APPENDIX F

Traffic Analysis

Technical Memo

To: Taylor Koutropoulos, ENV SP
From: Sandeep Das, Traffic Project Manager
Date: 12/8/2023
Re: SYR Land Release Traffic Analysis

Existing Conditions

The proposed land release site is served by a network of county, state, and interstate roadways. The principal roadways in this network are:

- Colonel Eileen Collins Blvd (CR 78)
- South Bay Rd (CR 208)
- State Route NY 936
- I-81

Access to the proposed site is provided primarily via Colonel Eileen Collins Blvd, which is also the existing access roadway for the Syracuse Hancock International Airport. On the City/County/Regional level, access to the proposed site will be primarily via Interstate I-90 & Interstate I-81 which has On and Off Ramps to Col. Eileen Collins Blvd via State Route 936. On the local level, access is also provided via South Bay Rd which connects directly to Col. Eileen Collins Blvd at a Signalized Intersection.

Roadway Network

Col Eileen Collins Blvd (CR 78) is an east-west 4-lane divided minor arterial with two travel lanes in each direction separated by a 20'-30' wide grassy median. The eastern end of the roadway starts to the west of Columbia Ln in the Central Terminal Area of the Syracuse Hancock International Airport. The western end of the roadway intersects with South Bay Road (CR 208). The roadway widens at key intersections to provide a turn lanes. This road provides convenient access between the site and the regional and interstate transportation network. The posted speed limit on Col Eileen Collins Blvd is 45 mph, the 50th percentile speed is 47 mph and the 85th percentile speed is 53 mph. There are no sidewalks or separated bike lanes. Heavy vehicles comprise 4% of the AADT on this roadway.

South Bay Rd (CR 208) is a north-south minor arterial with two travel lanes in each direction, but also features additional auxiliary lanes for turning movements at the major intersections and ramps. This roadway merges with US 11/Brewerton Rd 0.5 miles south of the intersection with Col Eileen Collins Blvd. The northern stretch of the roadway connects to the Town of Cicero and the Oneida Lake. This roadway also connects E Taft Rd, a principal arterial on the north to the proposed site. The posted speed limit is 40 mph, the 50th percentile speed is 47 mph and the 85th percentile speed is 53mph. There are no sidewalks or separated bike lanes. Heavy vehicles comprise 4% of the AADT on this roadway.

There is one Interstate highway in the study area: I-81 which provides direct connection to Col Eileen Collins Blvd at Interchange 27, a partial cloverleaf interchange. This interchange is about 0.4 miles west of the project site.

There is one NY State highway in the study area: NY-936A/B which is a connector roadway between Interstate I-81 and Col Eileen Collins Blvd at Interchange 27. The On-ramp and Off-ramp from I-81 are connected directly to NY-936. This State route also connects E Taft Rd on the North to the proposed site.

Attachment I-A depicts the roadway network and their classifications in relation to the proposed land release site. Attachment I-A also provides intersection details within the study area.

Traffic Volumes

Traffic volume data was compiled from the New York State Department of Transportation's (NYSDOT) Traffic Data Viewer online resource to identify Annual Average Daily Traffic (AADT) volumes and weekday AM and PM peak hour volumes along the study roadways. The historic traffic data, from 1977 to 2019, were also analyzed for an estimation of the overall AADT growth rate for the project study area, as shown in Appendix I-B. The existing traffic volumes along the study roadways are shown in Table 1 and the estimated projected volumes are shown in Table 2

Table 1: Existing Traffic Volumes

Road	Station ID	Count Year	AADT	Weekday Peak Hour Volume (2-Way)	
				AM	PM
South Bay Rd & Col Eileen Collins Blvd	338054	2017	14749	1056	1349
I-81 South Off-ramp - to Col Eileen Collins Dr EB via NY 936A	333102	2017	1953	143	145
I-81 South On-ramp - From Col Eileen Collins Dr WB via NY 936A	333103	2017	2054	180	195
Col Eileen Collins Blvd - From South Bay Rd to Air Cargo Rd	336009	2015	7069	585	517
I-81 North Off-ramp - to Col Eileen Collins Dr EB via NY 936A	333100	2017	2833	219	200
I-81 North On-ramp - From Col Eileen Collins Dr WB via NY 936A	333101	2017	1909	156	216
Col Eileen Collins Blvd - From Air Cargo Rd to Columbia Ln (Terminal)	331122	2019	8732	646	603

