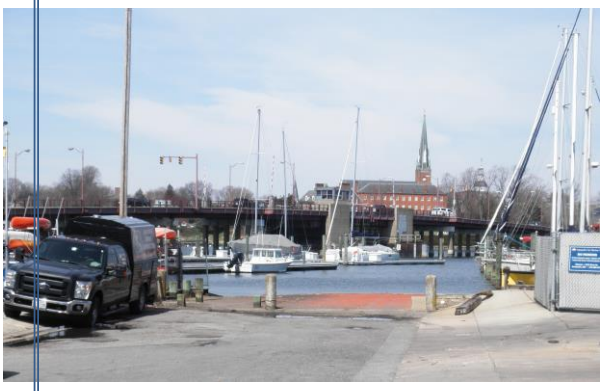
CITY OF ANNAPOLIS

Eastport Transportation Study

Short-term and Long-term Recommendations Report

SEPTEMBER 2016



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NELSON NYGAARD

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1. Introduction and Executive Summary

This report provides short-term and long-term transportation improvement recommendations in response to resident input and based on an existing conditions evaluation of transportation in the Eastport neighborhood of Annapolis. Recommendations in this report relate to traffic, parking, loading, bus service, biking, and walking. However, it should be noted that all transportation modes are inter-related; improving one will often have ancillary benefits to others. For example, efforts to increase cycling locally, would reduce both traffic congestion and parking demand.

Based on a thorough evaluation of existing conditions across all travel modes, the following conclusions and recommendations are presented:

- Short-term traffic demand can be met with the current roadway network
- Long-term, traffic will have to be managed through investments in other modes of transportation
- Eastport has one-way street segments. Long-term alternatives should be explored that provide a consistent pattern for one-way streets that optimize vehicle movement while maintaining the existing curbside parking supply.
- Curbside parking is high demand, particularly on Saturdays and during events. Long-term solutions involve managing parking through meters and through residential permit parking permits.
- Consolidation of loading zones and permitted times is recommend.
- Events should be managed through public-private cooperation of existing parking facilities, to include publicizing available private pay lots. Event signal timing programs for signals should be instituted along select streets in and around Eastport.
- Improved cycling facilities are recommended along Bay Ridge Avenue, Chesapeake Avenue, and 6th Street. Cycling improvement for Chesapeake Avenue and 6th Street would be at the expense of parking lanes and travel lanes, respectively.
- Select pedestrian improvements are recommended to address deficiencies in crosswalks and sidewalks. Traffic calming is recommended on Chesapeake Avenue and on 6th Street.
- Improvements to bus service include providing routing and span-of-service information at all stops, as well as recommendations to improve bus boarding and accessibility.

2. Purpose and Need

The City of Annapolis previously conducted a multimodal transportation study for its Eastport neighborhood that audited and evaluated existing conditions including roadway geometry, crash experience, land use, right-of-way, traffic volumes and traffic operations, public parking supply and demand, pedestrian and bicycle networks, and transit services. Through meetings, public surveys, and open houses, this study also engaged local citizens, businesses and key stakeholders

such as Eastport Civic Association and Eastport Business Association for input on issues across all transportation modes.

Responses from the survey[1] and public input generally indicates:

- Retaining the current one-way street network;
- Maintaining the status quo with regard to bus service;
- Low support for managing curbside parking with metered spaces and permit parking;
- Strong support for increased traffic calming and pedestrian & bike infrastructure;
- Strong support for improving parking availability;
- Strong support for improving traffic congestion;
- Support for restricting future development.

The objective of this report is provide short- and long-term recommendations and to assess future transportation conditions, impacted by short-term and long-term future land use changes to develop a plan for improved traffic management, and multimodal circulation and safety throughout the Eastport neighborhood. Recommendations were developed that facilitate enhanced multimodal mobility, improved the effectiveness of traffic and transit operations in, out, and within the neighborhood. Short term recommendations are one that can be executed typically within existing maintenance budgets – retiming a traffic signal or repainting a crosswalk, for example. Long-term improvements are ones that are financially constrained (i.e. not budgeted for in the current year), or that require a planning or construction design element; or alternatively a long-term improvement could also be a public policy/code change that will require public input and hearings.

3. Study Area

The study area for this report, shown in Figure 1, generally extends from Spa Creek in the north, to Back Creek in the South; and from Truxton Park in the West to the Severn River in the East. The study area has limited roadway access to and from downtown Annapolis and points north (US 50, West Street), and points south and west (Outer Neck, Forest Drive and Harness Creek); as well as limited opportunities for additional roadway capacity.

Travel between Eastport and Annapolis is primarily achieved through private vehicle trips, which facilitates the need for both on-and off-street residential parking. On-street parking is allowed on most commercial and residential streets, but parking in private residential driveways is also common, although the frequency of driveways varies widely per block. Eastport's basic

[1] Conducted on-line in May/June 2016 with 362 responses. Survey Results are shown in Appendix C.

street grid, short block faces, and narrow street widths maximize connectivity within the neighborhood[2] and encourage alternative modes of transportation. The topography of Eastport is generally flat, making biking and walking an ideal alternative to driving for many trips.

4. Short-term Traffic Evaluation

4.1 Study Intersections

Eleven study intersections, mapped in Figure 1, are listed in the table below along with their control and existing level of service (LOS) for the AM, PM, and Saturday peak period.

4.2 Existing Traffic conditions

The traffic analysis shows that all study area intersections currently operate at an acceptable level of service for all three study periods, as shown in Table 1.

Table 1: Existing Level of Service at Select Intersections

	Study Intersection	Control	Level of AM (PM) [Saturday]
1	Second Street at Eastern Avenue	Uncontrolled	A (A) [A]
2	Severn Avenue at Fourth Street	Uncontrolled	A (A) [A]
3	Severn Avenue at Sixth Street	Signalized	B (B) [B]
4	Bay Ridge Avenue at Sixth Street	Uncontrolled	B (A) [A]
5	Chesapeake Avenue at Sixth Street	Signalized	A (A) [A]
6	Bay Ridge Avenue at Burnside Street	Uncontrolled	A (A) [A]
7	Bay Ridge Avenue at Chesapeake	Uncontrolled	A (A) [A]
8	Bay Ridge Avenue at Madison Street	Signalized	A (B) [A]
9	President Street at Madison Street	Uncontrolled	A (A) [A]
10	President Street at Van Buren Drive	Uncontrolled	A (A) [A]
11	Bay Ridge Avenue at Tyler Avenue	Signalized	B (C) [B]

[2] Two private, gated townhome communities were not included in this study: Chesapeake Landing (Chesapeake and Horn Point) and Horn Point Courts (Chester and Horn Point). Both developments feature higher levels of density but prohibit public pedestrian, bicycle, or vehicle access

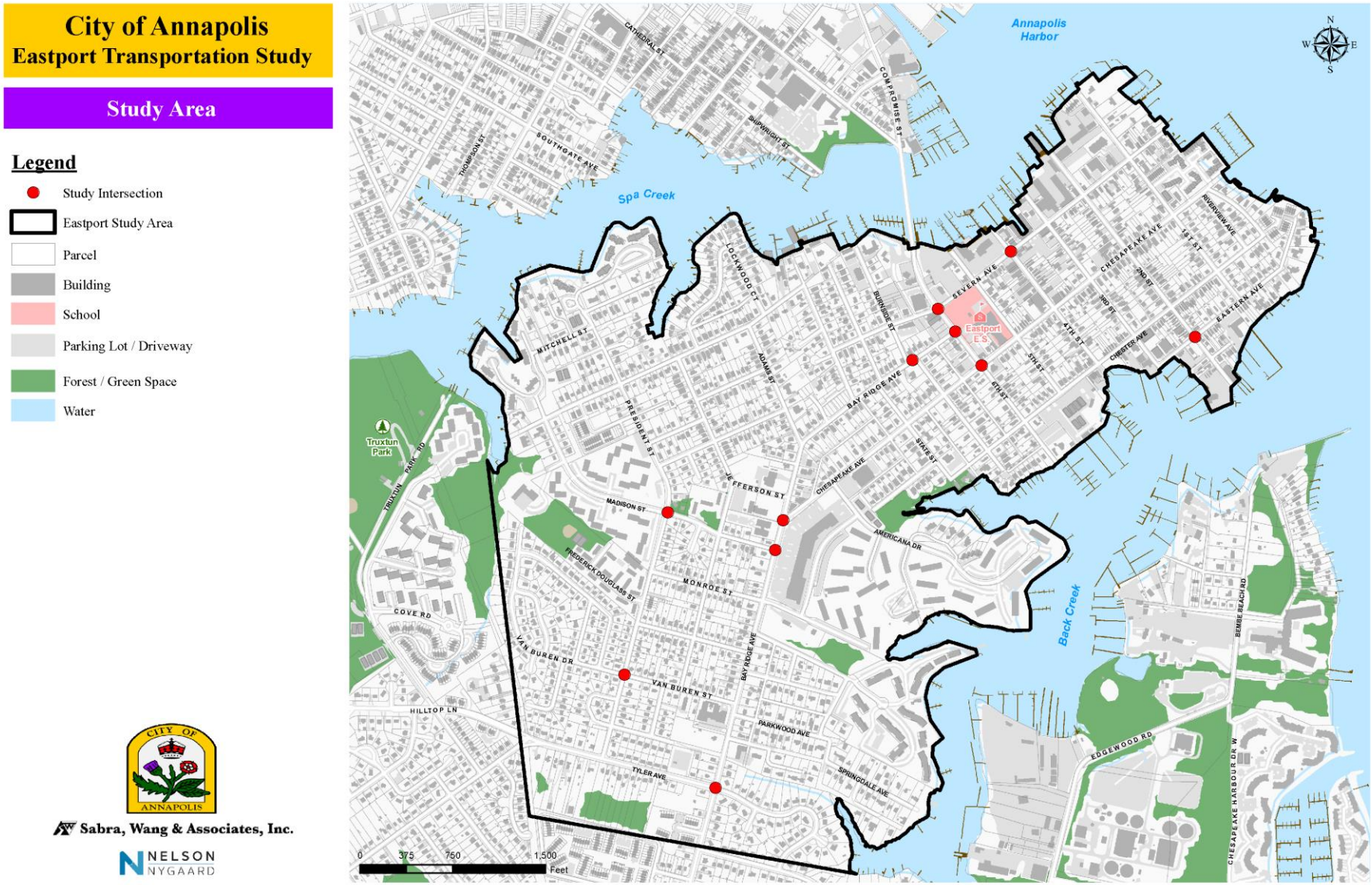


Figure 1: Eastport Transportation Study Area

4.3 Short-term Future Traffic Conditions

Short-term traffic conditions were evaluated to determine future impacts on all modes of transportation and parking due to increases in future traffic volumes. The short-term scenario represents a 2020 design year with 4 pipeline developments built and operational, and also additional growth in through traffic of 1% per year.

4.31.1 Background Developments

Four total background developments are anticipated to be built under the short-term scenario with two additional developments projected to be completed under the long-term scenario. Figure 2 shows a map of the proposed background developments and their locations within the study area.

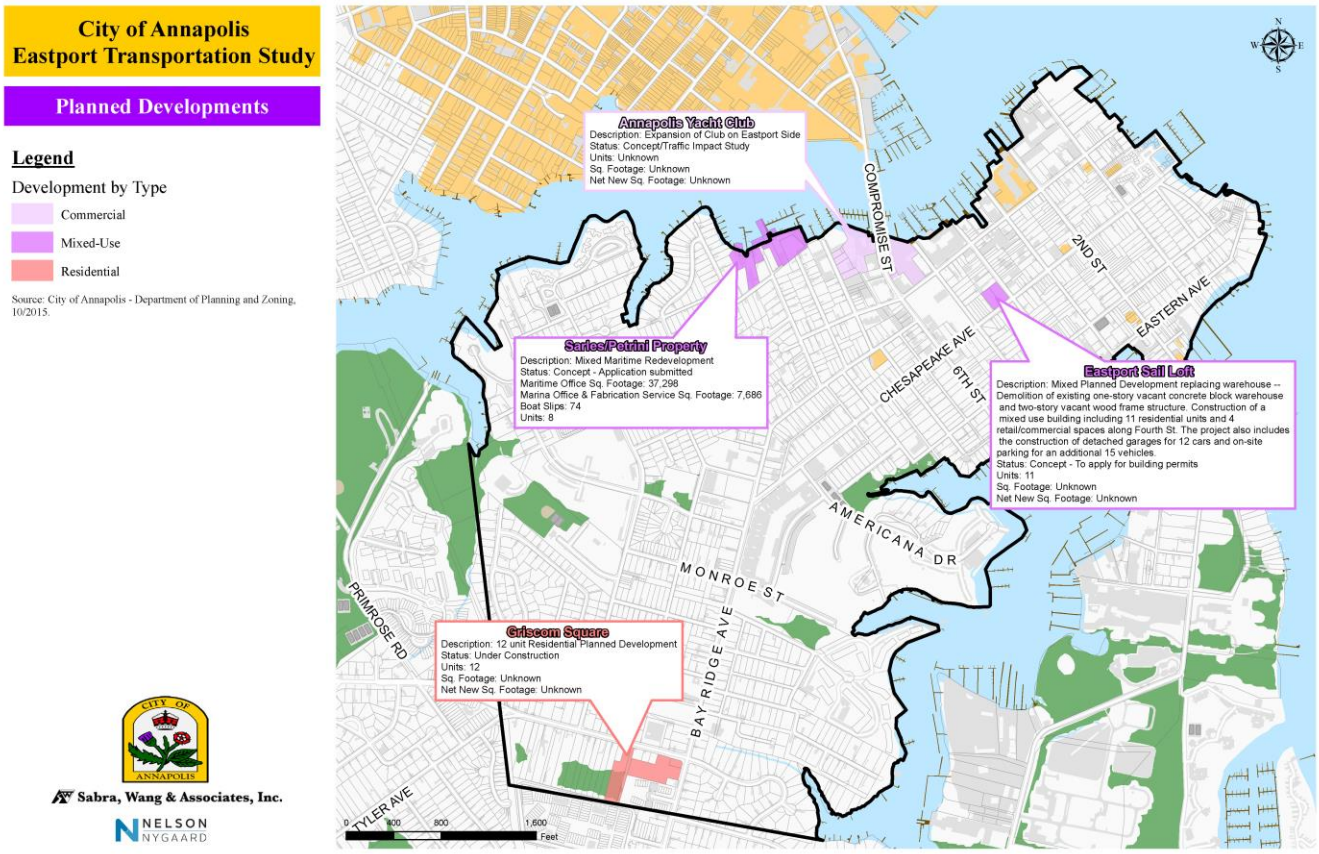


Figure 2: Map of Background Developments

The following information was used to estimate the net trip generation for each background developments using the 9th Edition of the ITE *Trip Generation Handbook* and collected data:

- Sarles/Petrini Property (South Annapolis Yacht Center)
  - 84 berth marina: ITE Code 420
  - 30,000 SF warehouse: ITE Code 151
  - 3,000 SF general office building: ITE Code 710
- Eastport Sail Loft

    - 11 dwelling unit apartment building: ITE Code 220
    - 2,842 SF Commercial Space
- Griscom Square
    - 12 dwelling unit townhomes: ITE Code 230
- Annapolis Yacht Club
    - East Side of 6th Street
        - 11 Employees General Office: ITE Code 710
        - 108 Berth Marina: ITE Code 420
        - 130 Member Sailing Club[3]
    - West side of 6th Street
        - 59 Seat Restaurant: ITE Code 931
        - 35 Berth Marina: ITE Code 420
        - 10,000 SF Rec Center: ITE Code 495

The net number of peak hour trips generated by each development, as well as the total for all four, is shown in Table 2. These trip generation estimates are conservative, as no discount was taken for pass-by trips, internal capture, or non-driving modes.

[3] 25% of pick-ups and drop-offs would still utilize the western Annapolis Yacht Club development as children can cross to the other development via a walkway underneath the Spa Creek Bridge.

Table 2: Short-term Background Site Generated Trips

Eastport Sail Loft

LandUse	AM			PM			Saturday		
	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit	Total
220 - Apartment	2	4	**6**	4	3	**7**	3	3	**6**
Total	**2**	**4**	**6**	**4**	**3**	**7**	**3**	**3**	**6**

Sarles/Petrini Property

LandUse	AM			PM			Saturday		
	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit	Total
710 - General Office Building	4	1	**5**	1	3	**4**	1	0	**1**
151 - Mini Warehouse	4	4	**8**	5	4	**9**	6	6	**12**
420 - Marina	9	5	**14**	9	5	**14**	10	13	**23**
Total	**17**	**10**	**27**	**15**	**12**	**27**	**17**	**19**	**36**

Griscom Square

LandUse	AM			PM			Saturday		
	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit	Total
230 - Residential Condominium/Townhouse	1	4	**5**	4	2	**6**	3	3	**6**
Total	**1**	**4**	**5**	**4**	**2**	**6**	**3**	**3**	**6**

Annapolis Yacht Club (West Side)

LandUse	AM			PM			Saturday		
	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit	Total
931 - Quality Restaurant	7	3	**10**	10	7	**17**	11	8	**19**
420 - Marina	4	2	**6**	4	4	**8**	4	5	**9**
495 - Recreational Community Center*	16	12	**28**	16	17	**33**	32	34	**66**
Sailing Club	24	24	**49**	24	24	49	0	0	**0**
Total	**51**	**41**	**93**	**54**	**52**	**107**	**47**	**47**	**94**

Annapolis Yacht Club (East Side)

LandUse	AM			PM			Saturday		
	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit	Total
710 - General Office Building	5	1	**6**	4	1	**5**	1	0	**1**
420 - Marina	12	7	**19**	12	11	**23**	14	17	**31**
Sailing Club	73	73	**146**	73	73	**146**	0	0	**0**
Total	**90**	**81**	**171**	**89**	**85**	**174**	**15**	**17**	**32**

TOTAL FOR ALL BACKGROUND DEVELOPMENTS

LandUse	AM			PM			Saturday		
	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit	Total
Total	**159**	**136**	**295**	**162**	**151**	**313**	**82**	**86**	**168**

Site generated trips were distributed through the network based upon the assumption that 50% would travel to and from the north via 6th Street, and the remaining 50% would utilize Tyler Avenue or Bay Ridge Avenue to the south. Existing background traffic was used to determine the distribution between Tyler Avenue and Bay Ridge Avenue.

Background Regional Traffic Growth
Annual growth in regional traffic through the study area was estimated using a 1% annual growth rate. The annual growth rate was applied to major movements within the network for four years to represent regional growth by year 2020.

Programmed Roadway Improvements
Currently there are no programmed roadway improvements by City or State anticipated prior to year 2020.

4.4 Short-term Traffic Analysis and Results

An intersection capacity analysis was performed for the estimated traffic in year 2020. Short-term traffic volumes were developed by adding the existing traffic volumes, growth in existing regional and net site generated traffic for the four background developments. As discussed in the *Existing Conditions* report, a Synchro™ model implementing Highway Capacity Manual 2000 methods was used to perform the analyses. The results of the future capacity analysis are summarized in Table 3. Additionally, queuing at intersection approaches was assessed with SimTraffic using the same methodology as for the existing conditions: results from five 60-minute simulations with 15 minute seeding intervals were averaged for each peak hour scenario. The 95th percentile queue lengths are shown in Table 3.

The SimTraffic simulations under the short-term scenario show traffic conditions similar to those in existing conditions which is reflected in Table 3. Results in Table 3 show that no study intersections or study intersection movements degrade to a failing LOS from existing conditions. Furthermore, study area intersections remain at an overall level of service of C for AM, PM, and Saturday peak hour scenarios. 95% queue lengths increase modestly. These results are expected, as the short-term development programs are only expected to increase vehicle trips modestly.

4.5 Short-term Traffic Recommendations

Given that sufficient capacity exists along main lines and at intersections to accommodate short term developments and expected growth in regional traffic, it is recommended that signal timing and signal cycle length be evaluated at Madison and Bay Ridge and at Tyler and Bay Ridge as developments come on-line[4]. Additionally, per the findings of the *Annapolis Yacht Club Traffic Impact Study*, lengthening existing striping for the shared left-through lane on the southbound approach of 6th Street at Severn Avenue is recommended – if it is compatible with existing planning efforts for that space (e.g. Annapolis Bike Masterplan).

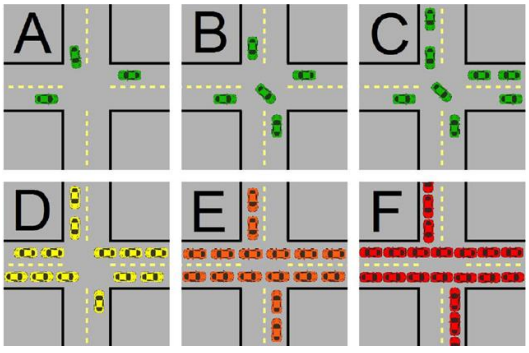


Figure 3: Example of Differing Intersection Levels of Services

[4] Traffic Signal timing improvements were recently made at 6th and Severn and at 6th and Chesapeake

