

Intersection Analysis Study

SR 5 (US 1) at Park Avenue

VOLUSIA COUNTY
SECTION 79010
MP 15.659

Continuing Services for Traffic Operations
Contract Number C-8W24
Financial Project No. 237974-1-32-10
Work Order No. 44
Sequence No. 1
Study 1

FDA No. 390.44

Prepared For:



Prepared By:

Faller, Davis & Associates, Inc.
CONSULTING ENGINEERS

Maitland, Florida
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Engineer of Record: Edward S. Jarem

P. STATE 45255

11/30/11

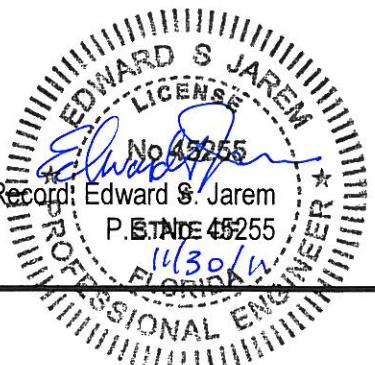


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EXECUTIVE SUMMARY

Faller, Davis & Associates, Inc. (FDA) conducted an Intersection Analysis Study at the intersection of SR 5 (US 1) at Park Avenue in Edgewater, Volusia County, Florida. An arterial investment study (AIS) was performed for SR 5 in Volusia County in 2006. The study recommended various intersection-level improvements at several locations. This intersection was included in those recommendations and at the time of this study, the improvements were being designed for this location.

The purpose of this intersection analysis study is to evaluate the need and feasibility of the improvements identified in the AIS, as well as the need for other additional improvements to address observed operational or safety issues.

The improvement developed in the AIS, which has been scoped for design, includes the addition of a southbound right turn lane on US 1. This improvement is to be accomplished within the existing curb line. This improvement is referred to as Alternative 1 in this study.

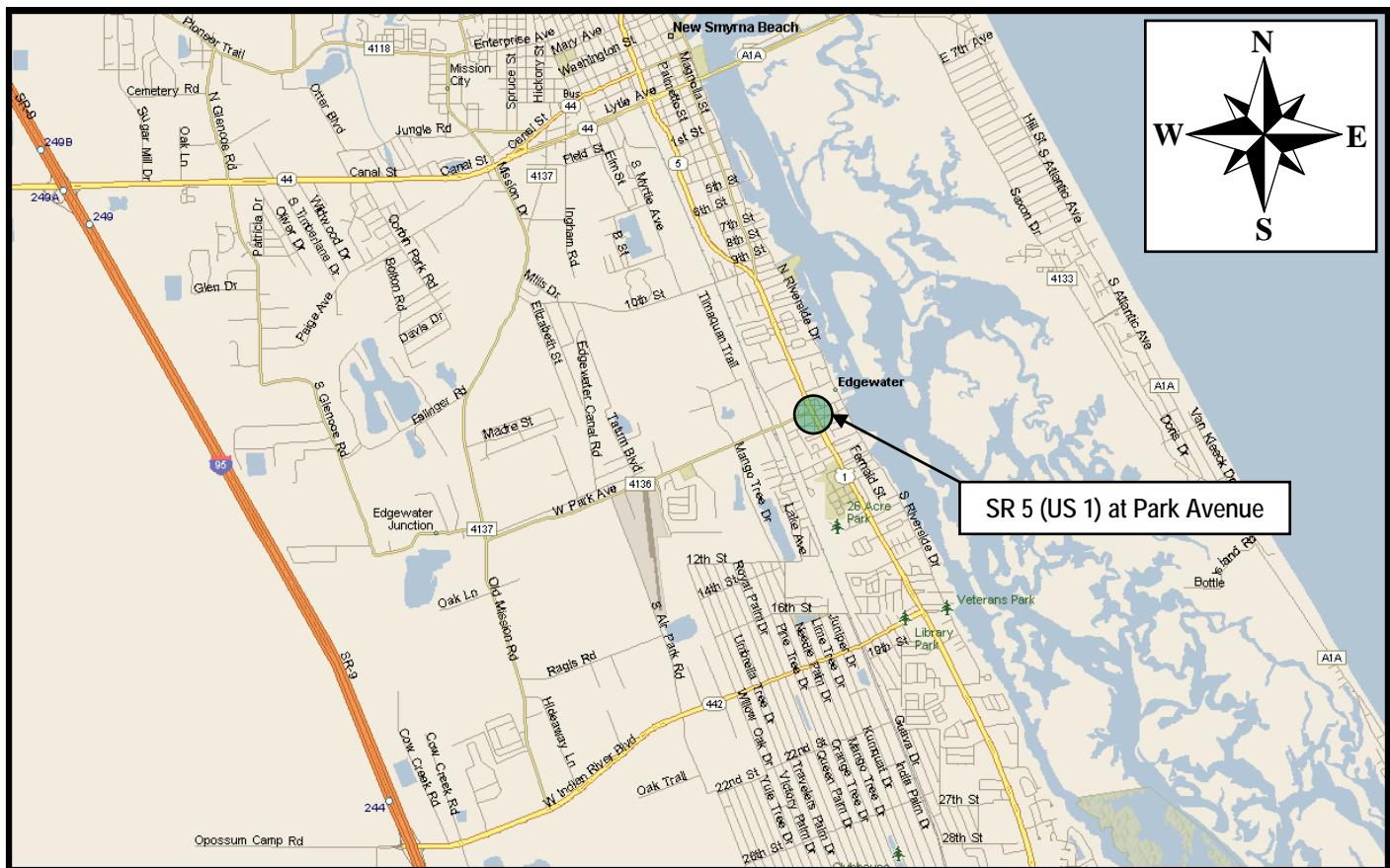
Based on the results of the analysis, field observations, and engineering judgment, the following recommendations and conclusions were developed:

1. Review of the results for the future year traffic volumes indicates that the addition of the southbound right turn lane (Alternative 1) will be beneficial to the intersection operations. However, the eastbound left turn movement will not operate at an acceptable level of service in the 2025 afternoon peak period. Alternative 2, which includes the improvements in Alternative 1 and an east-west protected-permissive left turn phase, is recommended as it provides an acceptable level of service for all of the movements at the intersection in the 2025 afternoon peak period and will not require right of way acquisition.
2. The improvements in Alternatives 1 and 2 are considered to be feasible as they are being accomplished within the existing curb lines, and northbound and southbound U-turn movements will not be affected as they are currently restricted at the intersection.

1. INTRODUCTION

The Florida Department of Transportation has retained **Faller, Davis & Associates, Inc. (FDA)** to perform an Intersection Analysis study at the intersection of SR 5 (US 1) at Park Avenue in Edgewater, Volusia County, Florida. The analysis methods used in conducting this study are consistent with those set forth in the Manual on Uniform Traffic Control Devices (MUTCD 2009), the Manual on Uniform Traffic Studies (MUTS), and FDOT District 5 guidelines and procedures.

Figure 1-Project Location Map



2. EXISTING CONDITIONS

The intersection of SR 5 (US 1) at Park Avenue is located in Edgewater. Significant features for the intersection are summarized below:

Table 1-Summary of Existing Conditions

Feature	Description
Main Street	<ul style="list-style-type: none"> • SR 5 (US 1)
Side Street	<ul style="list-style-type: none"> • Park Avenue
Area Location	<ul style="list-style-type: none"> • The intersection is located 2.3 miles south of SR 44 (Lytle Avenue) and 3.5 miles east of Interstate 95.
Surrounding Development	<ul style="list-style-type: none"> • Development along US 1 is commercial and residential.
Land Uses at Intersection	<ul style="list-style-type: none"> • Northeast-Strip shopping plaza • Northwest-Vacant commercial building • Southwest-Hardware store • Southeast-Convenience store
Pedestrian Generators	<ul style="list-style-type: none"> • Bus stops and convenience store in the vicinity of the intersection
Traffic Control	<ul style="list-style-type: none"> • Traffic signal utilizing a protected-permissive north-south left turn phase, a north-south through phase, and an east-west phase.
Adjacent Signalized Intersections	<ul style="list-style-type: none"> • North Approach: Tenth Street approximately 1.0 mile north • South Approach: SR 442 (Indian River Boulevard) approximately 1.5 miles south • East Approach: N/A • West Approach: N/A
SR 5 (US 1)	<ul style="list-style-type: none"> • <u>Function</u>-Major north-south arterial roadway in Volusia County. • <u>Connectivity</u>-SR 44 to the north and SR 442 to the south • <u>Cross Section</u>-Four lane divided roadway with a raised median and closed drainage system • <u>Posted Speed Limit</u>-North Approach: 45 mph, South Approach: 45 mph • <u>North Approach Lanes</u>-Left turn lane, through lane, and a through/right turn lane • <u>South Approach Lanes</u>- Left turn lane, through lane, and a through/right turn lane • <u>Alignment</u>-Slight horizontal curve south of the intersection • <u>Sidewalks</u>-Both sides of roadway • <u>Utilities</u>-Overhead utility lines on both sides of US 1 south of Park Avenue and on the west side of US 1 north of Park Avenue • <u>Street Lighting</u>-Conventional street lighting on both sides of the roadway north of Park Avenue and on the east side of the roadway south of Park Avenue
Park Avenue	<ul style="list-style-type: none"> • <u>Function</u>-Local collector roadway west of the intersection and local roadway east of the intersection • <u>Connectivity</u>- Old Mission Road to the west and local residential access access to the east • <u>Cross Section</u>-Two lane undivided roadway with a closed drainage system • <u>Posted Speed Limit</u>-East Approach: 25 mph (assumed-not posted), West Approach: 30 mph • <u>East Approach Lanes</u>-One left turn lane and one through/right turn lane • <u>West Approach Lanes</u>- One left turn lane and one through/right turn lane • <u>Alignment</u>-Level and tangent • <u>Sidewalks</u>-Both sides of roadway • <u>Utilities</u>-Overhead utilities on both sides of each approach • <u>Street Lighting</u>-Conventional street lighting on the north side of the east approach
Other Distinct Features	<ul style="list-style-type: none"> • Buildings close to the right of way on the northwest and southwest corners

Traffic Volumes

Eight-hour turning movement counts were conducted from 7:00 to 9:00 AM, 11:00 AM to 1:00 PM, and 2:00 to 6:00 PM. The count reveals that the peak traffic volumes on US 1 occur from 4:30 to 5:30 PM with a total of 2,069 vph approaching the intersection. The peak traffic volumes on Park Avenue occur from 3:15 to 4:15 PM with 463 vph approaching the intersection. The following table summarizes the minimum and maximum and distribution of turning movements during the eight highest hours:

Table 2-Turning Movement Count Summary

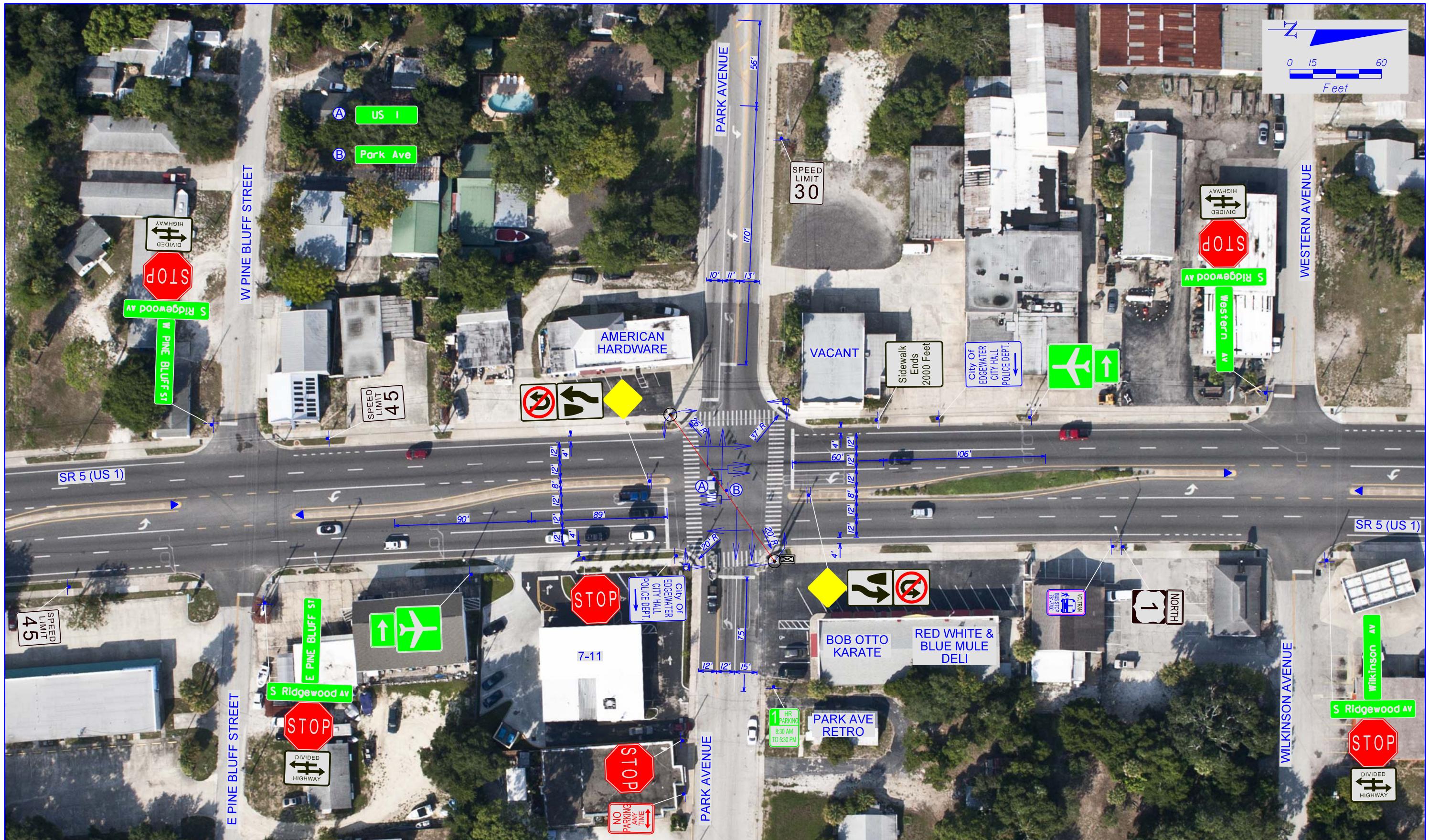
MOVEMENT		NB		SB		EB		WB	
		Min	Max	Min	Max	Min	Max	Min	Max
Left	Volume	45	88	6	21	132	172	19	85
	App % Avg	8%		2%		58%		50%	
Through	Min - Max	703	854	327	1002	18	40	14	43
	App % Avg	89%		86%		11%		29%	
Right	Min - Max	12	29	49	142	35	106	18	27
	App % Avg	3%		12%		31%		21%	
U-Turn	Min - Max	0	4	0	3	0	0	0	0
	App % Avg	<1%		<1%		0%		0%	

Two pedestrians crossed the south approach, three pedestrians crossed the west approach, seven pedestrians crossed the east approach, and no pedestrians crossed the north approach during the count period. Numerous bicyclists were observed at the intersection during the count period. Turning movement, pedestrian, and bicycle data is presented in further detail in the appendix.

