

Intersection	Approach	Existing Conditions (2014)						Future Background Conditions (2019)						Total Future Conditions (2019)					
		AM Peak Hour	PM Peak Hour	LOS	Delay	LOS	Delay	AM Peak Hour	PM Peak Hour	LOS	Delay	LOS	Delay	AM Peak Hour	PM Peak Hour	LOS	Delay	LOS	Delay
21st St NW & Pennsylvania Ave NW	Overall	23.2	32.4	C	32.4	C	23.5	C	32.6	C	23.0	C	32.6	C	32.6	C	32.6	C	32.6
	Eastbound	23.4	48.2	C	48.2	D	23.8	C	48.5	D	23.8	C	48.5	D	48.5	C	48.5	D	48.5
	Westbound	7.9	11.4	A	11.4	B	7.7	A	11.5	B	7.9	A	11.6	B	11.6	A	11.6	B	11.6
	Southbound	46.0	39.0	D	39.0	D	46.1	D	39.3	D	43.6	D	39.1	D	39.1	D	39.1	D	39.1
I (Eye) St NW & Pennsylvania Ave NW	Overall	14.7	28.2	B	28.2	C	14.6	B	28.4	C	14.9	B	28.8	C	28.8	B	28.8	C	28.8
	Eastbound	11.5	26.0	B	26.0	C	11.6	B	26.0	C	11.9	B	26.8	C	26.8	C	26.8	C	26.8
	Westbound	4.0	32.4	A	32.4	C	4.0	A	33.1	C	4.0	A	33.2	C	33.2	A	33.2	C	33.2
	Southwestbound	32.3	29.3	C	29.3	C	32.4	C	29.3	C	32.3	C	29.2	C	29.2	C	29.2	C	29.2
20th St NW & K St WB	Overall	9.9	10.8	A	10.8	B	10.2	B	10.9	B	10.2	B	10.9	B	10.9	B	10.9	B	10.9
	Westbound	32.8	19.3	C	19.3	B	34.1	C	19.6	B	34.1	C	19.6	B	19.6	C	19.6	B	19.6
	Northbound	1.3	1.7	A	1.7	A	1.3	A	1.7	A	1.3	A	1.6	A	1.6	A	1.6	A	1.6
20th St NW & K St NW	Overall	14.8	18.2	B	18.2	B	15.1	B	18.4	B	15.1	B	18.3	B	18.3	B	18.3	B	18.3
	Eastbound	29.5	28.8	C	28.8	C	30.2	C	28.8	C	30.2	C	28.8	C	28.8	C	28.8	C	28.8
	Westbound	18.9	20.5	B	20.5	C	19.1	B	20.8	C	19.1	B	20.8	C	20.8	B	20.8	C	20.8
	Northbound	1.6	1.5	A	1.5	A	1.6	A	1.5	A	1.6	A	1.4	A	1.4	A	1.4	A	1.4
20th St NW & K St EB	Overall	20.7	21.0	C	21.0	C	20.9	C	21.1	C	21.1	C	21.1	C	21.1	C	21.1	C	21.1
	Eastbound	21.5	25.2	C	25.2	C	22.0	C	25.2	C	23.1	C	25.0	C	25.0	C	25.0	C	25.0
	Northbound	20.5	20.7	C	20.7	C	20.7	C	20.7	C	20.7	C	20.8	C	20.8	C	20.8	C	20.8
19th St NW, H St NW, & Pennsylvania Ave NW	Overall	38.8	29.4	D	29.4	C	40.7	D	30.6	C	40.8	D	30.6	C	30.6	D	30.6	C	30.6
	Eastbound	46.5	24.0	D	24.0	C	49.8	D	26.7	C	49.9	D	26.7	C	26.7	D	26.7	C	26.7
	Westbound	30.5	35.9	C	35.9	D	30.6	C	36.0	D	30.7	C	36.0	D	36.0	C	36.0	D	36.0
	Southbound	28.6	31.7	C	31.7	C	28.8	C	32.2	C	28.8	C	32.2	C	32.2	C	32.2	C	32.2
K St EB Ramp & Private Alley	Northbound Right	0.0	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
	Eastbound Right	0.0	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
K St EB Ramp & IFC Driveway	Northbound Right	0.0	9.7	A	9.7	A	0.0	A	9.8	A	0.0	A	9.9	A	9.9	A	9.9	A	9.9
	Eastbound Right	0.0	8.7	A	8.7	A	0.0	A	8.7	A	0.0	A	8.7	A	8.7	A	8.7	A	8.7
21st St NW & 2100 K Driveway	Eastbound Right	0.0	8.8	A	8.8	A	0.0	A	8.8	A	8.6	A	9.0	A	9.0	A	9.0	A	9.0