Table 2: Projected Traffic Volumes						
Road	Station ID	2022 Projected AADT (NYSDOT Historic Data)	Study Area Overall Growth Rate	2030 Projected AADT with CAG	Weekday Peak Hour Volume (2-Way)	
					AM	PM
South Bay Rd & Col Eileen Collins Blvd	338054	14367	1%	15557	1202	1535
Off-ramp - I-81S & NY 936A SB to Col Eileen Collins Dr EB	333102	1944	1%	2105	163	165
On-ramp - From Col Eileen Collins Dr WB to NY 936A SB & I-81S	333103	2044	1%	2213	205	222
Col Eileen Collins Blvd - From South Bay Rd to Air Cargo Rd	336009	6764	1%	7324	679	600
Off-ramp - I-81N & NY 936A NB to Col Eileen Collins Dr EB	333100	2820	1%	3054	249	228
On-ramp - From Col Eileen Collins Dr WB to NY 936A NB & I-81N	333101	1900	1%	2057	178	246
Col Eileen Collins Blvd - From Air Cargo Rd to Columbia Ln (Terminal)	331122	8657	1%	9374	721	673

Traffic Operations

Since the purpose of this traffic study is to provide a planning level assessment of the existing roadway network condition and its operations, AADT data from New York State DOT (NYSDOT) Traffic Data Viewer was utilized and no turning movement counts (TMC) and automatic traffic recorder (ATR) counts were not collected for this study. NYSDOT provides a general planning-level tool for assessing the operational performance of various arterial configurations based on daily volumes and travel speeds (NYSDOT Highway Design Manual Appendix 5-D). This tool is used to screen for potential congestion issues along arterial roadways. Table 3 shows the existing daily volumes on the three arterial roadway segments in the study area and compares them to the applicable NYSDOT volume thresholds for LOS C and LOS D operations. As can be seen from this Table, the existing volumes in the study area are much lower than the LOS C threshold, indicating the transportation network provides high levels of performance and mobility. Furthermore, the Highway Capacity Manual Special Report 209 (Transportation Research Board, 1994) also provides a qualitative measure of Level of Service for Arterial Roadway Segments based on the observed speeds.

CHA also analyzed the 2 signalized intersections in the vicinity of the proposed development site to estimate the existing capacity and performance of these intersections. Table 4 shows the existing Level of Service

and the Delay for the 2 signalized intersections. We would like to point out that these measures are an estimate since the underlying traffic volume data has been obtained from the NYSDOT Traffic Data viewer, rather than from performing Turning Movement Counts (TMC) at these intersections. Further detailed analysis with collected traffic data will be needed when the proposed development is being undertaken. But these results give an understanding of the current functioning of the intersections. The Col Eileen Collins Blvd and Constellation Way intersection is functioning with high reserve capacity and can accommodate additional traffic from the proposed development. The unsignalized (2-way STOP) intersection at Air Cargo Rd and Col Eileen Collins Blvd is functioning close to free condition with high reserve capacity. The South Bay Rd intersection is functioning with some reserve capacity in the AM peak hour but at the threshold capacity in the PM peak hour and would most likely need some mitigation measures when the proposed development is operational. The off-ramps and on-ramps from Interstate I-81 needs to be analyzed for weaving operations because of additional truck traffic from the proposed development.

