

Figure 12: Inbound Trip Distribution and Routing

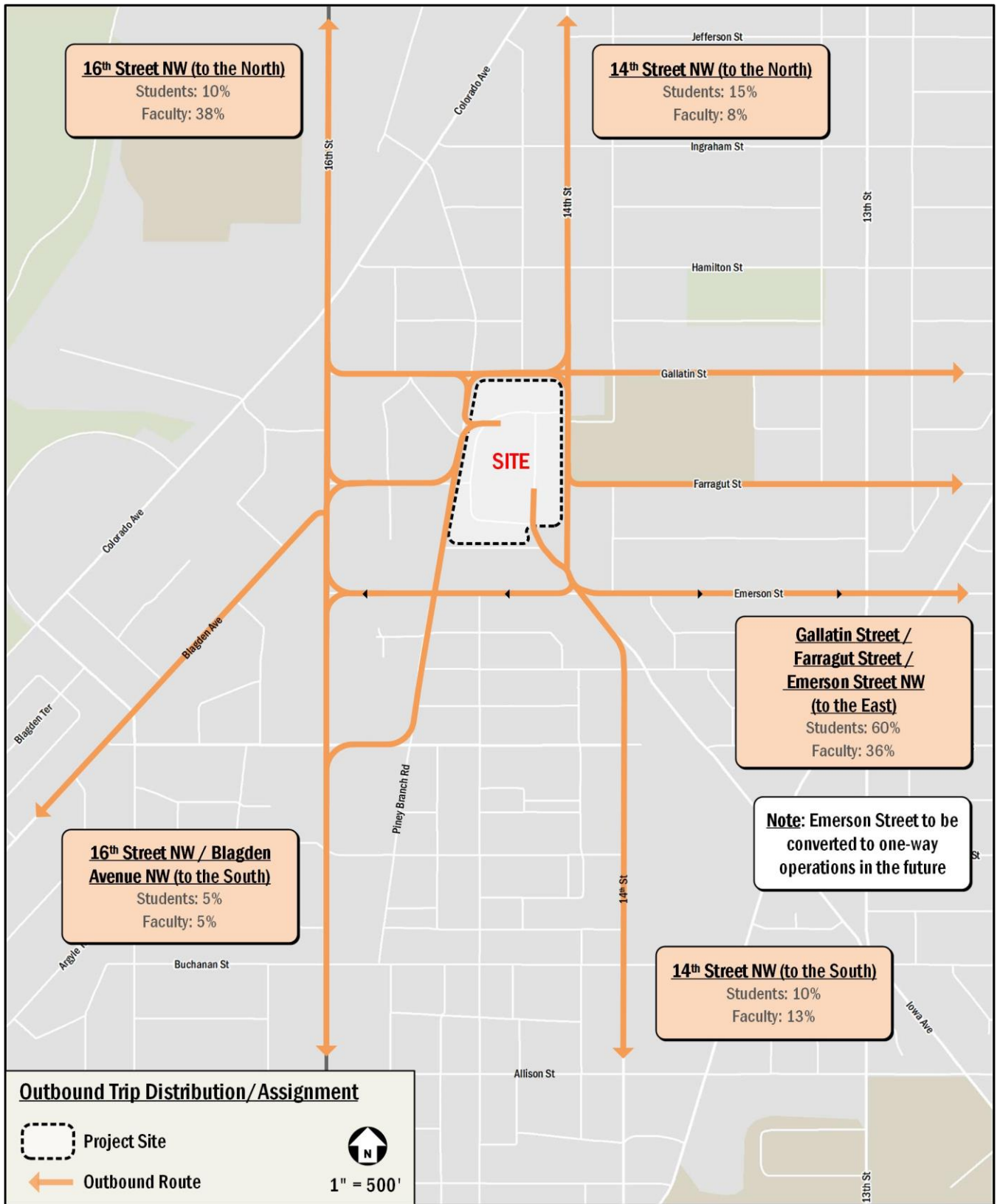


Figure 13: Outbound Trip Distribution and Routing



Figure 14: Existing Lane Configuration and Traffic Control (2017)