Table 17: Peak Hour Queuing Analysis Results

Intersection	Approach	Existing Conditions (2014)				Future Background Conditions (2019)				Total Future Conditions (2019)			
		AM Peak Hour	PM Peak Hour	50th	95th	AM Peak Hour	PM Peak Hour	50th	95th	AM Peak Hour	PM Peak Hour	50th	95th
23rd St NW & I (Eye) St NW	Westbound	21	38	110	178	24	41	124	195	24	41	125	197
	Northbound	94	119	48	58	99	126	50	60	100	127	50	61
	Southbound	59	79	144	177	68	91	151	186	68	91	151	186
22nd St NW, L St NW, & New Hampshire Ave NW	Eastbound	199	247	159	180	205	255	164	186	208	257	164	187
	Northbound	68	101	79	m107	71	105	79	m107	72	105	81	m110
	Northeastbound	~219	#301	90	105	~228	#310	93	108	~228	#310	93	108
22nd St NW & K St WB Ramp	Westbound	84	121	199	#358	86	122	204	#369	86	122	204	1
	Northbound	5	7	1	2	6	7	1	2	6	7	#369	2
22nd St NW & K St EB Ramp	Eastbound Left	0	13	0	14	0	13	0	14	0	13	0	14
	Eastbound Thru	128	155	48	81	132	159	50	83	146	173	52	87
	Northbound	52	70	25	36	53	72	26	35	59	79	28	38
22nd St NW & Pennsylvania Ave NW	Eastbound	87	97	47	60	90	99	48	61	90	99	48	61
	Westbound	55	82	141	182	55	81	144	186	60	88	146	190
	Northbound	80	108	66	74	84	110	82	86	86	112	83	86
22nd St NW & I (Eye) St NW	Eastbound	166	290	52	59	213	365	57	64	218	373	57	65
	Westbound	29	56	97	118	34	63	153	176	34	63	154	177
	Northbound	64	96	23	37	67	99	25	38	68	100	25	39
21st St NW & L St NW	Eastbound	236	m256	56	76	243	m261	58	80	245	m263	58	81
	Southbound	134	165	218	268	140	173	227	278	143	177	227	279
21st St NW & K St WB Ramp	Westbound	93	109	83	146	100	118	87	151	100	118	87	151
	Southbound	106	145	160	210	113	152	167	219	119	158	168	220
21st St NW & K St NW	Eastbound	131	172	84	115	136	176	86	117	136	176	86	117
	Westbound	81	110	371	439	83	113	381	450	83	113	381	450
	Southbound	0	0	9	9	0	0	9	9	0	0	10	9
21st St NW & K St EB Ramp	Eastbound	97	146	73	115	106	158	82	127	137	201	88	7
	Southbound	9	9	7	7	9	9	7	7	9	9	135	7
21st St NW & Pennsylvania Ave NW	Eastbound	216	266	146	184	223	275	152	191	223	275	152	191
	Westbound	45	54	72	108	46	56	74	110	49	60	75	111
	Southbound	97	116	233	280	106	125	241	289	108	127	249	297

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Intersection	Approach	Existing Conditions (2014)				Future Background Conditions (2019)				Total Future Conditions (2019)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
I (E) St NW & Pennsylvania Ave NW	Eastbound	54	62	87	102	56	64	89	105	57	65	93	120
	Westbound	9	12	44	m76	10	12	46	m78	10	13	47	m78
	Southwest Left	8	43	23	61	8	44	23	61	8	45	23	62
	Southwest Right	0	31	0	29	0	31	0	29	0	31	0	29
20th St NW & K St WB Ramp	Westbound	166	272	106	182	173	#288	111	190	174	#289	111	190
	Northbound	3	4	2	2	3	4	2	2	3	4	2	2
20th St NW & K St NW	Eastbound	199	263	180	231	207	271	186	238	207	271	186	238
	Westbound	114	154	238	304	120	162	248	315	120	162	248	315
	Northbound	5	6	2	2	5	5	2	2	5	6	2	2
20th St NW & K St EB Ramp	Eastbound	92	140	30	57	97	145	31	58	102	149	31	58
	Northbound	142	172	64	85	146	177	66	87	147	178	67	89
19th St NW, H St NW, & Pennsylvania Ave NW	Eastbound Left	104	#327	157	213	110	#341	161	#221	109	#341	163	#226
	Eastbound Thru	114	167	36	#301	120	174	39	#315	121	175	40	#315
	Westbound Left	15	33	53	82	15	34	54	84	15	34	54	84
	Westbound Thru	64	97	52	78	70	105	54	80	72	108	54	81
	Westbound R2	20	50	2	16	21	51	2	16	21	51	2	16
	Southbound	100	129	240	284	103	133	248	293	103	133	248	293

~Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table 18: Peak Hour Capacity Analysis Results with Recommended Improvements

