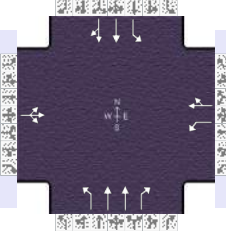
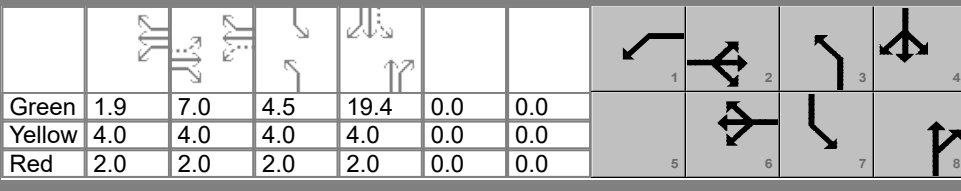


# **Appendix 5**

## **2025 Build Capacity Analysis Sheets**

**AM Peak Hour**

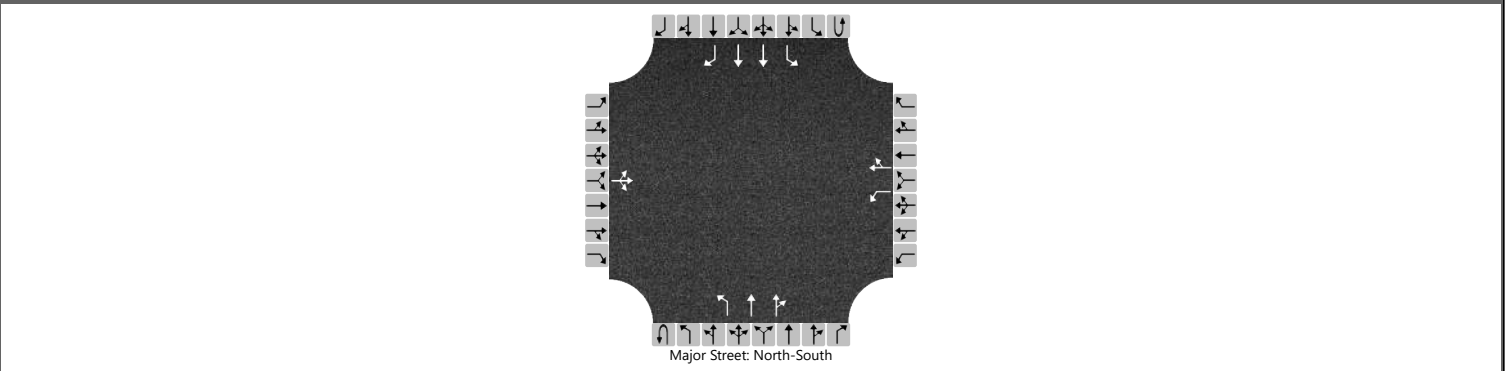
## HCS Signalized Intersection Results Summary

General Information					Intersection Information											
Agency	Woolpert, Inc.				Duration, h	0.250										
Analyst	KWA		Analysis Date	8/29/2023		Area Type	Other									
Jurisdiction	City of Plainfield		Time Period	Opening Build AM		PHF	0.85									
Urban Street	Ronald Regan Pkwy		Analysis Year	2025		Analysis Period	1 > 7:00									
Intersection	Airtech Rd		File Name	Opening Build AM.xus												
Project Description	Life Science Center															
Demand Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h					25	0	18	17	7	14	55	765	97	56	679	65
Signal Information																
Cycle, s	56.7	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On													
Force Mode	Fixed	Simult. Gap N/S	On													
Green	1.9	7.0	4.5	19.4	0.0	0.0										
Yellow	4.0	4.0	4.0	4.0	0.0	0.0										
Red	2.0	2.0	2.0	2.0	0.0	0.0										
Timer Results					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase						2	1	6	3	8	7	4				
Case Number						8.3	1.0	4.0	2.0	3.0	1.1	4.0				
Phase Duration, s						13.0	7.9	20.9	10.5	25.3	10.5	25.4				
Change Period, ( Y+R <sub>c</sub> ), s						6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Allow Headway ( MAH ), s						3.3	3.3	3.3	3.0	3.0	3.0	3.0				
Queue Clearance Time ( g <sub>s</sub> ), s						3.9	2.5	3.1	4.0	15.4	4.7	14.6				
Green Extension Time ( g <sub>e</sub> ), s						0.1	0.0	0.2	0.1	3.9	0.1	4.0				
Phase Call Probability						0.70	0.27	0.78	0.64	1.00	0.65	1.00				
Max Out Probability						0.00	0.00	0.00	0.00	0.12	0.00	0.10				
Movement Group Results					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement					5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h					51			20	25	65	900	114	66	444	431	
Adjusted Saturation Flow Rate ( s ), veh/h/ln					1277			1810	942	1725	1710	982	864	1767	1712	
Queue Service Time ( g <sub>s</sub> ), s					0.5			0.5	1.1	2.0	13.4	4.9	2.7	12.6	12.6	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s					1.9			0.5	1.1	2.0	13.4	4.9	2.7	12.6	12.6	
Green Ratio ( g/C )					0.12			0.19	0.26	0.08	0.34	0.34	0.42	0.34	0.34	
Capacity ( c ), veh/h					257			316	247	137	1166	335	228	604	585	
Volume-to-Capacity Ratio ( X )					0.197			0.063	0.100	0.474	0.772	0.341	0.289	0.736	0.737	
Back of Queue ( Q ), ft/ln ( 95 th percentile)					31.5			9.3	15.2	36.4	201.6	56.8	28.5	200.6	188.8	
Back of Queue ( Q ), veh/ln ( 95 th percentile)					1.1			0.4	0.4	1.4	7.6	1.6	0.7	7.5	7.3	
Queue Storage Ratio ( RQ ) ( 95 th percentile)					0.03			0.05	0.02	0.13	0.11	0.26	0.10	0.17	0.16	
Uniform Delay ( d <sub>1</sub> ), s/veh					22.6			18.9	15.9	25.0	16.7	14.0	12.3	16.4	16.4	
Incremental Delay ( d <sub>2</sub> ), s/veh					0.1			0.0	0.1	0.9	0.4	0.2	0.3	0.7	0.7	
Initial Queue Delay ( d <sub>3</sub> ), s/veh					0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay ( d ), s/veh					22.8			18.9	15.9	26.0	17.2	14.2	12.6	17.1	17.1	
Level of Service ( LOS)					C			B	B	C	B	B	B	B	B	
Approach Delay, s/veh / LOS					22.8	C		17.3	B		17.4	B		16.8	B	
Intersection Delay, s/veh / LOS					17.2						B					
Multimodal Results					EB			WB			NB			SB		
Pedestrian LOS Score / LOS					2.43	B		2.27	B		1.90	B		1.67	B	
Bicycle LOS Score / LOS					0.57	A		0.56	A		1.38	A		1.26	A	

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	S Ronald Reagan Pkwy and Wamsley Way		
Agency/Co.	Woolpert, Inc.			Jurisdiction	City of Plainfield		
Date Performed	8/18/2023			East/West Street	Wamsley Way		
Analysis Year	2025			North/South Street	S Ronald Reagan Pkwy		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.88		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	0	0	1	2	0	0	1	2	1	
Configuration			LTR			L		TR		L	T	TR		L	T	R	
Volume (veh/h)		3	0	2		32	2	21	0	2	720	55	0	102	794	4	
Percent Heavy Vehicles (%)		0	0	100		0	0	0	0	50			0	50			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized																No	
Median Type   Storage		Left Only								4							

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.50	6.50	8.90		7.50	6.50	6.90		5.10				5.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	4.30		3.50	4.00	3.30		2.70				2.70		

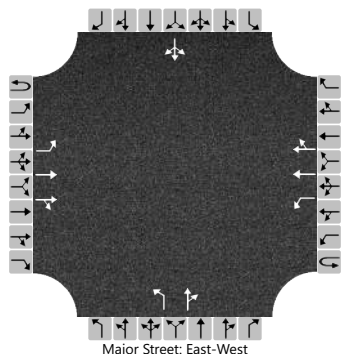
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			6			36		26		2				116			
Capacity, c (veh/h)			273			261		291		509				523			
v/c Ratio			0.02			0.14		0.09		0.00				0.22			
95% Queue Length, Q <sub>95</sub> (veh)			0.1			0.5		0.3		0.0				0.8			
Control Delay (s/veh)			18.5			21.0		18.6		12.1	0.1			13.8	2.0		
Level of Service (LOS)			C			C		C		B	A			B	A		
Approach Delay (s/veh)		18.5				20.0				0.1				3.4			
Approach LOS		C				C				A				A			

# HCS Two-Way Stop-Control Report

* H Q H U D O , Q I R U P D W L R Q		6 L W H , Q I R U P D W L R Q	
Analyst	KWA	Intersection	Earlham Ln and US 40
Agency/Co.	Woolpert, Inc.	Jurisdiction	City of Plainfield
Date Performed	8/18/2023	East/West Street	US 40
Analysis Year	2025	North/South Street	Earlham Ln
Time Analyzed	Opening AM Build	Peak Hour Factor	0.97
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## / D Q H V



## 9 H K L F O H 9 R O X P H V D Q G \$ G M X V W P H Q W V

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	2	0	0	1	2	0	1	1	0		0	1	0	
Configuration		L	T	TR		L	T	TR		L		TR			LTR	
Volume (veh/h)	0	3	1348	270	0	39	999	1	88	0	58		3	0	4	
Percent Heavy Vehicles (%)	0	0			0	0			0	0	17		0	0	25	
Proportion Time Blocked		0.000				0.000			0.000	0.000	0.000		0.000	0.000	0.000	
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Left Only								9							

## & U L W L F D O D X S + I R D G R Z \ V

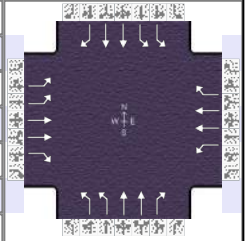
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	6.50	7.24		7.50	6.50	7.40
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.47		3.50	4.00	3.55

## ' H O D \ 4 X H X H / H Q J W K D Q G / H Y H O R I 6 H U Y L F H

Flow Rate, v (veh/h)		3				40				91		60			7	
Capacity, c (veh/h)		682				390				123		282			284	
v/c Ratio		0.00				0.10				0.74		0.21			0.03	
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.3				4.2		0.8			0.1	
Control Delay (s/veh)		10.3	0.0			15.3	1.4			90.9		21.2			18.0	
Level of Service (LOS)		B	A			C	A			F		C			C	
Approach Delay (s/veh)	0.1				1.9				63.2				18.0			
Approach LOS	A				A				F				C			

# HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Woolpert, Inc.			Duration, h	0.250
Analyst	KWA	Analysis Date	8/29/2023	Area Type	Other
Jurisdiction	City of Plainfield	Time Period	Opening Build AM	PHF	0.88
Urban Street	US 40	Analysis Year	2025	Analysis Period	1 > 7:00
Intersection	Ronald Reagan Pkwy	File Name	Opening Build AM.xus		
Project Description	Life Science Center				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	125	976	118	275	692	168	94	420	221	448	521	159

Signal Information				Signal Phases								
Cycle, s	150.7	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
Green	8.5	12.8	49.4	6.9	13.3	23.8						
Yellow	4.0	4.0	4.0	4.0	4.0	4.0						
Red	2.0	2.0	2.0	2.0	2.0	2.0						

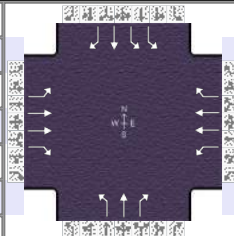
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	14.5	55.4	33.3	74.1	12.9	29.8	32.3	49.2
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Queue Clearance Time ( g <sub>s</sub> ), s	8.3	48.9	27.1	22.9	6.7	23.4	25.7	25.5
Green Extension Time ( g <sub>e</sub> ), s	0.2	0.4	0.2	5.8	0.1	0.4	0.6	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Max Out Probability	0.00	1.00	1.00	0.02	0.00	1.00	0.40	1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	142	1109	134	282	709	172	107	477	251	509	592	181
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1675	1752	1535	1668	1752	1422	1702	1654	1497	1593	1654	1547
Queue Service Time ( g <sub>s</sub> ), s	6.3	46.9	9.0	25.1	20.9	7.8	4.7	21.4	20.1	23.7	23.5	13.1
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	6.3	46.9	9.0	25.1	20.9	7.8	4.7	21.4	20.1	23.7	23.5	13.1
Green Ratio ( g/C )	0.06	0.33	0.37	0.18	0.45	0.63	0.05	0.16	0.34	0.17	0.29	0.34
Capacity ( c ), veh/h	189	1148	573	302	1585	891	156	522	507	555	947	530
Volume-to-Capacity Ratio ( X )	0.752	0.966	0.234	0.933	0.447	0.193	0.683	0.914	0.495	0.917	0.625	0.341
Back of Queue ( Q ), ft/ln ( 95 th percentile)	128.6	793.3	157.8	492.1	339.5	119.5	95.2	419.9	315.1	437.7	399.9	222.7
Back of Queue ( Q ), veh/ln ( 95 th percentile)	4.9	30.7	6.0	18.2	13.2	4.3	3.7	15.4	11.8	16.0	14.7	8.6
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.38	0.44	0.34	1.73	0.29	0.52	0.24	0.23	0.81	1.46	0.31	1.48
Uniform Delay ( d <sub>1</sub> ), s/veh	70.1	49.9	32.4	60.9	28.4	12.0	70.8	62.5	39.6	61.2	46.8	36.9
Incremental Delay ( d <sub>2</sub> ), s/veh	2.3	18.4	0.1	27.6	0.1	0.0	2.0	18.7	0.3	16.0	1.0	0.1
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	72.4	68.3	32.5	88.5	28.4	12.0	72.8	81.2	39.9	77.2	47.7	37.0
Level of Service ( LOS )	E	E	C	F	C	B	E	F	D	E	D	D
Approach Delay, s/veh / LOS	65.3	E		40.6	D		67.7	E		57.9	E	
Intersection Delay, s/veh / LOS	57.5						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.59	C	2.58	C	2.47	B	2.60	C
Bicycle LOS Score / LOS	1.63	B	1.55	B	1.18	A	1.55	B

## HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	Other		
Jurisdiction	City of Plainfield	Time Period	Opening Build AM	PHF	0.94		
Urban Street	US 40	Analysis Year	2025	Analysis Period	1 > 7:00		
Intersection	Raceway Rd	File Name	Opening Build AM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	131	1266	70	269	820	158	91	0	88	233	0	182

Signal Information				Signal Timing (s)								Signal Phases				
Cycle, s	140.5	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	8.6	4.4	70.4	8.6	2.7	15.8						
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	0.0	4.0						
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	2.0	0.0	2.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phase Duration, s	14.6	76.4	25.0	86.9	14.6	21.8	17.3	24.5
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s	3.1	3.1	3.1	3.1	3.1	3.4	3.1	3.4
Queue Clearance Time ( g <sub>s</sub> ), s	8.3	63.9	18.4	23.0	8.6	8.6	10.8	17.9
Green Extension Time ( g <sub>e</sub> ), s	0.2	6.1	0.5	10.8	0.1	0.6	0.4	0.5
Phase Call Probability	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00
Max Out Probability	0.00	0.15	0.00	0.03	0.00	0.00	0.00	0.00

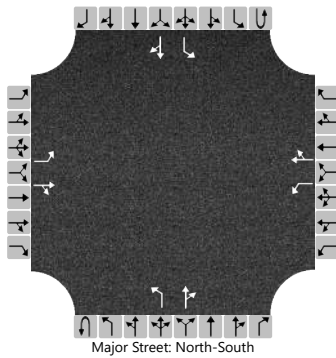
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	167	1613	89	286	872	168	97	0	94	248	0	194
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1795	1724	1610	1810	1682	1572	1810	1900	1610	1730	1900	1585
Queue Service Time ( g <sub>s</sub> ), s	6.3	61.9	3.6	16.4	21.0	5.8	6.6	0.0	6.6	8.8	0.0	15.9
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	6.3	61.9	3.6	16.4	21.0	5.8	6.6	0.0	6.6	8.8	0.0	15.9
Green Ratio ( g/C )	0.57	0.50	0.56	0.65	0.58	0.66	0.17	0.11	0.25	0.19	0.13	0.19
Capacity ( c ), veh/h	428	1730	906	316	1938	1032	323	214	400	698	250	306
Volume-to-Capacity Ratio ( X )	0.390	0.933	0.098	0.905	0.450	0.163	0.299	0.000	0.234	0.355	0.000	0.633
Back of Queue ( Q ), ft/ln ( 95 th percentile)	103.7	794.1	59.7	399.9	337.9	90.1	135.5	0	118.5	174.6	0	266.9
Back of Queue ( Q ), veh/ln ( 95 th percentile)	4.1	30.3	2.4	16.0	12.6	3.5	5.4	0.0	4.7	6.9	0.0	10.5
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.26	1.76	0.00	0.00	0.64	0.24	0.00	0.00	0.00	0.46	0.00	0.70
Uniform Delay ( d <sub>1</sub> ), s/veh	15.6	33.0	14.3	45.4	17.1	9.3	51.0	0.0	42.4	49.6	0.0	52.4
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	2.3	0.0	8.0	0.1	0.0	0.2	0.0	0.1	0.1	0.0	0.8
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	15.6	35.3	14.3	53.4	17.2	9.4	51.2	0.0	42.5	49.7	0.0	53.2
Level of Service ( LOS )	B	D	B	D	B	A	D		D	D		D
Approach Delay, s/veh / LOS	32.5		C	24.0		C	46.9		D	51.3		D
Intersection Delay, s/veh / LOS	32.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.26	B	2.47	B	2.47	B
Bicycle LOS Score / LOS	1.78	B	1.58	B	0.80	A	1.22	A

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 6		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Internal Rd 1		
Analysis Year	2023			North/South Street	Raceway Rd		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	1	1	0	
Configuration		L		TR		L		TR		L		TR		L		TR	
Volume (veh/h)		108	6	39		0	6	36		16	38	9		38	158	124	
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized																	
Median Type   Storage		Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

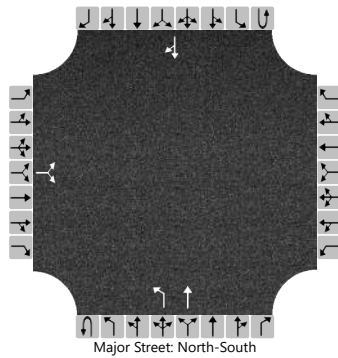
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		117		49		0		46		17				41			
Capacity, c (veh/h)		489		742		481		874		1248				1549			
v/c Ratio		0.24		0.07		0.00		0.05		0.01				0.03			
95% Queue Length, Q <sub>95</sub> (veh)		0.9		0.2		0.0		0.2		0.0				0.1			
Control Delay (s/veh)		14.7		10.2		12.5		9.3		7.9	0.1	0.1		7.4	0.1	0.1	
Level of Service (LOS)		B		B		B		A		A	A	A		A	A	A	
Approach Delay (s/veh)		13.3				9.3				2.1				1.0			
Approach LOS		B				A				A				A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 7		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Earlham Ln		
Analysis Year	2023			North/South Street	Raceway Rd		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		15		0						0	0				62	41
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type   Storage		Undivided														

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

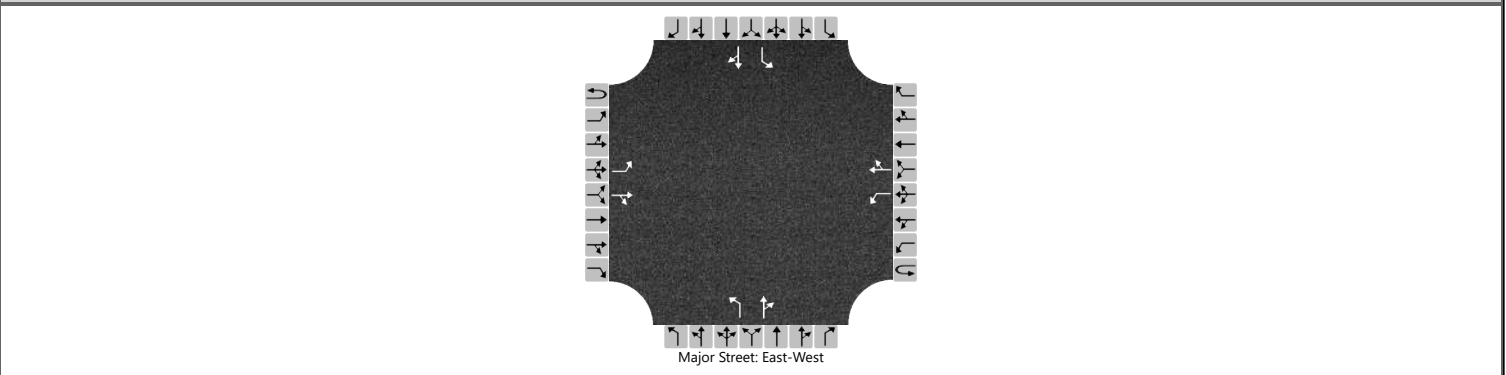
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16							0						
Capacity, c (veh/h)			908							1471						
v/c Ratio			0.02							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.1							0.0						
Control Delay (s/veh)			9.0							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.0														
Approach LOS		A														