Table 3: Arterial Levels of Service

Raodway Segment	AADT (Existing)	Truck AADT (Existing)	Average Speed/Posted Speed Limit (mph)	Level of Service AADT Threshold		Level of Service Speed Threshold
				LOS C	LOS D	
South Bay Rd North of Col Eileen Collins	7842	233	26/35	23,000	29,000	B
South Bay Rd South of Col Eileen Collins	14671	604	NA/40	23,000	29,000	N/A
Col Eileen Collins Blvd	8732	327	48/45	23,000	29,000	A

TABLE 11-1. ARTERIAL LEVELS OF SERVICE

ARTERIAL CLASS	I	II	III
Range of Free Flow Speeds (mph)	45 to 35	35 to 30	35 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
LEVEL OF SERVICE	**AVERAGE TRAVEL SPEED (MPH)**		
A	≥ 35	≥ 30	≥ 25
B	≥ 28	≥ 24	≥ 19
C	≥ 22	≥ 18	≥ 13
D	≥ 17	≥ 14	≥ 9
E	≥ 13	≥ 10	≥ 7
F	< 13	< 10	< 7

Source: Transportation Research Board, Highway Capacity Manual, Special Report 209 (Washington, D.C., 1994), pp. 11-4.

Table 4: Intersection Levels of Service						
Intersection	Total Estimated Intersection Volume (vph)		Estimated Existing LOS		Estimated Existing Delay	
	AM	PM	AM	PM	AM	PM
South Bay Rd @ Col Eileen Collins	1317	1591	C	D	29.4	45.3
Col Eileen Collins @ Air Cargo Rd	899	811	B	B	10.5	10.5

Traffic Safety

Crash history data was obtained from NYSDOT for the three-year period from March 1, 2020 to March 31, 2023 for the study area. The crash data showed a total of 80 crashes reported to have occurred within the study area over the three-year period. The findings showed that 9 crashes occurred at the 2 intersections within the study area, 6 at the South Bay and 3 at the Constellation Way intersections with Col Eileen Collins Blvd. The reason for these crashes was primarily "failure to yield right of way". The other crashes occurred primarily at the I-81 & NY936 ramps (41%) and at driveways & midblock locations on South Bay Rd and some at the Airport Garage exits. The crash study also indicated that there was 1 fatality and 1 non-fatal injury crashes which amounts to 1.25% each of the total crashes. Inspection of the accident data showed that around 23% of the crashes were rear-ends and 36% of crashes were collision with roadside structures and animals. Appendix I-B depicts the crash severity at the intersections within the study area, as well as depicting the crash types at these intersections.

The safety and resiliency of the transportation system is a high priority of the SMTC and its member communities. The LRTP and the regional Transportation Improvement Program advances infrastructure improvements and safety projects to reduce serious injuries and fatalities for all users of the transportation system. The Onondaga County Department of Transportation (OCDOT) also monitors traffic safety conditions on the study area roadways and has a program to identify and prioritize issues and countermeasures to maintain the safety of the transportation system for all users.

Sponsor's Proposed Action

The Sponsor's Proposed Action (release of airport property from aeronautical to non-aeronautical use) would not directly cause a change in area traffic volumes or circulation patterns, or otherwise place new demands on the transportation system.

It is anticipated that there would be an increase in traffic due to future development of the site. Although a specific plan or proposal has not been finalized at this time, a preliminary conceptual design plan has been developed showing that the site would support a mixed-use development comprising of hotels, restaurants, offices, light retail and gas station. Due to direct connectivity to the Interstate system adjacent to the site, long distance accessibility would not be an issue. The trip generation potential of this development was estimated using the data and methodologies of the Trip Generation Manual, 11th edition of the Institute of Transportation Engineers (ITE). Based on the ITE data, it is estimated that a future mixed use approximately 400,000 square foot development comprised of these general land use types could generate approximately over 10000

vehicle trips per day combined and 1200-1500 vehicle trips during peak hours. The potential enter/exit distribution of these trips are shown in Table 5.

