TECHNICAL MEMORANDUM

Settler's Hill and Kingsland Drive Feasibility Study

Fabyan Parkway, Settler's Hill Golf Course Entrance to Kingsland Drive

Prepared For:

KDOT
KANE COUNTY DIVISION OF TRANSPORTATION

41W011 Burlington Rd,
Campton Hills, IL 60175

Prepared By:

Peralte-Clark LLC

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Arlington Heights, IL 60005

November 2022

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Introduction

Based on changes in traffic demand in recent years at the intersections of Settler's Hill and Fabyan Parkway and Kingsland Drive and Fabyan Parkway in Batavia, Illinois, the Kane County Division of Transportation (KDOT) is undertaking a feasibility study to evaluate signal warrants at both intersections, evaluate operational and/or safety deficiencies, and identify proposed alternatives to address these deficiencies. The study will shortlist alternatives to be further vetted in Phase 1. The study will also serve to better define the scope of a subsequent Phase 1 study and facilitate initial coordination with the Forest Preserve District of Kane County, who owns a substantial amount of property on the north side of Fabyan Parkway.

Purpose of Study

This study will analyze available data to devise a list of potential geometric, signal and access modification options to improve safety, accessibility, and levels of service through the corridor. The study will also generally define the limits of needed improvements. For this analysis, the limits will extend from Raddant Road to the west, Enterprise Avenue to the east and Olympic Drive to the south.

Existing Conditions

Fabyan Parkway and Settler's Hill

Fabyan Parkway is an SRA route. It is typically 4 lanes with a painted center median. The existing right of way is approximately 100 feet. There is curb and gutter on both sides of the road with a mixed-use path along the north side of the road. The entrance to the Settler's Hill golf course is on the north side of the road. This driveway entrance is two lanes with a raised center median. There is an existing temporary traffic signal at this location which is not coordinated with either permanent signal to the east or west.

Fabyan Parkway and Kingsland Drive

Fabyan Parkway is an SRA route. There are 4 through lanes, an eastbound right-turn lane, and a painted center median. The right turn lane has an approach taper that is approximately 80 feet long and a turning bay of approximately 75 feet. The existing right of way is approximately 100 feet. There is curb and gutter on both sides of the road with a mixed-use path along the north side of the road. There is a driveway entrance to a landscaping business on the north side of the road.

Kingsland Drive is the south leg of the intersection. It is two lanes with an existing right of way of approximately 50 feet. There is curb and gutter on both sides of the road. Kingsland Drive serves a commercial business district. The radius returns for the southeast and southwest corners of the intersection appear to be undersized. The grass is worn down behind the curb return due to the commercial truck traffic driving over the curb and the grass.

Crash analysis was performed on the area for a 5-year period between 2016 and 2020. Review of the crash information shows that frequent lane shifts to avoid turning vehicles contribute to some types of crashes. See Attachment 5.

Distance Between Intersections

The distance between the intersection of Fabyan Parkway and Settler's Hill and Fabyan Parkway and Kingsland Drive is approximately 350 feet. The existing conditions are shown in Attachment 1.

Alternatives Analysis

Fabyan Parkway and Settler's Hill

Three different alternatives were considered:

No-Build Alternative

The No-Build alternative consists of not changing anything at this location. The existing temporary signal is not warranted under current conditions. The signal is not part of the interconnected system within the corridor and impedes its operations.

Build Alternative A

Build Alternative "A" involves removing the temporary signal at Settler's Hill. The two intersections would be maintained as separate intersections with no geometric modifications at either intersection. This option would not address operational and safety deficiencies at the intersections.

Build Alternative B

Build Alternative "B" would remove the temporary signal at Settler's Hill and the two intersections would be maintained as separate. The two intersections would have stop control for Setter's Hill and Kingsland Drive with turn lane channelization improvements.

Fabyan Parkway and Kingsland Drive

Build Alternative "B" would remove the temporary signal at Settler's Hill and the two intersections would be maintained as separate. The two intersections would have stop control for Setter's Hill and Kingsland Drive with turn lane channelization improvements. The turning radii for trucks turning to and from Kingsland Drive would be improved.

Combining the Two Intersections

Two different alternatives were considered:

Build Alternative C

Build Alternative "C" consists of removing the temporary signal and shifting the golf course driveway east to align with Kingsland Drive and providing turn movement channelization. The single intersection would have stop control for Settler's Hill and Kingsland Drive. The turning radii for trucks turning to and from Kingsland Drive would be improved. This would have environmental and property impacts on the golf course and the landscape company. These impacts would outweigh the resulting benefits of aligning the two accesses.

Build Alternative D

Build Alternative "D" consists of adding a new signal to Alternative C. Based on redistributed existing volumes, the signal would not be warranted.

Recommendations

The signal warrant analysis concluded that Signals are not warranted at either intersection under existing or proposed conditions for any alternative. See Attachment 3. All intersections perform at acceptable Level of Service under existing and projected conditions. See Attachment 4. There are high delays on east and west approaches that can be alleviated with the addition of turning lanes. Crash analysis was performed on the area for a 5-year period between 2016 and 2020. There does not appear to be a correlation between pavement condition and roadway lighting condition with any one type of crash. See Attachment 5.

P-C analyzed four alternative geometries and recommends Alternative B. A concept of the alternative was presented to the County along with a discussion of pros and cons. The alternative features the removal of the traffic signal and provides turning movement channelization to improve safety and operations. The concept of the alternative is attached. See Attachment 2. The widening accommodating added channelization was asymmetrical to the north to avoid potential wetlands along the south parkway. The results of a wetland identification and delineation study may require adjustments to the conceptual geometry.

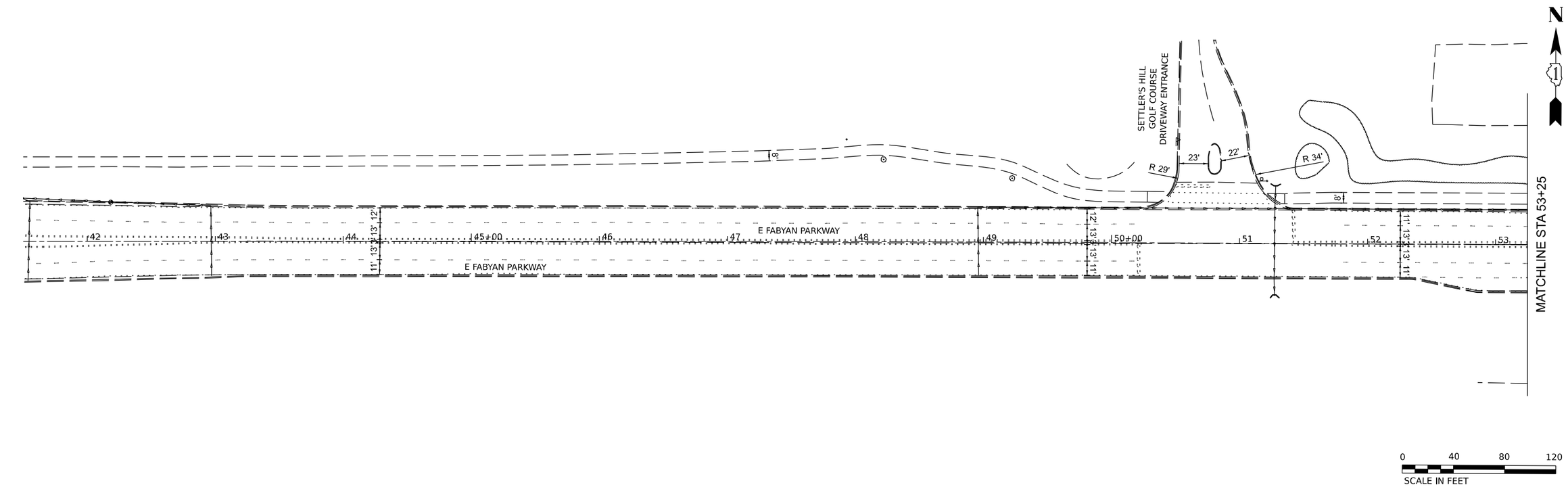
An engineer's opinion of probable cost of construction was developed for Alternative B. This cost does not include right of way acquisition, permit fees, storm water management modifications, nor engineering costs. The cost is $762,015.50. See Attachment 6.

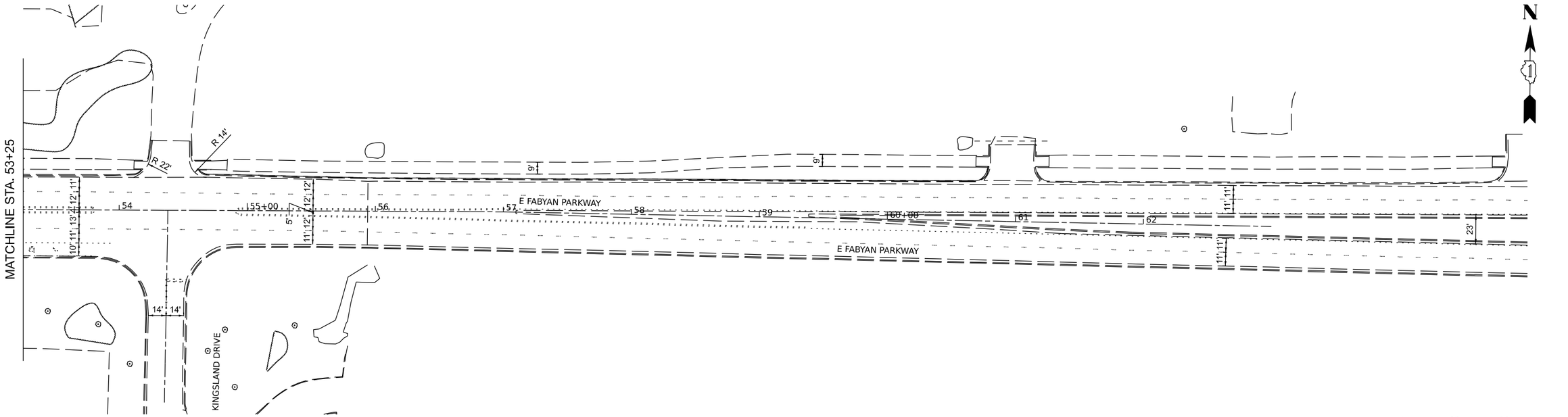
Next Steps

Since a feasible option is selected as part of this study process, potential environmental impacts must be evaluated in the following steps. Key issues would include the following:

- Wetland impacts
- Right of way acquisition investigation
- Traffic signal removal
- Storm water management modifications
- Section 6f processing
- Adherence to clear zone guidelines
- ADA accommodations for the relocated multi-use path

ATTACHMENT 1: Existing Conditions





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Peralte-Clark LLC

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	DRAWN -	REVISED -
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PLOT DATE = $DATE$	DATE -	REVISED -

