	276	735	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	97	53	635	872	-	-	860	-	-
Stage 1	213	220	-	-	-	-	-	-	-
Stage 2	743	416	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	63	0	635	872	-	-	860	-	-
Mov Cap-2 Maneuver	63	0	-	-	-	-	-	-	-
Stage 1	211	0	-	-	-	-	-	-	-
Stage 2	484	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27	0.1	3.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	872	-	-	186	860	-	-
HCM Lane V/C Ratio	0.01	-	-	0.122	0.347	-	-
HCM Control Delay (s)	9.2	-	-	27	11.4	-	-
HCM Lane LOS	A	-	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	1.6	-	-

Port Cortlandt  
12: Rt 6/9/202 & Bear Mtn Pkwy

Existing 2020  
Weekday AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			 			
Traffic Volume (vph)	203	1500	844	494	557	301
Future Volume (vph)	203	1500	844	494	557	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3224	1845	1783	1568
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3224	1845	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						28
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.94	0.94	0.86	0.86	0.89	0.89
Heavy Vehicles (%)	3%	3%	5%	3%	3%	3%
Adj. Flow (vph)	216	1596	981	574	626	338
Shared Lane Traffic (%)						
Lane Group Flow (vph)	216	1596	981	574	626	338
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov



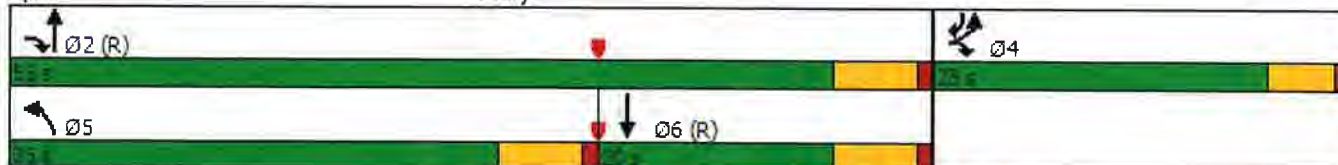
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	24.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	27.8	49.0	15.2	41.2
Actuated g/C Ratio	0.25	1.00	0.35	0.61	0.19	0.52
v/c Ratio	0.49	0.99	0.88	0.51	1.85	0.41
Control Delay	30.2	22.4	34.7	10.7	416.6	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	22.4	34.7	10.7	416.6	13.1
LOS	C	C	C	B	F	B
Approach Delay	23.3			25.8	275.1	
Approach LOS	C			C	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.85  
 Intersection Signal Delay: 80.3  
 Intersection Capacity Utilization 132.2%  
 Analysis Period (min) 15  
 ! Phase conflict between lane groups.

Intersection LOS: F  
 ICU Level of Service H

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy





Port Cortlandt  
13: Rt 6 (Main St)/Main St. & Rt 9 SB Ramps

Existing 2020  
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	74	16	32	259	14	32
Future Vol, veh/h	74	16	32	259	14	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	92	92	59	59
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	81	18	35	282	24	54

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	278	176	0	0	317
Stage 1	176	-	-	-	-
Stage 2	102	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	705	859	-	-	1226
Stage 1	847	-	-	-	-
Stage 2	915	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	691	859	-	-	1226
Mov Cap-2 Maneuver	691	-	-	-	-
Stage 1	847	-	-	-	-
Stage 2	897	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	2.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	716	1226
HCM Lane V/C Ratio	-	-	0.138	0.019
HCM Control Delay (s)	-	-	10.8	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

**Intersection**

Int Delay, s/veh	6.9					
<b>Movement</b>	<b>EBL</b>	<b>EBT</b>	<b>WBT</b>	<b>WBR</b>	<b>SBL</b>	<b>SBR</b>
Lane Configurations		↖	↗		↖	↗
Traffic Vol, veh/h	37	69	287	107	215	4
Future Vol, veh/h	37	69	287	107	215	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	91	91	87	87
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	47	87	315	118	247	5

**Major/Minor**

<b>Major/Minor</b>	<b>Major1</b>	<b>Major2</b>	<b>Minor2</b>		
Conflicting Flow All	433	0	-	0	555 374
Stage 1	-	-	-	-	374 -
Stage 2	-	-	-	-	181 -
Critical Hdwy	4.15	-	-	-	6.45 6.25
Critical Hdwy Stg 1	-	-	-	-	5.45 -
Critical Hdwy Stg 2	-	-	-	-	5.45 -
Follow-up Hdwy	2.245	-	-	-	3.545 3.345
Pot Cap-1 Maneuver	1111	-	-	-	488 666
Stage 1	-	-	-	-	689 -
Stage 2	-	-	-	-	843 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1111	-	-	-	467 666
Mov Cap-2 Maneuver	-	-	-	-	467 -
Stage 1	-	-	-	-	659 -
Stage 2	-	-	-	-	843 -

**Approach**

<b>Approach</b>	<b>EB</b>	<b>WB</b>	<b>SB</b>
HCM Control Delay, s	2.9	0	20.8
HCM LOS			C

**Minor Lane/Major Mvmt**

<b>Minor Lane/Major Mvmt</b>	<b>EBL</b>	<b>EBT</b>	<b>WBT</b>	<b>WBR</b>	<b>SBLn1</b>	<b>SBLn2</b>
Capacity (veh/h)	1111	-	-	-	467	666
HCM Lane V/C Ratio	0.042	-	-	-	0.529	0.007
HCM Control Delay (s)	8.4	0	-	-	21	10.4
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	3	0

Port Cortandt  
1: John Walsh Blvd/Park Entrance & Louisa St

Existing 2020  
Weekday PM Peak Hour

Intersection												
Int Delay, s/veh	9.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔	↔		↔	
Traffic Vol, veh/h	1	1	1	236	1	6	1	6	270	7	4	1
Future Vol, veh/h	1	1	1	236	1	6	1	6	270	7	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	82	82	82	86	86	86	67	67	67
Heavy Vehicles, %	2	3	3	37	3	2	3	2	32	2	2	2
Mvmt Flow	2	2	2	288	1	7	1	7	314	10	6	1

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	8	0	0	4	0	0	591	591	3	749	589	5
Stage 1	-	-	-	-	-	-	7	7	-	581	581	-
Stage 2	-	-	-	-	-	-	584	584	-	168	8	-
Critical Hdwy	4.12	-	-	4.47	-	-	7.13	6.52	6.52	5.4	5.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.533	-	-	3.527	4.018	3.588	3.518	4.018	3.318
Pot Cap-1 Maneuver	1612	-	-	1416	-	-	417	420	999	469	497	1078
Stage 1	-	-	-	-	-	-	1012	890	-	499	500	-
Stage 2	-	-	-	-	-	-	496	498	-	834	889	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1612	-	-	1416	-	-	347	333	999	266	395	1078
Mov Cap-2 Maneuver	-	-	-	-	-	-	347	333	-	266	395	-
Stage 1	-	-	-	-	-	-	1011	889	-	499	398	-
Stage 2	-	-	-	-	-	-	388	396	-	567	888	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	8	10.3	16.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	335	999	1612	-	-	1416	-	-	321
HCM Lane V/C Ratio	0.024	0.314	0.001	-	-	0.203	-	-	0.056
HCM Control Delay (s)	16	10.2	7.2	0	-	8.2	0	-	16.9
HCM Lane LOS	C	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	1.4	0	-	-	0.8	-	-	0.2

Intersection

Intersection Delay, s/veh	10
Intersection LOS	A

Movement

	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖			↗		
Traffic Vol, veh/h	242	0	130	0	0	0
Future Vol, veh/h	242	0	130	0	0	0
Peak Hour Factor	0.92	0.92	0.78	0.78	0.92	0.92
Heavy Vehicles, %	12	2	17	5	2	2
Mvmt Flow	263	0	167	0	0	0
Number of Lanes	1	0	0	1	0	0

Approach



















	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	10.3	9.6
HCM LOS	B	A

Lane

	NBLn1	EBLn1
Vol Left, %	100%	100%
Vol Thru, %	0%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	130	242
LT Vol	130	242
Through Vol	0	0
RT Vol	0	0
Lane Flow Rate	167	263
Geometry Grp	1	1
Degree of Util (X)	0.234	0.347
Departure Headway (Hd)	5.052	4.748
Convergence, Y/N	Yes	Yes
Cap	712	760
Service Time	3.074	2.766
HCM Lane V/C Ratio	0.235	0.346
HCM Control Delay	9.6	10.3
HCM Lane LOS	A	B
HCM 95th-tile Q	0.9	1.6













Port Cortandt  
4: Lower S St & Louisa St

Existing 2020  
Weekday PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	315	13	22	246	27	53	49	17	36	22	43
Future Volume (vph)	50	315	13	22	246	27	53	49	17	36	22	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frts		0.995			0.986				0.850			0.850
Flt Protected		0.993			0.996			0.975			0.970	
Satd. Flow (prot)	0	3097	0	0	3026	0	0	1799	1463	0	1730	1516
Flt Permitted		0.863			0.908			0.848			0.825	
Satd. Flow (perm)	0	2692	0	0	2758	0	0	1564	1463	0	1471	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			26				44			45
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.93	0.93	0.93	0.78	0.78	0.78	0.91	0.91	0.91	0.96	0.96	0.96
Heavy Vehicles (%)	3%	13%	3%	3%	20%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	54	339	14	28	315	35	58	54	19	38	23	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	407	0	0	378	0	0	112	19	0	61	45
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		20.0			20.0			20.0	20.0		20.0	20.0

Port Cortandt  
4: Lower S St & Louisa St

Existing 2020  
Weekday PM Peak Hour

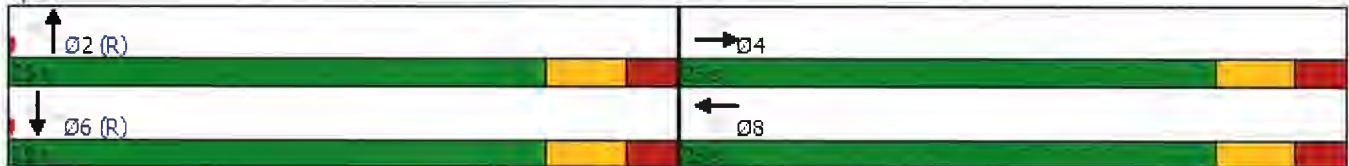
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.38			0.34			0.18	0.03		0.10	0.07
Control Delay		11.7			10.7			10.7	1.7		10.1	4.0
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		11.7			10.7			10.7	1.7		10.1	4.0
LOS		B			B			B	A		B	A
Approach Delay		11.7			10.7			9.4			7.5	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.38  
 Intersection Signal Delay: 10.6  
 Intersection Capacity Utilization 43.6%  
 Analysis Period (min) 15










Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortandt  
5: Broadway & Bleakley Ave

Existing 2020  
Weekday PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	32	115	112	22	105
Future Volume (vph)	45	32	115	112	22	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't	0.944		0.933			
Flt Protected	0.972					0.991
Satd. Flow (prot)	1805	0	1524	0	0	1343
Flt Permitted	0.972					0.931
Satd. Flow (perm)	1805	0	1524	0	0	1261
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	37					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.86	0.86	0.96	0.96	0.73	0.73
Heavy Vehicles (%)	3%	3%	37%	3%	3%	48%
Adj. Flow (vph)	52	37	120	117	30	144
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	237	0	0	174
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.14		0.31			0.28
Control Delay	10.0		10.3			10.2



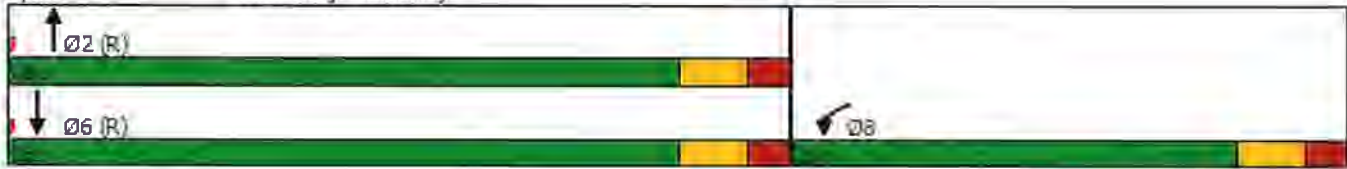
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay	0.0		0.0			0.0
Total Delay	10.0		10.3			10.2
LOS	A		B			B
Approach Delay	10.0		10.3			10.2
Approach LOS	A		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.31  
 Intersection Signal Delay: 10.2  
 Intersection Capacity Utilization 36.6%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A











Splits and Phases: 5: Broadway & Bleakley Ave





Port Cortandt  
6: Rt 9A & Bleakley Ave

Existing 2020  
Weekday PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	95	21	17	638	610	50
Future Volume (vph)	95	21	17	638	610	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976					0.850
Flt Protected	0.961			0.999		
Satd. Flow (prot)	1788	0	0	1809	1852	1463
Flt Permitted	0.961			0.980		
Satd. Flow (perm)	1788	0	0	1774	1852	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	22					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.80	0.80	0.83	0.83	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	5%	6%	3%
Adj. Flow (vph)	119	26	20	769	670	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	145	0	0	789	670	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%

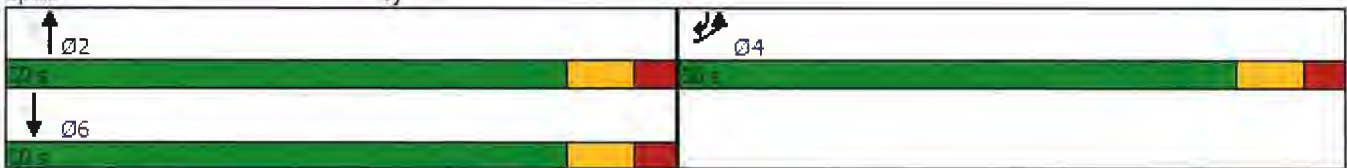


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	8.4			30.6	30.6	45.9
Actuated g/C Ratio	0.18			0.67	0.67	1.00
v/c Ratio	0.42			0.67	0.54	0.04
Control Delay	17.4			12.1	8.3	0.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	17.4			12.1	8.3	0.0
LOS	B			B	A	A
Approach Delay	17.4			12.1	7.7	
Approach LOS	B			B	A	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 45.9  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 10.7  
 Intersection Capacity Utilization 62.1%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 6: Rt 9A & Bleakley Ave



Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	1	1	206	128	13
Future Vol, veh/h	14	1	1	206	128	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	94	94	77	77
Heavy Vehicles, %	75	3	3	16	31	75
Mvmt Flow	22	2	1	219	166	17

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	396	175	183
Stage 1	175	-	-
Stage 2	221	-	-
Critical Hdwy	7.15	6.23	4.13
Critical Hdwy Stg 1	6.15	-	-
Critical Hdwy Stg 2	6.15	-	-
Follow-up Hdwy	4.175	3.327	2.227
Pot Cap-1 Maneuver	490	866	1386
Stage 1	707	-	-
Stage 2	670	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	490	866	1386
Mov Cap-2 Maneuver	490	-	-
Stage 1	706	-	-
Stage 2	670	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1386	-	490	866	-	-
HCM Lane V/C Ratio	0.001	-	0.045	0.002	-	-
HCM Control Delay (s)	7.6	0	12.7	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

Port Cortandt  
8: Broadway & Entergy Driveway

Existing 2020  
Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			L		R
Traffic Vol, veh/h	11	1	4	216	140	10
Future Vol, veh/h	11	1	4	216	140	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	98	98	79	79
Heavy Vehicles, %	3	3	3	19	36	3
Mvmt Flow	15	1	4	220	177	13



















Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	412	184	190	0	0
Stage 1	184	-	-	-	-
Stage 2	228	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-
Pot Cap-1 Maneuver	594	856	1378	-	-
Stage 1	845	-	-	-	-
Stage 2	808	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	592	856	1378	-	-
Mov Cap-2 Maneuver	592	-	-	-	-
Stage 1	842	-	-	-	-
Stage 2	808	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1378	-	608	-	-
HCM Lane V/C Ratio	0.003	-	0.026	-	-
HCM Control Delay (s)	7.6	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Port Cortandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

Existing 2020  
Weekday PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	116	35	321	80	0	6	0	652	67	351	74
Future Volume (vph)	0	116	35	321	80	0	6	0	652	67	351	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	12	12	11	13	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Frts		0.965						0.853	0.850		0.977	
Flt Protected				0.950				0.999			0.993	
Satd. Flow (prot)	0	3269	0	1662	1845	0	0	1417	1510	0	3336	0
Flt Permitted				0.622							0.665	
Satd. Flow (perm)	0	3269	0	1088	1845	0	0	1418	1510	0	2234	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		38									18	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		556			270			315			565	
Travel Time (s)		15.2			7.4			8.6			15.4	
Peak Hour Factor	0.73	0.73	0.73	0.93	0.93	0.93	0.84	0.84	0.84	0.87	0.87	0.87
Heavy Vehicles (%)	2%	3%	3%	5%	3%	2%	3%	2%	5%	5%	5%	5%
Adj. Flow (vph)	0	159	48	345	86	0	7	0	776	77	403	85
Shared Lane Traffic (%)									49%			
Lane Group Flow (vph)	0	207	0	345	86	0	0	387	396	0	565	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1	1	2	
Detector Template		Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)		100		20	100		20	100	20	20	100	
Trailing Detector (ft)		0		0	0		0	0	0	0	0	
Detector 1 Position(ft)		0		0	0		0	0	0	0	0	
Detector 1 Size(ft)		6		20	6		20	6	20	20	6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex		CI+Ex				CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		D.P+P	NA		custom	NA	custom	Perm	NA	

Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

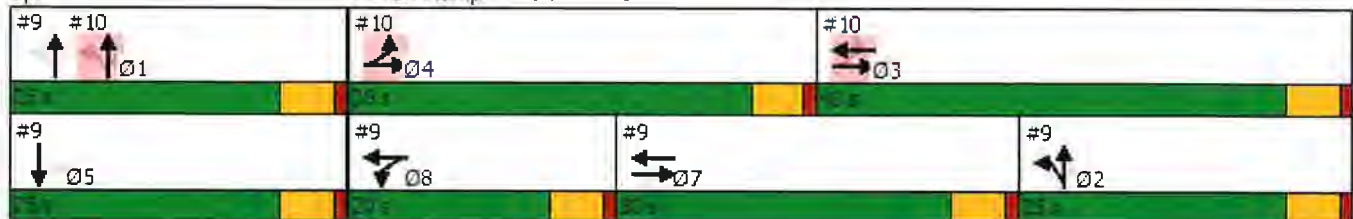
Existing 2020  
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2			5	
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5	5	
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0	5.0	
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0	23.0	
Total Split (s)		30.0		20.0			25.0		25.0	25.0	25.0	
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%	25.0%	
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0	20.0	
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0	4.0	
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0					0.0		0.0	
Total Lost Time (s)		5.0		5.0					5.0		5.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0	3.0	
Recall Mode		None		None			Max		Max	Max	Max	
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		10.0		24.7	29.7		46.8	21.7			20.1	
Actuated g/C Ratio		0.12		0.29	0.34		0.54	0.25			0.23	
v/c Ratio		0.50		0.85	0.14		0.50	1.05			1.06	
Control Delay		33.8		58.9	32.9		15.9	93.3			90.3	
Queue Delay		0.0		0.0	0.0		0.7	10.0			18.3	
Total Delay		33.8		58.9	32.9		16.6	103.3			108.5	
LOS		C		E	C		B	F			F	
Approach Delay		33.8			53.7		60.5				108.5	
Approach LOS		C			D		E				F	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 86.5  
 Natural Cycle: 105  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 69.9  
 Intersection Capacity Utilization 66.6%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service C

Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave





















Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			



Port Cortandt  
10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

Existing 2020  
Weekday PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	454	381	0	0	282	141	119	0	171	0	0	0
Future Volume (vph)	454	381	0	0	282	141	119	0	171	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frts					0.950				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1678	1644	0	0	3068	0	0	1736	1538	0	0	0
Flt Permitted	0.379							0.950				
Satd. Flow (perm)	669	1644	0	0	3068	0	0	1736	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					96				222			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.77	0.77	0.77	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	2%	2%	4%	5%	4%	5%	5%	2%	2%	2%
Adj. Flow (vph)	540	454	0	0	336	168	155	0	222	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	540	454	0	0	504	0	0	155	222	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			

Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
FIt Protected				
Satd. Flow (prot)				
FIt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				

Port Cortandt  
 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

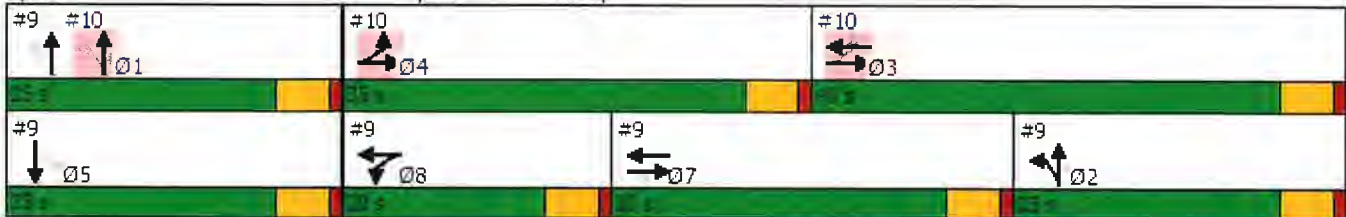
Existing 2020  
 Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1		1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0			0.0	0.0			
Total Lost Time (s)	5.0				5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	51.4	56.4			27.6			20.1	20.1			
Actuated g/C Ratio	0.59	0.65			0.32			0.23	0.23			
v/c Ratio	0.80	0.42			0.48			0.39	0.42			
Control Delay	31.2	8.3			21.6			32.7	7.2			
Queue Delay	8.5	0.7			0.1			2.9	0.0			
Total Delay	39.7	9.0			21.7			35.7	7.2			
LOS	D	A			C			D	A			
Approach Delay		25.6			21.7			18.9				
Approach LOS		C			C			B				

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 86.5  
 Natural Cycle: 105  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 23.2  
 Intersection Capacity Utilization 56.6%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service B

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
<b>Intersection Summary</b>				

Port Cortandt  
11: Rt 9A & Belock Ave/Rt 9 SB On-Ramp

Existing 2020  
Weekday PM Peak Hour

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↕↔		↔	↕↔	
Traffic Vol, veh/h	3	1	3	0	0	0	6	655	74	49	658	0
Future Vol, veh/h	3	1	3	0	0	0	6	655	74	49	658	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	92	92	92	86	86	86	90	90	90
Heavy Vehicles, %	3	5	3	2	2	2	3	5	5	5	5	3
Mvmt Flow	5	2	5	0	0	0	7	762	86	54	731	0














Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1234	1701	366	731	0	0	848	0	0
Stage 1	839	839	-	-	-	-	-	-	-
Stage 2	395	862	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	167	88	628	863	-	-	766	-	-
Stage 1	382	372	-	-	-	-	-	-	-
Stage 2	647	363	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	154	0	628	863	-	-	766	-	-
Mov Cap-2 Maneuver	154	0	-	-	-	-	-	-	-
Stage 1	379	0	-	-	-	-	-	-	-
Stage 2	602	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	0.1	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	863	-	-	247	766	-	-
HCM Lane V/C Ratio	0.008	-	-	0.045	0.071	-	-
HCM Control Delay (s)	9.2	-	-	20.3	10.1	-	-
HCM Lane LOS	A	-	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	-	-

Port Cortandt  
12: Rt 6/9/202 & Bear Mtn Pkwy

Existing 2020  
Weekday PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			 			
Traffic Volume (vph)	381	1222	1210	554	546	109
Future Volume (vph)	381	1222	1210	554	546	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Fr <sub>t</sub>		0.850				0.850
Fl <sub>t</sub> Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3286	1845	1783	1568
Fl <sub>t</sub> Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3286	1845	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						8
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.90	0.90	0.93	0.93	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	423	1358	1301	596	600	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	423	1358	1301	596	600	120
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov



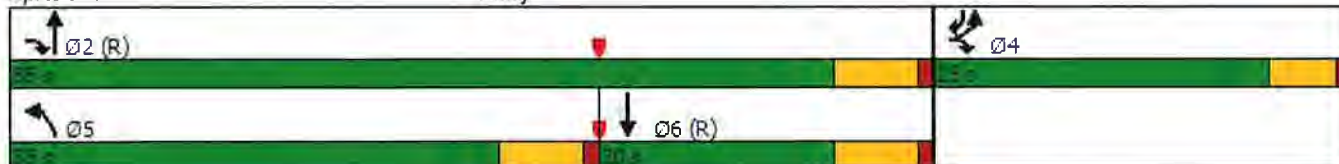
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	20.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	29.0	49.0	14.0	40.0
Actuated g/C Ratio	0.25	1.00	0.36	0.61	0.18	0.50
v/c Ratio	0.97	0.84	1.09	0.53	1.92	0.15
Control Delay	67.5	5.8	81.8	11.0	451.0	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	5.8	81.8	11.0	451.0	10.7
LOS	E	A	F	B	F	B
Approach Delay	20.5			59.5	377.6	
Approach LOS	C			E	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.92  
 Intersection Signal Delay: 95.8  
 Intersection Capacity Utilization 114.4%  
 Analysis Period (min) 15  
 ! Phase conflict between lane groups.

