

John F. Kennedy Road Analysis and Redesign

May 2, 2024

EXIT ONLY

Meet The Team



Payton Stuart
(Operational Analysis)



Tony Pezzella
(Traffic Simulation Analysis)

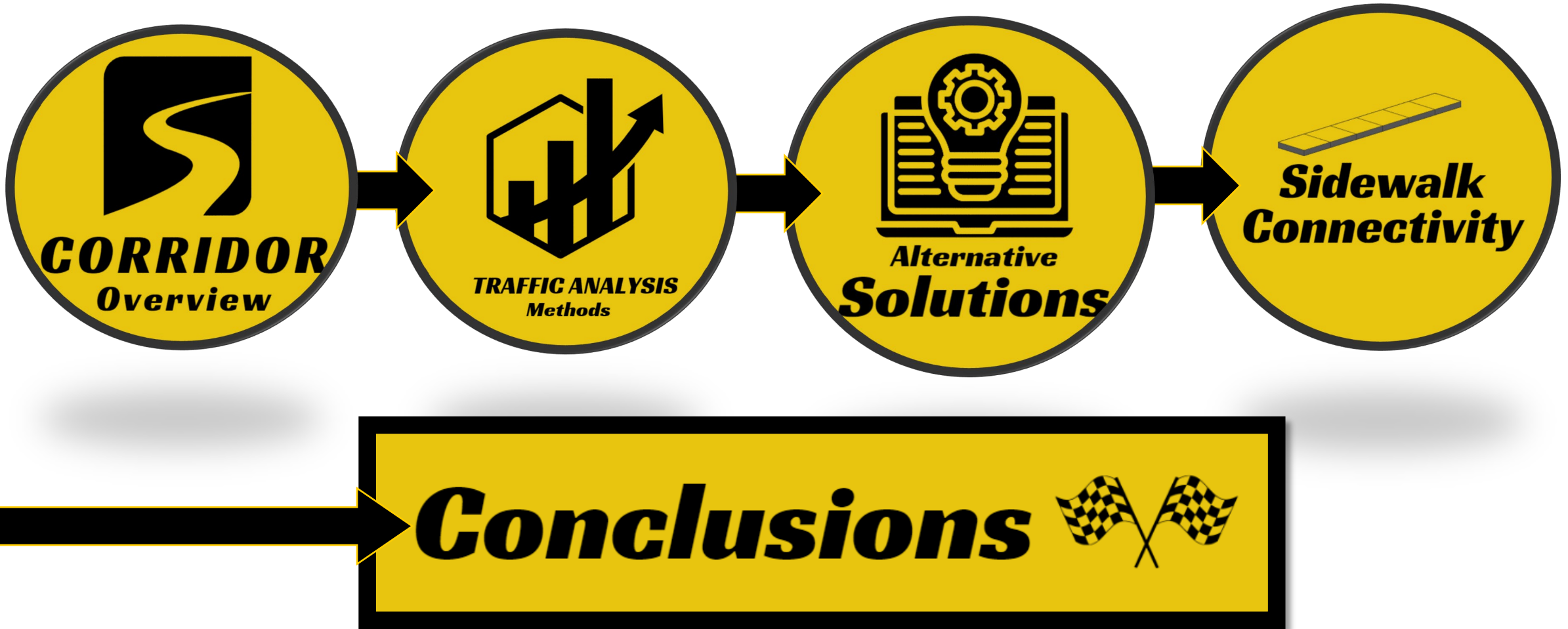


John Lyons
(Operational Analysis)



Connor Bobay
(Sidewalk Connectivity
Improvements)

Presentation Overview

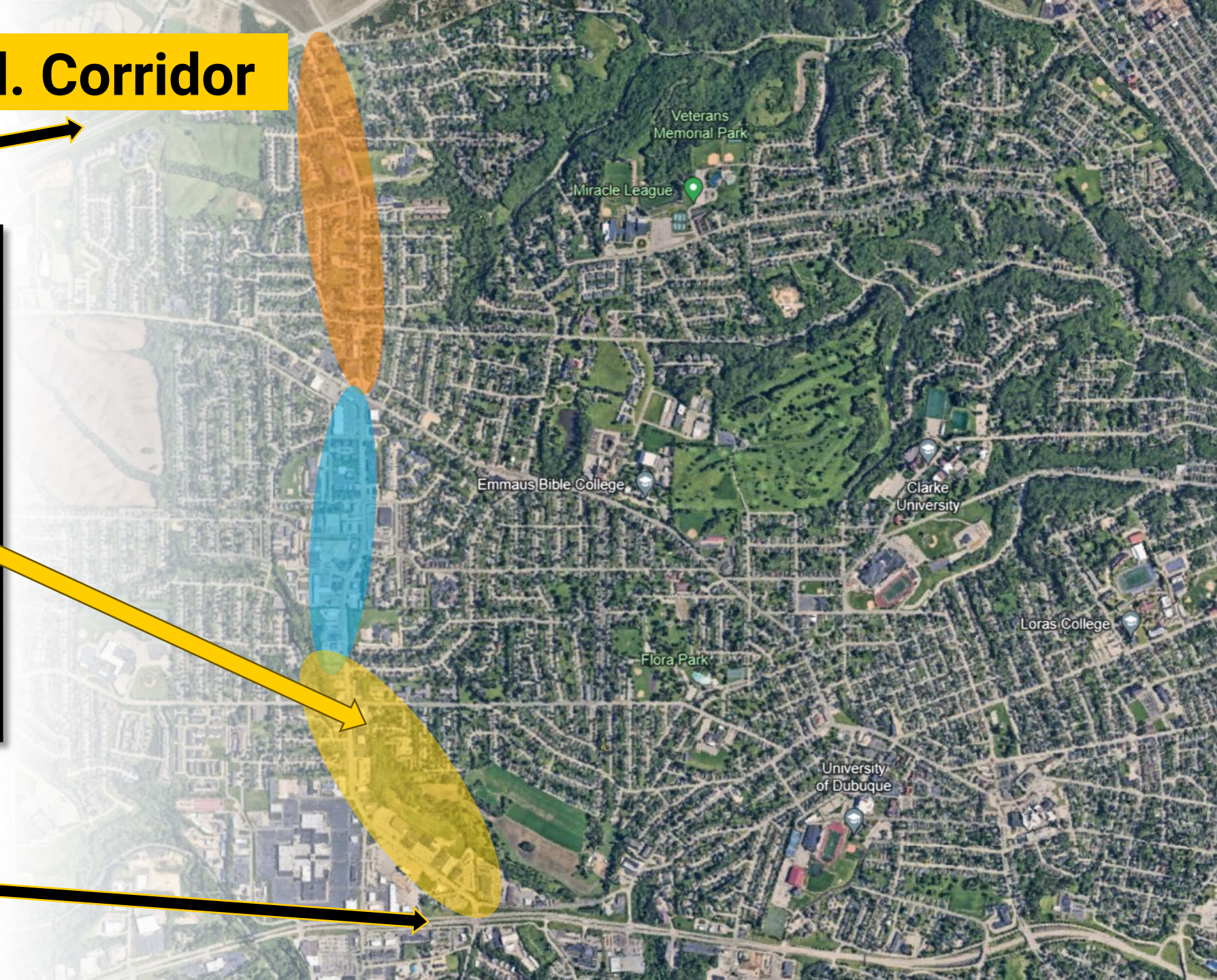
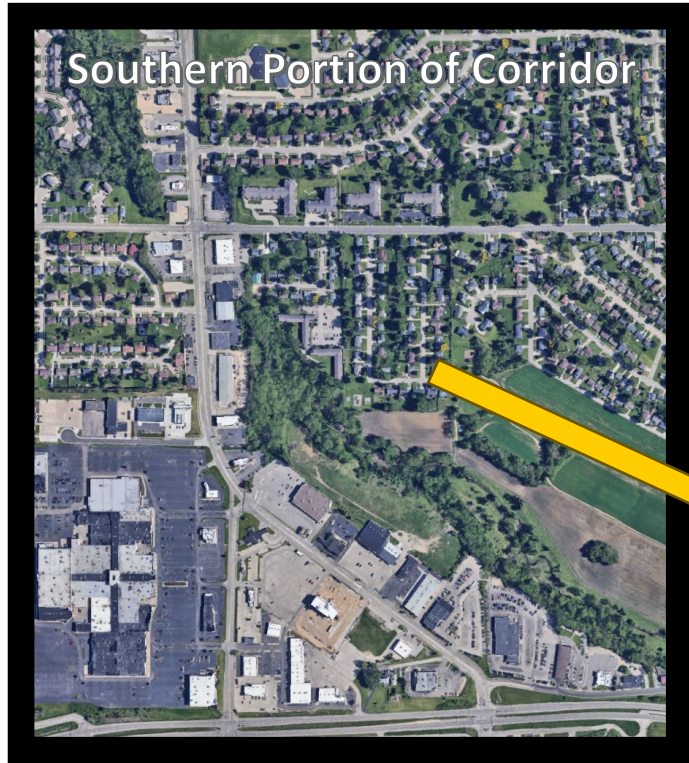


John F Kennedy Rd. Corridor

From NW Arterial

Southern Portion of Corridor

To HWY 20



Elementary School

Carter Rd.

Flora Park Skatepark

Flora Park

Dubuque
Montessori School

John F Kennedy Rd.

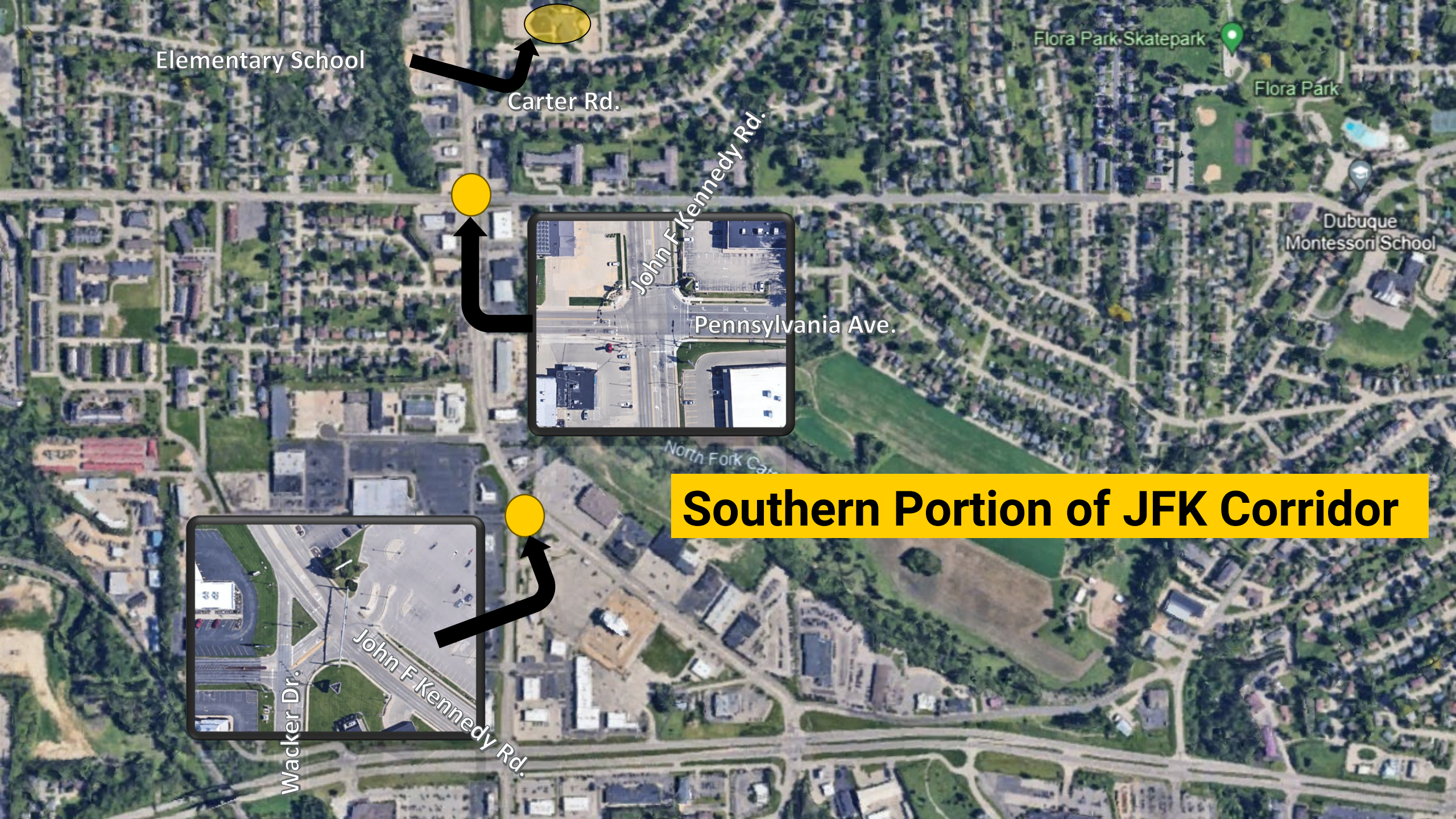
Pennsylvania Ave.