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 8		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Airtech Pkwy		
Analysis Year	2023			North/South Street	Raceway Road		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		1	1	0		1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		68	24	0		0	23	1		0	0	0		2	0	11
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

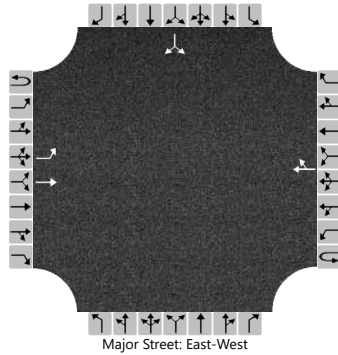
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		74				0				0		0		2		12	
Capacity, c (veh/h)		1582				1582				707		0		722		1048	
v/c Ratio		0.05				0.00				0.00				0.00		0.01	
95% Queue Length, Q <sub>95</sub> (veh)		0.1				0.0				0.0				0.0		0.0	
Control Delay (s/veh)		7.4				7.3				10.1				10.0		8.5	
Level of Service (LOS)		A				A				B				B		A	
Approach Delay (s/veh)		5.5				0.0								8.7			
Approach LOS		A				A								A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA	Intersection	Int 9				
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield				
Date Performed	9/6/2023	East/West Street	Airtech Pkwy				
Analysis Year	2023	North/South Street	Internal Rd 2				
Time Analyzed	Opening AM Build	Peak Hour Factor	0.92				
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25				
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		22	115				34	0						0		2
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

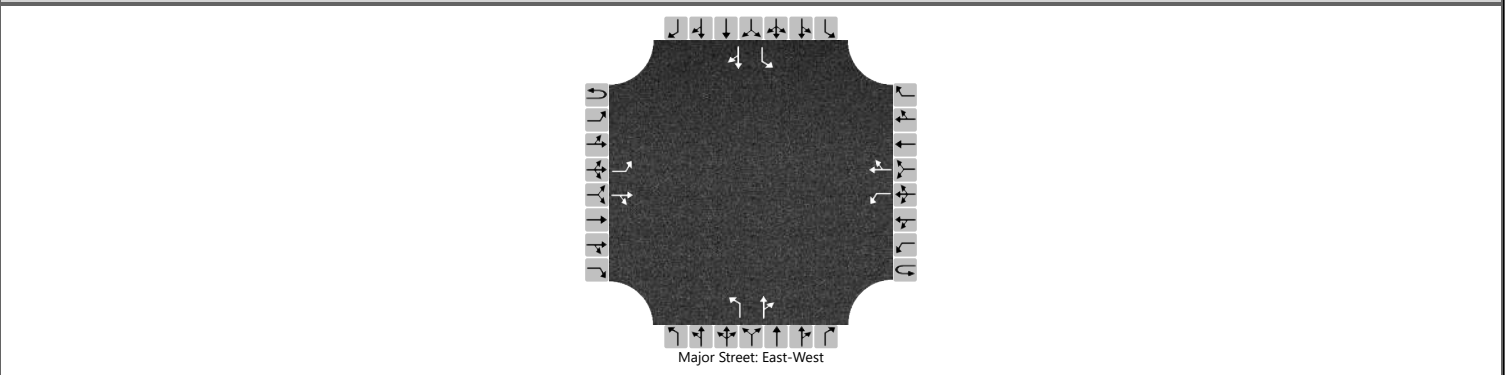
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24														2
Capacity, c (veh/h)		1567														1032
v/c Ratio		0.02														0.00
95% Queue Length, Q <sub>95</sub> (veh)		0.0														0.0
Control Delay (s/veh)		7.3														8.5
Level of Service (LOS)		A														A
Approach Delay (s/veh)					1.2								8.5			
Approach LOS					A								A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 10		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Wamsley Way		
Analysis Year	2023			North/South Street	Internal Rd 2		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9	10	11	12		
Number of Lanes	0	1	1	0	0	1	1	0	1	1	0	1	1	0		
Configuration		L		TR		L		TR	L		TR	L		TR		
Volume (veh/h)		21	81	33		0	31	7	6	0	0	2	0	5		
Percent Heavy Vehicles (%)		3				3			3	3	3	3	3	3		
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1			7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13			7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2			3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23			3.53	4.03	3.33		3.53	4.03	3.33

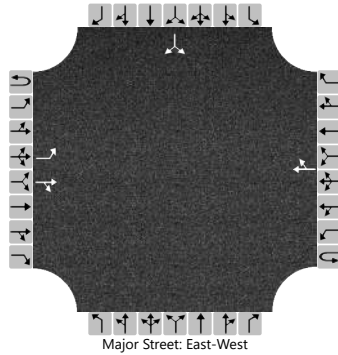
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		23				0			7		0		2		5
Capacity, c (veh/h)		1561				1457			751		0		758		1032
v/c Ratio		0.01				0.00			0.01				0.00		0.01
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.0			0.0				0.0		0.0
Control Delay (s/veh)		7.3				7.5			9.8				9.8		8.5
Level of Service (LOS)		A				A			A				A		A
Approach Delay (s/veh)		1.1				0.0				8.9					
Approach LOS		A				A				A					

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 11		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Wamsley Way		
Analysis Year	2023			North/South Street	Earlham Ln		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L		TR				TR							LR	
Volume (veh/h)		26	0	0			0	0						0		32
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												7.13		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

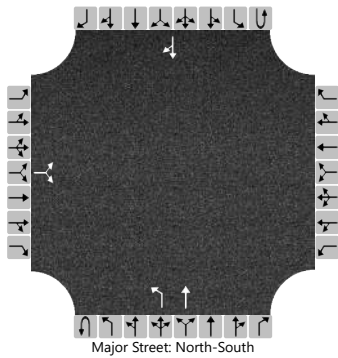
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		28														35	
Capacity, c (veh/h)		1617														1082	
v/c Ratio		0.02														0.03	
95% Queue Length, Q <sub>95</sub> (veh)		0.1														0.1	
Control Delay (s/veh)		7.3														8.4	
Level of Service (LOS)		A														A	
Approach Delay (s/veh)		7.3												8.4			
Approach LOS		A												A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 12		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Site Drive 1		
Analysis Year	2023			North/South Street	Earlham Ln		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		3		1						3	16					61
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type   Storage		Undivided														

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

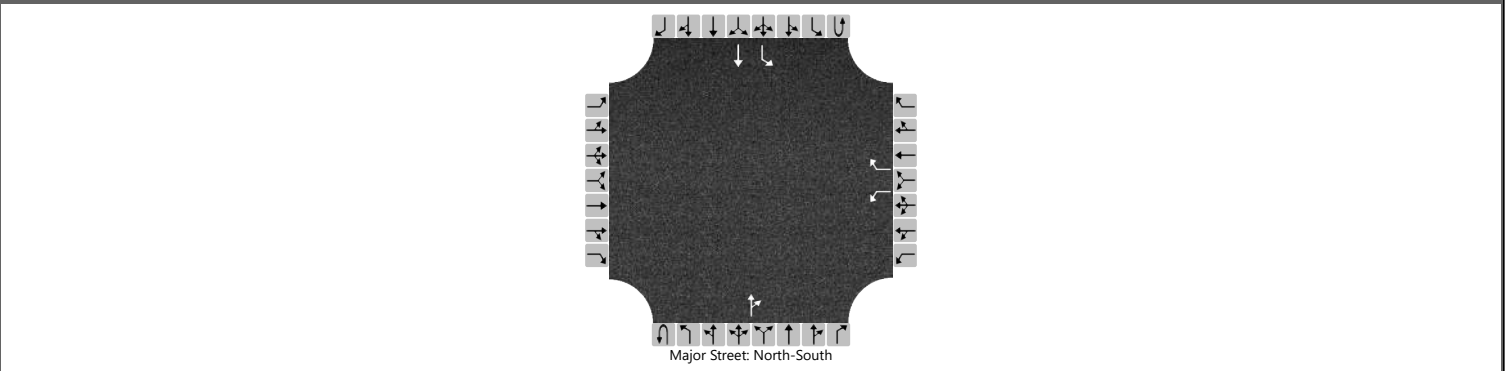
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4							3						
Capacity, c (veh/h)			919							1514						
v/c Ratio			0.00							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.0							0.0						
Control Delay (s/veh)			8.9							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		8.9								1.2						
Approach LOS		A								A						

# HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	KWA	Intersection	Int 13
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield
Date Performed	9/6/2023	East/West Street	Internal Rd 1
Analysis Year	2023	North/South Street	Earlham Ln
Time Analyzed	Opening AM Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						17		131			16	14		208	82	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No											
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1		
Critical Headway (sec)						6.43		6.23							4.13		
Base Follow-Up Headway (sec)						3.5		3.3							2.2		
Follow-Up Headway (sec)						3.53		3.33							2.23		

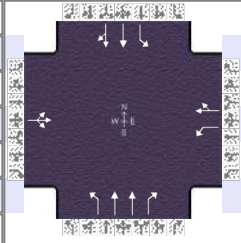
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						18		142							226		
Capacity, c (veh/h)						414		1048							1573		
v/c Ratio						0.04		0.14							0.14		
95% Queue Length, Q <sub>95</sub> (veh)						0.1		0.5							0.5		
Control Delay (s/veh)						14.1		9.0							7.7		
Level of Service (LOS)						B		A							A		
Approach Delay (s/veh)					9.6								5.5				
Approach LOS					A								A				

**PM Peak Hour**

# HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	Other		
Jurisdiction	City of Plainfield	Time Period	Opening Build PM	PHF	0.92		
Urban Street	Ronald Regan Pkwy	Analysis Year	2025	Analysis Period	1 > 7:00		
Intersection	Airtech Rd	File Name	Opening Build PM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	61	5	26	62	5	49	56	1018	43	21	816	32

Signal Information													
Cycle, s	66.1	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	5.0	9.5	2.4	2.3	23.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	4.0	0.0			
				Red	2.0	2.0	2.0	0.0	2.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6	3	8	7	4
Case Number		8.3	1.0	4.0	2.0	3.0	1.1	4.0
Phase Duration, s		15.5	11.0	26.4	10.7	31.3	8.4	29.0
Change Period, ( Y+R <sub>c</sub> ), s		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s		3.4	3.3	3.4	3.0	2.9	3.0	2.9
Queue Clearance Time ( g <sub>s</sub> ), s		6.3	3.9	3.7	4.4	21.8	2.6	16.9
Green Extension Time ( g <sub>e</sub> ), s		0.3	0.1	0.3	0.1	3.5	0.0	4.3
Phase Call Probability		0.95	0.71	0.98	0.67	1.00	0.34	1.00
Max Out Probability		0.00	0.00	0.00	0.00	0.43	0.00	0.20

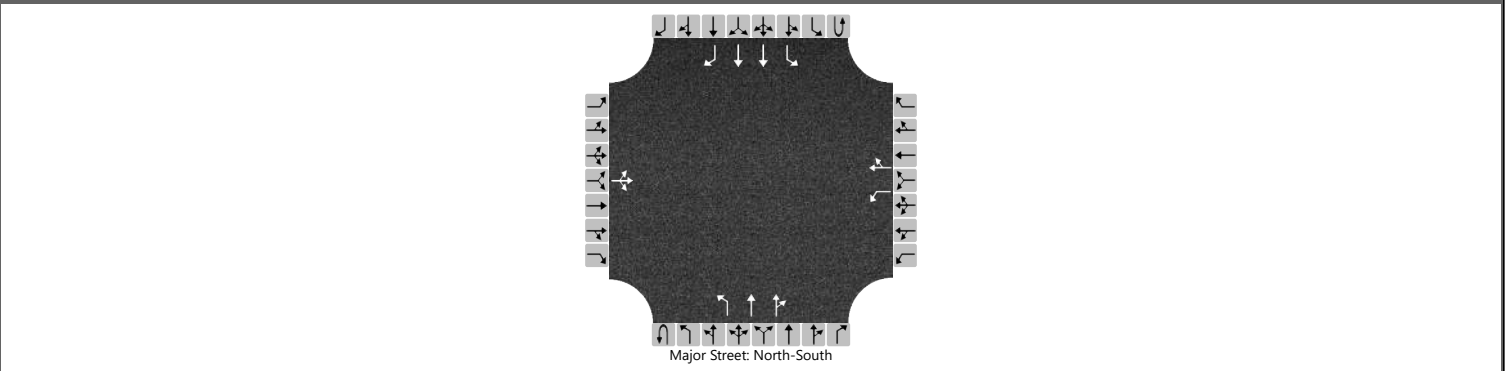
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h		100		67	59		61	1107	47	23	464	458
Adjusted Saturation Flow Rate ( s ), veh/h/ln		1372		1810	1633		1626	1696	1510	1668	1811	1787
Queue Service Time ( g <sub>s</sub> ), s		3.3		1.9	1.7		2.4	19.8	1.3	0.6	14.9	14.9
Cycle Queue Clearance Time ( g <sub>c</sub> ), s		4.3		1.9	1.7		2.4	19.8	1.3	0.6	14.9	14.9
Green Ratio ( g/C )		0.14		0.25	0.31		0.07	0.38	0.38	0.38	0.35	0.35
Capacity ( c ), veh/h		287		354	505		116	1297	577	195	629	621
Volume-to-Capacity Ratio ( X )		0.349		0.190	0.116		0.524	0.853	0.081	0.117	0.737	0.737
Back of Queue ( Q ), ft/ln ( 95 th percentile)		69.1		35.4	27.8		44.5	303.6	18	8.9	245.7	241.3
Back of Queue ( Q ), veh/ln ( 95 th percentile)		2.6		1.4	1.1		1.6	11.4	0.7	0.3	9.4	9.3
Queue Storage Ratio ( RQ ) ( 95 th percentile)		0.07		0.21	0.03		0.16	0.17	0.08	0.03	0.21	0.21
Uniform Delay ( d <sub>1</sub> ), s/veh		26.1		19.7	16.4		29.6	18.7	13.0	15.7	18.9	18.9
Incremental Delay ( d <sub>2</sub> ), s/veh		0.3		0.1	0.0		1.4	3.7	0.0	0.1	1.6	1.6
Initial Queue Delay ( d <sub>3</sub> ), s/veh		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh		26.3		19.8	16.4		31.0	22.4	13.0	15.8	20.5	20.5
Level of Service ( LOS )		C		B	B		C	C	B	B	C	C
Approach Delay, s/veh / LOS	26.3	C		18.2	B		22.5	C		20.4	C	
Intersection Delay, s/veh / LOS				21.6						C		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.27	B	1.90	B	1.68	B
Bicycle LOS Score / LOS	0.65	A	0.70	A	1.49	A	1.27	A

# HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	KWA	Intersection	S Ronald Reagan Pkwy and Wamsley Way
Agency/Co.	Woolpert, Inc.	Jurisdiction	City of Plainfield
Date Performed	8/18/2023	East/West Street	Wamsley Way
Analysis Year	2025	North/South Street	S Ronald Reagan Pkwy
Time Analyzed	Opening PM Build	Peak Hour Factor	0.95
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	0	0	1	2	0	0	1	2	1	
Configuration			LTR			L		TR		L	T	TR		L	T	R	
Volume (veh/h)		1	0	5		53	4	104	0	5	1100	18	0	29	753	0	
Percent Heavy Vehicles (%)		0	0	100		0	25	0	0	60			0	0			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized																No	
Median Type   Storage		Left Only								4							

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.50	6.50	8.90		7.50	7.00	6.90		5.30				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	4.30		3.50	4.25	3.30		2.80				2.20		

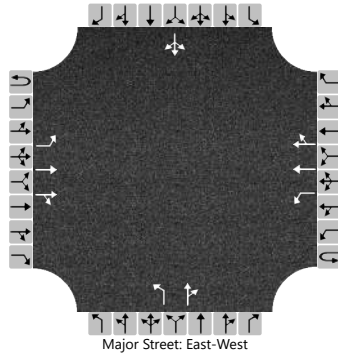
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			6			56		114		5				31			
Capacity, c (veh/h)			468			198		331		536				601			
v/c Ratio			0.01			0.28		0.34		0.01				0.05			
95% Queue Length, Q <sub>95</sub> (veh)			0.0			1.1		1.5		0.0				0.2			
Control Delay (s/veh)			12.8			30.1		21.5		11.8	0.1			11.3	0.5		
Level of Service (LOS)			B			D		C		B	A			B	A		
Approach Delay (s/veh)		12.8				24.3				0.2				0.9			
Approach LOS		B				C				A				A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Earlham Ln and US 40		
Agency/Co.	Woolpert, Inc.			Jurisdiction	City of Plainfield		
Date Performed	8/18/2023			East/West Street	US 40		
Analysis Year	2025			North/South Street	Earlham Ln		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.99		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	2	0	0	1	2	0	1	1	0		0	1	0	
Configuration		L	T	TR		L	T	TR	L		TR				LTR	
Volume (veh/h)	0	1	1719	177	0	23	1605	0	92	0	79		0	0	1	
Percent Heavy Vehicles (%)	0	0			0	0			0	0	0		0	0	0	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Left Only								9							

## Critical and Follow-up Headways

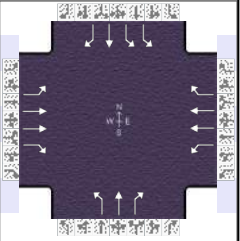
Base Critical Headway (sec)		4.1				4.1			7.5	6.5	6.9		7.5	6.5	6.9	
Critical Headway (sec)		4.10				4.10			7.50	6.50	6.90		7.50	6.50	6.90	
Base Follow-Up Headway (sec)		2.2				2.2			3.5	4.0	3.3		3.5	4.0	3.3	
Follow-Up Headway (sec)		2.20				2.20			3.50	4.00	3.30		3.50	4.00	3.30	

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				23			93		80				1	
Capacity, c (veh/h)		407				314			80		261				327	
v/c Ratio		0.00				0.07			1.16		0.31				0.00	
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.2			6.7		1.2				0.0	
Control Delay (s/veh)		13.9	0.0			17.4	1.2		241.4		24.7				16.0	
Level of Service (LOS)		B	A			C	A		F		C				C	
Approach Delay (s/veh)	0.0				1.5				141.3				16.0			
Approach LOS	A				A				F				C			

# HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Opening Build PM	PHF	0.96		
Urban Street	US 40	Analysis Year	2025	Analysis Period	1 > 7:00		
Intersection	Raceway Rd	File Name	Opening Build PM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	314	1431	20	146	1340	448	113	0	150	190	0	212

Signal Information													
Cycle, s	154.4	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	9.5	12.5	73.4	11.0	0.9	19.1			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	0.0	4.0			
				Red	2.0	2.0	2.0	0.0	0.0	2.0			

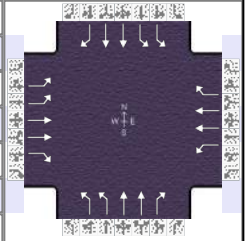
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	3.0	1.1	3.0	1.1	3.0	2.0	3.0
Phase Duration, s	34.0	97.8	15.5	79.4	15.0	25.1	15.9	26.0
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	4.0	6.0	4.0	6.0
Max Allow Headway ( MAH ), s	3.1	3.1	3.1	3.1	3.1	3.4	3.1	3.4
Queue Clearance Time ( g <sub>s</sub> ), s	29.0	64.6	9.4	71.3	11.7	17.2	11.7	21.5
Green Extension Time ( g <sub>e</sub> ), s	0.0	0.0	0.2	2.1	0.0	0.3	0.3	0.0
Phase Call Probability	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Max Out Probability	1.00	1.00	0.00	0.93	1.00	1.00	0.00	1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	341	1553	22	152	1396	467	118	0	156	198	0	221
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1616	1552	1449	1629	1514	1415	1629	1710	1449	1557	1710	1427
Queue Service Time ( g <sub>s</sub> ), s	27.0	62.6	0.8	7.4	69.3	34.0	9.7	0.0	15.2	9.7	0.0	19.5
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	27.0	62.6	0.8	7.4	69.3	34.0	9.7	0.0	15.2	9.7	0.0	19.5
Green Ratio ( g/C )	0.67	0.59	0.67	0.54	0.48	0.55	0.19	0.12	0.19	0.08	0.13	0.31
Capacity ( c ), veh/h	349	1846	965	201	1439	782	314	211	268	241	222	444
Volume-to-Capacity Ratio ( X )	0.976	0.841	0.022	0.758	0.970	0.597	0.375	0.000	0.582	0.822	0.000	0.498
Back of Queue ( Q ), ft/ln ( 95 th percentile)	436.3	671.6	11.1	131.8	995	431.9	180.3	0	240.7	180.3	0	286.2
Back of Queue ( Q ), veh/ln ( 95 th percentile)	17.3	25.6	0.4	5.3	37.1	16.9	7.2	0.0	9.6	7.1	0.0	11.3
Queue Storage Ratio ( RQ ) ( 95 th percentile)	1.09	1.49	0.00	0.00	1.88	1.17	0.00	0.00	0.00	0.47	0.00	0.75
Uniform Delay ( d <sub>1</sub> ), s/veh	52.1	25.3	8.7	30.9	39.4	23.0	54.0	0.0	57.4	70.2	0.0	43.4
Incremental Delay ( d <sub>2</sub> ), s/veh	15.2	0.7	0.0	2.2	16.2	0.8	0.3	0.0	1.8	2.7	0.0	0.3
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	67.3	26.0	8.7	33.1	55.7	23.8	54.2	0.0	59.3	72.8	0.0	43.7
Level of Service ( LOS )	E	C	A	C	E	C	D		E	E		D
Approach Delay, s/veh / LOS	33.2		C	46.6		D	57.1		E	57.5		E
Intersection Delay, s/veh / LOS	42.6						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.09	B	2.28	B	2.47	B	2.47	B
Bicycle LOS Score / LOS	2.00	B	2.15	B	0.94	A	1.18	A

## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Woolpert, Inc.			Duration, h	0.250
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD
Jurisdiction	City of Plainfield	Time Period	Opening Build PM	PHF	0.98
Urban Street	US 40	Analysis Year	2025	Analysis Period	1 > 7:00
Intersection	Ronald Reagan Pkwy	File Name	Opening Build PM.xus		
Project Description	Life Science Center				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	253	1063	97	173	1183	319	204	596	410	404	480	287

Signal Information				Phase Diagram									
Cycle, s	154.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On										
Force Mode	Fixed	Simult. Gap N/S	On										
		Green		15.3	4.7	53.0	12.6	5.4	33.0				
		Yellow		4.0	0.0	4.0	4.0	4.0	4.0				
		Red		2.0	0.0	2.0	2.0	2.0	2.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	21.3	59.0	26.0	63.7	18.6	39.0	30.0	50.4
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.1
Queue Clearance Time ( g <sub>s</sub> ), s	15.0	54.9	20.1	59.7	12.3	35.0	23.8	27.1
Green Extension Time ( g <sub>e</sub> ), s	0.3	0.0	0.0	0.0	0.3	0.0	0.1	2.6
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	0.12	1.00	1.00	1.00	0.00	1.00	1.00	0.59

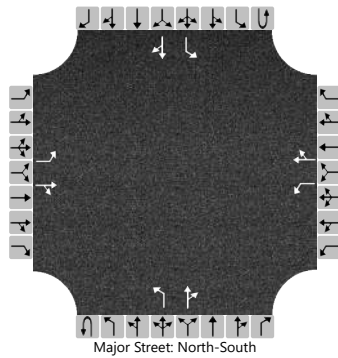
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	258	1085	99	179	1225	330	208	608	418	412	490	293
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1507	1577	1381	1502	1577	1280	1532	1488	1347	1433	1488	1393
Queue Service Time ( g <sub>s</sub> ), s	13.0	52.9	6.8	18.1	57.7	25.1	10.3	31.1	33.0	21.8	21.6	25.1
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	13.0	52.9	6.8	18.1	57.7	25.1	10.3	31.1	33.0	21.8	21.6	25.1
Green Ratio ( g/C )	0.10	0.34	0.43	0.13	0.38	0.53	0.08	0.21	0.34	0.16	0.29	0.39
Capacity ( c ), veh/h	299	1086	588	195	1183	679	250	638	464	446	859	540
Volume-to-Capacity Ratio ( X )	0.864	0.999	0.168	0.918	1.036	0.486	0.832	0.953	0.902	0.923	0.570	0.543
Back of Queue ( Q ), ft/ln ( 95 th percentile)	242.7	836.3	105.9	292.2	832.3	282.3	192	535.7	651.4	390.4	341.9	345
Back of Queue ( Q ), veh/ln ( 95 th percentile)	9.3	32.4	4.0	10.8	32.3	10.1	7.4	19.7	24.3	14.2	12.6	13.3
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.71	0.46	0.23	1.03	0.72	1.23	0.49	0.30	1.67	1.30	0.27	2.30
Uniform Delay ( d <sub>1</sub> ), s/veh	68.3	50.5	27.3	66.2	48.1	22.9	69.7	59.7	48.0	64.1	46.7	36.6
Incremental Delay ( d <sub>2</sub> ), s/veh	12.0	27.1	0.0	21.0	26.1	0.1	4.2	24.4	20.1	23.0	0.6	0.6
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	80.3	77.5	27.4	87.2	74.3	22.9	73.8	84.1	68.1	87.1	47.2	37.2
Level of Service ( LOS )	F	E	C	F	F	C	E	F	E	F	D	D
Approach Delay, s/veh / LOS	74.6	E		65.8	E		77.0	E		58.5	E	
Intersection Delay, s/veh / LOS	69.0			E			E			E		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.59	C	2.59	C	2.47	B	2.60	C
Bicycle LOS Score / LOS	1.68	B	1.90	B	1.51	B	1.47	A

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 6		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Internal Rd 1		
Analysis Year	2023			North/South Street	Raceway Rd		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound					
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		1	1	0		1	1	0		0	1	1	0		0	1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR		
Volume (veh/h)		71	3	4		0	3	15		19	176	1		20	32	113		
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3				
Proportion Time Blocked																		
Percent Grade (%)	0				0													
Right Turn Channelized																		
Median Type   Storage	Undivided																	

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

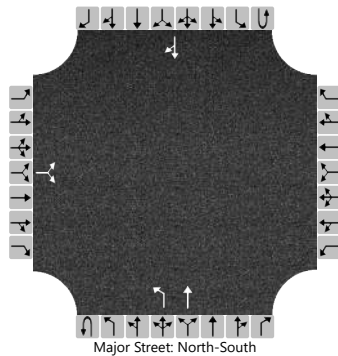
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		77		8		0		20		21				22		
Capacity, c (veh/h)		542		718		556		759		1416				1375		
v/c Ratio		0.14		0.01		0.00		0.03		0.01				0.02		
95% Queue Length, Q <sub>95</sub> (veh)		0.5		0.0		0.0		0.1		0.0				0.0		
Control Delay (s/veh)		12.7		10.1		11.5		9.9		7.6	0.1	0.1		7.7	0.1	0.1
Level of Service (LOS)		B		B		B		A		A	A	A		A	A	A
Approach Delay (s/veh)		12.5				9.9				0.8				1.0		
Approach LOS		B				A				A				A		

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 7		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Earlham Ln		
Analysis Year	2023			North/South Street	Raceway Rd		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		46		0						0	97					26
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type   Storage		Undivided														

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

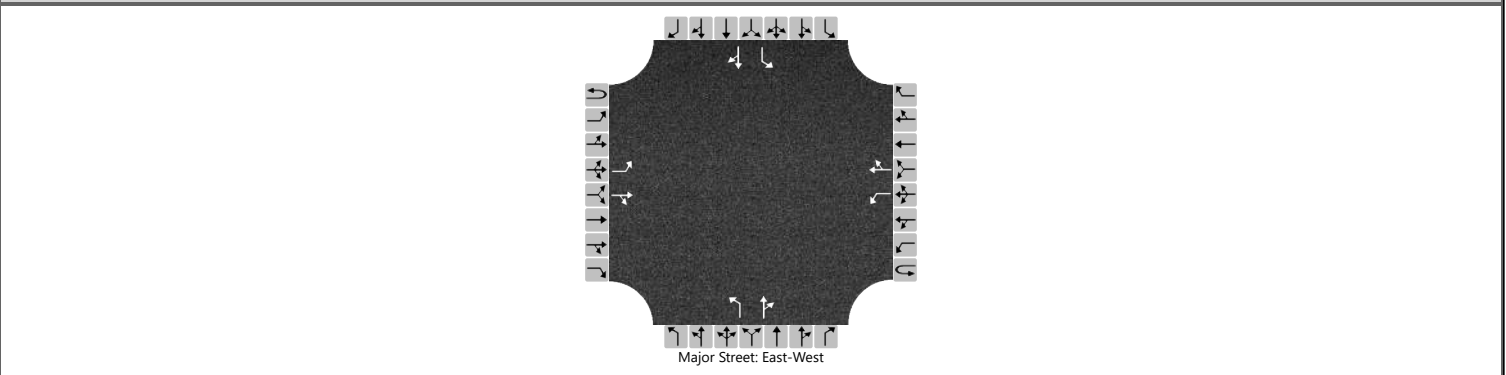
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			50							0						
Capacity, c (veh/h)			853							1567						
v/c Ratio			0.06							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.2							0.0						
Control Delay (s/veh)			9.5							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.5								0.0						
Approach LOS		A								A						

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 8		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Airtech Pkwy		
Analysis Year	2023			North/South Street	Raceway Road		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		1	1	0		1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		29	25	0		0	39	2		0	0	0		0	0	33
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

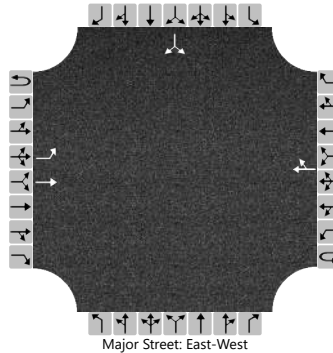
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		32				0				0		0		0		36	
Capacity, c (veh/h)		1557				1580				769		0		819		1024	
v/c Ratio		0.02				0.00				0.00				0.00		0.04	
95% Queue Length, Q <sub>95</sub> (veh)		0.1				0.0				0.0				0.0		0.1	
Control Delay (s/veh)		7.4				7.3				9.7				9.4		8.6	
Level of Service (LOS)		A				A				A				A		A	
Approach Delay (s/veh)		4.0				0.0								8.6			
Approach LOS		A				A								A			

# HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	KWA	Intersection	Int 9
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield
Date Performed	9/6/2023	East/West Street	Airtech Pkwy
Analysis Year	2023	North/South Street	Internal Rd 2
Time Analyzed	Opening PM Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		6	55				92	0						0		8
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

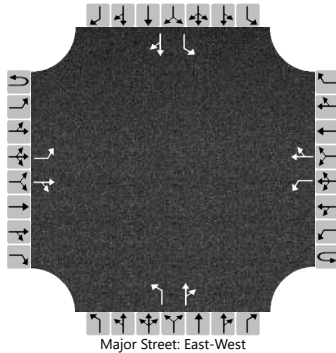
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													9	
Capacity, c (veh/h)		1486													953	
v/c Ratio		0.00													0.01	
95% Queue Length, Q <sub>95</sub> (veh)		0.0													0.0	
Control Delay (s/veh)		7.4													8.8	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)		0.7												8.8		
Approach LOS		A												A		

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 10		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Wamsley Way		
Analysis Year	2023			North/South Street	Internal Rd 2		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	1	0	0	1	1	0	1	1	0		1	1	0	
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		8	28	8		0	79	3		35	0	0		7	0	16
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

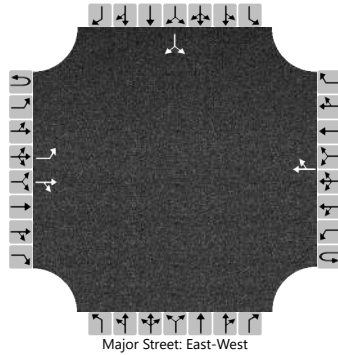
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		9				0				38		0		8		17
Capacity, c (veh/h)		1500				1564				798		0		823		968
v/c Ratio		0.01				0.00				0.05				0.01		0.02
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.0				0.1				0.0		0.1
Control Delay (s/veh)		7.4				7.3				9.7				9.4		8.8
Level of Service (LOS)		A				A				A				A		A
Approach Delay (s/veh)	1.3				0.0				9.0							
Approach LOS	A				A				A							

# HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	KWA	Intersection	Int 11
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield
Date Performed	9/6/2023	East/West Street	Wamsley Way
Analysis Year	2023	North/South Street	Earlham Ln
Time Analyzed	Opening PM Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	
Configuration		L		TR				TR							LR	
Volume (veh/h)		11	0	0			0	0						0		23
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												7.13		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

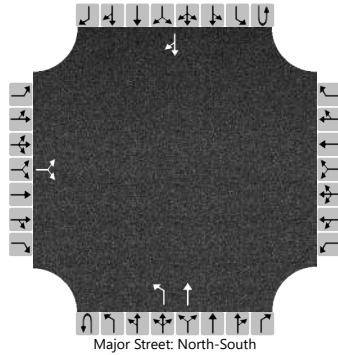
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		12													25		
Capacity, c (veh/h)		1617													1082		
v/c Ratio		0.01													0.02		
95% Queue Length, Q <sub>95</sub> (veh)		0.0													0.1		
Control Delay (s/veh)		7.2													8.4		
Level of Service (LOS)		A													A		
Approach Delay (s/veh)		7.2												8.4			
Approach LOS		A												A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 12		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Site Drive 1		
Analysis Year	2023			North/South Street	Earlham Ln		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		11		3						1	33				17	5
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type   Storage		Undivided														

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

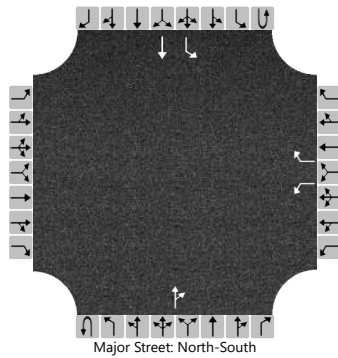
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			15							1						
Capacity, c (veh/h)			966							1584						
v/c Ratio			0.02							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.0							0.0						
Control Delay (s/veh)			8.8							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		8.8								0.2						
Approach LOS		A								A						

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 13		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Internal Rd 1		
Analysis Year	2023			North/South Street	Earlham Ln		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						12		84			95	9		165	13	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type   Storage						Undivided										

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

## Delay, Queue Length, and Level of Service

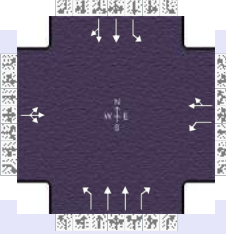
Flow Rate, v (veh/h)						13		91						179			
Capacity, c (veh/h)						476		943						1470			
v/c Ratio						0.03		0.10						0.12			
95% Queue Length, Q <sub>95</sub> (veh)						0.1		0.3						0.4			
Control Delay (s/veh)						12.8		9.2						7.8			
Level of Service (LOS)						B		A						A			
Approach Delay (s/veh)						9.7								7.2			
Approach LOS						A								A			

# **Appendix 6**

## **2045 No-Build Capacity Analysis Sheets**

**AM Peak Hour**

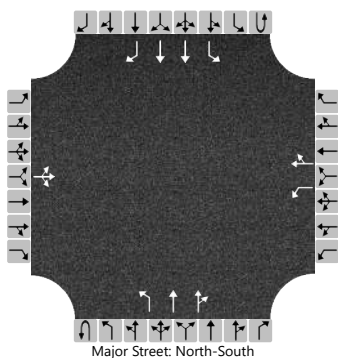
## HCS Signalized Intersection Results Summary

General Information					Intersection Information											
Agency	Woolpert, Inc.				Duration, h	0.250										
Analyst	KWA	Analysis Date	8/29/2023		Area Type	Other										
Jurisdiction	City of Plainfield		Time Period	Horizon No Build AM	PHF	0.85										
Urban Street	Ronald Regan Pkwy		Analysis Year	2025	Analysis Period	1 > 7:00										
Intersection	Airtch Rd		File Name	Horizon No Build AM.xus												
Project Description	Life Science Center															
Demand Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h					30	0	21	7	9	11	65	825	16	7	758	77
Signal Information																
Cycle, s	58.0	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On		Green	0.9	7.4	0.9	4.1	20.7	0.0					
Force Mode	Fixed	Simult. Gap N/S	On		Yellow	4.0	4.0	4.0	0.0	4.0	0.0					
					Red	2.0	2.0	2.0	0.0	2.0	0.0					
Timer Results					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase						2	1	6	3	8	7	4				
Case Number						8.3	1.0	4.0	2.0	3.0	1.1	4.0				
Phase Duration, s						13.4	6.9	20.3	11.0	30.8	6.9	26.7				
Change Period, ( Y+R <sub>c</sub> ), s						6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Allow Headway ( MAH ), s						3.3	3.3	3.3	3.0	2.9	3.0	2.9				
Queue Clearance Time ( g <sub>s</sub> ), s						4.3	2.2	3.1	4.5	15.1	2.4	16.7				
Green Extension Time ( g <sub>e</sub> ), s						0.2	0.0	0.2	0.1	4.2	0.0	4.0				
Phase Call Probability						0.74	0.12	0.77	0.71	1.00	0.12	1.00				
Max Out Probability						0.00	0.00	0.00	0.00	0.13	0.00	0.17				
Movement Group Results					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement					5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h					60			8	24		76	971	19	8	499	483
Adjusted Saturation Flow Rate ( s ), veh/h/ln					1273			1810	960		1725	1710	982	864	1767	1709
Queue Service Time ( g <sub>s</sub> ), s					1.0			0.2	1.1		2.5	13.1	0.6	0.4	14.7	14.7
Cycle Queue Clearance Time ( g <sub>c</sub> ), s					2.3			0.2	1.1		2.5	13.1	0.6	0.4	14.7	14.7
Green Ratio ( g/C )					0.13			0.18	0.25		0.09	0.43	0.43	0.37	0.36	0.36
Capacity ( c ), veh/h					261			276	237		148	1466	421	184	632	612
Volume-to-Capacity Ratio ( X )					0.230			0.030	0.099		0.517	0.662	0.045	0.045	0.790	0.790
Back of Queue ( Q ), ft/ln ( 95 th percentile)					38.4			4	15.3		44.1	185.3	6.9	3.9	233.1	220.7
Back of Queue ( Q ), veh/ln ( 95 th percentile)					1.3			0.2	0.4		1.7	7.0	0.2	0.1	8.7	8.5
Queue Storage Ratio ( RQ ) ( 95 th percentile)					0.04			0.02	0.02		0.16	0.10	0.03	0.01	0.20	0.19
Uniform Delay ( d <sub>1</sub> ), s/veh					23.0			19.9	16.9		25.4	13.2	9.7	12.6	16.7	16.7
Incremental Delay ( d <sub>2</sub> ), s/veh					0.2			0.0	0.1		1.0	0.4	0.0	0.0	1.7	1.8
Initial Queue Delay ( d <sub>3</sub> ), s/veh					0.0			0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh					23.2			19.9	17.0		26.4	13.6	9.7	12.6	18.4	18.5
Level of Service ( LOS )					C			B	B		C	B	A	B	B	B
Approach Delay, s/veh / LOS					23.2	C		17.7	B		14.5	B		18.4	B	
Intersection Delay, s/veh / LOS					16.6					B						
Multimodal Results					EB			WB			NB			SB		
Pedestrian LOS Score / LOS					2.43	B		2.27	B		1.89	B		1.67	B	
Bicycle LOS Score / LOS					0.59	A		0.54	A		1.37	A		1.30	A	

# HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	KWA	Intersection	S Ronald Reagan Pkwy and Wamsley Way
Agency/Co.	Woolpert, Inc.	Jurisdiction	City of Plainfield
Date Performed	8/18/2023	East/West Street	Wamsley Way
Analysis Year	2045	North/South Street	S Ronald Reagan Pkwy
Time Analyzed	Horizon AM No Build	Peak Hour Factor	0.88
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	0		0	1	2	0	0	1	2	1
Configuration			LTR			L		TR		L	T	TR		L	T	R	
Volume (veh/h)		4	0	2		9	2	5		0	2	830	1	0	2	865	5
Percent Heavy Vehicles (%)		0	0	100		0	0	0		0	50			0	50		
Proportion Time Blocked		0.000	0.000	0.000		0.000	0.000	0.000		0.000					0.000		
Percent Grade (%)	0				0												
Right Turn Channelized													No				
Median Type   Storage	Left Only								4								

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.50	6.50	8.90		7.50	6.50	6.90		5.10				5.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	4.30		3.50	4.00	3.30		2.70				2.70		

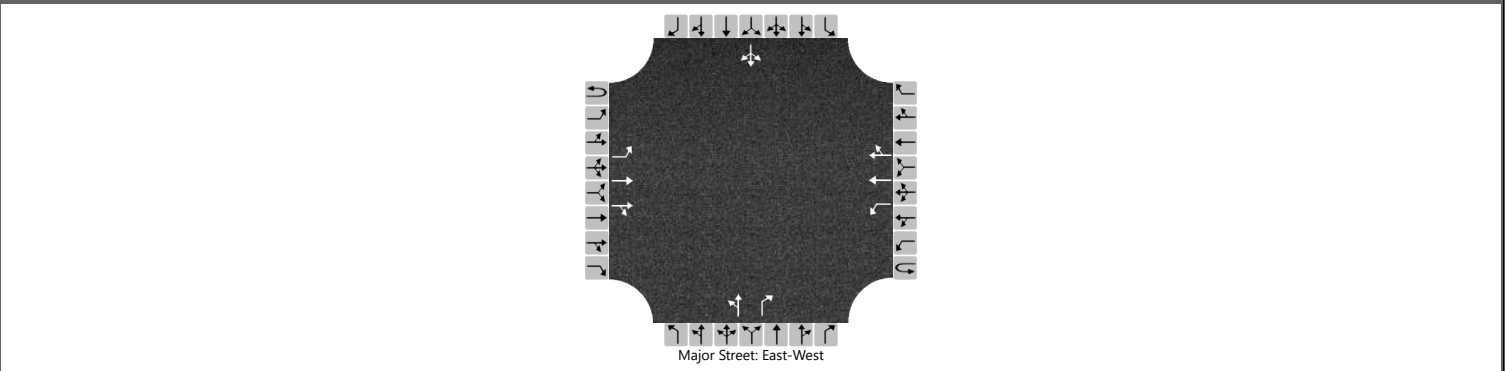
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			7			10		8			2				2		
Capacity, c (veh/h)			380			272		176			465				488		
v/c Ratio			0.02			0.04		0.05			0.00				0.00		
95% Queue Length, Q <sub>95</sub> (veh)			0.1			0.1		0.1			0.0				0.0		
Control Delay (s/veh)			14.7			18.8		26.4			12.8	0.1			12.4	0.1	
Level of Service (LOS)			B			C		D			B	A			B	A	
Approach Delay (s/veh)	14.7				22.1				0.1				0.1				
Approach LOS	B				C				A				A				