Intersection LOS: F  
 ICU Level of Service H

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy



Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	76	15	24	80	13	24
Future Vol, veh/h	76	15	24	80	13	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	87	87	65	65
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	84	17	28	92	20	37

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	151	74	0	0	120
Stage 1	74	-	-	-	-
Stage 2	77	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	834	979	-	-	1449
Stage 1	941	-	-	-	-
Stage 2	938	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	822	979	-	-	1449
Mov Cap-2 Maneuver	822	-	-	-	-
Stage 1	941	-	-	-	-
Stage 2	925	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	844	1449
HCM Lane V/C Ratio	-	-	0.12	0.014
HCM Control Delay (s)	-	-	9.8	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0



Intersection						
Int Delay, s/veh	6.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	18	82	94	77	199	10
Future Vol, veh/h	18	82	94	77	199	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	90	90	79	79
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	21	96	104	86	252	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	190	0	-	0	285 147
Stage 1	-	-	-	-	147 -
Stage 2	-	-	-	-	138 -
Critical Hdwy	4.15	-	-	-	6.45 6.25
Critical Hdwy Stg 1	-	-	-	-	5.45 -
Critical Hdwy Stg 2	-	-	-	-	5.45 -
Follow-up Hdwy	2.245	-	-	-	3.545 3.345
Pot Cap-1 Maneuver	1366	-	-	-	699 892
Stage 1	-	-	-	-	873 -
Stage 2	-	-	-	-	881 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1366	-	-	-	688 892
Mov Cap-2 Maneuver	-	-	-	-	688 -
Stage 1	-	-	-	-	859 -
Stage 2	-	-	-	-	881 -

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1366	-	-	-	688	892
HCM Lane V/C Ratio	0.016	-	-	-	0.366	0.014
HCM Control Delay (s)	7.7	0	-	-	13.2	9.1
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1.7	0

Port Cortlandt  
1: John Walsh Blvd/Park Entrance & Louisa St

Existing 2020  
Saturday Midday (Weekend) Peak Hour

Intersection												
Int Delay, s/veh	9.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑	↑		↔	
Traffic Vol, veh/h	1	2	2	273	2	9	2	12	266	9	5	1
Future Vol, veh/h	1	2	2	273	2	9	2	12	266	9	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	91	91	91	81	81	100	50	50	50
Heavy Vehicles, %	2	3	3	29	3	2	3	2	25	2	2	2
Mvmt Flow	2	4	4	300	2	10	2	15	266	18	10	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	12	0	0	8	0	0	623	622	6	758	619	7
Stage 1	-	-	-	-	-	-	10	10	-	607	607	-
Stage 2	-	-	-	-	-	-	613	612	-	151	12	-
Critical Hdwy	4.12	-	-	4.39	-	-	7.13	6.52	6.45	5.4	5.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.461	-	-	3.527	4.018	3.525	3.518	4.018	3.318
Pot Cap-1 Maneuver	1607	-	-	1453	-	-	397	403	1013	465	482	1075
Stage 1	-	-	-	-	-	-	1008	887	-	483	486	-
Stage 2	-	-	-	-	-	-	478	484	-	851	886	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1607	-	-	1453	-	-	326	319	1013	278	381	1075
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	319	-	278	381	-
Stage 1	-	-	-	-	-	-	1007	886	-	483	385	-
Stage 2	-	-	-	-	-	-	368	383	-	616	885	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			7.8			10.2			17.3		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	320	1013	1607	-	-	1453	-	-	323
HCM Lane V/C Ratio	0.054	0.263	0.001	-	-	0.206	-	-	0.093
HCM Control Delay (s)	16.9	9.8	7.2	0	-	8.1	0	-	17.3
HCM Lane LOS	C	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	1.1	0	-	-	0.8	-	-	0.3

Intersection

Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↗		
Traffic Vol, veh/h	195	0	135	9	0	0
Future Vol, veh/h	195	0	135	9	0	0
Peak Hour Factor	0.91	0.91	0.85	0.85	0.92	0.92
Heavy Vehicles, %	10	2	14	5	2	2
Mvmt Flow	214	0	159	11	0	0
Number of Lanes	1	0	0	1	0	0

Approach































Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	9.5	9.3
HCM LOS	A	A

Lane

Lane	NBLn1	EBLn1
Vol Left, %	94%	100%
Vol Thru, %	6%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	144	195
LT Vol	135	195
Through Vol	9	0
RT Vol	0	0
Lane Flow Rate	169	214
Geometry Grp	1	1
Degree of Util (X)	0.229	0.28
Departure Headway (Hd)	4.862	4.706
Convergence, Y/N	Yes	Yes
Cap	740	765
Service Time	2.878	2.722
HCM Lane V/C Ratio	0.228	0.28
HCM Control Delay	9.3	9.5
HCM Lane LOS	A	A
HCM 95th-tile Q	0.9	1.1













Port Cortlandt  
4: Lower S St & Louisa St

Existing 2020  
Saturday Midday (Weekend) Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			  	  		  	  
Traffic Volume (vph)	28	338	10	10	336	14	22	17	28	35	10	24
Future Volume (vph)	28	338	10	10	336	14	22	17	28	35	10	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frst		0.996			0.994				0.850			0.850
Flt Protected		0.996			0.999			0.972			0.963	
Satd. Flow (prot)	0	3116	0	0	3139	0	0	1793	1463	0	1717	1516
Flt Permitted		0.908			0.942			0.875			0.819	
Satd. Flow (perm)	0	2841	0	0	2960	0	0	1614	1463	0	1460	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			10				44			44
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.97	0.97	0.97	0.90	0.90	0.90	0.89	0.89	0.89	0.83	0.83	0.83
Heavy Vehicles (%)	3%	12%	3%	3%	15%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	29	348	10	11	373	16	25	19	31	42	12	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	387	0	0	400	0	0	44	31	0	54	29
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		20.0			20.0			20.0	20.0		20.0	20.0

Port Cortlandt  
4: Lower S St & Louisa St

Existing 2020  
Saturday Midday (Weekend) Peak Hour

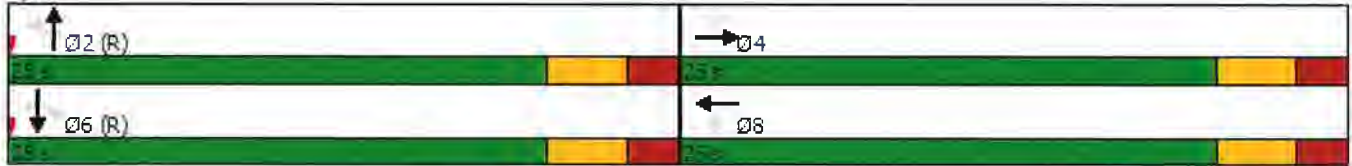
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.34			0.34			0.07	0.05		0.09	0.05
Control Delay		11.3			11.1			9.7	3.1		10.0	2.9
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		11.3			11.1			9.7	3.1		10.0	2.9
LOS		B			B			A	A		A	A
Approach Delay		11.3			11.1			7.0			7.5	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.34  
 Intersection Signal Delay: 10.5  
 Intersection Capacity Utilization 42.1%  
 Analysis Period (min) 15










Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortlandt  
5: Broadway & Bleakley Ave

Existing 2020  
Saturday Midday (Weekend) Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	36	128	73	19	127
Future Volume (vph)	24	36	128	73	19	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919		0.951			
Flt Protected	0.980					0.994
Satd. Flow (prot)	1772	0	1530	0	0	1405
Flt Permitted	0.980					0.954
Satd. Flow (perm)	1772	0	1530	0	0	1349
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	49					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.73	0.73	0.94	0.94	0.81	0.81
Heavy Vehicles (%)	3%	3%	33%	3%	3%	39%
Adj. Flow (vph)	33	49	136	78	23	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	0	214	0	0	180
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.13		0.28			0.27
Control Delay	8.1		10.0			10.0

Port Cortlandt  
5: Broadway & Bleakley Ave

Existing 2020  
Saturday Midday (Weekend) Peak Hour



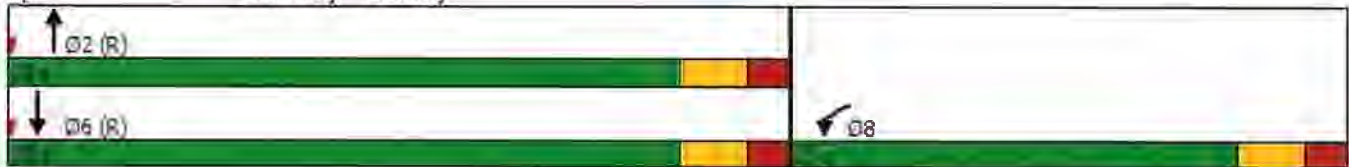
Lane Group	WBL	WBR	NBT	NBR	SBL	BBT
Queue Delay	0.0		0.0			0.0
Total Delay	8.1		10.0			10.0
LOS	A		A			B
Approach Delay	8.1		10.0			10.0
Approach LOS	A		A			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.28  
 Intersection Signal Delay: 9.7  
 Intersection Capacity Utilization 35.2%  
 Analysis Period (min) 15

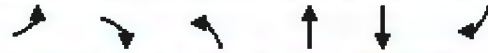
Intersection LOS: A  
ICU Level of Service A

Splits and Phases: 5: Broadway & Bleakley Ave



Port Cortlandt  
6: Rt 9A & Bleakley Ave

Existing 2020  
Saturday Midday (Weekend) Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	73	93	10	450	602	38
Future Volume (vph)	73	93	10	450	602	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924					0.850
Flt Protected	0.979			0.999		
Satd. Flow (prot)	1724	0	0	1759	1852	1463
Flt Permitted	0.979			0.986		
Satd. Flow (perm)	1724	0	0	1736	1852	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	101					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.92	0.92	0.94	0.94	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	8%	6%	3%
Adj. Flow (vph)	79	101	11	479	662	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	180	0	0	490	662	42
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%



Port Cortlandt  
6: Rt 9A & Bleakley Ave

Existing 2020  
Saturday Midday (Weekend) Peak Hour

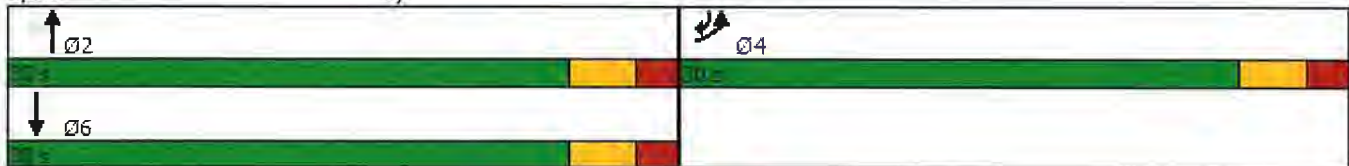


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	7.8			30.0	30.0	44.7
Actuated g/C Ratio	0.17			0.67	0.67	1.00
v/c Ratio	0.47			0.42	0.53	0.03
Control Delay	12.2			6.7	7.9	0.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	12.2			6.7	7.9	0.0
LOS	B			A	A	A
Approach Delay	12.2			6.7	7.4	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 44.7  
 Natural Cycle: 55  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.53  
 Intersection Signal Delay: 7.8  
 Intersection Capacity Utilization 49.8%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 6: Rt 9A & Bleakley Ave



Port Cortlandt  
7: Continental Driveway & Broadway

Existing 2020  
Saturday MIDDAY (Weekend) Peak Hour

Intersection

Int Delay, s/veh 0.2

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	↖	↗		↖	↗	
Traffic Vol, veh/h	3	1	1	191	130	12
Future Vol, veh/h	3	1	1	191	130	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	89	89	71	71
Heavy Vehicles, %	75	3	3	21	32	75
Mvmt Flow	6	2	1	215	183	17

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	409	192	200	0	-	0
Stage 1	192	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Critical Hdwy	7.15	6.23	4.13	-	-	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	481	847	1366	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	481	847	1366	-	-	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	673	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	11.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1366	-	481	847	-	-
HCM Lane V/C Ratio	0.001	-	0.012	0.002	-	-
HCM Control Delay (s)	7.6	0	12.6	9.3	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Port Cortlandt  
8: Broadway & Entergy Driveway

Existing 2020  
Saturday Midday (Weekend) Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	9	0	2	192	142	9
Future Vol, veh/h	9	0	2	192	142	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	90	90	75	75
Heavy Vehicles, %	3	3	3	22	35	3
Mvmt Flow	14	0	2	213	189	12



















Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	412	195	201	0	0
Stage 1	195	-	-	-	-
Stage 2	217	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-
Pot Cap-1 Maneuver	594	844	1365	-	-
Stage 1	836	-	-	-	-
Stage 2	817	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	593	844	1365	-	-
Mov Cap-2 Maneuver	593	-	-	-	-
Stage 1	834	-	-	-	-
Stage 2	817	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1365	-	593	-	-
HCM Lane V/C Ratio	0.002	-	0.024	-	-
HCM Control Delay (s)	7.6	0	11.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

Existing 2020  
Saturday Midday (Weekend) Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	92	78	268	159	0	69	0	386	73	355	52
Future Volume (vph)	0	92	78	268	159	0	69	0	386	73	355	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	12	12	11	13	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.931						0.897	0.850		0.984	
Fl <sub>t</sub> Protected				0.950				0.985			0.992	
Satd. Flow (prot)	0	3154	0	1646	1845	0	0	1448	1468	0	3333	0
Fl <sub>t</sub> Permitted				0.624				0.807			0.815	
Satd. Flow (perm)	0	3154	0	1081	1845	0	0	1187	1468	0	2738	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		93									12	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		556			270			315			565	
Travel Time (s)		15.2			7.4			8.6			15.4	
Peak Hour Factor	0.84	0.84	0.84	0.94	0.94	0.94	0.95	0.95	0.95	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	3%	6%	3%	2%	3%	2%	8%	5%	6%	5%
Adj. Flow (vph)	0	110	93	285	169	0	73	0	406	78	378	55
Shared Lane Traffic (%)									40%			
Lane Group Flow (vph)	0	203	0	285	169	0	0	235	244	0	511	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1	1	2	
Detector Template		Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)		100		20	100		20	100	20	20	100	
Trailing Detector (ft)		0		0	0		0	0	0	0	0	
Detector 1 Position(ft)		0		0	0		0	0	0	0	0	
Detector 1 Size(ft)		6		20	6		20	6	20	20	6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		D.P+P	NA		custom	NA	custom	Perm	NA	

Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

Existing 2020  
Saturday Midday (Weekend) Peak Hour

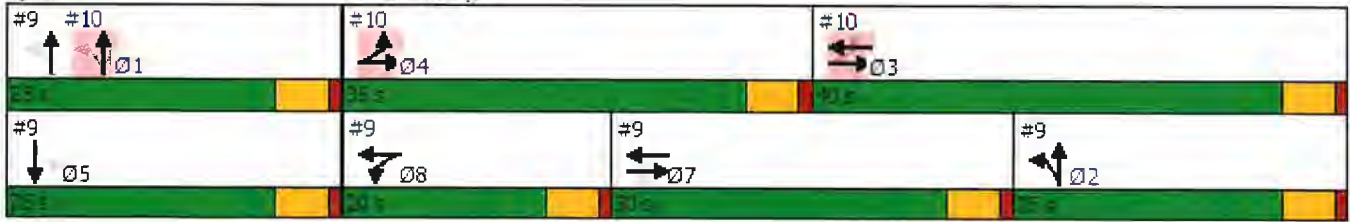


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2			5	
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5	5	
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0	5.0	
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0	23.0	
Total Split (s)		30.0		20.0			25.0		25.0	25.0	25.0	
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%	25.0%	
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0	20.0	
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0	4.0	
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0					0.0		0.0	
Total Lost Time (s)		5.0		5.0					5.0		5.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0	3.0	
Recall Mode		None		None			Max		Max	Max	Max	
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		8.7		22.9	27.9			40.1	20.0		20.0	
Actuated g/C Ratio		0.10		0.28	0.34			0.48	0.24		0.24	
v/c Ratio		0.49		0.73	0.27			0.37	0.69		0.76	
Control Delay		23.3		51.4	36.0			13.2	41.4		38.1	
Queue Delay		0.0		0.0	0.2			0.0	0.0		0.0	
Total Delay		23.3		51.4	36.2			13.2	41.4		38.1	
LOS		C		D	D			B	D		D	
Approach Delay		23.3			45.8			27.6			38.1	
Approach LOS		C			D			C			D	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 83  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 35.3  
 Intersection Capacity Utilization 61.9%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service B



















Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave



Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Port Cortlandt  
10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

Existing 2020  
Saturday Midday (Weekend) Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	273	0	0	337	78	90	0	78	0	0	0
Future Volume (vph)	278	273	0	0	337	78	90	0	78	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt					0.972				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1662	1629	0	0	3143	0	0	1752	1538	0	0	0
Flt Permitted	0.444							0.950				
Satd. Flow (perm)	777	1629	0	0	3143	0	0	1752	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					31				185			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.88	0.88	0.88	0.90	0.90	0.90	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	4%	5%	3%	5%	5%	2%	2%	2%
Adj. Flow (vph)	293	287	0	0	383	89	100	0	87	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	293	287	0	0	472	0	0	100	87	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			



Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				

Port Cortlandt

Existing 2020

10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

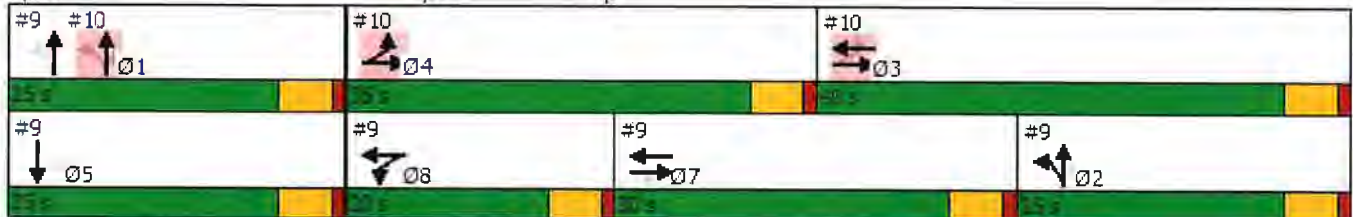
Saturday Midday (Weekend) Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1		1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0			0.0	0.0			
Total Lost Time (s)	5.0				5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	47.9	52.9			34.6			20.0	20.0			
Actuated g/C Ratio	0.58	0.64			0.42			0.24	0.24			
v/c Ratio	0.50	0.28			0.36			0.24	0.17			
Control Delay	14.6	6.8			16.9			28.3	0.7			
Queue Delay	0.0	0.8			0.0			0.2	0.0			
Total Delay	14.6	7.5			16.9			28.5	0.7			
LOS	B	A			B			C	A			
Approach Delay		11.1			16.9			15.6				
Approach LOS		B			B			B				

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 83  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 14.0  
 Intersection Capacity Utilization 44.7%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
<b>Intersection Summary</b>				

Intersection

Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕					↕	↕		↕	↕	
Traffic Vol, veh/h	5	2	3	0	0	0	3	450	69	62	637	2
Future Vol, veh/h	5	2	3	0	0	0	3	450	69	62	637	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	92	92	92	97	97	97	93	93	93
Heavy Vehicles, %	3	5	3	2	2	2	3	7	7	5	5	3
Mvmt Flow	13	5	8	0	0	0	3	464	71	67	685	2

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1058	1361	344	687	0	0	535	0	0
Stage 1	820	820	-	-	-	-	-	-	-
Stage 2	238	541	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	218	143	649	896	-	-	1008	-	-
Stage 1	391	380	-	-	-	-	-	-	-
Stage 2	776	511	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	203	0	649	896	-	-	1008	-	-
Mov Cap-2 Maneuver	203	0	-	-	-	-	-	-	-
Stage 1	390	0	-	-	-	-	-	-	-
Stage 2	725	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.6	0.1	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	896	-	-	273	1008	-	-
HCM Lane V/C Ratio	0.003	-	-	0.096	0.066	-	-
HCM Control Delay (s)	9	-	-	19.6	8.8	-	-
HCM Lane LOS	A	-	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗	↘↗	↑	↑	↗
Traffic Volume (vph)	386	1024	1419	443	436	355
Future Volume (vph)	386	1024	1419	443	436	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Fr <sub>t</sub>		0.850				0.850
Fl <sub>t</sub> Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3319	1863	1783	1568
Fl <sub>t</sub> Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3319	1863	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						2
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.93	0.93	0.88	0.88	0.95	0.95
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	415	1101	1613	503	459	374
Shared Lane Traffic (%)						
Lane Group Flow (vph)	415	1101	1613	503	459	374
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov



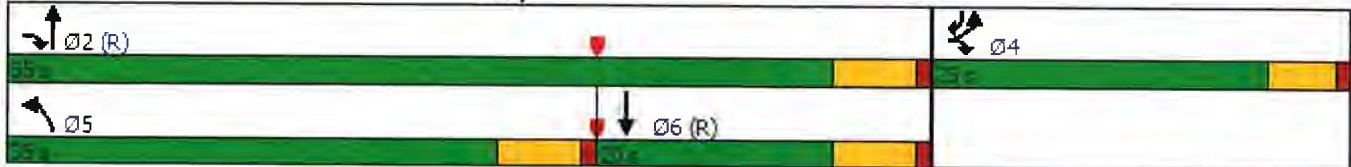
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	24.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	29.0	49.0	14.0	40.0
Actuated g/C Ratio	0.25	1.00	0.36	0.61	0.18	0.50
v/c Ratio	0.95	0.68	1.34	0.44	1.47	0.48
Control Delay	63.7	2.3	184.6	9.7	257.2	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	2.3	184.6	9.7	257.2	15.6
LOS	E	A	F	A	F	B
Approach Delay	19.1			143.0	148.8	
Approach LOS	B			F	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.47  
 Intersection Signal Delay: 102.0  
 Intersection Capacity Utilization 99.0%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service F

! Phase conflict between lane groups.

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy



Intersection

Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	78	14	22	147	19	17
Future Vol, veh/h	78	14	22	147	19	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	77	77	75	75
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	89	16	29	191	25	23

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	198	125	0
Stage 1	125	-	-
Stage 2	73	-	-
Critical Hdwy	6.45	6.25	-
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.345	-
Pot Cap-1 Maneuver	784	918	-
Stage 1	893	-	-
Stage 2	942	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	769	918	-
Mov Cap-2 Maneuver	769	-	-
Stage 1	893	-	-
Stage 2	924	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	4.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	788	1332
HCM Lane V/C Ratio	-	-	0.133	0.019
HCM Control Delay (s)	-	-	10.3	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

Intersection

Int Delay, s/veh 4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	17	78	159	102	152	10
Future Vol, veh/h	17	78	159	102	152	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	84	84	78	78
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	17	80	189	121	195	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	310	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1234	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1234	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1234	-	-	-	620	781
HCM Lane V/C Ratio	0.014	-	-	-	0.314	0.016
HCM Control Delay (s)	8	0	-	-	13.4	9.7
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1.3	0.1



## 7. Pending Development Projects Lists and Trip Generation

**Table A.7-1**

**Town of Cortlandt Pending Development Projects (through 2023)\***

Development	Location	Size	Type	Status	Anticipated Completion Year	Growth Factor or Discrete Trips <sup>1</sup>	Notes <sup>2</sup>
Cortlandt Crossing	Rt. 6	130,000 sq. ft.	Commercial	Partially constructed. Small tenant spaces still to be backfilled. 1 approved retail outparcel of 8,000 sq. ft. is approved but not yet constructed.	2021	Growth Factor	Distant from Port Cortlandt Study Area Intersections
The Sentinel	Rt. 6 at 3441 Lexington Ave.	Renovation and expansion - 38 new beds and 30,000 new sq. ft. to an existing 63,000 sq. ft., 150 bed assisted living facility	Assisted Living	Under Construction	2021	Growth Factor	Distant from Port Cortlandt Study Area Intersections
Pondview Commons	Rt. 6 and Regina Ave.	56 units	Apartment Units - 1&2 bedrooms	Under Construction	2021	Growth Factor	Distant from Port Cortlandt Study Area Intersections
Medical Oriented District (MOD)	Rt. 202 between Dayton Ln. & Conklin Ave.	366 Apts. - Studios/1 & 2 beds.	Apt. Units. - Studios/1 & 2 beds.	DEIS completed, public hearings held. Applicants working on FEIS, project scope revisions likely	2021	Discrete Trips	Discrete Trips sourced from MOD Traffic Impact Study and carried through to Port Cortlandt study area intersections
		85,000 sq. ft. new medical office	Medical Office				
		60,000 sq. ft. retail	Retail				
		120 unit assisted living	Assisted Living				
		100 room hotel	Hotel				
Lexington Ave. Classic Car Storage	3451 Lexington Ave. near Rt. 6	56,000 sq.ft. car storage bldg.	Storage for 350 cars, Members Lounge	Pending	2021	Growth Factor	Distant from Port Cortlandt Study Area Intersections
Palisades Fuel/Sinclair	Rt. 6 near Bear Mountain Parkway	2,940 sq. ft. gas station/convenience store with 6 fuel pumps	Commercial	Pending	2021	Growth Factor	Distant from Port Cortlandt Study Area Intersections
Crystal Clean Car Wash / Cortlandt Car Care	Route 9, north of Annsville Circle	4,672 square-foot (sf) car care facility consisting of three (3) self-serve wash stations, two (2) automatic wash stations and two (2) quick-lube oil change stations with 6 vehicle vacuum stations	Commercial	Partially constructed, On-hold	2021	Discrete Trips	Discrete Trips sourced from Car Wash Traffic Impact Study and carried through to Port Cortlandt study area intersections

**Notes:**  
 \* Source: Town of Cortlandt Planning Department  
 1. Indicates whether trips from the development project was accounted for with the background growth factor or with discrete trips that were added to the Port Cortlandt traffic network.  
 2. Provides reasoning for selecting the background growth factor to account for pending development projects and sources of discrete trips.