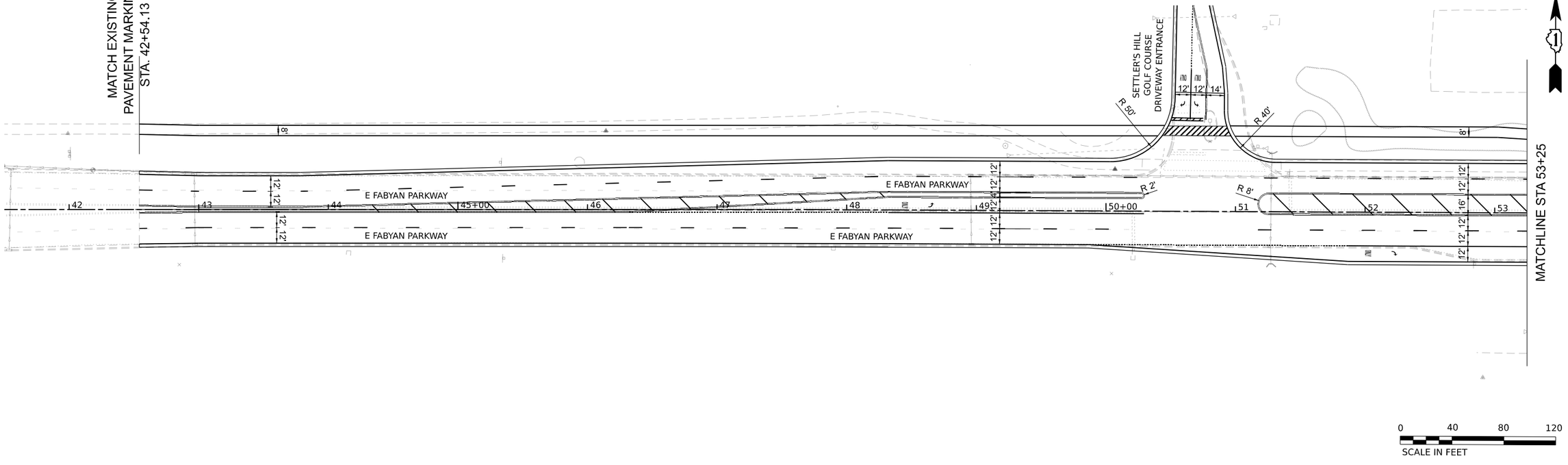
KANE COUNTY
DIVISION OF TRANSPORTATION

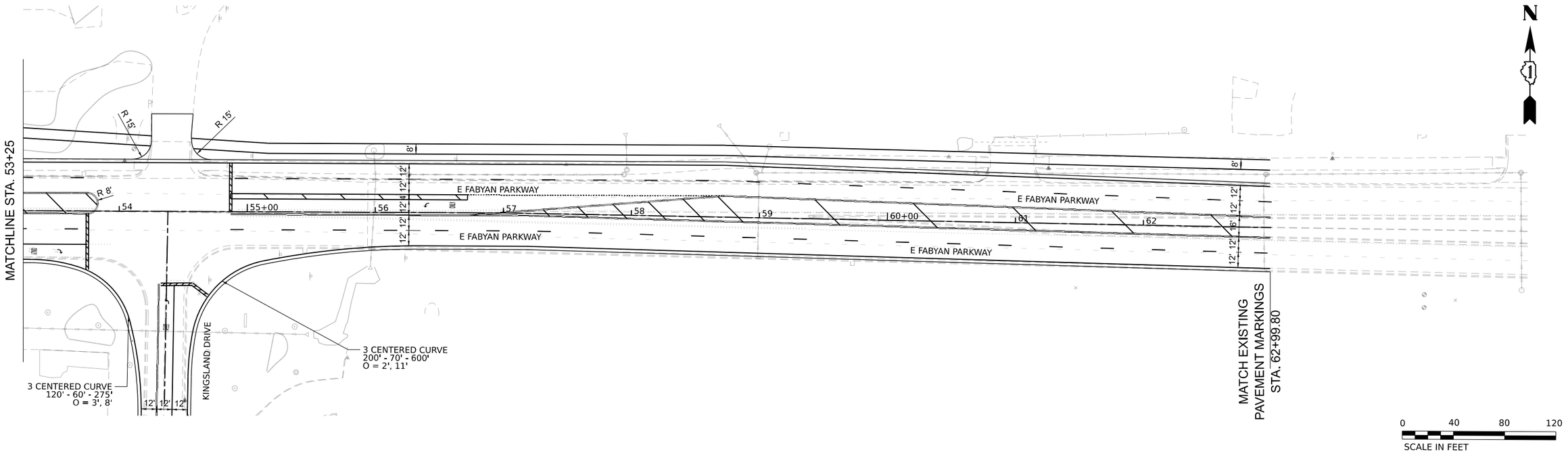
FABYAN PARKWAY
EXISTING GEOMETRY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		KANE		
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		

ATTACHMENT 2: Proposed Geometric Concept





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Peralte-Clark LLC

USER NAME = Shrija.Ayyarsamy	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 80.000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 6/1/2022	DATE -	REVISED -	

KANE COUNTY
DIVISION OF TRANSPORTATION

FABYAN PARKWAY
CONCEPT GEOMETRY

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		KANE		
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		

ATTACHMENT 3: Signal Warrants Analysis

Peralte-Clark LLC

Signal Warrants Analysis

- Settler's Hill
  - Not warranted
  - Minor street volumes very low during peak hours (less than 20)
  - 5 accidents in 5 years through 2020 (Most severe: Minor injury (B))
- Kingsland Drive
  - Not warranted
  - Warrant 1 met for 2 hours
  - 10 accidents in 5 years through 2020 (Most severe: Minor injury (B))
- Proposed Combined Intersection
  - Not Warranted
  - Minor street adjusted volume less than 80
  - 15 accidents in 5 years through 2020

STATE OF ILLINOIS
KANE COUNTY
DISTRICT #1, BUREAU OF TRAFFIC

SUMMARY OF TRAFFIC SURVEY

INTERSECTION: **Settler's Hill Golf Course Driveway and E Fabyan Parkway**
MUNICIPALITY: **Batavia, IL**
COUNTY: **Kane**

	TRAFFIC FROM NORTH				TRAFFIC FROM SOUTH					TRAFFIC FROM EAST				TRAFFIC FROM WEST					
ROUTE :	Settler's Hill Golf Course ☐ SRA				N.A. ☐ SRA					E Fabyan Parkway ☑ SRA				E Fabyan Parkway ☑ SRA					
	N. OF : E Fabyan Parkway GOING				S. OF : N.A. GOING					E. OF : Settler's Hill Golf Course GOING				W. OF : Settler's Hill Golf Course GOING					
START HOUR	EAST	SOUTH	WEST	TOTAL	WEST	NORTH	EAST	TOTAL	TOTAL NORTH AND SOUTH	SOUTH	WEST	NORTH	TOTAL	NORTH	EAST	SOUTH	TOTAL	TOTAL EAST AND WEST	GRAND TOTAL
6:00	5	0	12	**17**	0	0	0	**0**	17	0	343	5	**348**	14	817	0	**831**	1179	**1196**
7:00	3	0	5	**8**	0	0	0	**0**	8	0	561	9	**570**	17	986	0	**1003**	1573	**1581**
8:00	8	0	10	**17**	0	0	0	**0**	17	0	549	7	**556**	10	702	0	**712**	1268	**1285**
9:00	8	0	11	**19**	0	0	0	**0**	19	0	491	9	**500**	8	534	0	**542**	1042	**1061**
10:00	9	0	11	**19**	0	0	0	**0**	19	0	465	8	**473**	10	458	0	**468**	941	**960**
11:00	10	0	9	**19**	0	0	0	**0**	19	0	545	10	**555**	10	495	0	**505**	1060	**1079**
12:00	9	0	12	**21**	0	0	0	**0**	21	0	586	11	**597**	8	501	0	**509**	1106	**1127**
13:00	9	0	10	**18**	0	0	0	**0**	18	0	590	12	**602**	11	580	0	**591**	1193	**1211**
14:00	10	0	11	**21**	0	0	0	**0**	21	0	739	11	**750**	7	645	0	**652**	1403	**1424**
15:00	11	0	8	**19**	0	0	0	**0**	19	0	1071	10	**1081**	6	626	0	**632**	1713	**1732**
16:00	11	0	15	**26**	0	0	0	**0**	26	0	1103	10	**1113**	19	595	0	**614**	1727	**1753**
17:00	12	0	7	**18**	0	0	0	**0**	18	0	972	10	**982**	7	599	0	**606**	1588	**1606**
18:00	10	0	8	**18**	0	0	0	**0**	18	0	594	10	**604**	6	409	0	**415**	1020	**1038**
19:00	10	0	7	**17**	0	0	0	**0**	17	0	396	9	**405**	7	296	0	**303**	708	**725**
20:00	10	0	7	**17**	0	0	0	**0**	17	0	284	9	**293**	6	193	0	**199**	493	**510**
21:00	10	0	7	**17**	0	0	0	**0**	17	0	228	9	**237**	7	174	0	**181**	418	**435**

Trip Hourly distribution is even except for Peak hours whose Trip gen nos are different.

REVIEW INFORMATION

COUNTS USED: QUALITY COUNTS
COUNT DATE(S): 03.29.202 - AM 03.29.202 - PM
DATE REVIEWED: 04.29.2022
REVIEWED BY: Shrija Ayyarsamy

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC

DISTRICT #1

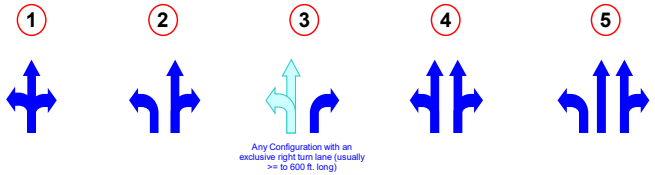
RIGHT TURN FACTORIZATION SHEET

INTERSECTION: **Settler's Hill Golf Course Driveway @ E Fabyan Parkway**

MUNICIPALITY: **Batavia, IL** COUNTY: **Kane**

DIR	HOUR BEGIN	MINOR STREET STREET N Settler's Hill Golf CONFIG. #: 3 VOLUMES L LEFT	T THROUGH	R RIGHT	A TOTAL	CRITICAL MAINLINE APPROACH VOLUME PER LANE	BASE RIGHT TURN REDUCTION %	MAINLINE CONGESTION FACTOR %	ADJUSTED RIGHT TURN REDUCTION %	ADJUSTED RIGHT TURNS	ADJUSTED MINOR STREET VOLUMES
	6:00	5	0	12	**17**	172	75%	0%	75%	3	**8**
	7:00	3	0	5	**8**	281	75%	0%	75%	1	**4**
	8:00	8	0	10	**17**	275	75%	0%	75%	3	**10**
	9:00	8	0	11	**19**	246	75%	0%	75%	3	**11**
	10:00	9	0	11	**19**	233	75%	0%	75%	3	**11**
	11:00	10	0	9	**19**	273	75%	0%	75%	2	**12**
	12:00	9	0	12	**21**	293	75%	0%	75%	3	**12**
	13:00	9	0	10	**18**	295	75%	0%	75%	3	**11**
	14:00	10	0	11	**21**	370	75%	0%	75%	3	**13**
	15:00	11	0	8	**19**	536	75%	10%	65%	3	**14**
	16:00	11	0	15	**26**	552	75%	10%	65%	5	**16**
	17:00	12	0	7	**18**	486	75%	5%	70%	2	**13**
	18:00	10	0	8	**18**	297	75%	0%	75%	2	**12**
	19:00	10	0	7	**17**	198	75%	0%	75%	1	**11**
	20:00	10	0	7	**17**	142	75%	0%	75%	2	**12**
	21:00	10	0	7	**17**	114	75%	0%	75%	1	**19**