Table 3: Short-term Future Traffic Analysis Comparison Table

Study Intersection		Approach	Movement	Existing - AM (PM) [Saturday]				Short-Term 2020 - AM (PM) [Saturday]			
				LOS	v/c	Delay (s)	95% Queue (ft)	LOS	v/c	Delay (s)	95% Queue (ft)
1	Second St at Eastern Ave	**Overall**	-	A (A) [A]	-	6.9 (7.0) [7.1]	-	A (A) [A]	-	6.9 (7.0) [7.1]	-
		EB	Overall	A (A) [A]	0.00 (0.01) [0.01]	6.6 (7.1) [6.8]	13 (12) [15]	A (A) [A]	0.00 (0.01) [0.01]	6.6 (7.1) [6.8]	14 (12) [15]
		WB	Overall	A (A) [A]	0.07 (0.09) [0.10]	6.4 (6.7) [6.9]	11 (14) [15]	A (A) [A]	0.07 (0.09) [0.10]	6.4 (6.7) [6.9]	12 (14) [15]
		NB	Overall	A (A) [A]	0.13 (0.23) [0.23]	7.0 (7.1) [7.1]	16 (20) [18]	A (A) [A]	0.13 (0.23) [0.23]	7.0 (7.1) [7.1]	17 (20) [18]
		SB	Overall	A (A) [A]	0.09 (0.16) [0.16]	7.0 (7.0) [7.3]	18 (11) [14]	A (A) [A]	0.09 (0.16) [0.16]	7.0 (7.0) [7.3]	19 (11) [14]
2	Severn Ave at 4th St	**Overall**	-	A (A) [A]	-	7.6 (8.2) [8.2]	-	A (A) [A]	-	7.6 (8.2) [8.2]	-
		EB	Overall	A (A) [A]	0.00 (0.01) [0.01]	7.0 (7.4) [7.6]	16 (29) [31]	A (A) [A]	0.00 (0.01) [0.01]	7.0 (7.4) [7.6]	20 (28) [26]
		WB	Overall	A (A) [A]	0.07 (0.09) [0.10]	7.7 (8.1) [8.1]	46 (46) [55]	A (A) [A]	0.08 (0.09) [0.10]	7.7 (8.1) [8.1]	52 (47) [53]
		NB	Overall	A (A) [A]	0.13 (0.23) [0.23]	7.6 (8.3) [8.4]	56 (68) [70]	A (A) [A]	0.13 (0.23) [0.23]	7.6 (8.4) [8.4]	58 (71) [67]
		SB	Overall	A (A) [A]	0.09 (0.16) [0.16]	7.6 (8.2) [8.2]	57 (62) [61]	A (A) [A]	0.09 (0.16) [0.16]	7.6 (8.2) [8.2]	50 (62) [58]
3	Severn Ave at 6th St	**Overall**	-	C (B) [B]	0.68 (0.60) [0.70]	23.1 (16.8) [16.8]	-	B (B) [B]	0.66 (0.72) [0.75]	16.4 (14.9) [16.3]	-
		EB	Overall	C (C) [C]	0.43 (0.25) [0.31]	33.5 (24.0) [24.5]	133 (93) [106]	D (C) [C]	0.51 (0.28) [0.35]	36.8 (23.8) [25.3]	143 (80) [128]
		WB	Overall	C (C) [C]	0.15 (0.51) [0.41]	28.1 (28.7) [26.5]	108 (172) [146]	C (C) [C]	0.38 (0.70) [0.39]	32.0 (34.7) [25.9]	160 (235) [143]
		NB	Overall	C (C) [B]	0.86 (0.64) [0.48]	33.3 (23.1) [19.6]	269 (211) [177]	B (A) [A]	0.68 (0.44) [0.35]	14.5 (8.9) [8.4]	268 (212) [187]
		SB	Overall	A (A) [B]	0.50 (0.60) [0.77]	9.5 (9.7) [13.4]	184 (198) [505]	B (B) [B]	0.56 (0.67) [0.84]	10.2 (10.3) [16.1]	255 (306) [926]
4	Bay Ridge Ave at 6th St	**Overall**	-		-	0.2 (0.2) [0.1]	-		-	0.2 (0.2) [0.1]	-
		NB	Overall	A (A) [A]	0.01 (0.01) [0.01]	0.3 (0.4) [0.3]	286 (130) [49]	A (A) [A]	0.01 (0.01) [0.01]	0.3 (0.4) [0.3]	382 (156) [60]
		SB	Overall	-	-	-	34 (76) [35]	-	-	-	44 (51) [37]
			Through	-	0.15 (0.24) [0.22]	0.0 (0.0) [0.0]	-	-	0.16 (0.25) [0.24]	0.0 (0.0) [0.0]	-
			Right	-	0.13 (0.20) [0.14]	0.0 (0.0) [0.0]	-	-	0.13 (0.21) [0.15]	0.0 (0.0) [0.0]	-
5	Chesapeake Ave at 6th St	**Overall**	-	A (A) [A]	0.64 (0.51) [0.41]	8.1 (8.8) [9.3]	-	A (A) [A]	0.67 (0.51) [0.43]	8.4 (8.4) [9.3]	-
		EB	Overall	A (A) [A]	-	3.9 (3.6) [3.3]	314 (157) [121]	A (A) [A]	-	4.4 (3.4) [3.4]	656 (182) [127]
			Left	A (A) [A]	0.62 (0.48) [0.30]	4.4 (4.3) [3.8]	-	A (A) [A]	0.66 (0.50) [0.34]	4.9 (4.2) [3.9]	-
			Through/Right	A (A) [A]	0.12 (0.17) [0.16]	2.0 (2.3) [2.6]	-	A (A) [A]	0.12 (0.17) [0.16]	2.0 (2.0) [2.6]	-
		WB	Overall	C (B) [B]	0.47 (0.45) [0.52]	24.7 (15.1) [18.2]	114 (181) [157]	C (B) [B]	0.49 (0.45) [0.53]	25.4 (15.3) [19.0]	116 (170) [160]
		SB	Overall	B (B) [B]	-	12.1 (13.2) [11.8]	90 (142) [107]	B (B) [B]	-	11.9 (12.3) [11.7]	98 (126) [138]
			Left/Through	C (C) [C]	0.42 (0.41) [0.46]	30.2 (25.7) [23.8]	-	C (C) [C]	0.42 (0.35) [0.47]	30.6 (24.6) [24.6]	-
			Right	A (B) [A]	0.10 (0.20) [0.16]	5.8 (10.8) [7.9]	-	A (B) [A]	0.11 (0.21) [0.17]	5.7 (10.0) [7.8]	-
6	Bay Ridge Ave at Burnside St	**Overall**	-	-	-	1.5 (1.5) [2.5]	-	-	-	1.7 (1.7) [2.7]	-
		WB	Overall	-	0.15 (0.24) [0.14]	0.0 (0.0) [0.0]	0 (3) [0]	-	0.16 (0.25) [0.15]	0.0 (0.0) [0.0]	0 (0) [0]
		NB	Overall	B (B) [B]	0.06 (0.10) [0.10]	10.6 (12.4) [10.9]	45 (53) [51]	B (B) [B]	0.07 (0.12) [0.12]	10.9 (12.8) [11.2]	48 (53) [53]
		SB	Overall	A (B) [A]	0.01 (0.01) [0.00]	9.6 (10.6) [9.5]	20 (25) [21]	A (B) [A]	0.01 (0.01) [0.01]	9.7 (10.8) [9.6]	23 (22) [19]
7	Bay Ridge Ave at Chesapeake Ave	**Overall**	-	-	-	4.1 (9.4) [6.0]	-	-	-	5.3 (11.1) [7.7]	-
		WB	Overall	B (C) [C]	0.37 (0.69) [0.56]	11.6 (23.6) [15.8]	100 (173) [131]	B (D) [C]	0.45 (0.77) [0.63]	14.1 (29.9) [18.2]	111 (241) [151]
		NB	Overall	-	0.43 (0.39) [0.38]	0.0 (0.0) [0.0]	25 (15) [10]	-	0.46 (0.42) [0.42]	0.0 (0.0) [0.0]	37 (18) [15]
		SB	Overall	A (B) [A]	0.14 (0.41) [0.20]	9.2 (10.7) [9.8]	77 (207) [81]	A (B) [A]	0.27 (0.44) [0.22]	9.7 (10.9) [10.0]	98 (265) [91]
8	Bay Ridge Ave at Madison Ave	**Overall**	-	A (B) [A]	0.56 (0.74) [0.58]	7.5 (13.9) [9.5]	-	A (B) [B]	0.60 (0.70) [0.62]	7.7 (12.0) [10.0]	-
		EB	Overall	C (B) [C]	0.42 (0.25) [0.57]	24.1 (18.5) [24.2]	66 (80) [103]	C (B) [C]	0.43 (0.22) [0.57]	24.6 (17.0) [24.7]	69 (86) [96]
		WB	Overall	C (C) [B]	-	24.3 (25.6)[18.8]	73 (140)[49]	C (C) [B]	-	24.9 (20.3)[19.2]	71 (155)[45]
			Left/Through	C (C) [B]	0.48 (0.68) [0.43]	25.1 (26.3)[19.1]	-	C (C) [B]	0.49 (0.56) [0.14]	25.7 (20.7)[19.5]	-
			Right	C (C) [B]	0.01 (0.01) [0.01]	20.7 (17.0) [18.4]	-	C (B) [B]	0.01 (0.01) [0.01]	21.0 (15.7) [18.7]	-
		NB	Overall	A (A) [A]	-	6.0 (9.8) [7.7]	246 (266) [265]	A (A) [A]	-	6.4 (8.7) [8.4]	282 (270) [277]
			Left	A (A) [A]	0.03 (0.12) [0.08]	3.2 (6.6) [4.7]	-	A (A) [A]	0.03 (0.13) [0.09]	3.1 (5.7) [4.8]	-
			Through/Right	A (A) [A]	0.58 (0.60) [0.58]	6.1 (10.0) [7.9]	-	A (A) [A]	0.62 (0.61) [0.63]	6.5 (8.8) [8.6]	-
		SB	Overall	A (B) [A]	-	4.8 (13.3) [7.4]	168 (215) [188]	A (B) [A]	-	4.9 (11.9) [8.0]	187 (204) [206]
			Left	A (A) [A]	0.07 (0.11) [0.06]	3.4 (6.3) [4.6]	-	A (A) [A]	0.08 (0.11) [0.07]	3.4 (5.4) [4.7]	-
			Through/Right	A (B) [A]	0.44 (0.76) [0.55]	4.9 (13.6) [7.5]	-	A (B) [A]	0.47 (0.76) [0.60]	5.0 (12.2) [8.1]	-
9	President St at Madison Ave	**Overall**	-	A (A) [A]	-	7.9 (8.0) [7.8]	-	A (A) [A]	-	7.9 (8.0) [7.8]	-
		EB	Overall	A (A) [A]	0.09 (0.09) [0.06]	7.5 (7.5) [7.3]	50 (50) [47]	A (A) [A]	0.09 (0.09) [0.06]	7.5 (7.5) [7.3]	49 (50) [46]
		WB	Overall	A (A) [A]	0.07 (0.07) [0.06]	7.9 (7.8) [7.7]	46 (49) [45]	A (A) [A]	0.07 (0.07) [0.06]	7.9 (7.8) [7.7]	45 (47) [43]
		NB	Overall	A (A) [A]	0.17 (0.21)[0.16]	8.1 (8.4)[8.0]	59 (62)[57]	A (A) [A]	0.17 (0.21)[0.16]	8.1 (8.4)[8.0]	57 (60)[55]
		SB	Overall	A (A) [A]	0.11 (0.07) [0.10]	8.0 (7.8) [7.8]	53 (53) [51]	A (A) [A]	0.11 (0.07) [0.10]	8.0 (7.8) [7.8]	53 (50) [55]
7	President St at Van Buren St	**Overall**	-	A (A) [A]	-	8.3 (8.6) [8.2]	-	A (A) [A]	-	8.3 (8.6) [8.2]	-
		EB	Overall	A (A) [A]	0.21 (0.18) [0.05]	8.5 (8.4) [7.5]	59 (59) [47]	A (A) [A]	0.21 (0.18) [0.05]	8.5 (8.4) [7.5]	62 (57) [44]
		WB	Overall	A (A) [A]	0.20 (0.28) [0.03]	8.4 (9.0) [7.9]	62 (71) [43]	A (A) [A]	0.20 (0.28) [0.03]	8.4 (9.0) [7.9]	60 (69) [43]
		NB	Overall	A (A) [A]	0.07 (0.04) [0.23]	7.7 (7.7) [8.5]	49 (45) [68]	A (A) [A]	0.07 (0.04) [0.23]	7.7 (7.7) [8.5]	50 (44) [66]
		SB	Overall	A (A) [A]	0.04 (0.07) [0.16]	8.0 (8.2) [8.1]	42 (51) [51]	A (A) [A]	0.04 (0.07) [0.16]	8.0 (8.2) [8.1]	43 (45) [58]
6	Bay Ridge Ave at Tyler Ave	**Overall**	-	B (C) [B]	0.55 (0.68) [0.57]	16.7 (20.6) [17.5]	-	B (C) [B]	0.58 (0.68) [0.61]	17.4 (20.1) [18.3]	-
		EB	Overall	C (C) [C]	-	27.4 (30.9) [24.9]	173 (275) [196]	C (C) [C]	-	27.6 (32.2) [25.7]	188 (346) [210]
			Left	C (C) [C]	0.63 (0.76) [0.63]	28.8 (33.7) [26.3]	-	C (D) [C]	0.65 (0.76) [0.67]	29.1 (35.7) [27.3]	-
			Through/Right	C (C) [C]	0.27 (0.41) [0.27]	23.8 (24.9) [21.3]	-	C (C) [C]	0.26 (0.41) [0.26]	23.4 (24.5) [21.1]	-
		WB	Overall	D (D) [D]	0.29 (0.09) [0.37]	40.0 (43.9) [48.5]	38 (12) [27]	D (D) [D]	0.30 (0.09) [0.38]	41.3 (41.9) [50.6]	36 (13) [30]
		NB	Overall	B (B) [B]	-	12.9 (14.2) [13.9]	210 (184) [175]	B (B) [B]	-	14.1 (13.4) [15.0]	234 (225) [170]
			Left	B (B) [B]	0.26 (0.29) [0.23]	10.9 (13.6) [12.5]	-	B (B) [B]	0.27 (0.29) [0.24]	11.6 (14.3) [13.3]	-
			Through/Right	B (B) [B]	0.47 (0.42) [0.40]	13.5 (14.3) [14.3]	-	B (B) [B]	0.51 (0.42) [0.44]	14.8 (13.2) [15.4]	-
		SB	Overall	B (B) [B]	-	13.1 (17.5) [14.5]	153 (287) [200]	B (B) [B]	-	13.6 (16.1) [15.1]	158 (317) [225]
			Left/Through	C (C) [C]	0.39 (0.69) [0.54]	21.2 (28.3) [23.2]	-	C (C) [C]	0.43 (0.69) [0.58]	22.5 (26.2) [24.7]	-
			Right	A (A) [A]	0.25 (0.29) [0.23]	8.0 (6.4) [5.8]	-	A (A) [A]	0.27 (0.29) [0.25]	7.9 (5.7) [5.8]	-

5. Long-term Traffic Evaluation

Any long-term development not currently in the planning pipeline is considered speculative – both the location and the development program. Due to the Eastport's compactness, speculative developments would have a large impact on certain intersections depending on their ultimate location, size, and development program. Rather than guessing on individual development programs and locations, we focused on the ultimate carrying capacity of Eastport's main travel way – Bay Ridge/Chesapeake and 6th Street, with the goal of determining how many more vehicle trips (local and/or through traffic) that these arterials can accommodate before congestion results in gridlocked streets (*arterial* Level of Service F) – see adjoining figure.

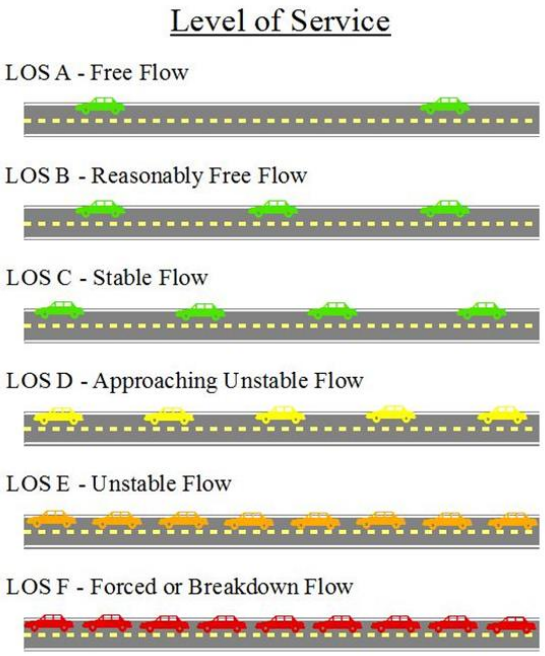


Figure 4: Graphic depiction of Arterial Level of Service

The maximum vehicle throughput of a road is limited by the number of lanes, traffic control, and desired vehicle speed. For examples a limited-access highway can process more vehicles per hour than one with traffic signals, even if they have the same speed limit and number of lanes.

5.1 Long-term Traffic Analysis and Results

Long-term forecasts assumes Eastport's main arterials remain the same – a two-lane road network with 25 mph speed limits. A couple of additional signalized intersections along Bay Ridge/Chesapeake were included in the long-term traffic model. In order to estimate the maximum amount of traffic the network can maintain the existing traffic model was first validated using current traffic count data and field observations. Vehicle trips were then added onto the validated network until LOS F conditions were reached. At 1850 vehicles per hour along Bay Ridge/ Chesapeake, the roadway network begin to operate in unstable traffic flow conditions; this is the peak capacity. Beyond this traffic volume, long queues persist and accessing Bay Ridge and Chesapeake Avenue from the side streets becomes difficult. This traffic volume includes the use of signal optimization, which affects the timing of signals to efficiently move traffic through the network.

The maximum peak hour volume of 1850 vehicles was then compared to the projected, year 2020 peak hour volumes. The PM peak hour was projected to be closest to this limit, at 1550 vehicles per hour, or 300 trips/hour below ultimate capacity. This is an estimate of the additional capacity remaining in the most restrictive peak hour. Under the assumptions used in the model,

300 additional trips per hour (after year 2020) can go through the network during the PM peak before the ability of the roadway network to process vehicle traffic breaks down. These additional trips can take the form of *additional through traffic*, or trips that are *locally generated* from new developments, or some combination of both.

5.2 Long-term Traffic Recommendations

The traffic volume along the main travel way is constrained due to the maximum neighborhood speed limit of 25 mph and the proximity of houses and buildings to the roadway. It is impractical and cost-prohibitive to add new lanes to increase the capacity of the roadway. Therefore, in order to effectively deal with projected growth in future traffic, vehicle trip reduction strategies are recommended – both for existing trips and for future developments. These strategies work by dis-incentivizing vehicle trips, and incentivizing alternate modes of travel. This is accomplished by creating better infrastructure for public and non-motorized transit and implementing travel demand management strategies. Such strategies include:

- Creating fully connected networks for pedestrians and bicycles,
- Improving bus facilities,
- Limiting newly created parking, and;
- Creating a parking management plan.

Many of these strategies coincide with specific bus, pedestrian, and cycling recommendations listed in the remainder of the report.

6. One-way Traffic Streets

Public input indicated mixed opinions on the current one-way street systems, with some residents approving, some against, and some not understanding the logic or purpose behind the one-way street network. A shown in Figure 5, the following streets have partial segments that are one-way in Eastport[5].

- Bay Ridge, 30', Parking allowed on both sides
- Burnside, 30', Parking allowed on both sides
- State Street, 30', Parking allowed on both sides
- 6th Street, 22', Parking allowed on both sides
- 5th Street, 26', Parking allowed on both sides and curbside school bus drop off/pick-up
- 3rd Street, 22', Parking allowed on both sides
- Chester Avenue, 24', Parking allowed on both sides

[5] For reference, 4th Street is 32' wide and 2nd Street is 22' wide.

Because roadway width and available curbside parking of these one-way blocks is similar to most other blocks that operate under two-way flow, the existing one-way network can seems arbitrary and sporadic.

Although 30-36 feet is the practical minimum to adequately provide for two travel lanes and parallel parking on both sides, the blocks that are currently two-way flow appear to handle the traffic volume under the existing network configuration without significant issue as observed from public comments and field observations. Given that there is not a strong consensus to change the network of one-streets, we have provided a short-term and long term *options*, that would decrease confusion for drivers – particularly non-local visitors. Both short-term and long-term options would need further study outside of the transportation sphere, as well as additional community input, since changes to one-way patterns improve convenience (e.g. reduced traffic, easier passing) for one block at the expense of a neighboring one.

6.1 One-way Short-term Options

To simplify the one-way network, consider converting from one-way to two-way:

- The block of 3rd Street between Severn Avenue and Chesapeake Avenue, and;
- The two blocks of Chester Avenue between 5th Street and 3rd Street.

It is not recommended to convert the block of 5th Street between Severn Avenue and Chesapeake Avenue due the bus drop off flow for the elementary school. The block of 6th Street between Chesapeake Avenue and Chester Avenue is also not recommended for conversion, because it is not wide enough for a receiving lane from southbound 6th street, a curbside parking on either side, and a northbound lane that would have queued traffic waiting to enter the intersection. Figure 5 shows which blocks could be converted to two-way.

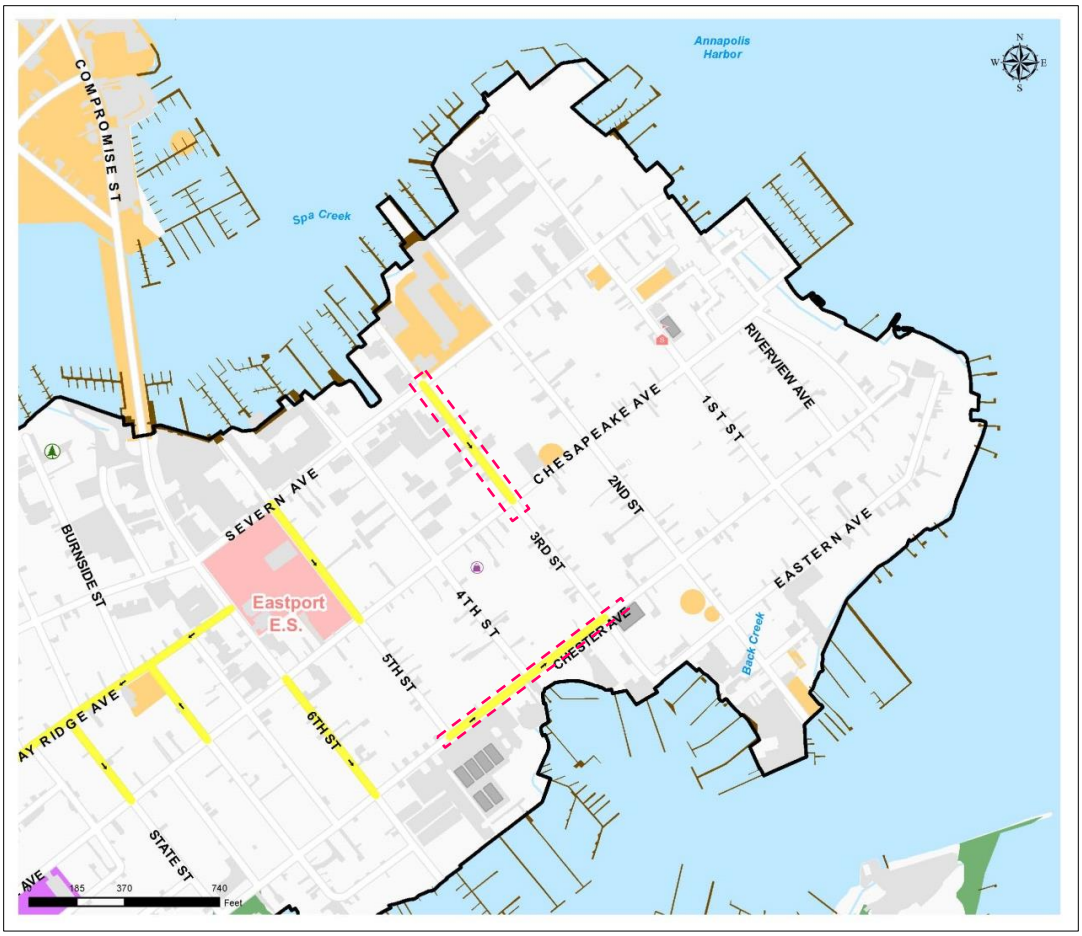


Figure 5: Optional short-term recommendations for conversion to two-way streets (show in dashed lines)

6.2 One-way Long-term Option #1

While a two-way network operates effectively with the existing volume and will conceivably continue to operative effectively in the future due to a low predicted growth in vehicle traffic along local streets, a one-way network could be preferable if available roadway can be repurposed to accommodate additional uses – such as increase curbside parking or to facilitate a multimodal network of dedicated bus lanes or bike lanes. Additionally, having a consistent and logical network of one-streets could benefit tourists and out-of town visitors.

The short, narrow, condensed grid network of the neighborhood east of 6th Street is well-suited for a logical one-way network of streets. The one-way network is shown in the map below in blue while the existing one-way network is shown in yellow as a reference. It is recommended to explore conversion of:

- Chesapeake Avenue to one-way flow in the *westbound* direction;
- Chester Avenue to one-way flow in the *eastbound* direction serving as the couplet to Chesapeake.
- 5th street through 1st Street between Severn Avenue and Chester Avenue to one-way flow in an alternating pattern.

Severn Avenue would remain as is, because of its access to a high density of commercial and marina uses. This area of Eastport would benefit from a more logical pattern for one-way traffic flow, and drivers need to pass each other along narrow roadways would be reduced, however, there would be little benefit carried over to other travel modes. Because the existing streets are narrower than typical two-way facilities, there is no additional space gained for bike lanes or bus lanes or parking by converting from two-way to one-way roads.

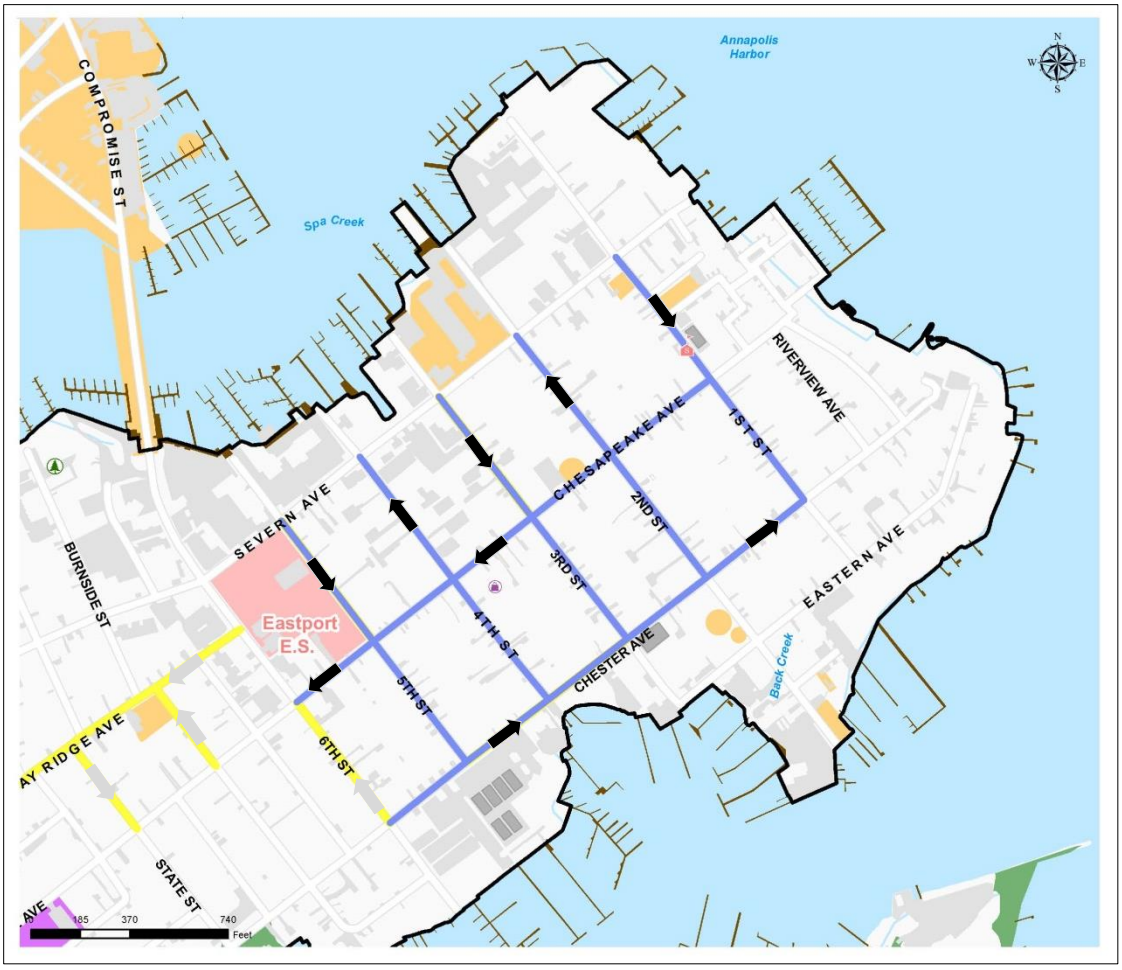


Figure 6: Long-term option #1 for creating a one-way street network

A review of traffic operations for this roadway directional configuration showed that this configuration would not cause any intersections to have a Level of Service below a D in any peak period.

6.3 One-way Long-term Option #2

Another option worth exploring is the conversion of Chesapeake Avenue, between Bay Ridge Avenue and 6th Street from two-way to one-way operations, such that Chesapeake and Bay Ridge Avenue operate together as one-way couplets between 6th Street and the Eastport Shopping Center. This option displaces current westbound Chesapeake traffic onto Bay Ridge,

which would then no longer need a yield control at its intersection with Chesapeake Avenue. The extra roadway width saved could be applied to protected two-way bike lanes, as shown in Figure 7. This conversion would have the ancillary effect of speed reduction along Chesapeake Avenue, which is currently 38 feet wide; both speeding along Chesapeake Avenue and a lack of bike facilities throughout Eastport were noted by residents. Converting Chesapeake Avenue to one-way eastbound has institutional challenges, however, as both delivery trucks and buses would have to be rerouted to Bay Ridge Avenue, in addition to all westbound traffic currently using Chesapeake Avenue. An alternative to one-way conversion would be to remove parking along the south side for two-way bike operations and retain two-way vehicle traffic, as shown in Figure 8.

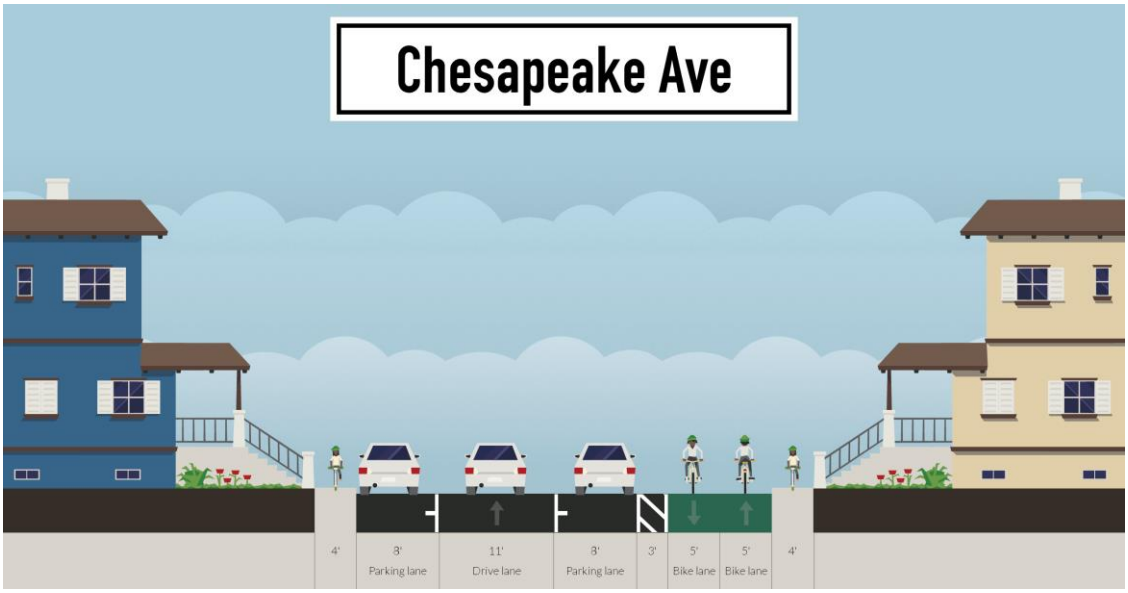


Figure 7: Long-term option for converting Chesapeake one-way eastbound and adding buffered two-way bike lanes

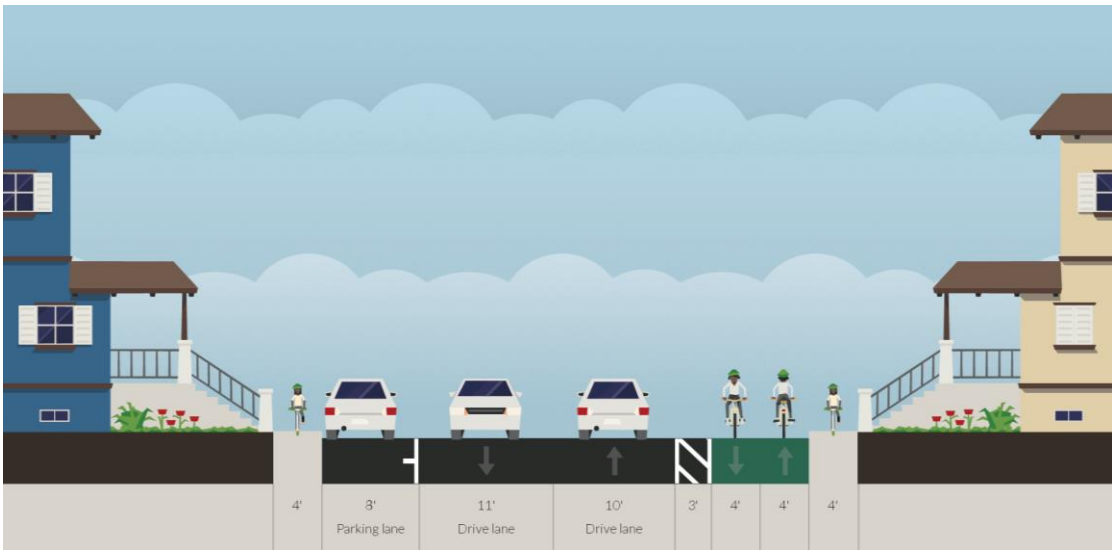


Figure 8: Alternative to one-way conversion of Chesapeake Avenue, retaining two-way operations, at the expense of parking along one-side.