Table 5: Proposed Mixed-use Development Trip Generation												
Land-use	Qty	Units	LUC	Average Weekday AM peak Trips (veh/hour)			Average Weekday PM peak Trips (veh/hour)			Average Weekend Trips (veh/hour)		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Office	22950	SF	710	31	4	35	6	27	33	7	5	12
Bank Drive Through	5725	SF	912	33	24	57	60	60	120	77	74	151
Pharmacy Drive Through	15290	SF	881	30	27	57	78	78	157	66	68	134
Hotel	358	Rm.	310	92	72	165	108	103	211	144	113	258
Gas Station/ C-Store (Assumed 14 vehicle fueling positions based on ITE Trip Gen Rate)	7750	SF	945	221	221	442	188	188	377	204	213	417
Drive Through Convenience (Coffee)	2225	SF	937	97	94	191	43	43	87	98	98	196
Restaurant	23050	SF	932	121	99	221	127	81	209	132	126	258
Mixed Use 1st Fl Commercial 2nd Fl Office (Assumed 50:50 Strip Retail Plaza General Office Building)	43040	SF	822710	59	24	83	76	97	173	78	75	153
			Total =	685	566	1251	687	679	1366	805	772	1578

The traffic generated by any future development of the site will distribute through the transportation network based on the origin/destination patterns that would be associated with the characteristics of the development. This distribution will reduce the amount of site traffic on any specific segment of the area transportation network. Given the direct connectivity to the site from Interstate I-81 via NY936, long distance trips would primarily utilize the Interstate for access to the site. Some local traffic, esp. employees working at the various business of the proposed development, would take the South Bay Rd to Col Eileen Collins Blvd route. The exact trip distribution and assignment exercise would need to be performed during the future traffic impact study. But it is safe to say that the traffic generated by a future development of the site is not anticipated to significantly change traffic patterns in the area.

As noted previously, the existing roadway network operates at very good levels of service. But the amount of traffic added to the system because of the future development of this site would be over 1000 vehicles per peak hour and would be classified as significant new trips added. Whichever trip distribution and route

assignment is adopted in the future, in the current roadway layout scenario, all of the additional 1000 new peak hour generated trips would access the proposed site via the Air Cargo Rd and Col Eileen Collins Blvd intersection. This is a STOP controlled intersection with good site geometrics and roadway conditions and as such signalization should be considered. Also, an additional access point to the proposed development site should be considered.

A future full traffic impact study would likely be required for a specific project proposal and the appropriate off-site mitigation, if required, would be identified at that time. That study would also identify the specific access design treatments and traffic control needed to accommodate the traffic movements in and out of the site safely and efficiently.

According to the SYR Airport Master Plan forecast of aviation demand, enplanements are estimated to grow at 2% CAGR for various Planning Activity Levels (PAL). Similarly, Cargo Traffic and Commercial Operations are estimated to grow at 2% to 4% CAGR. Since Colonel Eileen Collins Blvd is the only access route to the Airport Terminal, the cumulative impacts from the corresponding growth in vehicular traffic due to higher aviation demand and the proposed site development traffic should be carefully analyzed and mitigated, if required, as the roadway must operate without congestion esp. during peak flight hours.