North Fork Ca

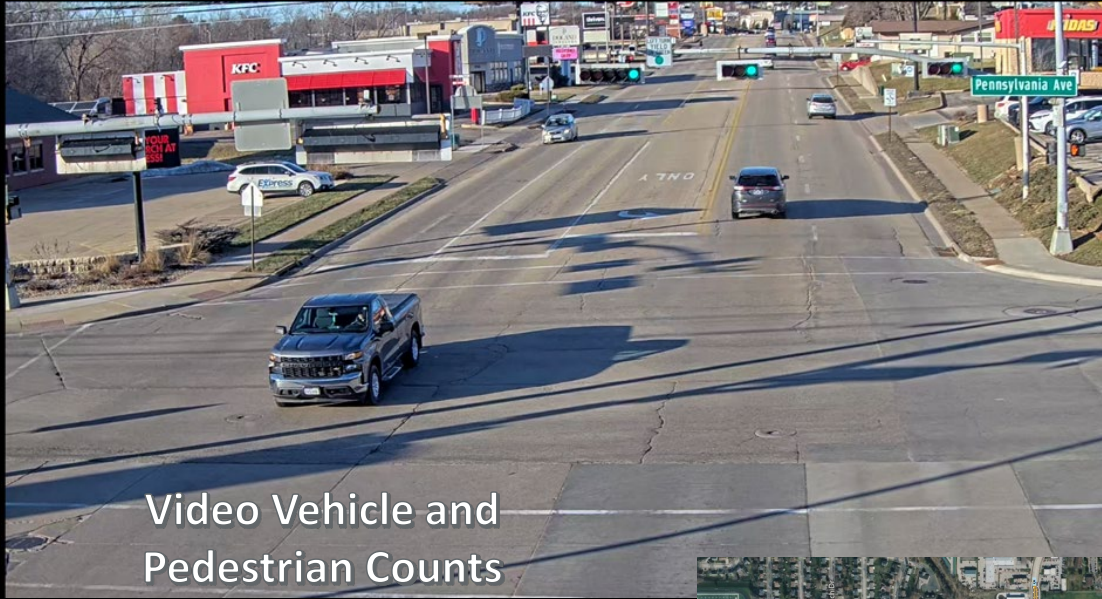
Southern Portion of JFK Corridor

Wacker Dr.

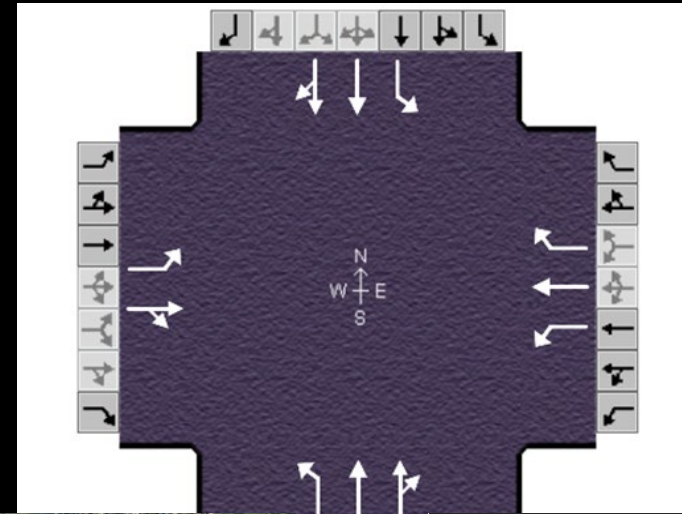
John F Kennedy Rd.



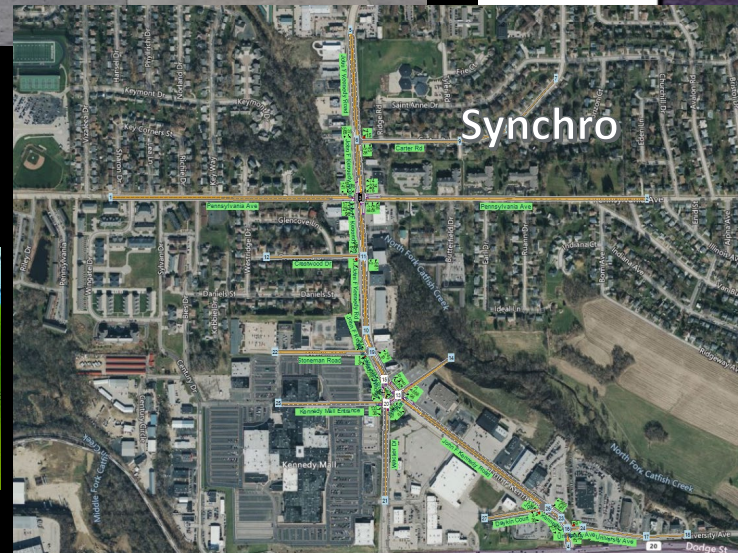
Traffic Analysis Methods



Highway Capacity Software (HCS)



Crash Analysis



Existing Conditions - Pennsylvania Ave and JFK



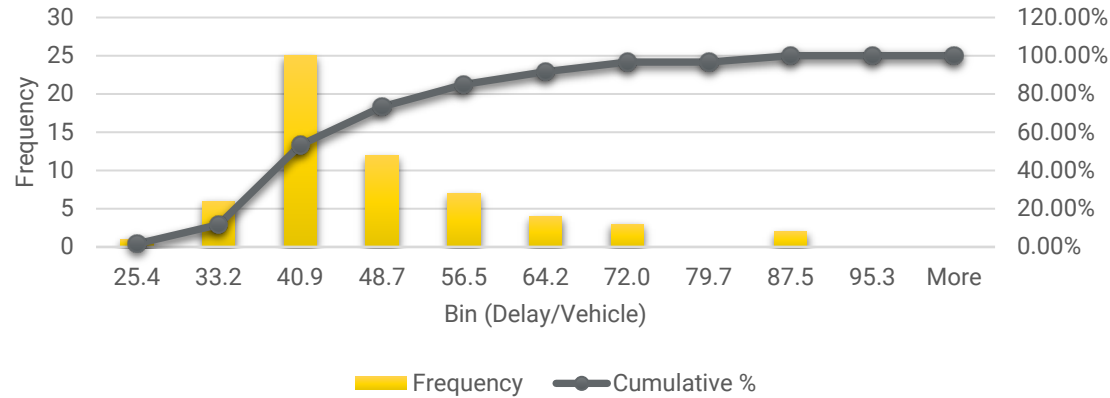
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Control Delay (d), s/veh	19.8	28.2		20.7	24.9	24.2	15.4	20.2	20.2	14.7	22.3	22.4
Level of Service (LOS)	B	C		C	C	C	B	C	C	B	C	C
Approach Delay, s/veh / LOS	25.0		C	23.3		C	19.5		B	21.7		C
Intersection Delay, s/veh / LOS	21.6						C					

IOWA

John F. Kennedy Rd Analysis and Redesign

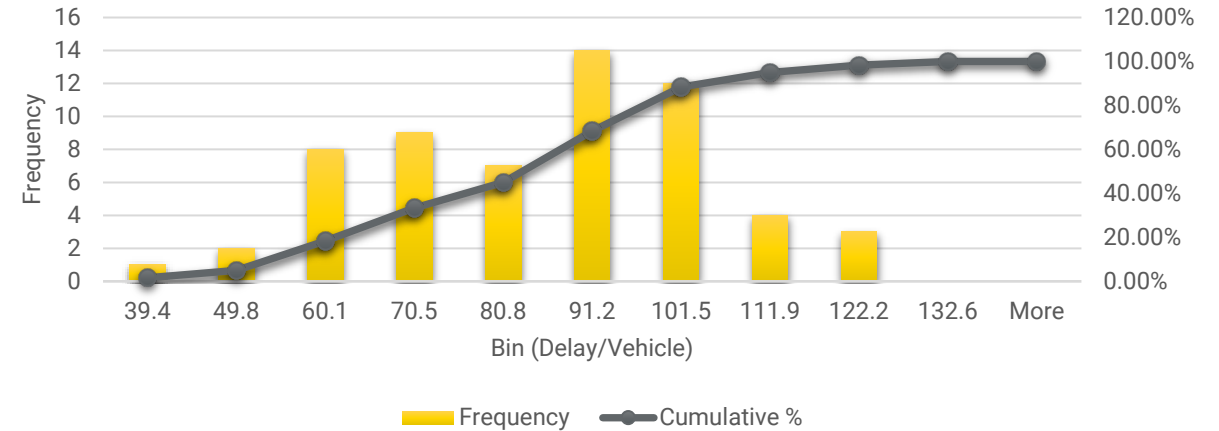
Existing Conditions- Pennsylvania Ave and JFK

Penn and JFK EB 12-1 Existing Conditions



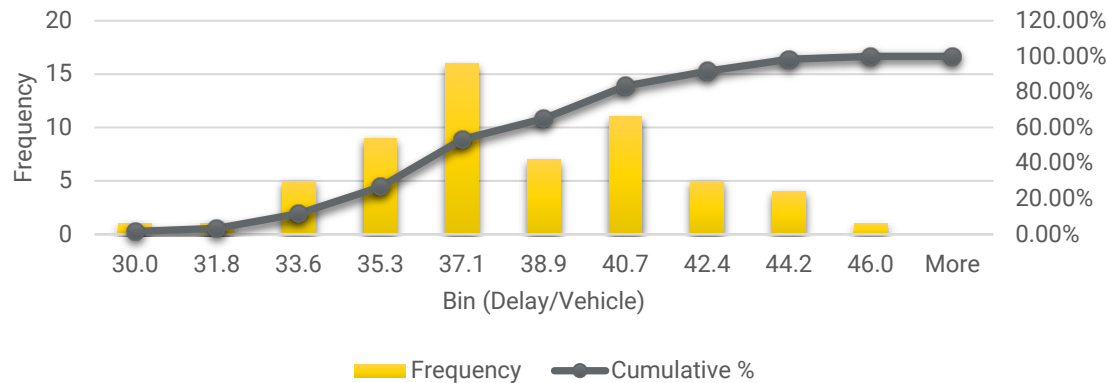
Max Delay/Vehicle: 87.5 seconds; Min Delay/Vehicle: 25.4 seconds

Penn and JFK SB 12-1 Existing Conditions



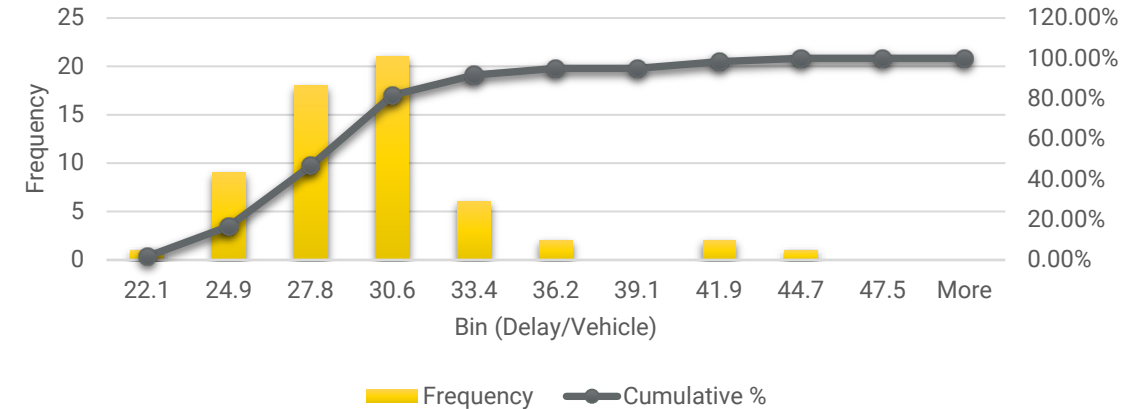
Max Delay/Vehicle: 122.2 seconds; Min Delay/Vehicle: 39.4 seconds