7. Parking

As discussed in the *Existing Conditions* Report, a curbside parking utilization study was conducted in Eastport, focused along the primary arterial and commercial streets across Eastport – and the peninsula east of 6th Street, where personal driveways were scarce. Curbside parking utilization in Eastport was assessed for three study periods:
1) A typical weekday evening;
2) A typical, non-event Saturday afternoon; and
3) During a Saturday afternoon event, in this case the 2nd weekend of the Fall Boat Show.

The typical weekday evening sees very high parking utilization rates concentrated in the area bounded by Severn to Chesapeake and 5th to 2nd Streets, and moderate curbside parking rates are seen outside of this area. On a typical Saturday afternoon, very few curbside spots are available east of 6th Street; and during a Saturday event, all curbside parking east of (and including) State Street was utilized, as was all available parking along Chesapeake Avenue and Bay Ridge Avenue.

7.1 Resident Parking Concerns

In general, Eastport residents and business owners expressed the following sentiments regarding curbside parking:

- Lack of enforcement of vehicles parked curbside for extended periods of time or parked at red-painted curbsides.
- Lack of reliable parking near residence
- Commercial/marina patrons parking in residential neighborhoods
- Visitors to Downtown Annapolis using Eastport as a free "satellite garage."

7.2 Parking Recommendations

As shown in the utilization surveys, the free curbside parking available in Eastport is a highly-desirable commodity in Eastport, with demand from residents; business owners, staff, and patrons; and visitors to both Eastport and Downtown Annapolis, where pay-only parking is available along Main Street, Annapolis City Dock, and in Hillman Garage.

Curbside parking is scarce because it is free, unmanaged, and in a desirable location. Increasing the supply of parking via paid garages and parking lots is expensive and the land area needed is vast. Additionally, large surface lots or garages would induce greater vehicle traffic into Eastport and also take away from Eastport's historic character.

Short Term Recommendations

To validate concerns expressed by residents, it is recommended to conduct two additional targeted parking studies that will help determine strategies for improved parking management:

- A *parking turnover study* on each commercially-oriented block face is recommended to understand how on-street parking is being used in the commercial areas. Such a study will determine, for example, if vehicles are parked all day on a block where parking is needed to support patronage of local businesses that rely on on-street parking.

- Evaluate the capacity and utilization of existing *private off-street parking*. This could provide information on whether or not patrons utilize the private parking spaces provided to them by visitors or simply use the most convenient parking spots available.

In either case, if commercially-oriented curbside space is being used for day-tourists, or at the expense of private parking lots, then two-hour parking restrictions can be applied to specific block to discourage abuse of free parking and encourage turnover. However, a limited application of two-hour parking, *by itself*, may only push this problem to adjacent non-commercial blocks where curbside parking remains unmanaged.

Long Term Recommendations

Assuming that Eastport and Downtown Annapolis continue to be desirable destinations and continue to grow, demand to drive to the area will only increase with time. Given that curbside parking is finite, there will ultimately be a need to manage this space, with preference given to residents and business owners/staff/patrons. Managing curbside space means allocating it to certain activities and charging for its use. Additionally, managing of curbside space should ideally be performed holistically – in other words, *all* of Eastport should be managed, because any unmanaged (free) block will quickly fill up to 100% capacity at all times.

Areas like Eastport, with a mix of commercial and residential and with a high demand for parking generally utilize a system that combines metered spaces and Residential Permit Parking (RPP) to manage and allocate curbside space. Metered spaces serve the commercial needs, while RPP permits are for residents. Other localities that have RPP include Washington, DC where the cost of RPP is $35 per year per car, while in College Park the cost is $10 per year. RPP blocks would be all block faces that have residential housing. Initially, the primary need for RPP would be east of State Street; adjacent blocks would be unmanaged but could apply for RPP on as-needed basis. Metered spacing would be relegated to commercial block faces, with the price-per-hour time-dependent and potentially free overnight. Commercial-only blocks represent potential for 140 to 160 metered spaces.

Because the demand to access Eastport would still exist with metered and/or RPP, it is recommended that fees from RPP and from meters be used increase the frequency, service span, and stop amenities of Annapolis Transit bus service within Eastport, as well as improve pedestrian and bike facilities. Additionally, fees can be applied toward parking enforcement.

Other curbside parking recommendations include:

- Designate select curbside spots for 24-48 hour parking (e.g. overnight boat excursions), where a business owner can purchase the permit to buy long-term curbside access.

- Institute Visitor Parking Permit (VPP) program in conjunction with RPP, where RPP sticker holders also receive a complementary VPP sticker for the year and the ability to obtain additional monthly VPP passes. VPP allows residents without driveways to have visitors at non-metered spaces.
- Add Wayfinding signs for existing off-street public/overflow parking facilities

8. Curbside Loading Recommendations

As businesses have turned over, the loading zones and adequate patron parking may not have been reevaluated. To better balance the parking needs of businesses, residents, and visitors it is recommended to evaluate existing loading zones with the goal of consolidation to make scarce curbside space more efficient. There are currently at least five loading zones within a one block vicinity of 4th and Severn, each with different loading zone times and restrictions. There is an opportunity for businesses to share loading zones, opening up parking for visitors. It is recommended that the loading zones be consolidated into two or three small time-limited loading zones located near:

- Intersection of 3rd and Severn
- Intersection of 4th and Severn

In order to establish the time limit, it is recommended that the City work with local businesses that have recurring delivery needs in order to coordinate a delivery schedule window.

Long-term loading solutions will depend on how the density of businesses changes – particularly businesses located along Severn Avenue that are on small lots. Large commercial lots (e.g. Eastport Shopping Center) should continue to load on-site and not use public space – even if the property redevelops or changes uses. Along the older commercial areas around Severn Avenue, loading needs will change as smaller commercial properties that are concentrated together turn over, or as properties change from residential to commercially-oriented. These changes require the City to be flexible with regard to future loading demand. Ultimately, as demand for business loading grows, if it cannot be accommodated on private property, the City should allocate select curbside spaces for which businesses pay for their use – much like metered parking spaces. Loading zone pricing can operate as a pay per use or annual permit obtained by each business that needs recurring deliveries.

9. Event Management

As shown in the parking utilization study, events utilize the large majority of all available curbside parking spaces in all of Eastport. To manage both the parking demand and the traffic during events, we recommend the following:

- Locate unused private spaces – commercial lots, fields, etc. – that can support short-term parking on a recurring basis for events.
    - Provide an online map with these parking locations, number of spaces and pricing.
- Portable Wayfinding signage during events
- Develop and implement event signal timing program for signals along:
    - 6th Street
    - Bay Ridge Avenue
    - Tyler Avenue/Hilltop Avenue from Spa Road to Bay Ridge Avenue

10. Cycling Network

Eastport's flat terrain, compactness, and grid network make it ideal for cycling. Based on public input, there is a strong desire for more and better bike facilities. Specifically, 6th Street, Chesapeake Avenue, and Bay Ridge (south of Chesapeake Avenue) have been identified as locations that need better cycling infrastructure and would accommodate the most cyclists. Additionally, more bike parking is needed at destinations throughout Eastport.

10.1 Recommended Cycling Improvements along Chesapeake Avenue

Chesapeake Avenue is 38 feet wide from 6th Street to Bay Ridge Avenue. It is recommended that the parking lane on Chesapeake Avenue in the northeast-bound direction be replaced with a dedicated bicycle lane. As shown in Figure 9, there is room to add an eastbound bike lane and a buffer between it and eastbound traffic. Buffers can take the form of hatching, which offer no protection from errant drivers or they can be protected; soft protection would be raised flexible bollards, and hard protection would be curb (either preformed and bolted into the asphalt or traditional permanent curb)

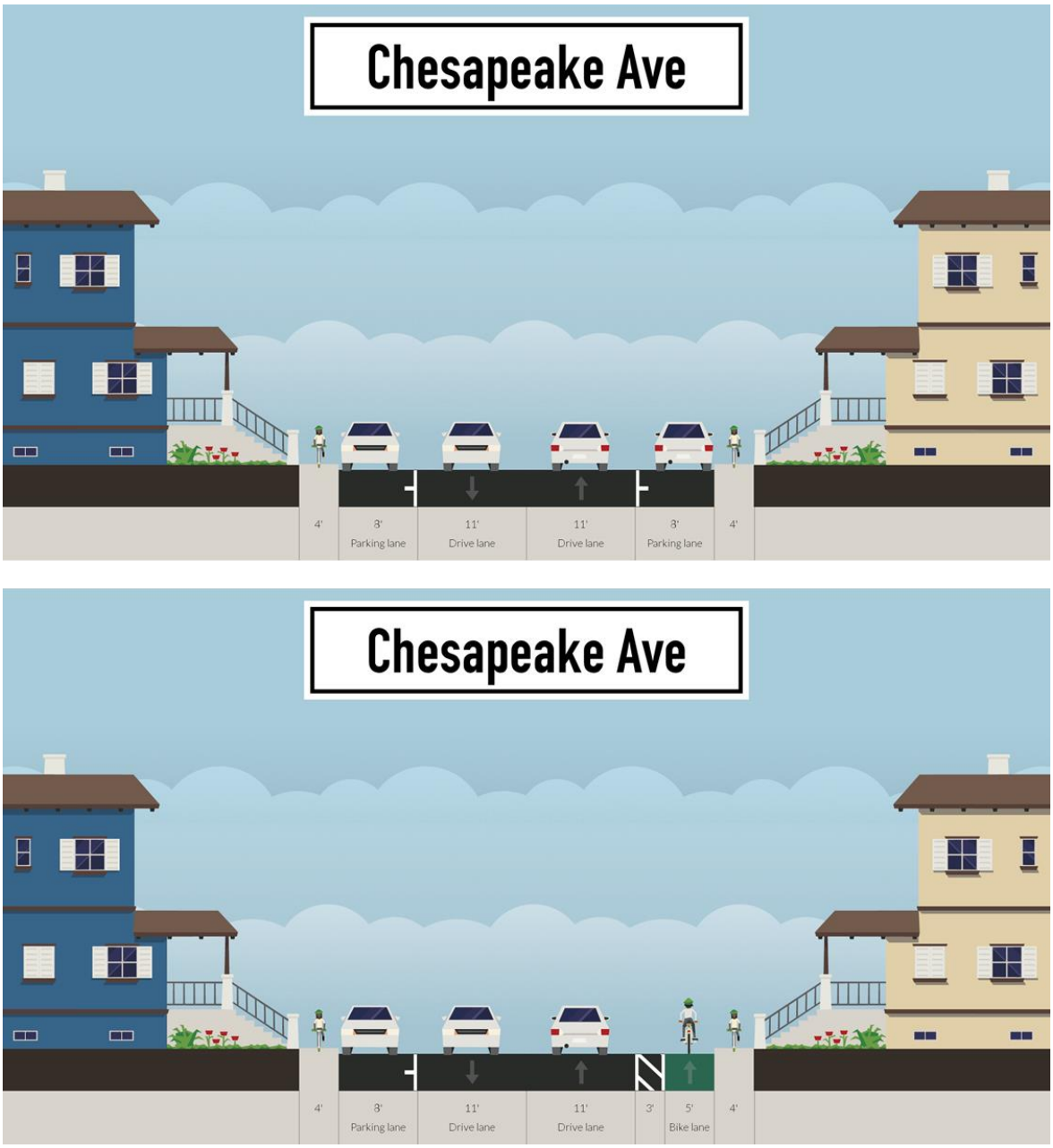


Figure 9: Re-striping Chesapeake Avenue to replace eastbound curbside parking with a bike lane

10.2 Cycling Improvements along Bay Ridge Avenue, South of Chesapeake Avenue

South of Chesapeake, Bay Ridge Avenue road-width varies based on the presence of turn lanes and/or parking lanes. However, there is available space to install 5' bike lanes in each direction, replacing sharrows with bike lanes. This improvement requires assuming 10' wide travel lanes in each direction, which is an acceptable road width given the number of vehicles using Bay Ridge, as well as the desire to minimize speeding through Eastport.

From Chesapeake to Fairview, where on-street parking is not allowed, we recommend installation of 5' wide bike lanes on either side of Bay Ridge Avenue. The roadway width is 38' from curb to curb, allowing for bicycle lanes in each direction plus two 10' travel lanes while

maintaining an 8' periodic alternating left turn only lane in the present configuration. In the long-term, the need for the left turn pockets should be evaluated; if the volumes are sufficiently low and gaps are available in opposing traffic, then the left turn pockets may not show any measurable improvement in travel time through the corridor and therefore can be removed. Figure 10 shows the typical proposed cross-section for Bay Ridge Avenue from Tyler to Chesapeake. Because the road width varies along this stretch of Bay Ridge, lateral transitions of the travel lanes should be gradual, even at the expense of shorter turn bays or reduced curbside parking, as shown in Figure 11.

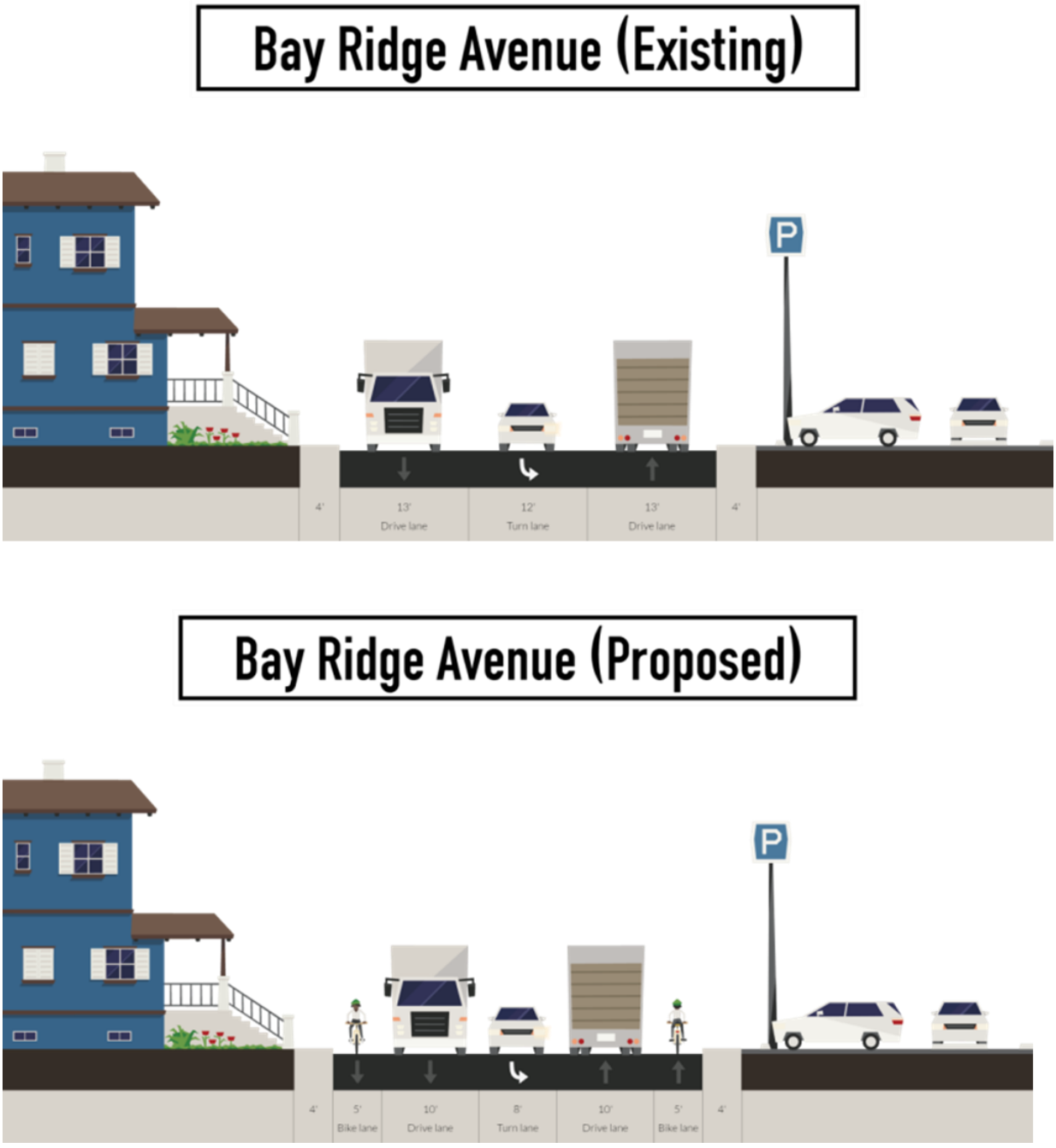


Figure 10: Existing and proposed lane use along Bay Ridge from Chesapeake to Fairview

Figure 11: Gradual transition of lane shifts along Bay Ridge Avenue between Fairview and Springfield

From Van Buren to Springdale where the roadway width is 40 feet and parking is allowed on the west side, the bike lane is recommended to be placed *in between* this parking lane and the southbound travel lane so that cyclists do not have to jog back and forth for one short block.

Figure 12: Bike "crosswalks" through an intersection

To alert vehicles turning onto and off of Bay Ridge Avenue, we recommend bike intersection crosswalks that direct cyclists through the intersection and also emphasize to drivers that there may be cyclists present.

In the long-term, redevelopment along Bay Ridge, such as the Eastport Shopping Center, provides opportunities to increase the public right-of-way for buffered bike lanes or a shared use path.

10.3 Cycling Improvements along 6th Street

6th Street width varies considerably, and public input has indicated a desire to see bike infrastructure along it in order to conveniently access Downtown Annapolis. Between Severn and Bay Ridge, the roadway is 30 feet wide and contains three travel lanes; the outside southbound travel lane becomes a right turn only to access Bay Ridge Avenue, while the other southbound lane proceeds to Chesapeake Avenue. It is recommended that this segment of 6th be evaluated for consolidation of the two southbound travel lanes into a single through-right lane, which would allow for the creation of 5-foot northbound and southbound lanes, as shown in Figure 13.

Between Severn and Spa Creek, 6th Street is approximately 40 feet before narrowing quickly down to 26 wide across the bridge into Downtown Annapolis. There is room for a northbound 10' travel lane and a northbound 5' bike lane, as well as a southbound 5' bike lane and two 10' southbound travel lanes. Based on the recommendation for the remaining segment of 6th Street, these two southbound lanes approaching Severn Avenue would have to be reconfigured from a share through-left and through-right to a left-only and a through-right lane. An evaluation of turning movements at this intersection would be required prior to the lane reconfiguration in order to determine the traffic impacts, if any.

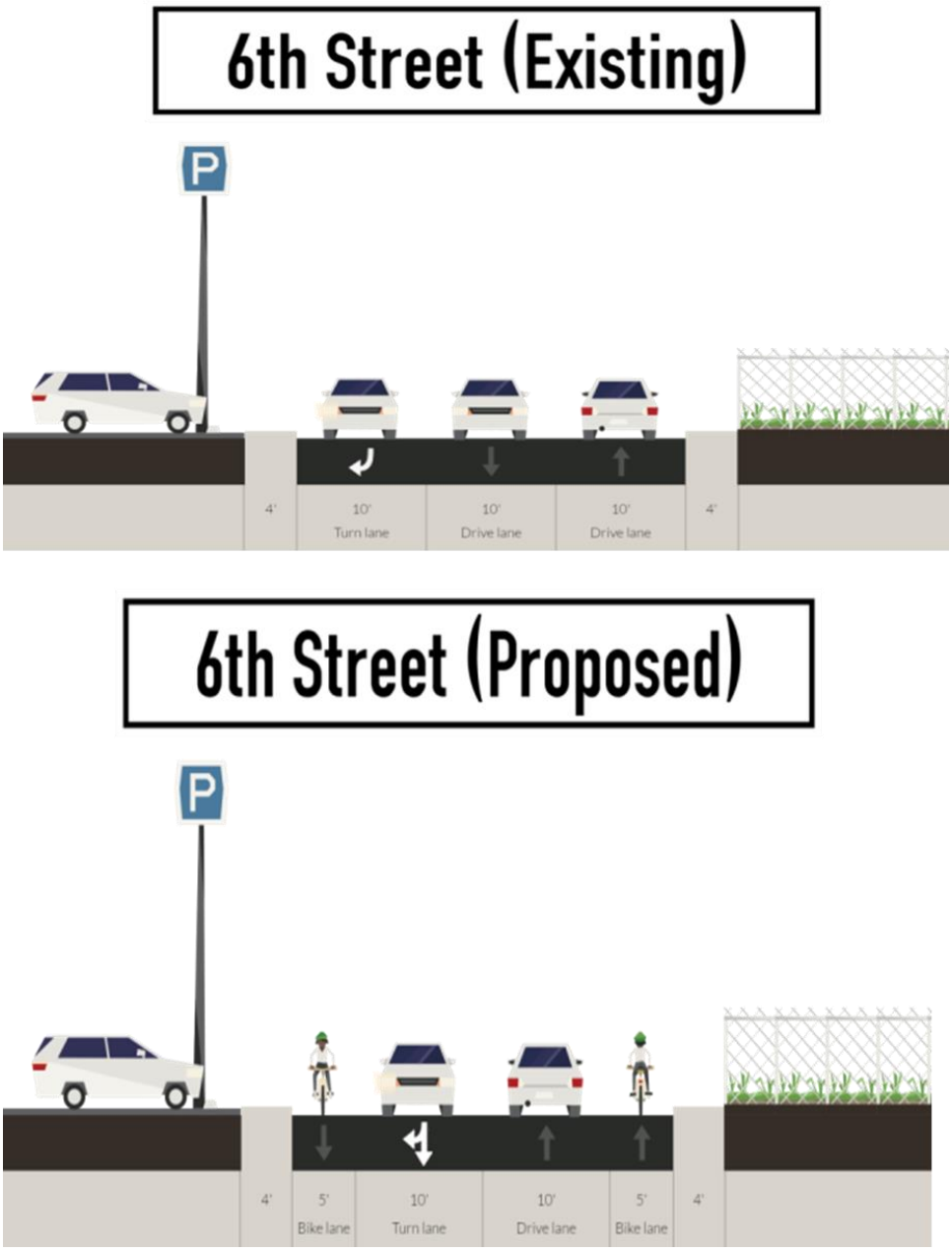


Figure 13: Recommended re-striping of a portion of 6th Street for new bike lanes

10.4 General cycling Infrastructure Recommendations

Recommendations from the Bicycle Master Plan should continue to be implemented, including:

- Creation of a Bicycle Boulevard/Signed Route along:
  - Severn Avenue,
  - Washington Street, and
  - Boucher Avenue
- Installation of public bicycle parking facilities at key locations including:
  - Eastport Shopping Center,
  - Near City Marina,

- ear Severn Avenue restaurants, and
- The Annapolis Maritime Museum.

11. Pedestrian Network

Pedestrian issues identified during field inspections and through public input centered around the following concerns:

- Lack of / faded crosswalks
- Missing, damaged, or obstructed sidewalk conditions
- Traffic calming on Chesapeake and on 6th Street

11.1 Recommendations for Crosswalk Installation and Updating

Missing crosswalks discourage pedestrians from using the sidewalk network, placing them at risk from drivers who may not be looking for or expecting pedestrian activity. In addition to providing a defined legal street crossing, crosswalks provide a visual cue for drivers to expect pedestrians. Pedestrian crossing is legal at every intersection under Maryland Law, irrespective of the presence of marked crosswalk. The majority of intersections studied in Eastport do not have crosswalks on every intersection leg, while many intersections have no crosswalks at all. A lack of crosswalks have been specifically identified by public input as a major concern. Crosswalks are missing at three high-priority locations:

- Along Bay Ridge Avenue between 6th and Chesapeake
- Along Chesapeake Avenue between 6th and Bay Ridge
- At the intersection of Chesapeake Avenue and Bay Ridge Avenue, crossing the Chesapeake Avenue leg, between the Eastport Shopping Center and PNC bank.

11.1.1 Recommendation for a crosswalk at the intersection of Chesapeake Avenue and Bay Ridge Avenue

In the short-term, installing a crosswalk at this location is difficult due to the lack of visibility for northeast-bound traffic rounding the bend as Bay Ridge Avenue becomes Chesapeake Avenue. Pedestrians would not be in a motorist's line of sight until they were too close to stop. A stop sign would be appropriate, but would need to accompanied by a crosswalk, stop control, and STOP AHEAD signage as seen in Figure 14. A stop sign warrant is recommended for this intersection.

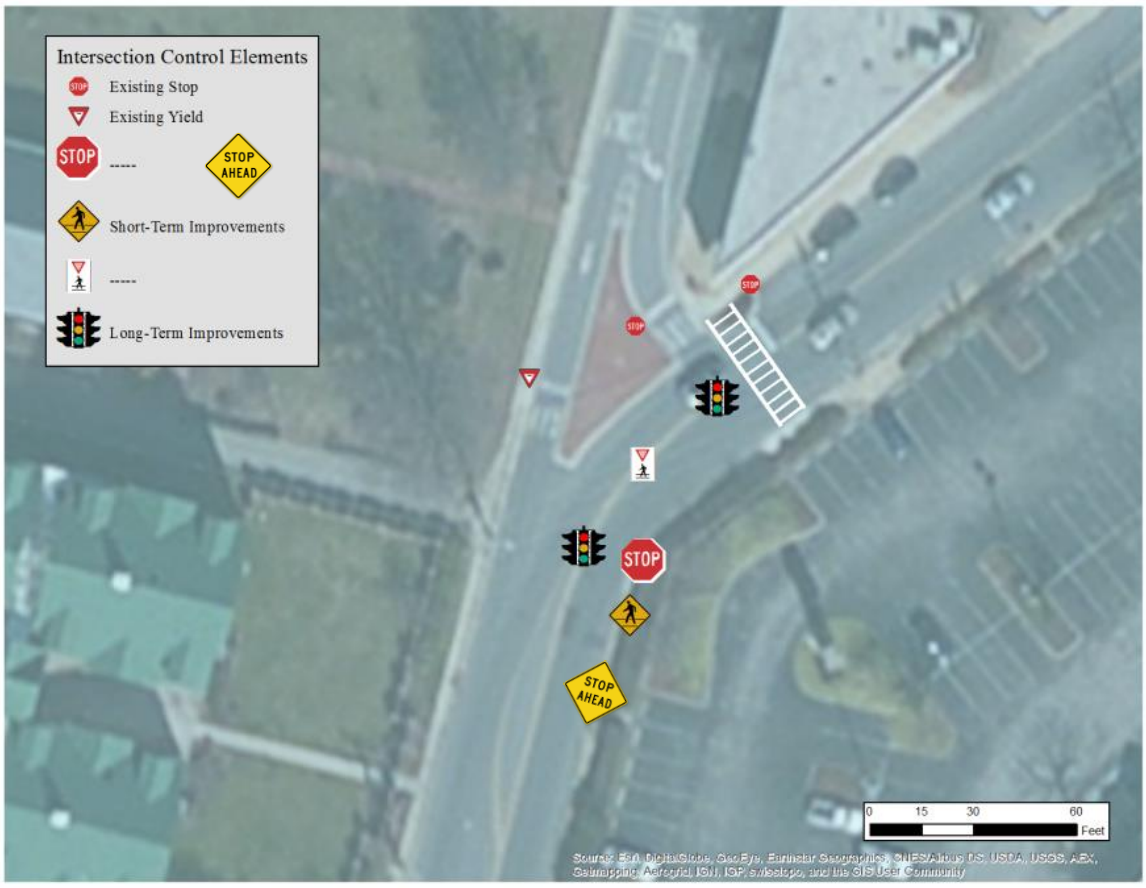


Figure 14: Proposed short-term pedestrian safety improvements by PNC Bank

In the long-term, the intersection would be safer as a signalized intersection or one that is realigned to remove the bend; alternatively the intersection could be reconstructed as a small traffic circle.

11.1.2 Recommendation for Crosswalks along Bay Ridge Avenue

In the short-term, we recommend installing marked crosswalks across Bay Ridge Avenue at the following intersections:

- Sailors Way,
- State Street, and;
- Burnside Street.

In the long-term, the intersections with Adams Street and with Washington Street should include marked crossings; however existing traffic calming measures will need to be reconfigured to allow for crosswalks which align with logical crossing locations and desired pedestrian routes. Additionally, curb ramps will also need to be installed or realigned.

11.1.3 Recommendation for crosswalks along Chesapeake Avenue

In the short-term, we recommend installing marked crosswalks across Chesapeake Avenue at the following intersections:

- Americana Drive,
- State Street, and;
- Burnside Street.