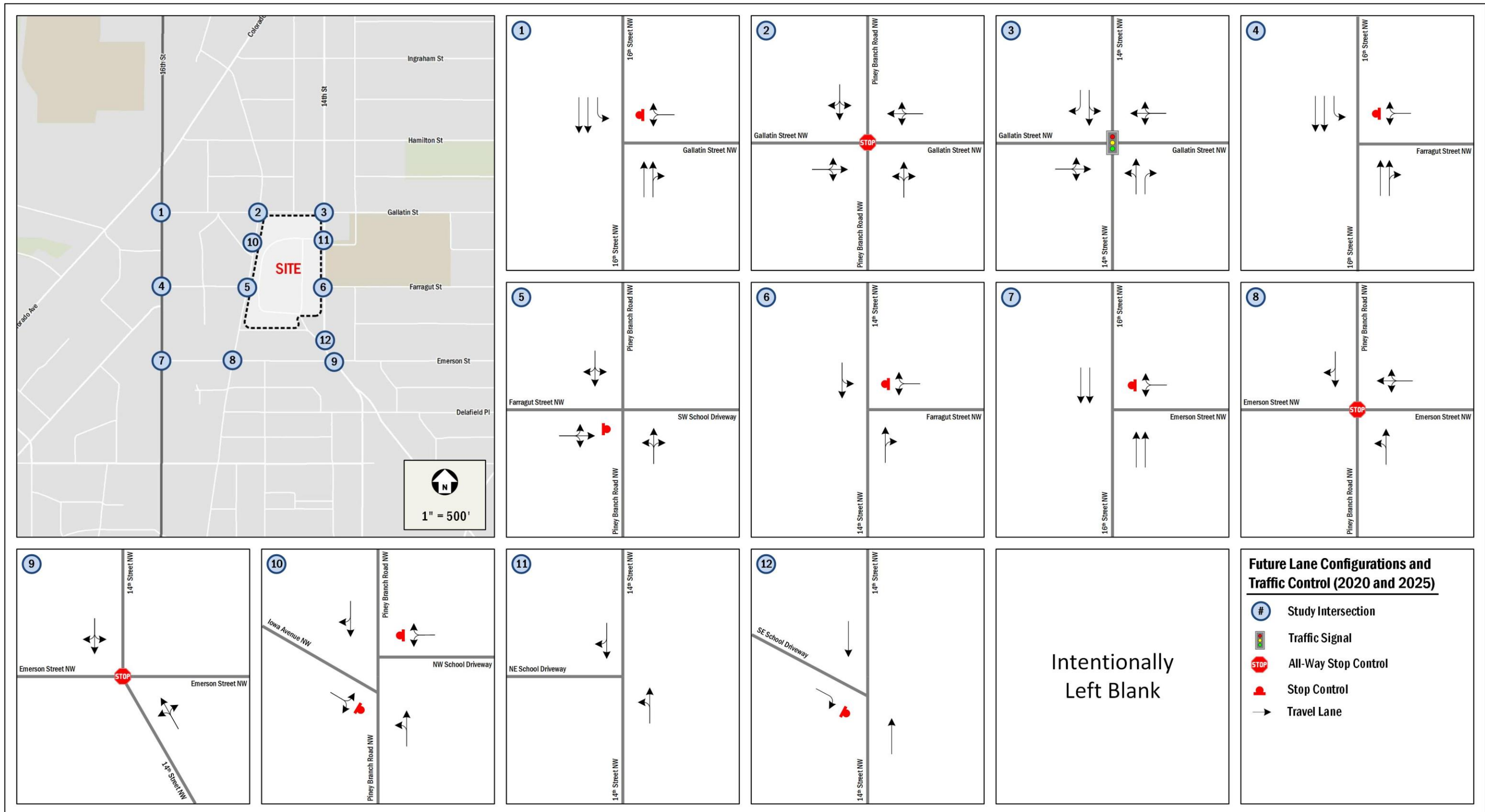


Figure 15: Background and Future Lane Configuration and Traffic Control (2020 and 2025)