Lane Configurations



LEFT	THROUGH	RIGHT	TOTAL (A)	.7A	.35A	3T	T/3	(T+L)	(T+R)	3R	3L	T/2	T/4	BASE REDUCTION
5.111	0	12	17	12	6	0	0	5	12	37	15	0	0	75%
2.538	0	5	8	6	3	0	0	3	5	16	8	0	0	75%
7.586	0	10	17	12	6	0	0	8	10	29	23	0	0	75%
8.28	0	11	19	14	7	0	0	8	11	33	25	0	0	75%
8.708	0	11	19	14	7	0	0	9	11	32	26	0	0	75%
10.06	0	9	19	14	7	0	0	10	9	28	30	0	0	75%
9.319	0	12	21	15	7	0	0	9	12	36	28	0	0	75%
8.717	0	10	18	13	6	0	0	9	10	29	26	0	0	75%
10.23	0	11	21	15	7	0	0	10	11	33	31	0	0	75%
10.91	0	8	19	14	7	0	0	11	8	25	33	0	0	75%
10.7	0	15	26	18	9	0	0	11	15	46	32	0	0	75%
11.69	0	7	18	13	6	0	0	12	7	20	35	0	0	75%
10.24	0	8	18	13	6	0	0	10	8	24	31	0	0	75%
9.892	0	7	17	12	6	0	0	10	7	22	30	0	0	75%
10.29	0	7	17	12	6	0	0	10	7	21	31	0	0	75%
9.804	0	7	17	12	6	0	0	10	7	22	29	0	0	75%

MAINLINE CONGESTION FACTORS	
VOLUMES	FACTOR (%)
0-399	0
400-499	5
500-599	10
600-699	15
700-799	20
800-899	25
900-999	30
1000-1099	35
1100-1199	40
1200-1299	45
1300-1399	50
1400-1499	55

REVIEW INFORMATION

COUNTS USED: QUALITY COUNTS

COUNT DATE(S): 03.29.2022

DATE REVIEWED: 04.29.2022

REVIEWED BY: Shrija Ayyarsamy

SIGNAL WARRANT REVIEW SHEET

DISTRICT #1

ILLINOIS DEPARTMENT OF TRANSPORTATION

SRA : **Fabyan Parkway**

Yes / No

Intersection: **Settler's Hill** County: **Kane**

Municipality: **Batavia, Illinois**

Speed Limit of Major Route: **45 mph**

Number of Lanes on Major approach: **2**

Isolated Community with Population < 10,000: **N**

Number of Lanes on Minor approach: **2**

HOUR BEGIN	Major Street Volume *(both approaches)*	Adj. Minor Street Volume *(higher volume approach)*	CHECK ANY HOURS WHICH MEET THE FOLLOWING WARRANTS				
			WARRANT 1		WARRANT 7: 8 hrs of one of the Following:		
			A 100%	B 100%	80% of A	80% of B	80% of Warr #4
6:00	1179	8					
7:00	1573	4					
8:00	1268	10					
9:00	1042	11					
10:00	941	11					
11:00	1060	12					
12:00	1106	12					
13:00	1193	11					
14:00	1403	13					
15:00	1713	14					
16:00	1727	16					
17:00	1588	13					
18:00	1020	12					
19:00	708	11					
20:00	493	12					
21:00	418	19					
Hours Met :			0 Hours	0 Hours	0 Hours	0 Hours	
Volume Requirements:	MAJOR:		600	900	480	720	
	MINOR:		200	150	160	120	

Increased Condition B Minor | Increased Condition B Minor Street Vol

WARRANT 1 Yes / No

Warrant 1 is met if any of the following Conditions are met:

- Condition A — MINIMUM VEHICULAR VOLUME — Yes / No
- Condition B — INTERRUPTION OF CONTINUOUS TRAFFIC — Yes / No

NOT APPLICABLE (SRA)

- 0 hours — Yes / No
- Yes / No
- Yes / No — PEAK-HOUR VOLUME

WARRANT 4 PEDESTRIAN VOLUME — Yes / No

WARRANT 5 SCHOOL CROSSING — Yes / No

WARRANT 6 COORDINATED SIGNAL SYSTEM — Yes / No

WARRANT 7 ACCIDENT EXPERIENCE — Yes / No

Review Information

Counts Used : QUALITY COUNTS

Count Date(s) : 03.29.2022

Date Reviewed : 04.29.2022

Reviewed By : Shrija Ayyarsamy

YEAR:	2016	2017	2018	2019	2020
TOTAL NUMBER OF ACCIDENTS:	2	3			
NUMBER CORRECTABLE ACCIDENTS:	0	0			
TRIED LESS RESTRICTIVE METHODS?			No		
ARE VOLUME REQUIREMENTS MET?			No		

WARRANT 8 ROADWAY NETWORK — Yes / No

Comments

WARRANT 9 Intersection Near a Grade Crossing — Yes / No

STOP OR YIELD CONTROLLED LEG WITH GRADE CROSSING: NORTH

D (clear storage distance) =

	#	%	Adj. Factor
RAIL TRAFFIC PER DAY =			
HIGH OCCUPANCY BUSSES PER HOUR =			
TRUCKS PER HOUR =			

OVERALL ADJUSTMENT FACTOR =

STATE OF ILLINOIS
KANE COUNTY
DISTRICT #1, BUREAU OF TRAFFIC

SUMMARY OF TRAFFIC SURVEY

INTERSECTION: **Kingsland Dr @ E Fabyan Parkway**
MUNICIPALITY: **Batavia, IL**
COUNTY: **Kane**

	TRAFFIC FROM NORTH				TRAFFIC FROM SOUTH					TRAFFIC FROM EAST				TRAFFIC FROM WEST					
ROUTE :	Kingsland Dr ☐ SRA				Kingsland Drive ☐ SRA					E Fabyan Parkway ☑ SRA				E Fabyan Parkway ☑ SRA					
	N. OF : E Fabyan Parkway GOING				S. OF : E Fabyan Parkway GOING					E. OF : Kingsland Drive GOING				W. OF : Kingsland Drive GOING					
START HOUR	EAST	SOUTH	WEST	TOTAL	WEST	NORTH	EAST	TOTAL	TOTAL NORTH AND SOUTH	SOUTH	WEST	NORTH	TOTAL	NORTH	EAST	SOUTH	TOTAL	TOTAL EAST AND WEST	GRAND TOTAL
6:00	4	2	1	**7**	7	1	18	**26**	33	45	334	20	**399**	3	763	53	**819**	1218	**1251**
7:00	3	0	0	**3**	13	0	18	**31**	34	43	550	0	**593**	1	927	60	**988**	1581	**1615**
8:00	1	0	1	**2**	13	0	19	**32**	34	28	540	2	**570**	0	675	29	**704**	1274	**1308**
9:00	5	0	1	**6**	13	0	28	**41**	47	21	479	1	**501**	2	507	25	**534**	1035	**1082**
10:00	3	0	0	**3**	13	0	17	**30**	33	11	459	2	**472**	1	450	8	**459**	931	**964**
11:00	2	0	0	**2**	35	0	31	**66**	68	23	510	3	**536**	3	481	24	**508**	1044	**1112**
12:00	0	0	2	**2**	36	0	68	**104**	106	31	551	2	**584**	0	497	41	**538**	1122	**1228**
13:00	3	0	0	**3**	22	0	34	**56**	59	25	568	5	**598**	2	549	31	**582**	1180	**1239**
14:00	0	0	1	**1**	38	0	103	**141**	142	36	699	0	**735**	1	619	29	**649**	1384	**1526**
15:00	3	0	0	**3**	42	0	96	**138**	141	17	1031	8	**1056**	1	604	18	**623**	1679	**1820**
16:00	10	0	5	**15**	43	0	81	**124**	139	9	1063	1	**1073**	0	595	6	**601**	1674	**1813**
17:00	2	1	0	**3**	16	0	56	**72**	75	15	958	0	**973**	0	587	11	**598**	1571	**1646**
18:00	0	0	0	**0**	7	0	21	**28**	28	6	586	0	**592**	0	405	5	**410**	1002	**1030**
19:00	0	0	0	**0**	10	0	9	**19**	19	4	386	0	**390**	0	287	6	**293**	683	**702**
20:00	0	0	0	**0**	7	0	6	**13**	13	1	276	0	**277**	0	188	3	**191**	468	**481**
21:00	0	0	0	**0**	4	0	3	**7**	7	1	224	0	**225**	0	171	1	**172**	397	**404**

Note 1

REVIEW INFORMATION

COUNTS USED: QUALITY COUNTS
COUNT DATE(S): 03.29.202 - AM 03.29.202 - PM
DATE REVIEWED: 04.29.2022
REVIEWED BY: Shrija Ayyarsamy

Note 1 Minor Leg - High Volume Approach

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC

DISTRICT #1

RIGHT TURN FACTORIZATION SHEET

INTERSECTION: **Kingsland Drive @ E Fabyan Parkway**

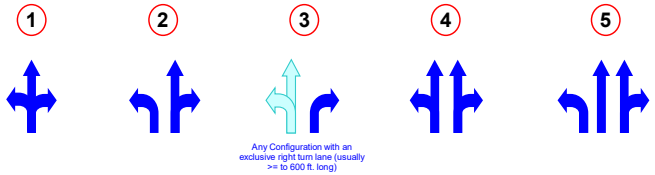
MUNICIPALITY: **Batavia, IL** COUNTY: **Kane County**

DIR	HOUR BEGIN	MINOR STREET STREET N Kingsland Drive CONFIG. #: 1 VOLUMES L LEFT	T THROUGH	R RIGHT	A TOTAL	CRITICAL MAINLINE APPROACH VOLUME PER LANE	BASE RIGHT TURN REDUCTION %	MAINLINE CONGESTION FACTOR %	ADJUSTED RIGHT TURN REDUCTION %	ADJUSTED RIGHT TURNS	ADJUSTED MINOR STREET VOLUMES
	6:00	7	1	18	**26**	382	40%	0%	40%	11	**19**
	7:00	13	0	18	**31**	464	40%	0%	40%	11	**24**
	8:00	13	0	19	**32**	338	40%	0%	40%	11	**24**
	9:00	13	0	28	**41**	254	40%	0%	40%	17	**30**
	10:00	13	0	17	**30**	225	40%	0%	40%	10	**23**
	11:00	35	0	31	**66**	241	40%	0%	40%	19	**54**
	12:00	36	0	68	**104**	249	40%	0%	40%	41	**77**
	13:00	22	0	34	**56**	275	40%	0%	40%	20	**42**
	14:00	38	0	103	**141**	310	60%	0%	60%	41	**79**
	15:00	42	0	96	**138**	302	40%	10%	30%	67	**109**
	16:00	43	0	81	**124**	298	40%	10%	30%	57	**100**
	17:00	16	0	56	**72**	294	60%	5%	55%	25	**41**
	18:00	7	0	21	**28**	203	60%	0%	60%	8	**15**
	19:00	10	0	9	**19**	144	40%	0%	40%	5	**15**
	20:00	7	0	6	**13**	94	40%	0%	40%	4	**11**
	21:00	4	0	3	**7**	86	40%	0%	40%	2	**6**