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA	Intersection	Earlham Ln and US 40				
Agency/Co.	Woolpert, Inc.	Jurisdiction	City of Plainfield				
Date Performed	8/18/2023	East/West Street	US 40				
Analysis Year	2045	North/South Street	Earlham Ln				
Time Analyzed	Horizon AM No Build	Peak Hour Factor	0.97				
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25				
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	2	0	0	1	2	0	0	1	1		0	1	0	
Configuration		L	T	TR		L	T	TR		LT		R			LTR	
Volume (veh/h)	0	4	1524	5	0	23	1059	1	0	0	7		4	0	5	
Percent Heavy Vehicles (%)	0	0			0	0			0	0	17		0	0	25	
Proportion Time Blocked		0.000				0.000					0.000	0.000		0.000	0.000	0.000
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type   Storage	Left Only								9							

## Critical and Follow-up Headways

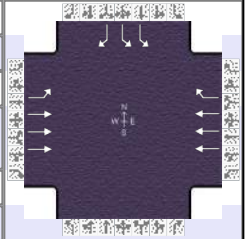
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	6.50	7.24		7.50	6.50	7.40
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.47		3.50	4.00	3.55

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				24				0		7			9	
Capacity, c (veh/h)		646				423				0		304			287	
v/c Ratio		0.01				0.06						0.02			0.03	
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.2						0.1			0.1	
Control Delay (s/veh)		10.6	0.1			14.0	0.7					17.2			18.0	
Level of Service (LOS)		B	A			B	A					C			C	
Approach Delay (s/veh)	0.1				1.0				18.0							
Approach LOS	A				A				C							

## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Woolpert, Inc.			Duration, h	0.250
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD
Jurisdiction	City of Plainfield	Time Period	Horizon No Build AM	PHF	0.96
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00
Intersection	Raceway Rd	File Name	Horizon No Build AM.xus		
Project Description	Life Science Center				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	156	1466			899	188					278	218

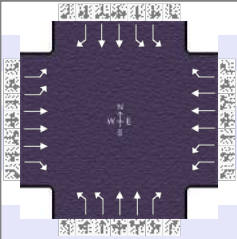
Signal Information				Signal Timing (s)									
Cycle, s	57.8	Reference Phase	2										
Offset, s	14	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	6.6	23.2	10.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0		
				Red	2.0	2.0	2.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6				4
Case Number	1.0	4.0		7.3				9.0
Phase Duration, s	12.6	41.8		29.2				16.0
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0		6.0				6.0
Max Allow Headway ( MAH ), s	3.1	3.1		3.1				3.2
Queue Clearance Time ( g <sub>s</sub> ), s	5.2	15.3		11.6				10.9
Green Extension Time ( g <sub>e</sub> ), s	0.3	11.6		11.6				0.0
Phase Call Probability	0.94	1.00		1.00				1.00
Max Out Probability	0.00	0.00		0.00				1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16				7		14
Adjusted Flow Rate ( v ), veh/h	177	1668			936	196				290		227
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1616	1480			1444	1415				1479		1284
Queue Service Time ( g <sub>s</sub> ), s	3.2	13.3			9.6	4.0				5.2		8.9
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	3.2	13.3			9.6	4.0				5.2		8.9
Green Ratio ( g/C )	0.55	0.62			0.40	0.57				0.17		0.29
Capacity ( c ), veh/h	440	2752			1741	813				511		369
Volume-to-Capacity Ratio ( X )	0.404	0.606			0.538	0.241				0.567		0.616
Back of Queue ( Q ), ft/ln ( 95 th percentile)	37.4	115.7			125.8	39.4				77.9		115.7
Back of Queue ( Q ), veh/ln ( 95 th percentile)	1.5	4.4			4.7	1.5				3.1		4.6
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.09	0.26			0.24	0.11				0.20		0.30
Uniform Delay ( d <sub>1</sub> ), s/veh	8.2	6.7			13.2	6.1				22.0		17.9
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	0.0			0.1	0.1				0.9		2.3
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0			0.0	0.0				0.0		0.0
Control Delay ( d ), s/veh	8.3	6.7			13.3	6.1				22.9		20.1
Level of Service ( LOS )	A	A			B	A				C		C
Approach Delay, s/veh / LOS	6.9	A		12.1	B		0.0			21.7		C
Intersection Delay, s/veh / LOS	10.8						B					

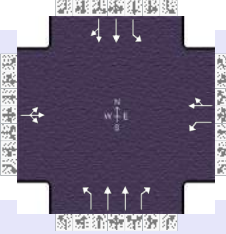
Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	0.66	A		2.08	B		2.59	C		2.59	C	
Bicycle LOS Score / LOS	1.42	A		1.11	A							F

## HCS Signalized Intersection Results Summary

General Information					Intersection Information											
Agency	Woolpert, Inc.				Duration, h	0.250										
Analyst	KWA	Analysis Date	8/29/2023		Area Type	CBD										
Jurisdiction	City of Plainfield		Time Period	Horizon No Build AM	PHF	0.88										
Urban Street	US 40		Analysis Year	2045	Analysis Period	1 > 7:00										
Intersection	Ronald Reagan Pkwy		File Name	Horizon No Build AM.xus												
Project Description	Life Science Center															
Demand Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h					149	986	70	247	756	145	97	496	235	403	571	189
Signal Information																
Cycle, s	109.2	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On		Green	8.3	3.3	30.3	6.8	6.9	23.6					
Force Mode	Fixed	Simult. Gap N/S	On		Yellow	4.0	0.0	4.0	4.0	4.0	4.0					
					Red	2.0	0.0	2.0	2.0	2.0	2.0					
Timer Results					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					5	2	1	6	3	8	7	4				
Case Number					2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0				
Phase Duration, s					14.3	36.3	17.6	39.7	12.8	29.6	25.7	42.5				
Change Period, ( Y+R <sub>c</sub> ), s					6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Allow Headway ( MAH ), s					3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				
Queue Clearance Time ( g <sub>s</sub> ), s					8.0	28.1	11.2	17.5	5.8	22.0	19.0	22.3				
Green Extension Time ( g <sub>e</sub> ), s					0.3	2.3	0.4	5.2	0.2	1.6	0.6	3.2				
Phase Call Probability					0.99	1.00	1.00	1.00	0.96	1.00	1.00	1.00				
Max Out Probability					0.00	0.73	0.00	0.13	0.00	0.22	0.11	0.24				
Movement Group Results					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement					5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h					169	1120	80	250	766	147	110	564	267	458	649	215
Adjusted Saturation Flow Rate ( s ), veh/h/ln					1507	1504	1381	1458	1504	1280	1532	1488	1347	1433	1488	1393
Queue Service Time ( g <sub>s</sub> ), s					6.0	26.1	4.4	9.2	15.5	7.3	3.8	20.0	18.3	17.0	20.3	11.8
Cycle Queue Clearance Time ( g <sub>c</sub> ), s					6.0	26.1	4.4	9.2	15.5	7.3	3.8	20.0	18.3	17.0	20.3	11.8
Green Ratio ( g/C )					0.08	0.28	0.34	0.11	0.31	0.49	0.06	0.22	0.32	0.18	0.33	0.41
Capacity ( c ), veh/h					228	1253	469	309	1391	625	189	644	434	517	996	571
Volume-to-Capacity Ratio ( X )					0.743	0.894	0.170	0.809	0.551	0.235	0.582	0.875	0.615	0.886	0.651	0.376
Back of Queue ( Q ), ft/ln ( 95 th percentile)					106.3	389.9	65.9	160.2	229.5	100.3	67.4	329.1	258.7	294	310.9	171.6
Back of Queue ( Q ), veh/ln ( 95 th percentile)					4.1	15.1	2.5	5.9	8.9	3.6	2.6	12.1	9.7	10.7	11.4	6.6
Queue Storage Ratio ( RQ ) ( 95 th percentile)					0.31	0.22	0.14	0.56	0.20	0.44	0.17	0.18	0.66	0.98	0.24	1.14
Uniform Delay ( d <sub>1</sub> ), s/veh					49.5	37.9	25.3	47.8	31.5	16.2	49.9	41.4	31.3	43.7	30.9	22.5
Incremental Delay ( d <sub>2</sub> ), s/veh					1.8	7.1	0.1	1.6	0.2	0.1	1.1	6.2	0.5	10.1	1.2	0.2
Initial Queue Delay ( d <sub>3</sub> ), s/veh					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay ( d ), s/veh					51.3	45.0	25.4	49.4	31.7	16.2	51.0	47.6	31.8	53.8	32.1	22.6
Level of Service ( LOS )					D	D	C	D	C	B	D	D	C	D	C	C
Approach Delay, s/veh / LOS					44.7	D	33.6	C	43.5	D	38.1	D				
Intersection Delay, s/veh / LOS					39.9					D						
Multimodal Results					EB			WB			NB			SB		
Pedestrian LOS Score / LOS					2.59	C	2.58	C	2.85	C	2.83	C				
Bicycle LOS Score / LOS					1.24	A	1.21	A	1.26	A	1.58	B				

**PM Peak Hour**

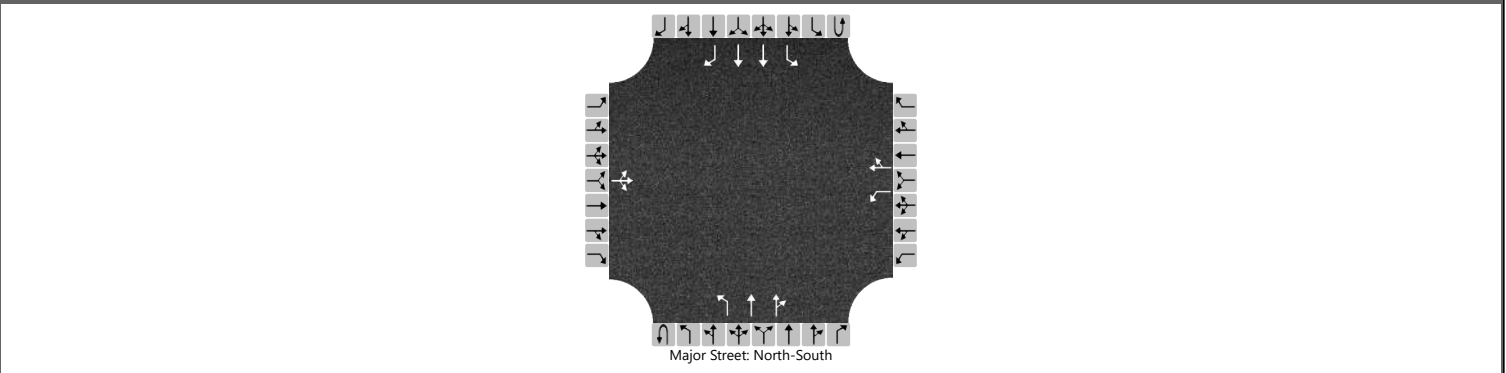
## HCS Signalized Intersection Results Summary

General Information					Intersection Information											
Agency	Woolpert, Inc.				Duration, h	0.250										
Analyst	KWA		Analysis Date	8/29/2023		Area Type	Other									
Jurisdiction	City of Plainfield		Time Period	Horizon No Build PM		PHF	0.92									
Urban Street	Ronald Regan Pkwy		Analysis Year	2025		Analysis Period	1 > 7:00									
Intersection	Airtch Rd		File Name	Horizon No Build PM.xus												
Project Description	Life Science Center															
Demand Information					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h					73	6	31	16	6	21	66	1169	16	12	903	38
Signal Information																
Cycle, s	63.8	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On		Green	1.9	9.3	1.4	3.6	23.6	0.0					
Force Mode	Fixed	Simult. Gap N/S	On		Yellow	4.0	4.0	4.0	0.0	4.0	0.0					
					Red	2.0	2.0	2.0	0.0	2.0	0.0					
Timer Results					EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase						2	1	6	3	8	7	4				
Case Number						8.3	1.0	4.0	2.0	3.0	1.1	4.0				
Phase Duration, s						15.3	7.9	23.2	11.0	33.2	7.4	29.6				
Change Period, ( Y+R <sub>c</sub> ), s						6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Allow Headway ( MAH ), s						3.3	3.3	3.3	3.0	2.9	3.0	2.9				
Queue Clearance Time ( g <sub>s</sub> ), s						7.0	2.5	2.8	4.7	23.9	2.3	18.0				
Green Extension Time ( g <sub>e</sub> ), s						0.3	0.0	0.3	0.1	3.2	0.0	4.8				
Phase Call Probability						0.93	0.27	0.95	0.72	1.00	0.21	1.00				
Max Out Probability						0.00	0.00	0.00	0.00	0.67	0.00	0.31				
Movement Group Results					EB			WB			NB			SB		
Approach Movement					L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement					5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h					120			17	29	72	1271	17	13	515	508	
Adjusted Saturation Flow Rate ( s ), veh/h/ln					1395			1810	1667	1626	1696	1510	1668	1811	1785	
Queue Service Time ( g <sub>s</sub> ), s					4.0			0.5	0.8	2.7	21.9	0.4	0.3	16.0	16.0	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s					5.0			0.5	0.8	2.7	21.9	0.4	0.3	16.0	16.0	
Green Ratio ( g/C )					0.15			0.21	0.27	0.08	0.43	0.43	0.39	0.37	0.37	
Capacity ( c ), veh/h					297			259	448	129	1446	644	172	670	660	
Volume-to-Capacity Ratio ( X )					0.403			0.067	0.065	0.558	0.879	0.027	0.076	0.769	0.769	
Back of Queue ( Q ), ft/ln ( 95 th percentile)					80.2			9.1	14	50	327.9	5.6	4.7	259.8	255.1	
Back of Queue ( Q ), veh/ln ( 95 th percentile)					3.0			0.4	0.6	1.8	12.3	0.2	0.2	9.9	9.8	
Queue Storage Ratio ( RQ ) ( 95 th percentile)					0.08			0.05	0.02	0.19	0.18	0.03	0.02	0.22	0.22	
Uniform Delay ( d <sub>1</sub> ), s/veh					25.4			20.7	17.4	28.3	16.8	10.6	15.2	17.7	17.7	
Incremental Delay ( d <sub>2</sub> ), s/veh					0.3			0.0	0.0	1.4	5.2	0.0	0.1	2.4	2.4	
Initial Queue Delay ( d <sub>3</sub> ), s/veh					0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay ( d ), s/veh					25.7			20.7	17.4	29.7	21.9	10.6	15.3	20.1	20.1	
Level of Service ( LOS)					C			C	B	C	C	B	B	C	C	
Approach Delay, s/veh / LOS					25.7	C		18.6	B		22.2	C		20.0	C	
Intersection Delay, s/veh / LOS					21.4					C						
Multimodal Results					EB			WB			NB			SB		
Pedestrian LOS Score / LOS					2.44	B		2.27	B		1.89	B		1.67	B	
Bicycle LOS Score / LOS					0.68	A		0.56	A		1.61	B		1.34	A	

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	S Ronald Reagan Pkwy and Wamsley Way		
Agency/Co.	Woolpert, Inc.			Jurisdiction	City of Plainfield		
Date Performed	8/18/2023			East/West Street	Wamsley Way		
Analysis Year	2045			North/South Street	S Ronald Reagan Pkwy		
Time Analyzed	Horizon PM No Build			Peak Hour Factor	0.95		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	0	0	1	2	0	0	1	2	1	
Configuration			LTR			L		TR		L	T	TR		L	T	R	
Volume (veh/h)		1	0	6		4	5	6	0	6	1251	0	0	7	875	0	
Percent Heavy Vehicles (%)		0	0	100		0	25	0	0	60			0	0			
Proportion Time Blocked		0.000	0.000	0.000		0.000	0.000	0.000		0.000				0.000			
Percent Grade (%)		0				0											
Right Turn Channelized																No	
Median Type   Storage		Left Only								4							

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.50	6.50	8.90		7.50	7.00	6.90		5.30				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	4.30		3.50	4.25	3.30		2.80				2.20		

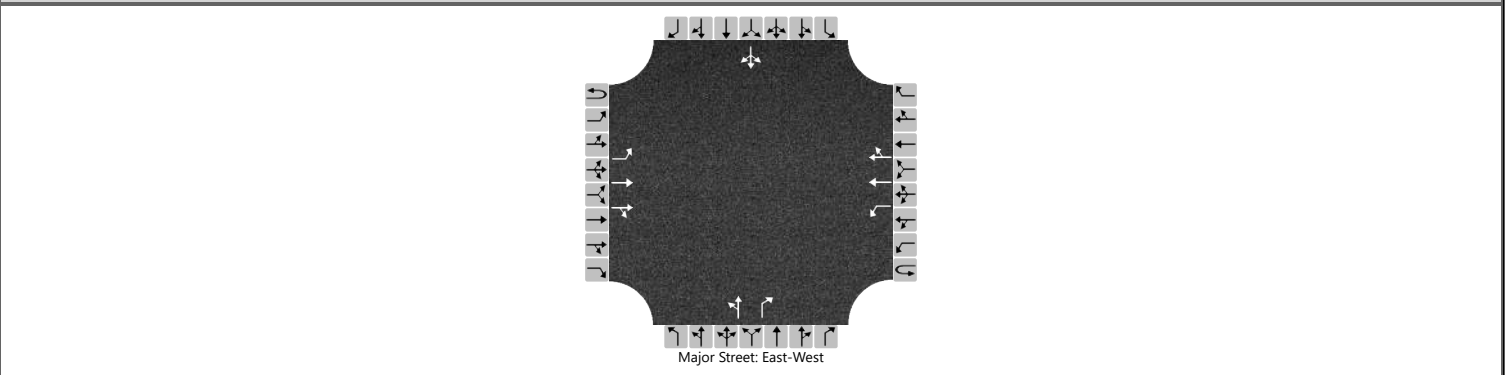
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			7			4		12		6				7			
Capacity, c (veh/h)			405			160		59		464				532			
v/c Ratio			0.02			0.03		0.20		0.01				0.01			
95% Queue Length, Q <sub>95</sub> (veh)			0.1			0.1		0.7		0.0				0.0			
Control Delay (s/veh)			14.1			28.1		80.9		12.9	0.2			11.9	0.2		
Level of Service (LOS)			B			D		F		B	A			B	A		
Approach Delay (s/veh)		14.1				66.8				0.2				0.3			
Approach LOS		B				F				A				A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Earlham Ln and US 40		
Agency/Co.	Woolpert, Inc.			Jurisdiction	City of Plainfield		
Date Performed	8/18/2023			East/West Street	US 40		
Analysis Year	2045			North/South Street	Earlham Ln		
Time Analyzed	Horizon PM No Build			Peak Hour Factor	0.99		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	1	2	0	0	1	2	0		0	1	1		0	1	0
Configuration		L	T	TR		L	T	TR		LT		R			LTR	
Volume (veh/h)	0	1	1980	5	0	22	1790	0		2	0	46		0	0	1
Percent Heavy Vehicles (%)	0	0			0	6				0	0	0		0	0	0
Proportion Time Blocked		0.000				0.000				0.000	0.000	0.000			0.000	0.000
Percent Grade (%)									0				0			
Right Turn Channelized									No							
Median Type   Storage	Left Only								9							

## Critical and Follow-up Headways

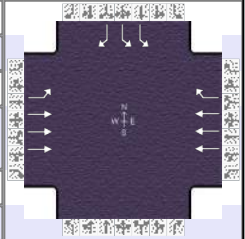
Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.22				7.50	6.50	6.90		7.50	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.26				3.50	4.00	3.30		3.50	4.00	3.30

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				22				2		46				1	
Capacity, c (veh/h)		345				267				62		244				284	
v/c Ratio		0.00				0.08				0.03		0.19				0.00	
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.3				0.1		0.7				0.0	
Control Delay (s/veh)		15.5	0.0			19.7	1.6			65.0		23.2				17.7	
Level of Service (LOS)		C	A			C	A			F		C				C	
Approach Delay (s/veh)		0.1				1.8				24.9				17.7			
Approach LOS		A				A				C				C			

## HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Woolpert, Inc.			Duration, h	0.250
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD
Jurisdiction	City of Plainfield	Time Period	Horizon No Build PM	PHF	0.96
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00
Intersection	Raceway Rd	File Name	Horizon No Build PM.xus		
Project Description	Life Science Center				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	375	1625			1583	535					226	253

Signal Information				Signal Timing (s)										
Cycle, s	104.5	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	19.0	52.6	15.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	2.0	2.0	2.0	0.0	0.0	0.0	0.0			