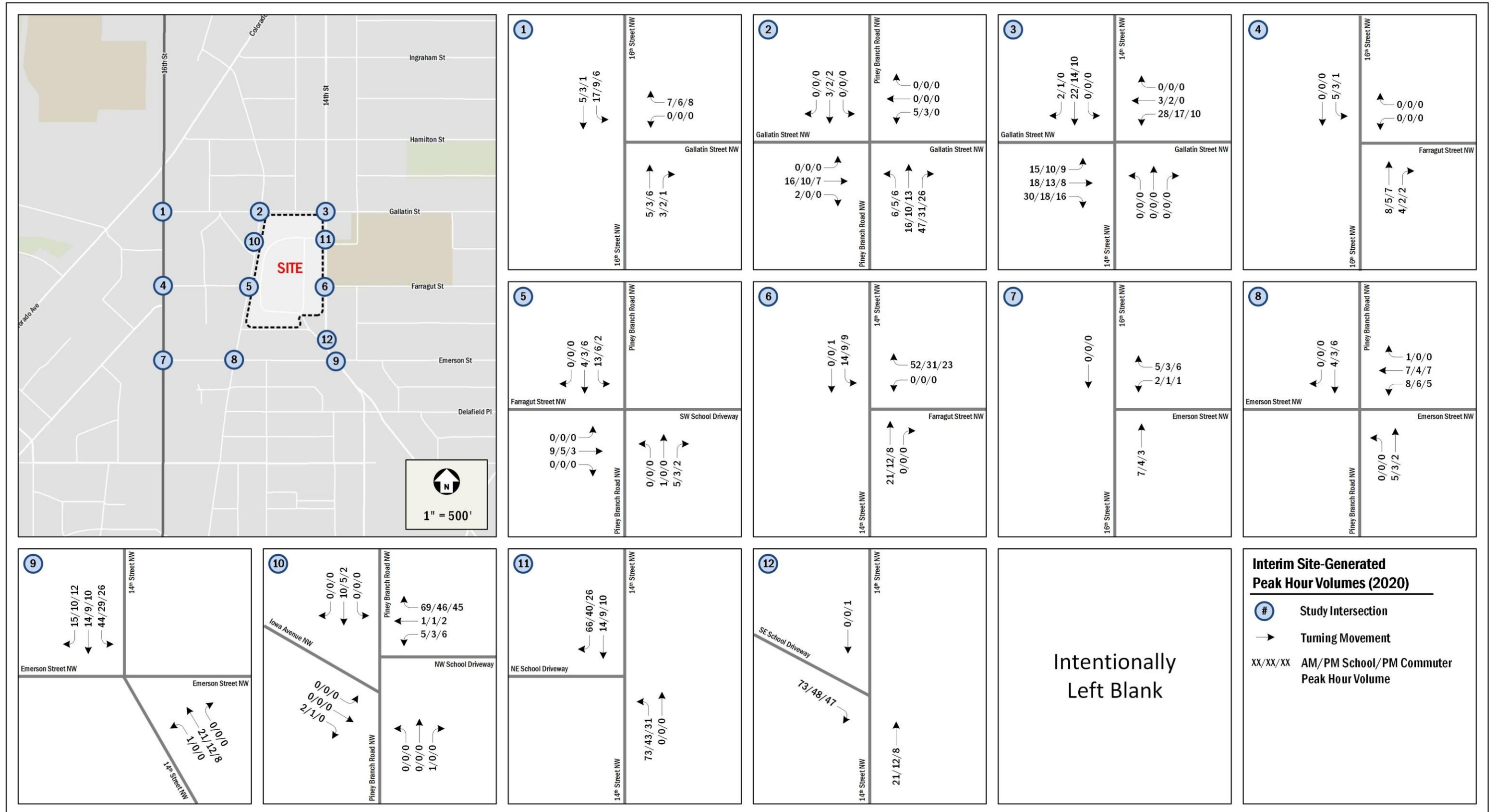


Figure 16: Site-Generated Peak Hour Traffic Volumes – Interim Conditions (2020)