Intersection	Approach	Existing Conditions (2014)						Future Background Conditions (2019)						Total Future Conditions (2019)					
		AM Peak Hour	PM Peak Hour	Delay	LOS	AM Peak Hour	PM Peak Hour	Delay	LOS	AM Peak Hour	PM Peak Hour	Delay	LOS	AM Peak Hour	PM Peak Hour	Delay	LOS	AM Peak Hour	PM Peak Hour
22nd St NW, I St NW, & New Hampshire Ave NW	Overall	76.2	30.8	30.8	E	76.2	30.8	30.8	F	80.8	30.9	30.9	C	80.6	31.0	31.0	C		
	Eastbound	26.5	C	30.7	C	26.9	C	26.9	C	26.9	C	31.1	C	27.0	C	31.1	C		
	Northbound	18.0	B	19.5	B	18.6	B	18.6	B	18.6	B	19.1	B	18.6	B	19.4	B		
	Northeastbound	204.6	F	43.2	D	218.9	F	43.6	D	218.9	F	43.6	D	218.9	F	43.6	D		
Improvements:	Overall	35.1	D	--	--	35.9	D	--	--	36.0	D	--	--	36.0	D	--	--		
	Eastbound	36.7	D	--	--	37.5	D	--	--	37.8	D	--	--	37.8	D	--	--		
	Northbound	26.4	C	--	--	26.8	C	--	--	26.7	C	--	--	26.7	C	--	--		
	Northeastbound	40.9	D	--	--	41.9	D	--	--	41.9	D	--	--	41.9	D	--	--		
22nd St NW & K St WB Ramp	Overall	13.9	B	41.1	D	14.4	B	43.5	D	14.3	B	42.8	D	14.3	B	42.8	D		
	Westbound	35.0	D	76.4	E	36.4	D	82.0	F	36.4	D	82.0	F	36.4	D	82.0	F		
	Northbound	1.2	A	0.5	A	1.2	A	0.6	A	1.2	A	0.5	A	1.2	A	0.5	A		
	Overall	--	--	13.3	B	--	--	13.2	B	--	--	13.3	B	--	--	13.3	B		
Improvements:	Westbound	--	--	16.5	B	--	--	16.9	B	--	--	16.9	B	--	--	16.9	B		
	Northbound	--	--	9.6	A	--	--	9.1	A	--	--	9.5	A	--	--	9.5	A		
22nd St NW & K St EB Ramp	Overall	12.2	B	10.6	B	12.1	B	10.2	B	12.8	B	10.4	B	12.8	B	10.4	B		
	Eastbound	16.3	B	20.2	C	16.4	B	20.3	C	16.9	B	20.4	C	16.9	B	20.4	C		
	Northbound	9.1	A	5.7	A	9.0	A	5.4	A	9.8	A	5.8	A	9.8	A	5.8	A		
	Overall	--	--	13.7	B	--	--	13.3	B	--	--	13.4	B	--	--	13.4	B		
Improvements:	Eastbound	--	--	34.0	C	--	--	34.2	C	--	--	34.4	C	--	--	34.4	C		
	Northbound	--	--	3.5	A	--	--	3.4	A	--	--	3.6	A	--	--	3.6	A		
22nd St NW & Pennsylvania Ave NW	Overall	15.8	B	24.0	C	15.8	B	23.7	C	16.1	B	23.8	C	16.1	B	23.8	C		
	Eastbound	8.5	A	12.4	B	8.6	A	12.4	B	8.6	A	12.4	B	8.6	A	12.4	B		
	Westbound	12.1	B	35.4	D	12.0	B	35.6	D	12.6	B	35.5	D	12.6	B	35.5	D		
	Northbound	41.1	D	19.3	B	40.5	D	18.8	B	40.6	D	18.8	B	40.6	D	18.8	B		
Improvements:	Overall	--	--	15.4	B	--	--	15.4	B	--	--	15.6	B	--	--	15.6	B		
	Eastbound	--	--	9.0	A	--	--	9.0	A	--	--	9.0	A	--	--	9.0	A		
	Westbound	--	--	10.9	B	--	--	11.0	B	--	--	11.5	B	--	--	11.5	B		
	Northbound	--	--	28.9	C	--	--	26.9	C	--	--	26.9	C	--	--	26.9	C		

Table 19: Peak Hour Queuing Results with Recommended Improvements

Intersection	Approach	Existing Conditions (2014)				Future Background Conditions (2017)				Total Future Conditions (2017)			
		AM Peak Hour	PM Peak Hour	50th	95th	AM Peak Hour	PM Peak Hour	50th	95th	AM Peak Hour	PM Peak Hour	50th	95th
22nd St NW, I St NW, & New Hampshire Ave NW	Eastbound	199	247	159	180	205	255	164	186	208	257	164	187
	Northbound	68	101	79	m107	71	105	79	m107	72	105	81	m110
	Northeastbound	~219	#301	90	105	~228	#310	93	108	~228	#310	93	108
Improvements:	Eastbound	227	283	--	--	235	291	--	--	238	295	--	--
	Northbound	160	201	--	--	164	206	--	--	165	207	--	--
	Northeastbound	156	205	--	--	160	210	--	--	160	210	--	--
22nd St NW & K St WB Ramp	Westbound	84	121	199	#358	86	122	204	#369	86	122	204	1
	Northbound	5	7	1	2	6	7	1	2	6	7	#369	2
	Westbound	--	--	90	129	--	--	92	135	--	--	92	136
22nd St NW & K St EB Ramp	Northbound	--	--	24	36	--	--	24	35	--	--	26	38
	Eastbound Left	0	13	0	14	0	13	0	14	0	13	0	14
	Eastbound Thru	128	155	48	81	132	159	50	83	146	173	52	87
Improvements:	Northbound	52	70	25	36	53	72	26	35	59	79	28	38
	Eastbound Left	--	--	0	18	--	--	0	18	--	--	0	18
	Eastbound Thru	--	--	64	107	--	--	66	110	--	--	69	114
22nd St NW & Pennsylvania Ave NW	Northbound	--	--	19	25	--	--	20	25	--	--	22	27
	Eastbound	87	97	47	60	90	99	48	61	90	99	48	61
	Westbound	55	82	141	182	55	81	144	186	60	88	146	190
Improvements:	Northbound	80	108	66	74	84	110	82	86	86	112	83	86
	Eastbound	--	--	38	49	--	--	39	50	--	--	39	50
	Westbound	--	--	72	104	--	--	74	109	--	--	77	116
	Northbound	--	--	82	95	--	--	99	98	--	--	100	98