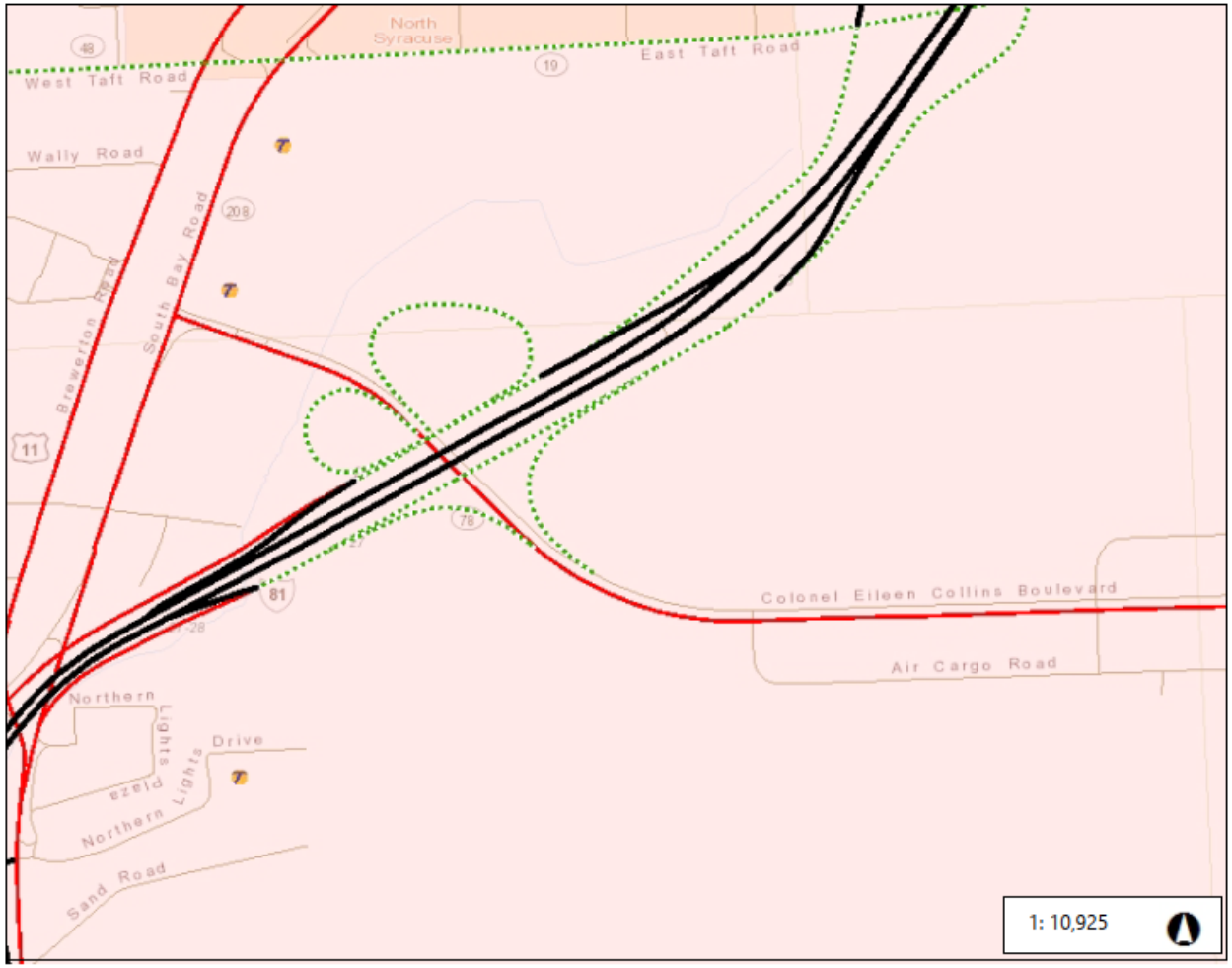
ATTACHMENT 1-A

Intersections in the Proposed Development Study Area

Intersection	Intersection Control	Approach	Direction	Movement Type	Lane Group								
					Left			Through			Right		
					# of Lanes	Width (ft)	Exclusive (Yes/No)	# of Lanes	Width	Shared (Yes/No)	# of Lanes	Width	Exclusive (Yes/No)
Col Eileen Collins Blvd & Constellation Way	Signalized	Eileen Collins	EB	Major	1	10	Yes	2	12	No	1	10	Yes
			WB	Major	1	10	Yes	2	12	No	1	10	Yes
		Constellation Way	NB	Minor	1	11	Yes	1	12	Yes	Shared w/ Thru Lane		
			SB	Minor	1	11	Yes	1	12	Yes	Shared w/ Thru Lane		
Col Eileen Collins Blvd & Air Cargo Rd	2-way STOP on NB-SB Approach & Median	Eileen Collins	EB	Major	1	11	Yes	2	12	No	Slip Lane		
			WB	Major	Shared w/Thru Lane			2	12	Yes	Shared w/Thru Lane		
		Air Cargo Rd	NB	Minor	NB Left and Through approach in the Median								
			SB	Minor	One (1) 22' wide Shared Thru-Right Lane. Left Turn approach in the Median								
Col Eileen Collins Blvd & South Bay Rd	Signalized	Eileen Collins	EB	Minor	One (1) 14' wide Shared Left-Thru-Right Driveway Lane								
			WB	Minor	1	12	Yes	No Through Lane			1	12	Yes
		South Bay Rd	NB	Major	No Left Turn			2	12	Yes	Slip Ramp/Lane		
			SB	Major	1	12	YES	2	12	No	Right Turn Upstream of Signal		