When improved with crosswalks, these intersections should include curb extensions that shorten crossing distances and reduce the obstruction of pedestrians due to parked cars.

11.1.4 Recommendations for Updated Crosswalks and Pedestrian Signals

It is recommended that crosswalks be updated on a continuous basis, with the following intersections being the highest priority:

- 6th and Severn Avenue
- 6th and Chesapeake
- 6th and midblock school crossing for Eastport Elementary
- Chesapeake Avenue and midblock school crossing for Eastport Elementary
- Bay Ridge and Madison
- Bay Ridge and Chesapeake

These locations have the highest pedestrian volume crossings. Additionally, the intersection of 6th and Severn Avenue should be upgraded to include pedestrian WALK and countdown signals as well as Leading Pedestrian Interval phasing (LPI). LPI is a brief pedestrian phase – typically about 3 seconds – that proceeds parallel traffic's green light. LPI is used to place pedestrians within the crosswalk prior to adjacent motorists receiving a green light. This allows for greater visibility of pedestrians to drivers, particularly those that are turning right across a crosswalk.

In the long-term, all crosswalks should be tabulated and kept on a recurring updating schedule. Painted crosswalk should be updated yearly, while thermoplastic crosswalks should be updated every 3 years.

11.2 Recommendations for Missing, Obstructed, and Non ADA-Compliant sidewalk

11.2.1 Missing, Damaged, and Obstructed Sidewalk

As shown in Figure 15 and Figure 16, several blocks throughout Eastport have sidewalk obstructions or have a sidewalk that is missing or in poor condition, creating an uncomfortable and often unsafe condition for pedestrians. Relocating utility poles is an expensive and lengthy process. Nevertheless, pedestrian access by residents and tourists is a quality of life issue, and pole relocation is recommended where they obstruct sidewalk and pedestrian ramps. In the short term, we recommend that the city evaluate all obstructing poles for relocation onto public and/or private space. Evaluation should focus on high pedestrian-activated spaces, such as those abutting Severn Avenue and abutting the Eastport Shopping Center. Note that some locations will require right-of-way and/or easement review. Where public/private space does not exist or public utility easements cannot be obtained, consider opportunities where roadway narrowing

may provide for widening sidewalks to safely accommodate pedestrians. Roadway narrowing requires moving existing curb lines; and may require moving drainage inlets.
In the short-term, replace damaged and uprooted sidewalks at:

- Chester Avenue - South Side (State to Burnside),
- Chester Avenue – Both Sides (3rd to 4th),
- Chesapeake Avenue - Both Sides (3rd to 4th),
- Americana Drive - West Side (Norman to Chesapeake),
- Severn Avenue - East Side (First Street to River), and
- Chesapeake Avenue - East Side (4th to 5th).

Additionally, prioritize the installation or completion of sidewalks at:

- Chester Avenue - North Side (State to Burnside),
- Fifth Street - West Side (Severn to Spa Creek),
- Chester Avenue - South Side (4th to 5th),
- Creekview Avenue - North Side (6th to Burnside),
- Chester Avenue - South Side (5th to 6th),
- Chester Avenue - South Side (State to Dead End),
- Norman Drive - Both Sides (Monroe to Americana),
- Monroe - South Side (Bay Ridge to Norman),
- Chester Avenue - West Side (Burnside to 6th),
- 2nd Street - West Side (Severn to Spa Creek),
- Chesapeake Avenue - West Side (1st to Riverview),
- 5th Street - North Side (Chesapeake to Chester),
- Bay Shore Avenue - Both Sides (2nd to Dead End),
- 2nd Street - East Side (Bay Shore to Dead End),
- Chester Avenue - North Side (2nd to 3rd),
- Eastern Avenue - South Side (2nd to 3rd),
- Eastern Avenue - Both Sides (1st to Dead End),
- Chester Avenue - Both Sides (1st to Riverview),
- Chester Avenue - Both Sides (Riverview to Horn Point).

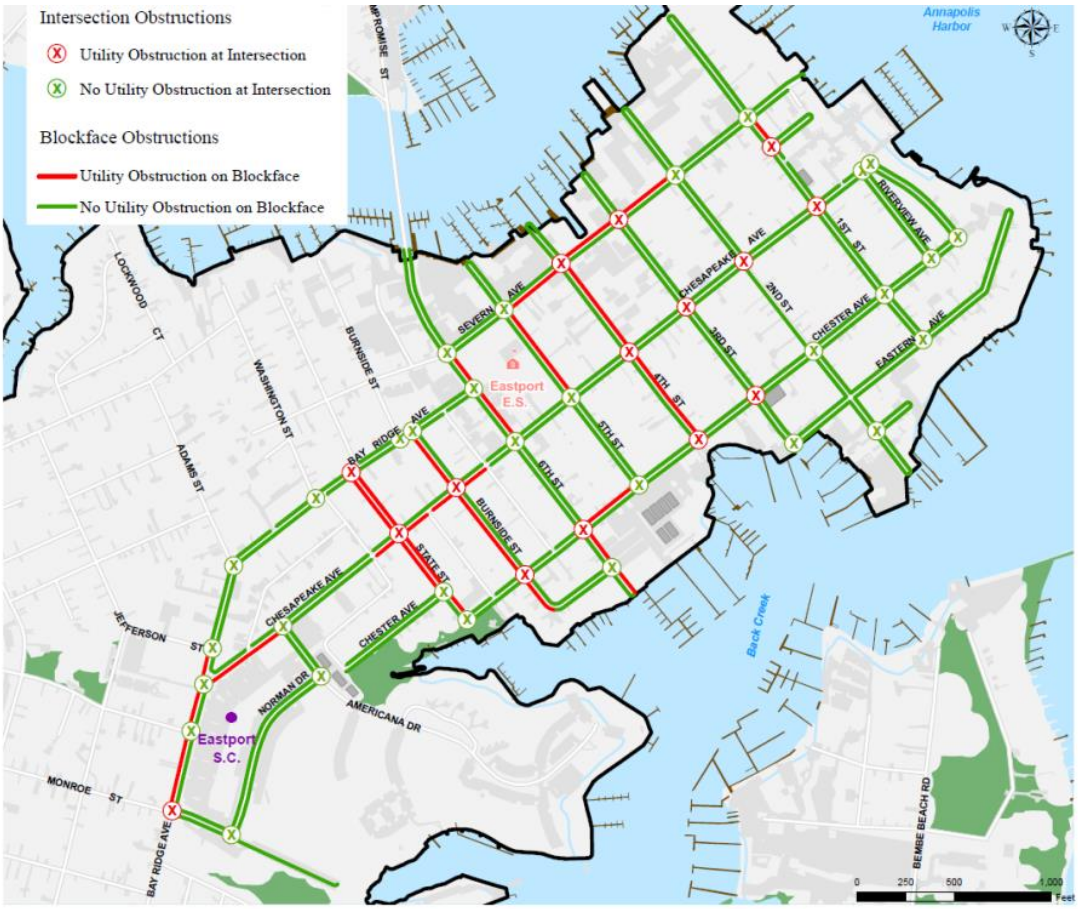


Figure 15: Locations where utility poles block pedestrian access

Figure 16: Locations where is sidewalk is in poor condition or missing

In the short-term, prioritize installation of ADA compliant detectable warning strips on all existing curb ramps. Installing pedestrian ramps where none are present is recommended at the following intersections:

- Bay Ridge at Adams,
- Bay Ridge at Sailors,
- Bay Ridge at Washington,
- Bay Ridge at Burnside,
- State at Chester,
- Chesapeake at Americana,
- Chesapeake at Bay Ridge,
- Chesapeake at Horn Point.

In the long-term, assess all curb ramps for geometry, slope, alignment and ease of access and subsequently prioritize reconstruction of all deficient ramps including the installation of curb

extensions where appropriate. Prioritization should be based on proximity to schools and activity centers, such as commercial retail/restaurants and attractions.

11.3 Recommendations for Traffic Calming

Public input on speeding was focused along 6th Street and along Chesapeake Avenue. As noted by speed profiles develop for the *Existing Condition*s report, both 6th Street and Chesapeake Avenue have about 15% of all vehicles traveling over 30 mph for each road. The speed limit is 25 mph for both.

Prior streetscape and traffic calming recommendations from *2005 Eastport Streetscape Plan* called for:

- Pedestrian lighting
- Street trees
- High-visibility intersections
    - High visibility crosswalks
    - Textured pavement inside intersections at:
        - 6th and Severn
        - 6th and Bay Ridge
        - 6th and Chesapeake

These elements combine to provide multiple visual cue for drivers to slow down for pedestrians. For 6th Street, we recommend implementing these elements suggested in the *2005 Eastport Streetscape Plan*, as well as exploring raised intersections along 6th Street. Raised intersections are similar to speed humps, but they cover an entire intersection, requiring motorists to slow down to 15-20 mph from every direction[6].

Chesapeake Avenue is 38' wide and has available parking on both sides. Parking is often well under capacity along Chesapeake and is not marked by striping, so it appears from a driver's perspective that each travel lane is 19' wide, which encourages speeding. To mitigate this in the short-term, we recommend marking an 8-foot parking lane with solid white line. Additionally, the crosswalks recommended previously, will help to provide additional visual cues to drivers to expect pedestrian activity along Chesapeake.

We also recommend evaluating locations for curb extensions and crosswalks along Chesapeake Avenue, between 6th and Bay Ridge. As shown in Figure 17, curb extensions with crosswalks serve to narrow crossing distance for pedestrian, promote their visibility to driver (so that they aren't obscured by parked cars, and narrow the travel lanes, so that drivers feel "pinched" and slow down.

[6] At this time, the city of Annapolis does not implement vertical traffic calming

Figure 17: A curb extension and crosswalk at an uncontrolled intersection in the Adams Morgan neighborhood of DC.

12. Bus Network

Public Input regarding the existing bus network in Eastport centered around two general themes:

- More coverage (i.e. longer service span, more frequent headways, and more stops)
- Relocation and improvement of select stops

As shown in Figure 18, many stops within Eastport showed low daily boardings, with the exception of the stop at the Eastport Shopping Center.

Based on an evaluation of public input, daily ridership figures, best ADA practices and field observations, we recommend the following short and long-term improvements:

- Short term:
    - To prevent potential traffic backups and attempted bus passing, relocate the stop at the intersection of 4th and Chesapeake to the front of the church on 4th Street to reduce conflicts and improve boarding/alighting conditions. Parking will be restricted in this area during hours of bus service in addition to the current Sunday restrictions.
    - Analyze green line routing and walking distance to stops in Eastport as part of the Annapolis Transit Development Plan. Query residents to determine if route expansion is desired to increase coverage area.
    - To increase headway and have a more repeatable bus arrival/departure time, evaluate stop consolidation – particularly where low-boarding stops are clustered.
    - Identify and add posted schedules to major stops and shelters system wide.

  - Identify locations where parking can be restricted to allow for better bus access to the curb. See Figure 19 for proposed locations for parking restrictions or bus bulb-outs (see long-term recommendations)

- Long-term:
  - Re-assess bus stop locations area-wide as part of the forthcoming Annapolis Transit Development Plan with the goal of improving capacity for amenities (benches, shelters, etc.).
    - Within a stop location reassessment, determine locations for installation of bus bulbs (see Figure 20) at intersections to allow both parking and a safe bus loading zone.
  - Provide real-time bus geo-location data so that riders have access to accurate arrival and departure time. This information can be both on-line and converted into a phone App.

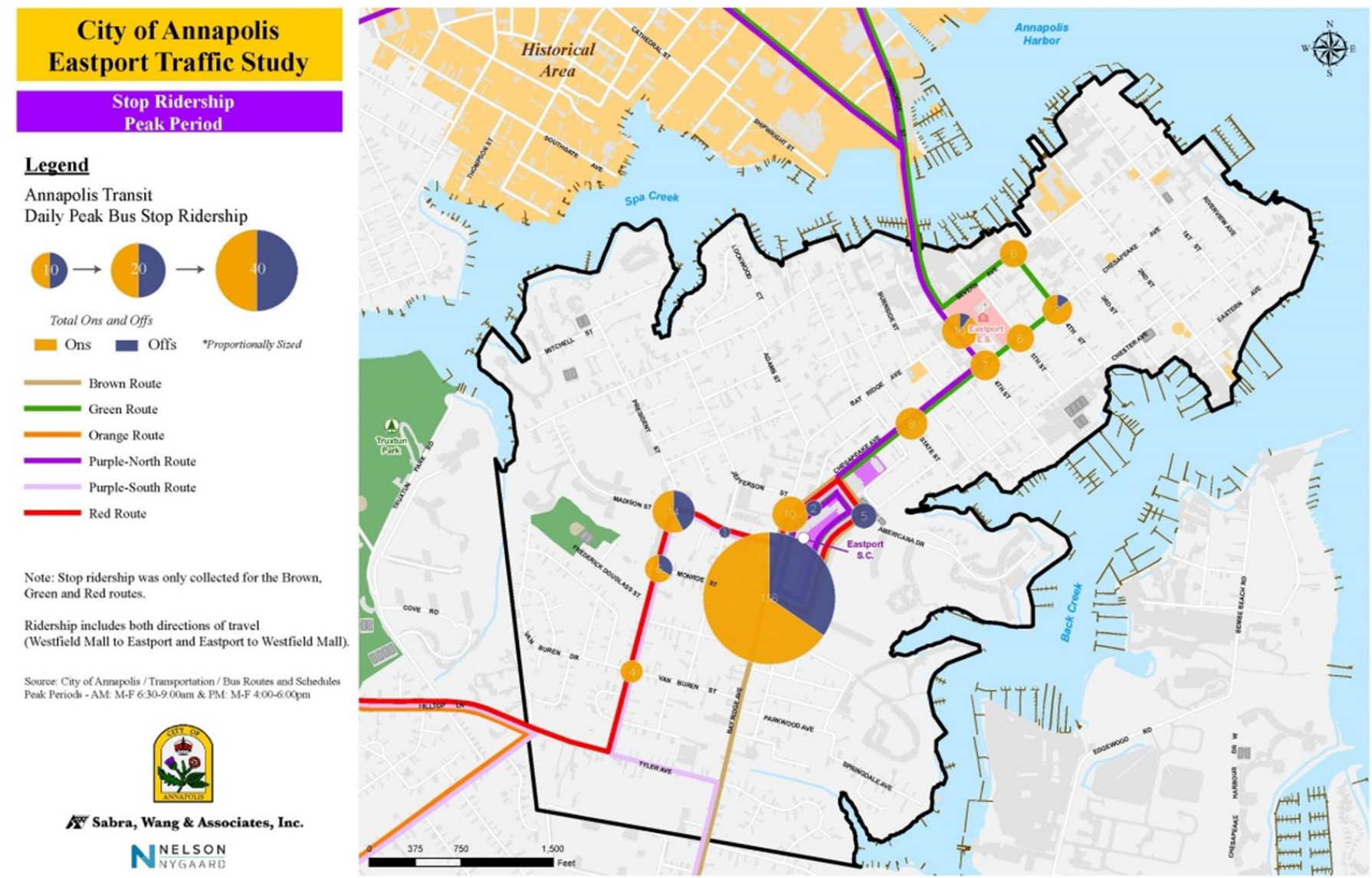


Figure 18: Daily ridership at stops throughout Eastport

Table 4 provides a summary of all recommendations for each mode of transportation.

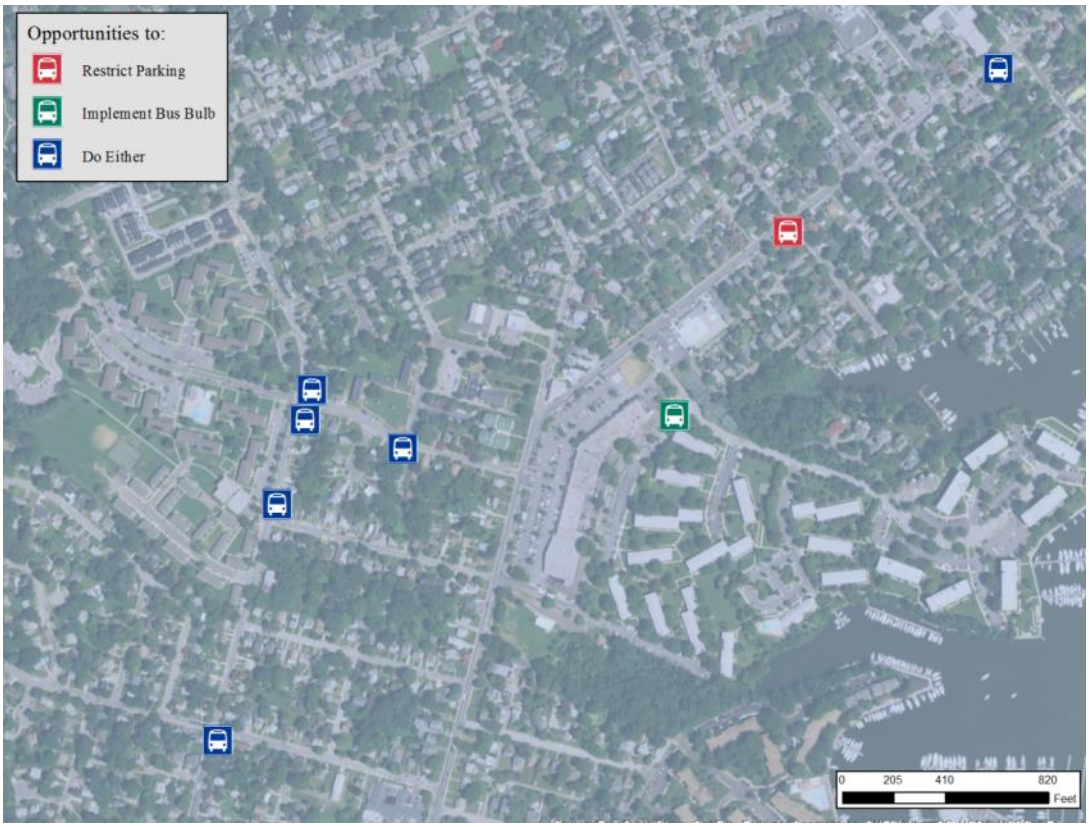


Figure 19: Opportunities to create curbside boarding.

Figure 20: Example of a bus bumpout that allows safe ADA access for riders

Table 4: Summary of Proposed Alternatives

Recommendation Timeframe	Proposed Recommendation				
	Traffic and One-way streets	**Bus**	**Pedestrian / Traffic Calming**	**Bicycle**	**Parking/Loading**
Short-term	Roadway Network can accommodate Year 2020 traffic projections without failing intersections.	Relocate bus stop at Chesapeake Ave and 4th Street to 4th in front of church, restrict parking during bus service hours	Evaluate feasibility of a stop sign at Bay Ridge Ave and Chesapeake Ave in order to safely accommodate crosswalk between the Eastport Shopping Center and PNC bank	Replace parking lane on NE bound Chesapeake Ave with dedicated bike lane from Bay Ridge to 6th Street	Perform targeted parking field studies to determine parking management strategies: 1) Conduct turn over study on commercial blocks; 2) Off-street parking capacity and utilization study
	Consider converting all blocks east of 6th Street to two way flow, except 5th Street from Severn to Chesapeake or 6th Street from Chester to Chesapeake Avenue	Query residents about green line routing and walking distance to stops to determine new stop locations or consolidation options	Install ladder-style crosswalks across Bay Ridge Ave at Sailors Way, State Street and Burnside Street	Install 5' bike lanes on either side of Bay Ridge Ave from Chesapeake Ave to Tyler. Reduce travel lane widths to 10' and shorten turn bays as needed to have more gradual lane shifts.	Consider 2-hour parking limits on commercial blocks.
	Monitor signal timings at Bay Ridge & Madison and at Bay Ridge & Tyler, as development proceeds	Update and add posted schedules and maps to stops and shelters	Install ladder-style crosswalks across Chesapeake Ave at Americana Way, State Street, and Burnside Street	Create signed route along Severn Ave, Washington Street, and Boucher Ave as part of Spa Creek trail, including parking facilities	Evaluate and consolidate loading zones and times.
		Identify locations area-wide where parking restrictions would increase bus access to curb	Refresh all crosswalks	Add public and private bike parking at key attractions	
			Install pedestrian signals/controls and LPI at Severn and 6th		
			Conduct Area-wide review for roadway narrowing to widen sidewalks or tree lawn and relocate utility obstructions		
Long-term	Vehicle trip growth that Eastport's main arterials can handle is finite. Cap growth in vehicle traffic through TDM strategies and parking maximums	Area-wide re-assessment of bus stop locations to improve capacity for bus amenities such as shelters	Reconfigure Bay Ridge and Chesapeake Ave intersection to remove uncontrolled bend in the road.	Evaluate potential of multi-use path along Bay Ridge as a development proffer when the Eastport Shopping Center redevelops	Consider metered parking in the commercial area
	Consider creating one way flow network, east of 6th Street, to improve alternate modes of travel. Convert Chesapeake Avenue to one-way flow Westbound. Convert Chester Avenue to one-way flow Eastbound. Convert north-south, numbered streets from 5th to 1st to one–way flow, alternating directions.	Plan for installation of dedicated transit stop poles at all stops	Modify existing traffic calming measures along Bay Ridge at Adams and Washington street to install direct crosswalks.	Evaluate Installation of bike lanes on both side of 6th Street from Spa Creek Bridge to Bay Ridge Ave. New bike lanes would come at the expense of a turn lane onto Bay Ridge	In conjunction with metered parking, consider Residential parking permit system to allow on street parking for residents only
	Optionally, convert Chesapeake Ave to one-way eastbound and re-use the save space for buffered bike lanes	Add bus bulbs or parking restrictions at all stops to provide direct curb access and/or shelter installation.	Develop installation and maintenance program for crosswalks		Require paid loading spaces, as business densify. Large lot commercial parcels should load on private space only.
		Add GPS to all buses and provide real-time bus location information via web and App	Install/repair sidewalks including ADA compliant ramps area wide.		
			Add crosswalks on all legs of every intersection.		
			Initiate a Utility relocation effort on all streets in Eastport to avoid sidewalk conflict. Prioritize areas near schools and local destinations.		
			Examine traffic calming measures such as curb extensions/neckdowns on Chesapeake between Bay Ridge and 6th Streets to coincide with new crosswalks		
			Implement an area-wide sidewalk installation/repair program. Prioritize areas near schools and local destinations.		

Appendix B: Short-term Year 2020 HCM and Queuing Reports

- HCM Reports
  - AM
  - PM
  - Saturday
- Queuing Reports
  - AM
  - PM
  - Saturday

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	171	427	96	5	599	118	108	19	8	65	5	119
Future Volume (vph)	171	427	96	5	599	118	108	19	8	65	5	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.99			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.98			0.99			0.92	
Flt Protected		0.99			1.00			0.96			0.98	
Satd. Flow (prot)		3403			1811			1772			1647	
Flt Permitted		0.54			1.00			0.59			0.86	
Satd. Flow (perm)		1874			1804			1083			1433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	186	464	104	5	651	128	117	21	9	71	5	129
RTOR Reduction (vph)	0	13	0	0	7	0	0	2	0	0	64	0
Lane Group Flow (vph)	0	741	0	0	777	0	0	145	0	0	141	0
Confl. Peds. (#/hr)	14		27	27		14	1		12	12		1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		61.0			45.1			25.0			25.0	
Effective Green, g (s)		61.0			45.1			25.0			25.0	
Actuated g/C Ratio		0.64			0.47			0.26			0.26	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		5.0			5.0			3.5			3.5	
Lane Grp Cap (vph)		1380			847			282			373	
v/s Ratio Prot		c0.07										
v/s Ratio Perm		0.27			c0.43			c0.13			0.10	
v/c Ratio		0.54			0.92			0.51			0.38	
Uniform Delay, d1		9.7			23.7			30.3			29.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			16.3			6.5			2.9	
Delay (s)		9.9			40.0			36.8			32.0	
Level of Service		A			D			D			C	
Approach Delay (s)		9.9			40.0			36.8			32.0	
Approach LOS		A			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	250	211	10	728	0	0
Future Volume (Veh/h)	250	211	10	728	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	229	11	791	0	0
Pedestrians					16	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	231			365		
pX, platoon unblocked			0.97		0.83	0.97
vC, conflicting volume			517		1101	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			485		932	248
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1044		242	765

Direction, Lane #	SE 1	SE 2	NW 1
Volume Total	272	229	802
Volume Left	0	0	11
Volume Right	0	229	0
cSH	1700	1700	1044
Volume to Capacity	0.16	0.13	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	0.3
Lane LOS			A
Approach Delay (s)	0.0		0.3
Approach LOS			

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		58.6%	ICU Level of Service B
Analysis Period (min)		15	

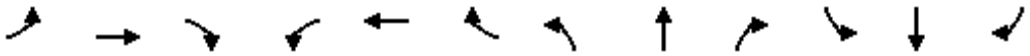
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	25	27	156	0	0	0	674	144	12	0	130	23
Future Volume (vph)	25	27	156	0	0	0	674	144	12	0	130	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.5				4.5	5.0			4.5	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Flpb, ped/bikes		0.99	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	0.99			0.98	
Flt Protected		0.98	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1798	1578				1767	1837			1818	
Flt Permitted		0.98	1.00				0.44	1.00			1.00	
Satd. Flow (perm)		1798	1578				813	1837			1818	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	29	170	0	0	0	733	157	13	0	141	25
RTOR Reduction (vph)	0	0	69	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	56	101	0	0	0	733	167	0	0	166	0
Confl. Peds. (#/hr)	14		4				3		4	4		3
Turn Type	Perm	NA	pm+ov				pm+pt	NA			NA	
Protected Phases		4	5				5	2			6	
Permitted Phases	4		4				2			6		
Actuated Green, G (s)		4.7	37.6				48.8	48.8			11.9	
Effective Green, g (s)		4.7	37.6				48.8	48.8			11.9	
Actuated g/C Ratio		0.07	0.59				0.77	0.77			0.19	
Clearance Time (s)		5.0	4.5				4.5	5.0			4.5	
Vehicle Extension (s)		3.5	3.5				3.5	5.0			5.0	
Lane Grp Cap (vph)		133	934				1119	1411			340	
v/s Ratio Prot			0.06				c0.34	0.09			0.09	
v/s Ratio Perm		0.03	0.01				c0.16					
v/c Ratio		0.42	0.11				0.66	0.12			0.49	
Uniform Delay, d1		28.1	5.6				3.5	1.9			23.1	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		2.5	0.1				1.5	0.1			2.3	
Delay (s)		30.6	5.7				4.9	2.0			25.4	
Level of Service		C	A				A	A			C	
Approach Delay (s)		11.9			0.0			4.4			25.4	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	6	266	292	0	0	717
Future Volume (Veh/h)	6	266	292	0	0	717
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	289	317	0	0	779
Pedestrians				7	4	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	0	
Right turn flare (veh)		10				
Median type					None	
Median storage veh)						
Upstream signal (ft)					237	
pX, platoon unblocked						
vC, conflicting volume	786	4	14	7	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	786	4	14	7	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	98	73	55	100	100	
cM capacity (veh/h)	322	1076	711	883	1623	

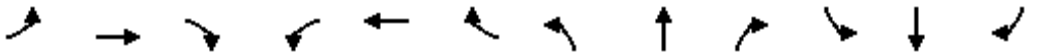
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	296	317	779
Volume Left	0	317	0
Volume Right	289	0	779
cSH	1102	711	1700
Volume to Capacity	0.27	0.45	0.46
Queue Length 95th (ft)	27	58	0
Control Delay (s)	9.7	14.1	0.0
Lane LOS	A	B	
Approach Delay (s)	9.7	14.1	0.0
Approach LOS	A	B	