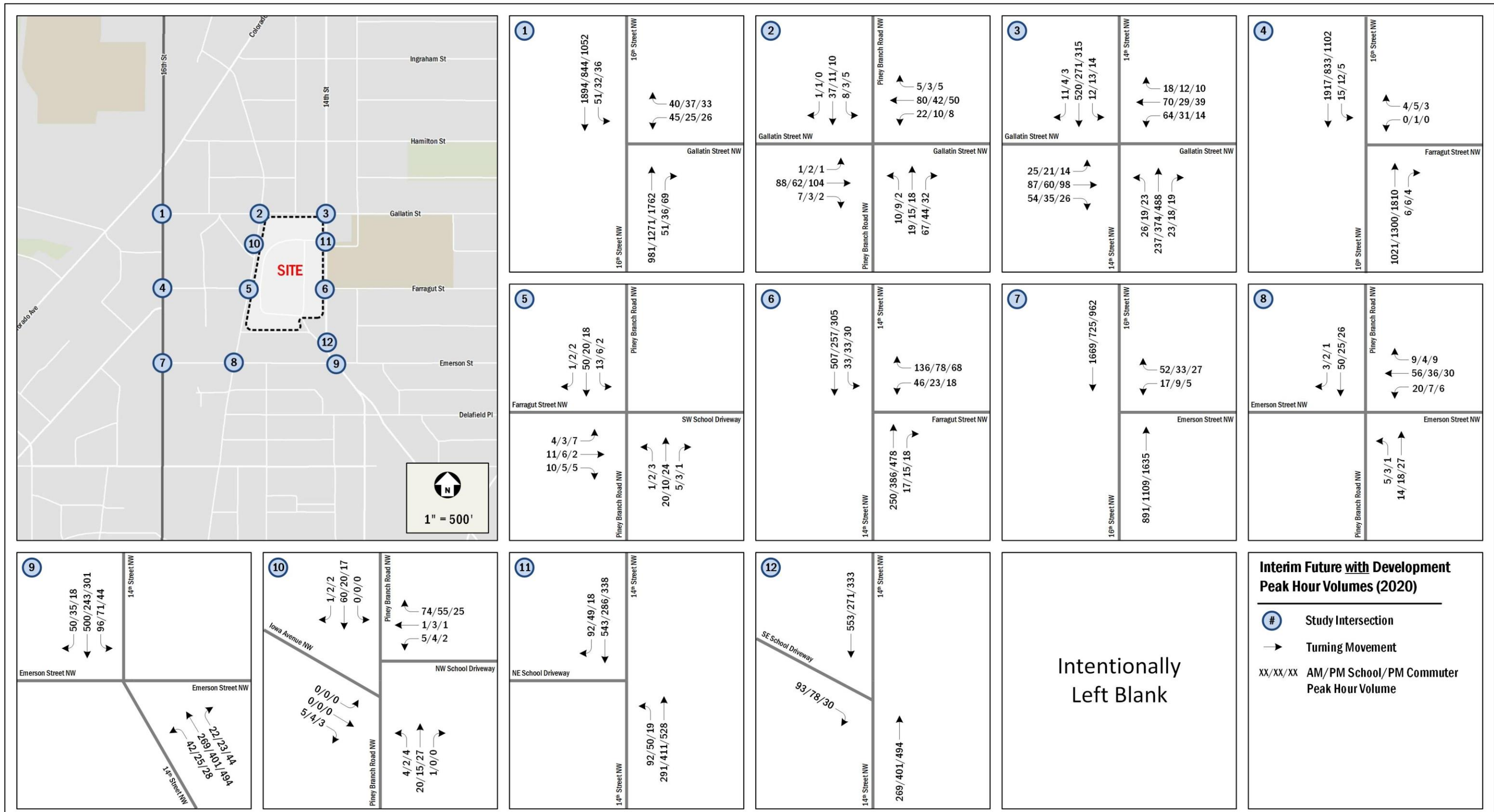


Figure 17: Future Peak Hour Traffic Volumes – Interim