New York State Department of Transportation

Syracuse Airport Roadway Network



0.3 0 0.17 0.3 Miles

NAD_1983_UTM_Zone_18N

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

Legend

Functional Class

RURAL
- (01) Principal Arterial Interstate
- (02) Principal Arterial Expressway
- (04) Principal Arterial Other
- (06) Minor Arterial
- (07) Major Collector
- (08) Minor Collector

URBAN
- (11) Principal Arterial Interstate
- (12) Principal Arterial Expressway
- (14) Principal Arterial Other
- (16) Minor Arterial
- (17) Major Collector
- (18) Minor Collector

Urban Areas

- Interstate
- 900 Route
- US Highway
- State Highway
- County Touring
- County Highway

Notes

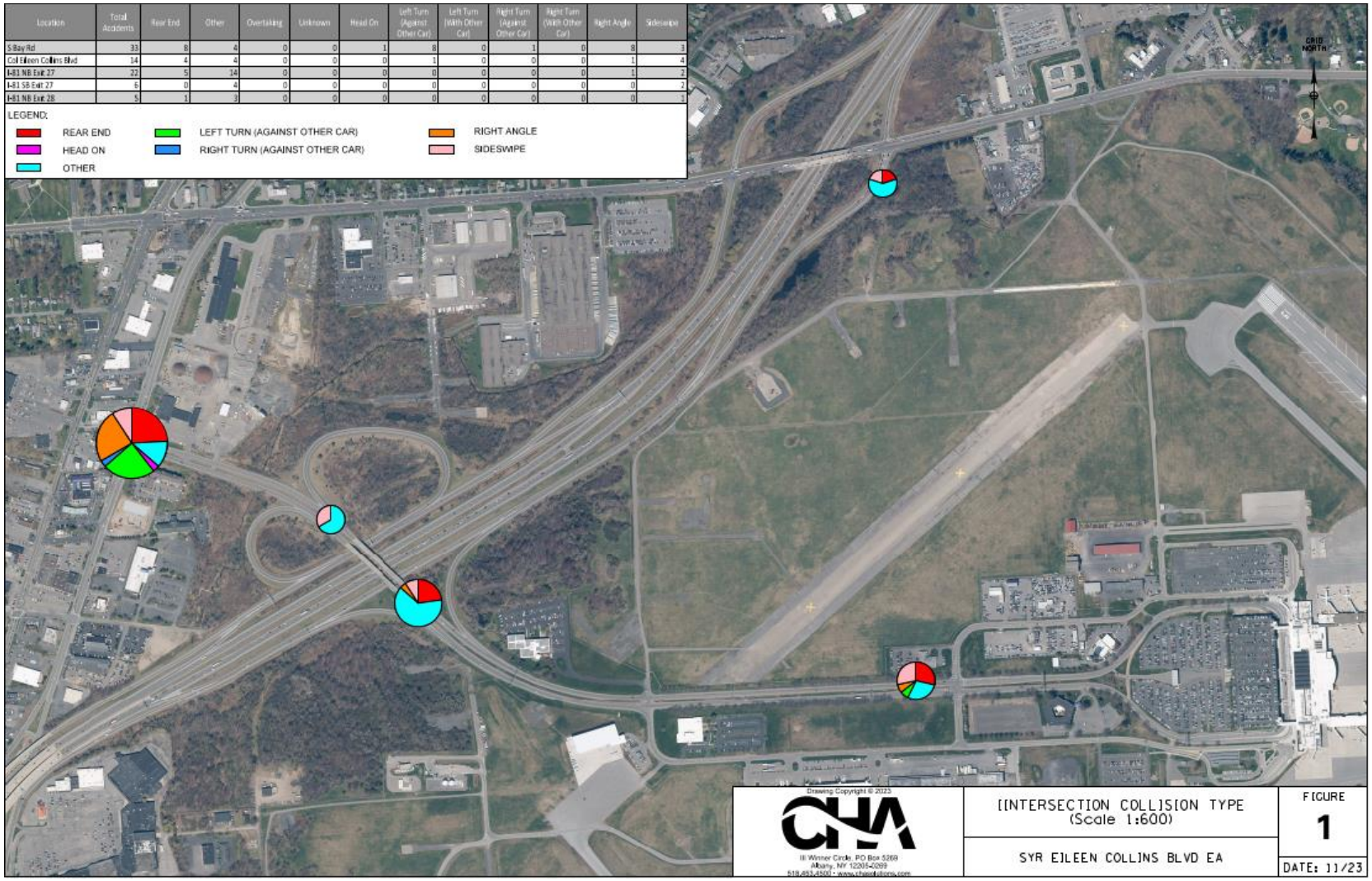
Please enter the notes

ATTACHMENT 1-B

Syracuse Airport Land Release ESA																	
Background Growth Rate Calculations																	
Station ID	Road Name	Begin	End	Municipality	AADT[1]												Simple Annual Growth Rate
					2022 (projected)	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	
331122	COL EILEEN COLN	AIRPORT BOUNDY	COLUMBIA LN	City of Syracuse	8657	0	8732	13238	0	0	0	0	0	0	6550	0	4.16%
333100	AIRPORT RD INTE	NY 936A NB	COL EILEEN COLLINS DR EB	Village of Salina	2820	0	0	0	2833	0	3225	0	0	0	0	2756	0.40%