Collision Data

Crash data was provided by the Florida Department of Transportation for the intersection of US 1 at Park Avenue for the 12-month period ending June 30, 2010. Three rear end crashes, two angle crashes, a left turn crash, and a right turn crash occurred at the intersection resulting in seven non-incapacitating and three possible injuries. The estimated property damage was \$37,170. Two crashes occurred during the hours of darkness (with street lighting) and one crash occurred on a wet roadway.

Collision summary and collision plots of the intersection have been included.



- CONTROLLER CABINET
- TRAFFIC SIGNAL POLE
- SIGNAL HEAD
- SIGN

- DELINEATOR
- POWER POLE
- LIGHT POLE
- HYDRANT

- DITCH BOTTOM INLET
- MANHOLE
- MITERED END SECTION
- DRAINAGE INLET

- GUARDRAIL
- FENCE
- TREE/SHRUB
- BUILDING

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CONDITION DIAGRAM
CONTINUING SERVICES FOR TRAFFIC OPERATIONS

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⚡ FATAL
 ⚡ INJURY
 XX COLLISION NUMBER
 ← REAR END
 ↗ SIDESWIPE
 ↘ OUT OF CONTROL
 ↙ BACKED INTO
 ↛ RIGHT TURN
 ↕ HIT PEDESTRIAN
 ↖ ANGLE
 ↤ LEFT TURN
 ↖ OVERTURNED
 ↖ HEAD ON
 ↖ HIT MOVEABLE OBJECT

HIT BIKE
 HIT SIGN
 HIT UTILITY POLE
 HIT PARKED CAR

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COLLISION DIAGRAM
CONTINUING SERVICES FOR TRAFFIC OPERATIONS

PAGE NO.

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Table 3-Collision Summary

Section: 79010
 Intersecting Street: Park Avenue
 Source Data: Hard Copy Crash Reports
 Study Period: From 7/1/2009 to 6/30/2010 12 Months

Route: SR 5 (US 1)
 County: Volusia
 City: Edgewater

No.	Long or Short Form	Date	Day	Time	DOB	Age	Alcohol / Drugs	Lighting Condition	Roadway Surface	Weather	Fatal	Injury	Most Severe Injury	Harmful Event	Property Damage	Vision Obstructed	Contributing Cause
1	L	7/30/2009	Thursday	21:50	12/15/1963	46	None	Dark (SL)	Wet	Rain	0	3	Non-Incapacitating	Rear End	\$10,000	None	Careless Driving
2	S	3/16/2010	Tuesday	12:30	3/5/1954	56	None	Daylight	Dry	Clear	0	0	None	Left Turn	\$3,000	None	FTYRW
3	L	3/30/2010	Tuesday	20:16	Unknown	Unknown	Undetermined	Dark (SL)	Dry	Clear	0	0	None	Right Turn	\$200	None	FTYRW
4	L	5/11/2010	Tuesday	14:52	6/4/1972	38	None	Daylight	Dry	Clear	0	4	Non-Incapacitating	Angle	\$10,000	None	FTYRW
5	L	5/14/2010	Friday	11:09	6/19/1970	40	None	Daylight	Dry	Clear	0	1	Possible	Rear End	\$70	None	Careless Driving
6	S	6/21/2010	Monday	16:45	7/30/1989	21	None	Daylight	Dry	Clear	0	0	None	Rear End	\$400	None	Careless Driving
7	L	6/24/2010	Thursday	18:49	12/21/1949	61	None	Daylight	Dry	Clear	0	2	Possible	Angle	\$13,500	None	Disregarded Traffic Signal
Crash Statistics									Injury Severity				Lighting			Roadway Condition	
Total Number of Crashes	Total Number of Long Form Crashes	Total Property Damage	Total Number of Fatalities	Total Number of Fatal Crashes	Total Number of Injuries	Total Number of Injury Crashes	None	Possible	Non-Incapacitating	Incapacitating	Fatal	Daylight	Dark (SL)	Dark (No SL)	Wet	Dry	Unknown
7	5	\$37,170	0	0	10	4	3	2	2	0	0	5	2	0	1	6	0
100%	71%	N/A	N/A	0%	N/A	57%	43%	29%	29%	0%	0%	71%	29%	0%	14%	86%	0%
Rear End	Head On	Angle	Left Turn	Right Turn	Sideswipe	Backed Into	Parked Car	Collision with MV Other Road	Pedestrian	Bike	Bike (Bike Lane)	Moped	Train	Animal	Hit Sign/Sign Post	Hit Utility Pole	Hit Guardrail
3	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
43%	0%	29%	14%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Hit Fence	Hit Concrete Barrier Wall	Bridge/Pier/Abutment	Hit Tree/Shrub	Hit Const Barricd/Sign/BrdgPier/Abutt	Traffic Gate	Crash Attenuator	Fixed Object Above Road	Other Fixed Object	Moveable Object	Ran Into Ditch/Culvert	Ran Off Road Into Water	Overturned	Occupant Fell From Vehicle	Trac/Trailer Jackknifed	Fire	Explosion	All Other
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Improper Driving	Careless Driving	FTYRW	Improper Backing	Improper Lane Change	Improper Turn	Followed Too Closely	Disregarded Traffic Signal	Exceed Safe Speed Limit	Disregarded Stop Sign	Failed to Maintain Equipment /	Improper Passing	Drove Left of Center	Stated Safe Speed Limit	Obstructing Traffic	Improper Load	All Other	Alcohol/Drugs-Under Influence
0	3	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
0%	43%	43%	0%	0%	0%	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

3. QUALITATIVE ASSESSMENT

The intersection of SR 5 (US 1) and Park Avenue was observed by a registered professional engineer in the morning (7:00 to 8:00 AM) and afternoon (4:45 to 5:45 PM) peak periods to assess existing operating conditions and to determine if modifications are needed to improve the safety and efficiency of the intersection.

Request: The Department requested an evaluation of the improvements identified in the US 1 AIS, as well as the need for other additional improvements to address observed operational or safety issues.

Operations: Operations include the efficiency of operation and interaction of motor vehicles, pedestrians, and bicycles at the intersection. Following are the observations relating to these factors:

- Northbound and southbound are the predominant movements at the intersection, averaging approximately 850 vph in each direction.
- The eastbound left turn movement is the predominant turning movement at the intersection, averaging approximately 150 vph.
- The traffic signal operates in non-coordinated mode throughout the day and the semi-actuated operation results in efficient operations in the morning and afternoon peak traffic periods. The intersection operates using a 50 to 70 second cycle length range in the morning and a 60 to 90 second cycle length range in the afternoon.
- The north-south protected-permissive left turn phases are sporadically activated as most vehicles turn during the permissive phase.
- The eastbound left turn movement operates efficiently as there are only one or two opposing westbound movements per cycle. Only one phase failure was observed for the eastbound left turn movement when, in the morning peak period, eight of twelve vehicles were serviced in a cycle. The unserviced vehicles were serviced during the next cycle.
- The southbound right turn movement was observed to operate efficiently in the peak periods.
- It was noted during the review in September that eastbound drivers experience significant glare from the sun in the morning peak period. Backplates are not currently provided on the signal heads.
- Northbound and southbound U-turn movements are restricted at the intersection.

Safety: Vehicle, pedestrian, and bicycle safety at the intersection are assessed through review of crash reports, identification of significant crash trends, then correlation to field conditions. Following are the observations relating to the safety of the intersection.

- Crash data provided by the Florida Department of Transportation for the intersection for the 12-month period ending June 30, 2010 includes three rear end crashes, two angle crashes, a left turn crash, and a right turn crash.
- Two rear end crashes occurred on the southbound approach and one occurred on the northbound approach. All of the crashes were caused by careless driving.
- One angle crash occurred when a southbound motorist disregarded the red traffic signal and struck a westbound motorist. The other angle crash occurred between a northbound motorist and a westbound motorist at Wilkinson Avenue. The westbound motorist failed to yield the right of way to the northbound motorist.
- The left turn crash involved a southbound left turn violating the right of way of a northbound through. This crash occurred at Wilkinson Avenue.
- The right turn crash involved a westbound vehicle making a right turn from Park Avenue violating the right of way of a northbound vehicle.
- None of the crashes involved the southbound right turn movement.

Maintenance: In addition to observing operational and safety conditions, correctible maintenance items are also identified during the field review. Following is a summary of maintenance items observed at the intersection.

- The existing signs and pavement markings are in good condition and properly applied.

4. INTERSECTION ANALYSIS

The purpose of the intersection analysis is to evaluate alternatives that may improve intersection efficiency and safety. Synchro models for the base condition, scoped improvements, and three alternatives were developed for the morning and afternoon peak traffic periods for the current year (2011) and future year (2025) traffic volumes.

The raw turning movement count data for the morning and afternoon peak traffic periods was adjusted to the average week of the year then factored by the peak hour factor for the intersection. Then, the 2025 traffic volumes were developed utilizing a 1.5% linear growth rate. Table 4 summarizes the volumes developed for the analysis.

Table 4-Design Volumes

Morning Peak Period	Time	EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Raw Count Data	11:45 AM	148	21	96	66	31	22	91	800	22	19	728	102	
2011 Adjusted to Average Week (inc. PHF)		162	23	105	72	34	24	100	878	24	21	799	112	
2025 Average Week		196	28	127	87	41	29	121	1062	29	25	967	136	
Afternoon Peak Period		EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Raw Count Data	4:30 PM	140	24	94	78	32	22	73	727	19	17	1093	140	
2011 Adjusted to Average Week (inc. PHF)		160	27	107	89	37	25	83	830	22	19	1248	160	
2025 Average Week		194	33	129	108	45	30	100	1004	27	23	1510	194	
Peak Hour Factor for Entire Intersection										AM	0.948	PM	0.911	
Date of Count				Average Week Factor				1.04						
Linear Growth Rate (per year)				1.5%	from		2011	to		2025	Growth Factor			

The existing signal timings and phasing sequences were obtained from the traffic signal controller. This intersection currently operates in non-coordinated mode throughout the day. The existing Yellow Change, Red Clearance, and Pedestrian Clearance intervals were checked against the requirements in the Traffic Engineering Manual (TEM) and District Five guidelines. Table 5 summarizes the recommended intervals.

Table 5-Recommended Intervals

Phase	1	2	3	4	5	6	7	8
Movement	NBL	SB	N/A	WB	SBL	NB	N/A	EB
Yellow Change Interval - Existing	4.0	4.3		4.0	4.0	4.3		4.0
Yellow Change Interval - FDOT Standard	4.3	4.3		3.0	4.3	4.3		3.2
Yellow Change Interval - Recommended	4.3	4.3		4.0	4.3	4.3		4.0
Red Clearance Interval - Existing	1.0	2.0		1.0	1.0	2.0		1.0
Red Clearance Interval - Calculated	1.4	1.2		3.1	1.4	1.2		2.7
Red Clearance Interval - Recommended	1.4	2.0		3.1	1.4	2.0		2.7
Pedestrian Clearance Interval - Existing		16.0		25.0		16.0		
Pedestrian Clearance Interval - Calculated		18.0		26.0		12.0		
Pedestrian Clearance Interval - Recommended		18.0		26.0		16.0		

The local controller timing worksheet is included in the appendix.

Base Condition

The existing signal sequence, timings, and geometry were modeled to establish base operating conditions. Synchro was calibrated by comparing field observations of existing signal operations with the developed phase splits from the models. Several cycle lengths were measured in the morning and afternoon peak period reviews and it was found that the traffic signal operates using a cycle length ranging from 60 to 90 seconds. Synchro predicted similar cycle lengths.