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Figure 19: Morning Peak Hour Capacity Analysis Results

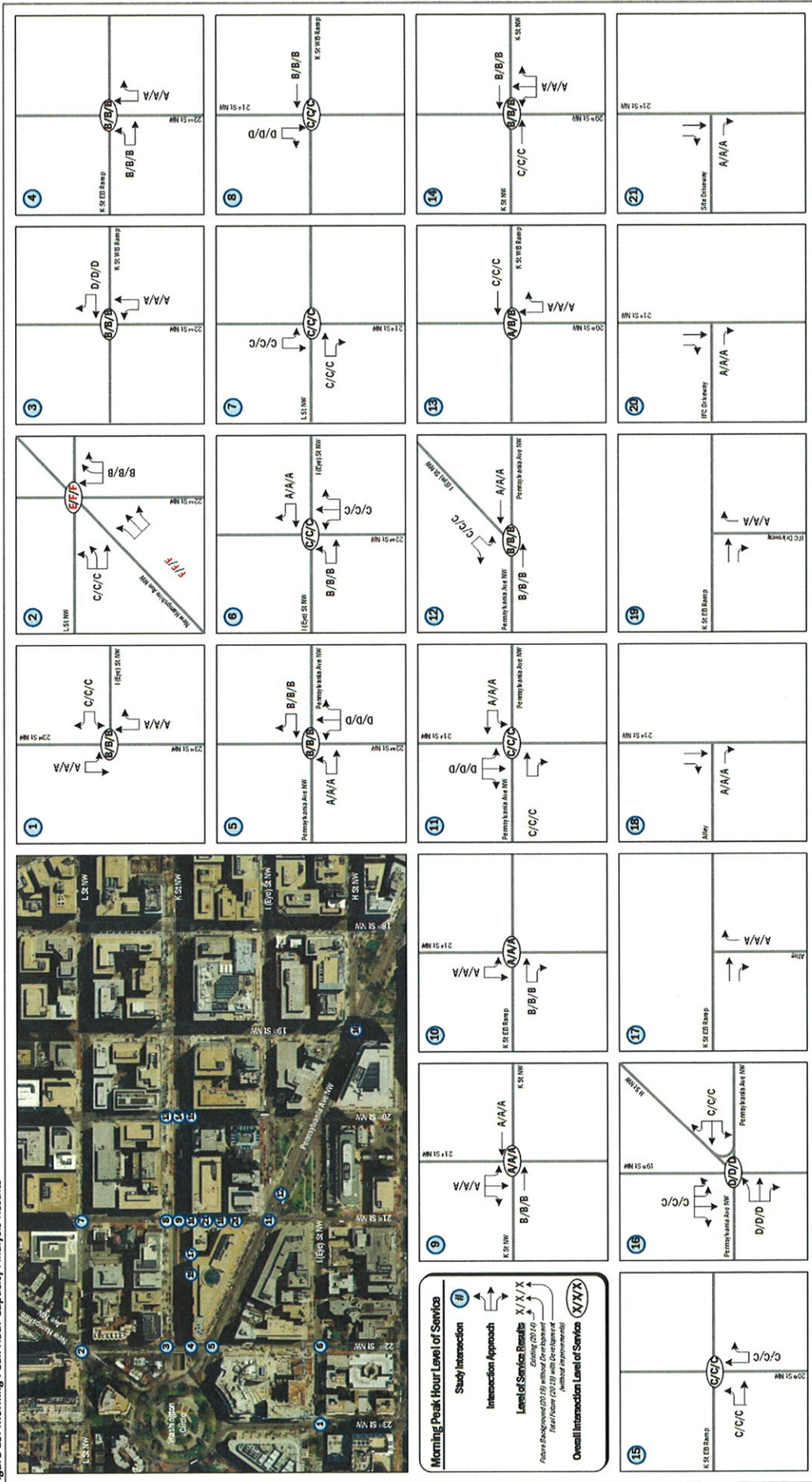
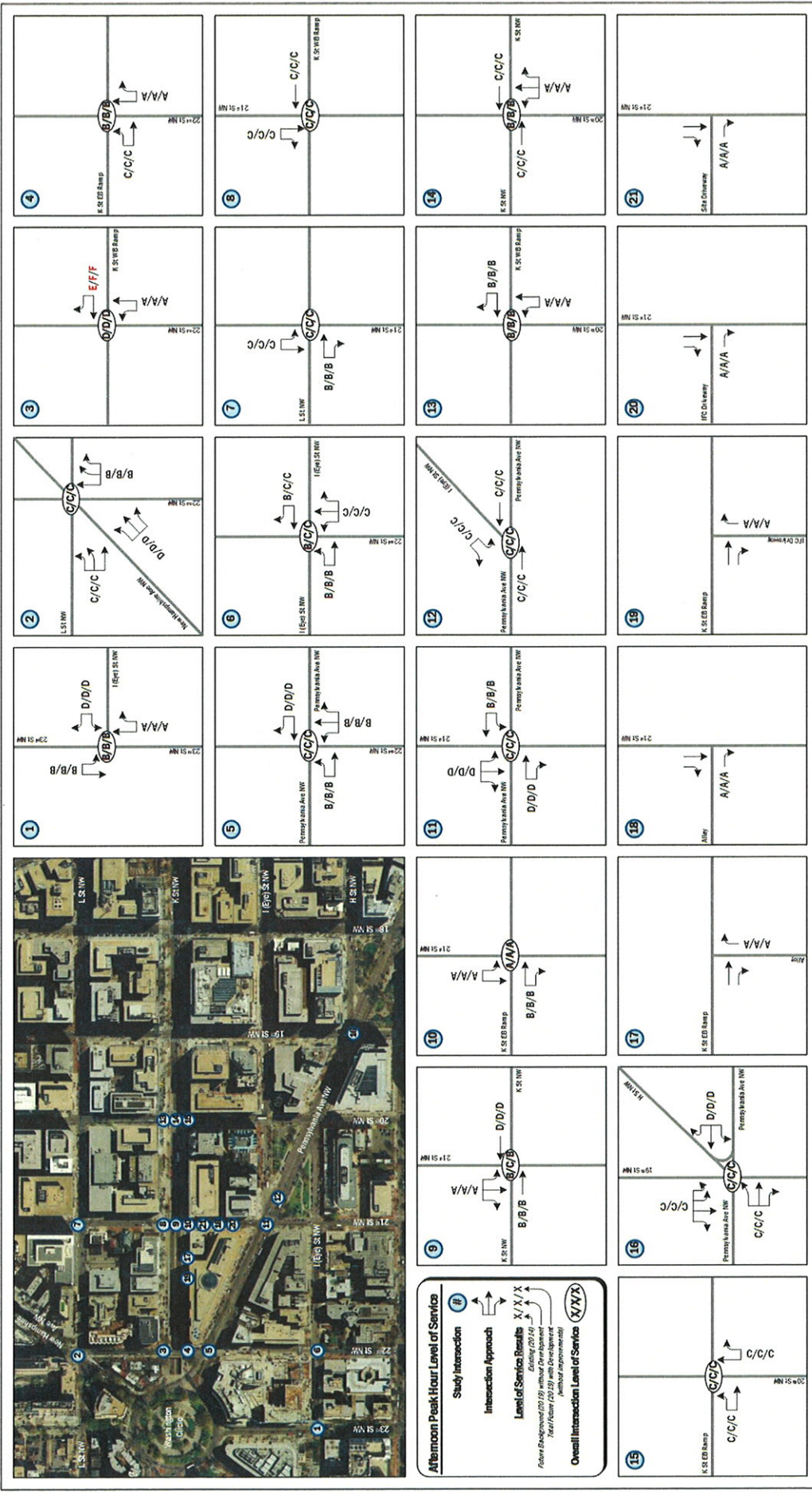