Conditions (2020)

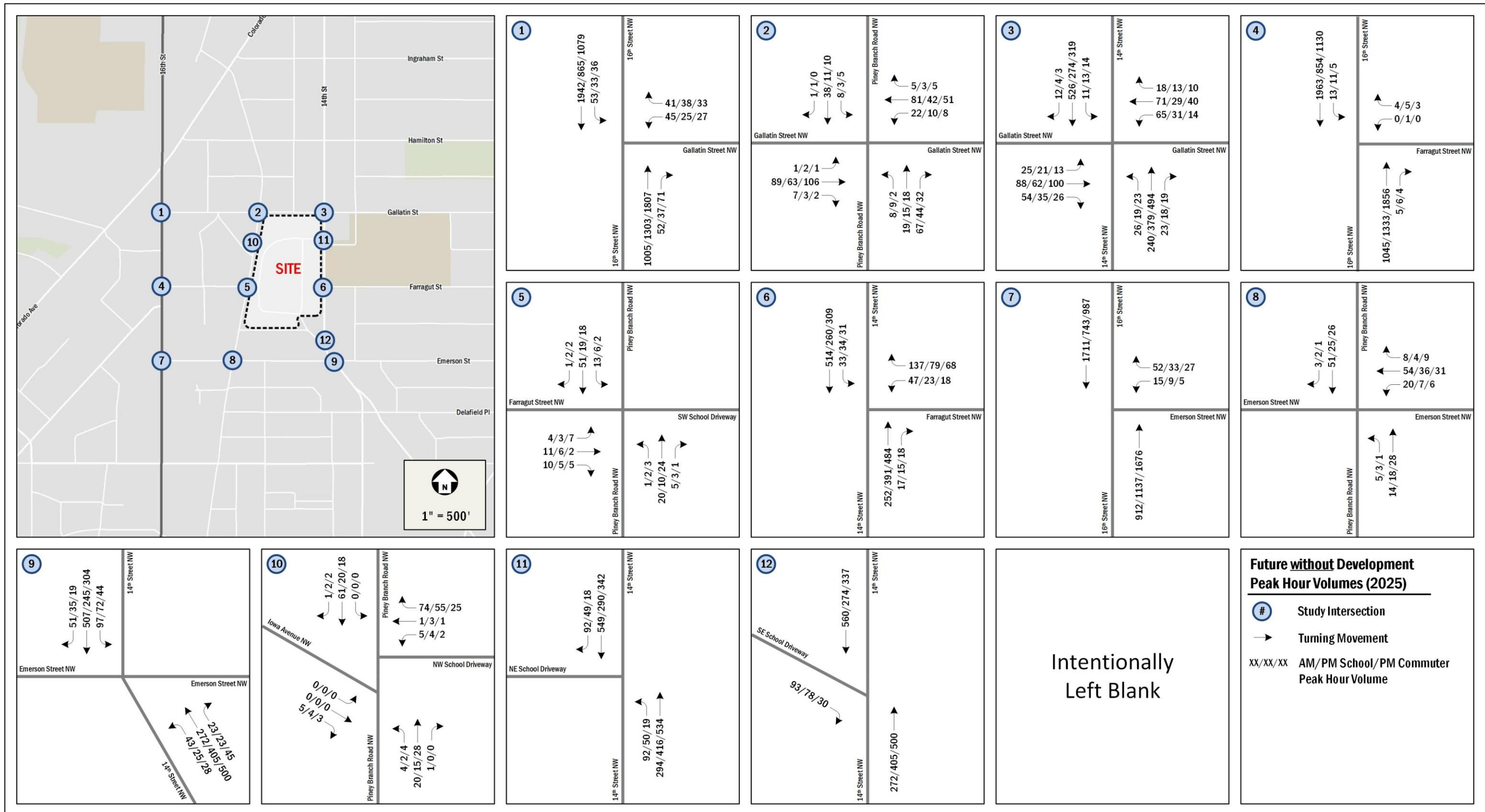
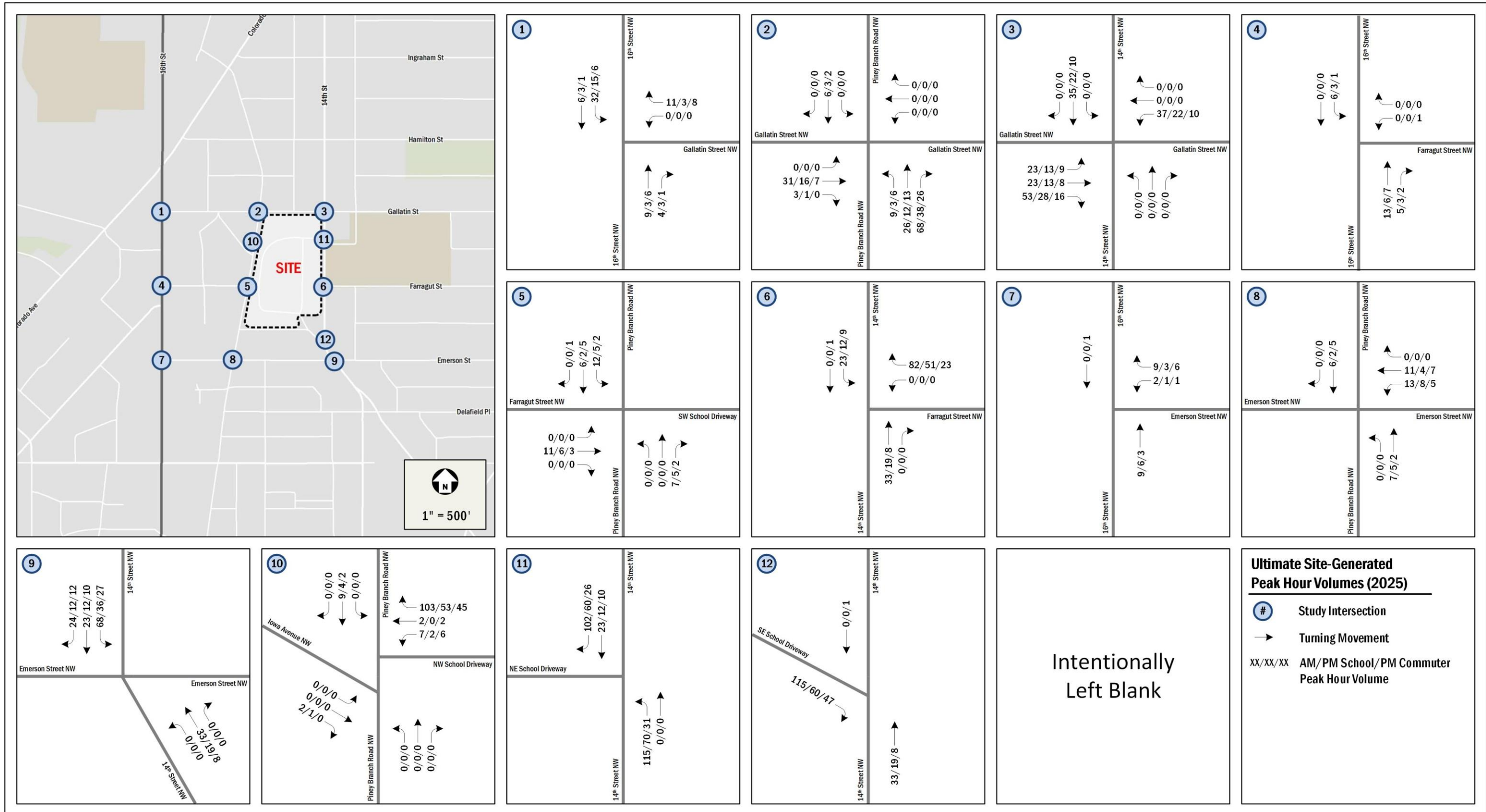