Alternative 1 (Scoped Improvements)

Alternative 1 includes the addition of a southbound right turn lane on US 1. This improvement is to be accomplished within the existing curb line and will require that the existing 12 foot wide lanes on the north approach be narrowed. The improvements to the south approach are being made to correct a three foot lateral offset through the intersection for southbound traffic. The existing northbound lanes will be narrowed to achieve this correction. A copy of the scoped improvements has been included in the appendix.

Alternative 2

Alternative 2 includes the improvements in Alternative 1, the addition of an east-west protected-permissive left turn phase, and the addition of a southbound right turn overlap phase that will operate concurrently with the eastbound left turn movement.

Alternative 2A

Alternative 2A includes the improvements in Alternative 1, the addition of an eastbound protected-permissive left turn phase, and the addition of a southbound right turn overlap phase that will operate concurrently with the eastbound left turn movement.

Alternative 3

Alternative 3 includes the improvements in Alternative 2, the addition of a second eastbound left turn lane, and the revision of the east-west left turn phase from protected-permissive to protected-only. This improvement would require widening the west approach and likely require right of way acquisition.

Table 6-Alternatives Comparison

Alternative	Intersection LOS	Intersection Delay (Sec/Veh)	SB Approach LOS	SB Approach Delay (Sec/Veh)	EBLT LOS	EBLT Delay (Sec/Veh)	WBLT LOS	WBLT Delay (Sec/Veh)
Morning Peak Period								
2011 No Build	B	13.4	B	14.5	C	31.0	C	22.4
2011 Alternative 1 (Scoped Improvements)	B	13.0	B	13.2	C	29.7	C	22.9
2011 Alternative 2	B	16.5	B	17.1	C	20.9	B	16.0
2011 Alternative 2A	B	17.8	B	19.4	C	21.0	C	31.2
2011 Alternative 3	B	17.2	B	17.1	C	26.2	C	29.0
Afternoon Peak Period								
2011 No Build	B	18.2	C	20.1	E	56.7	C	33.1
2011 Alternative 1 (Scoped Improvements)	B	16.3	B	17.4	D	46.5	C	30.3
2011 Alternative 2	C	21.1	C	25.3	C	30.0	C	23.3
2011 Alternative 2A	C	21.4	C	25.4	C	30.4	D	46.4
2011 Alternative 3	C	21.7	C	25.3	C	31.0	D	42.0
Morning Peak Period								
2025 No Build	B	17.5	B	20.0	D	38.3	C	24.3
2025 Alternative 1 (Scoped Improvements)	B	16.2	B	16.3	D	38.4	C	24.3
2025 Alternative 2	C	20.6	C	20.6	C	32.7	C	28.8
2025 Alternative 2A	C	23.0	C	23.9	C	29.7	D	51.5
2025 Alternative 3	C	21.4	C	20.4	D	41.5	D	44.6
Afternoon Peak Period								
2025 No Build	C	22.5	C	25.3	E	62.9	D	39.0
2025 Alternative 1 (Scoped Improvements)	B	19.7	C	20.1	E	59.5	D	37.1
2025 Alternative 2	C	21.7	C	21.2	D	48.2	D	39.6
2025 Alternative 2A	C	24.7	C	25.8	D	39.5	E	72.0
2025 Alternative 3	C	22.2	C	21.0	D	47.2	E	57.4

With the exception of the eastbound left turn movement in the afternoon peak period (LOS E), the intersection operates efficiently under existing conditions. Review of the results for the future year traffic volumes indicates that the addition of the southbound right turn lane (Alternative 1) will be beneficial to the intersection operations. However, the eastbound left turn movement will not operate at an acceptable level of service in the 2025 afternoon peak period. Alternatives 2, 2A, and 3 improve the eastbound left turn movement LOS from E to D in the 2025 afternoon peak period.

Alternative 2, which includes the improvements in Alternative 1, is recommended as it provides an acceptable level of service for all of the movements at the intersection in the 2025 afternoon peak period and will not require right of way acquisition.

The improvements in Alternatives 1 and 2 are considered to be feasible as they are being accomplished within the existing curb lines, and northbound and southbound U-turn movements will not be effected as they are already restricted at the intersection.

Other modifications such as revising the east-west signal phase to split phase operation then reassigning the eastbound through/right lane to a through/right/left turn lane to provide additional capacity to the eastbound left turn movement were modeled. It was found that these changes resulted in only minimal improvements over the no-build condition.

5. RECOMMENDATIONS

Based on the results of the analysis, field observations, and engineering judgment, the following recommendations are made:

1. Review of the results for the future year traffic volumes indicates that the addition of the southbound right turn lane (Alternative 1) will be beneficial to the intersection operations. However, the eastbound left turn movement will not operate at an acceptable level of service in the 2025 afternoon peak period. Alternative 2, which includes the improvements in Alternative 1 and an east-west protected-permissive left turn phase, is recommended as it provides an acceptable level of service for all of the movements at the intersection in the 2025 afternoon peak period and will not require right of way acquisition.
2. The improvements in Alternatives 1 and 2 are considered to be feasible as they are being accomplished within the existing curb lines, and northbound and southbound U-turn movements will not be affected as they are currently restricted at the intersection.
3. The recommended revisions to the yellow change intervals, red clearance intervals, and pedestrian clearance intervals should be implemented with any future signal timing or maintenance at the intersection.
4. Backplates should be added to the signal heads if the existing signal supports are adequate to accommodate the additional loading.

A conceptual improvement diagram has been developed to further depict the recommended improvements and is included on the following page.



CONTROLLER CABINET
TRAFFIC SIGNAL POLE
SIGNAL HEAD
SIGN

DELINEATOR
POWER POLE
LIGHT POLE
HYDRANT

DITCH BOTTOM INLET
MANHOLE
MITERED END SECTION
DRAINAGE INLET

GUARDRAIL
FENCE
TREE/SHRUB
BUILDING

Faller, Davis & Associates, Inc.

CONCEPTUAL IMPROVEMENT DIAGRAM
CONTINUING SERVICES FOR TRAFFIC OPERATIONS

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APPENDIX

North Approach Photographs



Looking south into the intersection along US 1



Looking north from the intersection along US 1

South Approach Photographs



Looking north into the intersection along US 1



Looking south from the intersection along US 1

East Approach Photographs



Looking west into the intersection along Park Avenue



Looking east from the intersection along Park Avenue

West Approach Photographs



Looking east into the intersection along Park Avenue



Looking west from the intersection along Park Avenue

VEHICLE TURNING MOVEMENT COUNT

SECTION: 79010
STATE ROUTE: SR 5 (US 1)
OBSERVER: NJS
WEATHER: CLEAR
NORTH APPROACH: SR 5 (US 1)
SOUTH APPROACH: SR 5 (US 1)

CITY: EDGEWATER
INTERSECTING ROUTE: PARK AVENUE
DATE OF COUNT: 8/16/2011
ROAD CONDITION: GOOD
EAST APPROACH: PARK AVENUE
WEST APPROACH: PARK AVENUE
COUNT PERIODS: 7:00 AM - 9:00 AM, 11:00 AM to 1:00 PM, and 2:00 PM to 6:00 PM

COUNTY: VOLUSIA
MILEPOST: 15.659
COMPLETED BY: NJS

ALL VEHICLES / ALL MOVEMENTS

START TIME	NORTHBOUND					SOUTHBOUND					NS TOTAL	EASTBOUND					WESTBOUND					EW TOTAL	GRAND TOTAL
	LEFT	THRU	RIGHT	U-TURN	TOTAL	LEFT	THRU	RIGHT	U-TURN	TOTAL		LEFT	THRU	RIGHT	U-TURN	TOTAL	LEFT	THRU	RIGHT	U-TURN	TOTAL		
7:00	12	165	6	0	183	1	64	10	0	75	258	18	6	4	0	28	4	2	3	0	9	37	295
7:15	8	193	6	0	207	1	74	11	0	86	293	29	5	11	0	45	4	2	7	0	13	58	351
7:30	9	224	10	0	243	2	88	13	0	103	346	47	9	12	0	68	6	5	7	0	18	86	432
7:45	16	247	6	0	269	2	101	15	1	119	388	40	5	8	0	53	5	5	8	0	18	71	459
Total	45	829	28	0	902	6	327	49	1	383	1,285	134	25	35	0	194	19	14	25	0	58	252	1,537
8:00	13	206	4	0	223	4	89	20	0	113	336	37	9	9	0	55	9	6	6	0	21	76	412
8:15	15	201	8	0	224	1	105	17	1	124	348	42	8	19	0	69	5	8	9	0	22	91	439
8:30	8	213	5	1	227	3	80	23	1	107	334	45	6	11	0	62	9	6	3	0	18	80	414
8:45	12	234	10	0	256	2	116	20	0	138	394	42	7	18	0	67	15	10	9	0	34	101	495
Total	48	854	27	1	930	10	390	80	2	482	1,412	166	30	57	0	253	38	30	27	0	95	348	1,760
11:00	15	200	8	2	225	6	158	27	0	191	416	51	16	33	0	100	17	14	7	0	38	138	554
11:15	17	195	6	0	218	3	172	25	1	201	419	33	6	18	0	57	14	9	3	0	26	83	502
11:30	21	185	9	1	216	4	164	27	1	196	412	43	6	28	0	77	14	6	6	0	26	103	515
11:45	23	198	3	1	225	7	157	32	0	196	421	45	2	22	0	69	20	8	6	0	34	103	524
Total	76	778	26	4	884	20	651	111	2	784	1,668	172	30	101	0	303	65	37	22	0	124	427	2,095
12:00	19	199	7	0	225	2	208	28	0	238	463	32	6	31	0	69	20	9	5	0	34	103	566
12:15	26	199	5	1	231	5	197	20	1	223	454	32	6	18	0	56	12	8	6	0	26	82	536
12:30	21	204	7	0	232	3	166	22	1	192	424	39	7	25	0	71	14	6	5	0	25	96	520
12:45	8	190	5	0	203	4	168	24	1	197	400	35	21	18	0	74	11	12	5	0	28	102	502
Total	74	792	24	1	891	14	739	94	3	850	1,741	138	40	92	0	270	57	35	21	0	113	383	2,124
14:00	28	184	7	0	219	4	201	34	1	240	459	41	4	21	0	66	11	12	1	0	24	90	549
14:15	23	189	10	0	222	6	191	31	0	228	450	27	3	24	0	54	17	9	12	0	38	92	542
14:30	13	186	4	1	204	6	209	22	0	237	441	63	10	21	0	94	16	7	8	0	31	125	566
14:45	24	147	5	1	177	5	197	18	0	220	397	28	5	23	0	56	15	7	5	0	27	83	480
Total	88	706	26	2	822	21	798	105	1	925	1,747	159	22	89	0	270	59	35	26	0	120	390	2,137
15:00	16	170	6	0	192	6	201	25	0	232	424	19	5	22	0	46	16	8	5	0	29	75	499
15:15	14	180	9	0	203	4	220	28	1	253	456	33	5	26	0	64	9	9	5	0	23	87	543
15:30	26	190	9	0	225	4	219	32	0	255	480	56	11	34	0	101	19	12	7	0	38	139	619
15:45	19	163	5	0	187	5	222	38	0	265	452	40	8	24	0	72	22	14	7	0	43	115	567
Total	75	703	29	0	807	19	862	123	1	1,005	1,812	148	29	106	0	283	66	43	24	0	133	416	2,228
16:00	18	189	3	2	212	5	234	28	0	267	479	43	8	29	0	80	25	10	7	0	42	122	601
16:15	16	184	2	0	202	4	231	34	0	269	471	28	6	17	0	51	20	5	2	0	27	78	549
16:30	18	182	8	0	208	8	280	34	0	322	530	34	9	21	0	64	19	9	11	0	39	103	633
16:45	21	176	3	1	201	2	248	37	0	287	488	37	6	22	0	65	21	6	3	0	30	95	583
Total	73	731	16	3	823	19	993	133	0	1,145	1,968	142	29	89	0	260	85	30	23	0	138	398	2,366
17:00	16	196	5	0	217	5	306	32	0	343	560	44	3	37	0	84	20	7	4	0	31	115	675
17:15	17	173	3	0	193	2	259	37	0	298	491	25	6	14	0	45	18	10	4	0	32	77	568
17:30	12	170	1	0	183	4	221	32	0	257	440	38	7	12	0	57	14	10	5	0	29	86	526
17:45	14	174	3	0	191	3	216	41	1	261	452	25	2	13	0	40	9	10	5	0	24	64	516
Total	59	713	12	0	784	14	1,002	142	1	1,159	1,943	132	18	76	0	226	61	37	18	0	116	342	2,285