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		



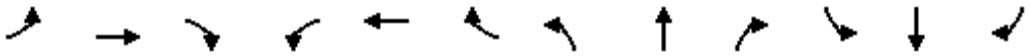
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	10	13	55	13	15	14	660	35	28	510	18
Future Volume (vph)	38	10	13	55	13	15	14	660	35	28	510	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1742			1786	1545	1768	1849		1770	1852	
Flt Permitted		0.77			0.72	1.00	0.42	1.00		0.30	1.00	
Satd. Flow (perm)		1378			1341	1545	777	1849		566	1852	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	11	14	60	14	16	15	717	38	30	554	20
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	2	0
Lane Group Flow (vph)	0	66	0	0	74	2	15	755	0	30	572	0
Confl. Peds. (#/hr)	3		2	2		3	2					2
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		6.0			6.0	6.0	35.3	35.3		35.3	35.3	
Effective Green, g (s)		6.0			6.0	6.0	35.3	35.3		35.3	35.3	
Actuated g/C Ratio		0.11			0.11	0.11	0.66	0.66		0.66	0.66	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			4.0	4.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		155			150	173	514	1224		374	1226	
v/s Ratio Prot								c0.41			0.31	
v/s Ratio Perm		0.05			c0.06	0.00	0.02			0.05		
v/c Ratio		0.43			0.49	0.01	0.03	0.62		0.08	0.47	
Uniform Delay, d1		22.0			22.2	21.0	3.1	5.1		3.2	4.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.6			3.5	0.0	0.0	1.3		0.2	0.6	
Delay (s)		24.6			25.7	21.0	3.1	6.5		3.4	5.0	
Level of Service		C			C	C	A	A		A	A	
Approach Delay (s)		24.6			24.9			6.4			4.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	53.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	283	4	96	1	10	5	133	435	0	0	243	382
Future Volume (vph)	283	4	96	1	10	5	133	435	0	0	243	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		4.0	6.0			6.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.98			1.00		1.00	1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.86			0.96		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1560			1784		1769	1863			1863	1564
Flt Permitted	0.95	1.00			1.00		0.45	1.00			1.00	1.00
Satd. Flow (perm)	1770	1560			1784		846	1863			1863	1564
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	308	4	104	1	11	5	145	473	0	0	264	415
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	167
Lane Group Flow (vph)	308	108	0	0	17	0	145	473	0	0	264	248
Confl. Peds. (#/hr)			1	1			1		2	2		1
Turn Type	Split	NA		Split	NA		pm+pt	NA			NA	pm+ov
Protected Phases	4	4		3	3		1	6			2	4
Permitted Phases							6			2		2
Actuated Green, G (s)	21.5	21.5			2.6		40.0	40.0			26.4	47.9
Effective Green, g (s)	21.5	21.5			2.6		40.0	40.0			26.4	47.9
Actuated g/C Ratio	0.27	0.27			0.03		0.50	0.50			0.33	0.60
Clearance Time (s)	5.0	5.0			5.0		4.0	6.0			6.0	5.0
Vehicle Extension (s)	3.5	3.5			3.5		3.5	6.5			6.5	3.5
Lane Grp Cap (vph)	475	418			57		533	930			614	935
v/s Ratio Prot	c0.17	0.07			c0.01		0.03	c0.25			0.14	0.07
v/s Ratio Perm							0.10					0.09
v/c Ratio	0.65	0.26			0.30		0.27	0.51			0.43	0.27
Uniform Delay, d1	26.0	23.0			37.9		11.3	13.5			21.0	7.7
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	3.2	0.4			3.5		0.3	1.4			1.5	0.2
Delay (s)	29.1	23.4			41.3		11.6	14.8			22.5	7.9
Level of Service	C	C			D		B	B			C	A
Approach Delay (s)		27.6			41.3			14.1			13.6	
Approach LOS		C			D			B			B	

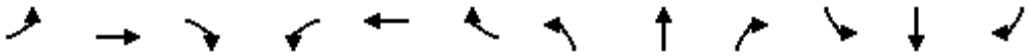
Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	153	0	12	134	11	6	13	35	18	5	4
Future Volume (vph)	6	153	0	12	134	11	6	13	35	18	5	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	166	0	13	146	12	7	14	38	20	5	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	173	171	59	29
Volume Left (vph)	7	13	7	20
Volume Right (vph)	0	12	38	4
Hadj (s)	0.04	0.01	-0.33	0.09
Departure Headway (s)	4.3	4.3	4.4	4.8
Degree Utilization, x	0.21	0.20	0.07	0.04
Capacity (veh/h)	807	805	757	682
Control Delay (s)	8.5	8.4	7.7	8.0
Approach Delay (s)	8.5	8.4	7.7	8.0
Approach LOS	A	A	A	A

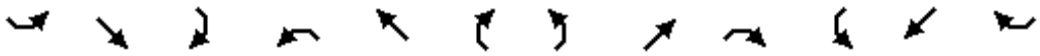
Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	25.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	13	55	24	22	7	36	58	37	15	66	4
Future Volume (vph)	6	13	55	24	22	7	36	58	37	15	66	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	14	60	26	24	8	39	63	40	16	72	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	81	58	142	92
Volume Left (vph)	7	26	39	16
Volume Right (vph)	60	8	40	4
Hadj (s)	-0.39	0.04	-0.08	0.04
Departure Headway (s)	4.1	4.6	4.2	4.4
Degree Utilization, x	0.09	0.07	0.17	0.11
Capacity (veh/h)	825	737	815	775
Control Delay (s)	7.5	7.9	8.1	8.0
Approach Delay (s)	7.5	7.9	8.1	8.0
Approach LOS	A	A	A	A

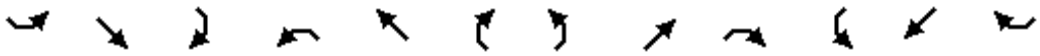
Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	20	23	0	0	0	0	0	241	4
Future Volume (Veh/h)	0	0	4	20	23	0	0	0	0	0	241	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	4	22	25	0	0	0	0	0	262	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	276	264	264	268	266	0	266			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	276	264	264	268	266	0	266			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	97	96	100	100			100		
cM capacity (veh/h)	656	641	775	681	640	1085	1298			1623		

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	4	47	266
Volume Left	0	22	0
Volume Right	4	0	4
cSH	775	658	1700
Volume to Capacity	0.01	0.07	0.16
Queue Length 95th (ft)	0	6	0
Control Delay (s)	9.7	10.9	0.0
Lane LOS	A	B	
Approach Delay (s)	9.7	10.9	0.0
Approach LOS	A	B	

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	1	3	41	3	13	3	80	27	1	70	0
Future Volume (vph)	0	1	3	41	3	13	3	80	27	1	70	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	3	45	3	14	3	87	29	1	76	0

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total (vph)	4	62	119	77
Volume Left (vph)	0	45	3	1
Volume Right (vph)	3	14	29	0
Hadj (s)	-0.42	0.04	-0.11	0.04
Departure Headway (s)	4.0	4.4	4.0	4.2
Degree Utilization, x	0.00	0.08	0.13	0.09
Capacity (veh/h)	854	782	874	836
Control Delay (s)	7.0	7.7	7.6	7.6
Approach Delay (s)	7.0	7.7	7.6	7.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.6			
Level of Service	A			
Intersection Capacity Utilization	26.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	5	5	20	5	18	1	18	145	5	2	129	19
Future Volume (Veh/h)	5	5	20	5	18	1	18	145	5	2	129	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	5	22	5	20	1	20	158	5	2	140	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								721				
pX, platoon unblocked												
vC, conflicting volume	366	358	150	380	366	160	161			163		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	366	358	150	380	366	160	161			163		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	98	99	96	100	99			100		
cM capacity (veh/h)	567	560	896	554	554	885	1418			1416		

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	32	26	183	163
Volume Left	5	5	20	2
Volume Right	22	1	5	21
cSH	756	562	1418	1416
Volume to Capacity	0.04	0.05	0.01	0.00
Queue Length 95th (ft)	3	4	1	0
Control Delay (s)	10.0	11.7	0.9	0.1
Lane LOS	A	B	A	A
Approach Delay (s)	10.0	11.7	0.9	0.1
Approach LOS	A	B		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	29.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	229	570	128	7	354	89	60	18	4	114	21	175
Future Volume (vph)	229	570	128	7	354	89	60	18	4	114	21	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.99			1.00			0.97	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.98			0.97			0.99			0.92	
Flt Protected		0.99			1.00			0.96			0.98	
Satd. Flow (prot)		3397			1792			1762			1631	
Flt Permitted		0.61			0.98			0.61			0.86	
Satd. Flow (perm)		2098			1761			1120			1425	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	249	620	139	8	385	97	65	20	4	124	23	190
RTOR Reduction (vph)	0	17	0	0	12	0	0	2	0	0	62	0
Lane Group Flow (vph)	0	991	0	0	478	0	0	87	0	0	275	0
Confl. Peds. (#/hr)	27		33	33		27	21		8	8		21
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		46.0			30.0			20.0			20.0	
Effective Green, g (s)		47.0			31.0			21.0			21.0	
Actuated g/C Ratio		0.62			0.41			0.28			0.28	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		5.0			5.0			3.5			3.5	
Lane Grp Cap (vph)		1519			718			309			393	
v/s Ratio Prot		c0.11										
v/s Ratio Perm		c0.29			0.27			0.08			c0.19	
v/c Ratio		0.65			0.67			0.28			0.70	
Uniform Delay, d1		9.3			18.3			21.6			24.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.8			4.8			2.3			10.0	
Delay (s)		10.1			23.1			23.8			34.7	
Level of Service		B			C			C			C	
Approach Delay (s)		10.1			23.1			23.8			34.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	394	331	10	476	0	0
Future Volume (Veh/h)	394	331	10	476	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	428	360	11	517	0	0
Pedestrians					7	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	231			365		
pX, platoon unblocked			0.90		0.93	0.90
vC, conflicting volume			795		974	435
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			714		764	313
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			795		342	653

Direction, Lane #	SE 1	SE 2	NW 1
Volume Total	428	360	528
Volume Left	0	0	11
Volume Right	0	360	0
cSH	1700	1700	795
Volume to Capacity	0.25	0.21	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	0.4
Lane LOS			A
Approach Delay (s)	0.0		0.4
Approach LOS			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	26	32	308	0	0	0	426	188	31	1	192	62
Future Volume (vph)	26	32	308	0	0	0	426	188	31	1	192	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0				4.0	4.0			4.0	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.99				1.00	0.99			0.99	
Flpb, ped/bikes		0.99	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	0.98			0.97	
Flt Protected		0.98	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1810	1575				1768	1814			1790	
Flt Permitted		0.98	1.00				0.43	1.00			1.00	
Satd. Flow (perm)		1810	1575				796	1814			1789	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	35	335	0	0	0	463	204	34	1	209	67
RTOR Reduction (vph)	0	0	190	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	63	145	0	0	0	463	232	0	0	277	0
Confl. Peds. (#/hr)	10		3				4		8	8		4
Turn Type	Perm	NA	pm+ov				pm+pt	NA		Perm	NA	
Protected Phases		4	5				5	2			6	
Permitted Phases	4		4				2			6		
Actuated Green, G (s)		4.6	23.0				40.9	40.9			18.5	
Effective Green, g (s)		5.6	24.0				41.4	41.9			19.0	
Actuated g/C Ratio		0.10	0.43				0.75	0.75			0.34	
Clearance Time (s)		5.0	4.5				4.5	5.0			4.5	
Vehicle Extension (s)		3.5	3.5				3.5	5.0			5.0	
Lane Grp Cap (vph)		182	681				924	1369			612	
v/s Ratio Prot			0.07				c0.17	0.13				
v/s Ratio Perm		0.03	0.02				c0.20				0.15	
v/c Ratio		0.35	0.21				0.50	0.17			0.45	
Uniform Delay, d1		23.2	9.8				3.7	1.9			14.2	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		1.4	0.2				0.5	0.1			1.1	
Delay (s)		24.6	10.0				4.2	2.0			15.3	
Level of Service		C	B				A	A			B	
Approach Delay (s)		12.3			0.0			3.4			15.3	
Approach LOS		B			A			A			B	

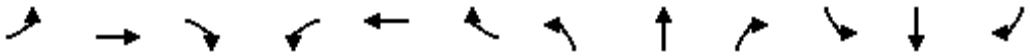
Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	7	434	393	0	0	654
Future Volume (Veh/h)	7	434	393	0	0	654
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	472	427	0	0	711
Pedestrians				6		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				1		
Right turn flare (veh)		10				
Median type					None	
Median storage veh)						
Upstream signal (ft)					237	
pX, platoon unblocked						
vC, conflicting volume	717	0	10	6	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	717	0	10	6	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	98	56	23	100	100	
cM capacity (veh/h)	354	1085	555	885	1623	

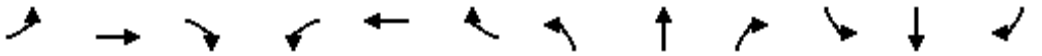
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	480	427	711
Volume Left	0	427	0
Volume Right	472	0	711
cSH	1103	555	1700
Volume to Capacity	0.44	0.77	0.42
Queue Length 95th (ft)	56	174	0
Control Delay (s)	10.9	29.9	0.0
Lane LOS	B	D	
Approach Delay (s)	10.9	29.9	0.0
Approach LOS	B	D	

Intersection Summary			
Average Delay	11.1		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		



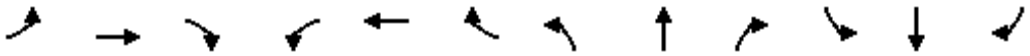
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	32	15	143	53	16	25	544	65	35	737	34
Future Volume (vph)	31	32	15	143	53	16	25	544	65	35	737	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.95	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.99	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1763			1781	1502	1765	1828		1767	1848	
Flt Permitted		0.83			0.77	1.00	0.18	1.00		0.30	1.00	
Satd. Flow (perm)		1485			1429	1502	343	1828		555	1848	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	35	16	155	58	17	27	591	71	38	801	37
RTOR Reduction (vph)	0	0	0	0	0	12	0	0	0	0	3	0
Lane Group Flow (vph)	0	85	0	0	213	5	27	662	0	38	835	0
Confl. Peds. (#/hr)	21			9		20	12		4	4		12
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		13.4			13.4	13.4	32.6	32.6		32.6	32.6	
Effective Green, g (s)		15.4			15.4	15.4	34.6	34.6		34.6	34.6	
Actuated g/C Ratio		0.27			0.27	0.27	0.60	0.60		0.60	0.60	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			4.0	4.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		394			379	398	204	1090		331	1102	
v/s Ratio Prot								0.36			c0.45	
v/s Ratio Perm		0.06			c0.15	0.00	0.08			0.07		
v/c Ratio		0.22			0.56	0.01	0.13	0.61		0.11	0.76	
Uniform Delay, d1		16.6			18.4	15.7	5.1	7.4		5.1	8.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			2.3	0.0	0.6	1.4		0.3	3.6	
Delay (s)		17.0			20.7	15.7	5.7	8.8		5.4	12.2	
Level of Service		B			C	B	A	A		A	B	
Approach Delay (s)		17.0			20.3			8.7			11.9	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	392	9	166	0	1	1	99	387	0	4	448	440
Future Volume (vph)	392	9	166	0	1	1	99	387	0	4	448	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.98			0.99		1.00	1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.86			0.93		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1561			1716		1770	1863			1862	1562
Flt Permitted	0.95	1.00			1.00		0.22	1.00			1.00	1.00
Satd. Flow (perm)	1770	1561			1716		402	1863			1857	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	426	10	180	0	1	1	108	421	0	4	487	478
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	152
Lane Group Flow (vph)	426	190	0	0	2	0	108	421	0	0	491	326
Confl. Peds. (#/hr)	2		2	2		2	2		13	13		2
Turn Type	Split	NA			NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	4	4		3	3		1	6			2	4
Permitted Phases							6			2		2
Actuated Green, G (s)	25.4	25.4			1.1		44.2	44.2			31.8	57.2
Effective Green, g (s)	26.4	26.4			2.1		44.2	46.2			33.8	59.2
Actuated g/C Ratio	0.30	0.30			0.02		0.51	0.53			0.39	0.68
Clearance Time (s)	5.0	5.0			5.0		4.0	6.0			6.0	5.0
Vehicle Extension (s)	3.5	3.5			3.5		3.5	6.5			6.5	3.5
Lane Grp Cap (vph)	538	475			41		337	992			723	1066
v/s Ratio Prot	c0.24	0.12			c0.00		0.03	c0.23				0.09
v/s Ratio Perm							0.13				c0.26	0.12
v/c Ratio	0.79	0.40			0.05		0.32	0.42			0.68	0.31
Uniform Delay, d1	27.6	23.9			41.3		13.7	12.2			21.9	5.5
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	8.0	0.7			0.6		0.7	0.9			4.2	0.2
Delay (s)	35.7	24.5			41.9		14.3	13.2			26.2	5.7
Level of Service	D	C			D		B	B			C	A
Approach Delay (s)		32.2			41.9			13.4			16.1	
Approach LOS		C			D			B			B	

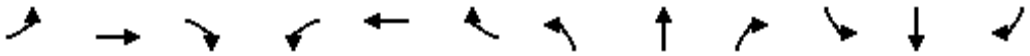
Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	8	126	2	31	173	16	2	9	18	17	24	5
Future Volume (vph)	8	126	2	31	173	16	2	9	18	17	24	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	137	2	34	188	17	2	10	20	18	26	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	148	239	32	49
Volume Left (vph)	9	34	2	18
Volume Right (vph)	2	17	20	5
Hadj (s)	0.04	0.02	-0.33	0.05
Departure Headway (s)	4.4	4.3	4.5	4.9
Degree Utilization, x	0.18	0.28	0.04	0.07
Capacity (veh/h)	795	813	728	677
Control Delay (s)	8.4	9.0	7.7	8.2
Approach Delay (s)	8.4	9.0	7.7	8.2
Approach LOS	A	A	A	A

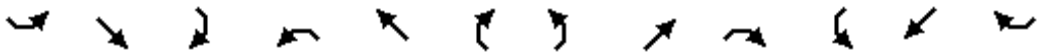
Intersection Summary			
Delay	8.6		
Level of Service	A		
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	18	51	21	18	14	52	78	35	10	42	2
Future Volume (vph)	3	18	51	21	18	14	52	78	35	10	42	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	20	55	23	20	15	57	85	38	11	46	2

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	78	58	180	59
Volume Left (vph)	3	23	57	11
Volume Right (vph)	55	15	38	2
Hadj (s)	-0.38	-0.04	-0.03	0.05
Departure Headway (s)	4.1	4.5	4.2	4.5
Degree Utilization, x	0.09	0.07	0.21	0.07
Capacity (veh/h)	820	748	818	766
Control Delay (s)	7.5	7.8	8.4	7.8
Approach Delay (s)	7.5	7.8	8.4	7.8
Approach LOS	A	A	A	A

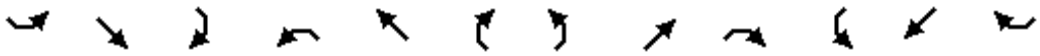
Intersection Summary				
Delay	8.0			
Level of Service	A			
Intersection Capacity Utilization	32.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	0	5	9	48	0	0	0	0	0	391	2
Future Volume (Veh/h)	0	0	5	9	48	0	0	0	0	0	391	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	5	10	52	0	0	0	0	0	425	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	452	426	426	431	427	0	427			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	452	426	426	431	427	0	427			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	98	90	100	100			100		
cM capacity (veh/h)	478	520	628	530	520	1085	1132			1623		

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	5	62	427
Volume Left	0	10	0
Volume Right	5	0	2
cSH	628	521	1700
Volume to Capacity	0.01	0.12	0.25
Queue Length 95th (ft)	1	10	0
Control Delay (s)	10.8	12.8	0.0
Lane LOS	B	B	
Approach Delay (s)	10.8	12.8	0.0
Approach LOS	B	B	

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	37.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	3	5	44	1	23	4	135	43	5	119	1
Future Volume (vph)	0	3	5	44	1	23	4	135	43	5	119	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	5	48	1	25	4	147	47	5	129	1

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total (vph)	8	74	198	135
Volume Left (vph)	0	48	4	5
Volume Right (vph)	5	25	47	1
Hadj (s)	-0.34	-0.04	-0.10	0.04
Departure Headway (s)	4.4	4.6	4.1	4.3
Degree Utilization, x	0.01	0.09	0.23	0.16
Capacity (veh/h)	745	728	848	797
Control Delay (s)	7.4	8.1	8.4	8.2
Approach Delay (s)	7.4	8.1	8.4	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.2			
Level of Service	A			
Intersection Capacity Utilization	29.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	12	35	4	15	50	1	12	185	15	1	234	7
Future Volume (Veh/h)	12	35	4	15	50	1	12	185	15	1	234	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	38	4	16	54	1	13	201	16	1	254	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								721				
pX, platoon unblocked												
vC, conflicting volume	523	503	258	518	499	209	262			217		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	523	503	258	518	499	209	262			217		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	92	99	96	88	100	99			100		
cM capacity (veh/h)	420	466	781	433	468	831	1302			1353		

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	55	71	230	263
Volume Left	13	16	13	1
Volume Right	4	1	16	8
cSH	467	463	1302	1353
Volume to Capacity	0.12	0.15	0.01	0.00
Queue Length 95th (ft)	10	13	1	0
Control Delay (s)	13.7	14.2	0.5	0.0
Lane LOS	B	B	A	A
Approach Delay (s)	13.7	14.2	0.5	0.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	30.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	390	615	138	4	298	49	58	58	9	62	24	111
Future Volume (vph)	390	615	138	4	298	49	58	58	9	62	24	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		0.95			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.99			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.98			0.99			0.92	
Flt Protected		0.98			1.00			0.98			0.98	
Satd. Flow (prot)		3395			1817			1798			1668	
Flt Permitted		0.62			0.99			0.78			0.87	
Satd. Flow (perm)		2146			1794			1428			1482	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	668	150	4	324	53	63	63	10	67	26	121
RTOR Reduction (vph)	0	14	0	0	8	0	0	4	0	0	62	0
Lane Group Flow (vph)	0	1228	0	0	373	0	0	132	0	0	152	0
Confl. Peds. (#/hr)	14		27	27		14	1		12	12		1
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		46.0			30.0			20.0			20.0	
Effective Green, g (s)		46.0			30.0			20.0			20.0	
Actuated g/C Ratio		0.61			0.39			0.26			0.26	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		5.0			5.0			3.5			3.5	
Lane Grp Cap (vph)		1496			708			375			390	
v/s Ratio Prot		c0.13										
v/s Ratio Perm		c0.37			0.21			0.09			c0.10	
v/c Ratio		0.82			0.53			0.35			0.39	
Uniform Delay, d1		11.8			17.6			22.7			23.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.6			2.8			2.6			2.9	
Delay (s)		15.3			20.4			25.3			25.9	
Level of Service		B			C			C			C	
Approach Delay (s)		15.3			20.4			25.3			25.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	374	236	7	300	0	0
Future Volume (Veh/h)	374	236	7	300	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	407	257	8	326	0	0
Pedestrians					20	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	231			365		
pX, platoon unblocked						
vC, conflicting volume			684		769	427
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			684		769	427
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			909		366	628

Direction, Lane #	SE 1	SE 2	NW 1
Volume Total	407	257	334
Volume Left	0	0	8
Volume Right	0	257	0
cSH	1700	1700	909
Volume to Capacity	0.24	0.15	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	0.3
Lane LOS			A
Approach Delay (s)	0.0		0.3
Approach LOS			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

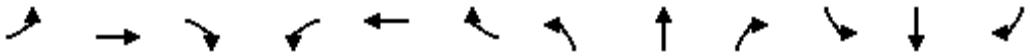
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	41	32	248	0	0	0	284	158	33	5	144	65
Future Volume (vph)	41	32	248	0	0	0	284	158	33	5	144	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.5				4.5	5.0			4.5	
Lane Util. Factor		1.00	1.00				1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.99				1.00	0.99			0.98	
Flpb, ped/bikes		0.97	1.00				0.99	1.00			1.00	
Frt		1.00	0.85				1.00	0.97			0.96	
Flt Protected		0.97	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1766	1563				1752	1791			1746	
Flt Permitted		0.97	1.00				0.41	1.00			0.99	
Satd. Flow (perm)		1766	1563				751	1791			1734	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	35	270	0	0	0	309	172	36	5	157	71
RTOR Reduction (vph)	0	0	141	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	80	129	0	0	0	309	199	0	0	233	0
Confl. Peds. (#/hr)	33		33				36		30	30		36
Turn Type	Perm	NA	pm+ov				pm+pt	NA		Perm	NA	
Protected Phases		4	5				5	2			6	
Permitted Phases	4		4				2			6		
Actuated Green, G (s)		5.0	24.8				36.9	36.9			13.1	
Effective Green, g (s)		5.0	24.8				36.9	36.9			13.1	
Actuated g/C Ratio		0.10	0.48				0.71	0.71			0.25	
Clearance Time (s)		5.0	4.5				4.5	5.0			4.5	
Vehicle Extension (s)		3.5	3.5				3.5	5.0			5.0	
Lane Grp Cap (vph)		170	746				915	1273			437	
v/s Ratio Prot			0.07				c0.13	0.11				
v/s Ratio Perm		0.05	0.02				0.11				c0.13	
v/c Ratio		0.47	0.17				0.34	0.16			0.53	
Uniform Delay, d1		22.2	7.7				3.6	2.4			16.8	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		2.4	0.1				0.3	0.1			2.3	
Delay (s)		24.6	7.8				3.9	2.6			19.0	
Level of Service		C	A				A	A			B	
Approach Delay (s)		11.7			0.0			3.4			19.0	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	27	223	420	0	0	652
Future Volume (Veh/h)	27	223	420	0	0	652
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	242	457	0	0	709
Pedestrians				4		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				0		
Right turn flare (veh)		10				
Median type					None	
Median storage veh)						
Upstream signal (ft)					237	
pX, platoon unblocked						
vC, conflicting volume	713	0	18	4	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	713	0	18	4	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	92	78	37	100	100	
cM capacity (veh/h)	356	1085	721	889	1623	

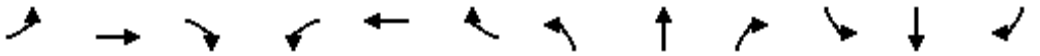
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	271	457	709
Volume Left	0	457	0
Volume Right	242	0	709
cSH	1215	721	1700
Volume to Capacity	0.22	0.63	0.42
Queue Length 95th (ft)	21	114	0
Control Delay (s)	10.0	18.2	0.0
Lane LOS	A	C	
Approach Delay (s)	10.0	18.2	0.0
Approach LOS	A	C	

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		



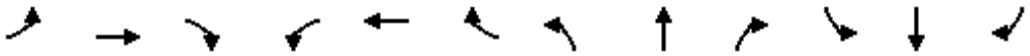
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	10	18	20	12	19	30	630	22	21	556	62
Future Volume (vph)	98	10	18	20	12	19	30	630	22	21	556	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			0.99	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1738			1796	1537	1769	1852		1766	1831	
Flt Permitted		0.75			0.79	1.00	0.32	1.00		0.30	1.00	
Satd. Flow (perm)		1356			1462	1537	604	1852		556	1831	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	11	20	22	13	21	33	685	24	23	604	67
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	0	0	6	0
Lane Group Flow (vph)	0	138	0	0	35	4	33	709	0	23	665	0
Confl. Peds. (#/hr)	6		7	7		6	1		6	6		1
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		9.8			9.8	9.8	33.4	33.4		33.4	33.4	
Effective Green, g (s)		9.8			9.8	9.8	33.4	33.4		33.4	33.4	
Actuated g/C Ratio		0.18			0.18	0.18	0.61	0.61		0.61	0.61	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			4.0	4.0	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)		240			259	272	365	1120		336	1107	
v/s Ratio Prot								c0.38			0.36	
v/s Ratio Perm		c0.10			0.02	0.00	0.05			0.04		
v/c Ratio		0.57			0.14	0.01	0.09	0.63		0.07	0.60	
Uniform Delay, d1		20.8			19.1	18.7	4.6	7.0		4.5	6.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.0			0.3	0.0	0.2	1.6		0.2	1.4	
Delay (s)		24.7			19.5	18.7	4.8	8.6		4.7	8.1	
Level of Service		C			B	B	A	A		A	A	
Approach Delay (s)		24.7			19.2			8.4			8.0	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	6	112	0	6	3	88	355	4	3	336	353
Future Volume (vph)	342	6	112	0	6	3	88	355	4	3	336	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0		4.0	6.0			6.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.86			0.96		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1598			1787		1768	1859			1862	1560
Flt Permitted	0.95	1.00			1.00		0.34	1.00			1.00	1.00
Satd. Flow (perm)	1770	1598			1787		637	1859			1857	1560
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	372	7	122	0	7	3	96	386	4	3	365	384
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	131
Lane Group Flow (vph)	372	129	0	0	10	0	96	389	0	0	368	253
Confl. Peds. (#/hr)							4		5	5		4
Turn Type	Split	NA			NA		pm+pt	NA		Perm	NA	pm+ov
Protected Phases	4	4		3	3		1	6			2	4
Permitted Phases							6			2		2
Actuated Green, G (s)	25.7	25.7			1.2		38.5	38.5			27.9	53.6
Effective Green, g (s)	25.7	25.7			1.2		38.5	38.5			27.9	53.6
Actuated g/C Ratio	0.32	0.32			0.01		0.47	0.47			0.34	0.66
Clearance Time (s)	5.0	5.0			5.0		4.0	6.0			6.0	5.0
Vehicle Extension (s)	3.5	3.5			3.5		3.5	6.5			6.5	3.5
Lane Grp Cap (vph)	558	504			26		392	879			636	1027
v/s Ratio Prot	c0.21	0.08			c0.01		0.02	c0.21				0.08
v/s Ratio Perm							0.10				c0.20	0.08
v/c Ratio	0.67	0.26			0.38		0.24	0.44			0.58	0.25
Uniform Delay, d1	24.1	20.7			39.7		12.9	14.3			21.9	5.7
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	3.1	0.3			10.8		0.4	1.1			2.8	0.1
Delay (s)	27.3	21.1			50.6		13.3	15.4			24.7	5.8
Level of Service	C	C			D		B	B			C	A
Approach Delay (s)		25.7			50.6			15.0			15.1	
Approach LOS		C			D			B			B	