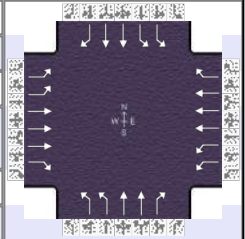
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2		6				4
Case Number	1.0	4.0		7.3				9.0
Phase Duration, s	25.0	83.5		58.6				21.0
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0		6.0				6.0
Max Allow Headway ( MAH ), s	3.1	3.1		3.1				3.3
Queue Clearance Time ( g <sub>s</sub> ), s	18.5	18.4		34.0				17.0
Green Extension Time ( g <sub>e</sub> ), s	0.5	22.5		18.6				0.0
Phase Call Probability	1.00	1.00		1.00				1.00
Max Out Probability	0.09	0.14		0.33				1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2			6	16				7		14
Adjusted Flow Rate ( v ), veh/h	387	1678			1649	557				235		264
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1616	1480			1444	1415				1479		1284
Queue Service Time ( g <sub>s</sub> ), s	16.5	16.4			32.0	24.0				7.7		15.0
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	16.5	16.4			32.0	24.0				7.7		15.0
Green Ratio ( g/C )	0.70	0.74			0.50	0.65				0.14		0.33
Capacity ( c ), veh/h	417	3294			2177	915				424		417
Volume-to-Capacity Ratio ( X )	0.930	0.510			0.757	0.609				0.555		0.631
Back of Queue ( Q ), ft/ln ( 95 th percentile)	345.2	156.2			412.2	278.2				129.8		245.5
Back of Queue ( Q ), veh/ln ( 95 th percentile)	13.7	6.0			15.4	10.9				5.1		9.7
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.86	0.35			0.78	0.75				0.34		0.65
Uniform Delay ( d <sub>1</sub> ), s/veh	27.9	5.6			20.9	10.8				41.7		30.0
Incremental Delay ( d <sub>2</sub> ), s/veh	9.2	0.0			0.5	0.2				1.0		2.3
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0			0.0	0.0				0.0		0.0
Control Delay ( d ), s/veh	37.1	5.6			21.4	11.0				42.6		32.3
Level of Service ( LOS )	D	A			C	B				D		C
Approach Delay, s/veh / LOS	11.5	B		18.8	B		0.0			37.2		D
Intersection Delay, s/veh / LOS	17.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	0.65	A	2.09	B	2.61	C	2.61	C
Bicycle LOS Score / LOS	1.63	B	1.70	B				F

## HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Horizon No Build PM	PHF	0.98		
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00		
Intersection	Ronald Reagan Pkwy	File Name	Horizon No Build PM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	303	1176	98	183	1299	305	157	672	435	413	562	343

Signal Information				Signal Timing (s)										
Cycle, s	136.7	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	11.2	4.7	40.0	9.3	6.6	35.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	4.0				
				Red	2.0	0.0	2.0	2.0	2.0	2.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	21.9	50.7	17.2	46.0	15.3	41.0	27.8	53.6
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.1
Queue Clearance Time ( g <sub>s</sub> ), s	15.8	35.3	11.0	42.0	9.0	37.0	21.8	26.6
Green Extension Time ( g <sub>e</sub> ), s	0.1	0.0	0.2	0.0	0.2	0.0	0.0	3.7
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	1.00	0.03	1.00	0.00	1.00	1.00	0.44

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	309	1200	100	196	1390	326	160	686	444	421	573	350
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1507	1504	1381	1458	1504	1280	1532	1488	1347	1433	1488	1393
Queue Service Time ( g <sub>s</sub> ), s	13.8	33.3	6.5	9.0	40.0	25.7	7.0	30.5	35.0	19.8	21.3	24.6
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	13.8	33.3	6.5	9.0	40.0	25.7	7.0	30.5	35.0	19.8	21.3	24.6
Green Ratio ( g/C )	0.12	0.33	0.39	0.08	0.29	0.45	0.07	0.26	0.34	0.16	0.35	0.46
Capacity ( c ), veh/h	351	1474	545	240	1320	579	207	762	456	458	1036	647
Volume-to-Capacity Ratio ( X )	0.882	0.814	0.184	0.818	1.053	0.564	0.772	0.900	0.974	0.921	0.554	0.541
Back of Queue ( Q ), ft/ln ( 95 th percentile)	265.8	470.5	99.1	153.9	646.5	310.9	128	494.9	692.6	363.4	329.1	326.4
Back of Queue ( Q ), veh/ln ( 95 th percentile)	10.1	18.2	3.8	5.7	25.1	11.1	5.0	18.2	25.8	13.3	12.1	12.6
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.78	0.26	0.22	0.54	0.56	1.35	0.33	0.27	1.78	1.21	0.26	2.18
Uniform Delay ( d <sub>1</sub> ), s/veh	59.5	42.2	27.0	61.7	48.4	27.5	62.7	49.2	44.7	56.6	36.0	26.2
Incremental Delay ( d <sub>2</sub> ), s/veh	19.1	3.4	0.1	3.0	34.8	0.5	2.3	13.4	35.3	23.3	0.4	0.5
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	78.6	45.6	27.1	64.7	83.2	28.0	65.0	62.6	79.9	79.9	36.4	26.7
Level of Service ( LOS )	E	D	C	E	F	C	E	E	E	E	D	C
Approach Delay, s/veh / LOS	50.8	D		71.9	E		68.8	E		47.5	D	
Intersection Delay, s/veh / LOS	60.4						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.59	C	2.59	C	2.85	C	2.84	C
Bicycle LOS Score / LOS	1.37	A	1.49	A	1.55	B	1.60	B

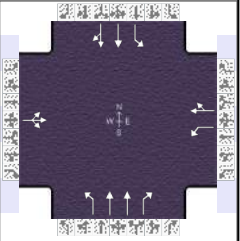
# **Appendix 7**

## **2045 Build Capacity Analysis Sheets**

**AM Peak Hour**

# HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	Other		
Jurisdiction	City of Plainfield	Time Period	Horizon Build AM	PHF	0.85		
Urban Street	Ronald Regan Pkwy	Analysis Year	2025	Analysis Period	1> 7:00		
Intersection	Airtech Rd	File Name	Horizon Build AM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	30	0	21	18	9	16	65	899	100	57	803	77

Signal Information													
Cycle, s	62.5	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	2.2	7.9	4.8	0.3	23.3	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	4.0	0.0			
				Red	2.0	2.0	2.0	0.0	2.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6	3	8	7	4
Case Number		8.3	1.0	4.0	2.0	3.0	1.1	4.0
Phase Duration, s		13.9	8.2	22.1	11.2	29.7	10.8	29.3
Change Period, ( Y+R <sub>c</sub> ), s		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s		3.3	3.3	3.3	3.0	3.0	3.0	3.0
Queue Clearance Time ( g <sub>s</sub> ), s		4.5	2.6	3.5	4.7	19.4	4.9	18.6
Green Extension Time ( g <sub>e</sub> ), s		0.2	0.0	0.2	0.1	4.2	0.1	4.3
Phase Call Probability		0.79	0.31	0.85	0.74	1.00	0.69	1.00
Max Out Probability		0.00	0.00	0.00	0.00	0.34	0.00	0.31

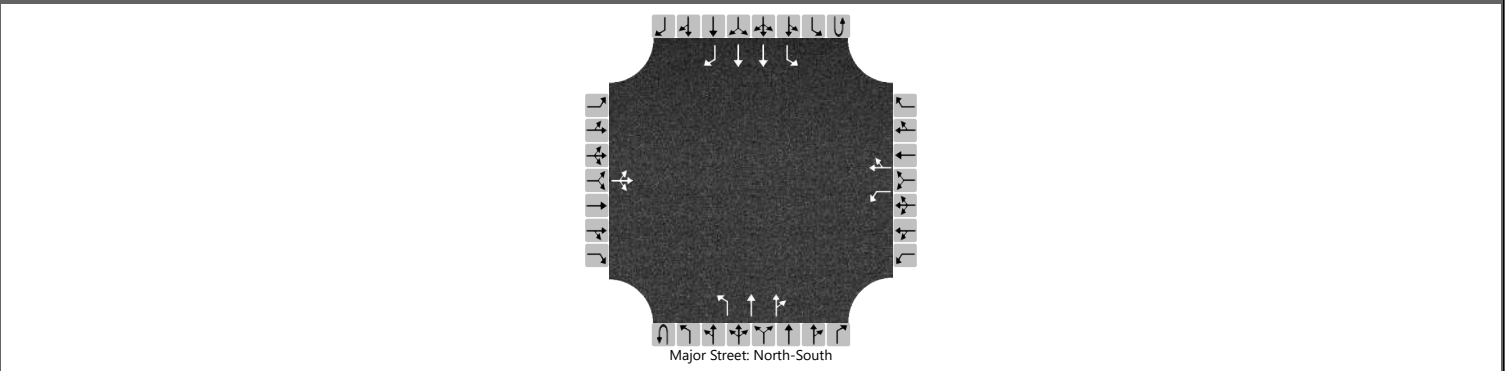
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h		60		21	29		76	1058	118	67	526	510
Adjusted Saturation Flow Rate ( s ), veh/h/ln		1268		1810	946		1725	1710	982	864	1767	1712
Queue Service Time ( g <sub>s</sub> ), s		1.2		0.6	1.5		2.7	17.4	5.3	2.9	16.6	16.6
Cycle Queue Clearance Time ( g <sub>c</sub> ), s		2.5		0.6	1.5		2.7	17.4	5.3	2.9	16.6	16.6
Green Ratio ( g/C )		0.13		0.19	0.26		0.08	0.38	0.38	0.45	0.37	0.37
Capacity ( c ), veh/h		251		299	243		142	1294	372	199	659	639
Volume-to-Capacity Ratio ( X )		0.239		0.071	0.121		0.538	0.817	0.317	0.336	0.797	0.798
Back of Queue ( Q ), ft/ln ( 95 th percentile)		42.1		11	20.8		48.9	262	62.1	31.4	270.9	256.9
Back of Queue ( Q ), veh/ln ( 95 th percentile)		1.4		0.4	0.6		1.9	9.9	1.8	0.8	10.1	9.9
Queue Storage Ratio ( RQ ) ( 95 th percentile)		0.04		0.06	0.03		0.18	0.15	0.29	0.11	0.23	0.22
Uniform Delay ( d <sub>1</sub> ), s/veh		24.9		20.8	17.8		27.6	17.5	13.7	14.0	17.5	17.5
Incremental Delay ( d <sub>2</sub> ), s/veh		0.2		0.0	0.1		1.2	2.1	0.2	0.4	3.1	3.2
Initial Queue Delay ( d <sub>3</sub> ), s/veh		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh		25.1		20.8	17.9		28.7	19.6	13.9	14.4	20.7	20.8
Level of Service ( LOS )		C		C	B		C	B	B	B	C	C
Approach Delay, s/veh / LOS	25.1	C		19.1	B		19.6	B		20.3	C	
Intersection Delay, s/veh / LOS				20.1						C		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.27	B	1.90	B	1.67	B
Bicycle LOS Score / LOS	0.59	A	0.57	A	1.52	B	1.40	A

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	S Ronald Reagan Pkwy and Wamsley Way		
Agency/Co.	Woolpert, Inc.			Jurisdiction	City of Plainfield		
Date Performed	8/18/2023			East/West Street	Wamsley Way		
Analysis Year	2045			North/South Street	S Ronald Reagan Pkwy		
Time Analyzed	Horizon AM Build			Peak Hour Factor	0.88		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	0	0	1	2	0	0	1	2	1	
Configuration			LTR			L		TR		L	T	TR		L	T	R	
Volume (veh/h)		4	0	2		34	2	22	0	2	855	55	0	102	935	5	
Percent Heavy Vehicles (%)		0	0	100		0	0	0	0	50			0	50			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized																No	
Median Type   Storage		Left Only								4							

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.50	6.50	8.90		7.50	6.50	6.90		5.10				5.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	4.30		3.50	4.00	3.30		2.70				2.70		

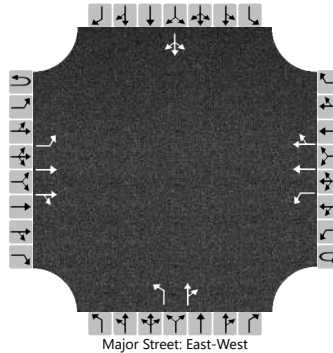
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			7			39		27		2				116			
Capacity, c (veh/h)			187			213		211		427				443			
v/c Ratio			0.04			0.18		0.13		0.01				0.26			
95% Queue Length, Q <sub>95</sub> (veh)			0.1			0.6		0.4		0.0				1.0			
Control Delay (s/veh)			25.0			25.6		24.5		13.5	0.1			16.0	2.9		
Level of Service (LOS)			C			D		C		B	A			C	A		
Approach Delay (s/veh)		25.0				25.2				0.1				4.2			
Approach LOS		C				D				A				A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Earlham Ln and US 40		
Agency/Co.	Woolpert, Inc.			Jurisdiction	City of Plainfield		
Date Performed	8/18/2023			East/West Street	US 40		
Analysis Year	2045			North/South Street	Earlham Ln		
Time Analyzed	Horizon AM Build			Peak Hour Factor	0.97		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	2	0	0	1	2	0	1	1	0		0	1	0	
Configuration		L	T	TR		L	T	TR	L		TR				LTR	
Volume (veh/h)	0	4	1596	271	0	42	1171	1	88	0	59		4	0	5	
Percent Heavy Vehicles (%)	0	0			0	0			0	0	17		0	0	25	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Left Only								9							

## Critical and Follow-up Headways

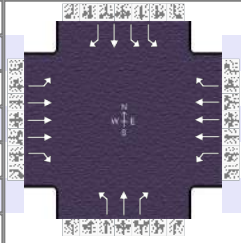
Base Critical Headway (sec)		4.1				4.1			7.5	6.5	6.9		7.5	6.5	6.9	
Critical Headway (sec)		4.10				4.10			7.50	6.50	7.24		7.50	6.50	7.40	
Base Follow-Up Headway (sec)		2.2				2.2			3.5	4.0	3.3		3.5	4.0	3.3	
Follow-Up Headway (sec)		2.20				2.20			3.50	4.00	3.47		3.50	4.00	3.55	

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				43			91		61				9	
Capacity, c (veh/h)		584				311			84		230				216	
v/c Ratio		0.01				0.14			1.08		0.26				0.04	
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.5			6.3		1.0				0.1	
Control Delay (s/veh)		11.2	0.1			18.4	2.3		210.5		26.2				22.4	
Level of Service (LOS)		B	A			C	A		F		D				C	
Approach Delay (s/veh)	0.1				2.9				136.5				22.4			
Approach LOS	A				A				F				C			

# HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Horizon Build AM	PHF	0.96		
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00		
Intersection	Raceway Rd	File Name	Horizon Build AM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	156	1504	70	269	966	188	91	0	88	278	0	218

Signal Information				Signal Timing (s)										
Cycle, s	115.1	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On	Green	9.7	1.1	51.9	13.1	9.4	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	4.0	0.0				
				Red	2.0	2.0	2.0	2.0	2.0	0.0				

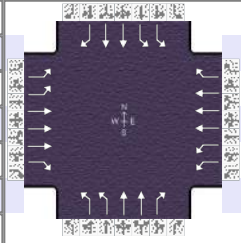
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8	7	4
Case Number	1.1	3.0	1.1	3.0		5.3	2.0	3.0
Phase Duration, s	15.7	57.9	22.8	65.0		15.4	19.1	34.5
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Allow Headway ( MAH ), s	3.1	3.1	3.1	3.1		3.3	3.1	3.3
Queue Clearance Time ( g <sub>s</sub> ), s	9.4	48.8	16.3	19.0		8.5	12.5	18.6
Green Extension Time ( g <sub>e</sub> ), s	0.3	3.0	0.4	13.4		0.8	0.5	0.7
Phase Call Probability	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Max Out Probability	0.00	0.82	0.01	0.13		0.00	0.00	0.01

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	196	1885	88	280	1006	196	95	0	92	290	0	227
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1616	1480	1449	1629	1444	1415	1629	1710	1449	1557	1710	1284
Queue Service Time ( g <sub>s</sub> ), s	7.4	46.8	3.5	14.3	17.0	6.9	6.5	0.0	6.0	10.5	0.0	16.6
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	7.4	46.8	3.5	14.3	17.0	6.9	6.5	0.0	6.0	10.5	0.0	16.6
Green Ratio ( g/C )	0.54	0.45	0.53	0.61	0.51	0.63	0.08	0.08	0.23	0.11	0.25	0.33
Capacity ( c ), veh/h	375	2000	771	310	2220	886	196	140	330	354	423	425
Volume-to-Capacity Ratio ( X )	0.521	0.942	0.114	0.905	0.453	0.221	0.484	0.000	0.278	0.818	0.000	0.534
Back of Queue ( Q ), ft/ln ( 95 th percentile)	99.3	513.1	57.4	349.5	249.8	93.3	120.9	0	95.9	188.7	0	223.9
Back of Queue ( Q ), veh/ln ( 95 th percentile)	3.9	19.6	2.3	14.0	9.3	3.6	4.8	0.0	3.8	7.4	0.0	8.8
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.25	1.14	0.00	0.00	0.47	0.25	0.00	0.00	0.00	0.50	0.00	0.59
Uniform Delay ( d <sub>1</sub> ), s/veh	15.2	30.3	13.4	34.8	17.9	9.4	51.6	0.0	36.7	50.0	0.0	31.3
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	2.6	0.0	15.2	0.1	0.0	0.7	0.0	0.2	1.8	0.0	0.5
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	15.3	32.9	13.4	50.1	17.9	9.4	52.3	0.0	36.9	51.8	0.0	31.8
Level of Service ( LOS )	B	C	B	D	B	A	D		D	D		C
Approach Delay, s/veh / LOS	30.5		C	22.9		C	44.7		D	43.0		D
Intersection Delay, s/veh / LOS	30.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.26	B	2.74	C	2.72	C
Bicycle LOS Score / LOS	1.48	A	1.30	A	0.80	A	1.34	A

# HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Horizon Build AM	PHF	0.88		
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00		
Intersection	Ronald Reagan Pkwy	File Name	Horizon Build AM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	149	1136	129	315	815	191	110	501	259	513	614	189

Signal Information				Signal Timing (s)										
Cycle, s	145.4	Reference Phase	2											
Offset, s	0	Reference Point	End	Green	10.3	1.8	42.0	8.0	17.3	30.0				
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	4.0	4.0				
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	2.0	2.0	2.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	16.3	48.0	24.1	55.8	14.0	36.0	37.3	59.3
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Queue Clearance Time ( g <sub>s</sub> ), s	10.0	43.4	17.5	23.2	7.8	29.3	31.1	30.2
Green Extension Time ( g <sub>e</sub> ), s	0.2	0.0	0.6	6.4	0.2	0.7	0.2	1.0
Phase Call Probability	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Max Out Probability	0.00	1.00	0.00	0.19	0.00	1.00	1.00	1.00

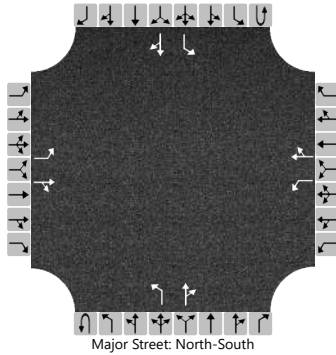
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	169	1291	147	317	819	192	125	569	294	583	698	215
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1507	1504	1381	1458	1504	1280	1532	1488	1347	1433	1488	1393
Queue Service Time ( g <sub>s</sub> ), s	8.0	41.4	11.3	15.5	21.2	11.3	5.8	27.3	27.2	29.1	28.2	14.9
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	8.0	41.4	11.3	15.5	21.2	11.3	5.8	27.3	27.2	29.1	28.2	14.9
Green Ratio ( g/C )	0.07	0.29	0.34	0.12	0.34	0.56	0.06	0.21	0.33	0.22	0.37	0.44
Capacity ( c ), veh/h	213	1303	475	363	1546	714	169	614	446	617	1091	609
Volume-to-Capacity Ratio ( X )	0.796	0.990	0.308	0.873	0.530	0.269	0.739	0.927	0.660	0.944	0.640	0.353
Back of Queue ( Q ), ft/ln ( 95 th percentile)	147.2	640.4	178.2	257.7	308.3	163.2	107.2	466.7	378.2	491.5	419.5	221.3
Back of Queue ( Q ), veh/ln ( 95 th percentile)	5.6	24.8	6.8	9.5	12.0	5.8	4.2	17.2	14.1	17.9	15.4	8.5
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.43	0.36	0.39	0.90	0.27	0.71	0.27	0.26	0.97	1.64	0.33	1.48
Uniform Delay ( d <sub>1</sub> ), s/veh	66.5	51.5	35.0	62.5	38.4	16.7	67.7	56.6	41.7	56.2	38.1	27.2
Incremental Delay ( d <sub>2</sub> ), s/veh	2.6	22.5	0.1	3.6	0.2	0.1	2.4	18.2	2.5	22.4	1.0	0.1
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	69.1	74.0	35.1	66.2	38.5	16.8	70.0	74.8	44.2	78.6	39.1	27.4
Level of Service ( LOS )	E	E	D	E	D	B	E	E	D	E	D	C
Approach Delay, s/veh / LOS	70.0	E		42.0	D		65.1	E		52.8	D	
Intersection Delay, s/veh / LOS	57.5						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.60	C	2.59	C	2.86	C	2.84	C
Bicycle LOS Score / LOS	1.37	A	1.31	A	1.30	A	1.72	B

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA	Intersection	Int 6				
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield				
Date Performed	9/6/2023	East/West Street	Internal Rd 1				
Analysis Year	2023	North/South Street	Raceway Rd				
Time Analyzed	Opening AM Build	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound					
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R		
Movement																		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		1	1	0		1	1	0		0	1	1	0		0	1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR		
Volume (veh/h)		108	6	39		0	6	36		16	38	9		38	158	124		
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3				
Proportion Time Blocked																		
Percent Grade (%)	0				0													
Right Turn Channelized																		
Median Type   Storage	Undivided																	