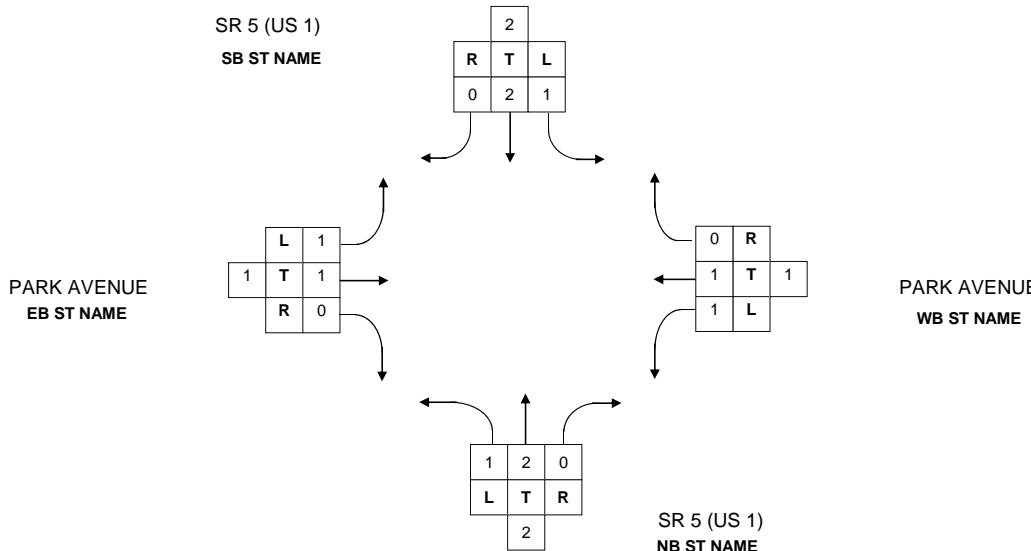
FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

PARK AVENUE

SECTION:	79010	CITY:	EDGEWATER	COUNTY:	VOLUSIA
STATE ROUTE:	SR 5 (US 1)	INTERSECTING ROUTE:	PARK AVENUE	MILEPOST:	15.659
OBSERVER:	NJS	DATE:	8/16/2011		
WEATHER:	CLEAR	ROAD CONDITION:	GOOD		
REMARKS					

BY NJS DATE 09/02/11



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL	
	BEGIN/END	L	T	R	U	TOT	L	T	R	U	TOT	N/S	L	T	R	U	TOT	L	T	R	U	TOT	E/W
4 - 5																							
5 - 6																							
6 - 7																							
7 - 8	45	829	28	0	902	6	327	49	1	383	1,285	134	25	35	0	194	19	14	25	0	58	252	
8 - 9	48	854	27	1	930	10	390	80	2	482	1,412	166	30	57	0	253	38	30	27	0	95	348	
9 - 10																							
10 - 11																							
11 - 12	76	778	26	4	884	20	651	111	2	784	1,668	172	30	101	0	303	65	37	22	0	124	427	
12 - 1	74	792	24	1	891	14	739	94	3	850	1,741	138	40	92	0	270	57	35	21	0	113	383	
1 - 2																							
2 - 3	88	706	26	2	822	21	798	105	1	925	1,747	159	22	89	0	270	59	35	26	0	120	390	
3 - 4	75	703	29	0	807	19	862	123	1	1,005	1,812	148	29	106	0	283	66	43	24	0	133	416	
4 - 5	73	731	16	3	823	19	993	133	0	1,145	1,968	142	29	89	0	260	85	30	23	0	138	398	
5 - 6	59	713	12	0	784	14	1,002	142	1	1,159	1,943	132	18	76	0	226	61	37	18	0	116	342	
6 - 7																							
7 - 8																							
8 - 9																							
9 - 10																							
10 - 11																							
11 - 12																							
TOTAL	538	6,106	188	11	6,843	123	5,762	837	11	6,733	13,576	1,191	223	645	0	2,059	450	261	186	0	897	2,956	

Percentage	8%	89%	3%	0%		2%	86%	12%	0%		58%	11%	31%	0%		50%	29%	21%	0%	
Maximum	88	854	29	4		21	1002	142	3		172	40	106	0		85	43	27	0	
Minimum	45	703	12	0		6	327	49	0		132	18	35	0		19	14	18	0	

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

PARK AVENUE

SECTION: 79010 CITY: EDGEWATER COUNTY: VOLUSIA
 STATE ROUTE: SR 5 (US 1) INTERSECTING ROUTE: PARK AVENUE MILEPOST: 15.659
 OBSERVER: NJS DATE: 8/16/2011
 WEATHER: CLEAR ROAD CONDITION: GOOD
 REMARKS: _____

FORM COMPLETED BY NJS DATE 09/02/11

SR 5 (US 1)
SB ST NAME

7-8	8-9	11-12	12-1	2-3	3-4	4-5	5-6	Total
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

7-8	0	0	0
8-9	1	0	1
11-12	0	0	0
12-1	0	0	0
2-3	1	0	1
3-4	1	0	1
4-5	0	0	0
5-6	0	0	0
Total	3	0	3

7-8	0	1	1
8-9	0	1	1
11-12	0	0	0
12-1	0	1	1
2-3	0	0	0
3-4	1	0	1
4-5	0	0	0
5-6	2	1	3
Total	3	4	7

PARK AVENUE
EB ST NAMEPARK AVENUE
WB ST NAME

7-8	8-9	11-12	12-1	2-3	3-4	4-5	5-6	Total
0	0	0	0	0	1	0	0	1
0	1	0	0	0	0	0	0	1
0	1	0	0	0	1	0	0	2

SR 5 (US 1)
NB ST NAME

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

PARK AVENUE

SECTION: 79010 CITY: EDGEWATER COUNTY: VOLUSIA
 STATE ROUTE: SR 5 (US 1) INTERSECTING ROUTE: PARK AVENUE MILEPOST: 15.659
 OBSERVER: NJS DATE: 8/16/2011
 WEATHER: CLEAR ROAD CONDITION: GOOD
 REMARKS:

FORM COMPLETED BY NJS DATE 09/02/11

SR 5 (US 1)
SB ST NAME

7-8	8-9	11-12	12-1	2-3	3-4	4-5	5-6	Total
1	2	2	0	1	1	0	1	8
0	0	1	3	0	0	0	1	5
1	2	3	3	1	1	0	2	13

7-8	1	0	1
8-9	2	1	3
11-12	0	0	0
12-1	4	5	9
2-3	1	0	1
3-4	2	0	2
4-5	1	1	2
5-6	0	0	0
Total	11	7	18

7-8	0	2	2
8-9	2	6	8
11-12	3	6	9
12-1	2	6	8
2-3	2	2	4
3-4	0	1	1
4-5	2	0	2
5-6	1	1	2
Total	12	24	36

PARK AVENUE
EB ST NAMEPARK AVENUE
WB ST NAME

7-8	8-9	11-12	12-1	2-3	3-4	4-5	5-6	Total
0	0	1	0	0	1	0	2	4
1	0	0	0	3	1	0	0	5
1	0	1	0	3	2	0	2	9

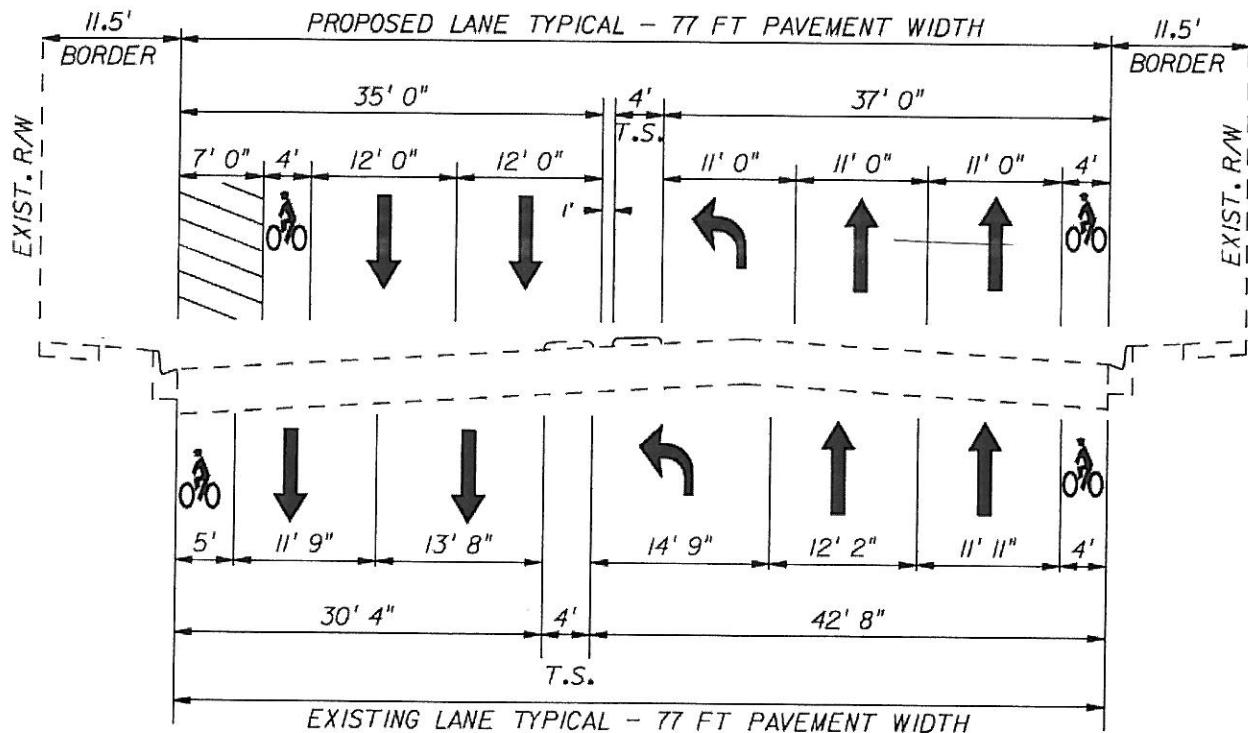
SR 5 (US 1)

NB ST NAME

Roadway Modifications:
SR 5 (Ridgewood Avenue/US 1)
South of Park Avenue Intersection

- Reduce lane widths, as shown in Figure A, to reduce the offset of thru lanes across the intersection. The southbound lanes are offset 3-ft across the intersection ($1^{\circ}50'$). The northbound lanes are aligned.
- Reconstruct the existing 4-ft traffic separator to accommodate the proposed lane widths and reduce lateral offset for southbound through traffic. The inside southbound lane will have a 1-ft offset from the traffic separator to align with the Type A median curb.
- Maintain 4-ft bike lanes.
- Transition southbound lanes back to existing using a shifting taper.
- Mill and resurface between the north median nose of the opening at Pine Bluff Street and Park Avenue.

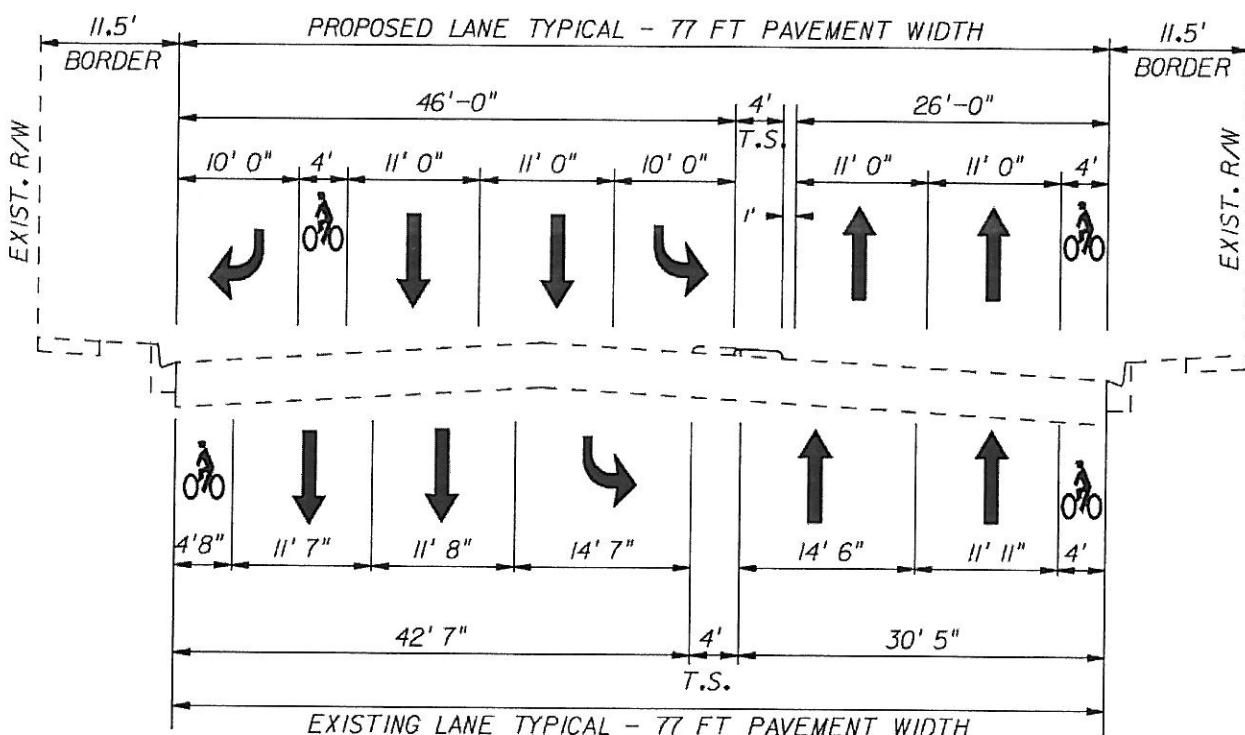
**Figure A: SR 5 (Ridgewood Avenue / US 1) Proposed Lane Modification
 (South of Intersection with Park Avenue, Section A)**



SR 5 (Ridgewood Avenue/US 1)
North of Park Avenue Intersection

- Provide a 390-ft right turn lane (205-ft queue) per Ghyabi & Associates Intersection Analysis.
- Reduce lane widths, as shown in Figure B, to add a right turn lane on SB SR 5 (Ridgewood Avenue/US 1).
- Remove the landscaped median and construct a 4-ft traffic separator.
- Maintain 4-ft bike lanes including keyhole, per Std. Index 17347. A 5-ft keyhole will not fit within the existing curb line without reducing a thru lane to 10-ft (variation due to design speed) or reducing a turn lane to 9-ft, which may increase off tracking thru the return.
- North of right lane addition, transition lanes from existing to proposed using a shifting taper.
- Reconstruct radius return to accommodate design vehicle SU for the right turn movement onto Park Avenue.
- Mill and resurface from Park Avenue to the PC of the return on the north side of Lamont Street, including the intersection of Park Avenue.