Penn and JFK NB 12-1 Existing Conditions



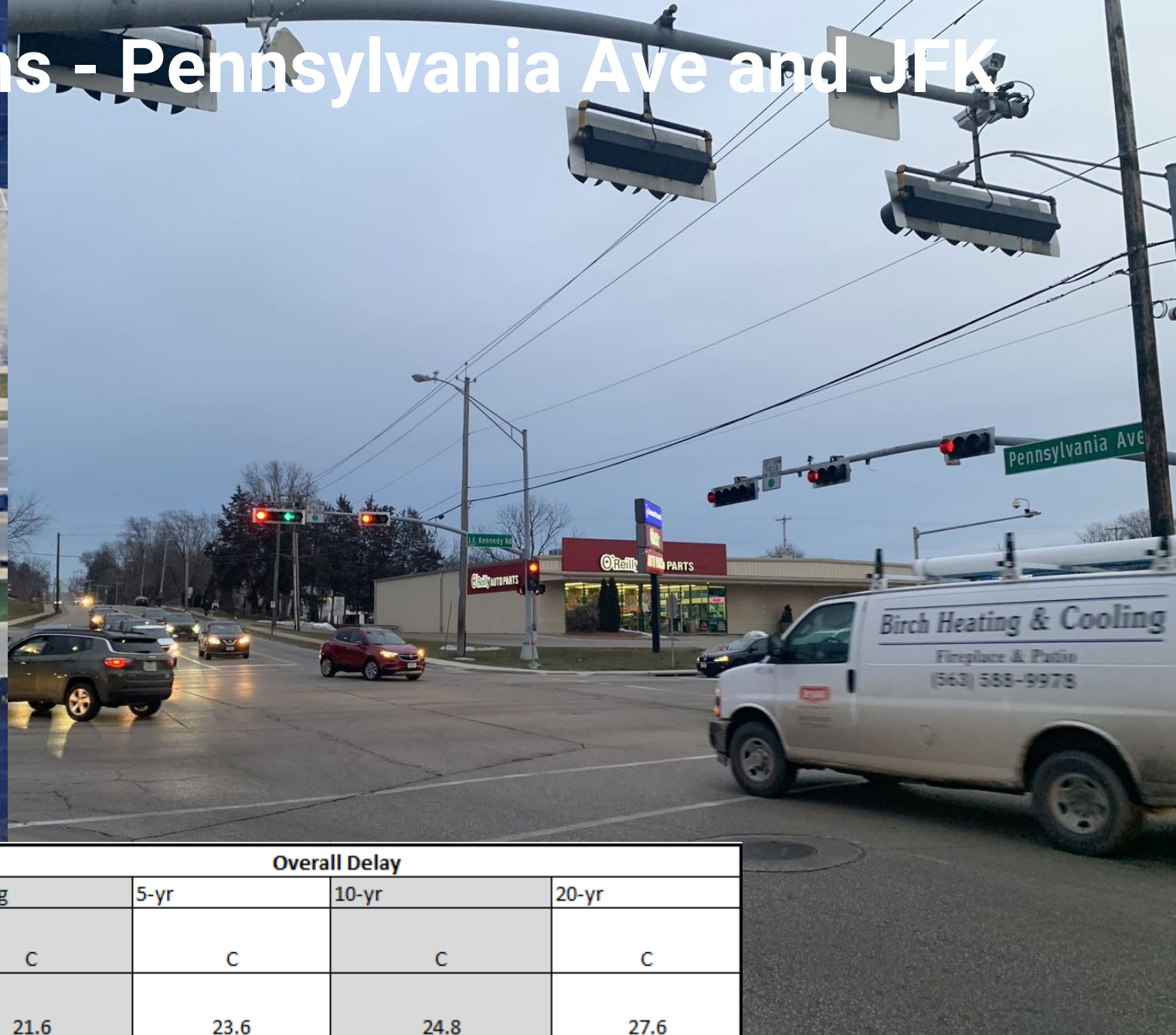
Max Delay/Vehicle: 44.2 seconds; Min Delay/Vehicle: 30 seconds

Penn and JFK WB 12-1 Existing Conditions



Max Delay/Vehicle: 44.7 seconds; Min Delay/Vehicle: 22.1 seconds

Projected Conditions - Pennsylvania Ave and JFK



	Overall Delay			
	Existing	5-yr	10-yr	20-yr
Level of Service	C	C	C	C
Intersection Delay s/veh	21.6	23.6	24.8	27.6

IOWA

John F. Kennedy Rd Analysis and Redesign

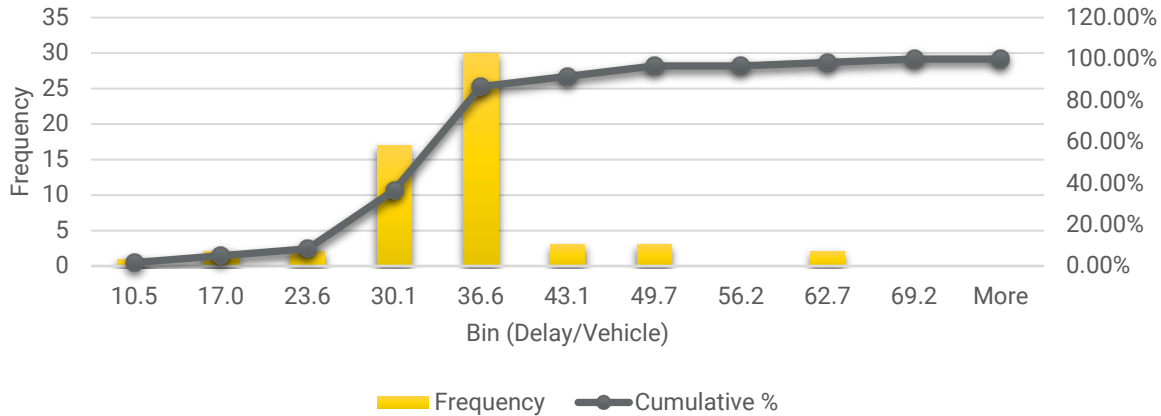
Existing Conditions - Wacker Dr and JFK

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	389	16	71	12	4	14	116	536	4	13	498	355
Control Delay (d), s/veh	23.2	30.2		33.3		33.3	36.5	16.7	16.7	36.6	24.6	24.8
Level of Service (LOS)	C	C		C		C	D	B	B	D	C	C
Approach Delay, s/veh / LOS	28.5		C	33.3		C	20.2		C	24.9		C
Intersection Delay, s/veh / LOS	24.4						C					



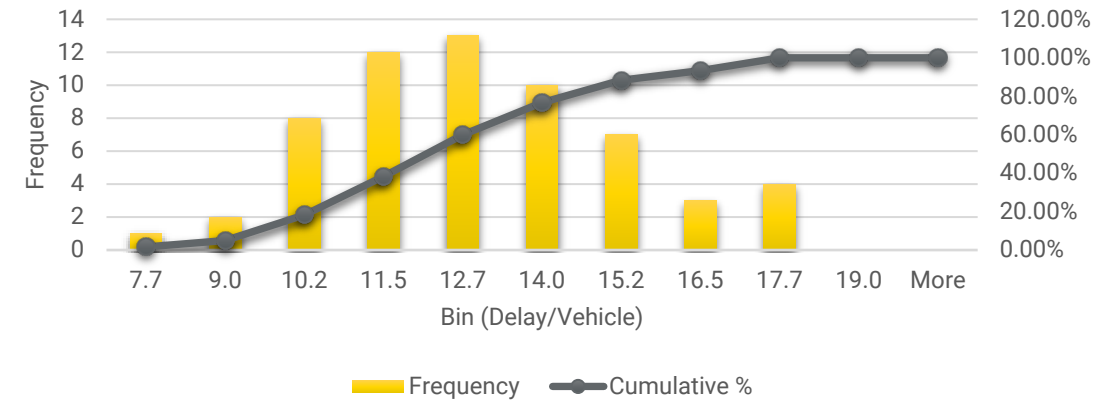
Existing Conditions- Wacker Dr and JFK

Wacker and JFK EB 12-1 Existing Conditions



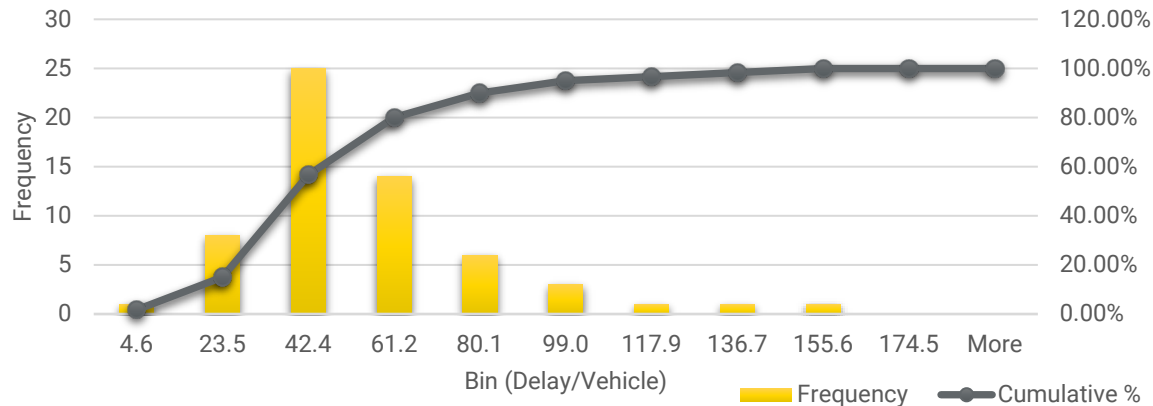
Max Delay/Vehicle: 62.7 seconds; Min Delay/Vehicle: 10.5 seconds

Wacker and JFK SB 12-1 Existing Conditions



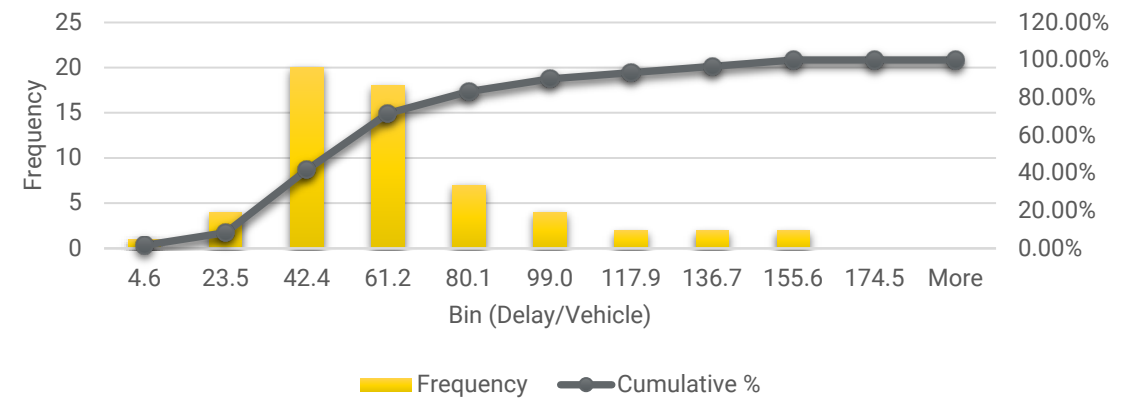
Max Delay/Vehicle: 17.7 seconds; Min Delay/Vehicle: 7.7 seconds

Wacker and JFK NB 12-1 Existing Conditions



Max Delay/Vehicle: 155.6 seconds; Min Delay/Vehicle: 4.6 seconds

Wacker and JFK WB 12-1 Existing Conditions



Max Delay/Vehicle: 155.6 seconds; Min Delay/Vehicle: 4.6 seconds

Projected Conditions - Wacker Dr and JFK



	Overall Delay			
	Existing	5-yr	10-yr	20-yr
Level of Service	C	C	C	C
Intersection Delay s/veh	24.3	26.7	29	33.7