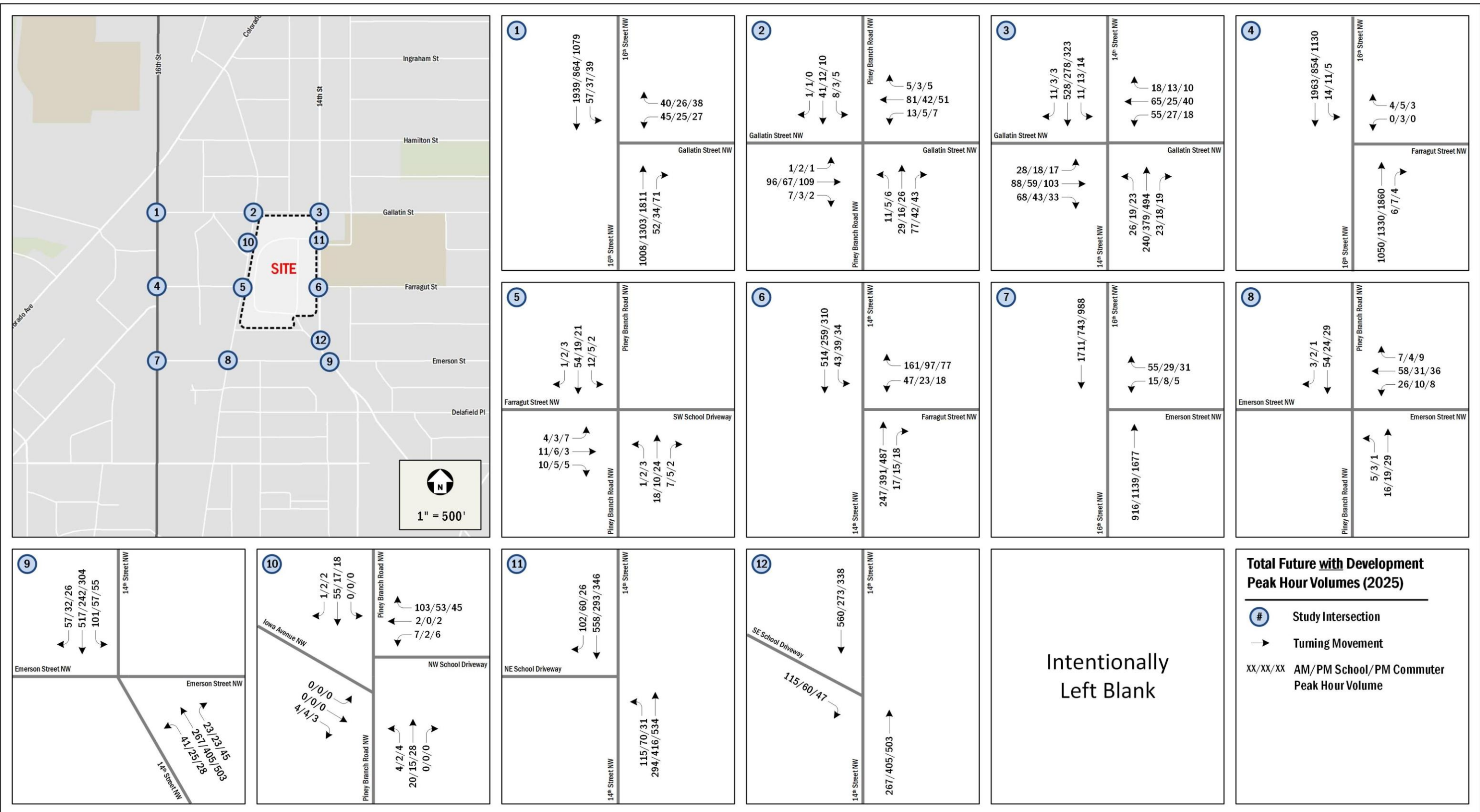
Figure 18: Background Peak Hour Traffic Volumes (2025)