**Figure B: SR 5 (Ridgewood Avenue / US 1) Proposed Lane Modification
(North of Intersection with Park Avenue, Section B)**



Drainage Scope Items:

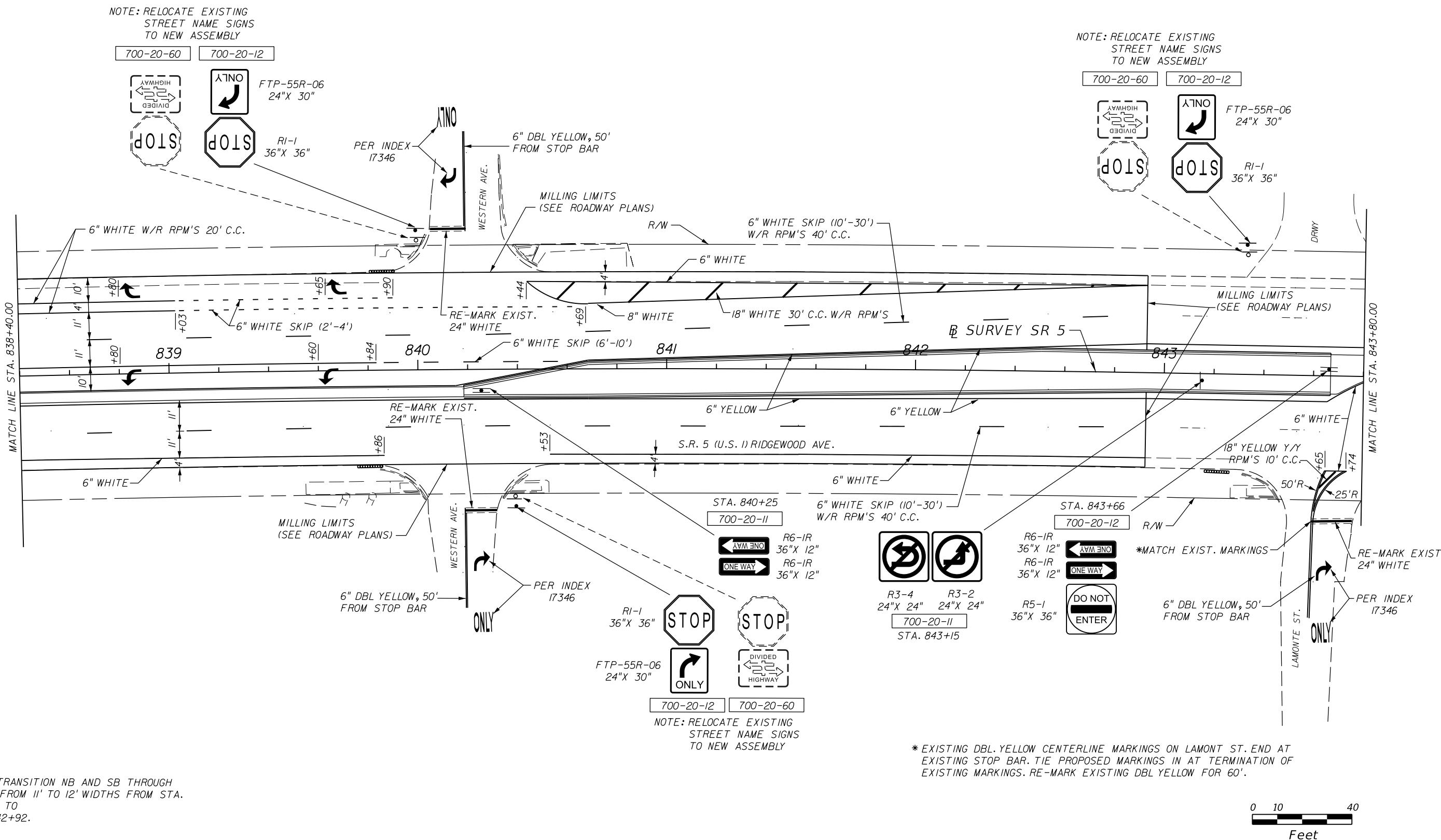
- No drainage modifications within project limits.

Utility Scope Items:

- Obtain Vvh information at the 3 proposed mast arms, 3 each, for a total of 9.
- Remove or relocate water/irrigation from the median

Permitting Scope Items:

- Coordination with FDOT for determination letter. No permit is expected.
- The widening will create an additional 151 SY of impervious area and 403 SY of disturbed soils.



REVISIONS				CES Comprehensive Engineering Services, Inc. 201 S Orange Ave, Suite 1300 Orlando, FL 32801-3442 Certificate of Authorization Number : 7862 Arthur L. Shipley, P.E., License No. 49398	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SIGNING & PAEMENT MARKING PLAN SHEET	SHEET NO. S-26
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
	PRELIMINARY NOT FOR CONSTRUCTION				SR 5	VOLUSIA	426889-1-52-01		
8/16/2011 2:24:22 PM								kraymond	8/16/2011 2:24:22 PM

CONTROLLER INTERVALS

Faller, Davis & Associates, Inc.

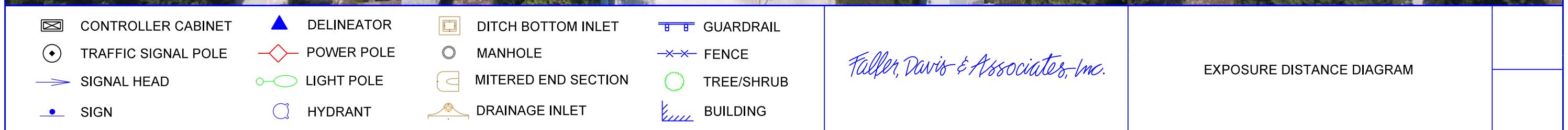
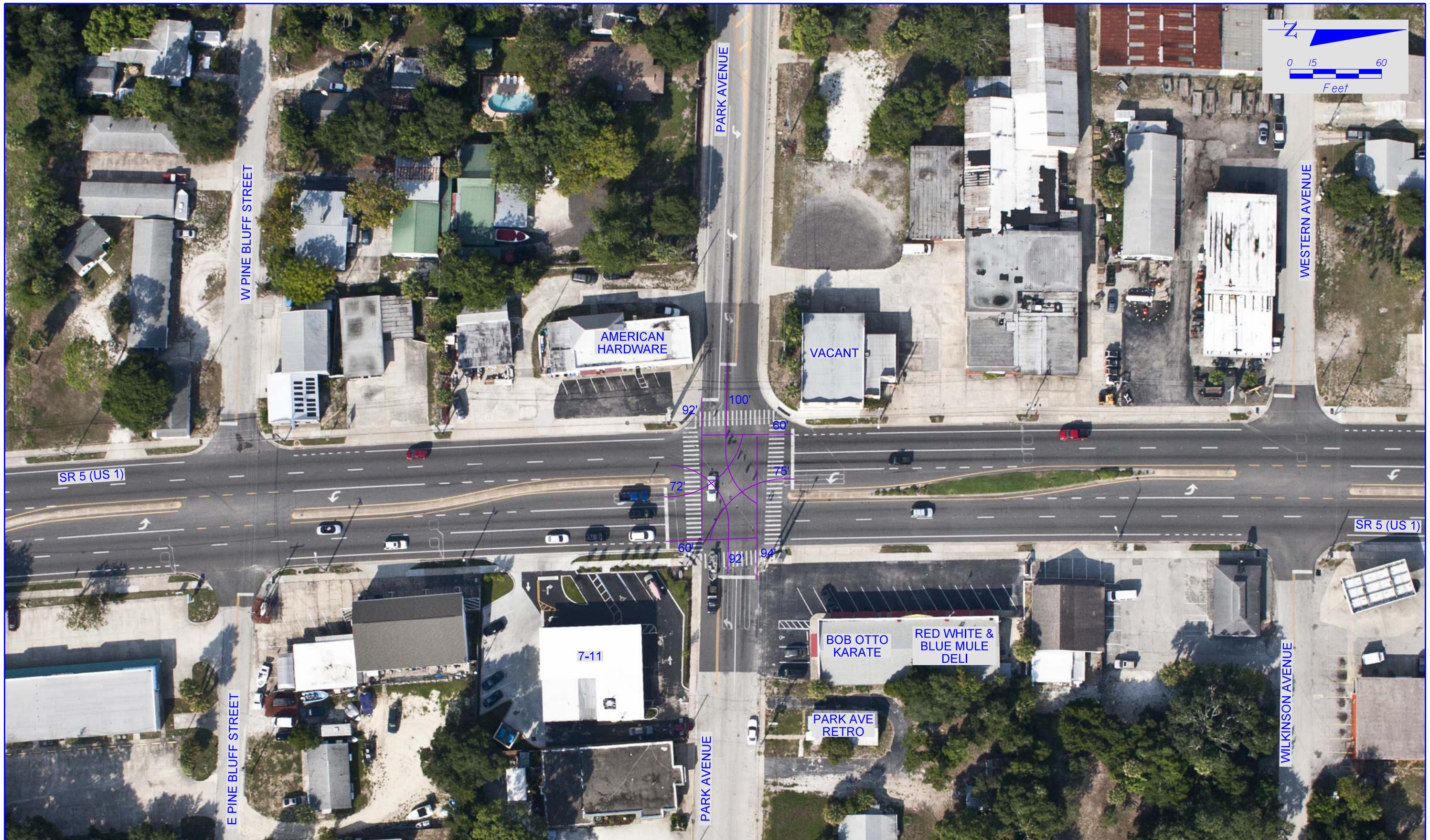
Updated 8/9/11

Intersection: US 1 at Park Avenue								EOR:	ESJ	Date:	8/23/2011
Movement # (Controller Phase Ø)	1	2	3	4	5	6	7	8			
Direction of Travel	NBL	SB	N/A	WB	SBL	NB	N/A	EB			
<i>Existing Timings</i>											
Min Green	5	10		6	5	10			6		
Extension	4.0	4.0		4.0	4.0	4.0			4.0		
Yellow	4.0	4.3		4.0	4.0	4.3			4.0		
Red Clearance	1.0	2.0		1.0	1.0	2.0			1.0		
Max I	10.0	45.0		20.0	10.0	45.0			20.0		
Max II	0.0	0.0		0.0	0.0	0.0			0.0		
Walk	0	7		10	0	7			0		
Pedestrian Clearance	0	16		25	0	16			0		
<i>Calculated Timings</i>											
Approach Speed (mph) ²	45	45		25	45	45			30		
% Grade of Approach (+ Uphill, - Downhill)	0%	0%		0%	0%	0%			0%		
Exposure Dist. (ft) ³	72	60		94	75	60			100		
Crossing Dist. For Concurrent Ped Mvmnt (ft) ⁴		60		89		42					
Pedestrian Crossing Speed (ft/sec) ⁵		3.5		3.5		3.5					
Yellow ⁷	4.3	4.3		3.0	4.3	4.3			3.2		
Red Clearance ⁷	1.4	1.2		3.1	1.4	1.2			2.7		
Pedestrian Clearance ¹¹		18		26		12					
<i>Recommended Timings</i>											
Min Green ⁶	5	10		6	5	10			6		
Extension ⁶	4	4		4	4	4			4		
Yellow	4.3	4.3		4.0	4.3	4.3			4.0		
Red Clearance	1.4	2.0		3.1	1.4	2.0			2.7		
Max I ⁸	10	45		20	10	45			20		
Max II ⁹											
Walk ¹⁰		7		10		7					
Pedestrian Clearance		18.0		26.0		16.0					
Minimum Split without Peds	11	17		14	11	17			13		
Maximum Split without Peds	16	52		28	16	52			27		

All timings shown above shall be reviewed and approved by the Engineer of Record (EOR) regardless of whether the timings are existing or newly developed.