**Table A.7-2**

**City of Peekskill Pending Development Projects (through 2023)\***

Development/Location	Size	Type	Status	Estimated Opening	Growth Factor or Discrete Trips <sup>1</sup>	Notes <sup>2</sup>
1 Park Place	181 units	Market rate rental apartments	Under construction	2021	Growth Factor	Traffic Impact Study shows low trip generation.
216 S. Division St	22 units	Market rate rental apartments	Under construction	2021	Growth Factor	Low trip generator
1847 Crompond Rd	52 units	Affordable Senior rental apartments	Under construction	2021	Growth Factor	Low trip generator
645 Main St	82 units	Affordable rental apartments	Under construction	2022	Growth Factor	EAF shows low trip generation
505 South St	51 units	Market rate condominium building	All approvals granted	2022	Growth Factor	EAF states no significant increase in traffic
653 Central Ave	78 units	Market rate rentals with 5% workforce & 5% affordable units	Purchase and Sale Agreement with City. Approvals TBD	2022-2023	Growth Factor	Low trip generator

**Notes:**  
 \* Source: City of Peekskill Planning Department  
 1. Indicates whether trips from the development project was accounted for with the background growth factor or with discrete trips that were added to the Port Cortlandt traffic network.  
 2. Provides reasoning for selecting the background growth factor to account for pending development projects.

DISCRETE PENDING DEVELOPMENT PROJECT TRIPS

			CORTLANDT						PEEKSKILL (all Peekskill projects accounted for with Growth Factor)			DISCRETE PENDING DEVELOPMENT PROJECT TRIPS - TOTAL					
Traffic Intersections			CORTLANDT MOD			CRYSTAL CLEAN CAR WASH											
Approach	Lane Group		Wkday AM	Wkday PM	Sat. MD	Wkday AM	Wkday PM	Sat. MD	Wkday AM	Wkday PM	Sat. MD	Wkday AM	Wkday PM	Sat. MD			
1	Louisa St & John Walsh Blvd.	EB	L									0	0	0			
			T										0	0	0		
			R											0	0	0	
		WB	L											0	0	0	
			T											0	0	0	
			R											0	0	0	
		NB	L											0	0	0	
			T											0	0	0	
			R											0	0	0	
		SB	L											0	0	0	
			T											0	0	0	
			R											0	0	0	
2	Louisa St & Route 9 Southbound Ramps	EB	T									0	0	0			
			R										0	0	0		
		WB	T										0	0	0		
			R										0	0	0		
		NB	L										0	0	0		
			R										0	0	0		
3	Louisa St & Route 9 Northbound Ramps	EB	L									0	0	0			
			T										0	0	0		
		WB	L										0	0	0		
			T										0	0	0		
		NB	L										0	0	0		
			T										0	0	0		
		4	Louisa St & Lower S. Street	EB	L									0	0	0	
					T										0	0	0
				WB	L										0	0	0
					T										0	0	0
				NB	L										0	0	0
					T										0	0	0
5	Broadway & Bleakley Ave.	WB	L									0	0	0			
			T										0	0	0		
		NB	L										0	0	0		
			T										0	0	0		
		SB	L										0	0	0		
			T										0	0	0		
		6	Route 9A & Bleakley Ave.	EB	L									0	0	0	
					T										0	0	0
				NB	L										0	0	0
					T										0	0	0
				SB	L										0	0	0
					T										0	0	0
7	Broadway & Continental Driveway	EB	L									0	0	0			
			T										0	0	0		
		NB	L										0	0	0		
			T										0	0	0		
		SB	L										0	0	0		
			T										0	0	0		
8	Broadway & Entergy Main Driveway	EB	L									0	0	0			
			T										0	0	0		
		NB	L										0	0	0		
			T										0	0	0		
		SB	L										0	0	0		
			T										0	0	0		
9	Welcher Ave. & Rt. 9 SB Off-Ramp/Route 9A	EB	T									0	0	0			
			R										0	0	0		
		WB	L										0	0	0		
			T										0	0	0		
		NB	L										0	0	0		
			T										0	0	0		
10	Welcher Ave. & Rt. 9 Northbound Ramps	EB	L									0	0	0			
			T										0	0	0		
		WB	L										0	0	0		
			T										0	0	0		
		NB	L										0	0	0		
			T										0	0	0		
11	Route 9A & Belock Ave./Rt. 9A SB On-Ramps	EB	L									0	0	0			
			T										0	0	0		
		NB	L										0	0	0		
			T										0	0	0		
		SB	L										0	0	0		
			T										0	0	0		
12	Route 6/9/202 @ Bear Mountain Parkway	EB	L				1	6				0	1	6			
			R	11	18		5	14				11	23	14			
		NB	L	13	35		5	14				13	40	14			
			T									0	0	0			
		SB	L									0	0	0			
			T									0	0	0			
13	Route 6 (Main Street) @ Route 9 SB Ramps	WB	L	11	18							11	18	0			
			R									0	0	0			
		NB	L									0	0	0			
			T									0	1	4			
		SB	L	30	35				1	4			30	35	0		
			T									0	0	0			
14	Route 6 (Main Street) @ Route 9 NB Ramps	EB	L									0	0	0			
			T	11	18							11	18	0			
		WB	L	30	35							30	35	0			
			R	13	35							13	35	0			
		SB	L	32	42							32	42	0			
			R									0	0	0			

8. Existing versus Future without the  
Proposed Project Level of Service Analysis  
Table

Table A.8-1

2020 Existing and 2023 Future without the Proposed Project Conditions Level of Service Analysis

Intersection	Weekday AM								Weekday PM								Saturday Midday (Weekend)																																																							
	2020 Existing				2023 Future w/o Proposed Project				2020 Existing				2023 Future w/o Proposed Project				2020 Existing				2023 Future w/o Proposed Project																																																			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS																																																
<b>SIGNALIZED INTERSECTIONS</b>																																																																								
Louisa Street and Lower S. Street																																																																								
Eastbound	LTR	0.56	13.8	B	LTR	0.57	14.0	B	LTR	0.38	11.7	B	LTR	0.38	11.7	B	LTR	0.34	11.3	B	LTR	0.35	11.4	B																																																
Westbound	LTR	0.39	11.9	B	LTR	0.40	12.0	B	LTR	0.34	10.7	B	LTR	0.34	10.8	B	LTR	0.34	11.1	B	LTR	0.34	11.2	B																																																
Northbound	LT	0.11	10.1	B	LT	0.12	10.2	B	LT	0.18	10.7	B	LT	0.18	10.7	B	LT	0.07	9.7	A	LT	0.07	9.7	A																																																
Southbound	R	0.03	1.6	A	R	0.03	1.6	A	R	0.03	1.7	A	R	0.03	1.7	A	R	0.05	3.1	A	R	0.05	3.3	A																																																
	LT	0.19	10.9	B	LT	0.19	10.9	B	LT	0.10	10.1	B	LT	0.11	10.1	B	LT	0.09	10.0	A	LT	0.09	10.0	A																																																
	R	0.03	2.0	A	R	0.03	2.0	A	R	0.07	4.0	A	R	0.07	4.0	A	R	0.05	2.9	A	R	0.05	2.9	A																																																
	Intersection				12.4				B				Intersection				12.5				B				Intersection				10.6				B				Intersection				10.6				B				Intersection				10.5				B				Intersection				10.6				B			
Broadway and Bleakley Avenue																																																																								
Westbound	LR	0.20	6.0	A	LR	0.20	6.0	A	LR	0.14	10.0	A	LR	0.15	10.0	A	LR	0.13	8.1	A	LR	0.13	7.9	A																																																
Northbound	TR	0.44	12.0	B	TR	0.45	12.1	B	TR	0.31	10.3	B	TR	0.32	10.4	B	TR	0.28	10.0	A	TR	0.29	10.0	B																																																
Southbound	LT	0.35	11.1	B	LT	0.35	11.2	B	LT	0.28	10.2	B	LT	0.28	10.3	B	LT	0.27	10.0	B	LT	0.27	10.1	B																																																
	Intersection				10.5				B				Intersection				10.6				B				Intersection				9.7				A				Intersection				9.7				A																											
Route 9A and Bleakley Avenue																																																																								
Eastbound	LR	0.64	20.1	C	LR	0.64	20.2	C	LR	0.42	17.4	B	LR	0.42	17.4	B	LR	0.47	12.2	B	LR	0.47	12.1	B																																																
Northbound	LT	0.54	11.9	B	LT	0.55	12.3	B	LT	0.67	12.1	B	LT	0.68	12.7	B	LT	0.42	6.7	A	LT	0.43	6.8	A																																																
Southbound	T	0.71	16.6	B	T	0.73	17.5	B	T	0.54	8.3	A	T	0.56	7.9	A	T	0.53	7.9	A	T	0.54	8.1	A																																																
	R	0.08	0.1	A	R	0.08	0.1	A	R	0.04	0.0	A	R	0.04	0.0	A	R	0.03	0.0	A	R	0.03	0.0	A																																																
	Intersection				14.7				B				Intersection				15.3				B				Intersection				10.7				B				Intersection				11.0				B				Intersection				7.8				A				Intersection				7.9				A			
Welcher Avenue and Route 9A/Route 9 Southbound Off-Ramp																																																																								
Eastbound	TR	0.35	23.9	C	TR	0.36	24.2	C	TR	0.50	33.8	C	TR	0.51	34.1	C	TR	0.49	23.3	C	TR	0.49	23.0	C																																																
Westbound	L	1.23	161.6	F	L	1.26	173.1	F	L	0.85	58.9	E	L	0.87	61.0	E	L	0.73	51.4	D	L	0.73	51.6	D																																																
Northbound	T	0.11	37.4	D	T	0.11	37.7	D	T	0.14	32.9	C	T	0.14	33.0	C	T	0.27	36.2	D	T	0.28	35.9	D																																																
	LR	0.33	11.8	B	LR	0.33	11.7	B	LR	0.50	16.6	B	LR	0.51	17.0	B	LR	0.37	13.2	B	LR	0.38	13.6	B																																																
Southbound	R	0.68	38.7	D	R	0.68	38.5	D	R	1.05	103.3	F	R	1.06	109.9	F	R	0.69	41.4	D	R	0.71	42.6	D																																																
	LTR	1.00	102.6	F	LTR	1.03	102.1	F	LTR	1.06	108.5	F	LTR	1.10	108.9	F	LTR	0.76	38.1	D	LTR	0.79	39.7	D																																																
	Intersection				90.0				F				Intersection				92.8				F				Intersection				69.9				E				Intersection				71.7				E				Intersection				35.3				D				Intersection				36.0				D			
Welcher Avenue and Route 9 Northbound Ramps																																																																								
Eastbound	L	0.68	27.0	C	L	0.69	27.9	C	L	0.80	39.7	D	L	0.82	53.9	D	L	0.50	14.6	B	L	0.51	15.5	B																																																
Westbound	T	0.23	7.0	A	T	0.24	6.8	A	T	0.42	9.0	A	T	0.43	9.0	A	T	0.28	7.5	A	T	0.28	7.7	A																																																
	TR	0.48	20.3	C	TR	0.49	20.9	C	TR	0.48	21.7	C	TR	0.50	22.2	C	TR	0.36	16.9	B	TR	0.36	17.0	B																																																
Northbound	LT	0.28	31.5	C	LT	0.29	32.4	C	LT	0.39	35.7	D	LT	0.39	36.4	D	LT	0.24	28.5	C	LT	0.24	28.8	C																																																
	R	0.21	1.3	A	R	0.22	1.5	A	R	0.42	7.2	A	R	0.43	7.3	A	R	0.17	0.7	A	R	0.17	0.8	A																																																
	Intersection				19.3				B				Intersection				19.8				B				Intersection				23.2				C				Intersection				27.6				C				Intersection				14.0				B				Intersection				14.3				B			
Route 9/Bear Mountain Parkway and Jans Peck Bridge*																																																																								
Eastbound	L	0.49	30.2	C	L	0.50	30.5	C	L	0.97	67.5	E	L	0.99	72.9	E	L	0.95	63.7	E	L	0.98	71.2	E																																																
Northbound	R	0.99	22.4	C	R	1.01	29.3	C	R	0.84	5.8	A	R	0.87	7.7	A	R	0.68	2.3	A	R	0.70	2.6	A																																																
	L	0.88	34.7	C	L	0.90	36.3	D	L	1.09	81.8	F	L	1.15	104.2	F	L	1.34	184.6	F	L	1.38	201.6	F																																																
Southbound	T	0.51	10.7	B	T	0.52	10.9	B	T	0.53	11.0	B	T	0.54	11.2	B	T	0.44	9.7	A	T	0.45	9.9	A																																																
	T	1.85	416.6	F	T	1.93	452.6	F	T	1.92	451.0	F	T	1.96	467.7	F	T	1.47	257.2	F	T	1.50	269.3	F																																																
	R	0.41	13.1	B	R	0.42	13.6	B	R	0.15	10.7	B	R	0.16	11.0	B	R	0.48	15.6	B	R	0.49	15.9	B																																																
	Intersection				80.3				F				Intersection				88.1				F				Intersection				95.8				F				Intersection				105.2				F				Intersection				102.0				F				Intersection				110.0				F			

Table A.8-1

2020 Existing and 2023 Future without the Proposed Project Conditions Level of Service Analysis

Intersection	Weekday AM								Weekday PM								Saturday Midday (Weekend)							
	2020 Existing				2023 Future w/o Proposed Project				2020 Existing				2023 Future w/o Proposed Project				2020 Existing				2023 Future w/o Proposed Project			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
<b>UNSIGNALIZED INTERSECTIONS</b>																								
<b>Louisa Street and John Walsh Boulevard/Park Entrance**</b>																								
Eastbound	LTR	0.00	7.3	A	LTR	0.00	7.3	A	LTR	0.00	7.2	A	LTR	0.00	7.2	A	LTR	0.00	7.2	A	LTR	0.00	7.2	A
Westbound	LTR	0.27	8.5	A	LTR	0.28	8.5	A	LTR	0.20	8.2	A	LTR	0.21	8.2	A	LTR	0.21	8.1	A	LTR	0.21	8.1	A
Northbound	LT	0.04	22.0	C	LT	0.04	22.4	C	LT	0.02	16.0	C	LT	0.03	16.3	C	LT	0.05	16.9	C	LT	0.06	17.1	C
	R	0.61	13.7	B	R	0.62	14.0	B	R	0.31	10.2	B	R	0.32	10.3	B	R	0.26	9.8	A	R	0.27	9.8	A
Southbound	LTR	0.11	23.0	C	LTR	0.11	23.8	C	LTR	0.06	16.9	C	LTR	0.06	17.2	C	LTR	0.09	17.3	C	LTR	0.10	17.6	C
<b>Louisa Street and Route 9 Southbound Ramps</b>																								
<i>-No Conflicting or Merging Movements for Analysis-</i>																								
<b>Louisa Street and Route 9 Northbound Ramps***</b>																								
Eastbound	L	0.39	10.9	B	L	0.39	11.0	B	L	0.35	10.3	B	L	0.35	10.4	B	L	0.28	9.5	A	L	0.29	9.6	A
Northbound	LT	0.30	10.3	B	LT	0.30	10.4	B	LT	0.24	9.6	A	LT	0.24	9.7	A	LT	0.23	9.3	A	LT	0.23	9.4	A
<b>Broadway and Continental Driveway</b>																								
Eastbound	L	0.06	13.3	B	L	0.06	13.4	B	L	0.05	12.7	B	L	0.05	12.8	B	L	0.05	12.6	B	L	0.01	12.7	B
	R	0.00	9.0	A	R	0.00	9.0	A	R	0.00	9.2	A	R	0.00	9.2	A	R	0.00	9.3	A	R	0.00	9.3	A
Northbound	LT	0.00	7.5	A	LT	0.00	7.5	A	LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.00	7.7	A
<b>Broadway and Entergy Main Driveway</b>																								
Eastbound	LR	0.04	11.3	B	LR	0.04	11.3	B	LR	0.03	11.1	B	LR	0.03	11.1	B	LR	0.02	11.2	B	LR	0.03	11.1	B
Northbound	LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.00	7.7	A
<b>Route 9A and Belock Avenue/Route 9 Southbound On-Ramp</b>																								
Eastbound	LTR	0.12	27.0	D	LTR	0.13	28.9	D	LTR	0.05	20.3	C	LTR	0.05	20.8	C	LTR	0.10	19.6	C	LTR	0.10	20.1	C
Northbound	L	0.01	9.2	A	L	0.01	9.2	A	L	0.01	9.2	A	L	0.01	9.3	A	L	0.00	9.0	A	L	0.00	9.1	A
Southbound	L	0.35	11.4	B	L	0.36	11.6	B	L	0.07	10.1	B	L	0.07	10.1	B	L	0.07	8.8	A	L	0.07	8.9	A
<b>Route 6 and Route 9 Southbound Ramps</b>																								
Westbound	LR	0.14	10.8	B	LR	0.16	11.2	B	LR	0.12	9.8	A	LR	0.15	10.2	B	LR	0.13	10.3	B	LR	0.14	10.3	B
Southbound	LT	0.02	8.0	A	LT	0.02	8.1	A	LT	0.01	7.5	A	LT	0.01	7.6	A	LT	0.02	7.8	A	LT	0.02	7.8	A
<b>Route 6 and Route 9 Northbound Ramps</b>																								
Eastbound	L	0.04	8.4	A	L	0.05	8.6	A	L	0.02	7.7	A	L	0.02	7.9	A	L	0.01	8.0	A	L	0.01	8.0	A
Southbound	L	0.53	21.0	C	L	0.68	29.6	D	L	0.37	13.2	B	L	0.51	16.8	C	L	0.31	13.4	B	L	0.32	13.6	B
	R	0.01	10.4	B	R	0.01	10.8	B	R	0.01	9.1	A	R	0.02	9.4	A	R	0.02	9.7	A	R	0.02	9.7	A

**Notes:**  
 \*\*The traffic signal at this intersection provides continuous green signal time for the eastbound right turn movement.  
 \*\*\* Coded as a Two-Way Stop Controlled intersection in Synchro due to limitations in the Synchro software  
 \*\*\*\* Coded as an All-Way Stop Controlled intersection in Synchro due to limitations in the Synchro software

## 9. Future without the Proposed Project Synchro Outputs



Intersection												
Int Delay, s/veh	11.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	2	2	268	2	14	2	5	493	2	9	1
Future Vol, veh/h	1	2	2	268	2	14	2	5	493	2	9	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	67	67	67	78	78	78	50	50	50
Heavy Vehicles, %	2	3	3	33	3	2	3	2	21	2	2	2
Mvmt Flow	2	4	4	400	3	21	3	6	632	4	18	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	24	0	0	8	0	0	834	834	6	1143	826	14
Stage 1	-	-	-	-	-	-	10	10	-	814	814	-
Stage 2	-	-	-	-	-	-	824	824	-	329	12	-
Critical Hdwy	4.12	-	-	4.43	-	-	7.13	6.52	6.41	5.4	5.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.497	-	-	3.527	4.018	3.489	3.518	4.018	3.318
Pot Cap-1 Maneuver	1591	-	-	1432	-	-	286	304	1024	306	388	1066
Stage 1	-	-	-	-	-	-	1008	887	-	372	391	-
Stage 2	-	-	-	-	-	-	366	387	-	684	886	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1591	-	-	1432	-	-	212	217	1024	89	277	1066
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	217	-	89	277	-
Stage 1	-	-	-	-	-	-	1007	886	-	372	280	-
Stage 2	-	-	-	-	-	-	245	277	-	260	885	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	8	14.1	23.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	216	1024	1591	-	-	1432	-	-	215
HCM Lane V/C Ratio	0.042	0.617	0.001	-	-	0.279	-	-	0.112
HCM Control Delay (s)	22.4	14	7.3	0	-	8.5	0	-	23.8
HCM Lane LOS	C	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	4.4	0	-	-	1.2	-	-	0.4

Intersection

Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement

	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↗		
Traffic Vol, veh/h	240	0	173	5	0	0
Future Vol, veh/h	240	0	173	5	0	0
Peak Hour Factor	0.82	0.82	0.83	0.83	0.92	0.92
Heavy Vehicles, %	10	2	15	5	2	2
Mvmt Flow	293	0	208	6	0	0
Number of Lanes	1	0	0	1	0	0

Approach

	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	11	10.4
HCM LOS	B	B

Lane

	NBLn1	EBLn1
Vol Left, %	97%	100%
Vol Thru, %	3%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	178	240
LT Vol	173	240
Through Vol	5	0
RT Vol	0	0
Lane Flow Rate	214	293
Geometry Grp	1	1
Degree of Util (X)	0.304	0.394
Departure Headway (Hd)	5.095	4.842
Convergence, Y/N	Yes	Yes
Cap	706	743
Service Time	3.127	2.87
HCM Lane V/C Ratio	0.303	0.394
HCM Control Delay	10.4	11
HCM Lane LOS	B	B
HCM 95th-tile Q	1.3	1.9

Port Cortland  
4: Lower S St & Louisa St

2023 Future without the Proposed Project  
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	561	9	41	325	5	36	18	14	54	41	18
Future Volume (vph)	29	561	9	41	325	5	36	18	14	54	41	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.998			0.998				0.850			0.850
Flt Protected		0.998			0.995			0.968			0.972	
Satd. Flow (prot)	0	3146	0	0	3110	0	0	1786	1463	0	1733	1516
Flt Permitted		0.921			0.841			0.804			0.827	
Satd. Flow (perm)	0	2903	0	0	2629	0	0	1483	1463	0	1475	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			3				44			44
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.79	0.79	0.79	0.83	0.83	0.83
Heavy Vehicles (%)	3%	11%	3%	3%	17%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	32	623	10	46	365	6	46	23	18	65	49	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	665	0	0	417	0	0	69	18	0	114	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		20.0			20.0			20.0	20.0		20.0	20.0

Port Cortlandt  
4: Lower S St & Louisa St

2023 Future without the Proposed Project  
Weekday AM Peak Hour

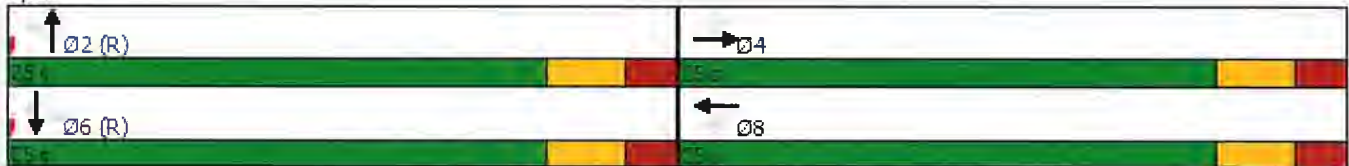
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.57			0.40			0.12	0.03		0.19	0.03
Control Delay		14.0			12.0			10.2	1.6		10.9	2.0
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		14.0			12.0			10.2	1.6		10.9	2.0
LOS		B			B			B	A		B	A
Approach Delay		14.0			12.0			8.4			9.5	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.57  
 Intersection Signal Delay: 12.5  
 Intersection Capacity Utilization 51.3%  
 Analysis Period (min) 15










Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortland  
5: Broadway & Bleakley Ave

2023 Future without the Proposed Project  
Weekday AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	68	129	143	36	125
Future Volume (vph)	18	68	129	143	36	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.893		0.929			
Flt Protected	0.990					0.989
Satd. Flow (prot)	1740	0	1455	0	0	1401
Flt Permitted	0.990					0.880
Satd. Flow (perm)	1740	0	1455	0	0	1247
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	101					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.67	0.67	0.84	0.84	0.73	0.73
Heavy Vehicles (%)	3%	3%	50%	3%	3%	43%
Adj. Flow (vph)	27	101	154	170	49	171
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	0	324	0	0	220
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.20		0.45			0.35
Control Delay	6.0		12.1			11.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay	0.0		0.0			0.0
Total Delay	6.0		12.1			11.2
LOS	A		B			B
Approach Delay	6.0		12.1			11.2
Approach LOS	A		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.45  
 Intersection Signal Delay: 10.6  
 Intersection Capacity Utilization 41.8%  
 Analysis Period (min) 15











Intersection LOS: B  
 ICU Level of Service A

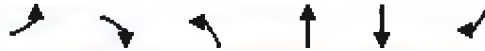
Splits and Phases: 5: Broadway & Bleakley Ave