Ultimate Site-Generated Peak Hour Volumes (2025)

- # Study Intersection
- Turning Movement
- XX/XX/XX AM/PM School/PM Commuter Peak Hour Volume

Figure 19: Site-Generated Peak Hour Traffic Volumes – Ultimate Conditions (2025)



Intentionally
Left Blank

Total Future with Development Peak Hour Volumes (2025)

Study Intersection
→ Turning Movement
XX/XX/XX AM/PM School/PM Commuter Peak Hour Volume

Figure 20: Future Peak Hour Traffic Volumes – Ultimate Conditions (2025)



Table 8: LOS Results

Intersection	Approach	Existing Conditions (2017)						Future Background Conditions (2020)						Interim Future Conditions (2020)						Future Background Conditions (2025)						Total Future Conditions (2025)					
		AM Peak Hour		PM School Peak Hour		PM Commuter Peak Hour		AM Peak Hour		PM School Peak Hour		PM Commuter Peak Hour		AM Peak Hour		PM School Peak Hour		PM Commuter Peak Hour		AM Peak Hour		PM School Peak Hour		PM Commuter Peak Hour		AM Peak Hour		PM School Peak Hour		PM Commuter Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
16th Street & Gallatin Street NW	Westbound Gallatin St	39.3	E	26.4	D	83.9	F	327.6	F	83.2	F	453.2	F	389.3	F	87.2	F	472.5	F	452.5	F	101.3	F	581.4	F	474.0	F	124.6	F	602.7	F
	Southbound 16th St Left	0.1	A	0.2	A	0.2	C	0.2	A	0.4	A	0.5	A	0.3	A	0.5	A	0.6	A	0.3	A	0.5	A	0.6	A	0.3	A	0.6	A	0.7	A
Piney Branch Road & Gallatin Street NW	Overall	7.3	A	7.2	A	7.1	A	7.8	A	7.4	A	7.6	A	8.1	A	7.6	A	7.7	A	8.1	A	7.6	A	7.7	A	8.5	A	7.5	A	7.8	A
	Eastbound Gallatin St	7.4	A	7.2	A	7.2	A	7.9	A	7.5	A	7.8	A	8.3	A	7.7	A	7.9	A	8.3	A	7.7	A	7.9	A	8.5	A	7.7	A	8.1	A
	Westbound Gallatin St	7.5	A	7.3	A	7.2	A	8.0	A	7.5	A	7.5	A	8.3	A	7.7	A	7.6	A	8.3	A	7.7	A	7.6	A	8.3	A	7.6	A	7.7	A
	Northbound Piney Branch Rd	6.9	A	7.1	A	6.9	A	7.2	A	7.1	A	7.1	A	7.7	A	7.4	A	7.3	A	7.7	A	7.4	A	7.3	A	8.0	A	7.4	A	7.5	A
	Southbound Piney Branch Rd	7.4	A	7.1	A	7.3	A	7.7	A	7.3	A	7.5	A	8.0	A	7.4	A	7.6	A	8.0	A	7.4	A	7.6	A	8.0	A	7.4	A	7.6	A
14th Street & Gallatin Street NW	Overall	21.3	C	18.1	B	9.0	A	30.2	C	21.2	C	13.5	B	89.5	F	26.5	C	14.8	B	92.6	F	26.8	C	14.9	B	92.8	F	25.9	C	16.1	B
	Eastbound Gallatin St	51.0	D	50.0	D	45.5	D	62.3	E	55.4	E	52.7	D	136.3	F	68.4	E	56.0	E	141.3	F	69.6	E	56.2	E	181.4	F	67.9	E	59.5	E
	Westbound Gallatin St	57.3	E	49.0	D	45.0	D	93.8	F	51.8	D	46.6	D	419.9	F	67.4	E	47.9	D	436.7	F	68.3	E	48.0	D	417.2	F	64.2	E	49.7	D
	Northbound 14th St	13.6	B	15.4	B	5.8	A	14.0	B	15.6	B	5.9	A	14.1	B	15.6	B	5.9	A	14.1	B	15.7	B	5.9	A	14.1	B	15.7	B	5.9	A
	Southbound 14th St	17.0	B	13.7	B	4.8	A	17.1	B	13.8	B	4.8	A	17.5	B	14.0	B	4.8	A	17.7	B	14.0	B	4.8	A	17.7	B	14.1	B	4.9	A
16th Street & Farragut Street NW	Westbound Farragut St	22.9	C	21.0	C	18.2	C	24.9	C	22.1	C	19.1	C	12.8	B	22.4	C	19.2	C	13.0	B	23.3	C	19.7	C	13.0	B	23.3	C	19.8	C
	Southbound 16th St Left	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A	0.2	A	0.1	A	0.1	A	0.2	A	0.1	A	0.1	A	0.2	A	0.1	A
Piney Branch Road & Farragut Street / SW School Driveway NW	Eastbound Farragut St	8.9	A	8.9	A	8.8	A	8.9	A	8.9	A	8.8	A	9.3	A	9.3	A	8.9	A	9.3	A	9.3	A	8.9	A	9.3	A	9.3	A	9.0	A
	Westbound School Driveway	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	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Northbound Piney Branch Rd	0.3	A	1.1	A	0.9	A	0.3	A	1.1	A	0.9	A	0.2	A	0.8	A	0.9	A	0.2	A	0.8	A	0.9	A	0.2	A	0.8	A	0.9	A
	Southbound Piney Branch Rd	0.3	A	0.0	A	0.0	A	0.3	A	0.0	A	0.0	A	1.5	A	1.6	A	0.6	A	1.5	A	1.6	A	0.3	A	1.3	A	1.5	A	0.3	A
14th Street & Farragut Street NW	Westbound Farragut St	13.2	B	13.3	B	14.3	B	15.5	C	14.2	B	15.5	C	17.1	C	14.9	B	15.8	C	17.4	C	15.1	B	16.0	C	18.2	C	15.5	C	16.3	C
	Southbound 14th St	0.5	A	1.0	A	1.0	A	0.5	A	1.0	A	1.0	A	0.8	A	1.3	A	1.1	A	0.8	A	1.3	A	1.1	A	1.0	A	1.5	A	1.3	A
16th Street & Emerson Street NW	Westbound Emerson St	41.4	E	21.7	C	54.5	F	32.5	D	21.5	C	36.1	E	32.0	D	22.8	C	38.8	E	34.3	D	23.8	C	41.8	E	34.2	D	22.7	C	40.8	E
	Southbound 16th St Left	0.5	A	0.8	A	2.3	A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Piney Branch Road & Emerson Street NW	Overall	8.1	A	7.6	A	7.9	A	7.4	A	7.2	A	7.1	A	7.5	A	7.3	A	7.2	A	7.5	A	7.3	A	7.2	A	7.6	A	7.3	A	7.2	A
	Eastbound Emerson St	7.9	A	7.6	A	8.0	A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Westbound Emerson St	8.2	A	7.7	A	7.7	A	7.4	A	7.2	A	7.1	A	7.6	A	7.3	A	7.2	A	7.5	A	7.3	A	7.2	A	7.7	A	7.3	A	7.3	A