Figure 20: Afternoon Peak Hour Capacity Analysis Results



3.3 Non-Auto Impacts

3.3.1 Transit

The proposed development is expected to generate 172 transit trips during the AM peak hour, 171 transit trips during the PM peak hour, and 1,302 overall daily transit trips. This increase in transit trips is primarily generated by office component of the development. As stated earlier, there is a significant amount of transit service nearby, including the Metrorail blue, orange, and red lines serviced by the Farragut West, Farragut North, and Foggy Bottom stations. In addition there are several Metrobus routes and stops within walking distance of the site.

WMATA studied capacity of Metrorail stations in its *2008 Station Access & Capacity Study*. The study analyzed capacity of Metrorail stations for their vertical transportation, for example the capacity of the station at elevators, stairs, and escalators to shuttle patrons between the street, mezzanine, and platforms. The study also analyzed stations capacity to process riders at farecard gates. For both analyses, vertical transportation and farecard gates, volume to capacity ratios were calculated for existing data (from 2005) and projections for the year 2030.

Based on findings presented in the Station Access & Capacity Study, the southeast mezzanine at the Farragut North station currently warrants improvements for vertical transportation as it has a volume to capacity ratio above 0.75. The Foggy Bottom-GWU station and the west mezzanine of the Farragut West station currently warrants a study of the vertical transportation as the volume to capacity ratio is between 0.5 and 0.75. Ridership at the Foggy Bottom-GWU or Farragut West stations is not expected to increase such that the volume to capacity ratio increases above 0.75. All three stations have acceptable volume to capacity ratios for farecard gates.