Note 2 Note 1

West Leg i Base reduction factor based On Lane configuration 1

Lane Configurations



LEFT	THROUGH	RIGHT	TOTAL (A)	.7A	.35A	3T	T/3	(T+L)	(T+R)	3R	3L	T/2	T/4	BASE REDUCTION
7	1	18	26	18	9	3	0	8	19	54	21	1	0	40%
13	0	18	31	22	11	0	0	13	18	54	39	0	0	40%
13	0	19	32	22	11	0	0	13	19	57	39	0	0	40%
13	0	28	41	29	14	0	0	13	28	84	39	0	0	40%
13	0	17	30	21	11	0	0	13	17	51	39	0	0	40%
35	0	31	66	46	23	0	0	35	31	93	105	0	0	40%
36	0	68	104	73	36	0	0	36	68	204	108	0	0	40%
22	0	34	56	39	20	0	0	22	34	102	66	0	0	40%
38	0	103	141	99	49	0	0	38	103	309	114	0	0	60%
42	0	96	138	97	48	0	0	42	96	288	126	0	0	40%
43	0	81	124	87	43	0	0	43	81	243	129	0	0	40%
16	0	56	72	50	25	0	0	16	56	168	48	0	0	60%
7	0	21	28	20	10	0	0	7	21	63	21	0	0	60%
10	0	9	19	13	7	0	0	10	9	27	30	0	0	40%
7	0	6	13	9	5	0	0	7	6	18	21	0	0	40%
4	0	3	7	5	2	0	0	4	3	9	12	0	0	40%

MAINLINE CONGESTION FACTORS	
VOLUMES	FACTOR (%)
0-399	0
400-499	5
500-599	10
600-699	15
700-799	20
800-899	25
900-999	30
1000-1099	35
1100-1199	40
1200-1299	45
1300-1399	50
1400-1499	55

REVIEW INFORMATION

COUNTS USED: QUALITY COUNTS

COUNT DATE(S): 03.29.2022

DATE REVIEWED: 04.29.2022

REVIEWED BY: Shrija Ayyarsamy

Note 3

able for Mainline cong

R RIGHT	A TOTAL	R/A	Base Right Turn reduction	
18	**26**	0.69	0.4	
18	**31**	0.58	0.4	
19	**32**	0.59	0.4	
28	**41**	0.68	0.4	
17	**30**	0.57	0.4	
31	**66**	0.47	0.4	
68	**104**	0.65	0.4	
34	**56**	0.61	0.4	
103	**141**	0.73	0.6	
96	**138**	0.70	0.4	
81	**124**	0.65	0.4	
56	**72**	0.78	0.6	
21	**28**	0.75	0.6	
9	**19**	0.47	0.4	
6	**13**	0.46	0.4	
3	**7**	0.43	0.4	

NOT On

the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

SIGNAL WARRANT REVIEW SHEET

DISTRICT #1

ILLINOIS DEPARTMENT OF TRANSPORTATION

SRA : **E Fabyan Pakrway**

Yes No

Intersection: **Kingsland Drive @ E Fabyan Parkway** County: **Kane County**

Municipality: **Batavia, IL**

Speed Limit of Major Route **45 mph** Isolated Community with Population < 10,000 **N**

Number of Lanes on Major approach **2** Number of Lanes on Minor approach **1**

HOUR BEGIN	Major Street Volume *(both approaches)*	Adj. Minor Street Volume *(higher volume approach)*	CHECK ANY HOURS WHICH MEET THE FOLLOWING WARRANTS				
			WARRANT 1		WARRANT 7: 8 hrs of one of the Following:		
			A 100%	B 100%	80% of A	80% of B	80% of Warr #4
6:00	1218	19					
7:00	1581	24					
8:00	1274	24					
9:00	1035	30					
10:00	931	23					
11:00	1044	54					
12:00	1122	77					
13:00	1180	42					
14:00	1384	79					
15:00	1679	109		X		X	
16:00	1674	100		X		X	
17:00	1571	41					
18:00	1002	15					
19:00	683	15					
20:00	468	11					
21:00	397	6					

Hours Met :		0 Hours	2 Hours	0 Hours	2 Hours	
Volume Requirements:	MAJOR:	600	900	480	720	
	MINOR:	150	100	120	80	
			Increased Minor Street Volu	Increased Minor Street Volume		

WARRANT 1 Yes No

Warrant 1 is met if any of the following Conditions are met:

- Condition A — MINIMUM VEHICULAR VOLUME — Yes No
- Condition B — INTERRUPTION OF CONTINUOUS TRAFFIC — Yes No

NOT APPLICABLE (SRA)

- 0 hours — Yes No
- Yes No
- PEAK-HOUR VOLUME — Yes No

WARRANT 4 PEDESTRIAN VOLUME — Yes No

WARRANT 5 SCHOOL CROSSING — Yes No

WARRANT 6 COORDINATED SIGNAL SYSTEM — Yes No

WARRANT 7 ACCIDENT EXPERIENCE — Yes No

YEAR:	2016	2017	2018	2019	2020
TOTAL NUMBER OF ACCIDENTS:	1	3	3	1	2
NUMBER CORRECTABLE ACCIDENTS:	0	1	0	0	0
TRIED LESS RESTRICTIVE METHODS?			No		
ARE VOLUME REQUIREMENTS MET?			No		

WARRANT 8 ROADWAY NETWORK — Yes No

WARRANT 9 Intersection Near a Grade Crossing — Yes No

STOP OR YIELD CONTROLLED LEG WITH GRADE CROSSING: NORTH

D (clear storage distance) =

	#	%	Adj. Factor
RAIL TRAFFIC PER DAY =			
HIGH OCCUPANCY BUSSES PER HOUR =			
TRUCKS PER HOUR =			

OVERALL ADJUSTMENT FACTOR =

Review Information

Counts Used : QUALITY COUNTS

Count Date(s) : 03.29.2022

Date Reviewed : 04.29.2022

Reviewed By : Shrija Ayyarsamy

Comments

STATE OF ILLINOIS
KANE COUNTY
DISTRICT #1, BUREAU OF TRAFFIC

SUMMARY OF TRAFFIC SURVEY

INTERSECTION: **Kingsland Dr @ E Fabyan Parkway**
MUNICIPALITY: **Batavia, IL**
COUNTY: **Kane**

	TRAFFIC FROM NORTH				TRAFFIC FROM SOUTH					TRAFFIC FROM EAST				TRAFFIC FROM WEST					
ROUTE :	Kingsland Dr_Combined ☐ SRA				Kingsland Dr_Combined ☐ SRA					E Fabyan Parkway ☑ SRA				E Fabyan Parkway ☑ SRA					
	N. OF : E Fabyan Parkway GOING				S. OF : E Fabyan Parkway GOING					E. OF : Kingsland Drive GOING				W. OF : Kingsland Drive GOING					
START HOUR	EAST →	SOUTH ↓	WEST ←	TOTAL	WEST ←	NORTH ↑	EAST →	TOTAL	TOTAL NORTH AND SOUTH	SOUTH ↓	WEST ←	NORTH ↑	TOTAL	NORTH ↑	EAST →	SOUTH ↓	TOTAL	TOTAL EAST AND WEST	GRAND TOTAL
6:00	9	2	13	**24**	7	1	18	**26**	50	45	334	25	**404**	17	763	53	**833**	1237	**1287**
7:00	6	0	5	**11**	13	0	18	**31**	42	43	550	9	**602**	18	927	60	**1005**	1607	**1649**
8:00	9	0	11	**20**	13	0	19	**32**	52	28	540	9	**577**	10	675	29	**714**	1291	**1343**
9:00	13	0	12	**25**	13	0	28	**41**	66	21	479	10	**510**	10	507	25	**542**	1052	**1118**
10:00	12	0	11	**23**	13	0	17	**30**	53	11	459	10	**480**	11	450	8	**469**	949	**1002**
11:00	12	0	9	**21**	35	0	31	**66**	87	23	510	13	**546**	13	481	24	**518**	1064	**1151**
12:00	9	0	14	**23**	36	0	68	**104**	127	31	551	13	**595**	8	497	41	**546**	1141	**1268**
13:00	12	0	10	**22**	22	0	34	**56**	78	25	568	17	**610**	13	549	31	**593**	1203	**1281**
14:00	10	0	12	**22**	38	0	103	**141**	163	36	699	11	**746**	8	619	29	**656**	1403	**1566**
15:00	14	0	8	**22**	42	0	96	**138**	160	17	1031	18	**1066**	7	604	18	**629**	1695	**1855**
16:00	21	0	20	**41**	43	0	81	**124**	165	9	1063	11	**1083**	19	595	6	**620**	1703	**1868**
17:00	14	1	7	**22**	16	0	56	**72**	94	15	958	10	**983**	7	587	11	**605**	1588	**1682**
18:00	10	0	8	**18**	7	0	21	**28**	46	6	586	10	**602**	6	405	5	**416**	1019	**1065**
19:00	10	0	7	**17**	10	0	9	**19**	36	4	386	9	**399**	7	287	6	**300**	699	**735**
20:00	10	0	7	**17**	7	0	6	**13**	30	1	276	9	**286**	6	188	3	**197**	484	**514**
21:00	10	0	7	**17**	4	0	3	**7**	24	1	224	9	**234**	7	171	1	**179**	413	**437**
	Combined Volumes		Combined Volumes									Combined Volumes		Combined Volumes					
			Note 1																

REVIEW INFORMATION

COUNTS USED: QUALITY COUNTS
COUNT DATE(S): 03.29.202 - AM 03.29.202 - PM
DATE REVIEWED: 04.29.2022
REVIEWED BY: Shrija Ayyarsamy

Note 1 Minor Leg - High Volume Approach
Note 2 20 and 21 North Leg is the minor leg
Note 3 Combined volumes indicate that Settler's & Kingsland's Turning Movements have been combined

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC

DISTRICT #1

RIGHT TURN FACTORIZATION SHEET

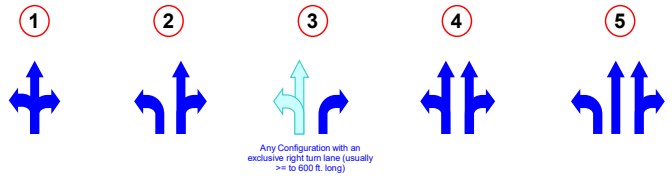
INTERSECTION: **Kingsland Drive_Combined @ E Fabyan Parkway**