Notes

- 1 Data to be entered in cells with black font and no fill color.
- 2 The 85th percentile or posted speed limit of the approach. If no speed limit is posted and the 85th percentile speed is not available, then 25 mph should be used. Used for calculation of the Yellow Change Interval and the Red Clearance Interval.
- 3 Through path or turning movement path from stop bar to last point of conflict including bicycle lanes and pedestrian crosswalks. The last point of conflict may be defined by District preference (i.e. D5 is last conflicting through lane & D1 is beyond furthest conflicting crosswalk). Exposure distances shall be measured for all left turn phases.
- 4 Curb to curb.
- 5 Use 3.5 fps. Use 3.0 fps for school crossings, locations where there is a significant elderly population, or where there are disabled pedestrians.
- 6 Use existing values and field adjust as necessary. Update values as needed for local preferences, dilemma zone protection, if newly signalized, or if loop placement changed.
- 7 Calculation based on 2009 MUTCD and 2011 TEM requirements. If calculated value lower than existing value, do not reduce without compelling reason. Yellow minimum 3.0 seconds. Yellow maximum 6.0 seconds. Red Clearance interval minimum 1.0 second and maximum 6.0 seconds. Maximums may be increased based on engineering judgment. When through and turning movements always terminate together (i.e. permissive left turn movement), the Red Clearance interval for the through movement shall be used. In the case of a split phased intersection or T-intersection, the longer of the left turn or through exposure distance should be used for the Red Clearance interval calculation.
- 8 Use existing values and field adjust as necessary. Update values as needed for local preferences.
- 9 Use existing values and field adjust as necessary. Update values as needed for local preferences. Calculate if Inhibit Max Termination is not used.
- 10 Use existing values and update values as needed for local preferences or to meet minimum requirements. 2009 MUTCD typical value 7.0 seconds, but may be reduced to 4.0 seconds. May be increased for school crossings, locations where there is a significant elderly population, or where there are disabled pedestrians.
- 11 Pedestrian Clearance must end at the start of the Yellow interval for the concurrent vehicle movement.



US 1 at Park Avenue

2011 No Build

AM Peak

	↙	→	↘	↖	←	↗	↖	↑	↗	↘	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	
Volume (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t		0.877			0.938			0.996			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1525	0	1770	1922	0	1770	3525	0	1770	3476	0
Flt Permitted	0.719			0.675			0.227			0.306		
Satd. Flow (perm)	1295	1525	0	1257	1922	0	423	3525	0	570	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		105			24			5			31	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		905			792			591			647	
Travel Time (s)		20.6			18.0			9.0			9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	128	0	72	58	0	100	902	0	21	911	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		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)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	Perm		Perm			pm+pt			pm+pt			
Protected Phases		8			4			1	6		5	2
Permitted Phases		8			4			6			2	

US 1 at Park Avenue

2011 No Build

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	
Total Split (s)	18.0	18.0	0.0	18.0	18.0	0.0	11.0	26.0	0.0	11.0	26.0	0.0
Total Split (%)	32.7%	32.7%	0.0%	32.7%	32.7%	0.0%	20.0%	47.3%	0.0%	20.0%	47.3%	0.0%
Maximum Green (s)	11.3	11.3		10.9	10.9		5.3	19.7		5.3	19.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	4.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	10.6	10.6		10.0	10.0		30.0	30.4		26.9	24.4	
Actuated g/C Ratio	0.21	0.21		0.20	0.20		0.60	0.61		0.54	0.49	
v/c Ratio	0.59	0.32		0.29	0.14		0.25	0.42		0.05	0.53	
Control Delay	31.0	9.0		22.4	13.5		7.2	9.6		5.8	14.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	31.0	9.0		22.4	13.5		7.2	9.6		5.8	14.7	
LOS	C	A		C	B		A	A		A	B	
Approach Delay		21.3			18.4			9.4			14.5	
Approach LOS		C			B			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 50.1

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 13.4

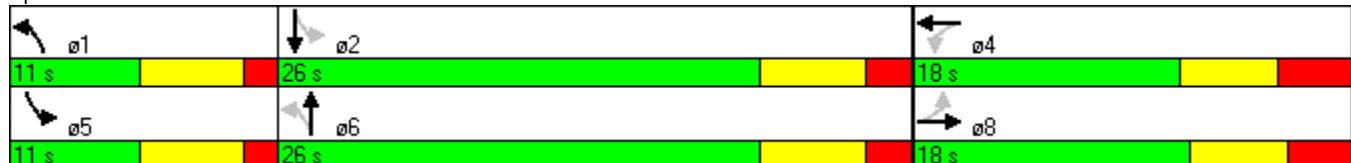
Intersection LOS: B

Intersection Capacity Utilization 66.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 Alternative 1

AM Peak

	↑	→	↓	↖	←	↗	↑	↖	↙	↓	↗	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	↑
Volume (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	11	11	11	10	11	10
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.877			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1525	0	1770	1922	0	1711	3408	0	1652	3421	1478
Flt Permitted	0.719			0.675			0.276			0.303		
Satd. Flow (perm)	1295	1525	0	1257	1922	0	497	3408	0	527	3421	1478
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		105			24			5				112
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	128	0	72	58	0	100	902	0	21	799	112
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			11				11
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	1.00	1.04	1.04	1.04	1.09	1.04	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	Perm		Perm			pm+pt			pm+pt		Perm	
Protected Phases		8			4			1	6		5	2
Permitted Phases		8			4			6			2	2

US 1 at Park Avenue

2011 Alternative 1

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	9.7
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	16.0
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	11.0	29.0	0.0	11.0	29.0	29.0
Total Split (%)	33.3%	33.3%	0.0%	33.3%	33.3%	0.0%	18.3%	48.3%	0.0%	18.3%	48.3%	48.3%
Maximum Green (s)	13.3	13.3		12.9	12.9		5.3	22.7		5.3	22.7	22.7
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.3
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.3
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Act Effect Green (s)	11.7	11.7		11.0	11.0		32.2	32.7		29.1	26.5	26.5
Actuated g/C Ratio	0.22	0.22		0.21	0.21		0.60	0.61		0.54	0.50	0.50
v/c Ratio	0.57	0.31		0.28	0.14		0.23	0.43		0.05	0.47	0.14
Control Delay	29.7	9.1		22.9	13.9		7.4	10.1		6.2	14.8	3.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.7	9.1		22.9	13.9		7.4	10.1		6.2	14.8	3.7
LOS	C	A		C	B		A	B		A	B	A
Approach Delay		20.6			18.9			9.8			13.2	
Approach LOS		C			B			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 53.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 13.0

Intersection LOS: B

Intersection Capacity Utilization 64.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 Alternative 2

AM Peak

	→	→	→	←	←	←	↑	↑	↓	↓	←	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	2	1	1	2	1	1	2	1	1	2	1
Volume (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.877			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1525	0	1770	1922	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.727						0.252			0.252		
Satd. Flow (perm)	1309	1525	0	1863	1922	0	469	3525	0	469	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		105			24			4				112
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	128	0	72	58	0	100	902	0	21	799	112
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	pm+pt		pm+ov									
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		4			6			2		2	

US 1 at Park Avenue

2011 Alternative 2

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		7	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.0	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	12.0	14.0		13.0	14.0		11.0	16.0		11.0	16.0	12.0
Total Split (s)	13.0	14.0	0.0	13.0	14.0	0.0	11.0	22.0	0.0	11.0	22.0	13.0
Total Split (%)	21.7%	23.3%	0.0%	21.7%	23.3%	0.0%	18.3%	36.7%	0.0%	18.3%	36.7%	21.7%
Maximum Green (s)	6.3	7.3		5.9	6.9		5.3	15.7		5.3	15.7	6.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	10.4	7.4		9.6	7.2		25.7	26.0		23.8	22.3	34.2
Actuated g/C Ratio	0.21	0.15		0.19	0.14		0.51	0.52		0.48	0.45	0.68
v/c Ratio	0.49	0.41		0.21	0.20		0.26	0.49		0.06	0.51	0.10
Control Delay	20.9	13.1		16.0	18.5		11.1	16.0		9.8	19.4	2.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	20.9	13.1		16.0	18.5		11.1	16.0		9.8	19.4	2.6
LOS	C	B		B	B		B	B		A	B	A
Approach Delay		17.5			17.1			15.5			17.1	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 50

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 16.5

Intersection LOS: B

Intersection Capacity Utilization 64.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 Alternative 2A

AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	2	1	1	2	1	1	2	1	1	2	1
Volume (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.877			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1525	0	1770	1922	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.328			0.784			0.236			0.264		
Satd. Flow (perm)	591	1525	0	1460	1922	0	440	3525	0	492	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		105			24			4				112
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	128	0	72	58	0	100	902	0	21	799	112
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	pm+pt		Perm			pm+pt			pm+pt		pm+ov	
Protected Phases	3	8		4			1	6		5	2	3
Permitted Phases	8		4			6			2		2	

US 1 at Park Avenue

2011 Alternative 2A

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	12.0	14.0		14.0	14.0		11.0	16.0		11.0	16.0	12.0
Total Split (s)	13.0	27.0	0.0	14.0	14.0	0.0	11.0	22.0	0.0	11.0	22.0	13.0
Total Split (%)	21.7%	45.0%	0.0%	23.3%	23.3%	0.0%	18.3%	36.7%	0.0%	18.3%	36.7%	21.7%
Maximum Green (s)	6.3	20.3		6.9	6.9		5.3	15.7		5.3	15.7	6.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	16.9	16.9		7.1	7.1		28.2	28.6		25.0	22.5	31.8
Actuated g/C Ratio	0.31	0.31		0.13	0.13		0.51	0.52		0.45	0.41	0.58
v/c Ratio	0.51	0.24		0.38	0.21		0.28	0.49		0.06	0.55	0.12
Control Delay	21.0	6.2		31.2	18.7		11.8	16.8		9.8	22.0	2.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	21.0	6.2		31.2	18.7		11.8	16.8		9.8	22.0	2.6
LOS	C	A		C	B		B	B		A	C	A
Approach Delay		14.5			25.6			16.3			19.4	
Approach LOS		B			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 55

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 17.8

Intersection LOS: B

Intersection Capacity Utilization 64.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 Alternative 3

AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑		↑↑	↑↑		↑	↑↑	↑
Volume (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.877			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	1525	0	1770	1922	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.252			0.252		
Satd. Flow (perm)	3319	1525	0	1770	1922	0	469	3525	0	469	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		105			24			4				112
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	162	23	105	72	34	24	100	878	24	21	799	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	162	128	0	72	58	0	100	902	0	21	799	112
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		22			22			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	Prot		Prot			pm+pt			pm+pt			pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases							6			2		2

US 1 at Park Avenue

2011 Alternative 3

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		7	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.0	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	12.0	14.0		13.0	14.0		11.0	16.0		11.0	16.0	12.0
Total Split (s)	13.0	14.0	0.0	13.0	14.0	0.0	11.0	22.0	0.0	11.0	22.0	13.0
Total Split (%)	21.7%	23.3%	0.0%	21.7%	23.3%	0.0%	18.3%	36.7%	0.0%	18.3%	36.7%	21.7%
Maximum Green (s)	6.3	7.3		5.9	6.9		5.3	15.7		5.3	15.7	6.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	6.8	7.4		6.2	7.2		25.7	26.0		23.8	22.3	34.2
Actuated g/C Ratio	0.14	0.15		0.12	0.14		0.51	0.52		0.48	0.45	0.68
v/c Ratio	0.36	0.41		0.33	0.20		0.26	0.49		0.06	0.51	0.10
Control Delay	26.2	13.1		29.0	18.5		11.1	16.0		9.8	19.4	2.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	26.2	13.1		29.0	18.5		11.1	16.0		9.8	19.4	2.6
LOS	C	B		C	B		B	B		A	B	A
Approach Delay		20.4			24.3			15.5			17.1	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 50

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 17.2

Intersection LOS: B

Intersection Capacity Utilization 62.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 No Build

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Volume (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t		0.880			0.940			0.996			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1530	0	1770	1926	0	1770	3525	0	1770	3479	0
Flt Permitted	0.717			0.671			0.112			0.329		
Satd. Flow (perm)	1291	1530	0	1250	1926	0	209	3525	0	613	3479	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)	107			25			6			30		
Link Speed (mph)	30			30			45			45		
Link Distance (ft)	905			792			591			647		
Travel Time (s)	20.6			18.0			9.0			9.8		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	134	0	89	62	0	83	852	0	19	1408	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)	12			12			12			12		
Link Offset(ft)	0			0			0			0		
Crosswalk Width(ft)	16			16			16			16		
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		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)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	Perm			Perm			pm+pt			pm+pt		
Protected Phases	8			4			1	6		5	2	
Permitted Phases	8			4			6			2		

US 1 at Park Avenue

2011 No Build

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	
Total Split (s)	16.0	16.0	0.0	16.0	16.0	0.0	11.0	33.0	0.0	11.0	33.0	0.0
Total Split (%)	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%	18.3%	55.0%	0.0%	18.3%	55.0%	0.0%
Maximum Green (s)	9.3	9.3		8.9	8.9		5.3	26.7		5.3	26.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	4.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	9.3	9.3		8.9	8.9		37.3	35.6		33.8	29.0	
Actuated g/C Ratio	0.15	0.15		0.15	0.15		0.62	0.59		0.56	0.48	
v/c Ratio	0.80	0.41		0.48	0.20		0.31	0.41		0.04	0.83	
Control Delay	56.7	12.2		33.1	17.3		7.9	8.1		4.5	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.7	12.2		33.1	17.3		7.9	8.1		4.5	20.3	
LOS	E	B		C	B		A	A		A	C	
Approach Delay		36.4			26.6			8.1			20.1	
Approach LOS		D			C			A			C	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60.1

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 18.2

Intersection LOS: B

Intersection Capacity Utilization 79.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 Alternative 1

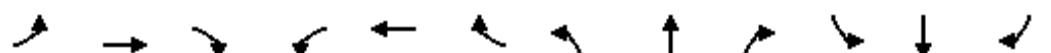
PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	↑
Volume (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	11	11	11	10	11	10
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.880			0.940			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1530	0	1770	1926	0	1711	3408	0	1652	3421	1478
Flt Permitted	0.717			0.671			0.120			0.328		
Satd. Flow (perm)	1291	1530	0	1250	1926	0	216	3408	0	570	3421	1478
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		107			25			5				160
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	134	0	89	62	0	83	852	0	19	1248	160
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			11				11
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	1.00	1.04	1.04	1.04	1.09	1.04	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	Perm		Perm			pm+pt			pm+pt		Perm	
Protected Phases		8			4			1	6		5	2
Permitted Phases		8			4			6			2	2