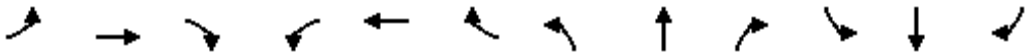
Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	8	24	11	11	2	27	139	14	6	112	6
Future Volume (vph)	5	8	24	11	11	2	27	139	14	6	112	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	9	26	12	12	2	29	151	15	7	122	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	40	26	195	136
Volume Left (vph)	5	12	29	7
Volume Right (vph)	26	2	15	7
Hadj (s)	-0.33	0.08	0.02	0.01
Departure Headway (s)	4.3	4.8	4.2	4.3
Degree Utilization, x	0.05	0.03	0.23	0.16
Capacity (veh/h)	760	694	831	823
Control Delay (s)	7.5	7.9	8.5	8.1
Approach Delay (s)	7.5	7.9	8.5	8.1
Approach LOS	A	A	A	A

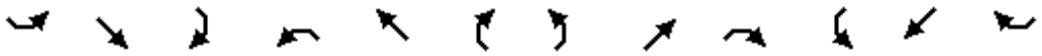
Intersection Summary				
Delay	8.2			
Level of Service	A			
Intersection Capacity Utilization	27.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	14	34	16	18	14	33	69	28	21	53	2
Future Volume (vph)	0	14	34	16	18	14	33	69	28	21	53	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	15	37	17	20	15	36	75	30	23	58	2

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	52	52	141	83
Volume Left (vph)	0	17	36	23
Volume Right (vph)	37	15	30	2
Hadj (s)	-0.39	-0.07	-0.04	0.07
Departure Headway (s)	4.1	4.4	4.2	4.4
Degree Utilization, x	0.06	0.06	0.16	0.10
Capacity (veh/h)	833	768	832	791
Control Delay (s)	7.3	7.7	8.0	7.8
Approach Delay (s)	7.3	7.7	8.0	7.8
Approach LOS	A	A	A	A

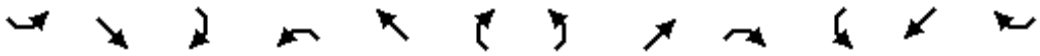
Intersection Summary				
Delay	7.8			
Level of Service	A			
Intersection Capacity Utilization	28.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	64	8	0	0	0	0	0	228	14
Future Volume (Veh/h)	0	0	4	64	8	0	0	0	0	0	228	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	4	70	9	0	0	0	0	0	248	15
Pedestrians					15							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					1							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	260	270	256	274	278	15	263			15		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	260	270	256	274	278	15	263			15		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	89	99	100	100			100		
cM capacity (veh/h)	679	628	783	660	622	1051	1301			1583		

Direction, Lane #	SE 1	NW 1	SW 1
Volume Total	4	79	263
Volume Left	0	70	0
Volume Right	4	0	15
cSH	783	655	1700
Volume to Capacity	0.01	0.12	0.15
Queue Length 95th (ft)	0	10	0
Control Delay (s)	9.6	11.2	0.0
Lane LOS	A	B	
Approach Delay (s)	9.6	11.2	0.0
Approach LOS	A	B	

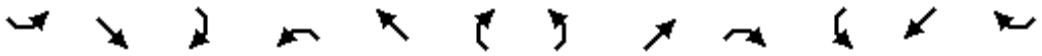
Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	30.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	1	5	43	2	30	7	124	55	8	110	1
Future Volume (vph)	3	1	5	43	2	30	7	124	55	8	110	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1	5	47	2	33	8	135	60	9	120	1

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total (vph)	9	82	203	130
Volume Left (vph)	3	47	8	9
Volume Right (vph)	5	33	60	1
Hadj (s)	-0.23	-0.09	-0.14	0.04
Departure Headway (s)	4.5	4.5	4.1	4.4
Degree Utilization, x	0.01	0.10	0.23	0.16
Capacity (veh/h)	727	736	849	790
Control Delay (s)	7.6	8.1	8.4	8.2
Approach Delay (s)	7.6	8.1	8.4	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.2			
Level of Service	A			
Intersection Capacity Utilization	26.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	12	12	42	15	10	5	52	140	7	5	150	15
Future Volume (Veh/h)	12	12	42	15	10	5	52	140	7	5	150	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	13	46	16	11	5	57	152	8	5	163	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								721				
pX, platoon unblocked												
vC, conflicting volume	462	455	171	504	459	156	179			160		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	462	455	171	504	459	156	179			160		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	97	95	96	98	99	96			100		
cM capacity (veh/h)	482	479	873	429	477	890	1397			1419		

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	72	32	217	184
Volume Left	13	16	57	5
Volume Right	46	5	8	16
cSH	674	485	1397	1419
Volume to Capacity	0.11	0.07	0.04	0.00
Queue Length 95th (ft)	9	5	3	0
Control Delay (s)	11.0	12.9	2.3	0.2
Lane LOS	B	B	A	A
Approach Delay (s)	11.0	12.9	2.3	0.2
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	33.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection: 1: Severn Ave & 6th St

Movement	SE	SE	NW	NE	SW
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	164	319	263	178	181
Average Queue (ft)	119	125	228	79	91
95th Queue (ft)	182	255	268	143	160
Link Distance (ft)		1501	172	288	380
Upstream Blk Time (%)			41		
Queuing Penalty (veh)			297		
Storage Bay Dist (ft)	140				
Storage Blk Time (%)	8	2			
Queuing Penalty (veh)	24	9			

Intersection: 2: Bay Ridge Ave & 6th St

Movement	SE	SE	NW
Directions Served	T	R	LT
Maximum Queue (ft)	73	69	331
Average Queue (ft)	5	7	205
95th Queue (ft)	36	44	382
Link Distance (ft)	172	172	315
Upstream Blk Time (%)			4
Queuing Penalty (veh)			31
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Chesapeake Ave & 6th St

Movement	SE	SE	NE	NE	SW
Directions Served	LT	R	L	TR	LTR
Maximum Queue (ft)	121	76	140	674	153
Average Queue (ft)	42	41	123	236	68
95th Queue (ft)	98	81	171	656	116
Link Distance (ft)	315			1993	662
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		50	115		
Storage Blk Time (%)	6	2	24	0	
Queuing Penalty (veh)	10	1	38	1	

Intersection: 4: Bay Ridge Ave & Chesapeake Ave

Movement	EB	EB	WB	NB
Directions Served	T	R	L	R
Maximum Queue (ft)	31	120	141	68
Average Queue (ft)	5	62	68	6
95th Queue (ft)	23	98	111	37
Link Distance (ft)	640		1993	175
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		250		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Bay Ridge Ave & Madison St

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	89	80	47	78	341	85	179
Average Queue (ft)	34	36	10	10	162	19	102
95th Queue (ft)	69	71	36	53	282	59	187
Link Distance (ft)	906	277	277		2035		175
Upstream Blk Time (%)							1
Queuing Penalty (veh)							4
Storage Bay Dist (ft)				125		75	
Storage Blk Time (%)					11	0	9
Queuing Penalty (veh)					1	0	3

Intersection: 6: Bay Ridge Ave & Tyler Ave

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	L	TR	LT	R
Maximum Queue (ft)	180	258	51	149	298	181	149
Average Queue (ft)	121	62	11	61	128	82	58
95th Queue (ft)	188	164	36	125	234	158	122
Link Distance (ft)		442	360		946	2035	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	160			125			175
Storage Blk Time (%)	5	0		0	6	0	0
Queuing Penalty (veh)	5	0		0	8	1	0

Intersection: 7: President St & Van Buren St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	62	48	31
Average Queue (ft)	41	39	27	19
95th Queue (ft)	62	60	50	43
Link Distance (ft)	345	460	427	1304
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: President St & Madison St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	56	43	67	64
Average Queue (ft)	28	26	37	32
95th Queue (ft)	49	45	57	53
Link Distance (ft)	212	906	1304	145
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Bay Ridge Ave & Burnside St

Movement	SE	NW
Directions Served	R	LT
Maximum Queue (ft)	29	53
Average Queue (ft)	5	24
95th Queue (ft)	23	48
Link Distance (ft)	83	149
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Severn Ave & 4th St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	25	57	67	51
Average Queue (ft)	4	29	37	32
95th Queue (ft)	20	52	58	50
Link Distance (ft)	194	525	190	1421
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 25: Chesapeake Ave & 4th St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	36	34	10
Average Queue (ft)	17	18	3	0
95th Queue (ft)	43	43	19	5
Link Distance (ft)	525	544	662	1370
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 433

Intersection: 1: Severn Ave & 6th St

Movement	SE	SE	NW	NE	SW
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	165	423	187	85	268
Average Queue (ft)	126	148	156	43	141
95th Queue (ft)	182	306	212	80	235
Link Distance (ft)		1500	175	291	376
Upstream Blk Time (%)			9		
Queuing Penalty (veh)			44		
Storage Bay Dist (ft)	140				
Storage Blk Time (%)	7	3			
Queuing Penalty (veh)	27	16			

Intersection: 2: Bay Ridge Ave & 6th St

Movement	SE	SE	NW
Directions Served	T	R	LT
Maximum Queue (ft)	72	73	240
Average Queue (ft)	7	13	55
95th Queue (ft)	39	51	156
Link Distance (ft)	175	175	315
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Chesapeake Ave & 6th St

Movement	SE	SE	NE	NE	SW
Directions Served	LT	R	L	TR	LTR
Maximum Queue (ft)	178	75	139	255	190
Average Queue (ft)	55	61	92	59	104
95th Queue (ft)	126	87	155	182	170
Link Distance (ft)	315			1993	662
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		50	115		
Storage Blk Time (%)	8	10	5	0	
Queuing Penalty (veh)	25	6	11	0	

Intersection: 4: Bay Ridge Ave & Chesapeake Ave

Movement	EB	EB	WB	NB
Directions Served	T	R	L	R
Maximum Queue (ft)	337	273	297	43
Average Queue (ft)	47	148	129	2
95th Queue (ft)	240	265	241	18
Link Distance (ft)	640		1993	175
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		250		
Storage Blk Time (%)	0	8		
Queuing Penalty (veh)	0	1		

Intersection: 5: Bay Ridge Ave & Madison St

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	95	178	34	147	310	99	190
Average Queue (ft)	45	92	10	28	160	31	168
95th Queue (ft)	86	155	33	82	270	85	204
Link Distance (ft)	906	277	277		2035		175
Upstream Blk Time (%)							8
Queuing Penalty (veh)							69
Storage Bay Dist (ft)				125		75	
Storage Blk Time (%)				0	10	0	28
Queuing Penalty (veh)				0	3	1	10

Intersection: 6: Bay Ridge Ave & Tyler Ave

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	L	TR	LT	R
Maximum Queue (ft)	184	404	16	149	277	406	200
Average Queue (ft)	157	164	2	58	123	178	102
95th Queue (ft)	212	346	13	120	225	317	219
Link Distance (ft)		442	360		946	2035	
Upstream Blk Time (%)		0					
Queuing Penalty (veh)		0					
Storage Bay Dist (ft)	160			125			175
Storage Blk Time (%)	17	0		0	5	6	0
Queuing Penalty (veh)	29	2		1	5	27	1

Intersection: 7: President St & Van Buren St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	65	79	40	36
Average Queue (ft)	38	45	19	23
95th Queue (ft)	57	69	44	45
Link Distance (ft)	345	460	427	1304
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: President St & Madison St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	61	53	68	64
Average Queue (ft)	30	25	40	27
95th Queue (ft)	50	47	60	50
Link Distance (ft)	212	906	1304	145
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Bay Ridge Ave & Burnside St

Movement	SE	NW
Directions Served	R	LT
Maximum Queue (ft)	29	63
Average Queue (ft)	4	29
95th Queue (ft)	22	53
Link Distance (ft)	83	149
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Severn Ave & 4th St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	54	86	72
Average Queue (ft)	7	30	46	41
95th Queue (ft)	28	47	71	62
Link Distance (ft)	194	525	196	1421
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 25: Chesapeake Ave & 4th St

Movement	SE	NW	NE
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	56	64	44
Average Queue (ft)	28	30	3
95th Queue (ft)	50	52	19
Link Distance (ft)	525	544	662
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 277

Intersection: 1: Severn Ave & 6th St

Movement	SE	SE	NW	NE	SW
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	165	1035	182	163	159
Average Queue (ft)	154	398	123	68	79
95th Queue (ft)	190	926	187	128	143
Link Distance (ft)		1501	172	288	364
Upstream Blk Time (%)		0	3		
Queuing Penalty (veh)		0	8		
Storage Bay Dist (ft)	140				
Storage Blk Time (%)	23	9			
Queuing Penalty (veh)	102	60			

Intersection: 2: Bay Ridge Ave & 6th St

Movement	SE	SE	NW
Directions Served	T	R	LT
Maximum Queue (ft)	55	63	100
Average Queue (ft)	4	8	14
95th Queue (ft)	29	37	60
Link Distance (ft)	172	172	315
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Chesapeake Ave & 6th St

Movement	SE	SE	NE	NE	SW
Directions Served	LT	R	L	TR	LTR
Maximum Queue (ft)	198	75	135	188	188
Average Queue (ft)	62	59	70	46	93
95th Queue (ft)	138	88	124	127	160
Link Distance (ft)	315			1993	662
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		50	115		
Storage Blk Time (%)	11	8	2	0	
Queuing Penalty (veh)	26	6	3	1	

Intersection: 4: Bay Ridge Ave & Chesapeake Ave

Movement	EB	EB	WB	NB
Directions Served	T	R	L	R
Maximum Queue (ft)	49	109	195	27
Average Queue (ft)	19	58	90	2
95th Queue (ft)	49	91	151	15
Link Distance (ft)	640		1993	175
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		250		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Bay Ridge Ave & Madison St

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	127	53	35	130	330	97	184
Average Queue (ft)	51	16	13	26	156	22	136
95th Queue (ft)	96	45	37	80	277	67	206
Link Distance (ft)	906	277	277		2035		175
Upstream Blk Time (%)							2
Queuing Penalty (veh)							11
Storage Bay Dist (ft)				125		75	
Storage Blk Time (%)				0	9	0	15
Queuing Penalty (veh)				0	3	1	3

Intersection: 6: Bay Ridge Ave & Tyler Ave

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	L	TR	LT	R
Maximum Queue (ft)	184	314	39	136	203	284	200
Average Queue (ft)	139	81	8	47	98	119	67
95th Queue (ft)	202	210	30	97	170	225	160
Link Distance (ft)		442	360		946	2035	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	160			125			175
Storage Blk Time (%)	9			0	3	2	0
Queuing Penalty (veh)	11			0	2	5	0

Intersection: 7: President St & Van Buren St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	31	74	59
Average Queue (ft)	23	20	42	35
95th Queue (ft)	44	44	65	51
Link Distance (ft)	345	460	427	1304
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: President St & Madison St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	43	67	60
Average Queue (ft)	23	25	37	31
95th Queue (ft)	45	44	55	53
Link Distance (ft)	212	906	1304	145
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Bay Ridge Ave & Burnside St

Movement	SE	NW
Directions Served	R	LT
Maximum Queue (ft)	30	57
Average Queue (ft)	3	31
95th Queue (ft)	19	53
Link Distance (ft)	83	149
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Severn Ave & 4th St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	54	78	65
Average Queue (ft)	6	31	45	37
95th Queue (ft)	26	53	67	58
Link Distance (ft)	194	525	206	1421
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 25: Chesapeake Ave & 4th St

Movement	SE	NW	NE	SW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	64	54	58	22
Average Queue (ft)	29	22	7	1
95th Queue (ft)	51	48	33	12
Link Distance (ft)	525	544	662	1370
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 242

Appendix C: Public Input from June 2016 Survey

- Survey Responses
- Survey Comments

362 responses

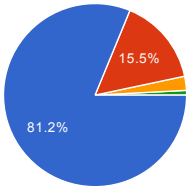
View all responses Publish analytics

Summary

[Image]

Question 1

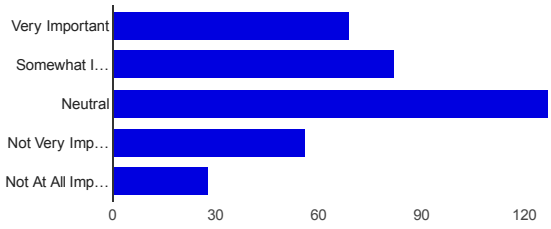
How often do you visit Eastport?



Daily - I live and/or work in Eastport	**294**	81.2%
Frequently - I visit Eastport often	**56**	15.5%
Occasionally - I visit Eastport every now and then	**9**	2.5%
Rarely - I seldom visit Eastport	**3**	0.8%

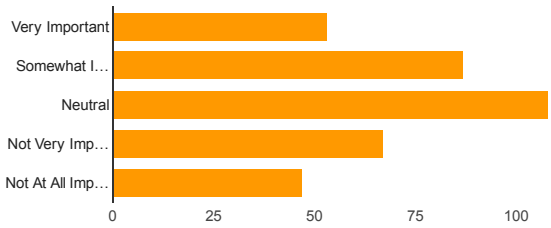
Question 2

One-Way Street Network [In regards to the infrastructure of Eastport, please rank how important improvements to the following transportation related infrastructure are to you.]



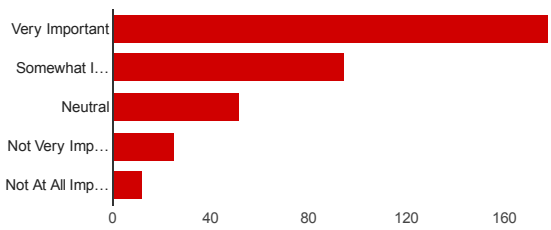
Very Important	**69**	19.1%
Somewhat Important	**82**	22.7%
Neutral	**127**	35.1%
Not Very Important	**56**	15.5%
Not At All Important	**28**	7.7%

Bus Service Including Stop Locations and Frequency [In regards to the infrastructure of Eastport, please rank how important improvements to the following transportation related infrastructure are to you.]



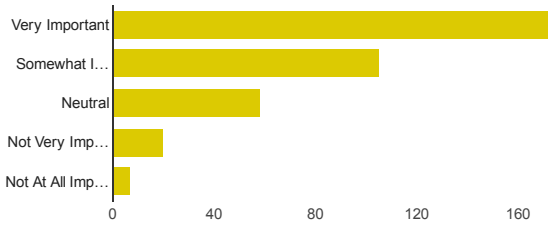
Very Important	**53**	14.6%
Somewhat Important	**87**	24%
Neutral	**108**	29.8%
Not Very Important	**67**	18.5%
Not At All Important	**47**	13%

Traffic Calming & Pedestrian Safety [In regards to the infrastructure of Eastport, please rank how important improvements to the following transportation related infrastructure are to you.]



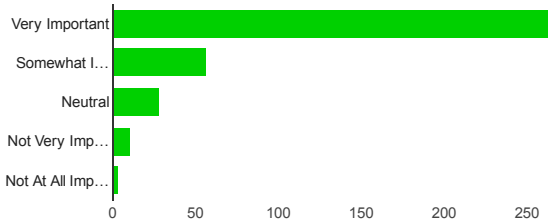
Very Important	**178**	49.2%
Somewhat Important	**95**	26.2%
Neutral	**52**	14.4%
Not Very Important	**25**	6.9%
Not At All Important	**12**	3.3%

Parking for Residents, Employees, & Business Owners [In regards to the infrastructure of Eastport, please rank how important improvements to the following transportation related infrastructure are to you.]



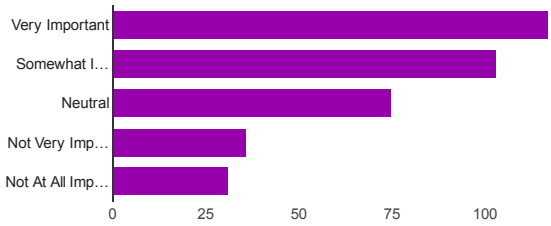
Very Important	**172**	47.5%
Somewhat Important	**105**	29%
Neutral	**58**	16%
Not Very Important	**20**	5.5%
Not At All Important	**7**	1.9%

Traffic Congestion [In regards to the infrastructure of Eastport, please rank how important improvements to the following transportation related infrastructure are to you.]



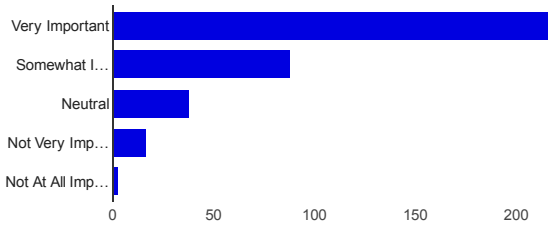
Very Important	**263**	72.7%
Somewhat Important	**57**	15.7%
Neutral	**28**	7.7%
Not Very Important	**11**	3%
Not At All Important	**3**	0.8%

Bike Infrastructure Including Dedicated / Protected Bike Lanes [In regards to the infrastructure of Eastport, please rank how important improvements to the following transportation related infrastructure are to you.]



Very Important	**117**	32.3%
Somewhat Important	**103**	28.5%
Neutral	**75**	20.7%
Not Very Important	**36**	9.9%
Not At All Important	**31**	8.6%

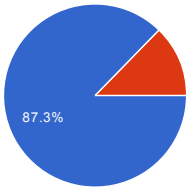
Pedestrian Infrastructure Including Sidewalk / Crosswalk Conditions and Prevalence [In regards to the infrastructure of Eastport, please rank how important improvements to the following transportation related infrastructure are to you.]



Very Important	**216**	59.7%
Somewhat Important	**88**	24.3%
Neutral	**38**	10.5%
Not Very Important	**17**	4.7%
Not At All Important	**3**	0.8%

Question 3

Do you agree or disagree with the following statement: The one-way streets in Eastport should remain as one-way streets.

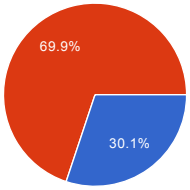


I Agree	**316**	87.3%
I Disagree	**46**	12.7%

Question 4

Do you agree or disagree with the following statement: The parking in Eastport should be formally manged through a combination

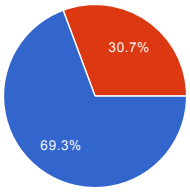
program of a residential parking district and metered parking.



I Agree	**109**	30.1%
I Disagree	**253**	69.9%

Question 5

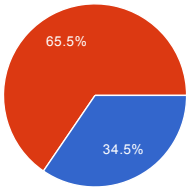
Do you agree or disagree with the following statement: The loading zones in Eastport should be consolidated and the time of permitted loading should be limited to the morning.



I Agree	**251**	69.3%
I Disagree	**111**	30.7%

Question 6

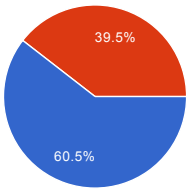
In order to provide for a separated bike lane, would you support converting Chesapeake Avenue to one-way traffic flow between Bay Ridge Avenue and 6th Street?



Yes, I would support converting Chesapeake Avenue to one-way flow between Bay Ridge Avenue and 6th Street in order to provide for a separate bike lane.	**125**	34.5%
No, I would not support converting Chesapeake Avenue to one-way flow between Bay Ridge Avenue and 6th Street in order to provide for a separate bike lane.	**237**	65.5%

Question 7

In order to make it easier for buses to approach the curb at a bus stop, would you support the removal of on-street parking spaces at select locations?



Yes, I would support the removal of on-street parking spaces at select locations in order to enhance the functionally of bus stops.	**219**	60.5%
No, I would not support the removal of on-street parking spaces at select locations in order to enhance the functionally of bus stops.	**143**	39.5%

Question 8

In the space below, please share other infrastructure improvements you believe would improve transportation safety and mobility in Eastport. (Click 'Your Answer' to begin typing.)

Use smaller buses in Eastport and Annapolis proper and teach the bus drivers to stay off their phones and not cut off bikers and cars or they get fired.

In the space below, please share other infrastructure improvements you believe would improve transportation safety and mobility in Eastport. (Click 'Your Answer' to begin typing.) (195 responses)

Use smaller buses in Eastport and Annapolis proper and teach the bus drivers to stay off their phones and not cut off bikers and cars or they get fired. Period.

Use smaller buses in Eastport and Annapolis proper and teach the bus drivers to stay off their phones and not cut off bikers and cars or they get fired. Period.

Add lane indicator lines so that people stop driving down the middle of a two-way street and don't pull over to allow easy flow of two way traffic. Add a stop sign on Washington Street at Severn Avenue. People ignore the stop sign on Severn. Make it a three way stop.

No crystal spring development on Forest Drive

No further responses

More off street parking for businesses

Turn off the movement switch on the signal at Hilltop lane and Primrose. Set signals to activate on pressure switches and not run on timers. We waste time and gas sitting at red lights. Do not have a company manage the parking in Eastport.

Annapolis is the second worst and hazardest city in the world for bike travel! All State bike riding laws are impossible to implement in Annapolis. In Eastport it's either bikes or cars! $10.00 dollar Spa Creek Bridge toll except for Annapolis City residents would reduce Memorial Circle traffic by 90%. Crystal Springs development will in crease traffic thru Eastport by 30% due to traffic being diverted off Forest Drive in mornings and late afternoon periods. When the City continues to allow down hill bike traffic on Main Street don't even think you can handle Eastport.

I think that on a daily basis, most things are fine (though I would love to see improved pedestrian and bike options!!), but I'm concerned about how the entire area locks up completely if a single road has a problem--like total gridlock if Forest Drive is shut down for a few hours.

First, most of the problems in Eastport is due to inconsistencies of traffic management, i.e., no rhyme or reason for stop signs, crosswalks or one way streets locations. 2nd one way streets give you so many more options for parking, road cleaning and traffic control. Stop signs and crosswalks can be placed with conformity But all will make any difference if the surrounding roadways are not cosidered

I cannot believe converting Chesapeake avenue to 1 way is even being considered - absolutely ludicrous. The focus needs to be fixing the traffic backup when the Eastport bridge is up every 30 minutes over the summer.

we DO NOT NEED NOR WANT a big residential development in the eastport shopping center

Frankly for most of us in lower Eastport we have adjusted to the narrow streets and the need to pull over to accommodate passing cars. MRE. We like it this way and sure as H do not want permits and regulations to make bureaucrats happy. Parking removal for buses has to be minimal. Most places do not have off street parking. This was a study that didn't need to happen. Again in the slogan of MRE...we like it this way. ?5 on loading zones, the City had this policy. Where did it go? ?4 no no a thousand times NO

Would be great for business if the circulator trolley could be extended to Watergate with a stop or two on Sixth, maybe even down fourth to sixth and then over to/from Westport. Would remove Watergate cars from restraint row and business along Sixth

I walk/run daily through Eastport and the area I feel most unsafe is on Severn ave on sidewalk where no cars are parked. I feel like a sitting duck for the speeders that could jump the curb at any time. I think there needs to be speed monitoring on Severn and Chesapeake.