Port Cortland  
6: Rt 9A & Bleakley Ave

2023 Future without the Proposed Project  
Weekday AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	195	54	18	405	523	88
Future Volume (vph)	195	54	18	405	523	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.971					0.850
Flt Protected	0.962			0.998		
Satd. Flow (prot)	1781	0	0	1713	1801	1463
Flt Permitted	0.962			0.965		
Satd. Flow (perm)	1781	0	0	1657	1801	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	28					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.76	0.76	0.88	0.88	0.76	0.76
Heavy Vehicles (%)	3%	3%	3%	11%	9%	3%
Adj. Flow (vph)	257	71	20	460	688	116
Shared Lane Traffic (%)						
Lane Group Flow (vph)	328	0	0	480	688	116
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%



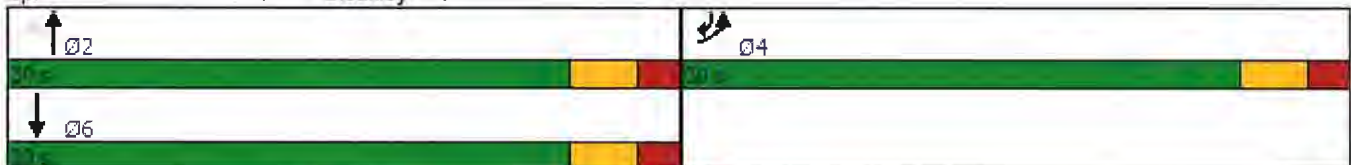
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	13.6			25.8	25.8	49.4
Actuated g/C Ratio	0.28			0.52	0.52	1.00
v/c Ratio	0.64			0.55	0.73	0.08
Control Delay	20.2			12.3	17.5	0.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	20.2			12.3	17.5	0.1
LOS	C			B	B	A
Approach Delay	20.2			12.3	15.0	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 49.4  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 15.3  
 Intersection Capacity Utilization 58.4%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 6: Rt 9A & Bleakley Ave





Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗		↖	↗	
Traffic Vol, veh/h	21	1	1	245	109	18
Future Vol, veh/h	21	1	1	245	109	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	82	82	81	81
Heavy Vehicles, %	75	3	3	20	37	75
Mvmt Flow	28	1	1	299	135	22

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	447	146	157	0	-	0
Stage 1	146	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	7.15	6.23	4.13	-	-	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	455	898	1417	-	-	-
Stage 1	730	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	455	898	1417	-	-	-
Mov Cap-2 Maneuver	455	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	611	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1417	-	455	898	-	-
HCM Lane V/C Ratio	0.001	-	0.062	0.001	-	-
HCM Control Delay (s)	7.5	0	13.4	9	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	2	264	125	18
Future Vol, veh/h	7	2	2	264	125	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	42	85	85	80	80
Heavy Vehicles, %	3	3	3	24	43	3
Mvmt Flow	17	5	2	311	156	23



















Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	483	168	179	0	-	0
Stage 1	168	-	-	-	-	-
Stage 2	315	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	541	874	1391	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	540	874	1391	-	-	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	738	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1391	-	590	-	-
HCM Lane V/C Ratio	0.002	-	0.036	-	-
HCM Control Delay (s)	7.6	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Port Cortland  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

2023 Future without the Proposed Project  
Weekday AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	43	40	378	50	0	4	0	426	93	432	79
Future Volume (vph)	0	43	40	378	50	0	4	0	426	93	432	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	12	12	11	13	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Flt		0.928						0.853	0.850		0.980	
Flt Protected				0.950				0.999			0.992	
Satd. Flow (prot)	0	3144	0	1646	1845	0	0	1378	1468	0	3342	0
Flt Permitted				0.679							0.794	
Satd. Flow (perm)	0	3144	0	1177	1845	0	0	1379	1468	0	2675	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		56									15	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		556			270			315			565	
Travel Time (s)		15.2			7.4			8.6			15.4	
Peak Hour Factor	0.72	0.72	0.72	0.76	0.76	0.76	0.84	0.84	0.84	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	3%	6%	3%	2%	3%	2%	8%	5%	5%	5%
Adj. Flow (vph)	0	60	56	497	66	0	5	0	507	103	480	88
Shared Lane Traffic (%)								49%				
Lane Group Flow (vph)	0	116	0	497	66	0	0	253	259	0	671	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1	1	2	
Detector Template		Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)		100		20	100		20	100	20	20	100	
Trailing Detector (ft)		0		0	0		0	0	0	0	0	
Detector 1 Position(ft)		0		0	0		0	0	0	0	0	
Detector 1 Size(ft)		6		20	6		20	6	20	20	6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		D.P+P	NA		custom	NA	custom	Perm	NA	

Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

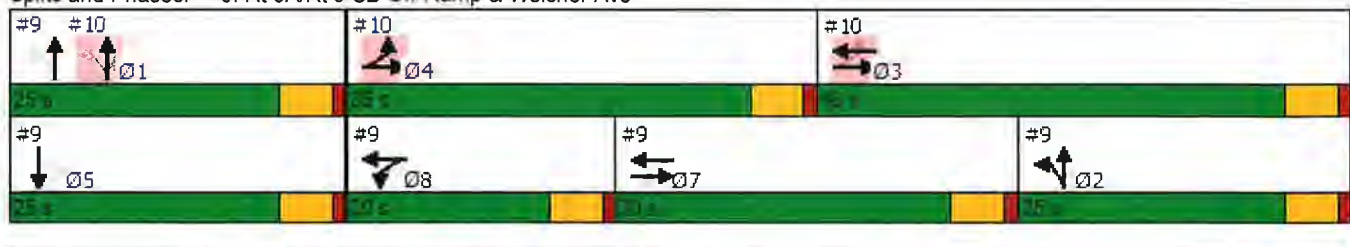
2023 Future without the Proposed Project  
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2			5	
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5	5	
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0	5.0	
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0	23.0	
Total Split (s)		30.0		20.0			25.0		25.0	25.0	25.0	
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%	25.0%	
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0	20.0	
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0	4.0	
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0					0.0		0.0	
Total Lost Time (s)		5.0		5.0					5.0		5.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0	3.0	
Recall Mode		None		None			Max		Max	Max	Max	
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		7.2		22.2	27.3		46.8	21.7			20.1	
Actuated g/C Ratio		0.09		0.26	0.32		0.56	0.26			0.24	
v/c Ratio		0.36		1.26	0.11		0.33	0.68			1.03	
Control Delay		24.2		173.1	37.7		11.7	38.5			77.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0			24.8	
Total Delay		24.2		173.1	37.7		11.7	38.5			102.1	
LOS		C		F	D		B	D			F	
Approach Delay		24.2			157.2		25.3				102.1	
Approach LOS		C			F		C				F	



















Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 84.1  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.26  
 Intersection Signal Delay: 92.8  
 Intersection Capacity Utilization 66.3%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service C

Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave



Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	343	219	0	0	345	126	84	0	79	0	0	0
Future Volume (vph)	343	219	0	0	345	126	84	0	79	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt					0.960				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1646	1613	0	0	3081	0	0	1719	1538	0	0	0
Flt Permitted	0.347							0.950				
Satd. Flow (perm)	601	1613	0	0	3081	0	0	1719	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					57				185			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.71	0.71	0.71	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	2%	2%	5%	5%	5%	5%	5%	2%	2%	2%
Adj. Flow (vph)	385	246	0	0	437	159	118	0	111	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	385	246	0	0	596	0	0	118	111	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			

Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				



Port Cortland  
10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

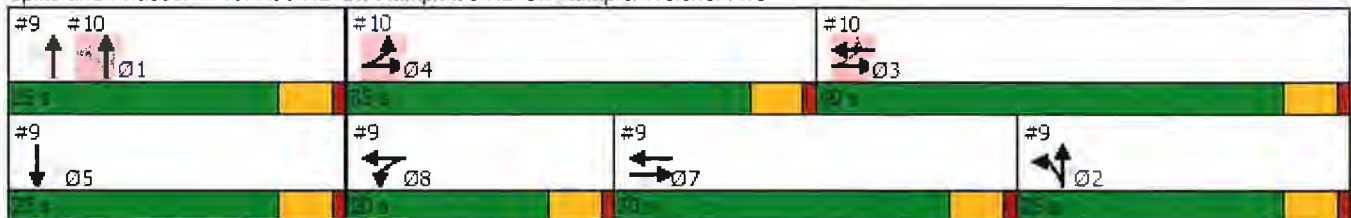
2023 Future without the Proposed Project  
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1		1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0		0.0	0.0	0.0			
Total Lost Time (s)	5.0				5.0		5.0	5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	49.0	54.0			32.1			20.1	20.1			
Actuated g/C Ratio	0.58	0.64			0.38			0.24	0.24			
v/c Ratio	0.69	0.24			0.49			0.29	0.22			
Control Delay	27.6	6.1			20.4			29.7	1.5			
Queue Delay	0.3	0.7			0.5			2.7	0.0			
Total Delay	27.9	6.8			20.9			32.4	1.5			
LOS	C	A			C			C	A			
Approach Delay		19.6			20.9			17.4				
Approach LOS		B			C			B				

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 84.1  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.26  
 Intersection Signal Delay: 19.8  
 Intersection Capacity Utilization 49.7%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕					↕	↕↕		↕	↕↕	
Traffic Vol, veh/h	4	2	11	0	0	0	7	426	166	250	601	1
Future Vol, veh/h	4	2	11	0	0	0	7	426	166	250	601	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	92	92	92	81	81	81	82	82	82
Heavy Vehicles, %	3	5	3	2	2	2	3	8	7	5	7	3
Mvmt Flow	5	3	15	0	0	0	9	526	205	305	733	1













Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1625	2093	367	734	0	0	731	0	0
Stage 1	1344	1344	-	-	-	-	-	-	-
Stage 2	281	749	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	92	50	627	860	-	-	850	-	-
Stage 1	206	213	-	-	-	-	-	-	-
Stage 2	738	410	-	-	-	-	-	-	-
Platoon blocked, %									
Mov Cap-1 Maneuver	58	0	627	860	-	-	850	-	-
Mov Cap-2 Maneuver	58	0	-	-	-	-	-	-	-
Stage 1	204	0	-	-	-	-	-	-	-
Stage 2	473	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.9	0.1	3.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	860	-	-	173	850	-	-
HCM Lane V/C Ratio	0.01	-	-	0.131	0.359	-	-
HCM Control Delay (s)	9.2	-	-	28.9	11.6	-	-
HCM Lane LOS	A	-	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	1.6	-	-

Port Cortland  
12: Rt 6/9/202 & Bear Mtn Pkwy

2023 Future without the Proposed Project  
Weekday AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	207	1541	874	504	568	307
Future Volume (vph)	207	1541	874	504	568	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Fr't		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3224	1845	1783	1568
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3224	1845	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						24
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.94	0.94	0.86	0.86	0.89	0.89
Heavy Vehicles (%)	3%	3%	5%	3%	3%	3%
Adj. Flow (vph)	220	1639	1016	586	638	345
Shared Lane Traffic (%)						
Lane Group Flow (vph)	220	1639	1016	586	638	345
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov

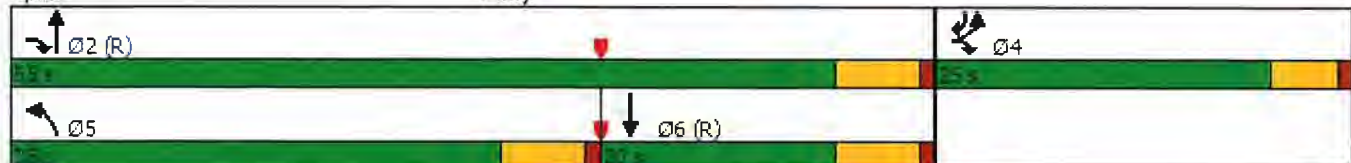


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	20.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	28.1	49.0	14.9	40.9
Actuated g/C Ratio	0.25	1.00	0.35	0.61	0.19	0.51
v/c Ratio	0.50	1.01	0.90	0.52	1.93	0.42
Control Delay	30.5	29.3	36.3	10.9	452.6	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	29.3	36.3	10.9	452.6	13.6
LOS	C	C	D	B	F	B
Approach Delay	29.4			27.0	298.5	
Approach LOS	C			C	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.93  
 Intersection Signal Delay: 88.1  
 Intersection Capacity Utilization 135.3%  
 Analysis Period (min) 15  
 ! Phase conflict between lane groups.

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy



Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Vol, veh/h	86	16	33	294	14	33
Future Vol, veh/h	86	16	33	294	14	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	92	92	59	59
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	95	18	36	320	24	56

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	300	196	0	0	356	0
Stage 1	196	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	685	838	-	-	1186	-
Stage 1	830	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	671	838	-	-	1186	-
Mov Cap-2 Maneuver	671	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	2.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	693	1186
HCM Lane V/C Ratio	-	-	0.162	0.02
HCM Control Delay (s)	-	-	11.2	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

**Intersection**

Int Delay, s/veh 9.6

**Movement** EBL EBT WBT WBR SBL SBR

Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	38	81	323	122	251	4
Future Vol, veh/h	38	81	323	122	251	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	91	91	87	87
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	48	103	355	134	289	5

**Major/Minor** Major1 Major2 Minor2

Conflicting Flow All	489	0	-	0	621	422
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1059	-	-	-	446	625
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1059	-	-	-	425	625
Mov Cap-2 Maneuver	-	-	-	-	425	-
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	827	-

**Approach** EB WB SB

HCM Control Delay, s	2.7	0	29.3
HCM LOS			D

**Minor Lane/Major Mvmt** EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h)	1059	-	-	-	425	625
HCM Lane V/C Ratio	0.045	-	-	-	0.679	0.007
HCM Control Delay (s)	8.6	0	-	-	29.6	10.8
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.1	-	-	-	4.9	0

Intersection												
Int Delay, s/veh	9.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↗		↕	
Traffic Vol, veh/h	1	1	1	241	1	6	1	6	275	7	4	1
Future Vol, veh/h	1	1	1	241	1	6	1	6	275	7	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	82	82	82	86	86	86	67	67	67
Heavy Vehicles, %	2	3	3	37	3	2	3	2	32	2	2	2
Mvmt Flow	2	2	2	294	1	7	1	7	320	10	6	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	8	0	0	4	0	0	603	603	3	764	601	5
Stage 1	-	-	-	-	-	-	7	7	-	593	593	-
Stage 2	-	-	-	-	-	-	596	596	-	171	8	-
Critical Hdwy	4.12	-	-	4.47	-	-	7.13	6.52	6.52	5.4	5.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.533	-	-	3.527	4.018	3.588	3.518	4.018	3.318
Pot Cap-1 Maneuver	1612	-	-	1416	-	-	409	413	999	462	491	1078
Stage 1	-	-	-	-	-	-	1012	890	-	492	493	-
Stage 2	-	-	-	-	-	-	488	492	-	831	889	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1612	-	-	1416	-	-	339	326	999	259	388	1078
Mov Cap-2 Maneuver	-	-	-	-	-	-	339	326	-	259	388	-
Stage 1	-	-	-	-	-	-	1011	889	-	492	390	-
Stage 2	-	-	-	-	-	-	380	389	-	560	888	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	8	10.4	17.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	328	999	1612	-	-	1416	-	-	314
HCM Lane V/C Ratio	0.025	0.32	0.001	-	-	0.208	-	-	0.057
HCM Control Delay (s)	16.3	10.3	7.2	0	-	8.2	0	-	17.2
HCM Lane LOS	C	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	1.4	0	-	-	0.8	-	-	0.2



Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	1			1		
Traffic Vol, veh/h	247	0	133	0	0	0
Future Vol, veh/h	247	0	133	0	0	0
Peak Hour Factor	0.92	0.92	0.78	0.78	0.92	0.92
Heavy Vehicles, %	12	2	17	5	2	2
Mvmt Flow	268	0	171	0	0	0
Number of Lanes	1	0	0	1	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	10.4	9.7
HCM LOS	B	A

Lane	NBLn1	EBLn1
Vol Left, %	100%	100%
Vol Thru, %	0%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	133	247
LT Vol	133	247
Through Vol	0	0
RT Vol	0	0
Lane Flow Rate	171	268
Geometry Grp	1	1
Degree of Util (X)	0.24	0.355
Departure Headway (Hd)	5.066	4.758
Convergence, Y/N	Yes	Yes
Cap	709	757
Service Time	3.09	2.777
HCM Lane V/C Ratio	0.241	0.354
HCM Control Delay	9.7	10.4
HCM Lane LOS	A	B
HCM 95th-tile Q	0.9	1.6

Port Cortland  
4: Lower S St & Louisa St

2023 Future without the Proposed Project  
Weekday PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	321	13	22	251	28	54	50	17	37	22	44
Future Volume (vph)	51	321	13	22	251	28	54	50	17	37	22	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.986				0.850			0.850
Flt Protected		0.993			0.996			0.975			0.970	
Satd. Flow (prot)	0	3097	0	0	3025	0	0	1799	1463	0	1730	1516
Flt Permitted		0.861			0.909			0.847			0.821	
Satd. Flow (perm)	0	2685	0	0	2761	0	0	1562	1463	0	1464	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			26				44			46
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.93	0.93	0.93	0.78	0.78	0.78	0.91	0.91	0.91	0.96	0.96	0.96
Heavy Vehicles (%)	3%	13%	3%	3%	20%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	55	345	14	28	322	36	59	55	19	39	23	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	414	0	0	386	0	0	114	19	0	62	46
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		20.0			20.0			20.0	20.0		20.0	20.0

Port Cortlandt  
4: Lower S St & Louisa St

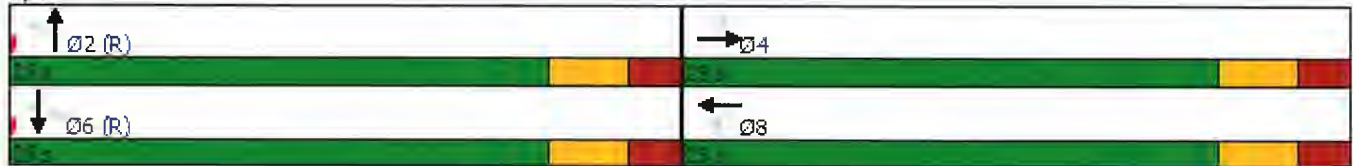
2023 Future without the Proposed Project  
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.38			0.34			0.18	0.03		0.11	0.07
Control Delay		11.7			10.8			10.7	1.7		10.1	4.0
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		11.7			10.8			10.7	1.7		10.1	4.0
LOS		B			B			B	A		B	A
Approach Delay		11.7			10.8			9.4			7.5	
Approach LOS		B			B			A			A	

Intersection Summary










Area Type:	Other
Cycle Length:	50
Actuated Cycle Length:	50
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	50
Control Type:	Pretimed
Maximum v/c Ratio:	0.38
Intersection Signal Delay:	10.6
Intersection Capacity Utilization	44.0%
Analysis Period (min)	15
Intersection LOS:	B
ICU Level of Service	A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortlandt  
5: Broadway & Bleakley Ave

2023 Future without the Proposed Project  
Weekday PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	46	33	117	114	22	107
Future Volume (vph)	46	33	117	114	22	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.944		0.933			
Flt Protected	0.972					0.992
Satd. Flow (prot)	1805	0	1524	0	0	1343
Flt Permitted	0.972					0.931
Satd. Flow (perm)	1805	0	1524	0	0	1260
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	38					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.86	0.86	0.96	0.96	0.73	0.73
Heavy Vehicles (%)	3%	3%	37%	3%	3%	48%
Adj. Flow (vph)	53	38	122	119	30	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	241	0	0	177
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.15		0.32			0.28
Control Delay	10.0		10.4			10.3

Port Cortlandt  
5: Broadway & Bleakley Ave

2023 Future without the Proposed Project  
Weekday PM Peak Hour

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay	0.0		0.0			0.0
Total Delay	10.0		10.4			10.3
LOS	A		B			B
Approach Delay	10.0		10.4			10.3
Approach LOS	A		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.32  
 Intersection Signal Delay: 10.3  
 Intersection Capacity Utilization 37.0%  
 Analysis Period (min) 15











Intersection LOS: B  
ICU Level of Service A

Splits and Phases: 5: Broadway & Bleakley Ave



Port Cortland  
6: Rt 9A & Bleakley Ave

2023 Future without the Proposed Project  
Weekday PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	97	21	17	651	622	51
Future Volume (vph)	97	21	17	651	622	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976					0.850
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1786	0	0	1809	1852	1463
Flt Permitted	0.960			0.980		
Satd. Flow (perm)	1786	0	0	1774	1852	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	22					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.80	0.80	0.83	0.83	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	5%	6%	3%
Adj. Flow (vph)	121	26	20	784	684	56
Shared Lane Traffic (%)						
Lane Group Flow (vph)	147	0	0	804	684	56
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	8.5			30.5	30.5	45.9
Actuated g/C Ratio	0.19			0.66	0.66	1.00
v/c Ratio	0.42			0.68	0.56	0.04
Control Delay	17.4			12.7	8.6	0.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	17.4			12.7	8.6	0.0
LOS	B			B	A	A
Approach Delay	17.4			12.7	7.9	
Approach LOS	B			B	A	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 45.9  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay: 11.0  
 Intersection Capacity Utilization 62.9%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 6: Rt 9A & Bleakley Ave



Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	1	1	210	131	13
Future Vol, veh/h	14	1	1	210	131	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	94	94	77	77
Heavy Vehicles, %	75	3	3	16	31	75
Mvmt Flow	22	2	1	223	170	17

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	404	179	187	0	0
Stage 1	179	-	-	-	-
Stage 2	225	-	-	-	-
Critical Hdwy	7.15	6.23	4.13	-	-
Critical Hdwy Stg 1	6.15	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-
Follow-up Hdwy	4.175	3.327	2.227	-	-
Pot Cap-1 Maneuver	484	861	1381	-	-
Stage 1	703	-	-	-	-
Stage 2	667	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	484	861	1381	-	-
Mov Cap-2 Maneuver	484	-	-	-	-
Stage 1	702	-	-	-	-
Stage 2	667	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1381	-	484	861	-	-
HCM Lane V/C Ratio	0.001	-	0.046	0.002	-	-
HCM Control Delay (s)	7.6	0	12.8	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-



Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑		↑
Traffic Vol, veh/h	11	1	4	220	143	10
Future Vol, veh/h	11	1	4	220	143	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	98	98	79	79
Heavy Vehicles, %	3	3	3	19	36	3
Mvmt Flow	15	1	4	224	181	13

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	420	188	194	0	0
Stage 1	188	-	-	-	-
Stage 2	232	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-
Pot Cap-1 Maneuver	588	851	1373	-	-
Stage 1	842	-	-	-	-
Stage 2	804	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	586	851	1373	-	-
Mov Cap-2 Maneuver	586	-	-	-	-
Stage 1	839	-	-	-	-
Stage 2	804	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1373	-	602	-	-
HCM Lane V/C Ratio	0.003	-	0.027	-	-
HCM Control Delay (s)	7.6	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

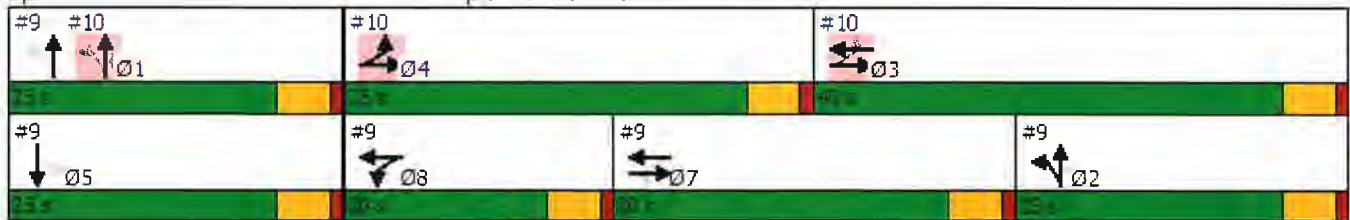
2023 Future without the Proposed Project  
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2				5
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5		5
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0		5.0
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0		23.0
Total Split (s)		30.0		20.0			25.0		25.0	25.0		25.0
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%		25.0%
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0		20.0
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0		4.0
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0					0.0			0.0
Total Lost Time (s)		5.0		5.0					5.0			5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0		3.0
Recall Mode		None		None			Max		Max	Max		Max
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		10.2		24.8	29.9		47.0		21.9			20.1
Actuated g/C Ratio		0.12		0.29	0.34		0.54		0.25			0.23
v/c Ratio		0.51		0.87	0.14		0.51		1.06			1.10
Control Delay		34.1		61.0	33.0		16.2		97.2			104.1
Queue Delay		0.0		0.0	0.0		0.8		12.7			4.8
Total Delay		34.1		61.0	33.0		17.0		109.9			108.9
LOS		C		E	C		B		F			F
Approach Delay		34.1			55.4		64.0					108.9
Approach LOS		C			E		E					F


















Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 86.9  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay: 71.7  
 Intersection Capacity Utilization 67.5%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service C

Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave



Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
<b>Intersection Summary</b>			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	463	389	0	0	288	144	121	0	174	0	0	0
Future Volume (vph)	463	389	0	0	288	144	121	0	174	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt					0.950				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1678	1644	0	0	3068	0	0	1736	1538	0	0	0
Flt Permitted	0.370							0.950				
Satd. Flow (perm)	653	1644	0	0	3068	0	0	1736	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					95				226			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.77	0.77	0.77	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	2%	2%	4%	5%	4%	5%	5%	2%	2%	2%
Adj. Flow (vph)	551	463	0	0	343	171	157	0	226	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	551	463	0	0	514	0	0	157	226	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			

Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1		1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0		0.0	0.0	0.0			
Total Lost Time (s)	5.0				5.0		5.0	5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	51.8	56.8			27.5		20.1	20.1				
Actuated g/C Ratio	0.60	0.65			0.32		0.23	0.23				
v/c Ratio	0.82	0.43			0.50		0.39	0.43				
Control Delay	32.4	8.3			22.1		33.2	7.3				
Queue Delay	21.6	0.7			0.1		3.2	0.0				
Total Delay	53.9	9.0			22.2		36.4	7.3				
LOS	D	A			C		D	A				
Approach Delay		33.4			22.2		19.2					
Approach LOS		C			C		B					

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 86.9

Natural Cycle: 115

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 27.6

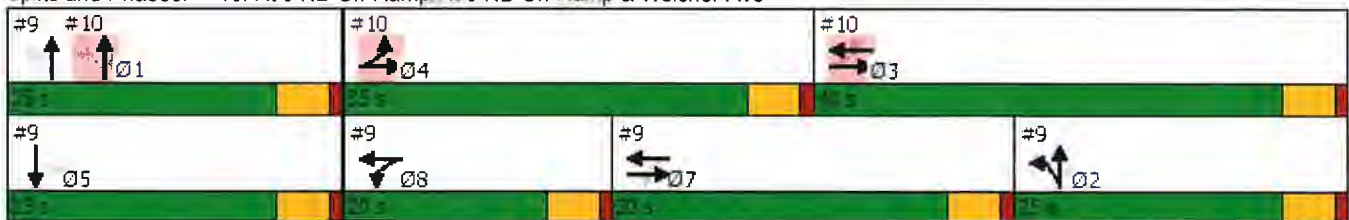
Intersection LOS: C

Intersection Capacity Utilization 57.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
<b>Intersection Summary</b>				



Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕					↕	↕↕		↕	↕↕	
Traffic Vol, veh/h	3	1	3	0	0	0	6	668	75	50	671	1
Future Vol, veh/h	3	1	3	0	0	0	6	668	75	50	671	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	92	92	92	86	86	86	90	90	90
Heavy Vehicles, %	3	5	3	2	2	2	3	5	5	5	5	3
Mvmt Flow	5	2	5	0	0	0	7	777	87	56	746	1

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1262	1737	374	747	0	0	864	0	0
Stage 1	859	859	-	-	-	-	-	-	-
Stage 2	403	878	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	161	84	621	851	-	-	756	-	-
Stage 1	373	364	-	-	-	-	-	-	-
Stage 2	641	357	-	-	-	-	-	-	-
Platoon blocked, %									
Mov Cap-1 Maneuver	148	0	621	851	-	-	756	-	-
Mov Cap-2 Maneuver	148	0	-	-	-	-	-	-	-
Stage 1	370	0	-	-	-	-	-	-	-
Stage 2	594	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	0.1	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	851	-	-	239	756	-	-
HCM Lane V/C Ratio	0.008	-	-	0.046	0.073	-	-
HCM Control Delay (s)	9.3	-	-	20.8	10.1	-	-
HCM Lane LOS	A	-	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	-	-

Port Cortlandt  
12: Rt 6/9/202 & Bear Mtn Pkwy

2023 Future without the Proposed Project  
Weekday PM Peak Hour

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	390	1269	1274	565	557	112
Future Volume (vph)	390	1269	1274	565	557	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3286	1845	1783	1568
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3286	1845	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						6
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.90	0.90	0.93	0.93	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	433	1410	1370	608	612	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	433	1410	1370	608	612	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov

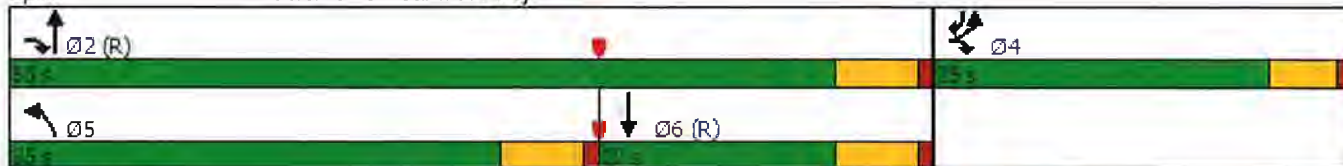


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	20.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	29.0	49.0	14.0	40.0
Actuated g/C Ratio	0.25	1.00	0.36	0.61	0.18	0.50
v/c Ratio	0.99	0.87	1.15	0.54	1.96	0.16
Control Delay	72.9	7.7	104.2	11.2	467.7	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	7.7	104.2	11.2	467.7	11.0
LOS	E	A	F	B	F	B
Approach Delay	23.0			75.6	391.3	
Approach LOS	C			E	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.96  
 Intersection Signal Delay: 105.2  
 Intersection LOS: F  
 Intersection Capacity Utilization 117.9%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ! Phase conflict between lane groups.

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy



Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	96	15	24	117	13	24
Future Vol, veh/h	96	15	24	117	13	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	87	87	65	65
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	107	17	28	134	20	37

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	172	95	0	0	162
Stage 1	95	-	-	-	-
Stage 2	77	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	811	953	-	-	1399
Stage 1	921	-	-	-	-
Stage 2	938	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	799	953	-	-	1399
Mov Cap-2 Maneuver	799	-	-	-	-
Stage 1	921	-	-	-	-
Stage 2	924	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	817	1399
HCM Lane V/C Ratio	-	-	0.151	0.014
HCM Control Delay (s)	-	-	10.2	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0

**Intersection**

Int Delay, s/veh 7.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	18	102	131	114	245	10
Future Vol, veh/h	18	102	131	114	245	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	90	90	79	79
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	21	120	146	127	310	13

**Major/Minor**

	Major1	Major2	Minor2		
Conflicting Flow All	273	0	-	0	372 210
Stage 1	-	-	-	-	210 -
Stage 2	-	-	-	-	162 -
Critical Hdwy	4.15	-	-	-	6.45 6.25
Critical Hdwy Stg 1	-	-	-	-	5.45 -
Critical Hdwy Stg 2	-	-	-	-	5.45 -
Follow-up Hdwy	2.245	-	-	-	3.545 3.345
Pot Cap-1 Maneuver	1273	-	-	-	623 823
Stage 1	-	-	-	-	818 -
Stage 2	-	-	-	-	860 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1273	-	-	-	612 823
Mov Cap-2 Maneuver	-	-	-	-	612 -
Stage 1	-	-	-	-	803 -
Stage 2	-	-	-	-	860 -

**Approach**

	EB	WB	SB
HCM Control Delay, s	1.2	0	16.5
HCM LOS			C

**Minor Lane/Major Mvmt**

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1273	-	-	-	612	823
HCM Lane V/C Ratio	0.017	-	-	-	0.507	0.015
HCM Control Delay (s)	7.9	0	-	-	16.8	9.4
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	-	-	-	2.9	0

Intersection												
Int Delay, s/veh	9.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	2	2	278	2	9	2	12	271	9	5	1
Future Vol, veh/h	1	2	2	278	2	9	2	12	271	9	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	91	91	91	81	81	100	50	50	50
Heavy Vehicles, %	2	3	3	29	3	2	3	2	25	2	2	2
Mvmt Flow	2	4	4	305	2	10	2	15	271	18	10	2

Major/Minor	Major1	Major2	Minor1	Minor2							
Conflicting Flow All	12	0	0	8	0	633	632	6	770	629	7
Stage 1	-	-	-	-	-	10	10	-	617	617	-
Stage 2	-	-	-	-	-	623	622	-	153	12	-
Critical Hdwy	4.12	-	-	4.39	-	7.13	6.52	6.45	5.4	5.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.461	-	3.527	4.018	3.525	3.518	4.018	3.318
Pot Cap-1 Maneuver	1607	-	-	1453	-	391	398	1013	459	477	1075
Stage 1	-	-	-	-	-	1008	887	-	477	481	-
Stage 2	-	-	-	-	-	472	479	-	849	886	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1607	-	-	1453	-	320	313	1013	271	375	1075
Mov Cap-2 Maneuver	-	-	-	-	-	320	313	-	271	375	-
Stage 1	-	-	-	-	-	1007	886	-	477	379	-
Stage 2	-	-	-	-	-	361	377	-	611	885	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	7.8	10.2	17.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	314	1013	1607	-	-	1453	-	-	316
HCM Lane V/C Ratio	0.055	0.268	0.001	-	-	0.21	-	-	0.095
HCM Control Delay (s)	17.1	9.8	7.2	0	-	8.1	0	-	17.6
HCM Lane LOS	C	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	1.1	0	-	-	0.8	-	-	0.3

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	1			1		
Traffic Vol, veh/h	199	0	138	9	0	0
Future Vol, veh/h	199	0	138	9	0	0
Peak Hour Factor	0.91	0.91	0.85	0.85	0.92	0.92
Heavy Vehicles, %	10	2	14	5	2	2
Mvmt Flow	219	0	162	11	0	0
Number of Lanes	1	0	0	1	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	9.6	9.4
HCM LOS	A	A

Lane	NBLn1	EBLn1
Vol Left, %	94%	100%
Vol Thru, %	6%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	147	199
LT Vol	138	199
Through Vol	9	0
RT Vol	0	0
Lane Flow Rate	173	219
Geometry Grp	1	1
Degree of Util (X)	0.234	0.286
Departure Headway (Hd)	4.874	4.716
Convergence, Y/N	Yes	Yes
Cap	738	763
Service Time	2.89	2.731
HCM Lane V/C Ratio	0.234	0.287
HCM Control Delay	9.4	9.6
HCM Lane LOS	A	A
HCM 95th-tile Q	0.9	1.2

Port Cortlandt  
4: Lower S St & Louisa St













2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	345	10	10	343	14	22	17	29	36	10	24
Future Volume (vph)	29	345	10	10	343	14	22	17	29	36	10	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.994				0.850			0.850
Flt Protected		0.996			0.999			0.972			0.962	
Satd. Flow (prot)	0	3116	0	0	3139	0	0	1793	1463	0	1715	1516
Flt Permitted		0.906			0.942			0.874			0.817	
Satd. Flow (perm)	0	2835	0	0	2960	0	0	1612	1463	0	1457	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			10				44			44
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.97	0.97	0.97	0.90	0.90	0.90	0.89	0.89	0.89	0.83	0.83	0.83
Heavy Vehicles (%)	3%	12%	3%	3%	15%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	30	356	10	11	381	16	25	19	33	43	12	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	408	0	0	44	33	0	55	29
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2		2		6
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		20.0			20.0			20.0	20.0		20.0	20.0



Port Cortland  
4: Lower S St & Louisa St

2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

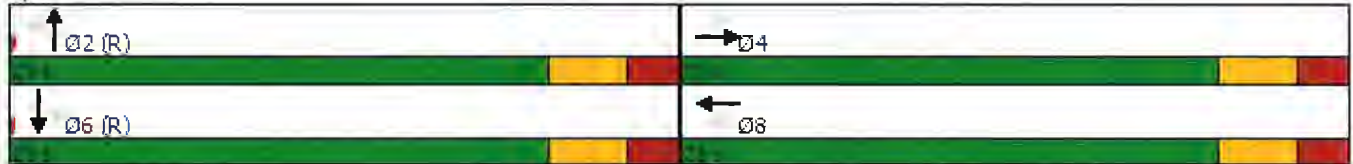
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.35			0.34			0.07	0.05		0.09	0.05
Control Delay		11.4			11.2			9.7	3.3		10.0	2.9
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		11.4			11.2			9.7	3.3		10.0	2.9
LOS		B			B			A	A		A	A
Approach Delay		11.4			11.2			7.0			7.5	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.35  
 Intersection Signal Delay: 10.6  
 Intersection Capacity Utilization 42.6%  
 Analysis Period (min) 15










Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortland  
5: Broadway & Bleakley Ave

2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	37	131	74	19	130
Future Volume (vph)	24	37	131	74	19	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't	0.918		0.951			
Flt Protected	0.981					0.994
Satd. Flow (prot)	1772	0	1529	0	0	1404
Flt Permitted	0.981					0.954
Satd. Flow (perm)	1772	0	1529	0	0	1348
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	51					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.73	0.73	0.94	0.94	0.81	0.81
Heavy Vehicles (%)	3%	3%	33%	3%	3%	39%
Adj. Flow (vph)	33	51	139	79	23	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	218	0	0	183
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.13		0.29			0.27
Control Delay	7.9		10.0			10.1

Port Cortlandt  
5: Broadway & Bleakley Ave

2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

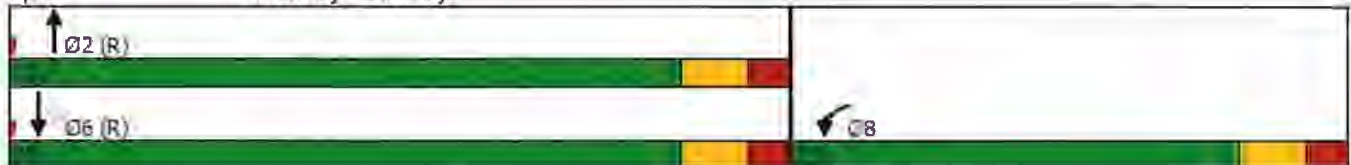
	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay	0.0		0.0			0.0
Total Delay	7.9		10.0			10.1
LOS	A		B			B
Approach Delay	7.9		10.0			10.1
Approach LOS	A		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.29  
 Intersection Signal Delay: 9.7  
 Intersection Capacity Utilization 35.4%  
 Analysis Period (min) 15











Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 5: Broadway & Bleakley Ave



Port Cortland  
6: Rt 9A & Bleakley Ave

2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	95	10	459	614	39
Future Volume (vph)	74	95	10	459	614	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.924					0.850
Flt Protected	0.979			0.999		
Satd. Flow (prot)	1724	0	0	1759	1852	1463
Flt Permitted	0.979			0.986		
Satd. Flow (perm)	1724	0	0	1736	1852	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	103					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.92	0.92	0.94	0.94	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	8%	6%	3%
Adj. Flow (vph)	80	103	11	488	675	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	183	0	0	499	675	43
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	7.8			29.9	29.9	44.7
Actuated g/C Ratio	0.17			0.67	0.67	1.00
v/c Ratio	0.47			0.43	0.54	0.03
Control Delay	12.1			6.8	8.1	0.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	12.1			6.8	8.1	0.0
LOS	B			A	A	A
Approach Delay	12.1			6.8	7.6	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 44.7  
 Natural Cycle: 55  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 7.9  
 Intersection Capacity Utilization 50.6%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 6: Rt 9A & Bleakley Ave



**Intersection**

Int Delay, s/veh	0.2					
<b>Movement</b>	<b>EBL</b>	<b>EBR</b>	<b>NBL</b>	<b>NBT</b>	<b>SBT</b>	<b>SBR</b>
Lane Configurations	↖	↗		↕	↕	
Traffic Vol, veh/h	3	1	1	195	133	12
Future Vol, veh/h	3	1	1	195	133	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	89	89	71	71
Heavy Vehicles, %	75	3	3	21	32	75
Mvmt Flow	6	2	1	219	187	17

<b>Major/Minor</b>	<b>Minor2</b>	<b>Major1</b>		<b>Major2</b>	
Conflicting Flow All	417	196	204	0	0
Stage 1	196	-	-	-	-
Stage 2	221	-	-	-	-
Critical Hdwy	7.15	6.23	4.13	-	-
Critical Hdwy Stg 1	6.15	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-
Follow-up Hdwy	4.175	3.327	2.227	-	-
Pot Cap-1 Maneuver	475	843	1362	-	-
Stage 1	690	-	-	-	-
Stage 2	670	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	475	843	1362	-	-
Mov Cap-2 Maneuver	475	-	-	-	-
Stage 1	689	-	-	-	-
Stage 2	670	-	-	-	-

<b>Approach</b>	<b>EB</b>	<b>NB</b>	<b>SB</b>
HCM Control Delay, s	11.8	0	0
HCM LOS	B		

<b>Minor Lane/Major Mvmt</b>	<b>NBL</b>	<b>NBT</b>	<b>EBLn1</b>	<b>EBLn2</b>	<b>SBT</b>	<b>SBR</b>
Capacity (veh/h)	1362	-	475	843	-	-
HCM Lane V/C Ratio	0.001	-	0.013	0.002	-	-
HCM Control Delay (s)	7.6	0	12.7	9.3	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Port Cortlandt  
8: Broadway & Entergy Driveway

2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	9	1	2	196	145	9
Future Vol, veh/h	9	1	2	196	145	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	90	90	75	75
Heavy Vehicles, %	3	3	3	22	35	3
Mvmt Flow	14	2	2	218	193	12













Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	421	199	205	0	-
Stage 1	199	-	-	-	-
Stage 2	222	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-
Pot Cap-1 Maneuver	587	839	1360	-	-
Stage 1	832	-	-	-	-
Stage 2	813	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	586	839	1360	-	-
Mov Cap-2 Maneuver	586	-	-	-	-
Stage 1	830	-	-	-	-
Stage 2	813	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1360	-	604	-	-
HCM Lane V/C Ratio	0.002	-	0.026	-	-
HCM Control Delay (s)	7.7	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Port Cortland  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑			↕	↗		↑↑	
Traffic Volume (vph)	0	94	80	273	162	0	70	0	394	74	362	53
Future Volume (vph)	0	94	80	273	162	0	70	0	394	74	362	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	12	12	11	13	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Flt Protected		0.931		0.950				0.896	0.850		0.984	
Satd. Flow (prot)	0	3154	0	1646	1845	0	0	1447	1468	0	3333	0
Flt Permitted				0.622				0.803			0.807	
Satd. Flow (perm)	0	3154	0	1078	1845	0	0	1179	1468	0	2711	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		95									12	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		556			270			315			565	
Travel Time (s)		15.2			7.4			8.6			15.4	
Peak Hour Factor	0.84	0.84	0.84	0.94	0.94	0.94	0.95	0.95	0.95	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	3%	6%	3%	2%	3%	2%	8%	5%	6%	5%
Adj. Flow (vph)	0	112	95	290	172	0	74	0	415	79	385	56
Shared Lane Traffic (%)									40%			
Lane Group Flow (vph)	0	207	0	290	172	0	0	240	249	0	520	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1	1	2	
Detector Template		Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)		100		20	100		20	100	20	20	100	
Trailing Detector (ft)		0		0	0		0	0	0	0	0	
Detector 1 Position(ft)		0		0	0		0	0	0	0	0	
Detector 1 Size(ft)		6		20	6		20	6	20	20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		D.P+P	NA		custom	NA	custom	Perm	NA	



Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

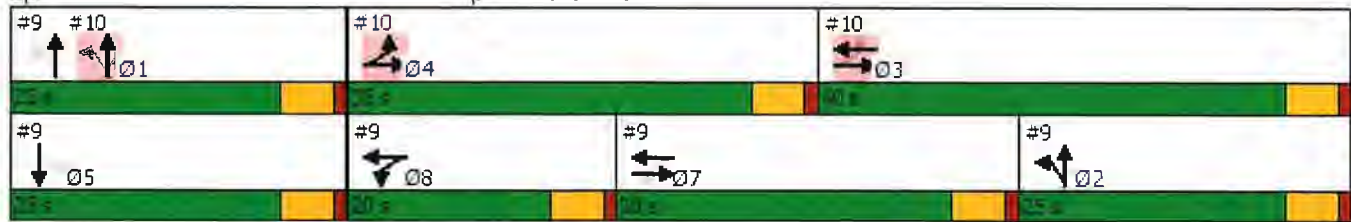
2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2		5		5
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5		5
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0		5.0
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0		23.0
Total Split (s)		30.0		20.0			25.0		25.0	25.0		25.0
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%		25.0%
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0		20.0
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0		4.0
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0					0.0			0.0
Total Lost Time (s)		5.0		5.0					5.0			5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0		3.0
Recall Mode		None		None			Max		Max	Max		Max
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		9.0		23.2	28.2		40.1		20.0			20.0
Actuated g/C Ratio		0.11		0.28	0.34		0.48		0.24			0.24
v/c Ratio		0.49		0.73	0.28		0.38		0.71			0.79
Control Delay		23.0		51.6	35.7		13.6		42.6			39.7
Queue Delay		0.0		0.0	0.2		0.0		0.0			0.0
Total Delay		23.0		51.6	35.9		13.6		42.6			39.7
LOS		C		D	D		B		D			D
Approach Delay		23.0			45.7		28.4					39.7
Approach LOS		C			D		C					D


















Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 83.3  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 36.0  
 Intersection Capacity Utilization 62.8%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service B

Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave



Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	278	0	0	344	80	92	0	80	0	0	0
Future Volume (vph)	284	278	0	0	344	80	92	0	80	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt					0.972				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1662	1629	0	0	3143	0	0	1752	1538	0	0	0
Flt Permitted	0.436							0.950				
Satd. Flow (perm)	763	1629	0	0	3143	0	0	1752	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					31				185			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.88	0.88	0.88	0.90	0.90	0.90	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	4%	5%	3%	5%	5%	2%	2%	2%
Adj. Flow (vph)	299	293	0	0	391	91	102	0	89	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	299	293	0	0	482	0	0	102	89	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			

Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				

Port Cortland  
10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

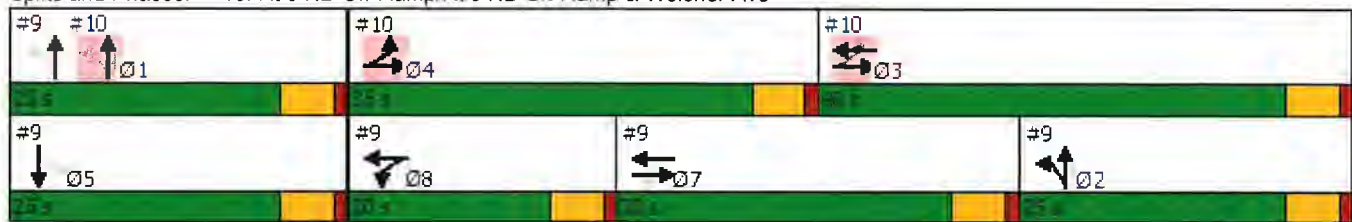
2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1		1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0			0.0	0.0			
Total Lost Time (s)	5.0				5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	48.2	53.2			34.7			20.0	20.0			
Actuated g/C Ratio	0.58	0.64			0.42			0.24	0.24			
v/c Ratio	0.51	0.28			0.36			0.24	0.17			
Control Delay	15.4	6.9			17.0			28.6	0.8			
Queue Delay	0.0	0.8			0.0			0.2	0.0			
Total Delay	15.5	7.7			17.0			28.8	0.8			
LOS	B	A			B			C	A			
Approach Delay		11.6			17.0			15.7				
Approach LOS		B			B			B				

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 83.3  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 14.3  
 Intersection Capacity Utilization 45.4%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effot Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
<b>Intersection Summary</b>				

Port Cortlandt  
11: Rt 9A & Belock Ave/Rt 9 SB On-Ramp

2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕					↕	↕		↕	↕	
Traffic Vol, veh/h	5	2	3	0	0	0	3	459	70	63	650	2
Future Vol, veh/h	5	2	3	0	0	0	3	459	70	63	650	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	92	92	92	97	97	97	93	93	93
Heavy Vehicles, %	3	5	3	2	2	2	3	7	7	5	5	3
Mvmt Flow	13	5	8	0	0	0	3	473	72	68	699	2

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1079	1387	351	701	0	0	545	0	0
Stage 1	836	836	-	-	-	-	-	-	-
Stage 2	243	551	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	211	138	642	885	-	-	1000	-	-
Stage 1	383	374	-	-	-	-	-	-	-
Stage 2	772	506	-	-	-	-	-	-	-
Platoon blocked, %									
Mov Cap-1 Maneuver	196	0	642	885	-	-	1000	-	-
Mov Cap-2 Maneuver	196	0	-	-	-	-	-	-	-
Stage 1	382	0	-	-	-	-	-	-	-
Stage 2	720	0	-	-	-	-	-	-	-














Approach	EB	NB	SB
HCM Control Delay, s	20.1	0.1	0.8
HCM LOS	C		







Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	885	-	-	265	1000	-	-
HCM Lane V/C Ratio	0.003	-	-	0.099	0.068	-	-
HCM Control Delay (s)	9.1	-	-	20.1	8.9	-	-
HCM Lane LOS	A	-	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	-	-



Port Cortlandt  
12: Rt 6/9/202 & Bear Mtn Pkwy

2023 Future without the Proposed Project  
Saturday Midday (Weekend) Peak Hour

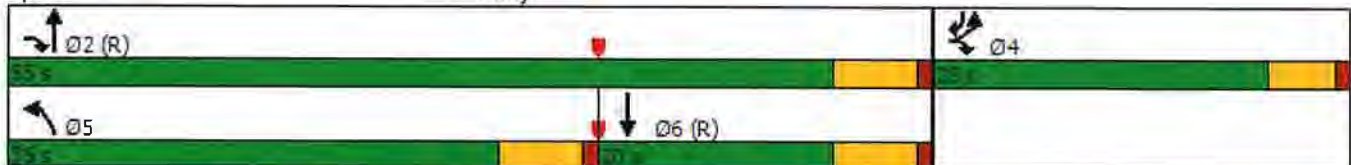
						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			 			
Traffic Volume (vph)	400	1058	1461	452	445	366
Future Volume (vph)	400	1058	1461	452	445	366
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3319	1863	1783	1568
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3319	1863	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						2
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.93	0.93	0.88	0.88	0.95	0.95
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	430	1138	1660	514	468	385
Shared Lane Traffic (%)						
Lane Group Flow (vph)	430	1138	1660	514	468	385
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	24.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	29.0	49.0	14.0	40.0
Actuated g/C Ratio	0.25	1.00	0.36	0.61	0.18	0.50
v/c Ratio	0.98	0.70	1.38	0.45	1.50	0.49
Control Delay	71.2	2.6	201.6	9.9	269.3	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.2	2.6	201.6	9.9	269.3	15.9
LOS	E	A	F	A	F	B
Approach Delay	21.4			156.2	154.9	
Approach LOS	C			F	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.50  
 Intersection Signal Delay: 110.0  
 Intersection Capacity Utilization 101.4%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service G  
 ! Phase conflict between lane groups.