MUNICIPALITY: **Batavia, IL** COUNTY: **Kane County**

DIR	HOUR BEGIN	MINOR STREET STREET N Kingsland Drive_(CONFIG. #: 2 VOLUMES L LEFT	T THROUGH	R RIGHT	A TOTAL	CRITICAL MAINLINE APPROACH VOLUME PER LANE	BASE RIGHT TURN REDUCTION %	MAINLINE CONGESTION FACTOR %	ADJUSTED RIGHT TURN REDUCTION %	ADJUSTED RIGHT TURNS	ADJUSTED MINOR STREET VOLUMES
	6:00	7	1	18	**26**	382	60%	0%	60%	7	**15**
	7:00	13	0	18	**31**	464	60%	5%	55%	8	**21**
	8:00	13	0	19	**32**	338	60%	0%	60%	8	**21**
	9:00	13	0	28	**41**	254	60%	0%	60%	11	**24**
	10:00	13	0	17	**30**	225	60%	0%	60%	7	**20**
	11:00	35	0	31	**66**	241	60%	0%	60%	12	**47**
	12:00	36	0	68	**104**	249	60%	0%	60%	27	**63**
	13:00	22	0	34	**56**	275	60%	0%	60%	14	**36**
	14:00	38	0	103	**141**	310	60%	0%	60%	41	**79**
	15:00	42	0	96	**138**	302	60%	0%	60%	38	**80**
	16:00	43	0	81	**124**	298	60%	0%	60%	32	**75**
	17:00	16	0	56	**72**	294	60%	0%	60%	22	**38**
	18:00	7	0	21	**28**	203	60%	0%	60%	8	**15**
	19:00	10	0	9	**19**	144	60%	0%	60%	4	**14**
	20:00	10	0	7	**17**	138	60%	0%	60%	3	**13**
	21:00	10	0	7	**17**	112	60%	0%	60%	3	**13**

Note 1
Base reduction factor based On Lane configuration 2

Lane Configurations



LEFT	THROUGH	RIGHT	TOTAL (A)	.7A	.35A	3T	T/3	(T+L)	(T+R)	3R	3L	T/2	T/4	BASE REDUCTION
7	1	18	26	18	9	3	0	8	19	54	21	1	0	60%
13	0	18	31	22	11	0	0	13	18	54	39	0	0	60%
13	0	19	32	22	11	0	0	13	19	57	39	0	0	60%
13	0	28	41	29	14	0	0	13	28	84	39	0	0	60%
13	0	17	30	21	11	0	0	13	17	51	39	0	0	60%
35	0	31	66	46	23	0	0	35	31	93	105	0	0	60%
36	0	68	104	73	36	0	0	36	68	204	108	0	0	60%
22	0	34	56	39	20	0	0	22	34	102	66	0	0	60%
38	0	103	141	99	49	0	0	38	103	309	114	0	0	60%
42	0	96	138	97	48	0	0	42	96	288	126	0	0	60%
43	0	81	124	87	43	0	0	43	81	243	129	0	0	60%
16	0	56	72	50	25	0	0	16	56	168	48	0	0	60%
7	0	21	28	20	10	0	0	7	21	63	21	0	0	60%
10	0	9	19	13	7	0	0	10	9	27	30	0	0	60%
10	0	7	17	12	6	0	0	10	7	21	30	0	0	60%
10	0	7	17	12	6	0	0	10	7	21	30	0	0	60%

MAINLINE CONGESTION FACTORS	
VOLUMES	FACTOR (%)
0-399	0
400-499	5
500-599	10
600-699	15
700-799	20
800-899	25
900-999	30
1000-1099	35
1100-1199	40
1200-1299	45
1300-1399	50
1400-1499	55

REVIEW INFORMATION

COUNTS USED: QUALITY COUNTS

COUNT DATE(S): 03.29.2022

DATE REVIEWED: 04.29.2022

REVIEWED BY: Shrija Ayyarsamy

NOT On
the minor street, the higher volume shall not be required to be on the same approach during each of
these 8 hours.

SIGNAL WARRANT REVIEW SHEET

DISTRICT #1

ILLINOIS DEPARTMENT OF TRANSPORTATION

SRA : **E Fabyan Pakrway**

Yes No

Intersection: **Kingsland Drive @ E Fabyan Parkway** County: **Kane County**

Municipality: **Batavia, IL**

Speed Limit of Major Route **45 mph** Isolated Community with Population < 10,000 **N**

Number of Lanes on Major approach **2** Number of Lanes on Minor approach **2**

HOUR BEGIN	Major Street Volume *(both approaches)*	Adj. Minor Street Volume *(higher volume approach)*	CHECK ANY HOURS WHICH MEET THE FOLLOWING WARRANTS				
			WARRANT 1		WARRANT 7: 8 hrs of one of the Following:		
			A 100%	B 100%	80% of A	80% of B	80% of Warr #4
6:00	1237	15					
7:00	1607	21					
8:00	1291	21					
9:00	1052	24					
10:00	949	20					
11:00	1064	47					
12:00	1141	63					
13:00	1203	36					
14:00	1403	79					
15:00	1695	80					
16:00	1703	75					
17:00	1588	38					
18:00	1019	15					
19:00	699	14					
20:00	484	13					
21:00	413	13					

Hours Met :		0 Hours	0 Hours	0 Hours	1 Hours	
Volume Requirements:	MAJOR:	600	900	480	720	
	MINOR:	200	150	160	120	
			Increased Volume		Increased Volume	

WARRANT 1 Yes No

Warrant 1 is met if any of the following Conditions are met:

- Condition A — MINIMUM VEHICULAR VOLUME — Yes **No**
- Condition B — INTERRUPTION OF CONTINUOUS TRAFFIC — Yes **No**

NOT APPLICABLE (SRA)

- 0 hours — Yes No
- Yes No
- PEAK-HOUR VOLUME — Yes No

WARRANT 4 PEDESTRIAN VOLUME — Yes **No**

WARRANT 5 SCHOOL CROSSING — Yes **No**

WARRANT 6 COORDINATED SIGNAL SYSTEM — Yes **No**

WARRANT 7 ACCIDENT EXPERIENCE — Yes **No**

YEAR:	2016	2017	2018	2019	2020
TOTAL NUMBER OF ACCIDENTS:	3	6	3	1	2
NUMBER CORRECTABLE ACCIDENTS:	0	1	0	0	0

TRIED LESS RESTRICTIVE METHODS? No

ARE VOLUME REQUIREMENTS MET? es Yes (Accident Vol Requirement

WARRANT 8 ROADWAY NETWORK — Yes **No**

WARRANT 9 Intersection Near a Grade Crossing — Yes **No**

STOP OR YIELD CONTROLLED LEG WITH GRADE CROSSING: NORTH

D (clear storage distance) =

	#	%	Adj. Factor
RAIL TRAFFIC PER DAY =			
HIGH OCCUPANCY BUSSES PER HOUR =			
TRUCKS PER HOUR =			

OVERALL ADJUSTMENT FACTOR =

Review Information

Counts Used : QUALITY COUNTS

Count Date(s) : 03.29.2022

Date Reviewed : 04.29.2022

Reviewed By : Shrija Ayyarsamy

Comments

ATTACHMENT 4: HCS Reports

HCS Results Summary

- Kingsland (Existing Geometry) - seconds (approach delay)

Peak Period	NB TWSC	SB TWSC
AM Existing	43	70
AM 2050	376	337
PM Existing	34	50
PM 2050	383	249

- Kingsland (Alternative "B") - seconds (approach delay)

Peak Period	NB TWSC	SB TWSC
AM Existing	43	78
AM 2050	197	280
PM Existing	26	51
PM 2050	113	207

- Settler's Hill (Existing Conditions) - seconds (approach delay)

Peak Period	SB Signalized
AM Existing	62
AM 2050	62
PM Existing	58
PM 2050	58

- Settler's Hill (Alternative "B") - seconds (approach delay)

Peak Period	SB TWSC
AM Existing	15
AM 2050	21
PM Existing	36
PM 2050	108

- Combined intersection Worst Delays under proposed conditions (Overall Intersection and EW approaches are B or better) - seconds (approach delay)

Peak Period	NB TWSC	NB Signalized	SB TWSC	SB Signalized
AM Existing	47	82	47	69
AM 2050	237	94	180	68
PM Existing	27	61	79	51
PM 2050	135	60	526	50

HCS7 Two-Way Stop-Control Report

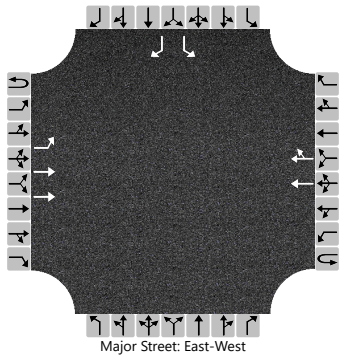
General Information

Analyst	Shrija Ayyarsamy
Agency/Co.	Peralte-Clark, LLC
Date Performed	6/2/2022
Analysis Year	2022
Time Analyzed	AM 2022_Proposed Geometry
Intersection Orientation	East-West
Project Description	Settler's and Kingsland Feasibility Study

Site Information

Intersection	Batavia, Illinois
Jurisdiction	Kane County
East/West Street	E Fabyan Parkway
North/South Street	Settler's Hill Driveway
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	17	986				561	9						2		5
Percent Heavy Vehicles (%)	0	5												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.20												6.80		6.90
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.25												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20												2		6
Capacity, c (veh/h)		908												163		674
v/c Ratio		0.02												0.01		0.01
95% Queue Length, Q_{95} (veh)		0.1												0.0		0.0
Control Delay (s/veh)		9.1												27.5		10.4
Level of Service (LOS)		A												D		B
Approach Delay (s/veh)	0.2												15.3			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

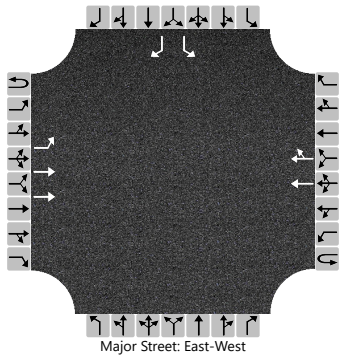
General Information

Analyst	Shrija Ayyarsamy
Agency/Co.	Peralte-Clark, LLC
Date Performed	6/2/2022
Analysis Year	2050
Time Analyzed	AM 2050_Proposed Geometry
Intersection Orientation	East-West
Project Description	Settler's and Kingsland Feasibility Study

Site Information

Intersection	Batavia, Illinois
Jurisdiction	Kane County
East/West Street	E Fabyan Parkway
North/South Street	Settler's Hill Driveway
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	23	1341				764	12						2		6
Percent Heavy Vehicles (%)	0	5												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.20												6.80		6.90
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.25												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		26												2		7
Capacity, c (veh/h)		737												81		565
v/c Ratio		0.04												0.03		0.01
95% Queue Length, Q_{95} (veh)		0.1												0.1		0.0
Control Delay (s/veh)		10.1												50.9		11.4
Level of Service (LOS)		B												F		B
Approach Delay (s/veh)	0.2												21.3			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