US 1 at Park Avenue

2011 Alternative 1

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	9.7
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	16.0
Total Split (s)	17.0	17.0	0.0	17.0	17.0	0.0	11.0	32.0	0.0	11.0	32.0	32.0
Total Split (%)	28.3%	28.3%	0.0%	28.3%	28.3%	0.0%	18.3%	53.3%	0.0%	18.3%	53.3%	53.3%
Maximum Green (s)	10.3	10.3		9.9	9.9		5.3	25.7		5.3	25.7	25.7
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.3
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.3
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Act Effect Green (s)	10.0	10.0		9.6	9.6		35.8	34.1		32.4	27.6	27.6
Actuated g/C Ratio	0.17	0.17		0.16	0.16		0.60	0.58		0.55	0.47	0.47
v/c Ratio	0.73	0.39		0.44	0.19		0.31	0.43		0.05	0.78	0.21
Control Delay	46.5	11.4		30.3	16.4		8.3	8.9		4.9	19.4	3.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	46.5	11.4		30.3	16.4		8.3	8.9		4.9	19.4	3.0
LOS	D	B		C	B		A	A		A	B	A
Approach Delay		30.5			24.6			8.8			17.4	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 59.3

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 Alternative 2

PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Volume (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.880			0.940			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1530	0	1770	1926	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.471						0.122			0.288		
Satd. Flow (perm)	848	1530	0	1863	1926	0	227	3525	0	536	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		107			25			4				160
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	134	0	89	62	0	83	852	0	19	1248	160
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	pm+pt		pm+ov									
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		4			6			2		2	

US 1 at Park Avenue

2011 Alternative 2

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		7	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		6.0	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	13.0	14.0		13.0	14.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	13.0	14.0	0.0	13.0	14.0	0.0	11.0	32.0	0.0	11.0	32.0	13.0
Total Split (%)	18.6%	20.0%	0.0%	18.6%	20.0%	0.0%	15.7%	45.7%	0.0%	15.7%	45.7%	18.6%
Maximum Green (s)	6.3	7.3		6.3	6.9		5.3	25.7		5.3	25.7	6.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		2.7	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	6.7	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	13.1	7.1		10.5	7.0		34.3	32.7		31.1	26.5	43.9
Actuated g/C Ratio	0.20	0.11		0.16	0.11		0.53	0.50		0.48	0.41	0.68
v/c Ratio	0.55	0.51		0.30	0.27		0.33	0.48		0.05	0.86	0.14
Control Delay	30.0	17.7		23.3	23.3		12.1	13.3		8.4	28.6	1.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	30.0	17.7		23.3	23.3		12.1	13.3		8.4	28.6	1.9
LOS	C	B		C	C		B	B		A	C	A
Approach Delay		24.4			23.3			13.2			25.3	
Approach LOS		C			C			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 64.9

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.1

Intersection LOS: C

Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 Alternative 2A

PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	↑
Volume (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.880			0.940			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1530	0	1770	1926	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.328			0.784			0.122			0.292		
Satd. Flow (perm)	591	1530	0	1460	1926	0	227	3525	0	544	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		107			25			4				160
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	134	0	89	62	0	83	852	0	19	1248	160
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	pm+pt		Perm			pm+pt			pm+pt		pm+ov	
Protected Phases	3	8		4			1	6		5	2	3
Permitted Phases	8		4			6			2		2	

US 1 at Park Avenue

2011 Alternative 2A

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	13.0	14.0		14.0	14.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	13.0	27.0	0.0	14.0	14.0	0.0	11.0	32.0	0.0	11.0	32.0	13.0
Total Split (%)	18.6%	38.6%	0.0%	20.0%	20.0%	0.0%	15.7%	45.7%	0.0%	15.7%	45.7%	18.6%
Maximum Green (s)	6.3	20.3		6.9	6.9		5.3	25.7		5.3	25.7	6.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	17.0	17.0		7.1	7.1		34.3	32.7		31.1	26.6	41.5
Actuated g/C Ratio	0.26	0.26		0.11	0.11		0.53	0.50		0.48	0.41	0.64
v/c Ratio	0.60	0.28		0.56	0.27		0.33	0.48		0.05	0.86	0.15
Control Delay	30.4	8.3		46.4	23.2		12.1	13.3		8.4	28.7	1.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	30.4	8.3		46.4	23.2		12.1	13.3		8.4	28.7	1.9
LOS	C	A		D	C		B	B		A	C	A
Approach Delay		20.3			36.9			13.2			25.4	
Approach LOS		C			D			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 65.1

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.4

Intersection LOS: C

Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2011 Alternative 3

PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑↑		↑↑	↑↑		↑	↑↑	↑
Volume (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.880			0.940			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	1530	0	1770	1926	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.122			0.288		
Satd. Flow (perm)	3319	1530	0	1770	1926	0	227	3525	0	536	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		107			25			4				160
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	160	27	107	89	37	25	83	830	22	19	1248	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	160	134	0	89	62	0	83	852	0	19	1248	160
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		22			22			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	Prot		Prot			pm+pt			pm+pt			pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases							6			2		2

US 1 at Park Avenue

2011 Alternative 3

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		7	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		6.0	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	13.0	14.0		13.0	14.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	13.0	14.0	0.0	13.0	14.0	0.0	11.0	32.0	0.0	11.0	32.0	13.0
Total Split (%)	18.6%	20.0%	0.0%	18.6%	20.0%	0.0%	15.7%	45.7%	0.0%	15.7%	45.7%	18.6%
Maximum Green (s)	6.3	7.3		6.3	6.9		5.3	25.7		5.3	25.7	6.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		2.7	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	6.7	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	9.0	7.1		6.5	7.0		34.3	32.7		31.1	26.5	43.9
Actuated g/C Ratio	0.14	0.11		0.10	0.11		0.53	0.50		0.48	0.41	0.68
v/c Ratio	0.35	0.51		0.50	0.27		0.33	0.48		0.05	0.86	0.14
Control Delay	31.0	17.7		42.0	23.3		12.1	13.3		8.4	28.6	1.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	31.0	17.7		42.0	23.3		12.1	13.3		8.4	28.6	1.9
LOS	C	B		D	C		B	B		A	C	A
Approach Delay		24.9			34.4			13.2			25.3	
Approach LOS		C			C			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 64.9

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.7

Intersection LOS: C

Intersection Capacity Utilization 73.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 No Build

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	
Volume (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t		0.877			0.938			0.996			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1525	0	1770	1922	0	1770	3525	0	1770	3476	0
Flt Permitted	0.711			0.659			0.141			0.206		
Satd. Flow (perm)	1280	1525	0	1228	1922	0	263	3525	0	384	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		127			29			5			29	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		905			792			591			647	
Travel Time (s)		20.6			18.0			9.0			9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	155	0	87	70	0	121	1091	0	25	1103	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		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)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	Perm		Perm			pm+pt			pm+pt			
Protected Phases		8			4			1	6		5	2
Permitted Phases		8			4			6			2	

US 1 at Park Avenue

2025 No Build

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	11.0	29.0	0.0	11.0	29.0	0.0
Total Split (%)	33.3%	33.3%	0.0%	33.3%	33.3%	0.0%	18.3%	48.3%	0.0%	18.3%	48.3%	0.0%
Maximum Green (s)	13.3	13.3		12.9	12.9		5.3	22.7		5.3	22.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	4.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	12.4	12.4		12.0	12.0		31.4	29.8		28.1	23.5	
Actuated g/C Ratio	0.22	0.22		0.21	0.21		0.55	0.52		0.49	0.41	
v/c Ratio	0.71	0.36		0.34	0.17		0.43	0.60		0.08	0.77	
Control Delay	38.3	9.1		24.3	14.1		11.9	12.8		6.5	20.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.3	9.1		24.3	14.1		11.9	12.8		6.5	20.3	
LOS	D	A		C	B		B	B		A	C	
Approach Delay		25.4			19.7			12.7			20.0	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 57.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 17.5

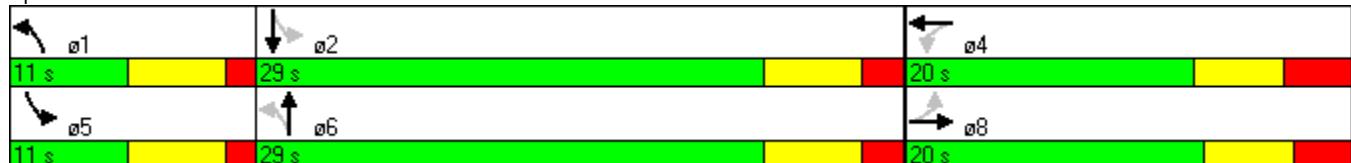
Intersection LOS: B

Intersection Capacity Utilization 74.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 Alternative 1

AM Peak

	↑	→	↓	↗	↖	↙	↖	↑	↗	↘	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑		↑	↑	↑
Volume (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	11	11	11	10	11	10
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.877			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1525	0	1770	1922	0	1711	3408	0	1652	3421	1478
Flt Permitted	0.711			0.659			0.190			0.207		
Satd. Flow (perm)	1280	1525	0	1228	1922	0	342	3408	0	360	3421	1478
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		127			29			5				136
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	155	0	87	70	0	121	1091	0	25	967	136
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			11				11
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	1.00	1.04	1.04	1.04	1.09	1.04	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	Perm		Perm			pm+pt			pm+pt		Perm	
Protected Phases		8			4			1	6		5	2
Permitted Phases		8			4			6			2	2

US 1 at Park Avenue

2025 Alternative 1

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	9.7
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	16.0
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	11.0	29.0	0.0	11.0	29.0	29.0
Total Split (%)	33.3%	33.3%	0.0%	33.3%	33.3%	0.0%	18.3%	48.3%	0.0%	18.3%	48.3%	48.3%
Maximum Green (s)	13.3	13.3		12.9	12.9		5.3	22.7		5.3	22.7	22.7
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.3
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.3
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Act Effect Green (s)	12.4	12.4		12.0	12.0		31.5	29.9		28.2	23.6	23.6
Actuated g/C Ratio	0.22	0.22		0.21	0.21		0.55	0.52		0.49	0.41	0.41
v/c Ratio	0.71	0.36		0.34	0.17		0.39	0.61		0.08	0.69	0.20
Control Delay	38.4	9.1		24.3	14.1		10.0	13.4		6.6	18.3	3.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.4	9.1		24.3	14.1		10.0	13.4		6.6	18.3	3.7
LOS	D	A		C	B		A	B		A	B	A
Approach Delay		25.5			19.7			13.1			16.3	
Approach LOS		C			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 57.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 Alternative 2

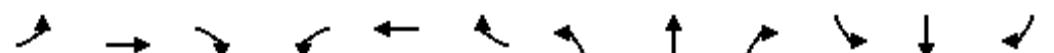
AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	↑
Volume (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.877			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1525	0	1770	1922	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.333			0.816			0.166			0.181		
Satd. Flow (perm)	600	1525	0	1520	1922	0	309	3525	0	337	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		127			27			4				136
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	155	0	87	70	0	121	1091	0	25	967	136
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	pm+pt		pm+ov									
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		4			6			2		2	

US 1 at Park Avenue

2025 Alternative 2

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		7	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		6.0	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	21.0	21.0	0.0	14.0	14.0	0.0	14.0	54.0	0.0	11.0	51.0	21.0
Total Split (%)	21.0%	21.0%	0.0%	14.0%	14.0%	0.0%	14.0%	54.0%	0.0%	11.0%	51.0%	21.0%
Maximum Green (s)	14.3	14.3		7.3	6.9		8.3	47.7		5.3	44.7	14.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		2.7	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	6.7	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	22.6	13.0		13.3	7.6		42.9	39.5		37.6	33.2	56.0
Actuated g/C Ratio	0.28	0.16		0.16	0.09		0.53	0.49		0.47	0.41	0.69
v/c Ratio	0.56	0.44		0.32	0.34		0.38	0.63		0.10	0.67	0.12
Control Delay	32.7	15.6		28.8	33.7		12.9	18.4		10.0	23.6	1.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	32.7	15.6		28.8	33.7		12.9	18.4		10.0	23.6	1.5
LOS	C	B		C	C		B	B		B	C	A
Approach Delay		25.1			31.0			17.8			20.6	
Approach LOS		C			C			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 80.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 20.6

Intersection LOS: C

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 Alternative 2A

AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	↑
Volume (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.877			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1525	0	1770	1922	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.410			0.659			0.152			0.172		
Satd. Flow (perm)	738	1525	0	1228	1922	0	283	3525	0	320	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		127			29			3				136
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	155	0	87	70	0	121	1091	0	25	967	136
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	pm+pt			Perm			pm+pt			pm+pt		pm+ov
Protected Phases	3	8		4			1	6		5	2	3
Permitted Phases	8		4			6			2		2	