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

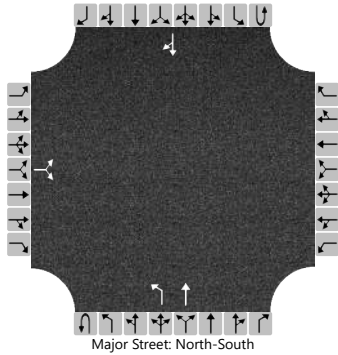
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		117		49		0		46		17				41		
Capacity, c (veh/h)		489		742		481		874		1248				1549		
v/c Ratio		0.24		0.07		0.00		0.05		0.01				0.03		
95% Queue Length, Q <sub>95</sub> (veh)		0.9		0.2		0.0		0.2		0.0				0.1		
Control Delay (s/veh)		14.7		10.2		12.5		9.3		7.9	0.1	0.1		7.4	0.1	0.1
Level of Service (LOS)		B		B		B		A		A	A	A		A	A	A
Approach Delay (s/veh)		13.3				9.3				2.1				1.0		
Approach LOS		B				A				A				A		

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 7		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Earlham Ln		
Analysis Year	2023			North/South Street	Raceway Rd		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		15		0						0	0				62	41
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type   Storage		Undivided														

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

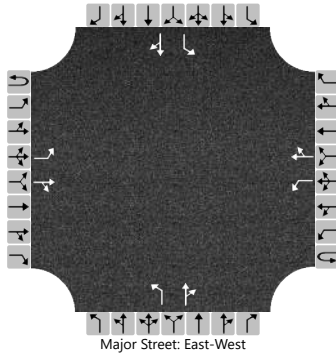
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16							0						
Capacity, c (veh/h)			908							1471						
v/c Ratio			0.02							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.1							0.0						
Control Delay (s/veh)			9.0							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.0														
Approach LOS		A														

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 8		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Airtech Pkwy		
Analysis Year	2023			North/South Street	Raceway Road		
Time Analyzed	Horizon AM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	1	0	0	1	1	0	1	1	0		1	1	0	
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		68	27	0		0	27	1		0	0	0		2	0	11
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

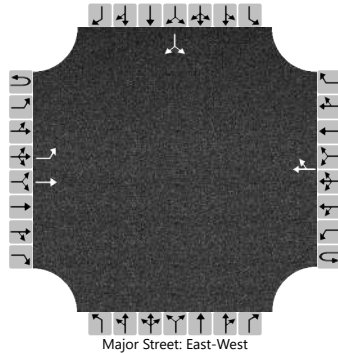
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		74				0				0		0		2		12
Capacity, c (veh/h)		1576				1577				699		0		713		1042
v/c Ratio		0.05				0.00				0.00				0.00		0.01
95% Queue Length, Q <sub>95</sub> (veh)		0.1				0.0				0.0				0.0		0.0
Control Delay (s/veh)		7.4				7.3				10.2				10.1		8.5
Level of Service (LOS)		A				A				B				B		A
Approach Delay (s/veh)	5.3				0.0				8.7							
Approach LOS	A				A				A							

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 9		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Airtech Pkwy		
Analysis Year	2023			North/South Street	Internal Rd 2		
Time Analyzed	Horizon AM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	1	0	0	0	1	0	0	0	0		0	1	0	
Configuration		L	T					TR							LR	
Volume (veh/h)		22	118				38	0					0		8	
Percent Heavy Vehicles (%)		3											3		3	
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

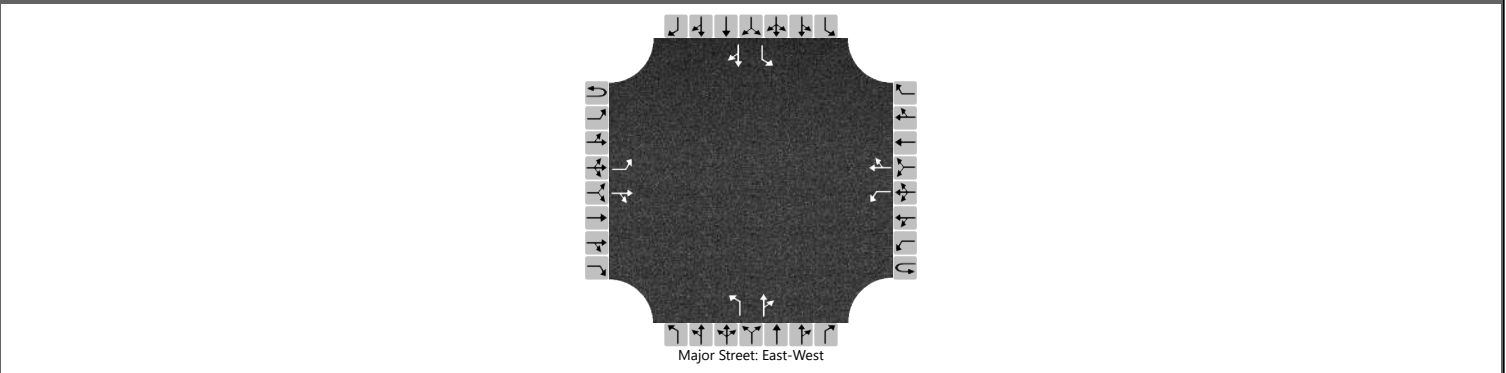
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24													9		
Capacity, c (veh/h)		1561													1027		
v/c Ratio		0.02													0.01		
95% Queue Length, Q <sub>95</sub> (veh)		0.0													0.0		
Control Delay (s/veh)		7.3													8.5		
Level of Service (LOS)		A													A		
Approach Delay (s/veh)		1.2												8.5			
Approach LOS		A												A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 10		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Wamsley Way		
Analysis Year	2023			North/South Street	Internal Rd 2		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9	10	11	12		
Priority																
Number of Lanes	0	1	1	0	0	1	1	0	1	1	0	1	1	0		
Configuration		L		TR		L		TR	L		TR	L		TR		
Volume (veh/h)		21	81	33		0	31	7	6	0	0	2	0	5		
Percent Heavy Vehicles (%)		3				3			3	3	3	3	3	3		
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1			7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13			7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2			3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23			3.53	4.03	3.33		3.53	4.03	3.33

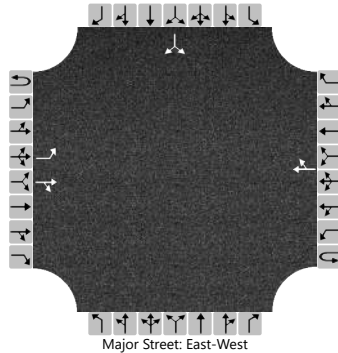
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		23				0			7		0		2		5
Capacity, c (veh/h)		1561				1457			751		0		758		1032
v/c Ratio		0.01				0.00			0.01				0.00		0.01
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.0			0.0				0.0		0.0
Control Delay (s/veh)		7.3				7.5			9.8				9.8		8.5
Level of Service (LOS)		A				A			A				A		A
Approach Delay (s/veh)		1.1				0.0				8.9					
Approach LOS		A				A				A					

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 11		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Wamsley Way		
Analysis Year	2023			North/South Street	Earlham Ln		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L		TR				TR							LR	
Volume (veh/h)		26	0	0			0	0						0		32
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												7.13		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

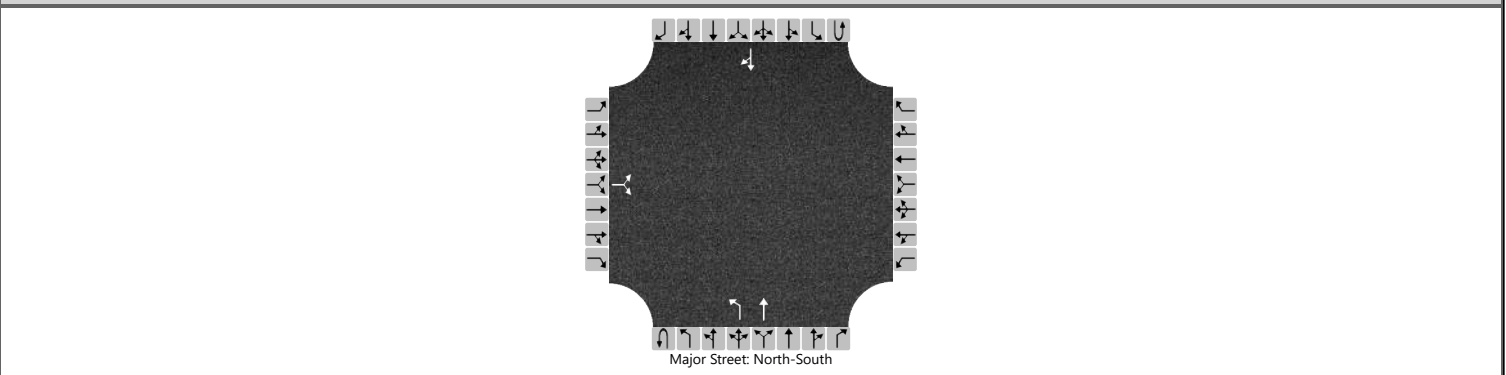
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		28														35	
Capacity, c (veh/h)		1617														1082	
v/c Ratio		0.02														0.03	
95% Queue Length, Q <sub>95</sub> (veh)		0.1														0.1	
Control Delay (s/veh)		7.3														8.4	
Level of Service (LOS)		A														A	
Approach Delay (s/veh)		7.3												8.4			
Approach LOS		A												A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA	Intersection	Int 12				
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield				
Date Performed	9/6/2023	East/West Street	Site Drive 1				
Analysis Year	2023	North/South Street	Earlham Ln				
Time Analyzed	Opening AM Build	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0	
Configuration			LR							L	T					TR	
Volume (veh/h)		3		1						3	16					61	11
Percent Heavy Vehicles (%)		3		3						3							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized																	
Median Type   Storage		Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

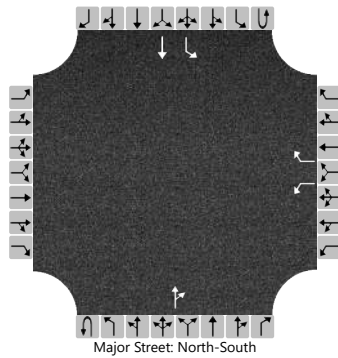
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4							3							
Capacity, c (veh/h)			919							1514							
v/c Ratio			0.00							0.00							
95% Queue Length, Q <sub>95</sub> (veh)			0.0							0.0							
Control Delay (s/veh)			8.9							7.4							
Level of Service (LOS)			A							A							
Approach Delay (s/veh)		8.9								1.2							
Approach LOS		A								A							

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 13		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Internal Rd 1		
Analysis Year	2023			North/South Street	Earlham Ln		
Time Analyzed	Opening AM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						17		131			16	14		208	82	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No											
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1		
Critical Headway (sec)						6.43		6.23							4.13		
Base Follow-Up Headway (sec)						3.5		3.3							2.2		
Follow-Up Headway (sec)						3.53		3.33							2.23		

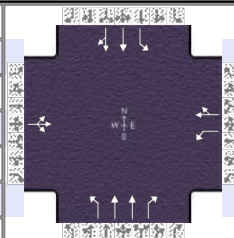
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						18		142							226		
Capacity, c (veh/h)						414		1048							1573		
v/c Ratio						0.04		0.14							0.14		
95% Queue Length, Q <sub>95</sub> (veh)						0.1		0.5							0.5		
Control Delay (s/veh)						14.1		9.0							7.7		
Level of Service (LOS)						B		A							A		
Approach Delay (s/veh)					9.6								5.5				
Approach LOS					A								A				

**PM Peak Hour**

## HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	Other		
Jurisdiction	City of Plainfield	Time Period	Horizon Build PM	PHF	0.92		
Urban Street	Ronald Regan Pkwy	Analysis Year	2025	Analysis Period	1 > 7:00		
Intersection	Airtech Rd	File Name	Horizon Build PM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	73	6	31	65	6	52	66	1208	46	23	963	38

Signal Information													
Cycle, s	71.3	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	5.3	9.7	2.7	2.6	27.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	0.0	4.0	0.0			
				Red	2.0	2.0	2.0	0.0	2.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6	3	8	7	4
Case Number		8.3	1.0	4.0	2.0	3.0	1.1	4.0
Phase Duration, s		15.7	11.3	27.0	11.3	35.5	8.7	33.0
Change Period, ( $Y+R_c$ ), s		6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( $MAH$ ), s		3.4	3.3	3.4	3.0	2.9	3.0	2.9
Queue Clearance Time ( $g_s$ ), s		7.8	4.2	4.0	5.0	28.4	2.6	21.2
Green Extension Time ( $g_e$ ), s		0.4	0.1	0.4	0.1	1.2	0.0	4.3
Phase Call Probability		0.97	0.75	0.99	0.76	1.00	0.39	1.00
Max Out Probability		0.00	0.00	0.00	0.00	1.00	0.00	0.51

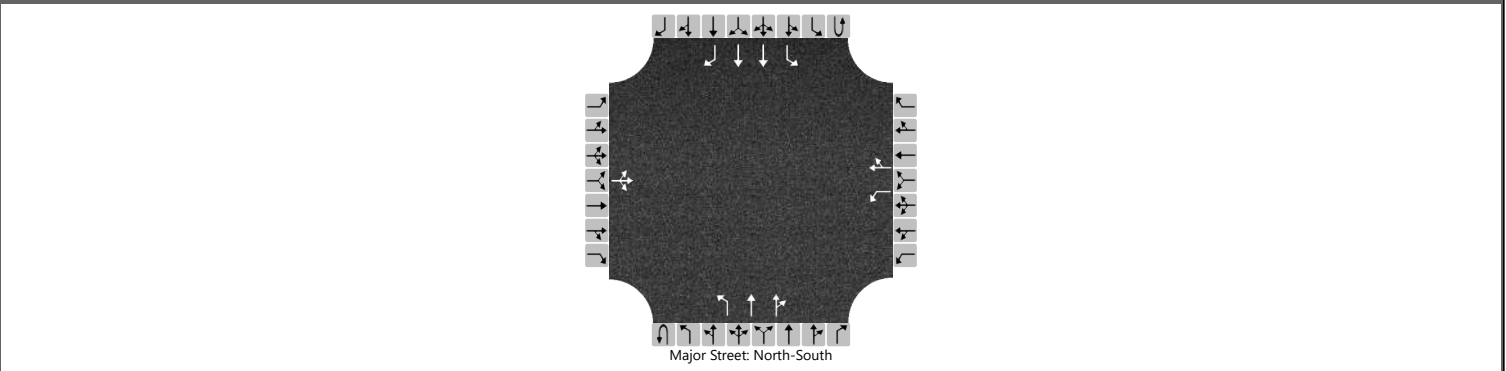
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( $v$ ), veh/h		120		71	63		72	1313	50	25	548	540
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln		1368		1810	1636		1626	1696	1510	1668	1811	1786
Queue Service Time ( $g_s$ ), s		4.8		2.2	2.0		3.0	26.4	1.4	0.6	19.2	19.2
Cycle Queue Clearance Time ( $g_c$ ), s		5.8		2.2	2.0		3.0	26.4	1.4	0.6	19.2	19.2
Green Ratio ( $g/C$ )		0.14		0.24	0.29		0.07	0.41	0.41	0.42	0.38	0.38
Capacity ( $c$ ), veh/h		271		312	482		121	1406	626	171	685	676
Volume-to-Capacity Ratio ( $X$ )		0.442		0.227	0.131		0.592	0.934	0.080	0.146	0.799	0.800
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)		92.9		41.5	33.6		57.8	430.7	20	10.2	323.5	318.5
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)		3.4		1.7	1.3		2.1	16.2	0.8	0.4	12.3	12.2
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)		0.09		0.24	0.04		0.21	0.24	0.09	0.04	0.27	0.27
Uniform Delay ( $d_1$ ), s/veh		29.0		22.0	18.4		31.9	19.9	12.6	17.3	19.8	19.8
Incremental Delay ( $d_2$ ), s/veh		0.4		0.1	0.0		1.7	11.2	0.0	0.1	4.8	4.9
Initial Queue Delay ( $d_3$ ), s/veh		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( $d$ ), s/veh		29.4		22.1	18.5		33.7	31.2	12.7	17.4	24.6	24.6
Level of Service ( LOS )		C		C	B		C	C	B	B	C	C
Approach Delay, s/veh / LOS	29.4	C		20.4	C		30.7	C		24.4	C	
Intersection Delay, s/veh / LOS				27.6						C		

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.27	B	1.90	B	1.68	B
Bicycle LOS Score / LOS	0.68	A	0.71	A	1.67	B	1.41	A

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	S Ronald Reagan Pkwy and Wamsley Way		
Agency/Co.	Woolpert, Inc.			Jurisdiction	City of Plainfield		
Date Performed	8/18/2023			East/West Street	Wamsley Way		
Analysis Year	2045			North/South Street	S Ronald Reagan Pkwy		
Time Analyzed	Horizon PM Build			Peak Hour Factor	0.95		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	0	0	1	2	0	0	1	2	1	
Configuration			LTR			L		TR		L	T	TR		L	T	R	
Volume (veh/h)		1	0	6		54	5	105	0	6	1303	18	0	30	896	0	
Percent Heavy Vehicles (%)		0	0	100		0	25	0	0	60			0	0			
Proportion Time Blocked																	
Percent Grade (%)		0				0											
Right Turn Channelized																No	
Median Type   Storage		Left Only								4							

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1				4.1		
Critical Headway (sec)		7.50	6.50	8.90		7.50	7.00	6.90		5.30				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	4.30		3.50	4.25	3.30		2.80				2.20		

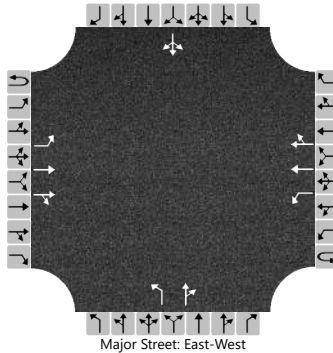
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			7			57		116		6				32			
Capacity, c (veh/h)			393			146		222		453				498			
v/c Ratio			0.02			0.39		0.52		0.01				0.06			
95% Queue Length, Q <sub>95</sub> (veh)			0.1			1.7		2.7		0.0				0.2			
Control Delay (s/veh)			14.3			44.7		37.7		13.1	0.2			12.7	0.7		
Level of Service (LOS)			B			E		E		B	A			B	A		
Approach Delay (s/veh)		14.3				40.0				0.2				1.1			
Approach LOS		B				E				A				A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Earlham Ln and US 40		
Agency/Co.	Woolpert, Inc.			Jurisdiction	City of Plainfield		
Date Performed	8/18/2023			East/West Street	US 40		
Analysis Year	2045			North/South Street	Earlham Ln		
Time Analyzed	Horizon PM Build			Peak Hour Factor	0.99		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	2	0	0	1	2	0	1	1	0		0	1	0	
Configuration		L	T	TR		L	T	TR	L		TR				LTR	
Volume (veh/h)	0	1	2041	178	0	26	1896	0	92	0	87		0	0	1	
Percent Heavy Vehicles (%)	0	0			0	0			0	0	0		0	0	0	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Left Only								9							

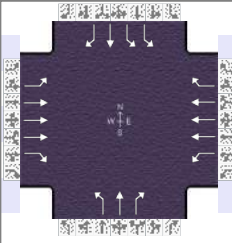
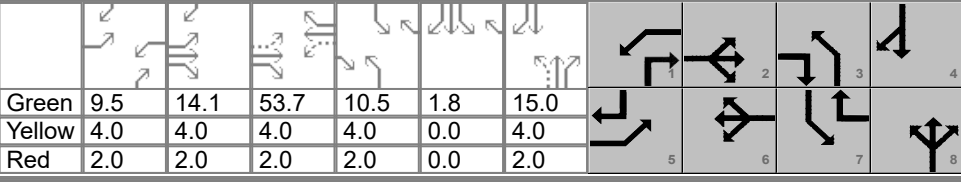
## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1			7.5	6.5	6.9		7.5	6.5	6.9	
Critical Headway (sec)		4.10				4.10			7.50	6.50	6.90		7.50	6.50	6.90	
Base Follow-Up Headway (sec)		2.2				2.2			3.5	4.0	3.3		3.5	4.0	3.3	
Follow-Up Headway (sec)		2.20				2.20			3.50	4.00	3.30		3.50	4.00	3.30	

## Delay, Queue Length, and Level of Service

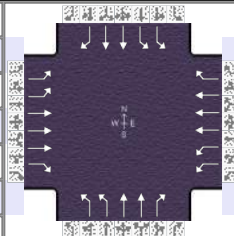
Flow Rate, v (veh/h)		1				26			93		88				1	
Capacity, c (veh/h)		314				234			50		204				261	
v/c Ratio		0.00				0.11			1.87		0.43				0.00	
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.4			9.2		2.0				0.0	
Control Delay (s/veh)		16.5	0.1			22.3	2.4		586.0		35.4				18.8	
Level of Service (LOS)		C	A			C	A		F		E				C	
Approach Delay (s/veh)	0.1				2.7				318.4				18.8			
Approach LOS	A				A				F				C			