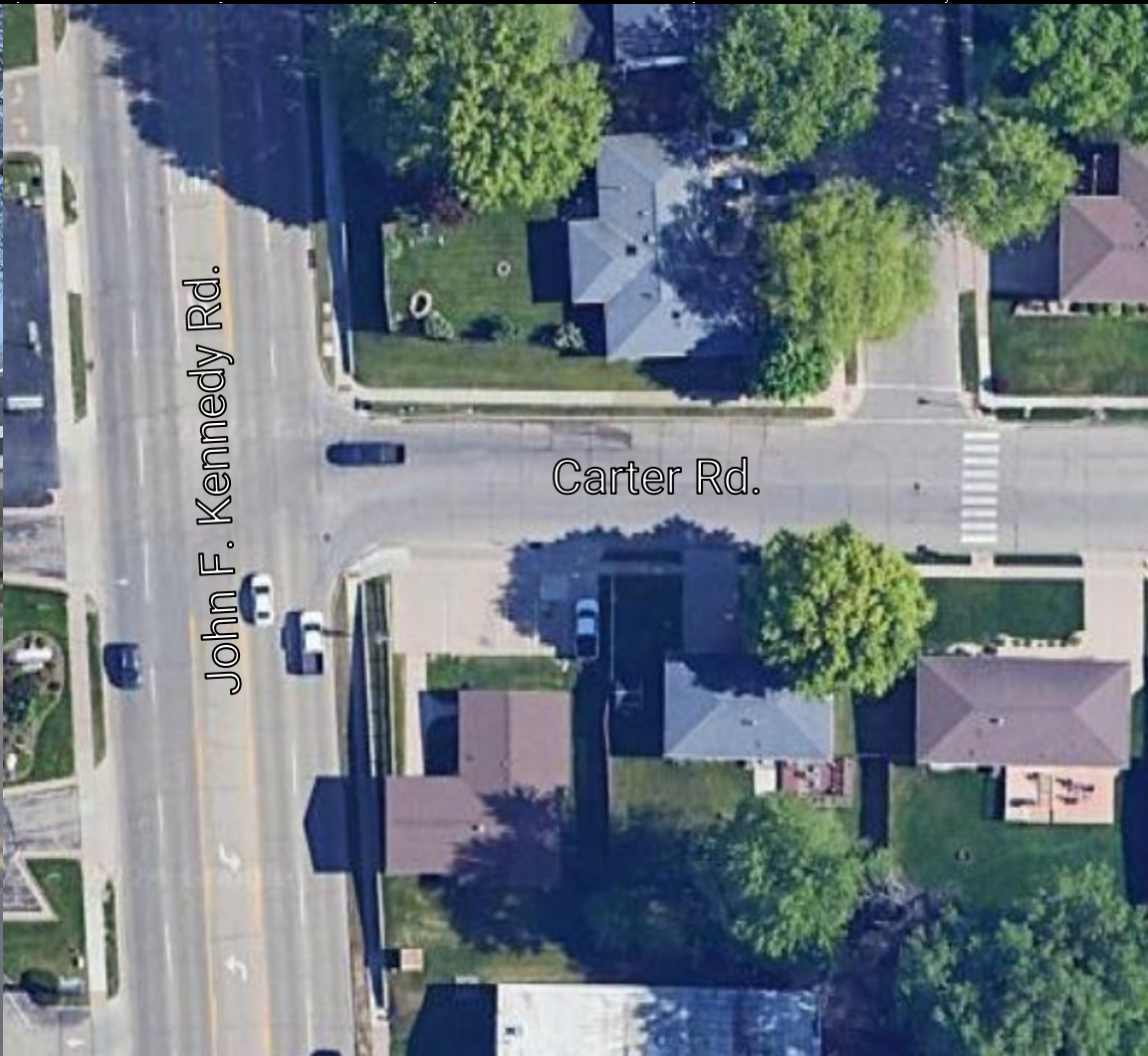


Existing and Projected Conditions - Carter Rd and JFK

Direction	5, 10, 20-yr Projections							
	Existing		5-yr		10-yr		20-yr	
	Westbound Left	Westbound Right	Westbound Left	Westbound Right	Westbound Left	Westbound Right	Westbound Left	Westbound Right
Level of Service	B	A	B	A	C	B	C	B
Control Delay (sec/veh)	12	9.8	12.3	9.9	15.6	10	17.1	10.3



Carter Rd and JFK



Existing and Projected Conditions - Carter Rd and Ridge Rd

Existing

Approach	Eastbound			Westbound			Northbound			Southbound			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3	
Control Delay (s/veh)	7.5			7.6						7.2			
Level of Service, LOS	A			A						A			
Approach Delay (s/veh) LOS	7.5	A		7.6	A						7.2	A	
Intersection Delay (s/veh) LOS	7.5						A						

5-yr

Control Delay (s/veh)	7.6			7.7						7.3		
Level of Service, LOS	A			A						A		
Approach Delay (s/veh) LOS	7.6	A		7.7	A				7.3		A	
Intersection Delay (s/veh) LOS	7.6						A					

10-yr

Control Delay (s/veh)	7.6			7.8						7.3		
Level of Service, LOS	A			A						A		
Approach Delay (s/veh) LOS	7.6	A		7.8	A				7.3		A	
Intersection Delay (s/veh) LOS	7.7						A					

20-yr

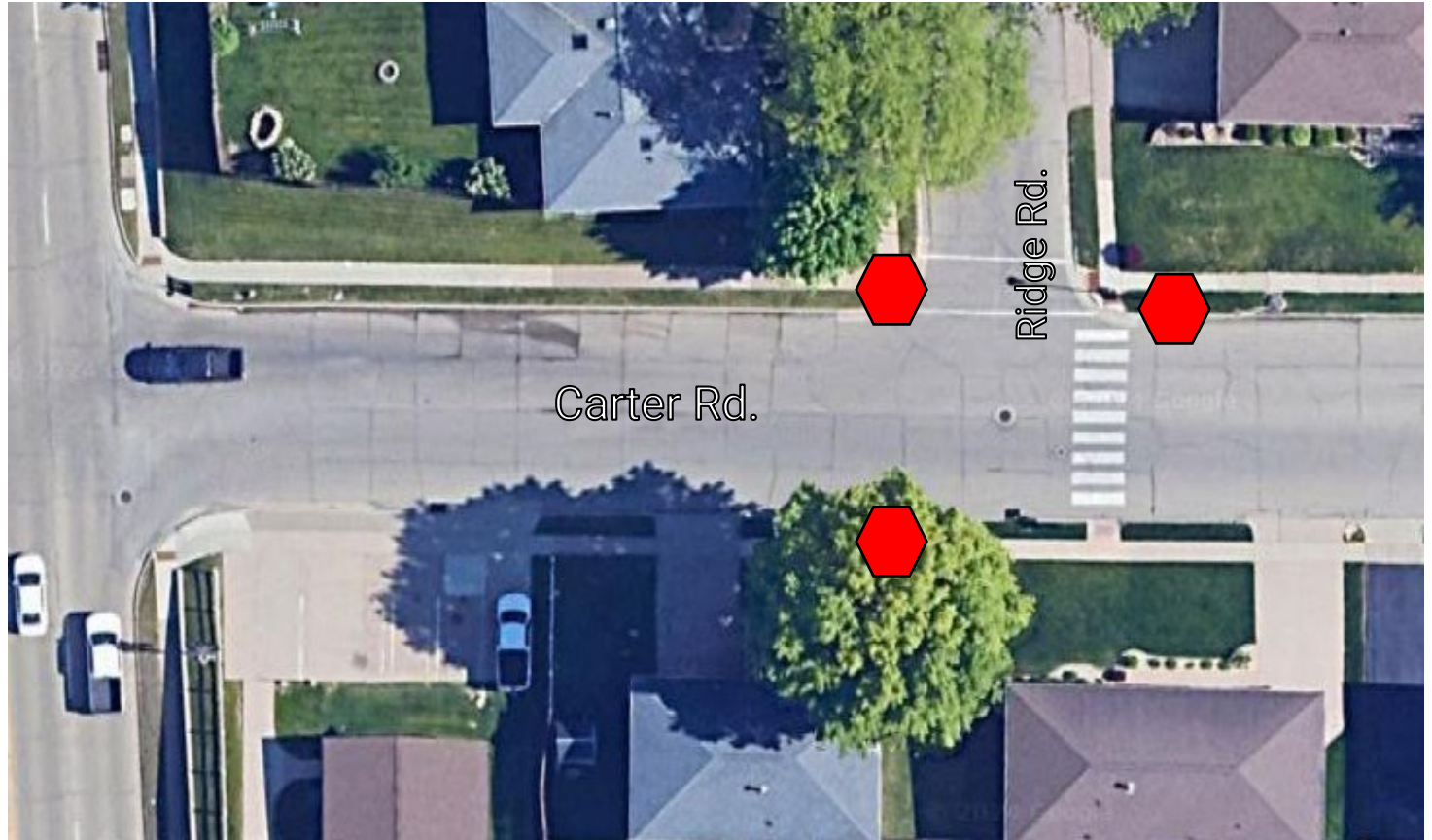
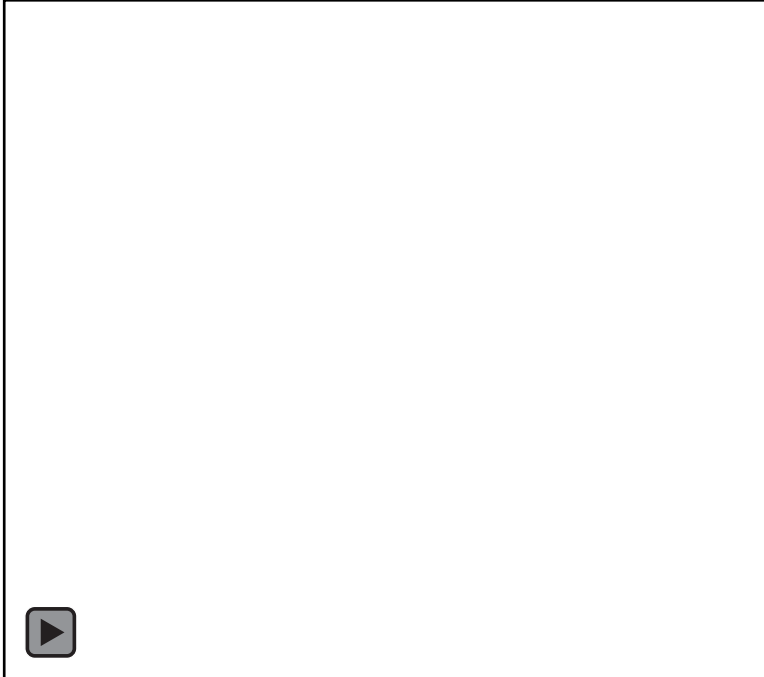
Control Delay (s/veh)	7.6			7.9						7.4		
Level of Service, LOS	A			A						A		
Approach Delay (s/veh) LOS	7.6	A		7.9	A						7.4	A
Intersection Delay (s/veh) LOS	7.7						A					



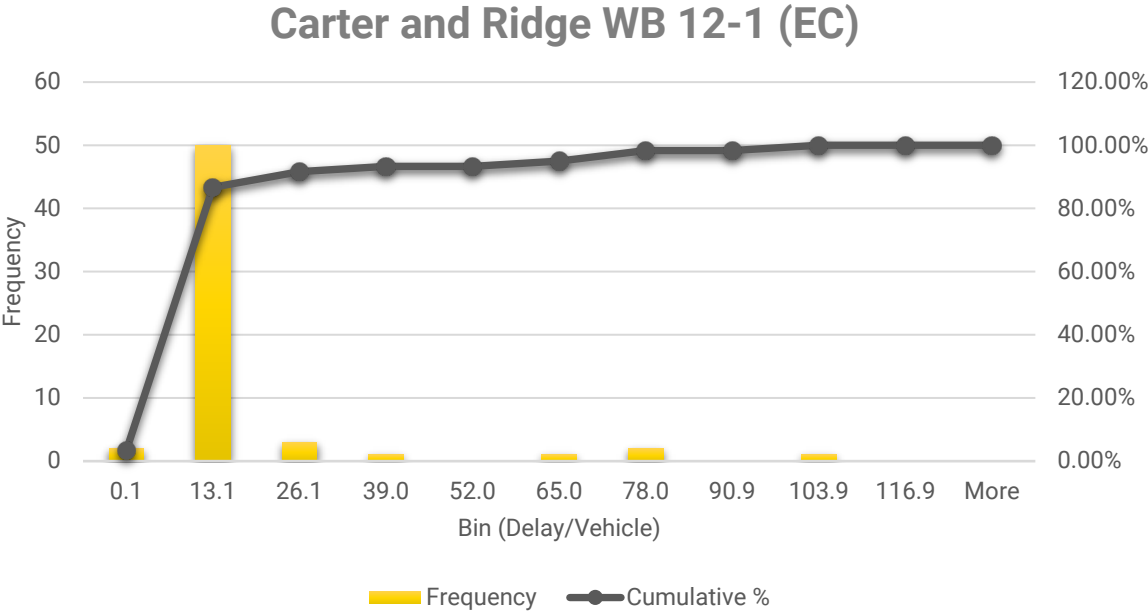
Pedestrian Safety



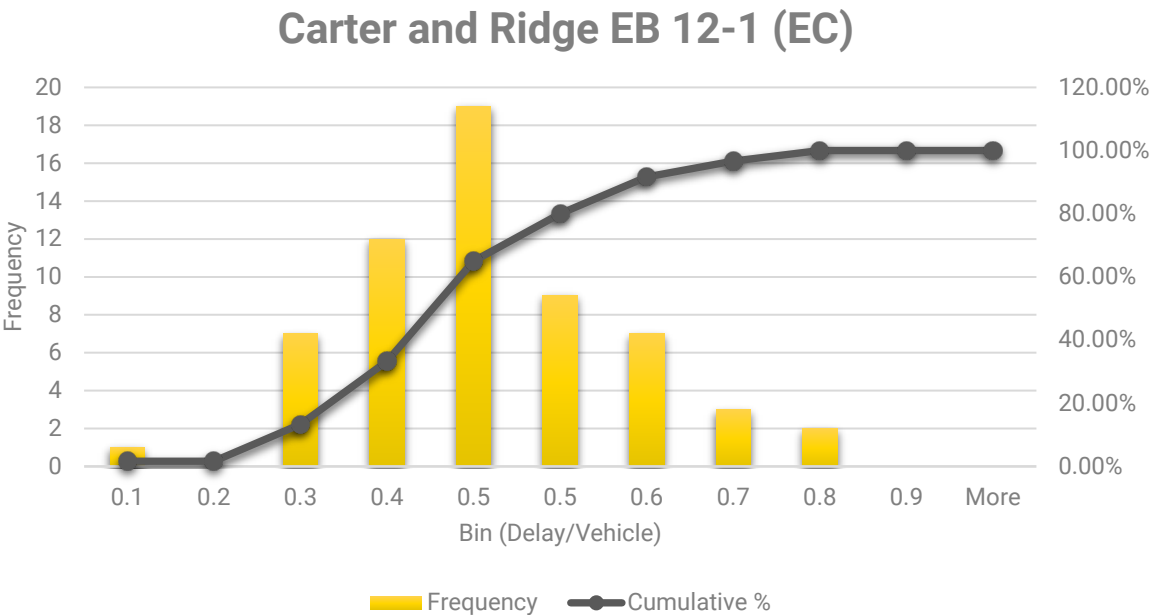
Alternative 1- 3 way stop at Carter Rd and Ridge Rd