WMATA also studies capacity for its bus routes in DC's Transit Future System Plan, which lists the bus routes with the highest load factor (a ratio of passenger volume to bus capacity). There are 21 bus routes that pass near the development and four of these are considered high load routes as summarized in Table 20. For the purpose of the study, a load factor over 1.2 in peak periods or over 1.0 in off-peak periods/weekends exceeds acceptable load standards. Due to the abundance of bus routes that travel through the study area, the Metrobus trips generated by the development will not cause detrimental impacts to the existing high load bus routes. These issues have been addressed and the need for additional transit options has been acknowledged within DC's Transit Future System Plan through the reestablishment of the DC Streetcar system. This system will add additional capacity to DC's overall public transportation system and take some of the load off of high capacity bus routes.

Table 20: Bus Load Factors in Major Corridors

Route Numbers	Corridor	Load Factor
32, 36	Wisconsin Avenue, Pennsylvania Avenue	1.20 (peak)
D3, D6	Sibley Hospital/Stadium Armory	1.06 (all day), 1.35 (Saturday)

3.3.2 Bicycle

Of all of the modes analyzed in this report, the trip generations estimates for cycling are the lowest. The projected trips are around 68 per weekday. Although bicycling will be an important mode for getting to and from the site, with significant bicycle facilities located on site, the impacts from bicycling will be relatively less than impacts to other modes.

The cyclists traveling to and from the site area expected to take advantage of the existing and planned bicycle lanes in the study area, as well as local streets adjacent to the site. Based on the trip generation estimates for bicycling, and the quality of the routes near the site, the PUD will not have a negative impact to bicycle facilities in the study area.

3.3.3 Pedestrian

The PUD is located in a walkable area, with connections to adjacent developments and transit service. The trip generation estimates project approximately 214 walking trips per weekday for the PUD. In addition, the 1,302 daily transit trips are expected to impact the pedestrian network as well.

The origins and destinations of these trips are likely to be:

- Nearby transit stations and bus stops (for transit trips on the pedestrian network);
- Buildings adjacent to the PUD that will generate trips to and from the retail and office portions of the site; and
- Recreational parks where residents can walk.

Most of the sidewalks surrounding the site are of acceptable quality, as summarized in Section 1.6.1. The sidewalks closest to the PUD, such as those along K Street and 21st Street are of high quality.

The capacity of sidewalks to handle the projected number of pedestrians will not be negatively impacted by this project. DDOT requires that all sidewalks are a minimum of 6 feet wide, with sidewalks on arterial streets 8 to 10 feet wide depending on the location. The proposed widths of the sidewalks adjacent to the site property meet the District standard. The *Highway Capacity Manual* (HCM) outlines methodologies for calculating capacity of sidewalks based on the sidewalk widths. According to methodologies contained in the HCM, the LOS grade on a 6 foot wide sidewalk does not reach LOS D until the sidewalk volumes reach 2,000 pedestrians per hour. Similarly, LOS E is not reached until volumes reach 3,000 pedestrians per hour. The existing pedestrian counts adjacent to the site combined with the projected pedestrian trips associated with the site will not approach the threshold for LOS E, though a few crosswalks have an existing LOS of D. Thus, the sidewalk capacity will not be exceeded, and there will be no detrimental impacts.

Based on the trip generation estimates for walking and the quality of the routes near the project's location, the 2100 K Street PUD will not have a negative impact to pedestrian facilities in the study area.

3.4 Crash Analysis

3.4.1 Summary of Available Crash Data

A safety analysis was performed to determine if there was an abnormally high accident rate at any study area intersection. The District Department of Transportation (DDOT) provided the last three years of intersection accident data; from 2011 to 2013. This data set included all signalized intersections adjacent to the site. This data was reviewed and analyzed to determine the accident rate at each location. For intersections, the accident rate is measured in accidents per million-entering vehicles (MEV). The accident rates per intersection are shown in Table 21.

According to the Institute of Transportation Engineer's *Transportation Impact Analysis for Site Development*, an accident rate of 1.0 or higher is an indication that further study is required. Three intersections in the study area meet this criterion (as shown in red in Table 21 and detailed in Table 22). The proposed site needs to be developed in a manner to help alleviate, or at minimum not add to, the conflicts at these intersections.

The crash summary data in Table 21 shows that a majority of the study intersections (eight out of ten) have an existing crash rate over 1.0 crashes per million entering vehicles—the rate which is considered a threshold for further analysis. A rate over 1.0 does not necessarily mean there is a significant problem at an intersection, but rather it is a threshold used to identify which intersections may have higher crash rates due to operational, geometric, or other issues.

For these eight intersections, the crash type information from the DDOT crash data was reviewed to see if there is a high percentage of certain crash types. Generally, the reasons for why an intersection has a high crash rate cannot be derived from crash data, as the exact details of each crash are not represented. However, some summaries of crash data can be used to develop general trends or eliminate some possible causes. Table 22 contains a breakdown of crash types reported for the intersections with a crash rate over 1.0 per MEV.