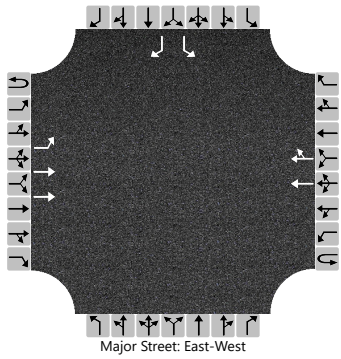
General Information

Analyst	Shrija Ayyarsamy
Agency/Co.	Peralte-Clark, LLC
Date Performed	6/2/2022
Analysis Year	2022
Time Analyzed	PM 2022_Proposed Geometry
Intersection Orientation	East-West
Project Description	Settler's and Kingsland Feasibility Study

Site Information

Intersection	Batavia, Illinois
Jurisdiction	Kane County
East/West Street	E Fabyan Parkway
North/South Street	Settler's Hill Driveway
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	11	630				1123	18						19		6
Percent Heavy Vehicles (%)	0	6												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.22												6.80		6.90
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.26												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11												19		6
Capacity, c (veh/h)		572												113		461
v/c Ratio		0.02												0.17		0.01
95% Queue Length, Q_{95} (veh)		0.1												0.6		0.0
Control Delay (s/veh)		11.4												43.4		12.9
Level of Service (LOS)		B												E		B
Approach Delay (s/veh)	0.2												36.1			
Approach LOS													E			

HCS7 Two-Way Stop-Control Report

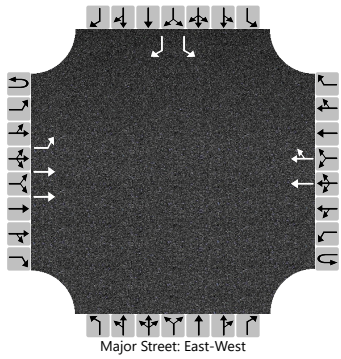
General Information

Analyst	Shrija Ayyarsamy
Agency/Co.	Peralte-Clark, LLC
Date Performed	6/2/2022
Analysis Year	2050
Time Analyzed	PM 2050_Proposed Geometry
Intersection Orientation	East-West
Project Description	Settler's and Kingsland Feasibility Study

Site Information

Intersection	Batavia, Illinois
Jurisdiction	Kane County
East/West Street	E Fabyan Parkway
North/South Street	Settler's Hill Driveway
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	15	857				1529	24						23		7
Percent Heavy Vehicles (%)	0	6												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.22												6.80		6.90
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.26												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		15												23		7
Capacity, c (veh/h)		391												48		336
v/c Ratio		0.04												0.49		0.02
95% Queue Length, Q_{95} (veh)		0.1												1.8		0.1
Control Delay (s/veh)		14.6												136.6		15.9
Level of Service (LOS)		B												F		C
Approach Delay (s/veh)	0.3												108.5			
Approach LOS													F			

HCS7 Two-Way Stop-Control Report

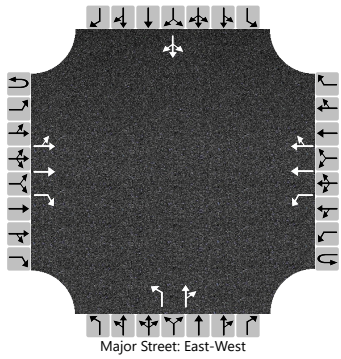
General Information

Analyst	Shrija Ayyarsamy
Agency/Co.	Peralte-Clark, LLC
Date Performed	4/28/2022
Analysis Year	2022
Time Analyzed	AM 2022_Proposed Geometry
Intersection Orientation	East-West
Project Description	Settler's and Kingsland Feasibility Study

Site Information

Intersection	Batavia, Illinois
Jurisdiction	Kane County
East/West Street	E Fabyan Parkway
North/South Street	Kingsland Drive
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	1	0		0	1	0
Configuration		LT	T	R		L	T	TR		L		TR			LTR	
Volume (veh/h)		1	927	60	0	43	550	0		13	0	18		3	0	0
Percent Heavy Vehicles (%)		0			3	28				38	0	67		100	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		Undivided														

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				4.66				8.26	6.50	8.24		9.50	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				2.48				3.88	4.00	3.97		4.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				48				15		20			3	
Capacity, c (veh/h)		972				494				61		362			52	
v/c Ratio		0.00				0.10				0.24		0.06			0.06	
95% Queue Length, Q_{95} (veh)		0.0				0.3				0.8		0.2			0.2	
Control Delay (s/veh)		8.7				13.1				81.9		15.5			78.5	
Level of Service (LOS)		A				B				F		C			F	
Approach Delay (s/veh)		0.0				0.9				43.4				78.5		
Approach LOS										E				F		

HCS7 Two-Way Stop-Control Report

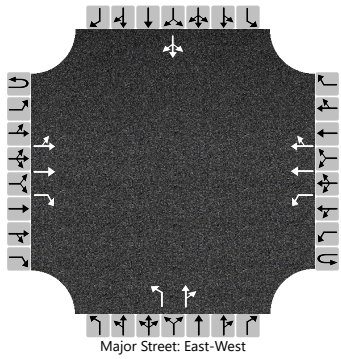
General Information

Analyst	Shrija Ayyarsamy
Agency/Co.	Peralte-Clark, LLC
Date Performed	4/28/2022
Analysis Year	2050
Time Analyzed	AM 2050_Proposed Geometry
Intersection Orientation	East-West
Project Description	Settler's and Kingsland Feasibility Study

Site Information

Intersection	Batavia, Illinois
Jurisdiction	Kane County
East/West Street	E Fabyan Parkway
North/South Street	Kingsland Drive
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	1	0		0	1	0
Configuration		LT	T	R		L	T	TR		L		TR			LTR	
Volume (veh/h)		1	1258	81	0	59	751	0		17	0	23		4	0	0
Percent Heavy Vehicles (%)		0			3	28				38	0	67		100	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		Undivided														

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				4.66				8.26	6.50	8.24		9.50	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				2.48				3.88	4.00	3.97		4.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				66				19		26			4	
Capacity, c (veh/h)		801				333				21		259			17	
v/c Ratio		0.00				0.20				0.93		0.10			0.26	
95% Queue Length, Q_{95} (veh)		0.0				0.7				2.6		0.3			0.7	
Control Delay (s/veh)		9.5				18.5				436.4		20.4			279.8	
Level of Service (LOS)		A				C				F		C			F	
Approach Delay (s/veh)		0.0				1.3				197.2				279.8		
Approach LOS										F				F		

HCS7 Two-Way Stop-Control Report

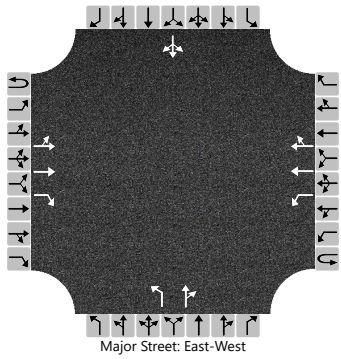
General Information

Analyst	Shrija Ayyarsamy
Agency/Co.	Peralte-Clark, LLC
Date Performed	4/28/2022
Analysis Year	2022
Time Analyzed	PM 2022_Proposed Geometry
Intersection Orientation	East-West
Project Description	Settler's and Kingsland Feasibility Study

Site Information

Intersection	Batavia, Illinois
Jurisdiction	Kane County
East/West Street	E Fabyan Parkway
North/South Street	Kingsland Drive
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	1	0		0	1	0
Configuration		LT	T	R		L	T	TR		L		TR			LTR	
Volume (veh/h)		0	619	14	0	13	1060	8		46	0	97		9	0	4
Percent Heavy Vehicles (%)		0			3	31				2	0	10		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		Undivided														

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				4.72				7.54	6.50	7.10		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				2.51				3.52	4.00	3.40		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				14				50		105			14	
Capacity, c (veh/h)		609				733				120		637			92	
v/c Ratio		0.00				0.02				0.42		0.17			0.15	
95% Queue Length, Q_{95} (veh)		0.0				0.1				1.8		0.6			0.5	
Control Delay (s/veh)		10.9				10.0				54.8		11.8			50.9	
Level of Service (LOS)		B				B				F		B			F	
Approach Delay (s/veh)		0.0				0.1				25.6				50.9		
Approach LOS										D				F		

HCS7 Two-Way Stop-Control Report

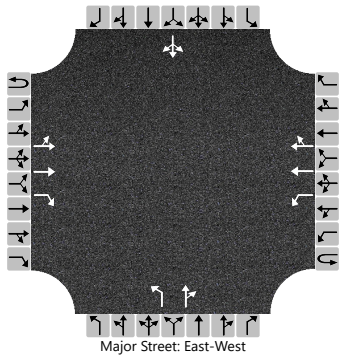
General Information

Analyst	Shrija Ayyarsamy
Agency/Co.	Peralte-Clark, LLC
Date Performed	4/28/2022
Analysis Year	2050
Time Analyzed	PM 2050_Proposed Geometry
Intersection Orientation	East-West
Project Description	Settler's and Kingsland Feasibility Study

Site Information

Intersection	Batavia, Illinois
Jurisdiction	Kane County
East/West Street	E Fabyan Parkway
North/South Street	Kingsland Drive
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		1	1	0		0	1	0
Configuration		LT	T	R		L	T	TR		L		TR			LTR	
Volume (veh/h)		0	840	19	0	18	1447	11		60	0	127		11	0	5
Percent Heavy Vehicles (%)		0			3	31				2	0	10		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		Undivided														

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				4.72				7.54	6.50	7.10		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				2.51				3.52	4.00	3.40		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				20				65		138			17	
Capacity, c (veh/h)		420				574				53		530			32	
v/c Ratio		0.00				0.03				1.22		0.26			0.54	
95% Queue Length, Q_{95} (veh)		0.0				0.1				5.7		1.0			1.8	
Control Delay (s/veh)		13.6				11.5				321.9		14.2			207.2	
Level of Service (LOS)		B				B				F		B			F	
Approach Delay (s/veh)		0.0				0.1				112.9				207.2		
Approach LOS										F				F		

ATTACHMENT 5: Accident Analysis

Accident Analysis

A total of 15 crashes were identified as occurring along the Fabyan Parkway corridor at/between its intersections with Settler's Hill Golf Course entrance and Kingsland Drive. The study limits were between 2016 and 2020.

- 15 crashes with minor injuries or less
- 8 rear ends
- 3 sideswipe
- Potential Cause: Lack of left turning lanes

CRASH ANALYSIS REPORT

Settler's Hill and Kingsland Drive Feasibility Study

Fabyan Parkway, Settler's Hill Golf Course Entrance to Kingsland Drive

Prepared For:

KDOT
KANE COUNTY DIVISION OF TRANSPORTATION

41W011 Burlington Rd,
Campton Hills, IL 60175

Prepared By:

Peralte-Clark LLC

44 S Vail Ave, Suite #201
Arlington Heights, IL 60005

June 2022

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LIST OF ATTACHMENTS

A. KABC Crash Data Tables

- Settler's Hill Golf Course Entrance
- Kingsland Drive Intersection

Introduction

The Kane County Division of Transportation (KDOT) has initiated a feasibility study of improvement needs on Fabyan Parkway at the intersections with the Settlers Hill Golf Course Entrance and Kingsland Drive. A key element of the feasibility study is to evaluate crash history and assess the overall safety of the intersections under study. The study limits extend from west of Settler's Hill Drive to east of Kingsland Drive. **The purpose of this crash analysis report is to evaluate existing crash data, identify patterns and potential causes, and to provide recommendations for roadway improvements which might lead to a reduction in crash frequency and/or severity.**

See figure below, for study limits:

Evaluating historical data is a three-step process: 1) Data Collection, 2) Data Processing, and 3) Data Analysis. The process is described below, and the results of the analysis are included in the subsequent sections of this report.