Existing Conditions- Carter Rd and Ridge Rd



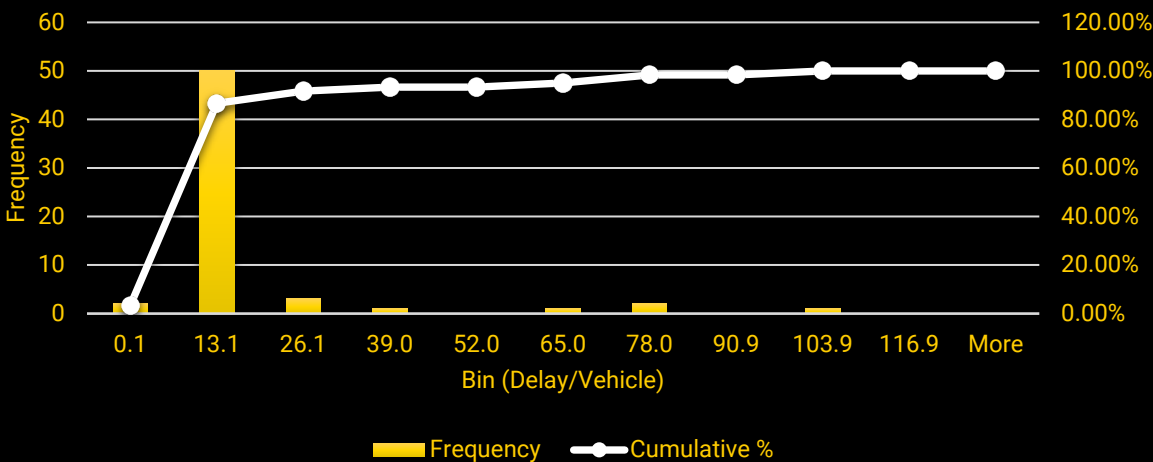
Max Delay/Vehicle: 103.9 seconds
Min Delay/Vehicle: 0.1 seconds



Max Delay/Vehicle: 0.8 seconds
Min Delay/Vehicle: 0.1 seconds

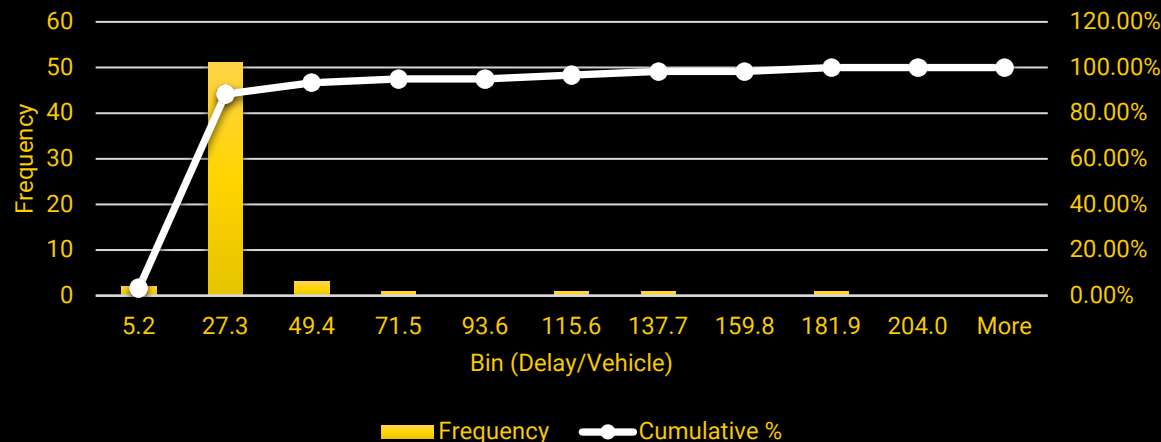
Projected Conditions (3-way stop) - Carter Rd and Ridge Rd

Carter and Ridge WB 12-1 (Existing Conditions)



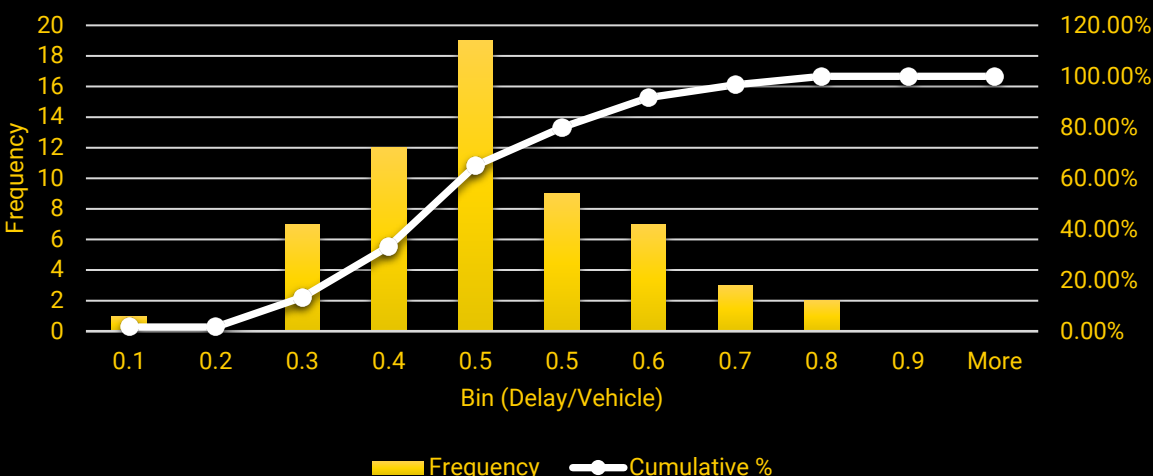
Max Delay/Vehicle: 103.9 seconds
Min Delay/Vehicle: 0.1 seconds

Carter and Ridge WB 12-1 (3-way stop)



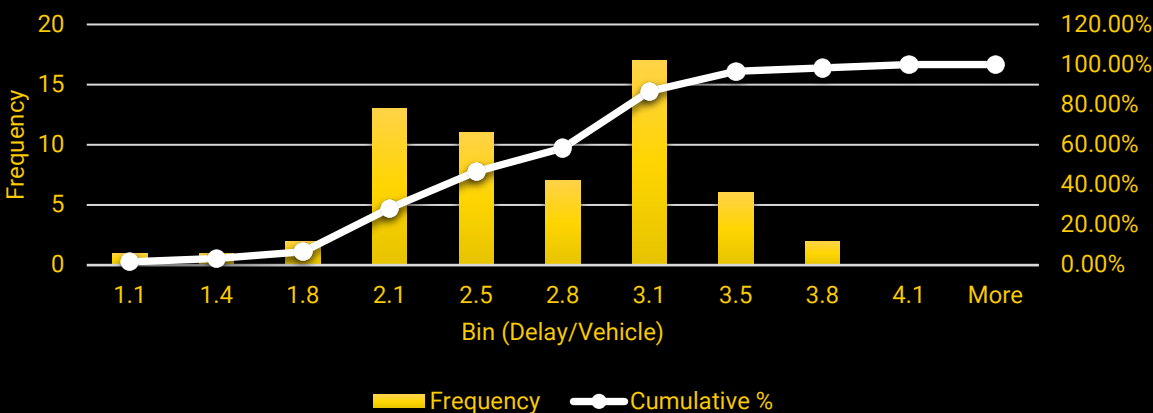
Max Delay/Vehicle: 181.9 seconds
Min Delay/Vehicle: 5.2 seconds

Carter and Ridge EB 12-1 (Existing Conditions)



Max Delay/Vehicle: 0.8 seconds
Min Delay/Vehicle: 0.1 seconds

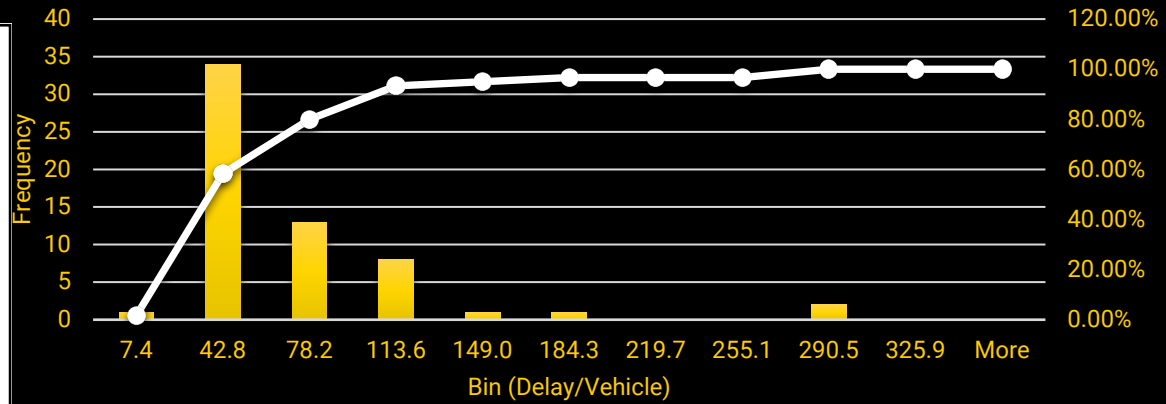
Carter and Ridge EB 12-1 (3-way stop)



Max Delay/Vehicle: 3.8 seconds
Min Delay/Vehicle: 1.1 seconds

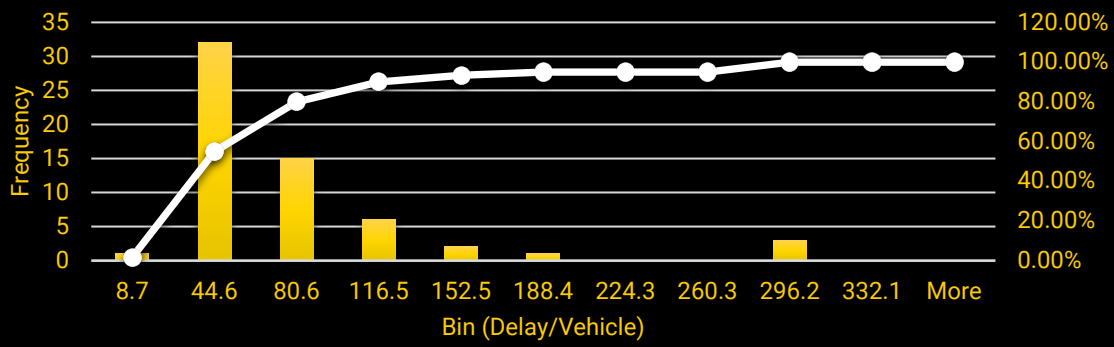
Existing and Projected Conditions - Carter Rd and JFK WB