Table 21: Intersection Crash Rates

Intersection	Total Crashes	Pedestrian Crashes	Bike Crashes	Rate per MEV*
K St NW & 20 th St NW	52	1	1	1.87
K St NW & 21 st St NW	58	2	3	2.27
K St NW & 22 nd St NW	14	0	0	1.46
Pennsylvania Ave NW & 21 st St/I (Eye) St NW	46	1	3	1.94
Pennsylvania Ave NW & 22 nd St NW	21	0	0	1.35
L St NW & 21 st St NW	13	1	3	0.62
L St NW & 22 nd St/New Hampshire Ave NW	28	0	1	1.41
19 th St NW & H St/Pennsylvania Ave NW	26	0	4	0.96
I (Eye) St NW & 22 nd St NW	15	0	2	2.12
I (Eye) St NW & 23 rd St NW	54	6	1	3.02

* - Million Entering Vehicles; volumes estimated based on turning movement count data

Table 22: High Crash Rate Intersections by Crash Type

Intersection	Rate per MEV	Right Angle	Left Turn	Right Turn	Rear End	Side Swiped	Head On	Parked	Fixed Object	Ran Off Road	Ped. Involved	Backing	Unspecified	Total
K St NW & 20 th St NW	1.87	9 17%	9 17%	10 19%	3 6%	17 33%	0 0%	2 4%	0 0%	0 0%	1 2%	1 2%	0 0%	52
K St NW & 21 st St NW	2.27	10 17%	6 10%	6 10%	16 28%	10 17%	0 0%	1 2%	1 2%	0 0%	2 3%	3 5%	1 2%	58
K St NW & 22 nd St NW	1.46	1 7%	1 7%	2 14%	2 14%	3 21%	0 0%	2 14%	0 0%	0 0%	0 0%	2 14%	0 0%	14
Pennsylvania Ave NW & 21 st St/I (Eye) St NW	1.94	6 13%	3 7%	2 4%	6 13%	20 43%	0 0%	1 2%	1 2%	0 0%	0 0%	3 7%	1 2%	46
Pennsylvania Ave NW & 22 nd St NW	1.35	1 5%	1 5%	2 10%	1 5%	9 43%	1 5%	2 10%	0 0%	0 0%	0 0%	2 10%	0 0%	21
L St NW & 22 nd St/New Hampshire Ave NW	1.41	1 4%	2 7%	1 4%	6 21%	10 36%	0 0%	1 4%	0 0%	1 4%	0 0%	2 7%	1 4%	28
I (Eye) St NW & 22 nd St NW	2.12	2 13%	2 13%	0 0%	1 7%	4 27%	0 0%	1 7%	0 0%	0 0%	0 0%	3 20%	0 0%	15
I (Eye) St NW & 23 rd St NW	3.02	1 2%	1 2%	4 7%	5 9%	22 41%	0 0%	7 13%	0 0%	0 0%	5 9%	2 4%	0 0%	54

3.4.2 Potential Impacts

This section reviews the eight locations with existing crash rates over 1.0 MEV and reviews potential impacts of the proposed development.

- *K Street NW & 20th Street NW*

This intersection was found to have a moderately high crash rate, with 1.87 crashes per MEV over the course of the 3-year study period. The majority of the crashes at this intersection were side swiped vehicles. A significant number of incidents recorded were also right-angle, left-turn, and right-turn crashes. Sideswipe crashes can often occur when a vehicle going straight through an intersection makes a last-second lane change to get around a vehicle waiting for a gap to make a left turn from a shared through/left lane, as is the case in this location since this section of K Street NW where illegally turning vehicles may stop traffic, or around a vehicle waiting for a gap in heavy pedestrian traffic to make a right-turn. Last-second lane changes may also be made around a bus stopped to board and alight passengers. Additionally, the types of crashes recorded may be caused by the existing configuration of K Street NW. Vehicles improperly turning at the intersection (from the main roadway instead of from the service lanes) may cause the right-angle and right-turn crashes, and vehicles turning left across K Street may cause the left-turn crashes. However, this report does not recommend mitigation measures at this intersection as the proposed development is not projected to make significant changes to the commuting patterns, operations, or geometry of this intersection.

- *K Street NW & 21st Street NW*

This intersection was found to have a moderately high crash rate, with 2.27 crashes per MEV over the course of the 3-year study period. The majority of the crashes at this intersection were rear-end, right-turn crashes, and side swiped vehicles. Elevated rear-end collision rates are typical at intersections controlled by a traffic signal. Additionally, as stated previously, sideswipe crashes can often occur when a vehicle going straight through an intersection makes a last-second lane change to get around a vehicle waiting for a gap to make a left turn from a shared through/left lane or around a vehicle waiting for a gap in heavy pedestrian traffic to make a right-turn. Last-second lane changes may also be made around a bus stopped to board and alight passengers. Additionally, the types of turning-vehicle crashes recorded may be caused by the existing configuration of K Street NW. Vehicles improperly turning at the intersection (from the main roadway instead of from the service lanes) may cause the right-angle and right-turn crashes, and vehicles turning left across K Street may cause the left-turn crashes. However, this report does not recommend mitigation measures at this intersection as the proposed development is not projected to make significant changes to the commuting patterns, operations, or geometry of this intersection.