333101	AIRPORT RD INTE	COL EILEEN COLLINS DR WB	NY 936A NB	Village of Salina	1900	0	0	0	1909	0	1828	0	0	0	0	1973	-0.46%
338054	SOUTH BAY RD	RT 936A	N SYRACUSE VL	Village of Clay	14367	0	0	0	14749	12546	0	0	0	13366	0	0	2.07%
333102	AIRPORT RD INTE	NY 936B SB	COL EILEEN COLLINS DR EB	Village of Salina	1944	0	0	0	1953	0	1718	0	0	0	0	1841	0.87%
333103	AIRPORT RD INTE	COL EILEEN COLLINS DR WB	NY 936B SB Ramp Ends	Village of Salina	2044	0	0	0	2054	0	2532	0	0	0	0	2296	-1.51%
336009	COL EILEEN COLN	S BAY RD	SYRACUSE AIRPORT	Village of Salina	6764	0	0	0	0	0	7069	0	0	0	0	6960	0.31%
Recommended Simple Annual Growth Rate Per Year =				0.84%													
				1%													

ATTACHMENT I-C

Location	Total Accidents	Rear End	Other	Overtaking	Unknown	Head On	Left Turn (Against Other Car)	Left Turn (With Other Car)	Right Turn (Against Other Car)	Right Turn (With Other Car)	Right Angle	Sideswipe
S Bay Rd	33	8	4	0	0	1	8	0	1	0	8	3
Col Eileen Collins Blvd	14	4	4	0	0	0	1	0	0	0	1	4
I-81 NB Exit 27	22	5	14	0	0	0	0	0	0	0	1	2
I-81 SB Exit 27	6	0	4	0	0	0	0	0	0	0	0	2
I-81 NB Exit 28	5	1	3	0	0	0	0	0	0	0	0	1



Location	Total Accidents	Fatal	Injury Only	Property Damage Only	Property Damage & Injury	Non-Reportable
S Bay Rd	33	0	1	27	5	0
Col Eileen Collins Blvd	14	0	0	13	1	0
I-81 NB Exit 27	22	1	0	18	3	0
I-81 SB Exit 27	6	0	0	6	0	0
I-81 NB Exit 28	5	0	0	4	1	0