US 1 at Park Avenue

2025 Alternative 2A

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	20.0	40.0	0.0	20.0	20.0	0.0	15.0	49.0	0.0	11.0	45.0	20.0
Total Split (%)	20.0%	40.0%	0.0%	20.0%	20.0%	0.0%	15.0%	49.0%	0.0%	11.0%	45.0%	20.0%
Maximum Green (s)	13.3	33.3		12.9	12.9		9.3	42.7		5.3	38.7	13.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	26.3	26.3		11.8	11.8		43.6	39.7		37.4	33.0	55.7
Actuated g/C Ratio	0.31	0.31		0.14	0.14		0.52	0.47		0.44	0.39	0.66
v/c Ratio	0.52	0.28		0.51	0.24		0.39	0.66		0.10	0.70	0.12
Control Delay	29.7	8.4		51.5	27.7		15.1	21.2		12.2	27.3	2.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.7	8.4		51.5	27.7		15.1	21.2		12.2	27.3	2.1
LOS	C	A		D	C		B	C		B	C	A
Approach Delay		20.3			40.9			20.6			23.9	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 84.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 23.0

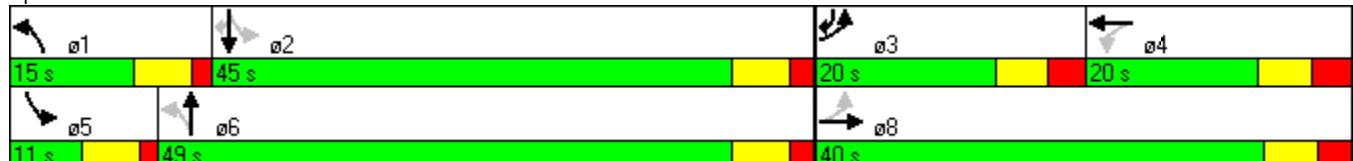
Intersection LOS: C

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 Alternative 3

AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑		↑↑	↑↑		↑	↑↑	↑
Volume (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.877			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	1525	0	1770	1922	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.166			0.184		
Satd. Flow (perm)	3319	1525	0	1770	1922	0	309	3525	0	343	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		127			29			4				136
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	196	28	127	87	41	29	121	1062	29	25	967	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	155	0	87	70	0	121	1091	0	25	967	136
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		22			22			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	Prot		Prot			pm+pt			pm+pt			pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases							6			2		2

US 1 at Park Avenue

2025 Alternative 3

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		7	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	5.0	6.0		6.0	5.7		5.0	9.7		5.0	9.7	5.0
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	17.0	19.0	0.0	17.0	19.0	0.0	14.0	53.0	0.0	11.0	50.0	17.0
Total Split (%)	17.0%	19.0%	0.0%	17.0%	19.0%	0.0%	14.0%	53.0%	0.0%	11.0%	50.0%	17.0%
Maximum Green (s)	10.3	12.3		10.3	11.9		8.3	46.7		5.3	43.7	10.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		2.7	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	6.7	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	10.5	10.3		9.9	9.3		42.5	39.1		37.1	32.7	53.0
Actuated g/C Ratio	0.13	0.13		0.12	0.12		0.53	0.49		0.47	0.41	0.67
v/c Ratio	0.45	0.50		0.39	0.28		0.37	0.63		0.09	0.67	0.12
Control Delay	41.5	18.1		44.6	28.5		12.7	18.1		10.0	23.2	1.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	41.5	18.1		44.6	28.5		12.7	18.1		10.0	23.2	1.9
LOS	D	B		D	C		B	B		A	C	A
Approach Delay		31.2			37.4			17.6			20.4	
Approach LOS		C			D			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 79.5

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 21.4

Intersection LOS: C

Intersection Capacity Utilization 69.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 No Build

PM Peak

	↙	→	↘	↖	←	↗	↖	↑	↗	↘	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Volume (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t		0.881			0.940			0.996			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1532	0	1770	1926	0	1770	3525	0	1770	3479	0
Flt Permitted	0.708			0.654			0.088			0.236		
Satd. Flow (perm)	1275	1532	0	1218	1926	0	164	3525	0	440	3479	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			30			5			26	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		905			792			591			647	
Travel Time (s)		20.6			18.0			9.0			9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	162	0	108	75	0	100	1031	0	23	1704	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		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)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	Perm		Perm			pm+pt			pm+pt			
Protected Phases		8			4			1	6		5	2
Permitted Phases		8			4			6			2	

US 1 at Park Avenue

2025 No Build

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	
Total Split (s)	21.0	21.0	0.0	21.0	21.0	0.0	11.0	48.0	0.0	11.0	48.0	0.0
Total Split (%)	26.3%	26.3%	0.0%	26.3%	26.3%	0.0%	13.8%	60.0%	0.0%	13.8%	60.0%	0.0%
Maximum Green (s)	14.3	14.3		13.9	13.9		5.3	41.7		5.3	41.7	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	4.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	13.9	13.9		13.5	13.5		47.9	45.2		45.7	41.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.63	0.59		0.60	0.54	
v/c Ratio	0.84	0.42		0.50	0.21		0.47	0.49		0.06	0.91	
Control Delay	62.9	12.7		39.0	20.7		15.5	10.9		5.2	25.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	62.9	12.7		39.0	20.7		15.5	10.9		5.2	25.6	
LOS	E	B		D	C		B	B		A	C	
Approach Delay		40.0			31.5			11.3			25.3	
Approach LOS		D			C			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 76.5

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 22.5

Intersection LOS: C

Intersection Capacity Utilization 90.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 Alternative 1

PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	↑
Volume (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	11	11	11	10	11	10
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.881			0.940			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1532	0	1770	1926	0	1711	3408	0	1652	3421	1478
Flt Permitted	0.708			0.654			0.099			0.233		
Satd. Flow (perm)	1275	1532	0	1218	1926	0	178	3408	0	405	3421	1478
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			30			5				194
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	162	0	108	75	0	100	1031	0	23	1510	194
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			11				11
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	1.00	1.04	1.04	1.04	1.09	1.04	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	Perm		Perm			pm+pt			pm+pt		Perm	
Protected Phases		8			4			1	6		5	2
Permitted Phases		8			4			6			2	2

US 1 at Park Avenue

2025 Alternative 1

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	9.7
Minimum Split (s)	13.0	13.0		13.0	13.0		11.0	16.0		11.0	16.0	16.0
Total Split (s)	20.0	20.0	0.0	20.0	20.0	0.0	11.0	44.0	0.0	11.0	44.0	44.0
Total Split (%)	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%	14.7%	58.7%	0.0%	14.7%	58.7%	58.7%
Maximum Green (s)	13.3	13.3		12.9	12.9		5.3	37.7		5.3	37.7	37.7
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.3
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.3
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Act Effect Green (s)	13.1	13.1		12.7	12.7		43.1	40.5		40.9	36.3	36.3
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.61	0.57		0.58	0.51	0.51
v/c Ratio	0.82	0.42		0.50	0.20		0.45	0.53		0.07	0.86	0.23
Control Delay	59.5	12.3		37.1	19.6		14.0	11.4		5.2	22.6	2.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	59.5	12.3		37.1	19.6		14.0	11.4		5.2	22.6	2.5
LOS	E	B		D	B		B	B		A	C	A
Approach Delay		38.0			30.0			11.7			20.1	
Approach LOS		D			C			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 71

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 19.7

Intersection LOS: B

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 Alternative 2

PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	↑
Volume (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.881			0.940			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1532	0	1770	1926	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.357			0.800			0.077			0.218		
Satd. Flow (perm)	643	1532	0	1490	1926	0	143	3525	0	406	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			26			4				194
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	162	0	108	75	0	100	1031	0	23	1510	194
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	pm+pt		pm+ov									
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		4			6			2		2	

US 1 at Park Avenue

2025 Alternative 2

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		7	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	5.7		5.0	9.7		5.0	9.7	6.0
Minimum Split (s)	13.0	14.0		13.1	14.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	18.0	18.0	0.0	14.0	14.0	0.0	11.0	57.0	0.0	11.0	57.0	18.0
Total Split (%)	18.0%	18.0%	0.0%	14.0%	14.0%	0.0%	11.0%	57.0%	0.0%	11.0%	57.0%	18.0%
Maximum Green (s)	11.3	11.3		6.9	6.9		5.3	50.7		5.3	50.7	11.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	19.5	11.2		12.2	7.2		54.4	51.8		52.3	47.8	67.9
Actuated g/C Ratio	0.21	0.12		0.13	0.08		0.60	0.57		0.57	0.53	0.75
v/c Ratio	0.72	0.53		0.49	0.43		0.54	0.51		0.07	0.81	0.16
Control Delay	48.2	19.6		39.6	39.9		23.8	14.4		7.9	24.0	1.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	48.2	19.6		39.6	39.9		23.8	14.4		7.9	24.0	1.1
LOS	D	B		D	D		C	B		A	C	A
Approach Delay		35.2			39.7			15.2			21.2	
Approach LOS		D			D			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 91

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 21.7

Intersection LOS: C

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 Alternative 2A

PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑		↑	↑↑	↑
Volume (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.881			0.940			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	1532	0	1770	1926	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.453			0.654			0.079			0.208		
Satd. Flow (perm)	816	1532	0	1218	1926	0	147	3525	0	387	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		121			27			4				194
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	162	0	108	75	0	100	1031	0	23	1510	194
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	pm+pt			Perm			pm+pt			pm+pt		pm+ov
Protected Phases	3	8			4			1	6		5	2
Permitted Phases	8			4			6			2		2

US 1 at Park Avenue

2025 Alternative 2A

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		4	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	6.0	6.0		5.7	5.7		5.0	9.7		5.0	9.7	6.0
Minimum Split (s)	13.0	14.0		14.0	14.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	15.0	34.0	0.0	19.0	19.0	0.0	11.0	55.0	0.0	11.0	55.0	15.0
Total Split (%)	15.0%	34.0%	0.0%	19.0%	19.0%	0.0%	11.0%	55.0%	0.0%	11.0%	55.0%	15.0%
Maximum Green (s)	8.3	27.3		11.9	11.9		5.3	48.7		5.3	48.7	8.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	27.0	27.0		11.4	11.4		53.1	50.4		50.9	46.3	61.1
Actuated g/C Ratio	0.28	0.28		0.12	0.12		0.56	0.53		0.54	0.49	0.64
v/c Ratio	0.62	0.31		0.73	0.29		0.57	0.55		0.08	0.87	0.18
Control Delay	39.5	11.0		72.0	31.5		26.3	16.6		8.8	29.2	1.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	39.5	11.0		72.0	31.5		26.3	16.6		8.8	29.2	1.5
LOS	D	B		E	C		C	B		A	C	A
Approach Delay		26.5			55.4			17.5			25.8	
Approach LOS		C			E			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 94.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 24.7

Intersection LOS: C

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1



US 1 at Park Avenue

2025 Alternative 3

PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑		↑	↑		↑↑	↑↑		↑	↑↑	↑
Volume (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	12	12	15	12	12	12	12	12	12	12
Storage Length (ft)	500		0	75		0	89		0	60		0
Storage Lanes	2		0	1		0	1		0	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr _t		0.881			0.940			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	1532	0	1770	1926	0	1770	3525	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.077			0.219		
Satd. Flow (perm)	3319	1532	0	1770	1926	0	143	3525	0	408	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			26			4				194
Link Speed (mph)		30			30			45				45
Link Distance (ft)		905			792			591				647
Travel Time (s)		20.6			18.0			9.0				9.8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	194	33	129	108	45	30	100	1004	27	23	1510	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	162	0	108	75	0	100	1031	0	23	1510	194
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		22			22			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.04	1.09	1.00	1.00	0.88	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		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	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	0.0
Detector 1 Queue (s)	0.0	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	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	Prot		Prot			pm+pt			pm+pt			pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases							6			2		2

US 1 at Park Avenue

2025 Alternative 3

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	8		7	4		1	6		5	2	3
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	5.7		5.0	9.7		5.0	9.7	6.0
Minimum Split (s)	13.0	13.0		13.1	13.0		11.0	16.0		11.0	16.0	13.0
Total Split (s)	17.0	15.0	0.0	17.0	15.0	0.0	11.0	57.0	0.0	11.0	57.0	17.0
Total Split (%)	17.0%	15.0%	0.0%	17.0%	15.0%	0.0%	11.0%	57.0%	0.0%	11.0%	57.0%	17.0%
Maximum Green (s)	10.3	8.3		9.9	7.9		5.3	50.7		5.3	50.7	10.3
Yellow Time (s)	4.0	4.0		4.0	4.0		4.3	4.3		4.3	4.3	4.0
All-Red Time (s)	2.7	2.7		3.1	3.1		1.4	2.0		1.4	2.0	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	4.0	7.1	7.1	4.0	5.7	6.3	4.0	5.7	6.3	6.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	4.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	None	None		None	None		None	Min		None	Min	None
Act Effect Green (s)	10.2	8.7		9.4	7.9		54.6	52.0		52.5	48.0	67.1
Actuated g/C Ratio	0.11	0.10		0.10	0.09		0.60	0.57		0.58	0.53	0.74
v/c Ratio	0.52	0.62		0.59	0.39		0.53	0.51		0.07	0.81	0.16
Control Delay	47.2	24.4		57.4	37.8		23.6	14.3		7.9	23.7	1.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	47.2	24.4		57.4	37.8		23.6	14.3		7.9	23.7	1.2
LOS	D	C		E	D		C	B		A	C	A
Approach Delay		36.8			49.4			15.1			21.0	
Approach LOS		D			D			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 90.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 22.2

Intersection LOS: C

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Park Ave & US 1