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy



Intersection

Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		P			↑
Traffic Vol, veh/h	80	14	22	150	19	17
Future Vol, veh/h	80	14	22	150	19	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	77	77	75	75
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	91	16	29	195	25	23

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	200	127	0	0	224
Stage 1	127	-	-	-	-
Stage 2	73	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	782	915	-	-	1327
Stage 1	891	-	-	-	-
Stage 2	942	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	767	915	-	-	1327
Mov Cap-2 Maneuver	767	-	-	-	-
Stage 1	891	-	-	-	-
Stage 2	924	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	4.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	786	1327
HCM Lane V/C Ratio	-	-	0.136	0.019
HCM Control Delay (s)	-	-	10.3	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

**Intersection**

Int Delay, s/veh 4.7

**Movement** EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	17	80	162	104	155	10
Future Vol, veh/h	17	80	162	104	155	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	84	84	78	78
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	17	82	193	124	199	13

**Major/Minor** Major1 Major2 Minor2

Conflicting Flow All	317	0	-	0	371	255
Stage 1	-	-	-	-	255	-
Stage 2	-	-	-	-	116	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1226	-	-	-	624	776
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1226	-	-	-	615	776
Mov Cap-2 Maneuver	-	-	-	-	615	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	902	-

**Approach** EB WB SB

HCM Control Delay, s	1.4	0	13.4
HCM LOS			B

**Minor Lane/Major Mvmt** EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h)	1226	-	-	-	615	776
HCM Lane V/C Ratio	0.014	-	-	-	0.323	0.017
HCM Control Delay (s)	8	0	-	-	13.6	9.7
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1.4	0.1

## 10. Future with the Proposed Project Synchro Outputs

Intersection												
Int Delay, s/veh	12.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑	↑		↔	
Traffic Vol, veh/h	1	2	2	341	2	14	2	5	532	2	9	1
Future Vol, veh/h	1	2	2	341	2	14	2	5	532	2	9	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	67	67	67	78	78	78	50	50	50
Heavy Vehicles, %	2	3	3	33	3	2	3	2	21	2	2	2
Mvmt Flow	2	4	4	509	3	21	3	6	682	4	18	2

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	24	0	0	8	0	0	1052	1052	6	1386	1044	14
Stage 1	-	-	-	-	-	-	10	10	-	1032	1032	-
Stage 2	-	-	-	-	-	-	1042	1042	-	354	12	-
Critical Hdwy	4.12	-	-	4.43	-	-	7.13	6.52	6.41	5.4	5.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.497	-	-	3.527	4.018	3.489	3.518	4.018	3.318
Pot Cap-1 Maneuver	1591	-	-	1432	-	-	204	227	1024	234	308	1066
Stage 1	-	-	-	-	-	-	1008	887	-	281	310	-
Stage 2	-	-	-	-	-	-	276	307	-	663	886	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1591	-	-	1432	-	-	137	145	1024	55	197	1066
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	145	-	55	197	-
Stage 1	-	-	-	-	-	-	1007	886	-	281	198	-
Stage 2	-	-	-	-	-	-	160	196	-	220	885	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	8.5	15.4	34.7
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	143	1024	1591	-	-	1432	-	-	145
HCM Lane V/C Ratio	0.063	0.666	0.001	-	-	0.355	-	-	0.166
HCM Control Delay (s)	31.9	15.2	7.3	0	-	8.9	0	-	34.7
HCM Lane LOS	D	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	5.3	0	-	-	1.6	-	-	0.6

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖			↗		
Traffic Vol, veh/h	272	0	176	5	0	0
Future Vol, veh/h	272	0	176	5	0	0
Peak Hour Factor	0.82	0.82	0.83	0.83	0.92	0.92
Heavy Vehicles, %	10	2	15	5	2	2
Mvmt Flow	332	0	212	6	0	0
Number of Lanes	1	0	0	1	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	11.8	10.6
HCM LOS	B	B

Lane	NBLn1	EBLn1
Vol Left, %	97%	100%
Vol Thru, %	3%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	181	272
LT Vol	176	272
Through Vol	5	0
RT Vol	0	0
Lane Flow Rate	218	332
Geometry Grp	1	1
Degree of Util (X)	0.315	0.448
Departure Headway (Hd)	5.196	4.86
Convergence, Y/N	Yes	Yes
Cap	691	740
Service Time	3.234	2.891
HCM Lane V/C Ratio	0.315	0.449
HCM Control Delay	10.6	11.8
HCM Lane LOS	B	B
HCM 95th-tile Q	1.3	2.3

Port Cortlandt  
4: Lower S St & Louisa St

2023 Future with the Proposed Project  
Weekday AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	596	9	41	389	5	36	18	14	54	41	26
Future Volume (vph)	33	596	9	41	389	5	36	18	14	54	41	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.998			0.998				0.850			0.850
Flt Protected		0.997			0.995			0.968			0.972	
Satd. Flow (prot)	0	3143	0	0	3103	0	0	1786	1463	0	1733	1516
Flt Permitted		0.910			0.847			0.804			0.827	
Satd. Flow (perm)	0	2869	0	0	2642	0	0	1483	1463	0	1475	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			3				44			44
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.89	0.89	0.89	0.79	0.79	0.79	0.83	0.83	0.83
Heavy Vehicles (%)	3%	11%	3%	3%	17%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	37	662	10	46	437	6	46	23	18	65	49	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	709	0	0	489	0	0	69	18	0	114	31
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		20.0			20.0			20.0	20.0		20.0	20.0



Port Cortland  
4: Lower S St & Louisa St

2023 Future with the Proposed Project  
Weekday AM Peak Hour

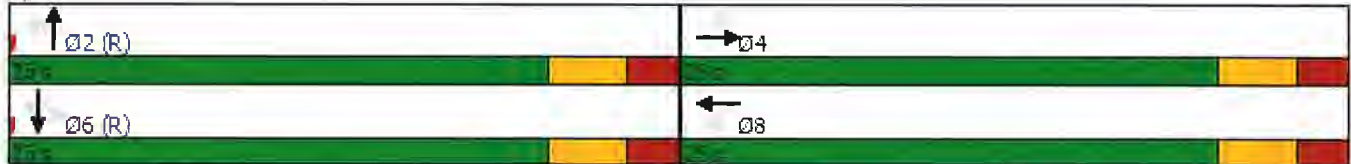
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.62			0.46			0.12	0.03		0.19	0.05
Control Delay		14.8			12.8			10.2	1.6		10.9	3.2
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		14.8			12.8			10.2	1.6		10.9	3.2
LOS		B			B			B	A		B	A
Approach Delay		14.8			12.8			8.4			9.2	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 13.1  
 Intersection Capacity Utilization 54.1%  
 Analysis Period (min) 15










Intersection LOS: B  
ICU Level of Service A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortlandt  
5: Broadway & Bleakley Ave

2023 Future with the Proposed Project  
Weekday AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	110	68	168	189	36	198
Future Volume (vph)	110	68	168	189	36	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949		0.929			
Flt Protected	0.970					0.992
Satd. Flow (prot)	1811	0	1458	0	0	1377
Flt Permitted	0.970					0.897
Satd. Flow (perm)	1811	0	1458	0	0	1245
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	55					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.67	0.67	0.84	0.84	0.73	0.73
Heavy Vehicles (%)	3%	3%	50%	3%	3%	43%
Adj. Flow (vph)	164	101	200	225	49	271
Shared Lane Traffic (%)						
Lane Group Flow (vph)	265	0	425	0	0	320
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.41		0.58			0.51
Control Delay	14.5		14.7			13.8



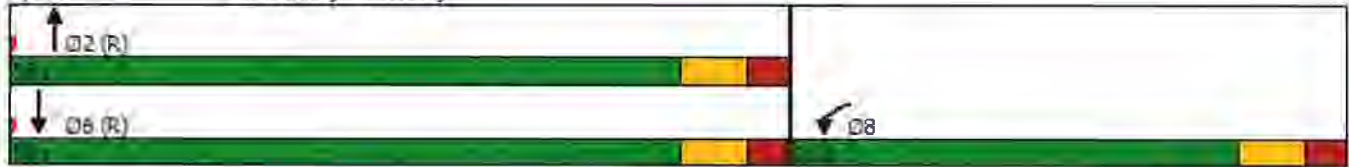
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay	0.0		0.0			0.0
Total Delay	14.5		14.7			13.8
LOS	B		B			B
Approach Delay	14.5		14.7			13.8
Approach LOS	B		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.58  
 Intersection Signal Delay: 14.3  
 Intersection Capacity Utilization 55.6%  
 Analysis Period (min) 15











Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 5: Broadway & Bleakley Ave



Port Cortland  
6: Rt 9A & Bleakley Ave

2023 Future with the Proposed Project  
Weekday AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	237	58	26	405	523	172
Future Volume (vph)	237	58	26	405	523	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.974					0.850
Flt Protected	0.961			0.997		
Satd. Flow (prot)	1784	0	0	1714	1801	1463
Flt Permitted	0.961			0.919		
Satd. Flow (perm)	1784	0	0	1580	1801	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.76	0.76	0.88	0.88	0.76	0.76
Heavy Vehicles (%)	3%	3%	3%	11%	9%	3%
Adj. Flow (vph)	312	76	30	460	688	226
Shared Lane Traffic (%)						
Lane Group Flow (vph)	388	0	0	490	688	226
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	15.7			25.2	25.2	51.0
Actuated g/C Ratio	0.31			0.49	0.49	1.00
v/c Ratio	0.69			0.63	0.77	0.15
Control Delay	20.9			16.1	20.9	0.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	20.9			16.1	20.9	0.2
LOS	C			B	C	A
Approach Delay	20.9			16.1	15.8	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 51  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 17.0  
 Intersection Capacity Utilization 67.6%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 6: Rt 9A & Bleakley Ave



Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1	1	330	274	18
Future Vol, veh/h	21	1	1	330	274	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	82	82	81	81
Heavy Vehicles, %	75	3	3	20	37	75
Mvmt Flow	28	1	1	402	338	22

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	753	349	360	0	-	0
Stage 1	349	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Critical Hdwy	7.15	6.23	4.13	-	-	-
Critical Hdwy Stg 1	6.15	-	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-	-
Follow-up Hdwy	4.175	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	290	692	1193	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	290	692	1193	-	-	-
Mov Cap-2 Maneuver	290	-	-	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1193	-	290	692	-	-
HCM Lane V/C Ratio	0.001	-	0.097	0.002	-	-
HCM Control Delay (s)	8	0	18.7	10.2	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0	-	-

Port Cortlandt  
8: Broadway & Entergy Driveway

2023 Future with the Proposed Project  
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	7	2	2	349	290	18
Future Vol, veh/h	7	2	2	349	290	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	42	42	85	85	80	80
Heavy Vehicles, %	3	3	3	24	43	3
Mvmt Flow	17	5	2	411	363	23

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	790	375	386	0	0
Stage 1	375	-	-	-	-
Stage 2	415	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-
Pot Cap-1 Maneuver	358	669	1167	-	-
Stage 1	693	-	-	-	-
Stage 2	664	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	357	669	1167	-	-
Mov Cap-2 Maneuver	357	-	-	-	-
Stage 1	692	-	-	-	-
Stage 2	664	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1167	-	398	-	-
HCM Lane V/C Ratio	0.002	-	0.054	-	-
HCM Control Delay (s)	8.1	0	14.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Port Cortland  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

2023 Future with the Proposed Project  
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	43	40	403	50	0	4	0	459	93	490	79
Future Volume (vph)	0	43	40	403	50	0	4	0	459	93	490	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	12	12	11	13	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Frt		0.928						0.853	0.850		0.982	
Flt Protected				0.950				0.999			0.993	
Satd. Flow (prot)	0	3144	0	1646	1845	0	0	1378	1468	0	3353	0
Flt Permitted				0.679							0.781	
Satd. Flow (perm)	0	3144	0	1177	1845	0	0	1379	1468	0	2637	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		56									13	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		556			270			315			565	
Travel Time (s)		15.2			7.4			8.6			15.4	
Peak Hour Factor	0.72	0.72	0.72	0.76	0.76	0.76	0.84	0.84	0.84	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	3%	6%	3%	2%	3%	2%	8%	5%	5%	5%
Adj. Flow (vph)	0	60	56	530	66	0	5	0	546	103	544	88
Shared Lane Traffic (%)									49%			
Lane Group Flow (vph)	0	116	0	530	66	0	0	273	278	0	735	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1	1	2	
Detector Template		Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)		100		20	100		20	100	20	20	100	
Trailing Detector (ft)		0		0	0		0	0	0	0	0	
Detector 1 Position(ft)		0		0	0		0	0	0	0	0	
Detector 1 Size(ft)		6		20	6		20	6	20	20	6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		D.P+P	NA		custom	NA	custom	Perm	NA	



Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
FIt Protected			
Satd. Flow (prot)			
FIt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

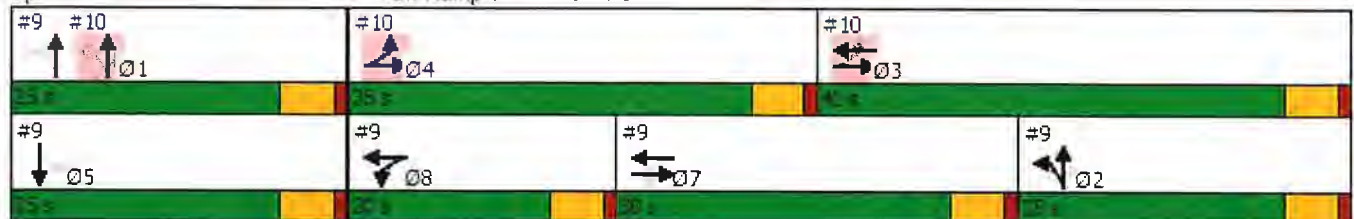
2023 Future with the Proposed Project  
Weekday AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2				5
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5		5
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0		5.0
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0		23.0
Total Split (s)		30.0		20.0			25.0		25.0	25.0		25.0
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%		25.0%
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0		20.0
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0		4.0
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0					0.0			0.0
Total Lost Time (s)		5.0		5.0					5.0			5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0		3.0
Recall Mode		None		None			Max		Max	Max		Max
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		7.2		22.3	27.3			47.6	22.4			20.1
Actuated g/C Ratio		0.08		0.26	0.32			0.56	0.26			0.24
v/c Ratio		0.36		1.35	0.11			0.35	0.72			1.16
Control Delay		24.7		209.6	36.2			11.9	39.8			120.0
Queue Delay		0.0		0.0	0.0			0.1	0.0			1.1
Total Delay		24.7		209.6	36.2			12.0	39.8			121.1
LOS		C		F	D			B	D			F
Approach Delay		24.7			190.4			26.0				121.1
Approach LOS		C			F			C				F

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 85  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.35  
 Intersection Signal Delay: 109.9  
 Intersection Capacity Utilization 69.9%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service C



















Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave



Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Port Cortlandt  
10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

2023 Future with the Proposed Project  
Weekday AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	223	0	0	353	126	101	0	79	0	0	0
Future Volume (vph)	372	223	0	0	353	126	101	0	79	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt					0.961				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1646	1613	0	0	3084	0	0	1719	1538	0	0	0
Flt Permitted	0.332							0.950				
Satd. Flow (perm)	575	1613	0	0	3084	0	0	1719	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					55				185			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.71	0.71	0.71	0.92	0.92	0.92
Heavy Vehicles (%)	6%	6%	2%	2%	5%	5%	5%	5%	5%	2%	2%	2%
Adj. Flow (vph)	418	251	0	0	447	159	142	0	111	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	418	251	0	0	606	0	0	142	111	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			

Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				

Port Cortlandt  
10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

2023 Future with the Proposed Project  
Weekday AM Peak Hour

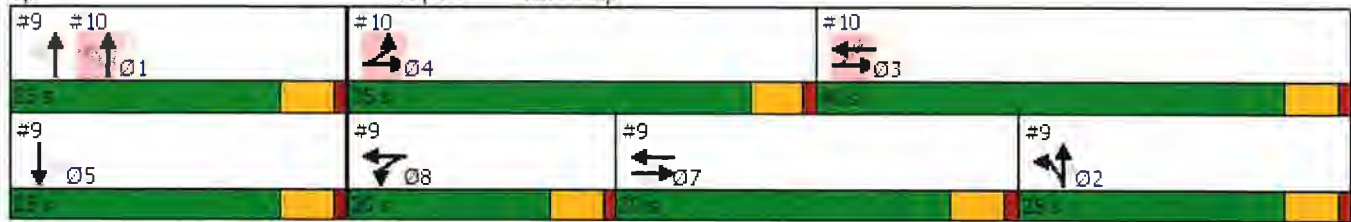


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1		1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0			0.0	0.0			
Total Lost Time (s)	5.0				5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	49.8	54.8			30.9			20.1	20.1			
Actuated g/C Ratio	0.59	0.64			0.36			0.24	0.24			
v/c Ratio	0.73	0.24			0.52			0.35	0.22			
Control Delay	30.6	6.2			22.3			31.4	1.5			
Queue Delay	0.7	0.6			0.7			4.6	0.0			
Total Delay	31.2	6.8			23.0			36.0	1.5			
LOS	C	A			C			D	A			
Approach Delay		22.1			23.0			20.8				
Approach LOS		C			C			C				

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 85  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.35  
 Intersection Signal Delay: 22.2  
 Intersection Capacity Utilization 52.5%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service A

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				














Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕					↕	↕		↕	↕	
Traffic Vol, veh/h	4	2	11	0	0	0	7	459	174	250	685	1
Future Vol, veh/h	4	2	11	0	0	0	7	459	174	250	685	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	92	92	92	81	81	81	82	82	82
Heavy Vehicles, %	3	5	3	2	2	2	3	8	7	5	7	3
Mvmt Flow	5	3	15	0	0	0	9	567	215	305	835	1

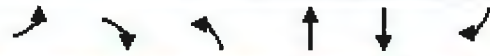
Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1748	2246	418	836	0	0	782	0	0
Stage 1	1446	1446	-	-	-	-	-	-	-
Stage 2	302	800	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	76	40	581	787	-	-	812	-	-
Stage 1	181	190	-	-	-	-	-	-	-
Stage 2	721	388	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	47	0	581	787	-	-	812	-	-
Mov Cap-2 Maneuver	47	0	-	-	-	-	-	-	-
Stage 1	179	0	-	-	-	-	-	-	-
Stage 2	450	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.6	0.1	3.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	787	-	-	144	812	-	-
HCM Lane V/C Ratio	0.011	-	-	0.157	0.375	-	-
HCM Control Delay (s)	9.6	-	-	34.6	12.1	-	-
HCM Lane LOS	A	-	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	1.8	-	-



						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			 			
Traffic Volume (vph)	207	1602	906	521	601	307
Future Volume (vph)	207	1602	906	521	601	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3224	1845	1783	1568
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3224	1845	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						21
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.94	0.94	0.86	0.86	0.89	0.89
Heavy Vehicles (%)	3%	3%	5%	3%	3%	3%
Adj. Flow (vph)	220	1704	1053	606	675	345
Shared Lane Traffic (%)						
Lane Group Flow (vph)	220	1704	1053	606	675	345
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				CI+Ex	CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov

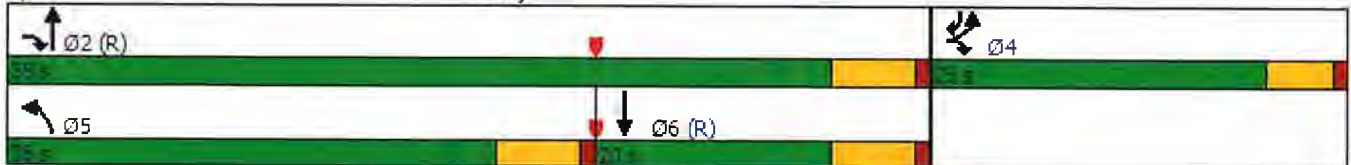


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	20.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	28.5	49.0	14.5	40.5
Actuated g/C Ratio	0.25	1.00	0.36	0.61	0.18	0.51
v/c Ratio	0.50	1.05	0.92	0.54	2.09	0.43
Control Delay	30.5	42.4	38.5	11.1	522.2	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	42.4	38.5	11.1	522.2	13.9
LOS	C	D	D	B	F	B
Approach Delay	41.1			28.5	350.2	
Approach LOS	D			C	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 2.09  
 Intersection Signal Delay: 105.1  
 Intersection Capacity Utilization 140.8%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service H  
 ! Phase conflict between lane groups.