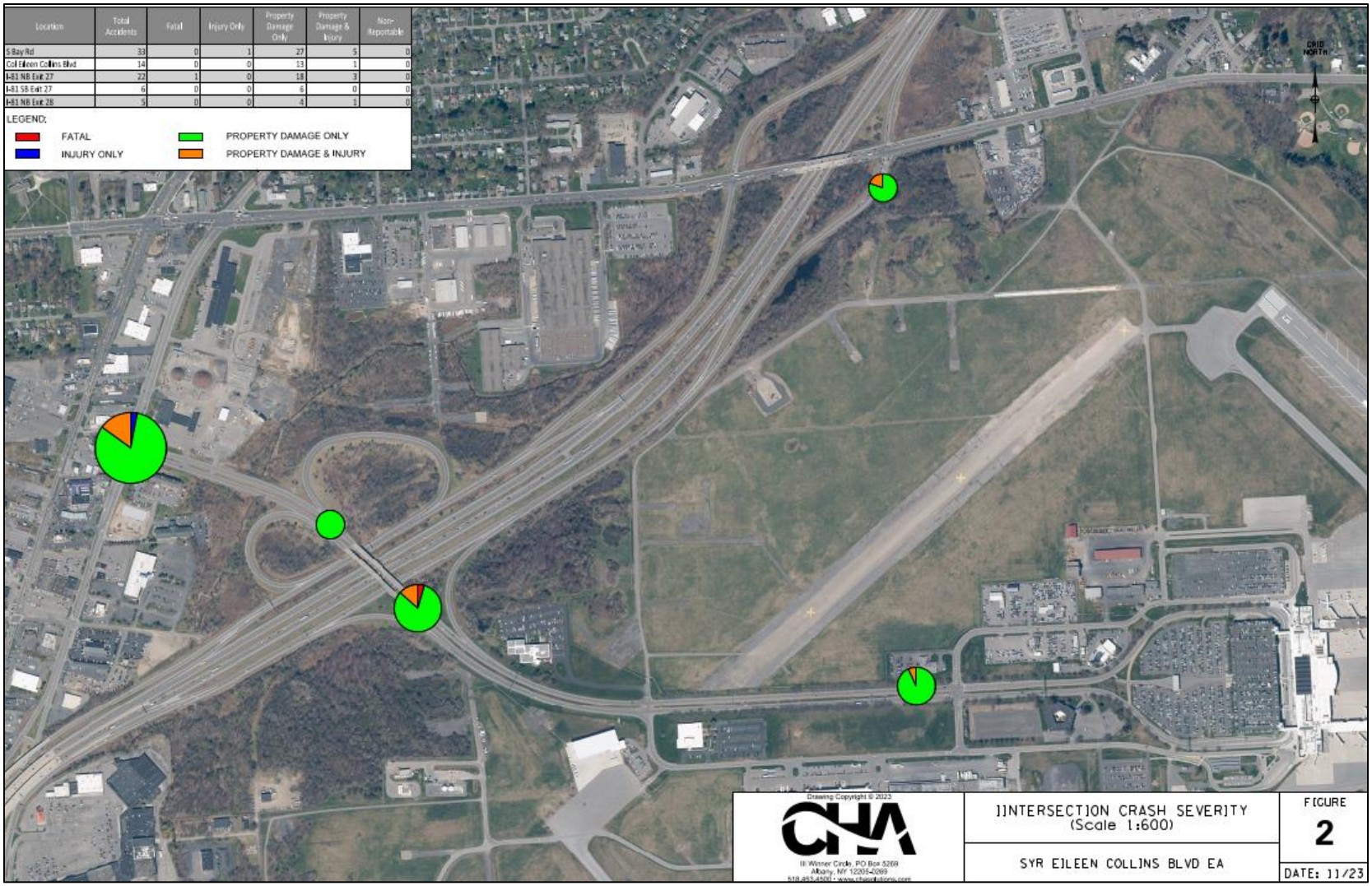
LEGEND:

FATAL

INJURY ONLY

PROPERTY DAMAGE ONLY

PROPERTY DAMAGE & INJURY



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]]NTERSECT]ON CRASH SEVER]TY
(Scale 1:600)

SYR E]LEEN COLL]NS BLVD EA

FIGURE
2

DATE:]1/23