Carter and JFK WB 12-1 w/o 3-way stop



Max Delay/Vehicle: 290.5 seconds
Min Delay/Vehicle: 7.4 seconds

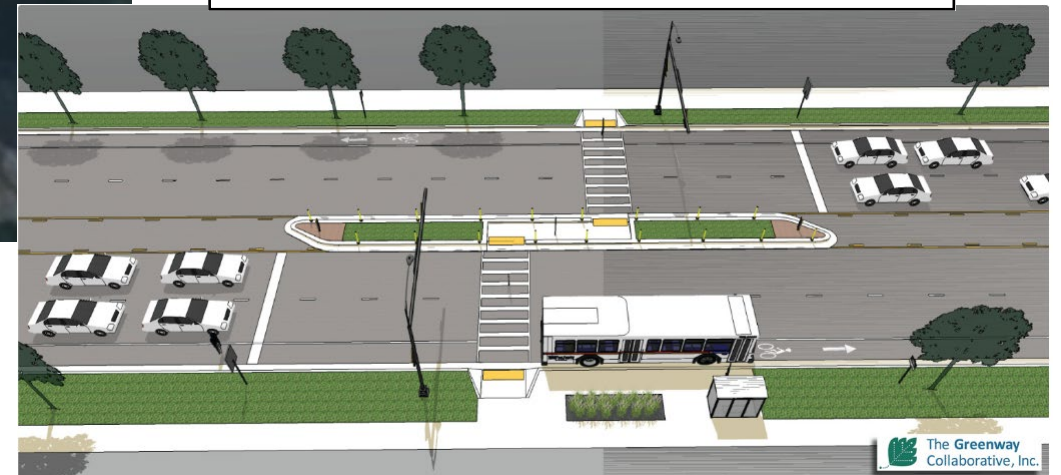
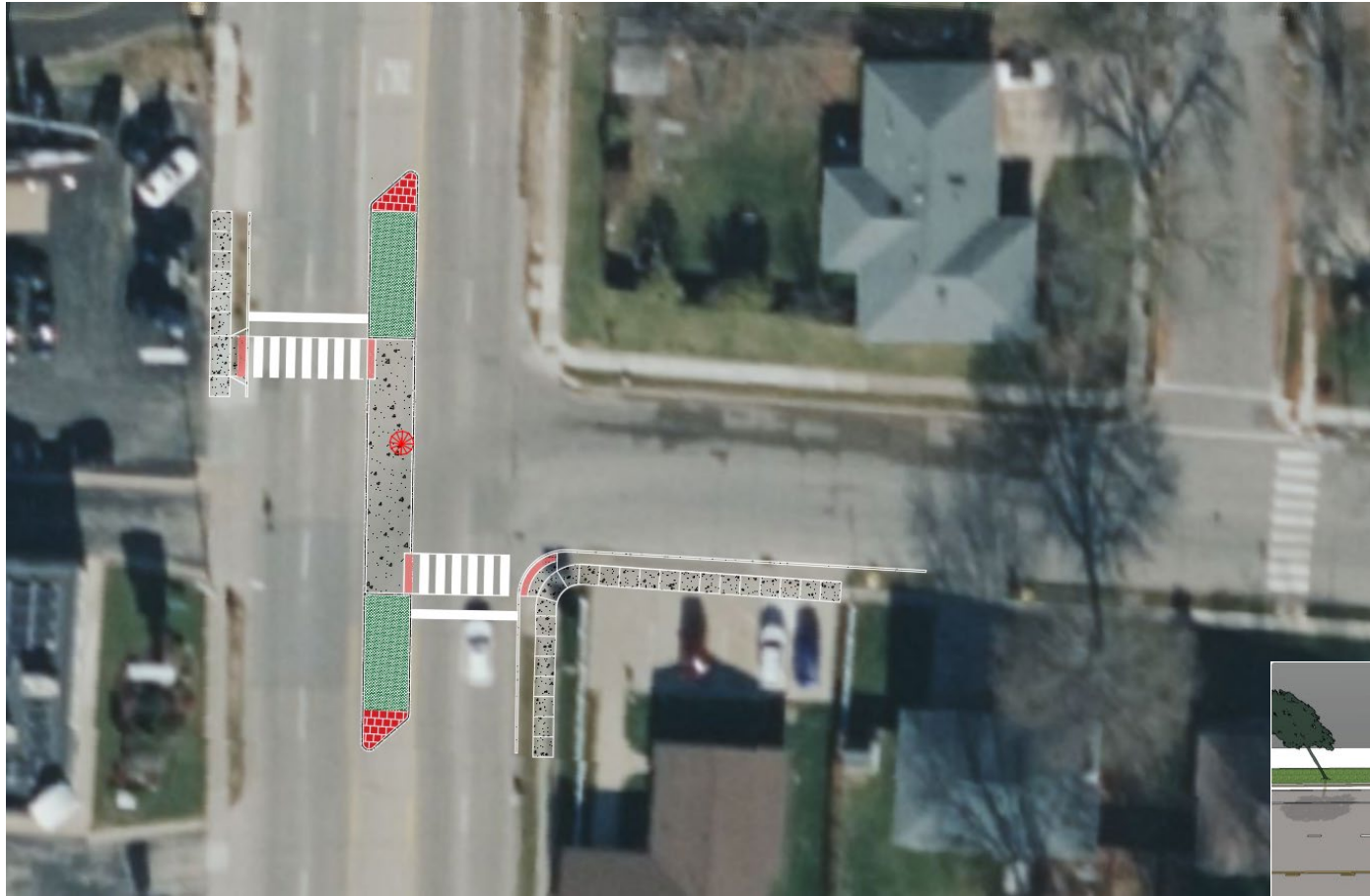
Carter and JFK WB 12-1 w/3-way stop



Max Delay/Vehicle: 296.2 seconds
Min Delay/Vehicle: 8.7 seconds

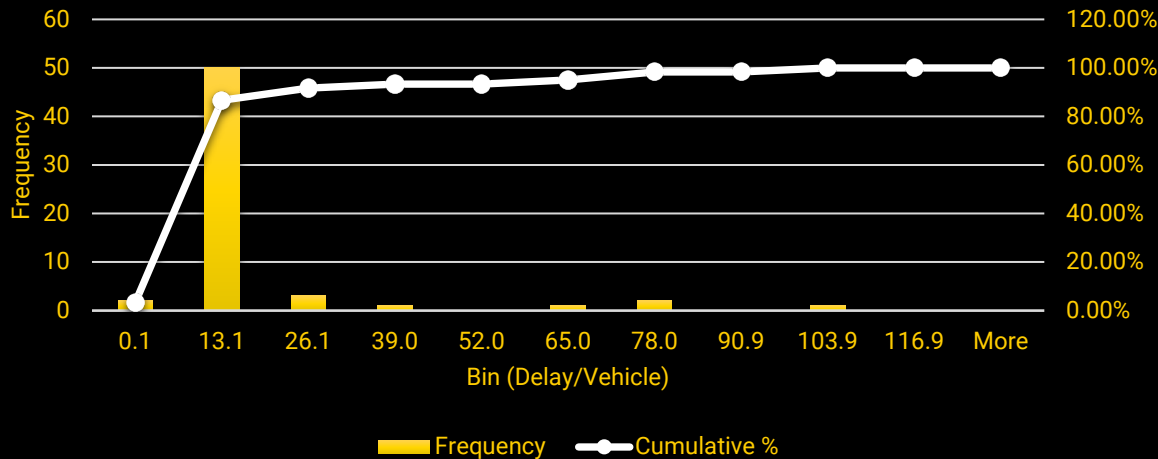


Pedestrian Safety-Alternative 2 (Pedestrian Median)



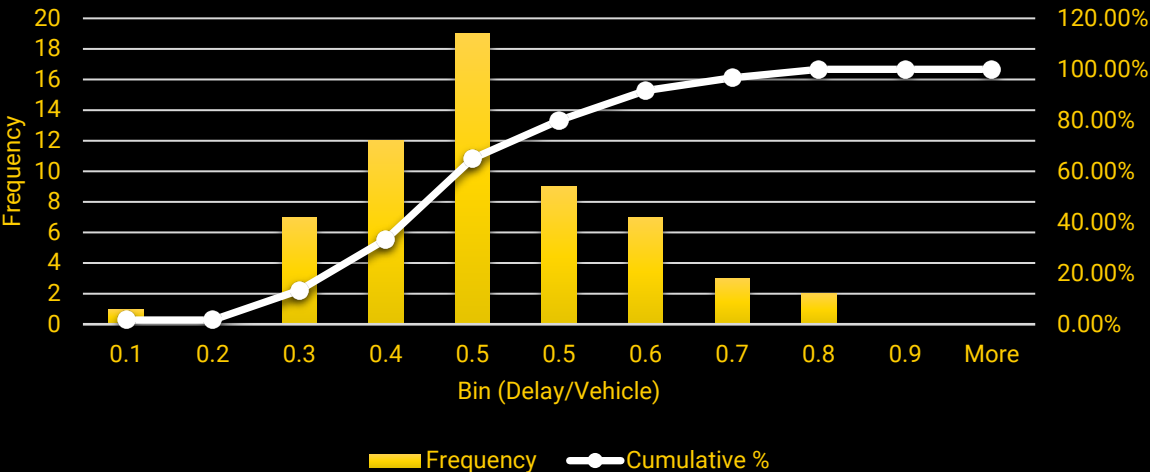
Projected Conditions (Ped. Median) - Carter Rd and Ridge Rd

Carter and Ridge WB 12-1 (EC)



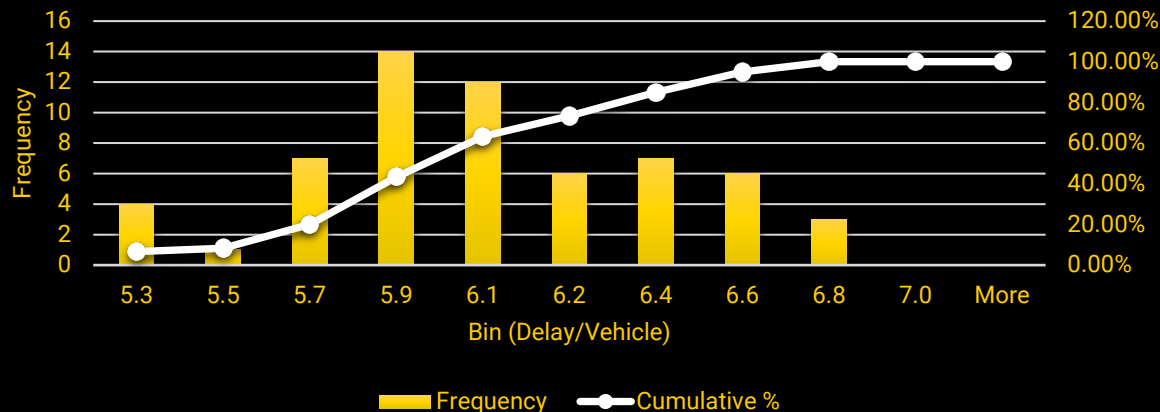
Max Delay/Vehicle: 103.9 seconds
Min Delay/Vehicle: 0.1 seconds

Carter and Ridge EB 12-1 (EC)



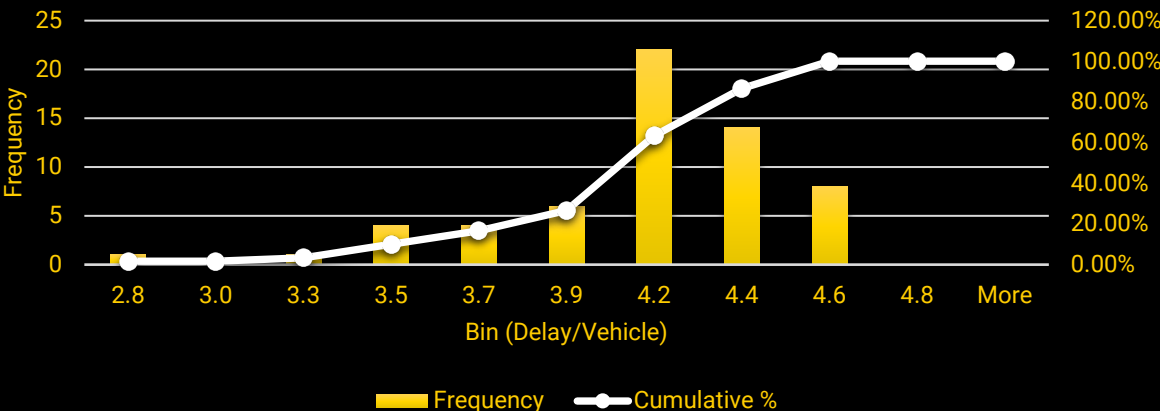
Max Delay/Vehicle: 0.8 seconds
Min Delay/Vehicle: 0.1 seconds

Carter and Ridge WB 12-1 (Pedestrian Median)



Max Delay/Vehicle: 6.8 seconds
Min Delay/Vehicle: 5.3 seconds

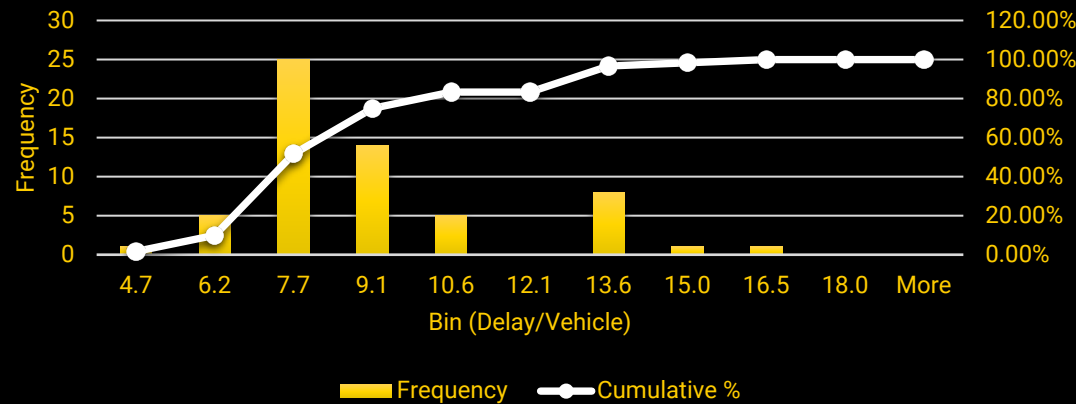
Carter and Ridge EB 12-1 (Pedestrian Median)