Data Collection

Crash reports from the state and local police were obtained by the Kane County Division of Transportation. These included data for the years 2016 through 2020.

Data Processing

The crash data is summarized by various categories: location of crash (intersection or segment), crash type, and severity of crashes. Crashes are also analyzed by roadway surface condition, weather condition, roadway lighting condition, and by date and time the crashes occurred. This provides an indication if the roadway surface, weather, lighting conditions and/or time and day of occurrence are contributing factors to the crashes being experienced.

Data Analysis

Each intersection was evaluated by analyzing crash patterns (number, type, and severity). A high concentration of certain crash types at a particular location is typically an indication of a common cause or reason. Crash severity, type and location are key indicators in the evaluation of current safety conditions of the corridor. Analysis of the data was performed to determine probable causes for the crashes recorded at the intersections. The geometric layout of the roadway, traffic conditions, and other site conditions were used to develop the probable causes of crashes and ultimately assist in development of potential safety improvements.

Injury Severity Descriptions

Crashes are categorized at five severity levels: Type K (Fatal), Type A (Incapacitating), Type B (Non-Incapacitating), Type C (Reported, Injury not Evident), and Property Damage Only (PDO). A brief description of each of the crash severity types is provided below:

- **Type K (Fatal)** – A crash that involves at least one person who dies within 30 days of the crash.
- **Type A (Incapacitating Injury)** – A crash that involves any injury, other than fatal, that prevents the injured person from walking, driving, or normally continuing the activities he/she was capable of performing before the injury occurred. Inclusions: severe lacerations, broken/distorted limbs, skull injuries, chest injuries and abdominal injuries.
- **Type B (Non-Incapacitating Injury)** – A crash that involves any injury, other than a fatal or incapacitating injury, that is evident to observers at the scene of the crash. Inclusions: lumps on the head, abrasions, bruises, and minor lacerations.
- **Type C (Reported, Injury not Evident)** – A crash that involves any injury reported or claimed that is not listed above and that is not evident to observers at the scene of the crash. Inclusions: momentary unconsciousness, claims of injuries not evident, limping, and complains of pain or nausea.
- **Property Damage Only (PDO)** – A crash that involves no injuries or fatalities, but damage is caused to either vehicle and the costs of the damage is assessed to be greater than $1500.

Crash Analysis Summary

A total of 15 crashes were identified as occurring along the Fabyan Parkway corridor at/between its intersections with Settler's Hill Golf Course Entrance and Kingsland Drive.

Crash Frequency

A total of 15 crashes occurred within the study limits between 2016 and 2020. A review of the frequency of crashes by year indicates a slight increase in the year 2017 over other years (2016 and 2018-2020) in the data set. Specific cause of this increase for the peak in 2017 is unknown. Of the total 15 crashes, 6 (40.0%) crashes were reported as injury crashes, resulting in injuries of varying degrees of severity. There were no fatalities recorded during the study period. The following table summarizes the five-year data set by year for total crashes and injury crashes.

Total Crash Data, Years (2016 – 2020)									
Year	Total Crashes		Injury Crashes		Number of Injuries by Type				
	Total	Frequency	Total	Frequency	K	A	B	C	Total
2016	3	20.0%	1	16.7%	--	--	--	1	1
2017	6	40.0%	4	66.6%	--	--	3	1	4
2018	3	20.0%	1	16.7%	--	--	--	1	1
2019	1	6.7%	0	0.0%	--	--	--	--	--
2020	2	13.3%	0	0.0%	--	--	--	--	--
Total	**15**	**100.0%**	**6**	**N/A**	**0**	**0**	**3**	**3**	**6**

Crash Type Distribution

The following table describes the distribution of the total 15 crashes within the study limits by crash type. The most common crash types were rear end (53.3%) and sideswipe same direction (20.0%). Probable causes of these types of crashes include deceleration of turning vehicles, over speeding, and lane changing. Other crash types in the data set include turning (13.3%) and fixed object and animal crashes (6.7% each).

Total Crash Data, Distributed by Type								
Crash Type	Total Crashes		Number of Injuries by Crash Type					
	Total	Frequency	K	A	B	C	Total	Frequency
Animal	1	6.7%	--	--	--	--	--	0.0%
Fixed Object	1	6.7%	--	--	--	--	--	0.0%
Turning	2	13.3%	--	--	2	--	2	13.3%
Rear End	8	53.3%	--	--	1	3	4	66.7%
Sideswipe Same Direction	3	20.0%	--	--	--	--	--	0.0%
Total	**15**	**100.0%**	**0**	**0**	**3**	**3**	**6**	**100.0%**

Crash Severity

Six (6) crashes (40.0%) involved injuries. These injury crashes resulted in a total of 6 injuries of varying severity. There were no fatalities (Type K) or Incapacitating injury (Type A) crashes during the study period. The following table shows the total number of injuries recorded by crash type.

Number of Injuries by Crash Type		
Crash Type	**Number of Injuries by Type**	
	Total	**Frequency**
Turning	2	13.3%
Rear End	4	66.7%
Total	**6**	**100.0%**

Of the 6 injuries recorded, 4 (66.7%) were the result of rear end collisions and 2 (13.3%) were the result of turning collisions. The severity of crashes was distributed as: 3 (50.0%) Type B, and 3 (50.0%) Type C injuries. The remaining crash reports were identified as either no damage or property damage only and not included as part of the injury severity analysis.

Roadway Surface Condition Analysis

The table to the right summarizes the distribution of crashes by roadway surface condition. As shown, 86.7% of all crashes occurred on a dry roadway surface, with 13.3% of crashes occurring on wet, snowy, slushy, or icy pavement conditions. The general findings of this crash analysis suggest that wet pavement was not a significant cause of crashes within the study area. These percentages do not indicate any particular deficiency in drainage or skid resistance.

Total Crashes, Distributed by Roadway Condition		
Roadway Condition	**Total Crashes**	
	Total	**Frequency**
Wet Pavement	2	13.3%
Snow/Slush/Ice	--	0.0%
Dry Pavement	13	86.7%
Unknown	--	0.0%
Totals	**15**	**100.0%**

Roadway Lighting Condition Analysis

The table to the right summarizes the distribution of crashes by lighting condition. Over the study period, over 90% of all crashes occurred in daylight or during dawn/dusk, which indicates that lack of street lighting did not contribute to a significant occurrence of crashes.

Total Crashes, Distributed by Lighting Condition		
Lighting Condition	**Total Crashes**	
	Total	**Frequency**
Darkness	1	6.7%
Darkness, Lighted Road	--	0.0%
Dawn/Dusk	8	53.3%
Daylight	6	40.0%
Unknown	--	0.0%
Totals	**15**	**100.0%**

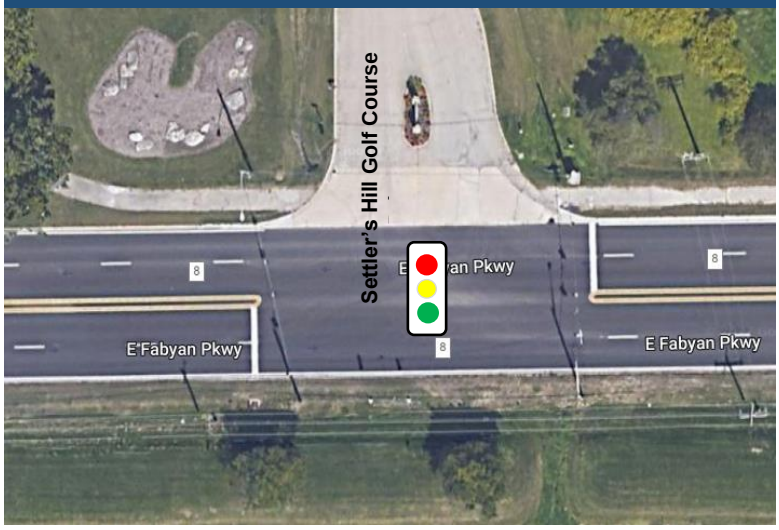
Time of Day Analysis

The table to the right summarizes the distribution of crashes by the time of day at the time of the crash. Morning hours (4:00 - 7:59 am) resulted in the highest distribution of crashes, followed by the Noon - 3:59 pm time frame. It is noted that only one (1) crash occurred between 8:00 pm and 4:00 am, which indicates that evening hours are not a significant concern. The higher distribution in the morning hours is indicative of morning rush hour / peak hour traffic expected.

Total Crashes, Distributed by Time of Day		
Lighting Condition	**Total Crashes**	
	Total	**Frequency**
Midnight - 3:59 am	1	6.7%
4:00 - 7:59 am	5	33.3%
8:00 - 11:59 am	2	13.3%
Noon - 3:59 pm	4	26.7%
4:00 - 7:59 pm	3	20.0%
8:00 - 11:59 pm	--	0.0%
Totals	**15**	**100.0%**

Settler's Hill Golf Course Entrance

E Fabyan Parkway at Settler's Hill Golf Course Entrance



The intersection of Fabyan Parkway at Settler's Hill Golf Course has a temporary traffic signal. At this T intersection, the north leg includes an unmarked 25-foot lane which functions as exclusive left and right turn lanes. The east and west legs are comprised of two through lanes. There are no excusive left and right turn lanes. The lanes are 12 feet wide.

There are no pedestrian accomodations at this intersection. There is a multi-use bike path located at the northern quadrants of the intersection.

Street lighting is limited to the intersection footprint with no approach lighting. The adjacent land use is primarily recreational (golf course), industrial and commercial.

Data Summary

A total of five (5) crashes occurred at the Fabyan Parkway and Settler's Hill Golf Course entrance during the study period, representing 33.3% of the total 15 crashes within the study limits. Of the 5 crashes, 3 (60.0%) were categorized as rear end crashes and 1 (20.0% each) as turning crashes and fixed object crashes. Three (3) injuries were reported at this intersection and were distributed as two Type B, and one Type C.

All five of the recorded crashes occurred on dry pavement. A total of 2 crashes were reported as having occurred under darkness and dawn/dusk, while the remaining 3 crashes occurred during daylight.

Crash Data Summary, Fabyan Parkway at Settler's Hill Golf Course Entrance

Crash Type	Total Crashes		Number of Injuries by Type					
	Total	Frequency	K	A	B	C	Total	Frequency
Fixed Object	1	20.0%	--	--	--	--	--	0.0%
Turning	1	20.0%	--	--	1	--	1	33.3%
Rear End	3	60.0%	--	--	1	1	2	66.7%
Total	**5**	**100.0%**	**0**	**0**	**2**	**1**	**3**	**100.0%**

Data Analysis

At 60%, rear end was the most common type of crash recorded at this intersection. The fixed object crash occurred when a yellow utility pole was hit. The turning crash occurred when a vehicle waiting to turn westbound left collided with an eastbound vehicle on red. Rear end crashes occurred due to a failure to reduce speed to avoid crashes and distracted driving. There does not appear to be a correlation between pavement condition and the occurrence of any one type of crash as all crashes occurred on dry pavement. The same is true of roadway lighting conditions where 60.0% of crashes occurred during clear, daylight hours.