I'd like to see dedicated pedestrian streets/sidewalks such as brashears in Eastport. The main mode of transportation for many Eastporters is our feet, making this safe and attractive is paramount to me and my family.

create an alternate route or bypass around forest drive to ease congestion during heavy traffic and in emergency situations. better maintenance of sidewalks (especially during winter months).

1) Do not allow a restaurant within South Annapolis Yacht Club. (There would be a significant increase in traffic on side streets southwest of the bridge). 2) The left turn onto Chesapeake immediately by PNC Bank is terribly dangerous. Block that left turn and force traffic through Eastport Shopping Center if they need to go to the post office or other points northeast on Chesapeake. (One cannot see what traffic is coming from the right at times and there is some confusion as to who has the right of way).

Need weekend and late bus service

(1) Support current one-way streets; but add no more; (2) Residential parking should include both for detached houses and townhouses - they are both houses.

The traffic flow needs to be managed better!

Making some of the side streets one way (fifth street, fourth street, third street and second street

better bus service is essential...

Stop building up the area. It's causing more traffic and congestion 15yrs ago I could get around Eastport in 10mins now it takes 45mins.

Cars frequently park along red curbs making certain turns and getting in and out of certain (my) parking lots dangerous. I would like to see some consequence for parking along red curbs.

With the exception of big events and bad traffic accidents I don't think there is a major issue. However, when something out of the ordinary occurs things get very bad. More housing definitely should not be included in any plans

provide better signage to direct automobiles and cars to historic district, or if applicable dining options in Eastport. Seven Ave needs improvement infront of Eastport Elementary between AYC sailing annex.

route circulator bus to go to eastport shopping center. make bay ridge ave in front of eastport shopping center more of a plaza with pedestrian access at multiple locations across the width of the center , making that area an "eastport town center" , perhaps with a flagpole and outdoor gathering space. eastport needs an attractive "town center". the area in front of the shopping center (parking lot etc) is the most logical place for this.

STOP SIGN ENFORCEMENT

Make sure all curbs have appropriate disabled ramps and markings. All sidewalks should be level and unobstructed for wheelchair users and limited mobility pedestrians.

Need pedestrian walk- wait electronic sign at intersection of severn and 6th - VERY busy with pedestrians and cars and very dangerous.

Allow all residents of the Annapolis Neck Peninsula have a say in how traffic is managed because a large population of people who use Forest Dr do not live in the city of Annapolis.

Limiting further development.

Eastport is impacted by traffic problems affecting the city as a whole. (Accidents on Forest Dr., flooding downtown, special events, etc.) Perhaps extra police could help.

Commuting from Eastport is difficult at best and a disaster if Forest Drive has a problem. I avoid going through Annapolis proper due to tourists wandering across streets, flooding closing roads, and generally clogged roads from slow traffic, bridge openings , etc. Anyone who thinks we can add more housing/people/traffic has not done their homework. How can you only study a small portion of Eastport and think you have done an adequate job? Please look at traffic from both ends!

bike lanes should be separate from walking lanes (as well as auto lanes)

Eastport needs a parking garage, plain and simple. Building a parking garage would add more parking to Eastport and would reduce congestion on the streets from cars parked on the street. Building more condo complexes in Eastport without adding more parking is a terrible idea

These questions appear to be aimed at specific agendas (more bike lanes) and in absolute denial of the real traffic problems. Like the drivers ripping and roaring around Forest Dr, drivers crossing over lanes and weaving past cars, changing lanes around Chinquapin - Safeway area. Further down before Giant there are a lot of pedestrian accidents, with people getting hit crossing the road. And you guys want to discuss more bike lanes. I am in total disbelief and extremely angry however I am not so naive nor do I have concerns over Annapolis pc and social standing obviously. Start with surveys on improvements in driving conditions, reckless driving, fixing inferior road designs and do something about the highway deaths in broad daylight on Forest Dr and Bay Ridge Ave. do not continue with bike lane BS, fix the problems that are causing accidents and pedestrian fatalities

Visibly clear signage for local businesses on Severn ave. Many people from out of town venture down this road and hold up traffic looking for a restaurant/business, wondering if it is a one way street etc..

1. Add push buttons at cross walks that turn on flashing lights so cars can clearly see that someone is crossing e.g. on West Street near the Library. 2. Maybe too expensive - build a pedestrian bridge a bit down from the intersection at Forest Drive and Bay Ridge - placed on Forest Drive in alignment with Verizon or McDonalds and on Bay Ridge - past Shell gas station, before the church on the same side as the Shell gas station. 3. Tasteful neon Signs to forewarn people to avoid Forest Drive or Bay Ridge or West Street when an accident happens that will causes significant delays as happened today May 26, 2016. 4. Not sure exactly what happened to cause the accident today and if there are any safety points to be implemented that could help in such a situation. Thank you for asking and for your interest in making Annapolis a safe place.

work on the bottle-neck disasters that frequently occur on Forest Dr, 665, Spa, Hilltop, and West St. It has increasingly become more and more of an issue if one minor or major accident shuts these major thoroughfares down regardless of the time this misfortunes may take place...

I would make Chesapeake ave and Severn Ave one way streets (one into the peninsula and one out of the peninsula) from 6th street down to 1st.

Thanks for putting this together. While I would support the one way change on Chesapeake, I think the plan presented which involved a bike lane on one side and curb bumpouts to delineate parking areas on the other was a good plan that would both slow traffic and allow for two-way. I also think that the suggestion of making all numbered streets one way and leaving the artery streets two way was a good one (including reverting Chester back to two ways all the way). I think a major arguing point for eastport traffic is whether you live here or drive through here. if you drive through, you just want it to be quick and easy. If you live here, you want everyone to slow down. We need to look at both sides and come up with a compromise t hat safely suits all - both the residents and those who use Eastport as a pathway between downtown and the neck. Pedestrian wise, the sidewalks are a major issue with poles throughout, missing sections all over the place (especially in the Presidents' streets), and a general lack of usability, especially for wheelchairs. And bicycle wise, the current bike lane makes it easy to leave eastport but hard to get back. Though even leaving gets dicey after you cross tyler (or spa, if you are going that way). A major issue that wasn't really touched upon at all is the lack of bus/commuting options in Eastport. The DC bus comes down West st but only to calvert, so it is a pretty good walk (or bike ride, but there are no bike racks at the stop) to get there. Biking down Forest is not an option and the city buses (you'd need to take one to the mall and then transfer to the riva one) would take an hour to get you somewhat near the park and ride and you still have to walk about

10 - 15 minutes from the bus stop to get to the buses at the park and ride (about 1/2 mile). The number of Eastporters who commute to DC is high, yet there is nothing to assist them with alternative transportation. I don't know if a park and ride is an option on the peninsula, or simply having the DC/West St busses come at least to the City Dock circle, if not loop through Eastport and out tyler or forest. finally, speed on President St. There are no speed limit signs and only two stop signs between Tyler and Boucher. People race down the street like they're eluding the cops (which they sometimes are). There have been pedestrians hit, houses hit, cars hit. It is a dangerous accident waiting to happen. I know stop signs aren't to be used as speed control devices, but given that President is meant to be an evacuation route, speed bumps, bumpouts or other control devices might not be the best solutions - stop signs would work. Finally, finally, evacuation. Every year there are events that affect traffic in Eastport. Yet it seems that the police/city have not taken the opportunity to come up with an evacuation plan and to supply the necessary officer or personnel to direct that evacuation, whether it is because of fireworks, blue angels or an oncoming hurricane. Most in eastport aren't even aware that boucher to president is the evacuation route (and some don't even know you can leave that way). It is vital the residents know and it is important that police be on hand during special events to let the visitors know. Other wise, everyone tries to squeeze on Bay Ridge and Chesapeake and traffic backs up to first. I know i have included a lot here and I appreciate that you are doing this. It will make Eatsport better, and safer, for everyone. As someone who walks. rides or bikes between president and 5th every day, I see a lot of the various traffic needs. I am happy to help however i can Jess Pachler 410-916-5500

Need more "zebra-stripe" crosswalks.

The roads need repair. I've lived on Boucher for ten years and the roads have not been replaced. I've watched other roads, specifically President through the housing authority be done time and time again. Great, but let's do other roads. There is an incredible amount of taxes being paid by those who live on Boucher and we deserve to have the road done. I walk and run through the the streets of Eastport and they are awful and dangerous.

This survey is not comprehensive enough. I would suport residential parking but more then two hour, more like 6 hours. No metered parking. I would also like to see better enforcement of the 48 hour parking law first. I have cars belonging to midshipman and boating visitor parked in fount of my house for days and sometime weeks. During special events when no parking is permitted on Severn Ave the signs get tourn down by visitors and we always end up with cars parked on both sides of the street making it a a traffic nightmare. Your traffic study should of included all of Severn, Washington, Boucher and President Street. They are all part of Eastport and a major thoroughfare out of neighborhood. Bike lanes, crosswalks and bus stops are not a priority until the flow of traffic in and out of the neighborhood is fixed. Also maintainince of our streets and sidewalks. Is an issue. Take a drive down Boucher and see if you muffler stays on. If the city doesn't address the safety issue of traffic in and out of the neighborhood and starts new development projects they are treating the current residence tile fools we will not be passified by bike lanes, traffic calming and crosswalks so the city can increases it tax base with the development of Eastport Shopping Center, Watergate, Annapolis Yacht Club, South Annapolis Yacht Centre and most disturbing, Crystal Spring. The city has lost its mind!!!

First, stop the creeping power play of the historic district trying to control eastport.

It was again clearly evident on Thursday, 6/26 that Forest Drive is the major influence on traffic congestion, not just in Eastport but the entire City. This is where the emphasis should be placed. Stop tweaking little stuff hither, thither, and Yon, and stop the hemorrhaging on Forest Drive caused by poor planning !!!!!!!!

Zipcar, Car2go or similar parking

Having just survived yet another Eastport-and-surroundings traffic Armageddon I believe that adding road capacity sufficient to handle traffic during the 10+ traffic nightmares we experience each year would require expropriation of significant amounts of land and huge investment in more roads and lanes. That is just not going to happen. I don't think AAPD directing traffic at key intersections will actually increase traffic throughput when no one is able to move (though it might calm some angry motorist nerves). The study report should acknowledge the impact within the study area of frequent events nearby such as bridge openings, special events drawing high volumes of people/traffic, overflow traffic from Forest Drive, accidents, etc. Since we are not realistically able to add road capacity the best alternative is to SERIOUSLY (not the useless lip service we have been seeing from the city of Annapolis) improve sidewalks and cycling infrastructure and strongly encourage residents and visitors to this section of Eastport to walk, cycle, or use public transit. Walking, cycling and public transit need to be so much easier -- and feel safer -- that people choose to do that instead of driving. The City needs to discourage short automobile trips and encourage walking, cycling and public transit. Make driving short distances harder by charging -- and charging more -- for parking. Fix the sidewalks, add crosswalks, add bike lanes, add bike parking. Stop pretending there is a "plan" to fix motor vehicle traffic during the frequent "much worse than normal" situations (some of which are scheduled, but some of which are not). Any mayor, city official, city employee, or transportation consultant who suggests current road capacity is sufficient to handle additional residential development near the Eastport Shopping Mall, Crystal Springs, or anywhere else in the area which relies on single routes into peninsulas, should be forcibly held in a car stuck in traffic during these frequent traffic nightmares.

Another Forest drive fiasco yesterday. A publicly released and reviewed comprehensive emergency plan for road closures must be generated. If yesterday was execution of one then it isn't working. APD cannot handle a closure

Make numbered streets one way. Keep Third and Chester as one way as they have been. Delivery trucks to Ruths Chris and Davis Pub need to be able to turn down a one way street to get back to the main thoroughfares. Enforce parking especially during events, especially at red corners. Improve all sidewalks so people use them instead of walking in the street. Re-assess the various businesses in Eastport to be sure they have adequate parking. Many businesses have grown or expanded over the years and yet they have not kept up with their parking requirements per City Code. Send inspectors out to count spaces.....we seem to have alot more rental homes (AirBnB, VRBO) than ever before....how are parking spaces being allocated to these "businesses"? If they are renting as daily or weekly use, they should have to provide parking for their guests. Some of the rentals I have seen have multiple out of state cars for entire weekends. Make Annapolis City Marina open their lot to the public at night. Bring back the e-cruisers !! We used that service alot to avoid using our car to go downtown. Do not put bike lanes in at the expense of parking or making Chesapeake one way. We are not really set up as a biking town anyway.....quit trying to force this. Its not like masses of people are biking to work.....thanks for your help on this. Oh, one more thing....DO NOT approve all this new developement at Eastport Shopping Center and Watergate. Your expert said 850 more units would "break" they system, it seems to me that between Watergate and Eastport Shopping Center we will be well on our way to 850 more units.....so DON'T approve it.....seems like a no brainer. We are already at the breaking point of our schools, out Police, our Fire....why in the world do we want to ADD to that problem.....please take this seriously. If developers want to fix all the problems first, then they can come.

Stop the developments .. Annapolis can't handle this out of control growth!! Yesterday was a prime example on forest drive being closed..It took me an 1 1/2 hours to get from church circle to Eastport to my home .. I would have walked but there was no where to park the car ..

Moratorium on new developments along Forest Dr. corridor to limit traffic. Only 2 ways out of area-Forest Dr and Eastport. One accident is gridlock for hours. There is daily gridlock from 3-6 without drawbridge up. Have to look at the cumulative affect not one small area as all interralated.

The city's non-strategic plans for development adversely affects Annapolitans and the people of Eastport. When you build commercial businesses and over-crowded residences on Forest Dr, it impacts everyone including our quality of life. The Thurs May 26 Forest Dr accident is proof of what fast-moving development and more cars will do. The mayor reneged on his campaign promise regarding Crystal Springs. The city owes residents a strategic plan that supports the voters will. Traffic calming, beautification, not more buildings is the solution.

Stop the building - Crystal Springs, Quiet Waters development. We don't need more housing, we need property taxes or some tax on valuable property that right now pay no taxes - schools and religious institutions.

As a native of New Orleans, in neighborhoods with narrow streets and limited off street parking, one-way streets are the norm and work very efficiently. There is no need for what is affectionately known as the "game called Eastport chicken" and there seem to be very few scratched cars and broken side view mirrors. I do hope implementation of one-eat streets will be considered for eastport's narrow, congested streets. Parking in both sides of the street, in the same direction is smart, easy and effective. Thank you!

I believe bike lanes and pedestrian access are important to unclogging street and alleviating traffic. Better means of accessibility are key to alternative means being used. Thanks!

No more development along the Forest drive corridor. When there is a serious problem like yesterday 5/26/20126, the police need to direct traffic. They're nearly a non presence in these situations. I can't fathom why. Maybe it's turf issue between the county/city/state we, the people, don't care. It's an unacceptable lack of responsibility.

The area can handle no more development. No more development. No Crystal Springs.

If the roads are congested and we don't have options to expand them much, can we look towards using other modes of transportation - an aerial tramway, a small rail system, more options and promotion of transportation by water, increase bike and walking safety. When an accident blocks traffic for hours, it's nice to have the option of parking on the outside of town and taking another mode of transportation that is efficient and fairly quick. One that doesn't disrupt the quaintness of Annapolis.

No more development. Eastport is too crowded as it is.

On question 6 about the separated bike lane: while I am very much in favor of separated bike lanes, making a significant change just to put in a separated lane for a quarter of a mile will likely cause more problems at the endpoints than it solves. Given very little room at both ends of Chesapeake that could not ever accommodate such infrastructure, I would recommend a standard bike lane and attempt to make that more consistent with other lanes in the area. Consistency is very important as abrupt changes in infrastructure type are confusing for everyone.

Our sidewalks are a mess. The calming strips are treated like a slalom course and drunk driving through Eastport when the bars close downtown should be monitored.

A new bridge with four lanes would have the greatest impact to improve traffic in the city

Reduce developments in Eastport to control population and traffic growth

overhanging residential shrubbery along sidewalks cut back to allow full sidewalk access; street parking removed on Chesapeake Ave (and elsewhere) for bike paths; better bus stops, better signs, better info on bus routes at stops, more covered shelters, cleaner running buses; more automatic speeding ticket devices.

I live here. The biggest problems are the volumes. Plans for emergencies are crucial. It's bade bough to get home on a normal day. When streets are closed its impossible. For that matter , this are could never even be evacuated in case of a water natural disaster.

Stop trying to promote growth. If you build apartments over the Eastport shopping center, and allow places like Crystal Spring to over-populate the area, there is no way we can fix this issue.

Not permitting any additional multifamily housing units to be built

Need better response to accidents as we often get to total gridlock. This means if a real emergency evacuation was needed we would be unable to get out of town.

Traffic and parking enforcement neither one of those things happen on the peninsula

Parking and narrow streets are the greater problems; folks not knowing how to drive or park are the second problem. Some parkers do not park close enough to the curb and will also park over the lines making turn radius difficult to achieve. Some drivers need a middle lane marker so they know how to stay on the correct side of the road permitting two way traffic

Traffic is getting much heavier overall. Need to regulate housing capacity. More condos in Eastport mean many more cars on the road. Maybe restrict parking to one side of the street.

Cars are too big for Eastport's narrow roads. In an emergency situation there would be no getting out. Just look what happens on the 4th of July and other such events. No one can leave the area.

Of prime concern to me is to make every street: the numbered streets, Severn Ave, Chesapeake Ave, Chester Avenue ,River View Ave, and Horn Point Drive ONE WAY, between 6th Street and Horn Point Drive. ONE WAY, ONE WAY, ONE WAY!!! Currently, traveling those streets is a cross between a slalom run and playing vehicular chicken. Also larger stop signs are needed at 1st and Chester and stop signs should be on the Chesapeake Avenue entrances to the intersection of 5th and Chesapeake. The stop signs are on the 5th Street intersection entrances. This is ridiculous since the elementary school entrance is on Chesapeake Ave.

Eastport works as it is. Parking is shared by residents, businesses and visitors. Everyone once in a while doesn't get the perfect space but it works as it is. There is not sufficient commercial parking to have residential zones unless the City builds a garage as in Ward 1 where there are 4. The traffic works. Everyone slows down, pulls over and waves after the other cars pass. The new people who want to speed on our streets as they did in their last home in some other area should relax and enjoy Eastport's relaxed lifestyle and friendliness.

Enforcement of stop signs & cell phone laws. More crosswalks.

No additional development in Eastport provide residential stickers for parking.

Traffic is getting worse and worse. Sucks.

Solution for traffic back-ups that happen as a result of accidents on Forest Drive. More bike lanes in general. Crosswalk at Eastport shopping center at intersection of Bay Ridge and Chesapeak. Removal of median in the middle of Boucher. Pedestrian bridge over Hawkin's Cove to connect Eastport and Truxton Park.

Every time there is an accident on Hilltop or Forest Drive... it seems to gum up everything for hours and hours. One worries that a true emergency during those times could not be handled. Perhaps some pre-planning on routes out of the Hillsmere and Eastport communities IF something shuts FD down again would be helpful for the next event.

i think that there is a need for speed bumps on Bay Ridge Ave. The reflective signs are always being replaced because of speeding cars. And Cars speed down that street all day and night, many crashing into parked cars. Just this past year, I've been woken up by a dui arrest arrest because some guy slammed into two cars outside my window. And there's been a hit and run of my neighbors car across the street. Do not turn Chesapeake into a one way. It'll just cause more idiot drivers barreling down Bay Ridge Ave.

Traffic on Bay Ridge near the Eastport Shopping Center is so heavy we are having difficulty safely driving or biking out of our community. Perhaps a light at Fairview Avenue would help and linking Monroe and Fairview to use one light? These are the communities of Severn House and Watergate.

I think the city needs to face facts about the level of traffic when there is a predicted or unpredicted events. I don't know anyone on the peninsula who thinks "evacuation" is possible. I would like to see the city do modeling to see whose correct...the emergency management detp or the citizenry. Hope all in city were paying attention to this past Wed (a predicted event ...blue angels) and unpredicted event on Thurs. (child bicyclist hit on forest.) Does the city really believe it has a plan?

Some traffic calming bump-outs (not speed bumps!) on Chesapeake would be helpful. People speed in both directions. They could also help with storm water management. I live and work in Eastport and parking is rarely a problem. No need for permit or metered parking. It would be terrible for businesses!

Synchronize lights; enforce parking regs

All of the peninsula from 6th st to 1st should be examined. All pa king should be one side, and the possibility of all one way streets should be considered.

Designated pedestrian crossing zones on Chesapeake Ave between Bay Ridge and 6th. Pedestrian/bike safety improvements on Severn Ave -- either through eliminating street parking between 6th and 3rd to make wider sidewalks/bike lane or by converting Severn to one way on to the peninsula and Chesapeake to one way off the peninsula.

All junctions between 1st and 6th street should have 4 way stop signs - currently the random stop signs at each junction cause confusion and are dangerous - particularly Chesapeake and 2nd, Chester and 2nd, Chester and 6th is a no brainer! There should be no parking on south side of Bay Ridge ave between the Post Office and 6th. Bringing buses down 4th street does not make sense - have a single pick up on 6th street - there is VERY little demand for a bus on the peninsular Post more signs for route 50 and Route 97 so non residents can find the way out a big I 50/97sign at the Bayridge and Taylor/Hilltop is important too

Because of the business on the back creek side and the one way street section of Chester that runs from Mears to 3rd Street, Third Street is the exit lane for leaving those businesses at the end of third and second street on Back creek side. The drivers speed between Chester and Chesapeake. There needs to be traffic calming on that block or something to slow people down

Stop development. You did not ask a single question about overall congestion. I live on Fairview and it can take over 5 minutes to get onto Bay Ridge because traffic is so heavy. I am a part of Eastport too, not just the folks on the point.

Stop adding to the congestion with more building. Stop Crystal Spring and Quiet Waters development. Gridlock happens too often! Hope we never have a TRUE emergency--people will never be able to move!! Development at 4th & Chesapeake should have been a tasteful parking garage instead of adding more retail/living space which brings even more traffic. Shame on politicians!!!!

I think the city should train it's police officers or other personnel to direct traffic during critical time such as last Thursday, when the young bicyclist was hit by a car. It is ridiculous that we can't have folks directing traffic to keep things moving and prevent other accidents from occurring. I have lived in Annapolis for over 30 years and the traffic woes are becoming increasingly worse.

It is almost impossible at certain times of the day to get onto Bay Ridge Avenue from the side streets. The timing of the lights at Eastpot Shopping Center and Hilltop were recently changed which now creates a steady stream of traffic. Pulling onto Bay Ridge Avenue is very difficult now

and one must often go in the opposite direction and make U turns. Bay Ridge Avenue will not support any increase in population from new apartments, homes or shopping centers.

one way streets - depends on which street, agree/disagree should have had neutral option. Need crosswalk between shopping center and PNC bank. Get city buses to stop dumping oil at stops (especially Eastport Shopping Center) which washes into the bay. Maybe convert them to electric, or replace with Uber subsidies as they're doing in Florida.

I believe that the traffic and parking infrastructure in Eastport works just fine better than 90% of the time. With regards to pedestrian safety, I think crosswalks and sidewalks are in severe need of repair. Some of crosswalks around Eastport Elementary School are in need of immediate attention, and one should surely be added at Bakers and Co. and between the Shopping center and PNC Bank. As I said at the meeting, getting a good consensus of the issues that occur on a consistent basis should be the highest priority. This is a really great survey. Mike Tomasini Business Owner and Resident

Too many speeders

Eastport needs to be made more pedestrian friendly. More public transportation for commuters should also be incorporated. And any pedestrian improvements should include green infrastructure upgrades, i.e. Complete streets.

Cease the building of multi-unit dwellings in EASTPORT. It's already too crowded.

Have police figure out how to manage traffic durin emergency or event. Sitting in patrol cars waiting for it to sort it all out on its own is not an option

avoid performing 3 infrastructure/construction projects at the SAME time in Annapolis, which causes traffic to back up into Eastport. Or teach your traffic control officers how to do their job more effectively(i.e. work together) to improve the flow of traffic downtown

It is nice you ask about bus stops but there are really to few busses in the area. I.as l so think event parking is somthing that should be looked at. I live on the Peninsula and we get flooded with tourist ,kids on field trips and there busses. If you are not use to driving in small congested streets....people need an alternative parking bus system

Before we even consider the issues above, we nbed to have road infrastructure that supports significant congestion as well as ensuring traffic flow when there is a major accident. Over the past two years there have been a series of major accidents on the two roads by which Eastport is accessed that completely shutdown the city for hours. What happens when we need to evacuate the peninsula? How will that be handled?

Consideration should be given to creating an Eastport-wide system of one-way streets, not just keeping the haphazardly designated one-way streets that exist today, and which artificially force traffic onto the streets that are not one-way (such as the one-way sections of Chester Ave, Third Street, and Burnside). If streets are one-way, then parking can exist on both sides, but if streets remain two-way, then parking should only be allowed on one side (like exists on Severn Avenue, but not on others). Speed should be monitored and ticketed on the residential streets of Eastport (Severn Ave, lower Chesapeake Ave, Chester Ave, and the numbered streets), not through the addition of stop signs or traffic-calming bump-outs (but zebra-striped crosswalks could be added on corners to alert drivers to pedestrians). Parking could be managed with use of "residents only parking" zones and "visitor parking" spots (but not parking meters), or residents could be given parking decals and visitors allowed 2-hour parking (residents could be given numbered guest placards for occasional visitors). Deliveries and trash pick up in Eastport should be limited to after morning rush hour (the commercial refuse companies empty dumpsters, very loudly, too early in the morning, many times in violation of the existing time requirement, which is too early; huge delivery trucks roar down Eastport streets too early in the morning), and noise is a big issue along the routes leading to and around restaurants and other commercial properties. Idling commercial buses and limousines are a problem, as they drop off

their passengers at restaurants and then wait on residential streets, with their engines on and taking up parking spaces, until their passengers are done, and some local bus companies now stop in the middle of intersections to discharge and pick up their passengers at restaurants, blocking traffic and causing noise. Marked bike paths on the side of the roads need not take an entire lane or require a one way street, just a bike-width path to be ridden. City buses should remain on the current route in lower Eastport, and should not be routed on any other street than Fourth Street (we already have enough school and commercial buses crowding our narrow streets, such as those going to/from the AMM and restaurants). Traffic congestion is one of the worst issues -- events like Annapolis Yacht Club activities in Eastport back up Sixth Street (and that is before the new facilities are built), the 4th of July and Blue Angels gridlock Eastport for hours, and emergencies like accidents on Forest Drive, Spa Creek bridge closures or Compromise Street flooding, or an evacuation requirement make it virtually impossible to get off the peninsula.When these things occur, there is no response from the City to facilitate traffic flow at intersections, reverse direction of one-way streets, and double lane those two lane roads that can accommodate it so the traffic can get off the peninsula. No additional development of residential or commercial property on the Eastport peninsula should be allowed until a comprehensive change in the Eastport traffic patterns is put in place.

There needs to be a solid plan that WILL be implemented when Forest Drive is shut down. Being unable to get to work or home for hours on end is unacceptable. Stop trying to build more on forest drive when you can't even manage the traffic that is there. More frequent buses and added buses on the weekends would be nice. traffic may not be as bad if the public transport was better. Free shuttle for residents to down town and back would. Nice as well. The tourists get the circulatory so why can't residents?

Need traffic police to help leave Eastport after big events often we are trapped in eastport at end of work day

The city needs an emergency management plan for Forest Drive. Every single time there is any problem along that corridor, it takes hours to get anywhere from Eastport to Downtown to the Neck. It's unacceptable -- this should be the city's number one priority.

Better enforcement of no-parking zones (see a lot of it on the peninsula).

We need better management of emergencies/frequent closings of Forest Drive

Crosswalk is needed at Chesapeake and Bay Ridge. Speed bumps are needed on 1100 block of Boucher Ave. as speeding is very common and it is a residential area with many children and pets.