Max Delay/Vehicle: 2.8 seconds
Min Delay/Vehicle: 4.6 seconds

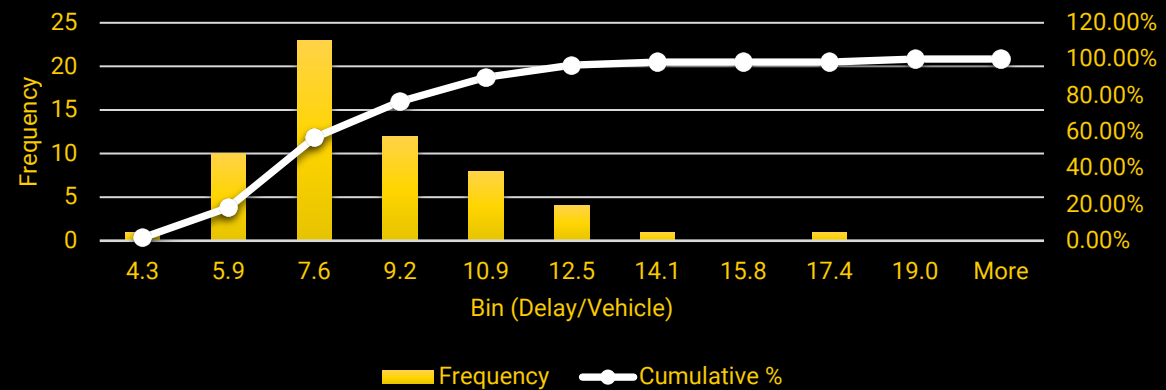
Existing and Projected Conditions (Ped-Median) - Carter Rd and JFK

Carter and JFK WB 12-1(EC)



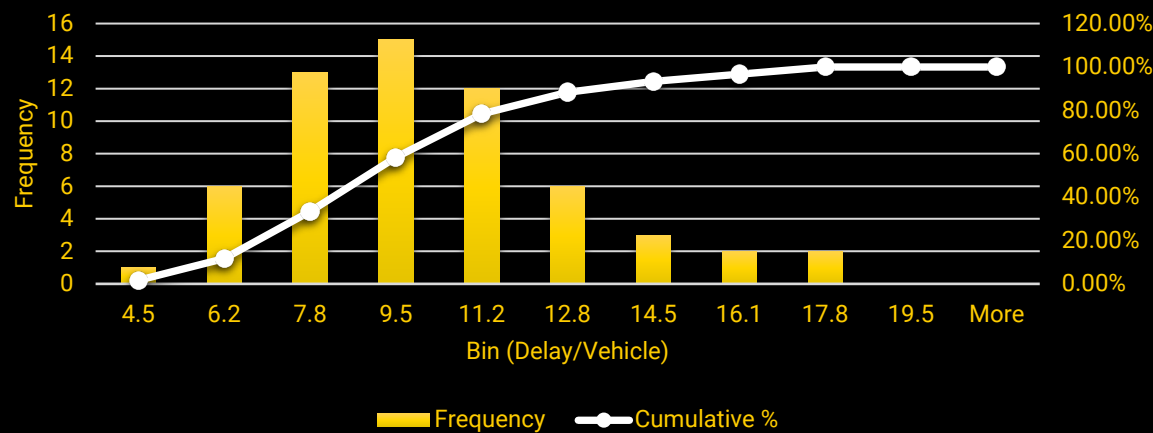
Max Delay/Vehicle: 16.5 seconds
Min Delay/Vehicle: 4.7 seconds

Carter and JFK WB 12-1(5-year)



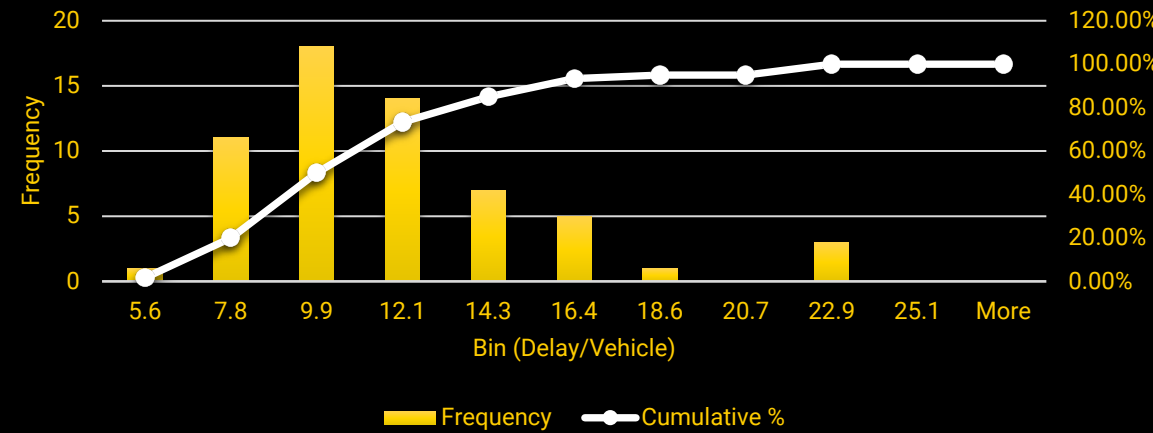
Max Delay/Vehicle: 17.4 seconds
Min Delay/Vehicle: 4.3 seconds

Carter and JFK WB 12-1(10-year)



Max Delay/Vehicle: 17.8 seconds
Min Delay/Vehicle: 4.5 seconds

Carter and JFK WB 12-1(20-year)

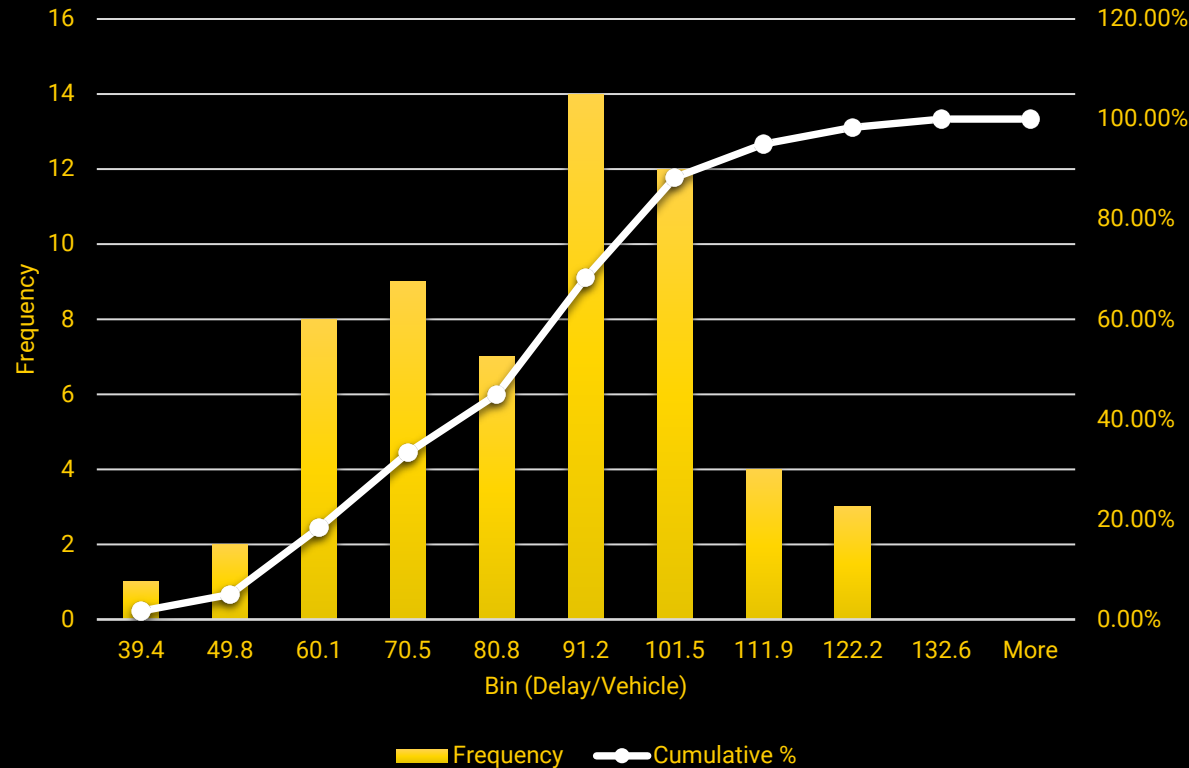


Max Delay/Vehicle: 22.9 seconds
Min Delay/Vehicle: 5.6 seconds

Existing and Projected Conditions (Ped-Median) – Pennsylvania Ave and JFK

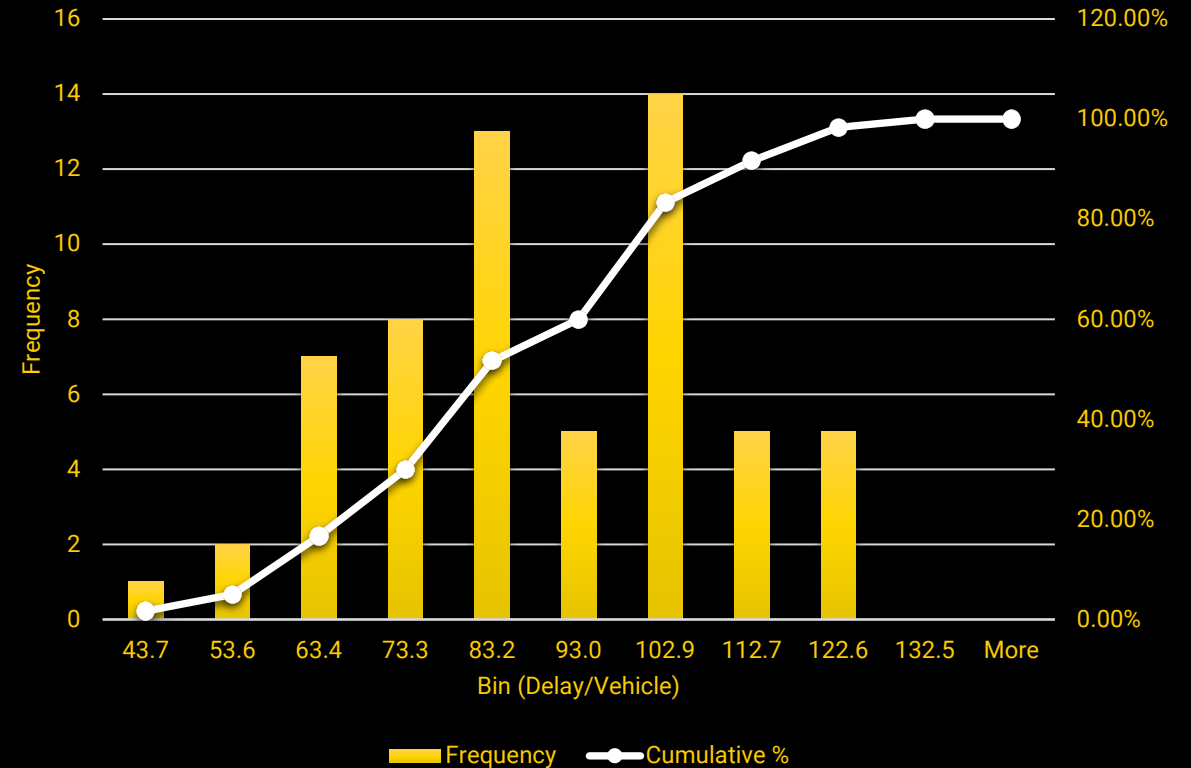
Using current traffic volumes

Penn and JFK SB 12-1 Existing Conditions



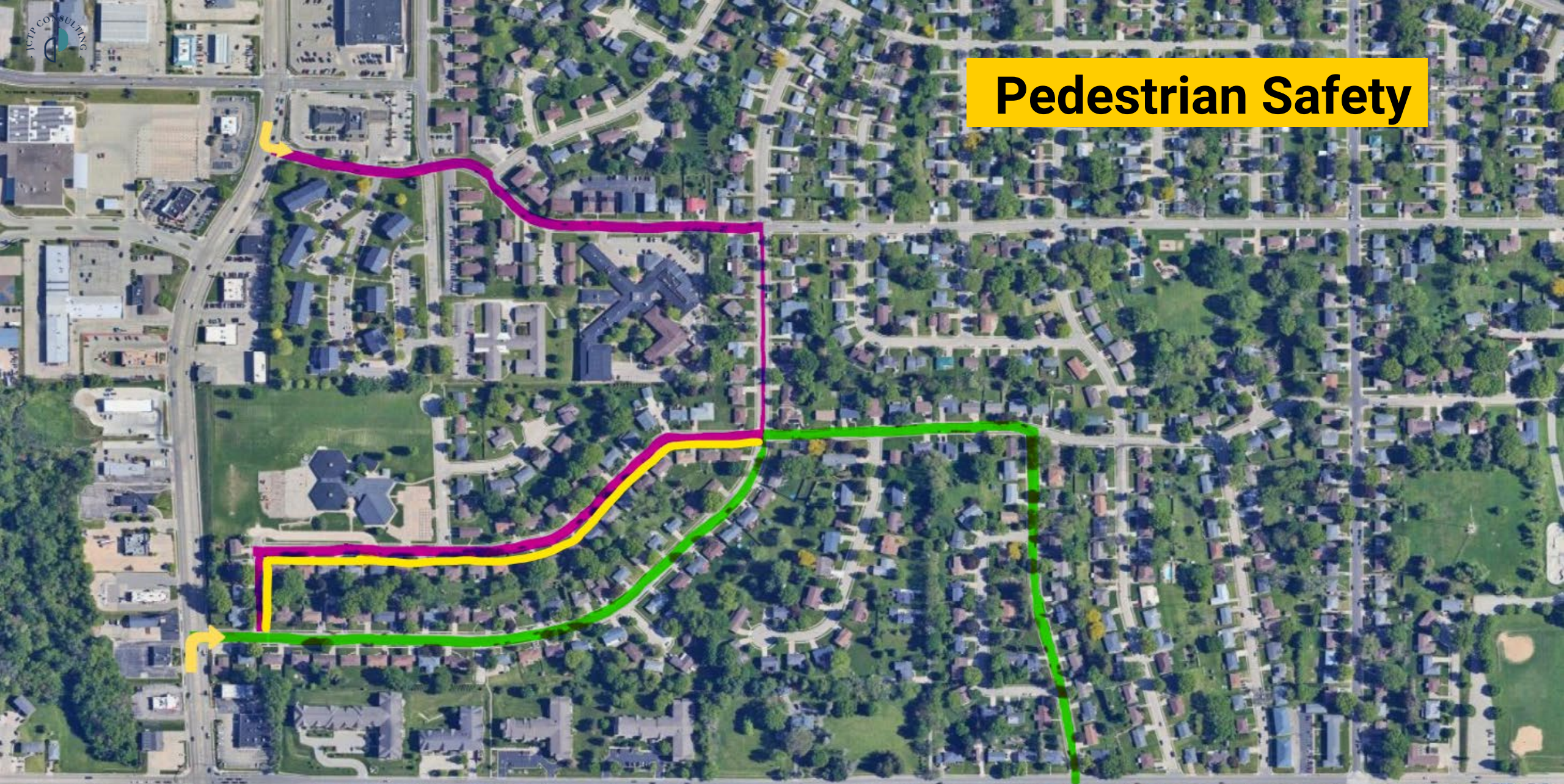
Max Delay/Vehicle: 122.2 seconds
Min Delay/Vehicle: 39.4 seconds