Fabyan Parkway at Kingsland Drive Intersection

Fabyan Parkway at Kingsland Drive

The intersection of Fabyan Parkway at Kingsland Drive is a two-way stop-controlled intersection. The north and south approaches, which are stop-controlled, are one lane each with, shared left, through and right turns. The west approach has two through lanes and an exclusive right tun lane. The east approach has two through lanes.

There are no pedestrian accommodations at this intersection. Street lighting is limited to a single lamp on an existing utility pole in the southwest quadrant. The adjacent land use is industrial and commercial with access points at the southeast, and southwest quadrants of this intersection.

Data Summary

A total of ten (10) crashes occurred at this intersection during the study period, representing 66.6% of the total 15 crashes within the study limits. Of the 10 crashes, 5 (50.0%) were categorized as rear end crashes, 3 (30.0%) were sideswipe same direction crashes, the remaining 2 (10.0%) were turning and animal crashes each. Three injuries were reported at this intersection, two (2) were categorized as Type C injuries and the remaining crash was classified as Type B.

Of the 10 crashes, 2 crashes were reported as having occurred when the pavement was wet. Three crashes occurred during the day, while the remaining seven (7) crashes occurred during dawn/dusk. No crash occurred during night.

Crash Data Summary, Fabyan Parkway at Kingsland Drive Intersection								
Crash Type	Total Crashes		Number of Injuries by Type					
	Total	Frequency	K	A	B	C	Total	Frequency
Animal	1	10.0%	--	--	--	--	0	0.0%
Turning	1	10.0%	--	--	1	--	1	33.3%
Read End	5	50.0%	--	--	--	2	2	66.7%
Sideswipe Same Direction	3	30.0%	--	--	--	--	0	0.0.%
Total	**10**	**100.0%**	**0**	**0**	**1**	**2**	**3**	**100.0%**

Data Analysis

At a combined 80.0%, rear-end and sideswipe same direction were the most common type of crashes recorded at this intersection. The remaining crash types recorded at this intersection (turning and animal) were determined to be negligible. Application of sudden brakes and failure to reduce speed were the primary reasons for the high incidence of rear-end crashes. Review of the crash information also shows that frequent lane shifts to avoid turning vehicles contributes to the sideswipe same direction crashes.

Seven of ten crashes occurred during low light conditions (dawn/dusk) which indicates a lack of visibility. Eight of ten crashes occurred on dry pavement, which indicates weather conditions did not contribute significantly to crashes recorded.

Potential Actions

Based on trends observed within the study limits, the following potential actions are recommended:

- Consider exclusive left turn lanes
- Consider roadway lighting or traffic signal adjustments to improve visibility, such as LED lamps or reflective backplates
- Consider consolidating into one access point

Project Name: Settler's and Kingsland Feasibility Study

Crash Data from (2016 TO 2020)

Crash Data Location: Fabyan Parkway @ Settler's Hill Golf Course Entrance

Crash Type	2016					2017					2018					2019					2020					Totals					
	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	% Crashes	# K fat.	# A inj.	# B inj.	# C inj.
Pedestrian																										0	0.0%	0	0	0	0
Pedalcyclist																										0	0.0%	0	0	0	0
Train																										0	0.0%	0	0	0	0
Animal																										0	0.0%	0	0	0	0
Overturned																										0	0.0%	0	0	0	0
Fixed Object						1																				1	20.0%	0	0	0	0
Other Object																										0	0.0%	0	0	0	0
Other Noncollision																										0	0.0%	0	0	0	0
Parked Motor Vehicle																										0	0.0%	0	0	0	0
Turning						1			1																	1	20.0%	0	0	1	0
Rear End	2				1	1			1																	3	60.0%	0	0	1	1
Sideswipe Same Direction																										0	0.0%	0	0	0	0
Sideswipe Opposite Direction																										0	0.0%	0	0	0	0
Head On																										0	0.0%	0	0	0	0
Angle																										0	0.0%	0	0	0	0
Other																										0	0.0%	0	0	0	0
Total	**2**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**100.0%**	**0**	**0**	**2**	**1**

# Crashes w/Injuries	2016	2017	2018	2019	2020	Total
# Crashes with K fatalities						0
# Crashes with A injuries						0
# Crashes with B injuries		2				2
# Crashes with C injuries	1					1
Totals	1	2	0	0	0	**3**

Note: Crashes documenting multiple types of injuries are counted only once and in the more serious injury category.

Time of Crash	2016	2017	2018	2019	2020	Total
Darkness		1				**1**
Darkness, Lighted Road						**0**
Dawn/Dusk		1				**1**
Daylight	2	1				**3**
Unknown						**0**
Totals	2	3	0	0	0	**5**

Roadway Condition	2016	2017	2018	2019	2020	Total
# Crashes with wet pavement						**0**
# Crashes with snow/slush/ice						**0**
# Crashes with dry pavement	2	3				**5**
# Unknown Condition						**0**
Totals	2	3	0	0	0	5

Time of Day	2016	2017	2018	2019	2020	Total
Midnight - 3:59 am		1				1
4:00 - 7:59 am						0
8:00 - 11:59 am	2					2
Noon - 3:59 pm		1				1
4:00 - 7:59 pm		1				1
8:00 - 11:59 pm						0
Totals	2	3	0	0	0	**5**

Data Summary: Crash Data from (2016 TO 2020)

Project: Project Name: Settler's and Kingsland Feasibility Study

Limits: Crash Data Location: Fabyan Parkway @ Settler's Hill Golf Course Entrance

County: Kane County

P Number:

Project Name: Settler's and Kingsland Feasibility Study
Crash Data from (2016 TO 2020)
Crash Data Location: Fabyan Parkway @ Kingsland Drive

Crash Type	2016					2017					2018					2019					2020					Totals					
	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	# K fat.	# A inj.	# B inj.	# C inj.	# Crashes	% Crashes	# K fat.	# A inj.	# B inj.	# C inj.
Pedestrian																										0	0.0%	0	0	0	0
Pedalcyclist																										0	0.0%	0	0	0	0
Train																										0	0.0%	0	0	0	0
Animal											1															1	10.0%	0	0	0	0
Overturned																										0	0.0%	0	0	0	0
Fixed Object																										0	0.0%	0	0	0	0
Other Object																										0	0.0%	0	0	0	0
Other Noncollision																										0	0.0%	0	0	0	0
Parked Motor Vehicle																										0	0.0%	0	0	0	0
Turning						1			1																	1	10.0%	0	0	1	0
Rear End	1					1				1	1				1	1					1					5	50.0%	0	0	0	2
Sideswipe Same Direction						1					1										1					3	30.0%	0	0	0	0
Sideswipe Opposite Direction																										0	0.0%	0	0	0	0
Head On																										0	0.0%	0	0	0	0
Angle																										0	0.0%	0	0	0	0
Other																										0	0.0%	0	0	0	0
Total	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**1**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**10**	**100.0%**	**0**	**0**	**1**	**2**

# Crashes w/Injuries	2016	2017	2018	2019	2020	Total
# Crashes with K fatalities						0
# Crashes with A injuries						0
# Crashes with B injuries		1				1
# Crashes with C injuries		1	1			2
Totals	0	2	1	0	0	**3**

Note: Crashes documenting multiple types of injuries are counted only once and in the more serious injury category.

Time of Day	2016	2017	2018	2019	2020	Total
Midnight - 3:59 am						0
4:00 - 7:59 am	1	1	1	1	1	5
8:00 - 11:59 am						0
Noon - 3:59 pm		1	1		1	3
4:00 - 7:59 pm		1	1			2
8:00 - 11:59 pm						0
Totals	1	3	3	1	2	**10**

Time of Crash	2016	2017	2018	2019	2020	Total
Darkness						**0**
Darkness, Lighted Road						**0**
Dawn/Dusk	1	2	2	1	1	**7**
Daylight		1	1		1	**3**
Unknown						**0**
Totals	1	3	3	1	2	**10**

Roadway Condition	2016	2017	2018	2019	2020	Total
# Crashes with wet pavement			2			**2**
# Crashes with snow/slush/ice						**0**
# Crashes with dry pavement	1	3	1	1	2	**8**
# Unknown Condition						**0**
Totals	1	3	3	1	2	10

Data Summary: Crash Data from (2016 TO 2020)
Project: Project Name: Settler's and Kingsland Feasibility Study
Limits: Crash Data Location: Fabyan Parkway @ Kingsland Drive
County: Kane County
P Number:

ATTACHMENT 6: Estimate of Probable Cost

Kane County Division of Transportation

Settler's Hill and Kingsland Drive Feasibility Study

Engineer's Opinion of Probable Cost - Alternative B
Pavement Widening and Resurfacing Improvement

A)	**Surface Maintenance and Capacity Improvements**	UNIT COST		ESTIMATED QUANTITY		Overall Cost	Assumptions
1)	HMA Binder (1.5")	$100.00	Tons	256	Tons	$25,600.00	The HMA Binder is assumed to be 1.5" thick and used **ONLY** for construction over the proposed pavement surface area widening.
2)	Concrete Base Course (6")	$46.50	Square Yard	3,046	Square Yard	$141,639.00	The PCC Concrete Base course is assumed to be 6" thick and used for **ONLY** construction over the proposed pavement surface area widening.
3)	Surface Course (1.5")	$103.00	Tons	1,434	Tons	$147,702.00	The Surface Course is assumed to be 1.5" thick and used for construction over the entirety of proposed pavement surface area.
4)	Aggregate Subbase (6")	$9.00	Square Yard	4,436	Square Yard	$39,924.00	The Aggregate Subbase is assumed to be 6" thick and used **ONLY** for construction over the proposed pavement surface area widening.
5)	Milling (1.5")	$9.00	Square Yard	14,021	Square Yard	$126,189.00	The Surface Course Milling is assumed to be 1.5" thick and used for construction over the entirety of existing pavement surface area.
6)	Combination Concrete Concrete Curb and Gutter B-6.24	$30.00	Foot	4841.818	Foot	$145,254.54	Source of Unit Cost flexure flow website
7)	Combination Curb and Gutter Removal	$7.50	Foot	4841.818	Foot	$36,313.64	The Combination Curb and Gutter Removal Quantity is assumed to be the same as the proposed Concrete Concrete Curb and Gutter Quantity for this high level cost estimate
					Construction Cost Estimate	**$662,622.18**	
					Contingency 15%	**$99,393.33**	15% Contingency is assumed based on the design being a conceptual design
					Finall Construction Cost	**$762,015.50**	

Note 1: The driveway and approach pavement widening surfaces are assumed to be constructed out of the same materials (base, subbase, aggregates etc.)

Peralte-Clark LLC