## HCS Signalized Intersection Results Summary

General Information						Intersection Information																	
Agency		Woolpert, Inc.				Duration, h		0.250															
Analyst		KWA		Analysis Date		8/29/2023		Area Type		CBD													
Jurisdiction		City of Plainfield		Time Period		Horizon Build PM		PHF		0.96													
Urban Street		US 40		Analysis Year		2045		Analysis Period		1 > 7:00													
Intersection		Raceway Rd		File Name		Horizon Build PM.xus																	
Project Description		Life Science Center																					
Demand Information				EB			WB			NB			SB										
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R								
Demand ( v ), veh/h				375	1695	20	146	1597	535	113	0	150	226	0	253								
Signal Information																							
Cycle, s	134.7	Reference Phase	2																				
Offset, s	0	Reference Point	End																				
Uncoordinated	Yes	Simult. Gap E/W	On																				
Force Mode	Fixed	Simult. Gap N/S	On	Green	9.5	14.1	53.7	10.5	1.8	15.0	Yellow	4.0	4.0	4.0	4.0	4.0	Red	2.0	2.0	2.0	2.0	0.0	2.0
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT												
Assigned Phase				5	2	1	6	3	8	7	4												
Case Number				1.1	3.0	1.1	3.0	1.1	3.0	2.0	3.0												
Phase Duration, s				35.6	79.8	15.5	59.7	16.5	21.0	18.3	22.8												
Change Period, ( Y+R <sub>c</sub> ), s				6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0												
Max Allow Headway ( MAH ), s				3.0	3.0	3.0	3.0	3.1	3.4	3.1	3.4												
Queue Clearance Time ( g <sub>s</sub> ), s				29.5	43.2	9.4	52.5	10.5	15.3	12.0	18.8												
Green Extension Time ( g <sub>e</sub> ), s				0.0	9.0	0.2	1.3	0.1	0.0	0.3	0.0												
Phase Call Probability				1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00												
Max Out Probability				1.00	0.74	0.00	1.00	0.00	1.00	0.01	1.00												
Movement Group Results				EB			WB			NB			SB										
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R								
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14								
Adjusted Flow Rate ( v ), veh/h				396	1792	21	152	1664	557	118	0	156	235	0	264								
Adjusted Saturation Flow Rate ( s ), veh/h/ln				1616	1480	1449	1629	1444	1415	1629	1710	1449	1557	1710	1284								
Queue Service Time ( g <sub>s</sub> ), s				27.5	41.2	0.7	7.4	50.5	44.6	8.5	0.0	13.3	10.0	0.0	16.8								
Cycle Queue Clearance Time ( g <sub>c</sub> ), s				27.5	41.2	0.7	7.4	50.5	44.6	8.5	0.0	13.3	10.0	0.0	16.8								
Green Ratio ( g/C )				0.63	0.55	0.63	0.47	0.40	0.49	0.19	0.11	0.18	0.09	0.13	0.34								
Capacity ( c ), veh/h				415	2433	907	224	1728	694	323	190	264	285	214	443								
Volume-to-Capacity Ratio ( X )				0.955	0.737	0.023	0.680	0.963	0.802	0.364	0.000	0.592	0.825	0.000	0.595								
Back of Queue ( Q ), ft/ln ( 95 th percentile)				416.5	418.5	10.1	126.4	706.1	559.1	156.4	0	216.3	184.8	0	297.4								
Back of Queue ( Q ), veh/ln ( 95 th percentile)				16.5	16.0	0.4	5.1	26.3	21.8	6.3	0.0	8.7	7.3	0.0	11.7								
Queue Storage Ratio ( RQ ) ( 95 th percentile)				1.04	0.93	0.00	0.00	1.33	1.51	0.00	0.00	0.00	0.49	0.00	0.78								
Uniform Delay ( d <sub>1</sub> ), s/veh				42.2	23.1	9.6	26.1	39.5	28.8	47.7	0.0	50.5	60.1	0.0	36.4								
Incremental Delay ( d <sub>2</sub> ), s/veh				10.1	0.2	0.0	1.4	13.3	6.0	0.3	0.0	2.4	2.8	0.0	1.5								
Initial Queue Delay ( d <sub>3</sub> ), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Control Delay ( d ), s/veh				52.3	23.3	9.6	27.4	52.8	34.8	48.0	0.0	52.9	62.9	0.0	37.9								
Level of Service ( LOS)				D	C	A	C	D	C	D		D	E		D								
Approach Delay, s/veh / LOS				28.3		C	47.0		D	50.8		D	49.7		D								
Intersection Delay, s/veh / LOS				39.7						D													
Multimodal Results				EB			WB			NB			SB										
Pedestrian LOS Score / LOS				2.09		B	2.29		B	2.74		C	2.74		C								
Bicycle LOS Score / LOS				1.68		B	1.79		B	0.94		A	1.31		A								

## HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Horizon Build PM	PHF	0.98		
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00		
Intersection	Ronald Reagan Pkwy	File Name	Horizon Build PM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	303	1254	113	203	1394	369	229	706	480	471	571	343

Signal Information													
Cycle, s	134.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	11.7	3.3	38.0	12.4	5.6	33.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	4.0			
				Red	2.0	0.0	2.0	2.0	2.0	2.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	21.0	47.3	17.7	44.0	18.4	39.0	30.0	50.6
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( MAH ), s	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.1
Queue Clearance Time ( g <sub>s</sub> ), s	15.6	38.7	11.5	40.0	12.0	35.0	24.2	27.0
Green Extension Time ( g <sub>e</sub> ), s	0.0	0.0	0.1	0.0	0.4	0.0	0.0	3.1
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	1.00	0.60	1.00	0.00	1.00	1.00	0.66

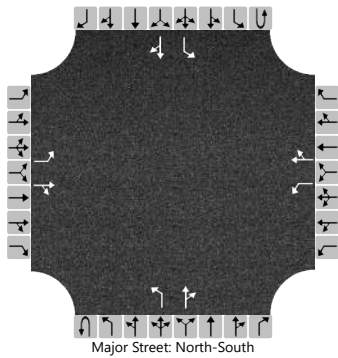
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	309	1280	115	211	1450	384	234	720	490	481	583	350
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1507	1504	1381	1458	1504	1280	1532	1488	1347	1433	1488	1393
Queue Service Time ( g <sub>s</sub> ), s	13.6	36.7	7.3	9.5	38.0	30.8	10.0	32.3	33.0	22.2	21.8	25.0
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	13.6	36.7	7.3	9.5	38.0	30.8	10.0	32.3	33.0	22.2	21.8	25.0
Green Ratio ( g/C )	0.11	0.31	0.40	0.09	0.28	0.46	0.09	0.25	0.33	0.18	0.33	0.44
Capacity ( c ), veh/h	337	1391	554	254	1280	592	284	733	449	513	990	619
Volume-to-Capacity Ratio ( X )	0.916	0.920	0.208	0.830	1.133	0.648	0.823	0.983	1.090	0.936	0.588	0.565
Back of Queue ( Q ), ft/ln ( 95 th percentile)	276.3	534.9	111.5	147.2	723.2	337.8	181.4	566.5	868	400	336.4	332.7
Back of Queue ( Q ), veh/ln ( 95 th percentile)	10.5	20.7	4.3	5.5	28.0	12.1	7.0	20.8	32.4	14.6	12.4	12.8
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.81	0.30	0.24	0.52	0.62	1.47	0.47	0.31	2.23	1.33	0.26	2.22
Uniform Delay ( d <sub>1</sub> ), s/veh	58.9	44.7	26.2	60.2	48.0	27.6	59.7	50.2	44.7	54.2	37.1	27.6
Incremental Delay ( d <sub>2</sub> ), s/veh	28.2	9.9	0.1	4.1	63.8	0.7	2.3	28.8	69.0	24.5	0.6	0.8
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh	87.1	54.7	26.3	64.2	111.8	28.3	62.0	79.0	113.6	78.7	37.7	28.4
Level of Service ( LOS )	F	D	C	E	F	C	E	E	F	E	D	C
Approach Delay, s/veh / LOS	58.6		E	91.2		F	88.0		F	49.3		D
Intersection Delay, s/veh / LOS	73.1						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.59	C	2.59	C	2.85	C	2.84	C
Bicycle LOS Score / LOS	1.42	A	1.59	B	1.68	B	1.65	B

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 6		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Internal Rd 1		
Analysis Year	2023			North/South Street	Raceway Rd		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		71	3	4		0	3	15		19	176	1		20	32	113
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type   Storage		Undivided														

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

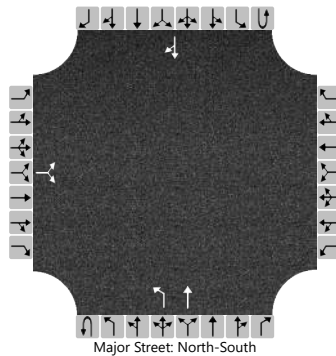
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		77		8		0		20		21				22				
Capacity, c (veh/h)		542		718		556		759		1416				1375				
v/c Ratio		0.14		0.01		0.00		0.03		0.01				0.02				
95% Queue Length, Q <sub>95</sub> (veh)		0.5		0.0		0.0		0.1		0.0				0.0				
Control Delay (s/veh)		12.7		10.1		11.5		9.9		7.6	0.1	0.1		7.7	0.1	0.1		
Level of Service (LOS)		B		B		B		A		A	A	A		A	A	A		
Approach Delay (s/veh)		12.5				9.9					0.8				1.0			
Approach LOS		B				A					A				A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 7		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Earlham Ln		
Analysis Year	2023			North/South Street	Raceway Rd		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		46		0						0	97					26
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type   Storage		Undivided														

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

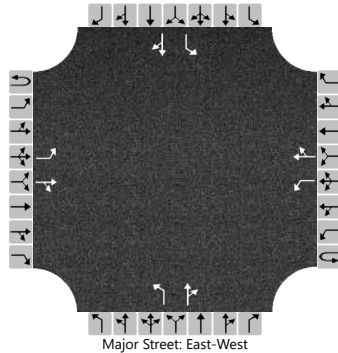
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			50							0						
Capacity, c (veh/h)			853							1567						
v/c Ratio			0.06							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.2							0.0						
Control Delay (s/veh)			9.5							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.5								0.0						
Approach LOS		A								A						

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 8		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Airtech Pkwy		
Analysis Year	2023			North/South Street	Raceway Road		
Time Analyzed	Horizon PM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	1	0	0	1	1	0	1	1	0		1	1	0	
Configuration		L		TR		L		TR	L		TR		L		TR	
Volume (veh/h)		29	29	0		0	46	2	0	0	0		0	0	33	
Percent Heavy Vehicles (%)		3				3			3	3	3		3	3	3	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1			7.1	6.5	6.2		7.1	6.5	6.2	
Critical Headway (sec)		4.13				4.13			7.13	6.53	6.23		7.13	6.53	6.23	
Base Follow-Up Headway (sec)		2.2				2.2			3.5	4.0	3.3		3.5	4.0	3.3	
Follow-Up Headway (sec)		2.23				2.23			3.53	4.03	3.33		3.53	4.03	3.33	

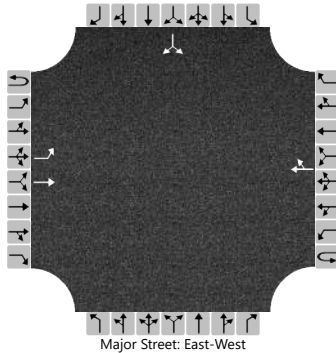
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		32				0			0		0		0		36	
Capacity, c (veh/h)		1547				1574			755		0		804		1014	
v/c Ratio		0.02				0.00			0.00				0.00		0.04	
95% Queue Length, Q <sub>95</sub> (veh)		0.1				0.0			0.0				0.0		0.1	
Control Delay (s/veh)		7.4				7.3			9.8				9.5		8.7	
Level of Service (LOS)		A				A			A				A		A	
Approach Delay (s/veh)	3.7				0.0								8.7			
Approach LOS	A				A								A			

# HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	KWA	Intersection	Int 9
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield
Date Performed	9/6/2023	East/West Street	Airtech Pkwy
Analysis Year	2023	North/South Street	Internal Rd 2
Time Analyzed	Horizon PM Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	1	1	0	0	0	1	0	0	0	0		0	1	0	
Configuration		L	T					TR							LR	
Volume (veh/h)		6	59				99	0					0			8
Percent Heavy Vehicles (%)		3											3			3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

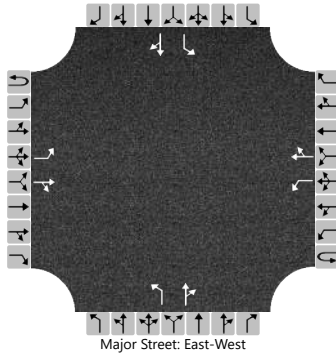
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7													9	
Capacity, c (veh/h)		1477													944	
v/c Ratio		0.00													0.01	
95% Queue Length, Q <sub>95</sub> (veh)		0.0													0.0	
Control Delay (s/veh)		7.4													8.9	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	0.7												8.9			
Approach LOS	A												A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 10		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Wamsley Way		
Analysis Year	2023			North/South Street	Internal Rd 2		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	1	1	0	0	1	1	0	1	1	0		1	1	0	
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		8	28	8		0	79	3		35	0	0		7	0	16
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

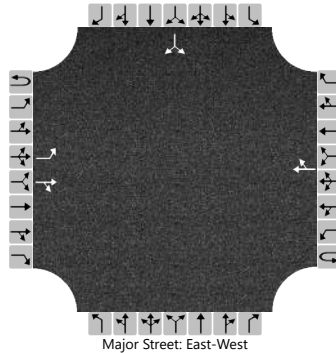
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		9				0				38		0		8		17
Capacity, c (veh/h)		1500				1564				798		0		823		968
v/c Ratio		0.01				0.00				0.05				0.01		0.02
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.0				0.1				0.0		0.1
Control Delay (s/veh)		7.4				7.3				9.7				9.4		8.8
Level of Service (LOS)		A				A				A				A		A
Approach Delay (s/veh)	1.3				0.0				9.0							
Approach LOS	A				A				A							

# HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	KWA	Intersection	Int 11
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield
Date Performed	9/6/2023	East/West Street	Wamsley Way
Analysis Year	2023	North/South Street	Earlham Ln
Time Analyzed	Opening PM Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	
Configuration		L		TR				TR							LR	
Volume (veh/h)		11	0	0			0	0						0		23
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												7.13		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

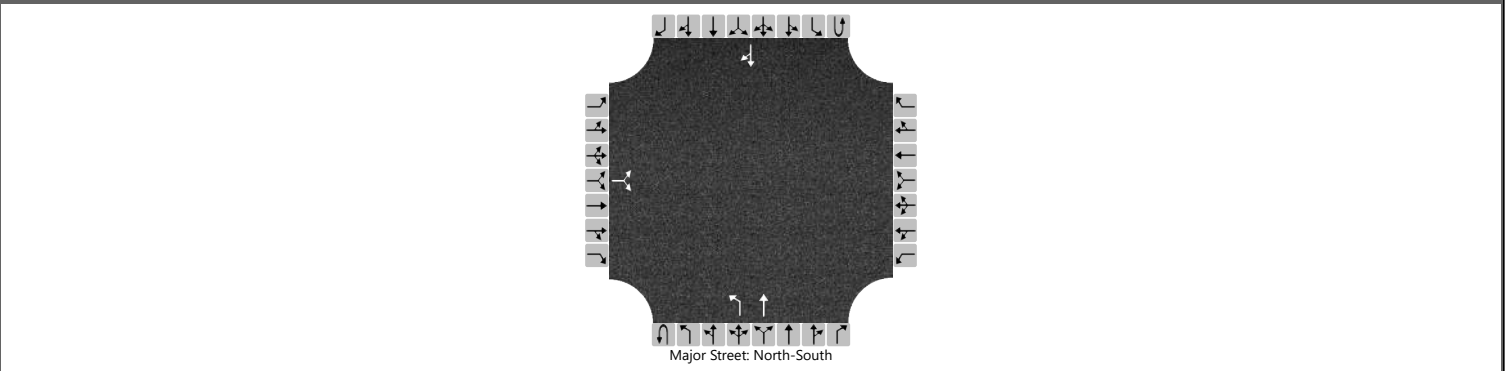
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		12													25		
Capacity, c (veh/h)		1617													1082		
v/c Ratio		0.01													0.02		
95% Queue Length, Q <sub>95</sub> (veh)		0.0													0.1		
Control Delay (s/veh)		7.2													8.4		
Level of Service (LOS)		A													A		
Approach Delay (s/veh)		7.2												8.4			
Approach LOS		A												A			

# HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	KWA			Intersection	Int 12		
Agency/Co.	Woolpert, Inc.			Jurisdiction	Town of Plainfield		
Date Performed	9/6/2023			East/West Street	Site Drive 1		
Analysis Year	2023			North/South Street	Earlham Ln		
Time Analyzed	Opening PM Build			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Life Science Center						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		11		3						1	33				17	5
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type   Storage		Undivided														

## Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

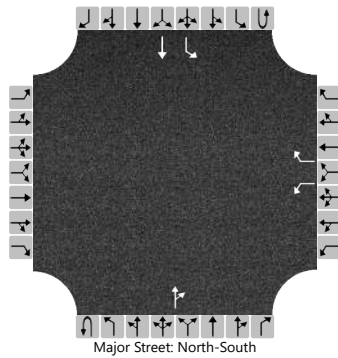
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			15							1						
Capacity, c (veh/h)			966							1584						
v/c Ratio			0.02							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.0							0.0						
Control Delay (s/veh)			8.8							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		8.8								0.2						
Approach LOS		A								A						

# HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	KWA	Intersection	Int 13
Agency/Co.	Woolpert, Inc.	Jurisdiction	Town of Plainfield
Date Performed	9/6/2023	East/West Street	Internal Rd 1
Analysis Year	2023	North/South Street	Earlham Ln
Time Analyzed	Opening PM Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Life Science Center		

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						12		84			95	9		165	13	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type   Storage						Undivided										

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

## Delay, Queue Length, and Level of Service

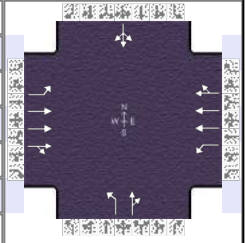
Flow Rate, v (veh/h)						13		91						179			
Capacity, c (veh/h)						476		943						1470			
v/c Ratio						0.03		0.10						0.12			
95% Queue Length, Q <sub>95</sub> (veh)						0.1		0.3						0.4			
Control Delay (s/veh)						12.8		9.2						7.8			
Level of Service (LOS)						B		A						A			
Approach Delay (s/veh)						9.7								7.2			
Approach LOS						A								A			

## **Intersection 3 Signalized Corridor**

**AM Peak Hour**

## HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Horizon Build AM	PHF	0.97		
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00		
Intersection	Earlham Lane	File Name	Horizon Build AM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	4	1596	271	42	1171	1	88	0	59	4	0	5

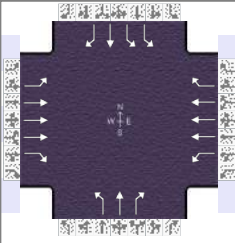
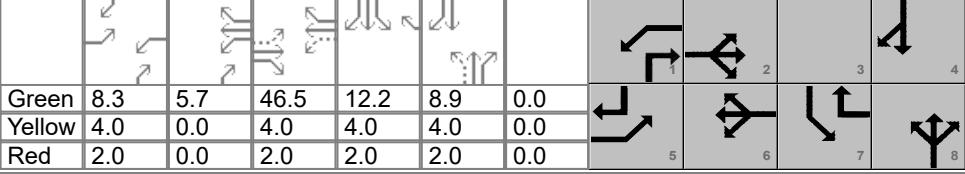
Signal Information																
Cycle, s	92.0	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On	Green	0.8	3.4	44.0	5.7	14.0	0.0						
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	0.0						
				Red	2.0	0.0	2.0	2.0	2.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8		4
Case Number	1.1	4.0	1.1	4.0	1.0	4.0		8.3
Phase Duration, s	6.8	50.0	10.2	53.4	11.7	31.8		20.0
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Allow Headway ( MAH ), s	3.1	3.1	3.1	3.1	3.1	3.4		3.4
Queue Clearance Time ( g <sub>s</sub> ), s	2.1	42.5	3.3	18.3	6.3	28.1		16.4
Green Extension Time ( g <sub>e</sub> ), s	0.0	1.4	0.0	12.4	0.1	0.0		0.0
Phase Call Probability	0.11	1.00	0.69	1.00	0.90	0.98		0.83
Max Out Probability	0.00	1.00	0.00	0.33	0.00	1.00		0.70