Penn and JFK SB 12-1 w/Pedestrian Median



Max Delay/Vehicle: 122.6 seconds
Min Delay/Vehicle: 43.7 seconds

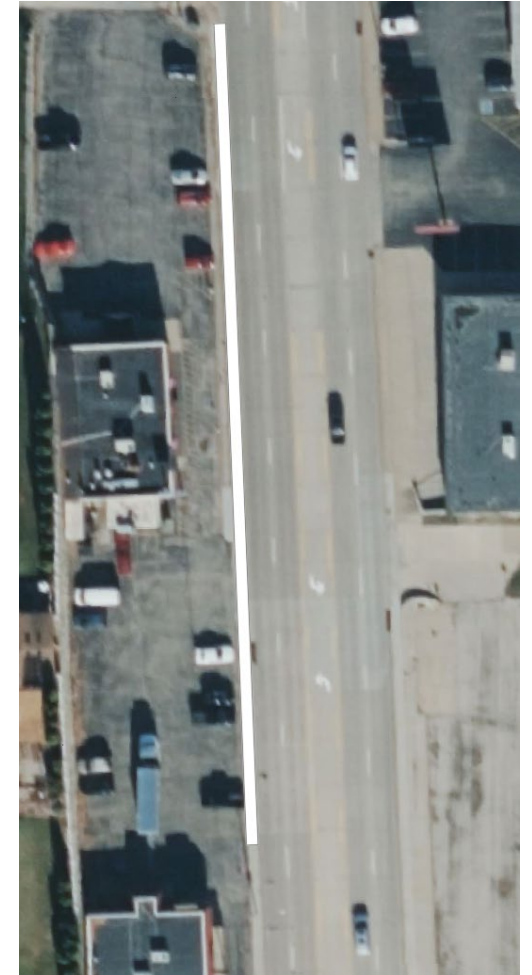
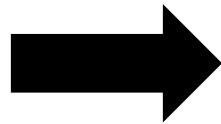
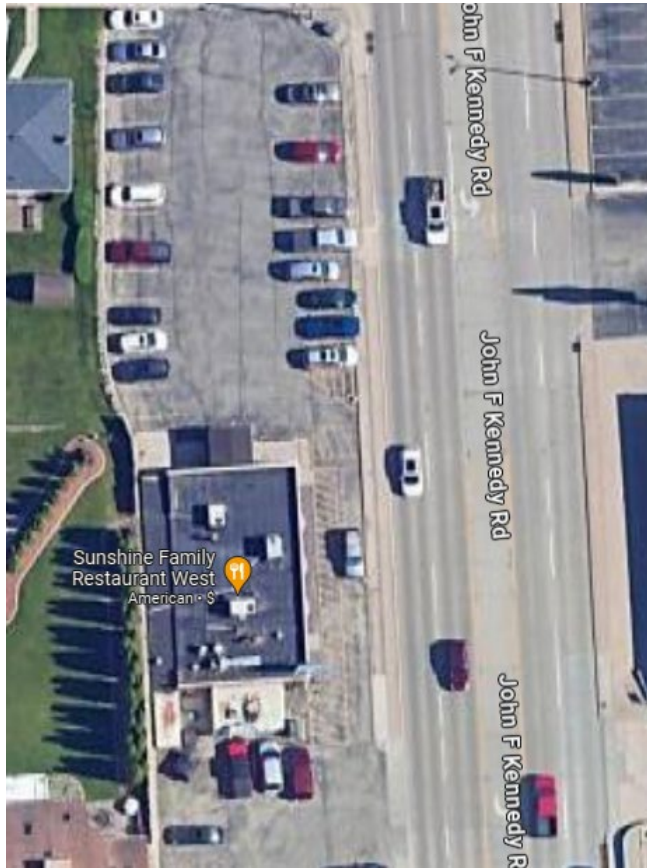
Pedestrian Safety



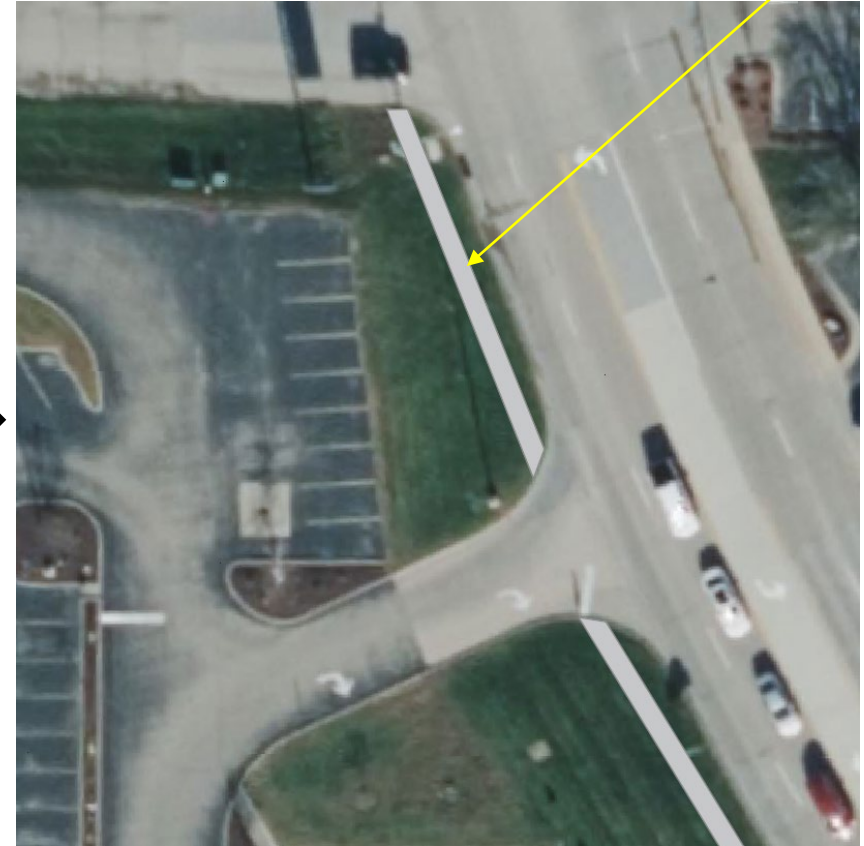
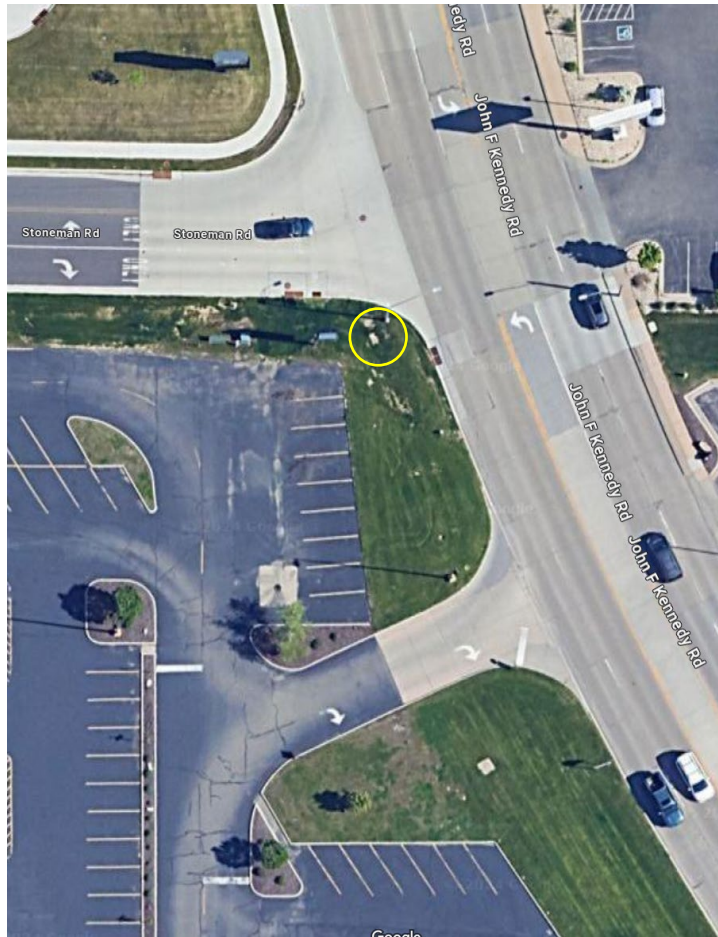
Pedestrian Median Cost Estimation

Pedestrian Median Cost Estimate				
Item	Quantity	Unit	Unit Price	Total
Brick Pavers	141.86	SF	11.09	\$ 1,573.23
PCC	162.52	SY	125	\$ 20,315.6
Detectable Warnings	20	EACH	162	\$ 3,240.00
Top Soil 6"	656.8	SF	5.58	\$ 3,664.94
Stop Signs 24" Octagon	2	EACH	34.25	\$ 68.50
Sub-Total				\$ 28,862.23

Sidewalk Connectivity



Sidewalk Connectivity



5' Wide
4" Thick
PCC

Sidewalk Connectivity



1' ROW

Sidewalk Connectivity



Sidewalk Cost Estimation

Sidewalk Cost Estimate				
Item	Quantity	Unit	Unit Price	Total
Removal of sidewalk	194.90	SY	35	\$ 6,821.50
Sidewalk PCC, 4 in	443.57	SY	125	\$ 55,446.0
Right of way Aquesition	1629.06	SF	3.89	\$ 6,337.04
Crosswalk pavement markings	114	LF	1.27	\$ 144.78
Pedestrian crosswalk signs	3	EACH	200	\$ 600.00
Push button with sign and post	2	EACH	4715	\$ 9,430.00
Sub-Total				\$78,779.31

Total Cost Estimation

Sidewalk Cost Estimate				
Item	Quantity	Unit	Unit Price	Total
Removal of sidewalk	194.90	SY	35	\$ 6,821.50
Sidewalk PCC, 4"	443.57	SY	125	\$ 55,446.0
Right of way Acquisition	1629.06	SF	3.89	\$ 6,337.04
Crosswalk pavement markings	114	LF	1.27	\$ 144.78
Pedestrian crosswalk signs	3	EACH	45.9	\$ 137.70
Push button with sign and post	2	EACH	4715	\$ 9,430.00
Sub-Total				\$ 78,317.01
Pedestrian Median Cost Estimate				
Item	Quantity	Unit	Unit Price	Total
Brick Pavers	141.86	SF	11.09	\$ 1,573.23
PCC	162.52	SY	125	\$ 20,315.6
Detectable Warnings	20	EACH	162	\$ 3,240.00
Top Soil 6"	656.8	SF	5.58	\$ 3,664.94
Stop Signs 24" Octagon	2	EACH	34.25	\$ 68.50
Sub-Total				\$ 28,862.23
Total w/o Contingency				\$107,179.24
20% Contingency				\$ 21,435.85
Total				\$128,615.08

Elementary School

Conclusions

Flora Park Skatepark

Flora Park

Dubuque
Montessori School

John F Kennedy Rd.

Pennsylvania Ave.

North Fork Carr

Southern Portion of JFK Corridor

Wacker Dr.

John F Kennedy Rd.

IOWA

John F. Kennedy Rd Analysis and Redesign

Questions?