- *K Street NW & 22nd Street NW*

This intersection was found to have a slightly high crash rate, with 1.46 crashes per MEV over the course of the 3-year study period. Of the 14 crashes recorded, the majority at this intersection were side swiped vehicles. As noted previously, sideswipe crashes can often occur when a vehicle going straight through an intersection makes a last-second lane change to get around a vehicle waiting for a gap to make a left turn from a shared through/left lane, as is the case in this location where both the northbound approach of 22nd Street and the eastbound approach of K Street have shared through/left-turn lanes. Additionally, the configuration of this intersection as a grade-separated diamond intersection leads to a high concentration of turning vehicles, which may lead to the turning crashes recorded. However, this report does not recommend mitigation measures at this intersection as

the proposed development is not projected to make significant changes to the commuting patterns, operations, or geometry of this intersection.

- Pennsylvania Avenue NW & 21st Street/I (Eye) Street NW

This intersection was found to have a moderately high crash rate, with 1.94 crashes per MEV over the course of the 3-year study period. The majority of the crashes at this intersection (almost half) were side swiped vehicles. As stated previously, sideswipe crashes can often occur when a vehicle going straight through an intersection makes a last-second lane change to get around a vehicle waiting for a gap to make a left turn from a shared through/left lane or around a vehicle waiting for a gap in heavy pedestrian traffic to make a right-turn. Last-second lane changes may also be made around a bus stopped to board and alight passengers. However, this report does not recommend mitigation measures at this intersection as the proposed development is not projected to make significant changes to the commuting patterns, operations, or geometry of this intersection.

- Pennsylvania Avenue NW & 22nd Street NW

This intersection was found to have a slightly high crash rate, with 1.35 crashes per MEV over the course of the 3-year study period. Of the 21 crashes recorded, the majority at this intersection (almost half) were side swiped vehicles. As noted previously, sideswipe crashes can often occur when a vehicle going straight through an intersection makes a last-second lane change to get around a vehicle waiting for a gap to make a left turn from a shared through/left lane or around a vehicle waiting for a gap in heavy pedestrian traffic to make a right-turn. Last-second lane changes may also be made around a bus stopped to board and alight passengers. However, this report does not recommend mitigation measures at this intersection as the proposed development is not projected to make significant changes to the commuting patterns, operations, or geometry of this intersection.

- L Street NW & 22nd Street/New Hampshire Avenue NW

This intersection was found to have a slightly high crash rate, with 1.41 crashes per MEV over the course of the 3-year study period. Of the crashes recorded, the majority at this intersection were side swiped vehicles. A significant number of incidents recorded were also rear-end crashes. As noted previously, sideswipe crashes can often occur when a vehicle going straight through an intersection makes a last-second lane change to get around a vehicle waiting for a gap to make a left turn from a shared through/left lane or around a vehicle waiting for a gap in heavy pedestrian traffic to make a right-turn. Elevated rear-end collision rates are typical at intersections controlled by a traffic signal. However, this report does not recommend mitigation measures at this intersection as the proposed development is not projected to make significant changes to the commuting patterns, operations, or geometry of this intersection.

- I (Eye) Street NW & 22nd Street NW

This intersection was found to have a moderately high crash rate, with 2.12 crashes per MEV over the course of the 3-year study period. The majority of the 15 crashes at this intersection were side swiped vehicles and backing vehicles. As stated previously, sideswipe crashes can often occur when a vehicle going straight through an intersection makes a last-second lane change to get around a vehicle waiting for a gap to make a left turn from a shared through/left lane or around a vehicle waiting for a gap in heavy pedestrian traffic to make a right-turn. The crashes recorded as "backing" may be due to vehicles backing up to avoid blocking the box or perform a parking maneuver. However, this report does not recommend mitigation measures at this intersection as the proposed development is not projected to make significant changes to the commuting patterns, operations, or geometry of this intersection.

- 1 (Eye) Street NW & 23rd Street NW

This intersection was found to have a significantly high crash rate, with 3.02 crashes per MEV over the course of the 3-year study period. The majority of the crashes at this intersection (almost half) were side swiped vehicles. As stated previously, sideswipe crashes can often occur when a vehicle going straight through an intersection makes a last-second lane change to get around a vehicle waiting for a gap to make a left turn from a shared through/left lane or around a vehicle waiting for a gap in heavy pedestrian traffic to make a right-turn, as is likely at this intersection due to the adjacent Metrorail station and George Washington University campus. However, this report does not recommend mitigation measures at this intersection as the proposed development is not projected to make significant changes to the commuting patterns, operations, or geometry of this intersection.

3.5 Summary and Conclusions

This TIS for the 2100 K Street PUD, Zoning Case 14-04, reviewed the transportation aspects of PUD application. Following a detailed review of the study area, project design, transportation demand, impacts by mode, crash data, and proposed TDM plan, this report concluded that the PUD **will not have a detrimental impact** to the surrounding transportation network.