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy



**Intersection**

Int Delay, s/veh	2.5					
<b>Movement</b>	<b>WBL</b>	<b>WBR</b>	<b>NBT</b>	<b>NBR</b>	<b>SBL</b>	<b>SBT</b>
Lane Configurations	Y		T			T
Traffic Vol, veh/h	86	16	33	319	14	33
Future Vol, veh/h	86	16	33	319	14	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	92	92	59	59
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	95	18	36	347	24	56

**Major/Minor**

	<b>Minor1</b>	<b>Major1</b>	<b>Major2</b>		
Conflicting Flow All	314	210	0	0	383
Stage 1	210	-	-	-	-
Stage 2	104	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	673	823	-	-	1159
Stage 1	818	-	-	-	-
Stage 2	913	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	659	823	-	-	1159
Mov Cap-2 Maneuver	659	-	-	-	-
Stage 1	818	-	-	-	-
Stage 2	894	-	-	-	-

**Approach**

	<b>WB</b>	<b>NB</b>	<b>SB</b>
HCM Control Delay, s	11.3	0	2.4
HCM LOS	B		

**Minor Lane/Major Mvmt**

	<b>NBT</b>	<b>NBRWBLn1</b>	<b>SBL</b>	<b>SBT</b>
Capacity (veh/h)	-	-	680	1159
HCM Lane V/C Ratio	-	-	0.165	0.02
HCM Control Delay (s)	-	-	11.3	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Intersection						
Int Delay, s/veh	11.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	38	81	348	122	263	4
Future Vol, veh/h	38	81	348	122	263	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	79	79	91	91	87	87
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	48	103	382	134	302	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	516	0	-	0	648 449
Stage 1	-	-	-	-	449 +
Stage 2	-	-	-	-	199 -
Critical Hdwy	4.15	-	-	-	6.45 6.25
Critical Hdwy Stg 1	-	-	-	-	5.45 -
Critical Hdwy Stg 2	-	-	-	-	5.45 -
Follow-up Hdwy	2.245	+	-	-	3.545 3.345
Pot Cap-1 Maneuver	1035	-	-	-	430 604
Stage 1	-	-	-	-	637 -
Stage 2	-	-	-	-	827 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1035	-	-	-	409 604
Mov Cap-2 Maneuver	+	-	-	-	409 -
Stage 1	-	-	-	-	606 -
Stage 2	-	-	-	-	827 -

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	34.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1035	-	-	-	409	604
HCM Lane V/C Ratio	0.046	-	-	-	0.739	0.008
HCM Control Delay (s)	8.6	0	-	-	34.9	11
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0.1	-	-	-	5.9	0

Intersection

Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	85	4	8	245	109	165
Future Vol, veh/h	85	4	8	245	109	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	82	82	81	81
Heavy Vehicles, %	3	3	3	20	37	3
Mvmt Flow	92	4	10	299	135	204

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	556	237	339	0	-	0
Stage 1	237	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	490	800	1215	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	485	800	1215	-	-	-
Mov Cap-2 Maneuver	485	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1215	-	494	-	-
HCM Lane V/C Ratio	0.008	-	0.196	-	-
HCM Control Delay (s)	8	0	14.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

**Intersection**

Int Delay, s/veh 9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑	↑		↔	
Traffic Vol, veh/h	1	1	1	280	1	6	1	6	348	7	4	1
Future Vol, veh/h	1	1	1	280	1	6	1	6	348	7	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	82	82	82	86	86	86	67	67	67
Heavy Vehicles, %	2	3	3	37	3	2	3	2	32	2	2	2
Mvmt Flow	2	2	2	341	1	7	1	7	405	10	6	1

**Major/Minor**

	Major1		Major2		Minor1		Minor2
Conflicting Flow All	8	0	0	4	0	0	697
Stage 1	-	-	-	-	-	-	7
Stage 2	-	-	-	-	-	-	690
Critical Hdwy	4.12	-	-	4.47	-	-	7.13
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13
Follow-up Hdwy	2.218	-	-	2.533	-	-	3.527
Pot Cap-1 Maneuver	1612	-	-	1416	-	-	354
Stage 1	-	-	-	-	-	-	1012
Stage 2	-	-	-	-	-	-	434
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1612	-	-	1416	-	-	284
Mov Cap-2 Maneuver	-	-	-	-	-	-	284
Stage 1	-	-	-	-	-	-	1011
Stage 2	-	-	-	-	-	-	323

**Approach**

	EB	WB	NB	SB
HCM Control Delay, s	2.4	8.1	11.1	21.1
HCM LOS			B	C

**Minor Lane/Major Mvmt**

	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	277	999	1612	-	-	1416	-	-	242
HCM Lane V/C Ratio	0.029	0.405	0.001	-	-	0.241	-	-	0.074
HCM Control Delay (s)	18.4	11	7.2	0	-	8.3	0	-	21.1
HCM Lane LOS	C	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	2	0	-	-	0.9	-	-	0.2

Intersection

Intersection Delay, s/veh	11.1
Intersection LOS	B



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↗		
Traffic Vol, veh/h	308	0	136	0	0	0
Future Vol, veh/h	308	0	136	0	0	0
Peak Hour Factor	0.92	0.92	0.78	0.78	0.92	0.92
Heavy Vehicles, %	12	2	17	5	2	2
Mvmt Flow	335	0	174	0	0	0
Number of Lanes	1	0	0	1	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	11.6	10
HCM LOS	B	A

Lane	NBLn1	EBLn1
Vol Left, %	100%	100%
Vol Thru, %	0%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	136	308
LT Vol	136	308
Through Vol	0	0
RT Vol	0	0
Lane Flow Rate	174	335
Geometry Grp	1	1
Degree of Util (X)	0.254	0.444
Departure Headway (Hd)	5.236	4.779
Convergence, Y/N	Yes	Yes
Cap	687	753
Service Time	3.266	2.805
HCM Lane V/C Ratio	0.253	0.445
HCM Control Delay	10	11.6
HCM Lane LOS	A	B
HCM 95th-tile Q	1	2.3

Port Cortlandt  
4: Lower S St & Louisa St

2023 Future with the Proposed Project  
Weekday PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	385	13	22	286	28	54	50	17	37	22	48
Future Volume (vph)	59	385	13	22	286	28	54	50	17	37	22	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.987				0.850			0.850
Flt Protected		0.994			0.997			0.975			0.970	
Satd. Flow (prot)	0	3100	0	0	3024	0	0	1799	1463	0	1730	1516
Flt Permitted		0.851			0.907			0.847			0.821	
Satd. Flow (perm)	0	2654	0	0	2751	0	0	1562	1463	0	1464	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			23				44			50
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.93	0.93	0.93	0.78	0.78	0.78	0.91	0.91	0.91	0.96	0.96	0.96
Heavy Vehicles (%)	3%	13%	3%	3%	20%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	63	414	14	28	367	36	59	55	19	39	23	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	0	0	431	0	0	114	19	0	62	50
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effect Green (s)		20.0			20.0			20.0	20.0		20.0	20.0



Port Cortlandt  
4: Lower S St & Louisa St

2023 Future with the Proposed Project  
Weekday PM Peak Hour

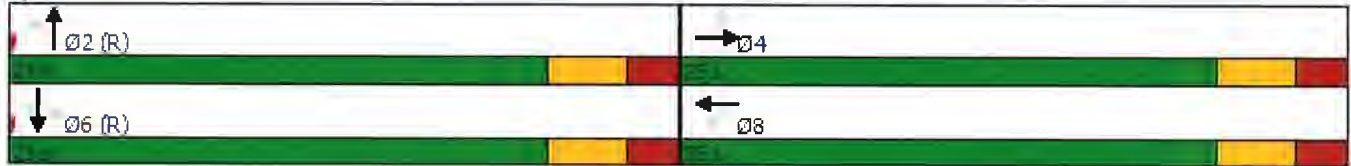
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.46			0.39			0.18	0.03		0.11	0.08
Control Delay		12.6			11.3			10.7	1.7		10.1	3.9
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		12.6			11.3			10.7	1.7		10.1	3.9
LOS		B			B			B	A		B	A
Approach Delay		12.6			11.3			9.4			7.3	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.46  
 Intersection Signal Delay: 11.3  
 Intersection Capacity Utilization 47.0%  
 Analysis Period (min) 15










Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortlandt  
5: Broadway & Bleakley Ave

2023 Future with the Proposed Project  
Weekday PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	92	33	190	206	22	146
Future Volume (vph)	92	33	190	206	22	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.965		0.930			
Flt Protected	0.964					0.994
Satd. Flow (prot)	1830	0	1531	0	0	1329
Flt Permitted	0.964					0.925
Satd. Flow (perm)	1830	0	1531	0	0	1237
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	32					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.86	0.86	0.96	0.96	0.73	0.73
Heavy Vehicles (%)	3%	3%	37%	3%	3%	48%
Adj. Flow (vph)	107	38	198	215	30	200
Shared Lane Traffic (%)						
Lane Group Flow (vph)	145	0	413	0	0	230
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.23		0.54			0.37
Control Delay	12.5		13.6			11.4



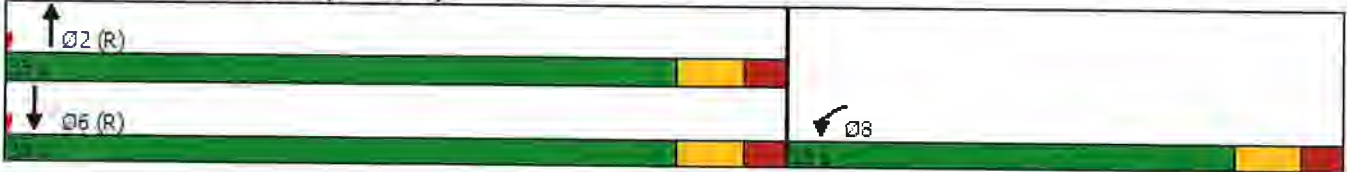
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay	0.0		0.0			0.0
Total Delay	12.5		13.6			11.4
LOS	B		B			B
Approach Delay	12.5		13.6			11.4
Approach LOS	B		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 12.8  
 Intersection Capacity Utilization 41.7%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 5: Broadway & Bleakley Ave



Port Cortlandt  
6: Rt 9A & Bleakley Ave

2023 Future with the Proposed Project  
Weekday PM Peak Hour



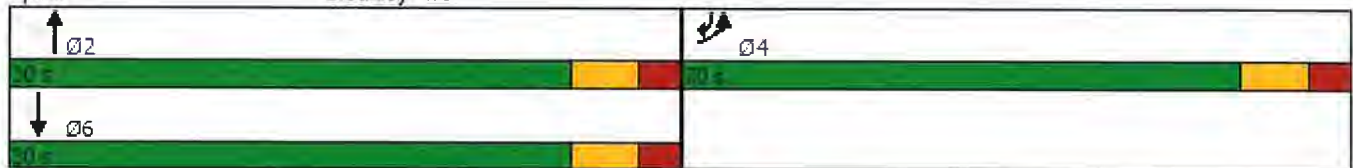
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	29	21	651	622	93
Future Volume (vph)	181	29	21	651	622	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981					0.850
Flt Protected	0.959			0.998		
Satd. Flow (prot)	1793	0	0	1807	1852	1463
Flt Permitted	0.959			0.972		
Satd. Flow (perm)	1793	0	0	1760	1852	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	16					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.80	0.80	0.83	0.83	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	5%	6%	3%
Adj. Flow (vph)	226	36	25	784	684	102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	262	0	0	809	684	102
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	11.9			27.2	27.2	49.1
Actuated g/C Ratio	0.24			0.55	0.55	1.00
v/c Ratio	0.59			0.83	0.67	0.07
Control Delay	20.4			21.4	13.5	0.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	20.4			21.4	13.5	0.1
LOS	C			C	B	A
Approach Delay	20.4			21.4	11.7	
Approach LOS	C			C	B	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 49.1  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 17.2  
 Intersection Capacity Utilization 71.3%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 6: Rt 9A & Bleakley Ave



Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗		↖	↗	
Traffic Vol, veh/h	14	1	1	375	216	13
Future Vol, veh/h	14	1	1	375	216	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	94	94	77	77
Heavy Vehicles, %	75	3	3	16	31	75
Mvmt Flow	22	2	1	399	281	17

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	691	290	298	0	0
Stage 1	290	-	-	-	-
Stage 2	401	-	-	-	-
Critical Hdwy	7.15	6.23	4.13	-	-
Critical Hdwy Stg 1	6.15	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-
Follow-up Hdwy	4.175	3.327	2.227	-	-
Pot Cap-1 Maneuver	318	747	1258	-	-
Stage 1	619	-	-	-	-
Stage 2	544	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	318	747	1258	-	-
Mov Cap-2 Maneuver	318	-	-	-	-
Stage 1	618	-	-	-	-
Stage 2	544	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1258	-	318	747	-	-
HCM Lane V/C Ratio	0.001	-	0.07	0.002	-	-
HCM Control Delay (s)	7.9	0	17.2	9.8	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

Port Cortlandt  
8: Broadway & Entergy Driveway

2023 Future with the Proposed Project  
Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	
Traffic Vol, veh/h	11	1	4	385	228	10
Future Vol, veh/h	11	1	4	385	228	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	98	98	79	79
Heavy Vehicles, %	3	3	3	19	36	3
Mvmt Flow	15	1	4	393	289	13

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	697	296	302	0	0
Stage 1	296	-	-	-	-
Stage 2	401	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-
Pot Cap-1 Maneuver	406	741	1253	-	-
Stage 1	752	-	-	-	-
Stage 2	674	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	404	741	1253	-	-
Mov Cap-2 Maneuver	404	-	-	-	-
Stage 1	749	-	-	-	-
Stage 2	674	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1253	-	420	-	-
HCM Lane V/C Ratio	0.003	-	0.038	-	-
HCM Control Delay (s)	7.9	0	13.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

2023 Future with the Proposed Project  
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑			↔	↑		↑↑	
Traffic Volume (vph)	0	118	36	339	82	0	6	0	732	68	387	75
Future Volume (vph)	0	118	36	339	82	0	6	0	732	68	387	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	12	12	11	13	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Flt		0.965						0.852	0.850		0.979	
Flt Protected				0.950				0.999			0.994	
Satd. Flow (prot)	0	3269	0	1662	1845	0	0	1415	1510	0	3346	0
Flt Permitted				0.615							0.607	
Satd. Flow (perm)	0	3269	0	1076	1845	0	0	1416	1510	0	2043	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		38									16	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		556			270			315			565	
Travel Time (s)		15.2			7.4			8.6			15.4	
Peak Hour Factor	0.73	0.73	0.73	0.93	0.93	0.93	0.84	0.84	0.84	0.87	0.87	0.87
Heavy Vehicles (%)	2%	3%	3%	5%	3%	2%	3%	2%	5%	5%	5%	5%
Adj. Flow (vph)	0	162	49	365	88	0	7	0	871	78	445	86
Shared Lane Traffic (%)									50%			
Lane Group Flow (vph)	0	211	0	365	88	0	0	443	435	0	609	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1	1	2	
Detector Template		Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)		100		20	100		20	100	20	20	100	
Trailing Detector (ft)		0		0	0		0	0	0	0	0	
Detector 1 Position(ft)		0		0	0		0	0	0	0	0	
Detector 1 Size(ft)		6		20	6		20	6	20	20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		D.P+P	NA		custom	NA	custom	Perm	NA	



Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Fr <sub>t</sub>			
Fl <sub>t</sub> Protected			
Satd. Flow (prot)			
Fl <sub>t</sub> Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

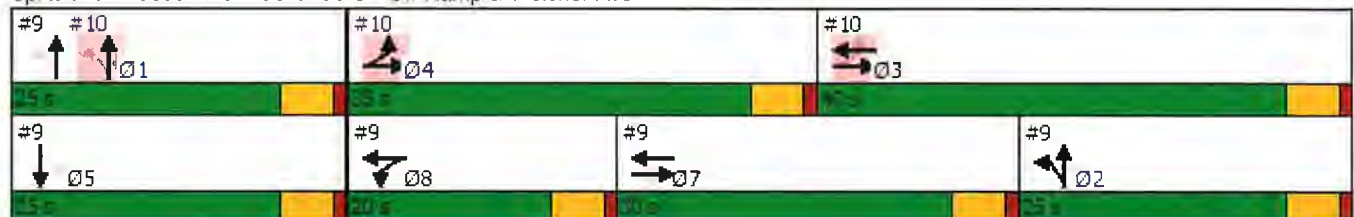
2023 Future with the Proposed Project  
Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2				5
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5		5
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0		5.0
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0		23.0
Total Split (s)		30.0		20.0			25.0		25.0	25.0		25.0
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%		25.0%
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0		20.0
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0		4.0
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0					0.0			0.0
Total Lost Time (s)		5.0		5.0					5.0			5.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0		3.0
Recall Mode		None		None			Max		Max	Max		Max
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effect Green (s)		10.2		25.0	30.0			47.3	22.2			20.1
Actuated g/C Ratio		0.12		0.29	0.34			0.54	0.25			0.23
v/c Ratio		0.51		0.90	0.14			0.58	1.14			1.26
Control Delay		34.3		64.0	32.0			17.6	120.8			165.3
Queue Delay		0.0		0.0	0.0			3.2	0.7			7.1
Total Delay		34.3		64.0	32.0			20.8	121.5			172.4
LOS		C		E	C			C	F			F
Approach Delay		34.3			57.8			70.7				172.4
Approach LOS		C			E			E				F

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 87.3  
 Natural Cycle: 125  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.26  
 Intersection Signal Delay: 93.2  
 Intersection Capacity Utilization 70.4%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service C



















Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave



Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Port Cortlandt  
10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

2023 Future with the Proposed Project  
Weekday PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	521	397	0	0	292	144	129	0	174	0	0	0
Future Volume (vph)	521	397	0	0	292	144	129	0	174	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt					0.951				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1678	1644	0	0	3071	0	0	1736	1538	0	0	0
Flt Permitted	0.348							0.950				
Satd. Flow (perm)	615	1644	0	0	3071	0	0	1736	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					93				226			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.77	0.77	0.77	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	2%	2%	4%	5%	4%	5%	5%	2%	2%	2%
Adj. Flow (vph)	620	473	0	0	348	171	168	0	226	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	620	473	0	0	519	0	0	168	226	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			

Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				

Port Cortlandt  
 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

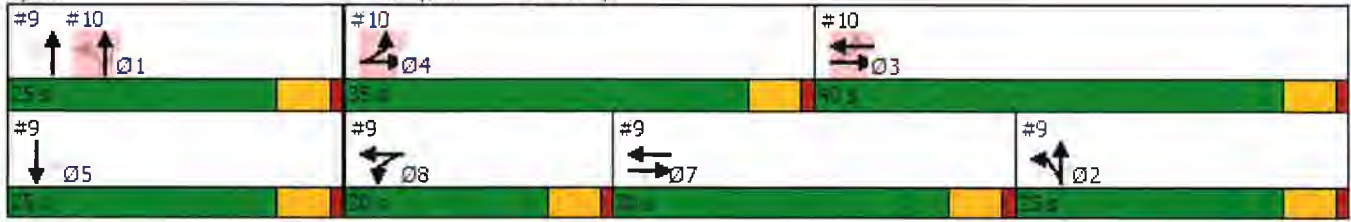
2023 Future with the Proposed Project  
 Weekday PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1		1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0			0.0	0.0			
Total Lost Time (s)	5.0				5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	52.2	57.2			25.1			20.1	20.1			
Actuated g/C Ratio	0.60	0.66			0.29			0.23	0.23			
v/c Ratio	0.89	0.44			0.55			0.42	0.43			
Control Delay	38.4	8.8			24.2			33.9	7.3			
Queue Delay	51.0	0.7			0.1			4.3	0.0			
Total Delay	89.4	9.5			24.3			38.2	7.3			
LOS	F	A			C			D	A			
Approach Delay		54.8			24.3			20.5				
Approach LOS		D			C			C				

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 87.3  
 Natural Cycle: 125  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.26  
 Intersection Signal Delay: 40.2  
 Intersection Capacity Utilization 61.2%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service B

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				














Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕					↕	↕		↕	↕	
Traffic Vol, veh/h	3	1	3	0	0	0	6	735	92	50	713	1
Future Vol, veh/h	3	1	3	0	0	0	6	735	92	50	713	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	92	92	92	86	86	86	90	90	90
Heavy Vehicles, %	3	5	3	2	2	2	3	5	5	5	5	3
Mvmt Flow	5	2	5	0	0	0	7	855	107	56	792	1

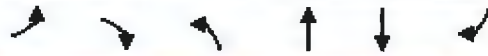
Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1347	1881	397	793	0	0	962	0	0
Stage 1	905	905	-	-	-	-	-	-	-
Stage 2	442	976	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	141	68	600	817	-	-	693	-	-
Stage 1	353	347	-	-	-	-	-	-	-
Stage 2	612	321	-	-	-	-	-	-	-
Platoon blocked, %									
Mov Cap-1 Maneuver	128	0	600	817	-	-	693	-	-
Mov Cap-2 Maneuver	128	0	-	-	-	-	-	-	-
Stage 1	350	0	-	-	-	-	-	-	-
Stage 2	562	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23	0.1	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	817	-	-	211	693	-	-
HCM Lane V/C Ratio	0.009	-	-	0.053	0.08	-	-
HCM Control Delay (s)	9.4	-	-	23	10.6	-	-
HCM Lane LOS	A	-	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	-	-



						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			 			
Traffic Volume (vph)	390	1301	1335	598	574	112
Future Volume (vph)	390	1301	1335	598	574	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3286	1845	1783	1568
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3286	1845	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						4
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.90	0.90	0.93	0.93	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	433	1446	1435	643	631	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	433	1446	1435	643	631	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov

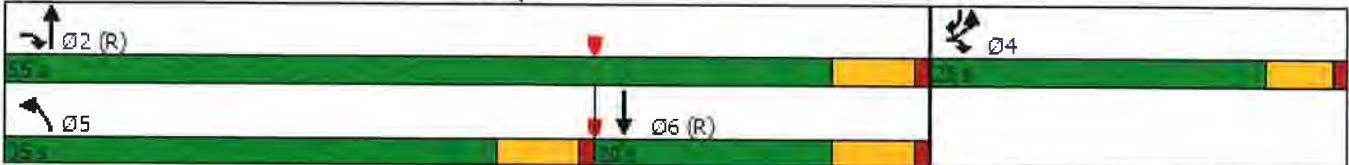


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	20.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	29.0	49.0	14.0	40.0
Actuated g/C Ratio	0.25	1.00	0.36	0.61	0.18	0.50
v/c Ratio	0.99	0.89	1.20	0.57	2.02	0.16
Control Delay	72.9	9.2	126.6	11.7	494.3	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	9.2	126.6	11.7	494.3	11.2
LOS	E	A	F	B	F	B
Approach Delay	23.9			91.0	415.5	
Approach LOS	C			F	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 2.02  
 Intersection Signal Delay: 116.2  
 Intersection LOS: F  
 Intersection Capacity Utilization 120.8%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ! Phase conflict between lane groups.

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy



Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	96	15	24	129	13	24
Future Vol, veh/h	96	15	24	129	13	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	87	87	65	65
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	107	17	28	148	20	37

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	179	102	0	0	176	0
Stage 1	102	-	-	-	-	-
Stage 2	77	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	804	945	-	-	1382	-
Stage 1	915	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	792	945	-	-	1382	-
Mov Cap-2 Maneuver	792	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	924	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	2.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	810	1382
HCM Lane V/C Ratio	-	-	0.152	0.014
HCM Control Delay (s)	-	-	10.2	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Intersection						
Int Delay, s/veh	8.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	18	102	143	114	270	10
Future Vol, veh/h	18	102	143	114	270	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	90	90	79	79
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	21	120	159	127	342	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	286	0	385
Stage 1	-	-	223
Stage 2	-	-	162
Critical Hdwy	4.15	-	6.45
Critical Hdwy Stg 1	-	-	5.45
Critical Hdwy Stg 2	-	-	5.45
Follow-up Hdwy	2.245	-	3.545
Pot Cap-1 Maneuver	1259	-	612
Stage 1	-	-	807
Stage 2	-	-	860
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1259	-	601
Mov Cap-2 Maneuver	-	-	601
Stage 1	-	-	792
Stage 2	-	-	860

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	18.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1259	-	-	-	601	809
HCM Lane V/C Ratio	0.017	-	-	-	0.569	0.016
HCM Control Delay (s)	7.9	0	-	-	18.6	9.5
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	-	-	-	3.6	0

Intersection

Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	
Traffic Vol, veh/h	165	8	4	210	131	85
Future Vol, veh/h	165	8	4	210	131	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	94	94	77	77
Heavy Vehicles, %	3	3	3	16	31	3
Mvmt Flow	179	9	4	223	170	110

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	456	225	280	0	0
Stage 1	225	-	-	-	-
Stage 2	231	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-
Pot Cap-1 Maneuver	561	812	1277	-	-
Stage 1	810	-	-	-	-
Stage 2	805	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	559	812	1277	-	-
Mov Cap-2 Maneuver	559	-	-	-	-
Stage 1	807	-	-	-	-
Stage 2	805	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1277	-	567	-	-
HCM Lane V/C Ratio	0.003	-	0.332	-	-
HCM Control Delay (s)	7.8	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Port Cortlandt  
1: John Walsh Blvd/Park Entrance & Louisa St

2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Intersection												
Int Delay, s/veh	9.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	1	2	2	317	2	9	2	12	310	9	5	1
Future Vol, veh/h	1	2	2	317	2	9	2	12	310	9	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	91	91	91	81	81	100	50	50	50
Heavy Vehicles, %	2	3	3	29	3	2	3	2	25	2	2	2
Mvmt Flow	2	4	4	348	2	10	2	15	310	18	10	2

Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	12	0	0	8	0	0	719	718	6	876	715	7
Stage 1	-	-	-	-	-	-	10	10	-	703	703	-
Stage 2	-	-	-	-	-	-	709	708	-	173	12	-
Critical Hdwy	4.12	-	-	4.39	-	-	7.13	6.52	6.45	5.4	5.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.461	-	-	3.527	4.018	3.525	3.518	4.018	3.318
Pot Cap-1 Maneuver	1607	-	-	1453	-	-	342	355	1013	409	436	1075
Stage 1	-	-	-	-	-	-	1008	887	-	428	440	-
Stage 2	-	-	-	-	-	-	423	438	-	829	886	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1607	-	-	1453	-	-	272	269	1013	222	330	1075
Mov Cap-2 Maneuver	-	-	-	-	-	-	272	269	-	222	330	-
Stage 1	-	-	-	-	-	-	1007	886	-	428	334	-
Stage 2	-	-	-	-	-	-	311	332	-	565	885	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	1.4		8			10.6			20.3		
HCM LOS						B			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	269	1013	1607	-	-	1453	-	-	265
HCM Lane V/C Ratio	0.064	0.306	0.001	-	-	0.24	-	-	0.113
HCM Control Delay (s)	19.3	10.1	7.2	0	-	8.3	0	-	20.3
HCM Lane LOS	C	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	1.3	0	-	-	0.9	-	-	0.4

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A



















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖			↗		
Traffic Vol, veh/h	231	0	141	9	0	0
Future Vol, veh/h	231	0	141	9	0	0
Peak Hour Factor	0.91	0.91	0.85	0.85	0.92	0.92
Heavy Vehicles, %	10	2	14	5	2	2
Mvmt Flow	254	0	166	11	0	0
Number of Lanes	1	0	0	1	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	10.1	9.6
HCM LOS	B	A

Lane	NBLn1	EBLn1
Vol Left, %	94%	100%
Vol Thru, %	6%	0%
Vol Right, %	0%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	150	231
LT Vol	141	231
Through Vol	9	0
RT Vol	0	0
Lane Flow Rate	176	254
Geometry Grp	1	1
Degree of Util (X)	0.243	0.334
Departure Headway (Hd)	4.963	4.731
Convergence, Y/N	Yes	Yes
Cap	725	762
Service Time	2.985	2.749
HCM Lane V/C Ratio	0.243	0.333
HCM Control Delay	9.6	10.1
HCM Lane LOS	A	B
HCM 95th-tile Q	0.9	1.5