My foremost concern is how susceptible our roads are to complete gridlock given one or two accidents. As we saw last week, Forrest Drive, Hilltop, and Downtown are our only options. A closure of any one of them will lead to hours of gridlock on the others. I only expect this to get worse as we get more in-fill and if Crystal Spring goes forward. Also, I'd be interested in the possibility of a DC commuter bus going through Eastport and Forrest Dr. on the way to the Truman Park and Ride like the ones that go down West St. I know quite a few people who make that drive daily. It could take some cars off of the road.

More traffic control by auxiliary officers on busy weekends. Having one at the bottom of Main is a start but could be more effective if used as a network with many other intersections involved.

Improvement on getting parking information availability to tourists and others visiting Annapolis should be a priority. Better system of smaller trolley bus system to move people to downtown Annapolis & Eastport from parking garages . Very little information out there about current bus! Very surprised that people who come here and live here are not aware about how to use this bus! Poorly communicated! Needs better marketing. Noticed some improvements to parking with signage and meters downtown this weekend. The two hour local free parking is a great idea but also having moved here five years ago find that locals don't know about it or where to

get the cards. I got it from word of mouth. I mostly walk with neighbor's to town but I bad weather would use garages & buses.

The streets from 6th street north should be alternating 1 way directions. Special events >4th July , Lights parade , Eastport Rockin etc- control visitor parking , this would greatly reduce the evacuation time to clear the streets of overflow traffic. Interview and hire a new traffic engineer ASAP.

We legitimate traffic study conducted during congestion months. The busiest times of year are the vacation months which that study excluded.

I think there needs to be a more thorough plan for events and emergencies that is actually executed. For example, in the past 6 months (less actually) there have been accidents on Forest Drive that have shut down Easport travel. If this is a common enough occurrence, we should be able to figure out better evacuation routes. If there is no way to do this, then many we should not consider more growth in Eastport or making the environment more suitable for biking and walking and actually encourage it.

I live in Eastport but I do not own a car. Buses, Bicycles, and sidewalks are my priorities

Spa Creek Bridge requires a non-slick surface for a bike lane. When it rains the metal grates within the bridge become like ice, and is the single most dangerous road section within the City.

i never thought about converting 2-way streets to 1-way, however it makes sense considering the cost to implement those changes (minimal) and the permanency of such changes (also minimal). bikes need a place to go, and need to obey traffic laws just like cars, but there is not adequate infrastructure for them. if more infrastructure is provided for bikes, the need for public transportation (bus) will be less and less. Also, on the topic of buses, why do we need enormous buses when there's only a handful of patrons traveling on them? wouldn't it make more sense to use something more sensible like a Sprinter van so they can navigate traffic and side-stops easier? happy to provide additional comments. i can be reached at colinmrobertson@gmail.com. thank you, Colin

Allowing street parking on both sides of a narrow 2 way street effectively makes that street one way only and un-navigable if someone turns onto the street from the other direction while trying to traverse that street. Please either disallow both-sides-of-street street parking or make the streets one way in more cases.

Turning one way streets into two way streets would create congestion, accidents and even more traffic in Eastport. Converting Chesapeake Avenue to one lane would create a myriad of problems and more congestion as well. There is simply not enough space to create a bike lane. If the main concern is traffic, eliminating more space will not remedy the problem. Additionally, none of these questions addressed event parking and management. What are the proposed solutions for managing traffic during events? How do we reduce hours of congestion in our neighborhood after events like the Blue Angels and 4th of July? Do you have an event management proposal or plan to solve the current safety hazards that result from hours of congestion and blocked roads? Thank you for your time and consideration. We look forward to seeing marked improvements in our neighborhood to create a safer and more accessible environment for residents and visitors.

Monitoring and ticketing of Eastport residents who put cones in the street to save parking. Many of these individuals have driveways, garages and parking pads. Occasional use of cones for a delivery is one thing but cones put out to protect parking 24/7 should not be allowed.

Recent incidents on Forest Dr. backing up traffic all around Annapolis and especially in Eastport have made it clear that one incident can snarl traffic throughout the city for numerous hours. It is my opinion that we need to come up with a more fluid detouring system and limit any development in that area until traffic concerns can be addressed. Additionally, better traffic and pedestrian management during the summer is a must. Backups through downtown are

unacceptable because the pedestrian traffic ignores the flow of cars and totally chokes off the ability of cars to move through the City Dock area. Dedicated police officers downtown to continually manage the flow of pedestrians and cars would greatly improve the ability of residents to drive anywhere during peak tourist season.

Curtail development. No large additional developments on Forest Drive and Spa Creek.

When we have major accidents on Forest Dr., the police need to have a PLAN b and set up a bypass as quickly as possible. Tie ups that last 3 hours are unsafe and unacceptable.

Do not allow Crystal Spring to be built. Traffic into the peninsula is congested enough.

The lack of sidewalks on many streets creates a huge safety problem with pedestrians and bikers in the same space as cars (and often difficult to see if they are moving among parked cars).

Put a moratorium on new housing construction in Eastport and Forest Drive for the sake of property tax dollars. We have enough traffic as it is to choke an Arkansas mule. God forbid if there is real disaster and the entire population tries to exit those areas. You do not have a police department that can handle that traffic problem.

Put a stop to development in Eastport as we are struggling with the size we are now.

Cross walk needs to be put in at Bay Ridge at end of shopping center where health clubs is toward Fairview Ave. Some kind of a light at intersection of Bayridge & Fairview to allow local resident traffic out onto Bayridge Ave.

Let's be outlandish and make Eastport east of 6th Street pedestrian only. Put in a parking garage near there and have walkable, bike ride-able, streets...

Please limit the amount of time that a vehicle is to remain parked in any one spot. I have a neighbor who keeps their third car on an unrestricted side of the street in the exact same spot(s) for months at a time. Please monitor the stop signs at Adams and Boucher. Many cars do not respect those stop signs and should be ticketed.

Too much emphasis is being put upon pedestrians, bike lanes and bus stops. If anything, road laws should be enforced against bicycle and motorcycle riders who disregard the law assuming the rules don't apply to them. Greater education to pedestrians in all of Annapolis is also needed as no one seems to know the definition of a "crosswalk". Pedestrians wrongfully assume that a car must stop at all crosswalks when there is a person standing at the corner. This is grossly untrue. A "crosswalk" is a path ON the street that crosses traffic lanes NOT including the sidewalks and corners. All too often I watch people blindly walk into the street thinking they have the right of way and nearly causing an accident. Another suggestion to improve traffic flow through Eastport is the removal of the crosswalk from Ego Alley to Market House. It is nearly impossible to have a steady flow of traffic from 6th Street, over the bridge, through the circle and onto Randall Street because of the crosswalk there. Pedestrians should be forced to first cross Prince George Street then cross Randall Street between Middleton's and the old Steven's Hardware thus allowing for traffic to proceed without stopping twice because of the lack of attention by pedestrians at all four corners at that intersection.

I think you will notice (if records are kept that there are a lot of rear end collisions at the intersectio of Hilltop and Forest when turning right from Hilltop onto Forest. Part of this issue is that during the Spring and Summer, the trees overgrow and block the vision when drivers are looking left down Forest Drive when attempting to merge onto Forest from Hilltop. Please, is someone could trim that back, It would be much safer.

Limit new housing and business construction

On Hilltop provide flashing lights (can be turned on by walkers) at the crossing locations (one near President and 1 close to the Jewish place). We also need side walks on Bay Ridge after Tyler/Hilltop light going away from Eastport

I wouldn't add any bike lanes anywhere in Eastport. The roads are already narrow and the street traffic is slow enough to make bikes mixed with cars safe.

Pedestrian stdewalks & paths need improvement. I often see multiple people & baby strollers walking in the streets of Eastport. Not safe situation! All the best with improvement program for Easort traffic. LD

limit future development

What I do not want to see is turning Chester Ave into a one-way street to handle the traffic leaving the Eastport peninsula. Chester Ave is the only easily accessed safe venue for pedestrian traffic on the peninsula.

No added building to increase population.

Provide a safe, public "drop-off" point for residents who wish to take the water taxi back from downtown Annapolis but who do not live directly on the water.

Make all streets one one including Chesapeake and Severn Ave

Severn Ave and Chesapeake Ave should both be ONE-WAY. One should be ONE-WAY in and the other ONE-WAY out. This should be done regardless of what is done for bike lanes.

Hard to believe that some streets allow parking on both side and 2 way traffic. This cannot physically be done on some streets. Try putting 4 cars parked side by side and see which streets can handle this. I believe having more one way streets would greatly improve the flow of traffic. We are constantly pulling over to the side (if you can find a spot close to the curb) to allow another car to pass.

Re-open the downtown Annapolis post office. Having the only post office located in Eastport off of Chesapeake Ave has greatly increased traffic in the past year. Pedestrian crosswalks need to be striped at every intersection and crossing. It is perilous to try to cross and cars frequently ignore the signage in the road. The sidewalks in Eastport are in terrible condition, making it very difficult to walk, push a stroller or safely enjoy the neighborhood. Bus service to Eastport is of very high frequency but there are very few riders. Bus service could be scaled back to hourly (as opposed to every 30 minutes) to reduce traffic.

Need to acknowledge and handle the "cut-through" paths (e.g., Boucher/ Washington/Severn, President/Boucher) so that the bulk of cars and buses stay on certain routes (at controlled speeds) and there is less incentive to cut through on narrower streets. Need to keep Chesapeake as two-way, since the one-way part of Bay Ridge Ave is inappropriate to handle any more westbound traffic, and because additional retail development on Chesapeake/Bay Ridge will need that flexibility. Still a bunch of sidewalks in crumbled states - assume they are on the list?

When talking about Eastport traffic you have to consider the traffic over spa creek bridge which is at saturation point. Parking in Eastport is adequate for businesses and residents alike PROVIDING NO MORE DEVELOPMENT.

Owner occupied homes should never have to give up parking to transients or events. Invasions of outside vehicles should not ever happen whether for Blue Angels or July 4th. The area should be for residents only since there is a lack of parking there for many of them. Annapolis is a town with residents and not a theme park for outsiders.

Please move the bus stop on Chesapeake Avenue and Fourth St to Fourth Street in front of the church to alleviate traffic congestion.

I am totally against metered parking and residential parking signs,stickers,etc. I believe that bike lanes would bring in too much unwanted and unnecessary traffic onto the peninsula and the possibility or rising crime as as well. I also think that one-way traffic for streets from Sixth through First Street might enhance the ability to negotiate our narrow streets (with every other street alternating its traffic direction). I've never been a fan of speed bumps, as I believe that

they can cause damage to many vehicles, especially low sportier vehicles. It also makes snow removal more difficult.

Traffic circles in place of intersections. Bike lanes should be routed off of main avenues with parking on those streets restricted to residents only on one side. This frees up a bike lane without impacting business and reduces non resident parking making the streets residents happy. Guests can park on adjacent streets.

Expanding a Circulator type free shuttle between Eastport and Downtown could help reduce traffic and bolster commerce in both Eastport and Downtown. A stop near Eastport Shopping Center could help alleviate parking complaints of residents closer to the bridge.

The streets in Eastport need to be maintained first of all before any discussion of traffic study. With the streets in such a bad condition cars and bikes will be trying to avoid the potholes.

The overall response to the last three major incidents on Forest Drive have been a disaster. A long term blockage on Forest Drive inside of Hilltop Lane should not adversely affect traffic on Rowe Blvd, Solomons Island Rd, Aris T Allen or West Street if proper notifications are provided to the driving traffic. This was not done. The 3+15 hour accident investigation of the recent incident at the Middle School was a disaster. The data should have been taken and the roadway opened in one hour. It appeared there was a training scenario or total incompetence ongoing at the scene. Cell phone traffic congestion reporting within the City during the incident was non existent and newspaper accounts the next day or after the fact appeared to be censored so the development of the Reserve at Quiet Waters, Crystal Spring and other residential development would not be questioned.

Do not allow any additional large scale development that will affect the traffic flow on Forest Drive. As a home owner in Mariners Point and within the city limits it is imperative that development be limited unless that developer pays for an additional lane for the entire Forest Drive corridor to alleviate any traffic congestion that will result.

Improved road conditions, repaving, etc. Also, the traffic calming on Bay Ridge Ave. that is not effective. We could have speed tables instead of the traffic obstacles that are there now. The current traffic obstacles are treated as an obstacle course for cars to zip through rather than actual traffic calming, evidenced by the reflectors that are continually knocked down and run over.

I think we need better parking signs along Severn Ave, at least; as well as increased parking enforcement on the weekends. I think the survey's weekend times were not appropriate to capture the peak traffic and related congestion on a Saturday evening or Sunday afternoon, nor did it capture any other city traffic issue that increases traffic in Eastport. It would have been important to capture that information, because Eastport is not set up to handle that increased traffic - and it is a part of life on at least a monthly basis.

Re Pedestrian mobility: It is a travesty that the sidewalks in Eastport are not conducive to pushing a wheelchair or a child's stroller due not only to uneven sidewalks but also residential bushes and plants growing into and over the sidewalks. Unbelievable that pedestrians have to walk in the street in some areas. This issue should be addressed before we consider adding bike lanes. Re transportation safety and mobility: NO MORE multiple housing construction in the area, especially Crystal Springs. That alone will cause more gridlock in Eastport than all the other issues you addressed. Where would we go if downtown is flooded and the only other way out is in gridlock?

Traffic lights could be better synched in the mornings/evenings to reflect the direction of traffic.

Coordinate and better program traffic light patterns - in particular at Bay Ridge and Tyler where west-bound traffic on Bay Ridge must wait until the green arrow for traffic turning left from east-bound Bay Ridge to Tyler turns off, even if there is no left turning traffic there. The lights have only had that problem since the intersection was repaved a couple of years ago and it it a huge

annoyance that backs up traffic unnecessarily back towards Eastport. That should be an obvious and easily implemented, huge improvement.

Eastport is an odd bird. And while I like the idea of oneway traffic on Chesapeake Ave, it will ultimately create more traffic on Bay Ridge and Boucher Avenues. I am the only person in my house that is 'for' this. As for greater Eastport and inbound Forrest Drive, the traffic does need to slow down and keep moving at the same time. I would like to see more roundabout/circles along Forest Drive where traffic is only getting worse. Thank you for seeking the publics opinion on this subject. My email contact is csdjan3@gmail.com Cindy Borchardt

One way streets including Severn avenue and Chesapeake avenue

I want to qualify my response to one-way streets, specifically, streets running between Bay Ridge and Chesapeake Avenues. I am in favor of decreasing automobile traffic, but the main reason I supported making Chesapeake one way for a bike lane was to make it easier to return State and Burnside Streets to 2-way traffic. I live on Washington Street and returning from, for instance, the Giant in Bay Forest, I currently have to go blocks out of my way to return home.

Stop the over-development! Do you not realize our infrastructure is limited by our geography? City government tax dollar greed has destroyed this city. There seems to be multiple incidents per year where the city shuts down do to a traffic incident. That doesn't give you a clue that the city is over developed? When there is an incident, the Annapolis police seem to be completely incompetent at managing traffic flow while resolving the issue. Two Suggestions: 1. Require the fire department and police to stop racing up and down our streets on ridiculous boondoggles just so they can justify their budgets! 2. Stop trying to manage traffic flow in downtown with crossing guards! They do a lousy job, only making congestion worse. Driver managed traffic flow almost always seems to flow faster. NOTE: I left out all of the expletives that should have been included in this comment!

Put a 25 mile/hour speed limit sign in the middle of every block, going both ways, so at least people are aware of the limit. Put a 25 mile/hour speed limit sign in the middle of Bill Jones Alley, going both ways. Have policeman monitor speeds on Chester Ave. and Burnside St. during the summer afternoons, when moms and kids are leaving Mears Marina. Have policemen monitor and TICKET for driving while holding cell phones to ears.

Do not build any more dwellings or businesses within 3 miles of Eastport! Install a light at Americana Dr. and Bay Ridge/Chesapeake Ave. Put parking signs (48 hour limit) along Americana Dr. It's been a free-for-all for far too many years!

I think streets running parallel to the numbered streets should be one way, and all one way streets should be one way the whole way. I'd like to see a bike lane on forest Drive, from the Bay Ridge shopping Center to Riva Rd.

I have lived at 826 Chesapeake Ave for 15 years and I support a one-way option on Chesapeake with residential parking on both sides but up against the curb. The bike lane (not a protected lane) should mirror that on Bay Ridge Ave along side with the traffic lane in the middle road section. The one way block of State St. between Chesapeake and Bay Ridge should be reversed for better egress from the peninsula for us that live on the 800 block of Chesapeake Ave.Traffic calming needs to stop motorists from passing on the right when they encounter a left turning vehicles. The current situation is very dangerous to pedestrians. 18 wheeler tractor trailers need to be banned from the city entirely. It will not hurt business to have deliveries in smaller box trucks. A one way street will reduce the traffic, noise and pollution for us residence who live with this congestion on a daily basis. I currently use Bay Ridge to exit Eastport as a preferred route since leaving on Chesapeake where it merges with Bay Ridge is dangerous. It is a game of Russian roulette wandering if the cars leaving on Bay Ridge will even stop. The are always disregarding the merge sign. This is a bad situation. Thank you Charles Henney 826 Chesapeake Ave

Parts of this survey are too general. But I strongly oppose making Chesapeake Avenue one way to accommodate a bike lane, even though I frequently ride my bike. Overall, the bike lanes don't go anywhere. There is a mere stretch of it from 6th Street to just about 1/4 miles past Tyler Avenue and then stops. Again, a brief stretch of bike lane on Tyler Avenue, but doesn't follow through! Going into town, there are no bike lanes. Living on Bay Ridge Avenue is difficult for a number of reasons, but having it one-way helps control the traffic. On other fronts, the traffic calming islands are poorly designed, particularly the one located at the top of Washington Street and Bay Ridge Avenue. For the amount of money the city has spent on replacing signs over these many years, the "island" could have been re-configured for a safer and more manageable driving lane for cars and bicycles. On parts of Bay Ridge Avenue, where the telephone poles are located, there is a metal grate that links and island and the sidewalk around the pole. It doesn't work--debris gets caught underneath and water backs up for several houses and doesn't drain.

People treat Chesapeake Ave heading towards the bridge from the shopping center as a two lane road (even though parking is permitted.) The "parking" lane should be marked and could better be used for bikes. Also, getting people to trim their hedges and other plantings that make visibility as you are entering roads like Chesapeake would be useful. We cannot see pedestrians or cars if you use Bill Jones Alley as an exit onto Chesapeake Ave. In face, Bill Jones Alley should probably be made a one way alley.

Clear the sidewalks of brush, parked cars and illegal bike riders to be pedestrian friendly. Add crosswalks everywhere. Enforce the laws you have. Get the slow moving coolie cycles or whatever you call them off the roads. Do not let the slow Horse drawn carts come back. Do not make any more one way streets. Do not do anything to make annapolis any more frustrating to drivers than it already is. Bikes do not need their own lanes on every road. Figure out a way to make bike lanes in town without taking parking or making more one way streets. Sometimes less is more

Remove traffic calming on Bay Ridge.

The city does not do enough to promote our bus system. Routes seem to be limited, I never see any advertising or encouragement to ride the bus around town. I used to be able to take the bus to the park and ride but that has been eliminated. Easing congestion around town could be aided with more ridership on the bus routes.

The light at Hilltop and Bay Ridge should not have the inbound left turn arrow on as long as it currently is since outbound traffic is stopped all the way back to the shopping center at evening rush hour. It should only allow a few cars to turn left onto Hilltop, then the outbound lane should be allowed to proceed toward Bay Ridge. This has been a problem for quite some time.

Turning lanes, more crosswalks and physical-barrier traffic calming on Bay Ridge Ave south of the shopping center.

Limit the amount of large parties at the Annapolis Maritime Museum.

Stop the over development!! Do NOT come to Eastport with your "managed" parking plans which are just another revenue generation plan!!!! What happened to "Clean Sweep"???? Start making some connecting roads between developments so when there is an incident there is more than one route available to traverse. My goodness it doesn't take a genius to see that having all individual developments with no through fares between them is causing huge traffic problems. Stop having the police department handle traffic flow when there is an issue as they are sullen, unsympathetic to those of us who have been stuck in our cars for hours with screaming babies and missed appointments, unobliging to share information or help, and arrogant in their treatment of the law abiding public, but then they are always that way. And disallow the police and fire departments to race around town going nowhere fast (I have followed both in the past just to see them turn off their sirens and lights once they have gotten

through traffic) and clogging our streets with unsafe speeds, noise pollution, and the constant feeling that this city is under siege. I lived in Brooklyn, NY and had fewer police and fire sirens than we do here. Fix the traffic and parking problems in downtown first and let Eastport deal with our own issues!!!

Bumpouts along Chesapeake Ave to improve pedestrian safety. Crosswalks to Eastport Shopping Center. Pedestrian countdown signals and additional pedestrian lead time at intersection of Severn Ave and Sixth St. Bike infrastructure connecting Eastport to Downtown along Sixth St and the Eastport Bridge.

In reference to the question regarding one way traffic on Chesapeake Ave, for someone who travels that road multiple times a day, it's not only a major way into the city, but a major way out. Think one way is a bad idea.

For Q6, I MIGHT support converting that stretch of Chesapeake Avenue to one-way (assuming traffic flow is toward downtown). But to make a more certain decision, I would need to know how thru traffic would be managed. Would there be anything to prevent Watergate residents from cutting through the shopping center to go out toward Forest, rather than making a long and unwieldy circle to 6th Street and back up Bay Ridge? Watergate houses a lot of people, and that could have a pretty dramatic impact on traffic flow in the shopping center parking areas.

Reduce the amount of parking which is currently allowed on both sides of some streets. It is a safety issue as an unobstructed view of traffic is not always possible.

Stop signs at the four way intersections would improve pedestrian safety crossing Chesapeake greatly.

This survey does not begin to address the real problem with traffic & parking on the Eastport peninsula between 6th St. and the Severn River. Traffic congestion is created when one or more of the traffic limiting intersections is crowded OR THE DRAWBRIDGE IS UP. The one-way street network is no such thing. There are a few 1 block one-way streets and one long one way street. Creating a system with some logical planning would be helpful. Pedestrian infrastructure has been upgraded recently. What's the issue? Parking is a problem. So what? It is the responsibility of employers to provide parking for their employees. The current traffic calming on Bay Ridge Ave is dreadful and dangerous. It should be removed. One-way streets might help the traffic flow, but only if they are thoughtfully planned. Parking is a problem: if you own a car in Eastport you have a parking problem. There are not enough driveways or parking lots. Some strategy to control parking by people who do not live or work here could be useful. It's 5:15pm on Wednesday and a very large truck just got stuck under a tree limb in front of my house. The delivery he is making is supposed to be on the other side of the peninsula. You cannot legislate away stupidity, and we ought not impede the small amount of commerce in the neighborhood. Question 6 makes no sense. Question 7 is obvious, but almost no one in Eastport rides the bus. Based on your presentations at the Traffic Study meeting a few weeks ago, this survey makes no rational or logical sense. It's too late, since you have already spent money on traffic and parking analysis.

(1) Eliminate the traffic-calming jut-outs on Bay Ridge Ave; they're more of a hazard than they're worth. (2) Consider speed humps/rumble strips/etc on selected parts of Severn and Chesapeake Aves; many cars get up to 30-40mph+ shortly after leaving a stop-sign intersection, eg Severn Ave at Fourth St. (3) Increase police parking enforcement, especially during restaurant delivery hours on Severn Ave; there are A LOT of violations when loading zones are n/a for delivery trucks (often due to illegally parked cars) and they end up using red zones instead. (4) Eastport will be impacted by increased development on the Forest Dr corridor; when/how will that be measured?

An additional traffic light at the Beechwood Hill community entrances. The flow of traffic is none-stop and congested at peak times and off times.

Parking is a real problem where I live since it is within blocks of restaurants and it is free and not reserved for residents. You should only allow parking on one side of Chesapeake between 6th and Horn Point as when there are cars parked on both sides, the road becomes one lane with people having to pause for others to pass by. In addition, people should be ticketed for parking over the white line and in the red zone. I often have people do this in front of my house - making it incredibly difficult to get in and out of my driveway = especially when they are cars parked on both sides. An alternative would be posting signs that say no Parking Beyond this point since people disregard the white lines and red zones. I have to park on the street in order for my guests to be able to park since all the spots in front of my house are taken. Many folks park here since it is free and walk down to Annapolis since they don't want to pay for parking. You should consider some areas within Eastport for parking meters and for set times that non-residents can park -- especially in the areas near the restaurants. Also - consider when you are raising the bridge -- not great when it is 7am with people commuting to work. Should take into a holistic approach to traffic taking into account the traffic from Forest Drive.

Need an alternate or wider route along Forest Drive between approximately Hilltop and Bay Ridge Ave. Current traffic creates gridlock conditions several times per year due to downed power lines, snow, and/or accidents. With no alternative route, hundreds of cars sit for hours.

All planned and new development must show how they will impact traffic thru an independent firm and the city must limit development based on input from the public and emergency/police services, as well as the traffic study. The Forest Drive corridor is especially affected and it's time the city said "no" to developers.

Smaller Circulator Buses would allow for improved use of these currently grossly under used resources. Better advertising associated with the Circulator would improve use especially by people from out of town. Converting Severn to one way from 6th to 1st and Chesapeake from 1st to 6th would improved traffic flow on that end of the peninsula.

I moved to Eastport three years ago and am ASTONISHED at how dangerous it is as a pedestrian. I have never lived anyplace where stop signs are routinely run, "rolling stops" are the norm, and speeding is rampant. I stopped counting the number of times I & my wife have almost been hit by vehicles at the corner of 3rd and Chesapeake (a four-way stop). Perhaps part of the problem is the location of stop signs and crosswalks throughout Eastport appears completely random and the traffic signage is poor. (For example, the one-way section of 3rd street doesn't have a one way/do not enter signs - and I have seen a number of cars drive the wrong way down that street as a result - one of which almost hit me since I didn't realize I needed to look for a wrong-way driver when crossing at Ruth's Chris.) This traffic study is a solution to what appears to be a pre-existing-agenda-manufactured problem. There isn't a need for bike lanes - Annapolis is a walking town. There isn't a need for residential district enforcement because there is ample parking except for the "big events" (Blue Angels, Fourth of July, etc.). If the city wants to solve a real problem - solve the SAFETY PROBLEM. Put up more stop signs and improve the overall signage, put in traffic calming devices, mark crosswalks, and have a police presence to actually ENFORCE THE TRAFFIC REGULATIONS.

Pedestrian safety would be greatly improved by adding stop signs at four way intersections. Drivers are often confused or forget where stop signs are and I've seen many drivers blow right through them. Enforcement of traffic safety would also be helpful through an increased police presence in the neighborhood - including the peninsula streets.

1) Stop building - we are land locked on three sides and as a result there are only two ways in / out of Eastport. One minor incident in / around Eastport and the city comes to a standstill. 2) Get rid of police crossing guards downtown. Drivers know that pedestrians have the right of way. If they must remain then they should also advise pedestrians to use the cross walk. 3) If there is an accident there is no need to send six police cars so that Annapolis Policemen/women can

stand around watching. While not in Eastport, there was an accident on Forest Drive today (6/13) with a car on its side in Annapolis Seafood's parking lot. There were 5 police cars with their lights on in the parking lot doing nothing but looking at the car. It took 17 minutes to go .4 miles from BayRidge to past the accident. And while driving past another police car came racing down Forest Drive to help his 5 fellow officers stand around with their hands in their pockets. This is sooooooooo typical of accident (mis-)management in / around Eastport by Annapolis Police Officers.

A big problem in Eastport is the gridlock that occurs when there's an accident on Forest Drive. Police officers need to be more of a presence to direct traffic. Another problem is with the many foot races in the city, often creating congestion in Eastport when cars arrive at the downtown traffic circle circle & have to turn around. Ditto bridge repairs. Annapolis's traffic flow is easily affected by problems on Forest Drive. This needs to be an area of focus!!!

It might be beneficial to have the parking spaced marked with lines so that all are accessible, instead of one car taking up two spots.