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	5	1471	692	46	855	427	91	61			9	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1629	1643	1519	1629	1603	1603	1590	1415			266	
Queue Service Time ( g <sub>s</sub> ), s	0.1	39.2	40.5	1.3	16.3	16.3	4.3	3.0			0.0	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	0.1	39.2	40.5	1.3	16.3	16.3	4.3	3.0			14.4	
Green Ratio ( g/C )	0.49	0.48	0.48	0.53	0.52	0.52	0.24	0.28			0.15	
Capacity ( c ), veh/h	216	1570	726	157	1649	824	177	400			98	
Volume-to-Capacity Ratio ( X )	0.021	0.937	0.954	0.292	0.519	0.519	0.513	0.152			0.095	
Back of Queue ( Q ), ft/ln ( 95 th percentile)	2.1	453.9	444.1	20.1	241.5	233.3	74.6	45.2			8	
Back of Queue ( Q ), veh/ln ( 95 th percentile)	0.1	17.5	17.8	0.8	9.1	9.1	2.9	1.8			0.3	
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.02	0.41	0.42	0.20	0.19	0.19	0.50	0.30			0.08	
Uniform Delay ( d <sub>1</sub> ), s/veh	13.5	22.9	23.2	21.2	14.9	14.9	29.8	24.9			34.0	
Incremental Delay ( d <sub>2</sub> ), s/veh	0.0	3.1	7.8	0.3	0.1	0.2	0.9	0.1			0.2	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Control Delay ( d ), s/veh	13.5	26.0	31.0	21.5	15.0	15.1	30.7	24.9			34.1	
Level of Service ( LOS )	B	C	C	C	B	B	C	C			C	
Approach Delay, s/veh / LOS	27.6		C	15.3		B	28.4		C	34.1		C
Intersection Delay, s/veh / LOS	23.1						C					

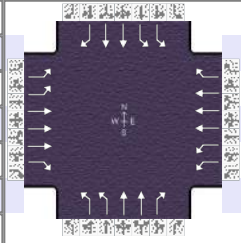
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.90	B	1.67	B	2.58	C	2.59	C
Bicycle LOS Score / LOS	1.55	B	1.18	A	0.74	A	0.50	A

## HCS Signalized Intersection Results Summary

General Information						Intersection Information											
Agency	Woolpert, Inc.					Duration, h	0.250										
Analyst	KWA	Analysis Date	8/29/2023			Area Type	CBD										
Jurisdiction	City of Plainfield		Time Period	Horizon Build AM		PHF	0.96										
Urban Street	US 40		Analysis Year	2045		Analysis Period	1 > 7:00										
Intersection	Raceway Rd		File Name	Horizon Build AM.xus													
Project Description	Life Science Center																
Demand Information						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h						156	1504	70	269	966	188	91	0	88	278	0	218
Signal Information																	
Cycle, s	105.5	Reference Phase	2														
Offset, s	0	Reference Point	End														
Uncoordinated	Yes	Simult. Gap E/W	On														
Force Mode	Fixed	Simult. Gap N/S	On														
Green	8.3	5.7	46.5	12.2	8.9	0.0											
Yellow	4.0	0.0	4.0	4.0	4.0	0.0											
Red	2.0	0.0	2.0	2.0	2.0	0.0											
Timer Results						EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase						5	2	1	6		8	7	4				
Case Number						1.1	3.0	1.1	3.0		5.3	2.0	3.0				
Phase Duration, s						14.3	52.5	20.0	58.2		14.9	18.2	33.1				
Change Period, ( Y+R <sub>c</sub> ), s						6.0	6.0	6.0	6.0		6.0	6.0	6.0				
Max Allow Headway ( MAH ), s						3.1	3.1	3.1	3.1		3.3	3.1	3.3				
Queue Clearance Time ( g <sub>s</sub> ), s						8.1	37.5	13.5	18.2		8.0	11.6	17.1				
Green Extension Time ( g <sub>e</sub> ), s						0.2	8.9	0.4	11.7		0.8	0.6	0.7				
Phase Call Probability						0.99	1.00	1.00	1.00		1.00	1.00	1.00				
Max Out Probability						0.00	0.34	0.00	0.08		0.00	0.00	0.00				
Movement Group Results						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement						5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h						173	1664	77	280	1006	196	95	0	92	290	0	227
Adjusted Saturation Flow Rate ( s ), veh/h/ln						1616	1480	1449	1629	1444	1415	1629	1710	1449	1557	1710	1284
Queue Service Time ( g <sub>s</sub> ), s						6.1	35.5	2.8	11.5	16.2	6.6	6.0	0.0	5.6	9.6	0.0	15.1
Cycle Queue Clearance Time ( g <sub>c</sub> ), s						6.1	35.5	2.8	11.5	16.2	6.6	6.0	0.0	5.6	9.6	0.0	15.1
Green Ratio ( g/C )						0.52	0.44	0.52	0.59	0.49	0.61	0.08	0.08	0.22	0.12	0.26	0.34
Capacity ( c ), veh/h						360	1957	760	313	2144	864	205	144	314	360	438	430
Volume-to-Capacity Ratio ( X )						0.480	0.851	0.102	0.896	0.469	0.227	0.463	0.000	0.292	0.804	0.000	0.528
Back of Queue ( Q ), ft/ln ( 95 th percentile)						85.9	392.4	49.2	309.8	237.6	87.8	109.5	0	88.3	170.7	0	205.4
Back of Queue ( Q ), veh/ln ( 95 th percentile)						3.4	15.0	2.0	12.4	8.9	3.4	4.4	0.0	3.5	6.7	0.0	8.1
Queue Storage Ratio ( RQ ) ( 95 th percentile)						0.21	0.87	0.00	0.00	0.45	0.24	0.00	0.00	0.00	0.45	0.00	0.54
Uniform Delay ( d <sub>1</sub> ), s/veh						14.8	26.5	12.6	27.3	17.6	9.3	47.1	0.0	34.6	45.6	0.0	28.4
Incremental Delay ( d <sub>2</sub> ), s/veh						0.1	0.7	0.0	9.5	0.1	0.0	0.6	0.0	0.2	1.6	0.0	0.4
Initial Queue Delay ( d <sub>3</sub> ), s/veh						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay ( d ), s/veh						14.9	27.2	12.6	36.8	17.6	9.4	47.7	0.0	34.8	47.2	0.0	28.8
Level of Service ( LOS )						B	C	B	D	B	A	D		C	D		C
Approach Delay, s/veh / LOS						25.5		C	20.2		C	41.4		D	39.1		D
Intersection Delay, s/veh / LOS						26.0						C					
Multimodal Results						EB			WB			NB			SB		
Pedestrian LOS Score / LOS						2.10		B	2.26		B	2.73		C	2.72		C
Bicycle LOS Score / LOS						1.48		A	1.30		A	0.80		A	1.34		A

# HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Horizon Build AM	PHF	0.88		
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00		
Intersection	Ronald Reagan Pkwy	File Name	Horizon Build AM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	149	1136	129	315	815	191	110	501	259	513	614	189

Signal Information												
Cycle, s	146.4	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On	Green	10.3	2.5	42.0	8.1	17.4	30.2		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	4.0	4.0	4.0	4.0		
				Red	2.0	2.0	2.0	2.0	2.0	2.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	16.3	48.0	24.8	56.5	14.1	36.2	37.5	59.6
Change Period, ( $Y+R_c$ ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( $MAH$ ), s	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Queue Clearance Time ( $g_s$ ), s	10.1	43.8	18.2	24.3	7.9	29.5	31.3	30.4
Green Extension Time ( $g_e$ ), s	0.2	0.0	0.6	6.4	0.2	0.7	0.1	0.9
Phase Call Probability	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00
Max Out Probability	0.00	1.00	0.00	0.22	0.00	1.00	1.00	1.00

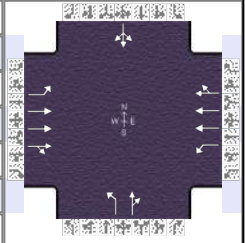
Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( $v$ ), veh/h	169	1291	147	328	850	199	125	569	294	583	698	215
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln	1507	1504	1381	1458	1504	1280	1532	1488	1347	1433	1488	1393
Queue Service Time ( $g_s$ ), s	8.1	41.8	11.4	16.2	22.3	11.9	5.9	27.5	27.2	29.3	28.4	15.1
Cycle Queue Clearance Time ( $g_c$ ), s	8.1	41.8	11.4	16.2	22.3	11.9	5.9	27.5	27.2	29.3	28.4	15.1
Green Ratio ( $g/C$ )	0.07	0.29	0.34	0.13	0.34	0.56	0.06	0.21	0.33	0.22	0.37	0.44
Capacity ( $c$ ), veh/h	213	1294	472	374	1555	716	169	613	450	616	1089	608
Volume-to-Capacity Ratio ( $X$ )	0.797	0.997	0.310	0.878	0.546	0.278	0.740	0.929	0.653	0.946	0.641	0.353
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)	148.4	651.7	180.3	266.5	318.8	171.1	108.1	470.5	378.2	495.7	422.5	223.1
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)	5.7	25.3	6.9	9.9	12.4	6.1	4.2	17.3	14.1	18.1	15.5	8.6
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)	0.44	0.36	0.39	0.94	0.27	0.74	0.28	0.26	0.97	1.65	0.33	1.49
Uniform Delay ( $d_1$ ), s/veh	67.0	52.2	35.5	62.7	38.7	16.8	68.2	57.1	41.5	56.6	38.5	27.5
Incremental Delay ( $d_2$ ), s/veh	2.6	24.4	0.1	4.6	0.2	0.1	2.4	18.6	2.4	22.9	1.0	0.1
Initial Queue Delay ( $d_3$ ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( $d$ ), s/veh	69.6	76.5	35.6	67.3	38.9	16.9	70.5	75.7	43.9	79.5	39.5	27.6
Level of Service ( LOS )	E	E	D	E	D	B	E	E	D	E	D	C
Approach Delay, s/veh / LOS	72.1	E		42.5	D		65.6	E		53.4	D	
Intersection Delay, s/veh / LOS	58.3						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.60	C	2.59	C	2.86	C	2.84	C
Bicycle LOS Score / LOS	1.37	A	1.31	A	1.30	A	1.72	B

**PM Peak Hour**

## HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Horizon Build PM	PHF	0.99		
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00		
Intersection	Earlham Lane	File Name	Horizon Build PM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	1	2041	178	26	1896	0	92	0	87	0	0	1

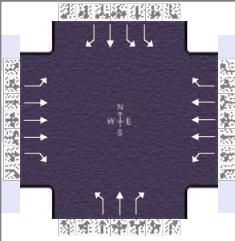
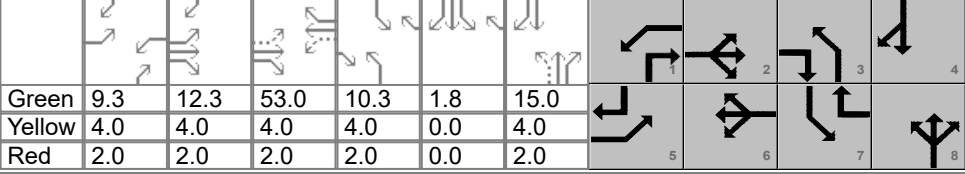
Signal Information				Signal Phases									
Cycle, s	92.4	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	0.2	2.9	50.1	0.3	15.0	0.0			
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	4.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	0.0	2.0	2.0	2.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		10.0		12.0
Phase Duration, s	6.2	56.1	9.1	59.0		21.0		6.3
Change Period, ( Y+R <sub>c</sub> ), s	6.0	6.0	6.0	6.0		6.0		6.0
Max Allow Headway ( MAH ), s	3.0	2.9	3.0	2.9		3.2		3.4
Queue Clearance Time ( g <sub>s</sub> ), s	2.0	37.8	2.7	28.9		17.0		2.1
Green Extension Time ( g <sub>e</sub> ), s	0.0	12.3	0.0	16.3		0.0		0.0
Phase Call Probability	0.03	1.00	0.51	1.00		0.99		0.03
Max Out Probability	0.00	0.67	0.00	0.52		1.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	1	1490	722	28	2017	0	93	88			0	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1629	1643	1574	1552	1657	1481	1590	1415			1376	
Queue Service Time ( g <sub>s</sub> ), s	0.0	35.1	35.8	0.7	26.9	0.0	4.8	5.1			0.0	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	0.0	35.1	35.8	0.7	26.9	0.0	4.8	5.1			0.0	
Green Ratio ( g/C )	0.54	0.54	0.54	0.58	0.57	0.51	0.16	0.16			0.14	
Capacity ( c ), veh/h	131	1783	853	153	2850		258	230				
Volume-to-Capacity Ratio ( X )	0.008	0.836	0.845	0.181	0.708	0.000	0.360	0.383			0.000	
Back of Queue ( Q ), ft/ln ( 95 th percentile)	0.4	354.4	338	10.3	291.4	0	84.8	80.6			0	
Back of Queue ( Q ), veh/ln ( 95 th percentile)	0.0	13.6	13.5	0.4	11.3	0.0	3.3	3.1			0.0	
Queue Storage Ratio ( RQ ) ( 95 th percentile)	0.00	0.32	0.32	0.10	0.23	0.00	0.57	0.54			0.00	
Uniform Delay ( d <sub>1</sub> ), s/veh	13.3	17.7	17.9	17.0	14.2		34.5	34.6				
Incremental Delay ( d <sub>2</sub> ), s/veh	0.0	0.5	1.2	0.1	0.2	0.0	0.3	0.4			0.0	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Control Delay ( d ), s/veh	13.3	18.2	19.1	17.0	14.4		34.8	35.0				
Level of Service ( LOS )	B	B	B	B	B		C	C				
Approach Delay, s/veh / LOS	18.5		B	14.4		B	34.9		C	60.6		E
Intersection Delay, s/veh / LOS	17.3						B					

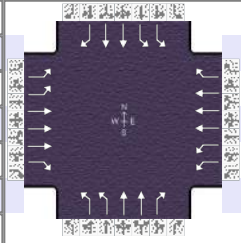
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.66	B	2.60	C	2.59	C
Bicycle LOS Score / LOS	1.72	B	1.56	B	0.79	A	0.49	A

## HCS Signalized Intersection Results Summary

General Information						Intersection Information											
Agency	Woolpert, Inc.					Duration, h	0.250										
Analyst	KWA		Analysis Date	8/29/2023		Area Type	CBD										
Jurisdiction	City of Plainfield		Time Period	Horizon Build PM		PHF	0.96										
Urban Street	US 40		Analysis Year	2045		Analysis Period	1 > 7:00										
Intersection	Raceway Rd		File Name	Horizon Build PM.xus													
Project Description	Life Science Center																
Demand Information						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h						375	1695	20	146	1597	535	113	0	150	226	0	253
Signal Information																	
Cycle, s	131.8	Reference Phase	2														
Offset, s	0	Reference Point	End														
Uncoordinated	Yes	Simult. Gap E/W	On														
Force Mode	Fixed	Simult. Gap N/S	On														
Green	9.3	12.3	53.0	10.3	1.8	15.0											
Yellow	4.0	4.0	4.0	4.0	0.0	4.0											
Red	2.0	2.0	2.0	2.0	0.0	2.0											
Timer Results						EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase						5	2	1	6	3	8	7	4				
Case Number						1.1	3.0	1.1	3.0	1.1	3.0	2.0	3.0				
Phase Duration, s						33.6	77.3	15.3	59.0	16.3	21.0	18.1	22.8				
Change Period, ( Y+R <sub>c</sub> ), s						6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Allow Headway ( MAH ), s						3.0	3.0	3.0	3.0	3.1	3.4	3.1	3.4				
Queue Clearance Time ( g <sub>s</sub> ), s						27.4	40.3	9.1	51.1	10.3	15.0	11.8	18.8				
Green Extension Time ( g <sub>e</sub> ), s						0.2	10.5	0.2	1.9	0.1	0.0	0.3	0.0				
Phase Call Probability						1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00				
Max Out Probability						1.00	0.66	0.00	0.97	0.00	1.00	0.00	1.00				
Movement Group Results						EB			WB			NB			SB		
Approach Movement						L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement						5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h						381	1721	20	152	1664	557	118	0	156	235	0	264
Adjusted Saturation Flow Rate ( s ), veh/h/ln						1616	1480	1449	1629	1444	1415	1629	1710	1449	1557	1710	1284
Queue Service Time ( g <sub>s</sub> ), s						25.4	38.3	0.7	7.1	49.1	43.3	8.3	0.0	13.0	9.8	0.0	16.8
Cycle Queue Clearance Time ( g <sub>c</sub> ), s						25.4	38.3	0.7	7.1	49.1	43.3	8.3	0.0	13.0	9.8	0.0	16.8
Green Ratio ( g/C )						0.63	0.54	0.62	0.47	0.40	0.49	0.19	0.11	0.18	0.09	0.13	0.34
Capacity ( c ), veh/h						402	2403	897	231	1743	700	328	194	267	286	218	433
Volume-to-Capacity Ratio ( X )						0.948	0.716	0.023	0.659	0.955	0.796	0.359	0.000	0.584	0.822	0.000	0.608
Back of Queue ( Q ), ft/ln ( 95 th percentile)						454.2	430.8	9.6	121.9	681.3	540.7	152.1	0	211.3	179.5	0	295.3
Back of Queue ( Q ), veh/ln ( 95 th percentile)						18.0	16.4	0.4	4.9	25.4	21.1	6.1	0.0	8.5	7.1	0.0	11.6
Queue Storage Ratio ( RQ ) ( 95 th percentile)						1.14	0.96	0.00	0.00	1.29	1.46	0.00	0.00	0.00	0.47	0.00	0.78
Uniform Delay ( d <sub>1</sub> ), s/veh						41.0	22.6	9.7	24.6	38.2	27.8	46.4	0.0	49.1	58.8	0.0	36.4
Incremental Delay ( d <sub>2</sub> ), s/veh						17.3	0.4	0.0	1.2	11.8	5.5	0.2	0.0	2.2	2.3	0.0	1.8
Initial Queue Delay ( d <sub>3</sub> ), s/veh						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( d ), s/veh						58.2	23.1	9.7	25.8	50.0	33.3	46.6	0.0	51.3	61.0	0.0	38.2
Level of Service ( LOS)						E	C	A	C	D	C	D		D	E		D
Approach Delay, s/veh / LOS						29.2		C	44.5		D	49.3		D	49.0		D
Intersection Delay, s/veh / LOS						39.0						D					
Multimodal Results						EB			WB			NB			SB		
Pedestrian LOS Score / LOS						2.09		B	2.28		B	2.74		C	2.74		C
Bicycle LOS Score / LOS						1.68		B	1.79		B	0.94		A	1.31		A

# HCS Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Woolpert, Inc.			Duration, h	0.250		
Analyst	KWA	Analysis Date	8/29/2023	Area Type	CBD		
Jurisdiction	City of Plainfield	Time Period	Horizon Build PM	PHF	0.98		
Urban Street	US 40	Analysis Year	2045	Analysis Period	1 > 7:00		
Intersection	Ronald Reagan Pkwy	File Name	Horizon Build PM.xus				
Project Description	Life Science Center						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( $v$ ), veh/h	303	1254	113	203	1394	369	229	706	480	471	571	343

Signal Information													
Cycle, s	134.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On	Green	12.0	3.0	38.0	12.4	5.6	33.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	4.0	4.0			
				Red	2.0	0.0	2.0	2.0	2.0	2.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	21.0	47.0	18.0	44.0	18.4	39.0	30.0	50.6
Change Period, ( $Y+R_c$ ), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway ( $MAH$ ), s	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.1
Queue Clearance Time ( $g_s$ ), s	15.6	38.8	11.9	40.0	12.0	35.0	24.2	27.0
Green Extension Time ( $g_e$ ), s	0.0	0.0	0.1	0.0	0.4	0.0	0.0	3.1
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	1.00	0.87	1.00	0.00	1.00	1.00	0.66

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( $v$ ), veh/h	309	1280	115	218	1497	396	234	720	490	481	583	350
Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln	1507	1504	1381	1458	1504	1280	1532	1488	1347	1433	1488	1393
Queue Service Time ( $g_s$ ), s	13.6	36.8	7.3	9.9	38.0	32.3	10.0	32.3	33.0	22.2	21.8	25.0
Cycle Queue Clearance Time ( $g_c$ ), s	13.6	36.8	7.3	9.9	38.0	32.3	10.0	32.3	33.0	22.2	21.8	25.0
Green Ratio ( $g/C$ )	0.11	0.31	0.40	0.09	0.28	0.46	0.09	0.25	0.34	0.18	0.33	0.44
Capacity ( $c$ ), veh/h	337	1381	551	261	1280	592	284	733	452	513	990	619
Volume-to-Capacity Ratio ( $X$ )	0.916	0.927	0.209	0.835	1.170	0.669	0.823	0.983	1.083	0.936	0.588	0.565
Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)	276.3	539.4	112	175.2	851	387.5	181.4	566.5	859	400	336.4	332.7
Back of Queue ( $Q$ ), veh/ln ( 95 th percentile)	10.5	20.9	4.3	6.5	33.0	13.8	7.0	20.8	32.1	14.6	12.4	12.8
Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)	0.81	0.30	0.24	0.61	0.73	1.68	0.47	0.31	2.20	1.33	0.26	2.22
Uniform Delay ( $d_1$ ), s/veh	58.9	45.0	26.4	60.0	48.0	28.0	59.7	50.2	44.5	54.2	37.1	27.6
Incremental Delay ( $d_2$ ), s/veh	28.2	10.7	0.1	8.1	82.3	1.6	2.3	28.8	66.4	24.5	0.6	0.8
Initial Queue Delay ( $d_3$ ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay ( $d$ ), s/veh	87.1	55.8	26.5	68.1	130.3	29.6	62.0	79.0	110.9	78.7	37.7	28.4
Level of Service (LOS)	F	E	C	E	F	C	E	E	F	E	D	C
Approach Delay, s/veh / LOS	59.5	E		105.0	F		87.1	F		49.3	D	
Intersection Delay, s/veh / LOS	77.7						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.59	C	2.59	C	2.85	C	2.84	C
Bicycle LOS Score / LOS	1.42	A	1.59	B	1.68	B	1.65	B