Port Cortlandt  
4: Lower S St & Louisa St













2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	380	10	10	378	14	22	17	29	36	10	28
Future Volume (vph)	33	380	10	10	378	14	22	17	29	36	10	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	10	12	11	11
Storage Length (ft)	0		0	0		0	0		0	0		150
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.995				0.850			0.850
Flt Protected		0.996			0.999			0.972			0.962	
Satd. Flow (prot)	0	3119	0	0	3140	0	0	1793	1463	0	1715	1516
Flt Permitted		0.899			0.942			0.874			0.817	
Satd. Flow (perm)	0	2816	0	0	2961	0	0	1612	1463	0	1457	1516
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			9				44			44
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1523			693			383			512	
Travel Time (s)		41.5			18.9			10.4			14.0	
Peak Hour Factor	0.97	0.97	0.97	0.90	0.90	0.90	0.89	0.89	0.89	0.83	0.83	0.83
Heavy Vehicles (%)	3%	12%	3%	3%	15%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	34	392	10	11	420	16	25	19	33	43	12	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	436	0	0	447	0	0	44	33	0	55	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.00	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2		6		6
Permitted Phases	4			8			2		2	6		6
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	25.0	25.0		25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)		20.0			20.0			20.0	20.0		20.0	20.0



Port Cortlandt  
4: Lower S St & Louisa St

2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

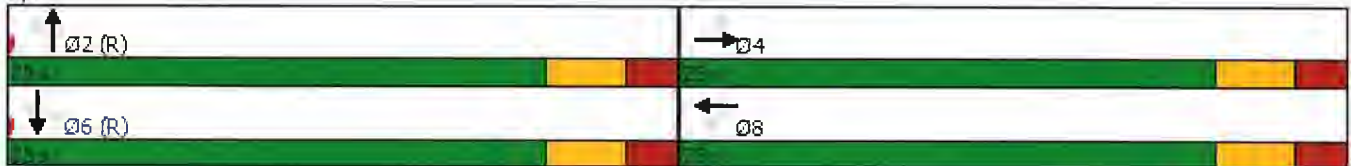
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.40			0.40			0.40	0.40		0.40	0.40
v/c Ratio		0.39			0.38			0.07	0.05		0.09	0.05
Control Delay		11.8			11.5			9.7	3.3		10.0	3.4
Queue Delay		0.0			0.0			0.0	0.0		0.0	0.0
Total Delay		11.8			11.5			9.7	3.3		10.0	3.4
LOS		B			B			A	A		A	A
Approach Delay		11.8			11.5			7.0			7.4	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.39  
 Intersection Signal Delay: 10.9  
 Intersection Capacity Utilization 44.7%  
 Analysis Period (min) 15










Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 4: Lower S St & Louisa St



Port Cortlandt  
5: Broadway & Bleakley Ave

2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	70	37	170	120	19	169
Future Volume (vph)	70	37	170	120	19	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.953		0.944			
Flt Protected	0.968					0.995
Satd. Flow (prot)	1815	0	1537	0	0	1396
Flt Permitted	0.968					0.956
Satd. Flow (perm)	1815	0	1537	0	0	1341
Right Turn on Red		Yes		No		
Satd. Flow (RTOR)	48					
Link Speed (mph)	30		30			30
Link Distance (ft)	568		1853			1085
Travel Time (s)	12.9		42.1			24.7
Peak Hour Factor	0.73	0.73	0.94	0.94	0.81	0.81
Heavy Vehicles (%)	3%	3%	33%	3%	3%	39%
Adj. Flow (vph)	96	51	181	128	23	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	147	0	309	0	0	232
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	14		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.85	0.96	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Minimum Split (s)	23.0		23.0		23.0	23.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
Maximum Green (s)	20.0		30.0		30.0	30.0
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	20.0		30.0			30.0
Actuated g/C Ratio	0.33		0.50			0.50
v/c Ratio	0.23		0.40			0.35
Control Delay	11.1		11.4			10.9

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Delay	0.0		0.0			0.0
Total Delay	11.1		11.4			10.9
LOS	B		B			B
Approach Delay	11.1		11.4			10.9
Approach LOS	B		B			B

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.40  
 Intersection Signal Delay: 11.2  
 Intersection Capacity Utilization 39.2%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 5: Broadway & Bleakley Ave



Port Cortlandt  
6: Rt 9A & Bleakley Ave







2023 Future with the Proposed Project  
Saturday MIDDAY (Weekend) Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	116	99	14	459	614	81
Future Volume (vph)	116	99	14	459	614	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	12	12	12	13	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.938					0.850
Flt Protected	0.974			0.999		
Satd. Flow (prot)	1741	0	0	1760	1852	1463
Flt Permitted	0.974			0.978		
Satd. Flow (perm)	1741	0	0	1723	1852	1463
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	88					
Link Speed (mph)	30			30	30	
Link Distance (ft)	760			501	657	
Travel Time (s)	17.3			11.4	14.9	
Peak Hour Factor	0.92	0.92	0.94	0.94	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	8%	6%	3%
Adj. Flow (vph)	126	108	15	488	675	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	0	0	503	675	89
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.96	1.00	1.00	1.00	0.96	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	0	0	0
Detector Template	Left		Left			
Leading Detector (ft)	20		20	0	0	0
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	20		20	6	6	20
Detector 1 Type	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Turn Type	Prot		Perm	NA	NA	pm+ov
Protected Phases	4			2	6	4
Permitted Phases			2			6
Detector Phase	4		2	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	23.0		23.0	23.0	23.0	23.0
Total Split (s)	30.0		30.0	30.0	30.0	30.0
Total Split (%)	50.0%		50.0%	50.0%	50.0%	50.0%

Port Cortlandt  
6: Rt 9A & Bleakley Ave

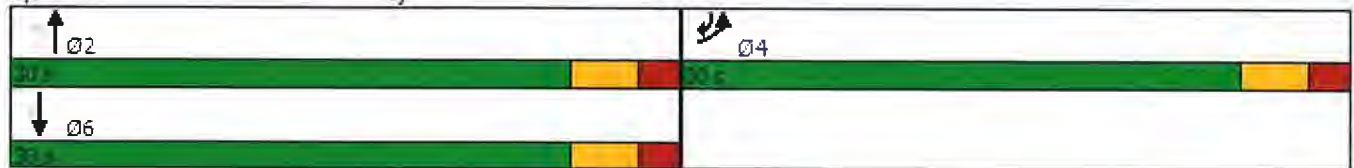
2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Maximum Green (s)	25.0		25.0	25.0	25.0	25.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		Max	Max	Max	None
Walk Time (s)	7.0		7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0	0
Act Effct Green (s)	9.5			27.8	27.8	47.3
Actuated g/C Ratio	0.20			0.59	0.59	1.00
v/c Ratio	0.56			0.50	0.62	0.06
Control Delay	15.1			8.7	10.6	0.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	15.1			8.7	10.6	0.1
LOS	B			A	B	A
Approach Delay	15.1			8.7	9.4	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 47.3  
 Natural Cycle: 55  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 10.0  
 Intersection Capacity Utilization 56.3%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 6: Rt 9A & Bleakley Ave



Port Cortlandt  
7: Continental Driveway & Broadway

2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗		↖	↗	
Traffic Vol, veh/h	3	1	1	280	218	12
Future Vol, veh/h	3	1	1	280	218	12
Conflicting Peds. #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	150	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	89	89	71	71
Heavy Vehicles, %	75	3	3	21	32	75
Mvmt Flow	6	2	1	315	307	17

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	633	316	324	0	0
Stage 1	316	-	-	-	-
Stage 2	317	-	-	-	-
Critical Hdwy	7.15	6.23	4.13	-	-
Critical Hdwy Stg 1	6.15	-	-	-	-
Critical Hdwy Stg 2	6.15	-	-	-	-
Follow-up Hdwy	4.175	3.327	2.227	-	-
Pot Cap-1 Maneuver	346	722	1230	-	-
Stage 1	600	-	-	-	-
Stage 2	600	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	346	722	1230	-	-
Mov Cap-2 Maneuver	346	-	-	-	-
Stage 1	599	-	-	-	-
Stage 2	600	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1230	-	346	722	-	-
HCM Lane V/C Ratio	0.001	-	0.017	0.003	-	-
HCM Control Delay (s)	7.9	0	15.6	10	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

Port Cortlandt  
8: Broadway & Entergy Driveway

2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Intersection

Int Delay, s/veh 0.4

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	W			E	E	
Traffic Vol, veh/h	9	1	2	281	230	9
Future Vol, veh/h	9	1	2	281	230	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	90	90	75	75
Heavy Vehicles, %	3	3	3	22	35	3
Mvmt Flow	14	2	2	312	307	12

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	629	313	319	0	-	0
Stage 1	313	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	445	725	1235	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	737	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	444	725	1235	-	-	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach EB NB SB













HCM Control Delay, s	13.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1235	-	462	-	-
HCM Lane V/C Ratio	0.002	-	0.034	-	-
HCM Control Delay (s)	7.9	0	13.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑			↕	↗		↕	
Traffic Volume (vph)	0	94	80	285	162	0	70	0	427	74	391	53
Future Volume (vph)	0	94	80	285	162	0	70	0	427	74	391	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	12	12	11	13	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		250
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Frnt		0.931						0.894	0.850		0.985	
Flt Protected				0.950				0.986			0.993	
Satd. Flow (prot)	0	3154	0	1646	1845	0	0	1444	1468	0	3339	0
Flt Permitted				0.622				0.797			0.797	
Satd. Flow (perm)	0	3154	0	1078	1845	0	0	1167	1468	0	2680	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		95									11	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		556			270			315			565	
Travel Time (s)		15.2			7.4			8.6			15.4	
Peak Hour Factor	0.84	0.84	0.84	0.94	0.94	0.94	0.95	0.95	0.95	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	3%	6%	3%	2%	3%	2%	8%	5%	6%	5%
Adj. Flow (vph)	0	112	95	303	172	0	74	0	449	79	416	56
Shared Lane Traffic (%)									40%			
Lane Group Flow (vph)	0	207	0	303	172	0	0	254	269	0	551	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	1.00	1.00	1.04	0.96	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2	1	1	2	
Detector Template		Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)		100		20	100		20	100	20	20	100	
Trailing Detector (ft)		0		0	0		0	0	0	0	0	
Detector 1 Position(ft)		0		0	0		0	0	0	0	0	
Detector 1 Size(ft)		6		20	6		20	6	20	20	6	
Detector 1 Type		CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA		D.P+P	NA		custom	NA	custom	Perm	NA	



Lane Group	Ø1	Ø3	Ø4
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Port Cortlandt  
9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave

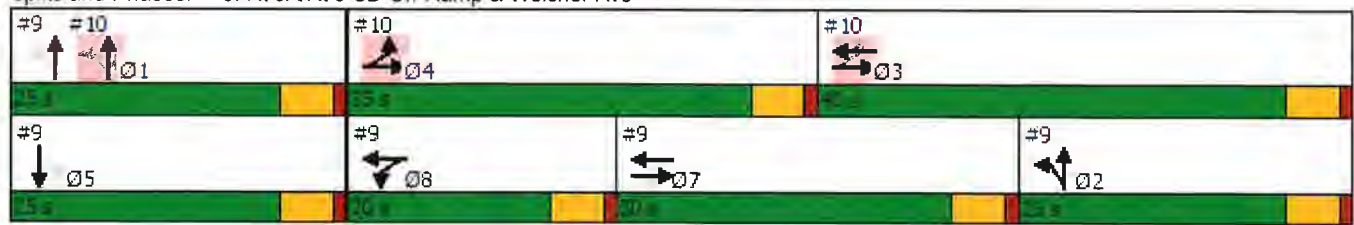
2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		7		8	7 8		2	1 2			5	
Permitted Phases				7			1		2	5		
Detector Phase		7		8	7 8		2	1 2	2	5	5	
Switch Phase												
Minimum Initial (s)		5.0		5.0			5.0		5.0	5.0	5.0	
Minimum Split (s)		27.0		20.0			23.0		23.0	23.0	23.0	
Total Split (s)		30.0		20.0			25.0		25.0	25.0	25.0	
Total Split (%)		30.0%		20.0%			25.0%		25.0%	25.0%	25.0%	
Maximum Green (s)		25.0		15.0			20.0		20.0	20.0	20.0	
Yellow Time (s)		4.0		4.0			4.0		4.0	4.0	4.0	
All-Red Time (s)		1.0		1.0			1.0		1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0					0.0		0.0	
Total Lost Time (s)		5.0		5.0					5.0		5.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		3.0		3.0			3.0		3.0	3.0	3.0	
Recall Mode		None		None			Max		Max	Max	Max	
Walk Time (s)		7.0										
Flash Dont Walk (s)		15.0										
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		9.0		23.3	28.3		40.1	20.0			20.0	
Actuated g/C Ratio		0.11		0.28	0.34		0.48	0.24			0.24	
v/c Ratio		0.49		0.76	0.27		0.41	0.76			0.85	
Control Delay		23.0		55.6	38.5		13.9	46.6			44.2	
Queue Delay		0.0		0.0	0.2		0.0	0.0			0.2	
Total Delay		23.0		55.6	38.7		13.9	46.6			44.4	
LOS		C		E	D		B	D			D	
Approach Delay		23.0			49.4		30.7				44.4	
Approach LOS		C			D		C				D	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 83.4  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay: 39.2  
 Intersection Capacity Utilization 64.9%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service C



















Splits and Phases: 9: Rt 9A/Rt 9 SB Off-Ramp & Welcher Ave



Lane Group	Ø1	Ø3	Ø4
Protected Phases	1	3	4
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0
Total Split (s)	25.0	40.0	35.0
Total Split (%)	25%	40%	35%
Maximum Green (s)	20.0	35.0	30.0
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lead
Lead-Lag Optimize?		Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	Max	None	None
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Port Cortlandt  
 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

2023 Future with the Proposed Project  
 Saturday Midday (Weekend) Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	313	282	0	0	348	80	100	0	80	0	0	0
Future Volume (vph)	313	282	0	0	348	80	100	0	80	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	9	12	12	10	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		325	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr					0.972				0.850			
Flt Protected	0.950							0.950				
Satd. Flow (prot)	1662	1629	0	0	3143	0	0	1752	1538	0	0	0
Flt Permitted	0.430							0.950				
Satd. Flow (perm)	752	1629	0	0	3143	0	0	1752	1538	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					31				185			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		270			670			740			577	
Travel Time (s)		6.1			15.2			16.8			13.1	
Peak Hour Factor	0.95	0.95	0.95	0.88	0.88	0.88	0.90	0.90	0.90	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	2%	2%	4%	5%	3%	5%	5%	2%	2%	2%
Adj. Flow (vph)	329	297	0	0	395	91	111	0	89	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	329	297	0	0	486	0	0	111	89	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.14	1.00	1.00	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2			2		1	2	1			
Detector Template	Left	Thru			Thru		Left	Thru	Right			
Leading Detector (ft)	20	100			100		20	100	20			
Trailing Detector (ft)	0	0			0		0	0	0			
Detector 1 Position(ft)	0	0			0		0	0	0			
Detector 1 Size(ft)	20	6			6		20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex		CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0			
Detector 2 Position(ft)		94			94			94				
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	D.P+P	NA			NA		Perm	NA	Perm			

Lane Group	Ø2	Ø5	Ø7	Ø8
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				

Port Cortlandt  
 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave

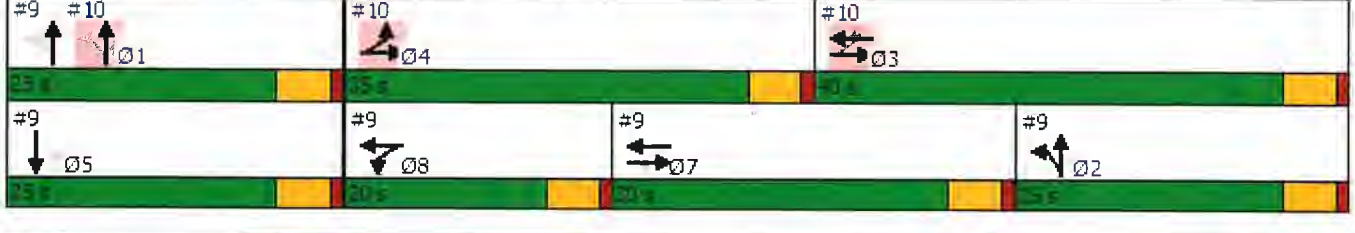
2023 Future with the Proposed Project  
 Saturday Midday (Weekend) Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4	3 4			3			1				
Permitted Phases	3				3		1		1			
Detector Phase	4	3 4			3		1	1	1			
Switch Phase												
Minimum Initial (s)	5.0				5.0		5.0	5.0	5.0			
Minimum Split (s)	23.0				23.0		23.0	23.0	23.0			
Total Split (s)	35.0				40.0		25.0	25.0	25.0			
Total Split (%)	35.0%				40.0%		25.0%	25.0%	25.0%			
Maximum Green (s)	30.0				35.0		20.0	20.0	20.0			
Yellow Time (s)	4.0				4.0		4.0	4.0	4.0			
All-Red Time (s)	1.0				1.0		1.0	1.0	1.0			
Lost Time Adjust (s)	0.0				0.0			0.0	0.0			
Total Lost Time (s)	5.0				5.0			5.0	5.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0				3.0		3.0	3.0	3.0			
Recall Mode	None				None		Max	Max	Max			
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	48.3	53.3			33.8			20.0	20.0			
Actuated g/C Ratio	0.58	0.64			0.41			0.24	0.24			
v/c Ratio	0.55	0.29			0.38			0.26	0.17			
Control Delay	17.8	7.1			17.9			28.9	0.8			
Queue Delay	0.1	0.8			0.0			0.2	0.0			
Total Delay	17.9	7.9			18.0			29.1	0.8			
LOS	B	A			B			C	A			
Approach Delay		13.1			18.0			16.5				
Approach LOS		B			B			B				

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 83.4  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay: 15.4  
 Intersection Capacity Utilization 47.6%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 10: Rt 9 NB Off-Ramp/Rt 9 NB On-Ramp & Welcher Ave



Lane Group	Ø2	Ø5	Ø7	Ø8
Protected Phases	2	5	7	8
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	27.0	20.0
Total Split (s)	25.0	25.0	30.0	20.0
Total Split (%)	25%	25%	30%	20%
Maximum Green (s)	20.0	20.0	25.0	15.0
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag			Lag	Lead
Lead-Lag Optimize?			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	None	None
Walk Time (s)			7.0	
Flash Dont Walk (s)			15.0	
Pedestrian Calls (#/hr)			0	
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
<b>Intersection Summary</b>				

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕					↗	↕		↗	↕	
Traffic Vol, veh/h	5	2	3	0	0	0	3	492	78	63	692	2
Future Vol, veh/h	5	2	3	0	0	0	3	492	78	63	692	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	160	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	38	38	92	92	92	97	97	97	93	93	93
Heavy Vehicles, %	3	5	3	2	2	2	3	7	7	5	5	3
Mvmt Flow	13	5	8	0	0	0	3	507	80	68	744	2

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1141	1474	373	746	0	0	587	0	0
Stage 1	881	881	-	-	-	-	-	-	-
Stage 2	260	593	-	-	-	-	-	-	-
Critical Hdwy	6.86	6.6	6.96	4.16	-	-	4.2	-	-
Critical Hdwy Stg 1	5.86	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.86	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.05	3.33	2.23	-	-	2.25	-	-
Pot Cap-1 Maneuver	193	122	622	851	-	-	964	-	-
Stage 1	363	356	-	-	-	-	-	-	-
Stage 2	757	484	-	-	-	-	-	-	-
Platoon blocked, %									
Mov Cap-1 Maneuver	179	0	622	851	-	-	964	-	-
Mov Cap-2 Maneuver	179	0	-	-	-	-	-	-	-
Stage 1	362	0	-	-	-	-	-	-	-
Stage 2	703	0	-	-	-	-	-	-	-














Approach	EB	NB	SB
HCM Control Delay, s	21.5	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	851	-	-	244	964	-	-
HCM Lane V/C Ratio	0.004	-	-	0.108	0.07	-	-
HCM Control Delay (s)	9.2	-	-	21.5	9	-	-
HCM Lane LOS	A	-	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	-	-



Port Cortlandt  
12: Rt 6/9/202 & Bear Mtn Pkwy

2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			 			
Traffic Volume (vph)	400	1090	1493	469	462	366
Future Volume (vph)	400	1090	1493	469	462	366
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	11	12	11	12
Storage Length (ft)	0	0	240			125
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.97	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1620	3319	1863	1783	1568
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1620	3319	1863	1783	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						1
Link Speed (mph)	30			30	30	
Link Distance (ft)	665			498	712	
Travel Time (s)	15.1			11.3	16.2	
Peak Hour Factor	0.93	0.93	0.88	0.88	0.95	0.95
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	430	1172	1697	533	486	385
Shared Lane Traffic (%)						
Lane Group Flow (vph)	430	1172	1697	533	486	385
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			22	22	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	0.96	1.04	1.00	1.04	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	custom	Prot	NA	NA	pm+ov

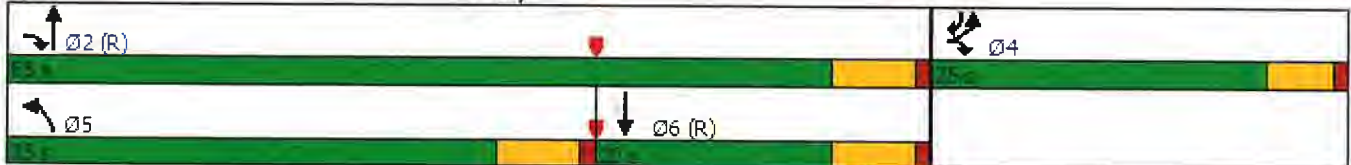


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4	2 4!	5	2	6!	4
Permitted Phases		4				6
Detector Phase	4	2 4	5	2	6	4
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		11.0	24.0	24.0	20.0
Total Split (s)	25.0		35.0	55.0	20.0	25.0
Total Split (%)	31.3%		43.8%	68.8%	25.0%	31.3%
Maximum Green (s)	20.0		29.0	49.0	14.0	20.0
Yellow Time (s)	4.0		5.0	5.0	5.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		6.0	6.0	6.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	C-Max	C-Min	None
Act Effct Green (s)	20.0	80.0	29.0	49.0	14.0	40.0
Actuated g/C Ratio	0.25	1.00	0.36	0.61	0.18	0.50
v/c Ratio	0.98	0.72	1.41	0.47	1.56	0.49
Control Delay	71.2	2.8	215.0	10.1	293.6	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.2	2.8	215.0	10.1	293.6	15.9
LOS	E	A	F	B	F	B
Approach Delay	21.2			166.0	170.9	
Approach LOS	C			F	F	

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.56  
 Intersection Signal Delay: 117.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 103.2%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 ! Phase conflict between lane groups.

Splits and Phases: 12: Rt 6/9/202 & Bear Mtn Pkwy



Port Cortlandt  
 13: Rt 6 (Main St)/Main St. & Rt 9 SB Ramps

2023 Future with the Proposed Project  
 Saturday Midday (Weekend) Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	W	W
Traffic Vol, veh/h	80	14	22	162	19	17
Future Vol, veh/h	80	14	22	162	19	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	77	77	75	75
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	91	16	29	210	25	23

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	207	134	0	0	239
Stage 1	134	-	-	-	-
Stage 2	73	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245
Pot Cap-1 Maneuver	775	907	-	-	1310
Stage 1	885	-	-	-	-
Stage 2	942	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	760	907	-	-	1310
Mov Cap-2 Maneuver	760	-	-	-	-
Stage 1	885	-	-	-	-
Stage 2	924	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	4.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	779	1310
HCM Lane V/C Ratio	-	-	0.137	0.019
HCM Control Delay (s)	-	-	10.4	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

Port Cortlandt  
14: Rt 6 & Rt 9 NB Ramps

2023 Future with the Proposed Project  
Saturday Midday (Weekend) Peak Hour

Intersection

Int Delay, s/veh	5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	17	80	174	104	167	10
Future Vol, veh/h	17	80	174	104	167	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	84	84	78	78
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	17	82	207	124	214	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	331	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1212	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1212	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1212	-	-	-	603	762
HCM Lane V/C Ratio	0.014	-	-	-	0.355	0.017
HCM Control Delay (s)	8	0	-	-	14.2	9.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1.6	0.1

Intersection

Int Delay, s/veh 2.1

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	Y			Y	Y	
Traffic Vol, veh/h	85	4	4	195	133	85
Future Vol, veh/h	85	4	4	195	133	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	89	89	71	71
Heavy Vehicles, %	3	3	3	21	32	3
Mvmt Flow	92	4	4	219	187	120

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	474	247	307	0	-	0
Stage 1	247	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	547	789	1248	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	545	789	1248	-	-	-
Mov Cap-2 Maneuver	545	-	-	-	-	-
Stage 1	789	-	-	-	-	-
Stage 2	808	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	12.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1248	-	553	-	-
HCM Lane V/C Ratio	0.004	-	0.175	-	-
HCM Control Delay (s)	7.9	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-