	Northbound Piney Branch Rd	7.6	A	7.4	A	7.5	A	7.3	A	7.3	A	7.2	A	7.3	A	7.3	A	7.2	A	7.3	A	7.3	A	7.2	A	7.4	A	7.3	A	7.2	A
	Southbound Piney Branch Rd	8.0	A	7.6	A	7.7	A	7.4	A	7.2	A	7.1	A	7.4	A	7.2	A	7.2	A	7.4	A	7.2	A	7.2	A	7.5	A	7.2	A	7.2	A
14th Street & Emerson Street NW	Overall	29.2	D	14.6	B	30.0	D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Eastbound Emerson St	11.9	B	10.5	B	12.8	B	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Westbound Emerson St	13.4	B	10.5	B	11.7	B	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Northbound 14th St	16.9	C	17.4	C	45.7	E	11.6	B	13.7	B	22.8	C	12.6	B	14.5	B	23.9	C	12.8	B	14.7	B	24.8	C	12.5	B	14.6	B	25.5	D
	Southbound 14th St	44.2	E	13.9	B	17.0	C	20.8	C	11.3	B	12.0	B	29.8	D	12.7	B	12.8	B	31.4	D	12.8	B	12.9	B	34.9	D	12.2	B	13.5	B
Piney Branch Road & NW Driveway NW	Westbound School Driveway	8.5	A	8.6	A	8.5	A	8.5	A	8.6	A	8.5	A	8.9	A	8.8	A	8.6	A	8.9	A	8.8	A	8.7	A	9.0	A	8.8	A	8.8	A
	Northbound Piney Branch Rd	1.3	A	0.7	A	1.0	A	1.3	A	0.7	A	1.0	A	1.2	A	0.7	A	1.0	A	1.3	A	0.7	A	1.0	A	1.3	A	1.0	A	1.0	A
	Southbound Piney Branch Rd	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	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
14th Street & NE Driveway NW	Sign Configuration not Allowed in HCM Analysis																														
14th Street & SE Driveway NW	Eastbound School Driveway	13.4	B	10.4	B	10.3	B	14.0	B	10.6	B	10.4	B	16.4	C	11.2	B	10.7	B	16.6	C	11.3	B	10.8	B	17.7	C	11.1	B	11.0	B



Table 9: Queuing Results (in feet)

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2017)						Future Background Conditions (2020)						Interim Future Conditions (2020)						Future Background Conditions (2025)						Total Future Conditions (2025)					
			AM Peak		PM School Peak		PM Peak		AM Peak		PM School Peak		PM Peak		AM Peak		PM School Peak		PM Peak		AM Peak		PM School Peak		PM Peak		AM Peak		PM School Peak		PM Peak	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %		
16th Street & Gallatin Street NW	Westbound LR Gallatin St	210	--	21	--	9	--	42	--	186	--	76	--	163	--	213	--	86	--	172	--	226	--	94	--	189	--	228	--	90	--	186
	Southbound Left 16th St	50	--	3	--	3	--	3	--	4	--	4	--	9	--	7	--	6	--	10	--	7	--	7	--	10	--	8	--	8	--	11
Piney Branch Road & Gallatin Street NW	Eastbound LTR Gallatin St	150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Westbound LTR Gallatin St	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Northbound LTR Piney Branch Rd	135	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Southbound LTR Piney Branch Rd	315	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
14th Street & Gallatin Street NW	Eastbound LTR Gallatin St	260	30	68	24	58	30	64	83	138	58	105	96	153	~152	#280	92	#162	112	174	~157	#284	94	#167	119	182	~186	#319	92	#162	114	176
	Westbound LTR Gallatin St	970	57	108	16	46	23	54	100	#211	37	76	41	80	~196	#333	57	#109	46	88	~200	#338	58	#114	54	98	~175	#308	50	97	47	89
	Northbound 14th St	90	110	158	178	254	132	177	117	167	182	261	135	181	117	168	182	261	135	181	119	170	185	265	136	183	119	170	185	265	136	183
	Southbound 14th St	305	237	333	119	163	71	102	241	337	120	163	71	103	256	358	128	173	73	105	261	364	129	175	74	107	262	366	131	178	74	107
16th Street & Farragut Street NW	Westbound Farragut St	370	--	2	--	7	--	0	--	2	--	2	--	0	--	1	--	3	--	0	--	1	--	3	--	0	--	1	--	3	--	0
	Southbound 16th St Left	70	--	1	--	2	--	1	--	1	--	2	--	1	--	2	--	2	--	1	--	2	--	2	--	1	--	2	--	2	--	1
Piney Branch Road & Farragut Street / SW School Driveway NW	Eastbound Farragut St	370	--	2	--	1	--	1	--	2	--	1	--	1	--	3	--	2	--	1	--	3	--	2	--	1	--	3	--	2	--	1
	Westbound School Driveway	50	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0
	Northbound Piney Branch Rd	345	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0
	Southbound Piney Branch Rd	180	--	0	--	0	--	0	--	0	--	0	--	0	--	1	--	0	--	0	--	1	--	0	--	0	--	1	--	0	--	0
14th Street & Farragut Street NW	Westbound LR Farragut St	970	--	17	--	9	--	10	--	33	--	16	--	18	--	51	--	24	--	22	--	53	--	25	--	21	--	63	--	30	--	22
	Southbound Left 14th St	205	--	1	--	2	--	2	--	1	--	2	--	2	--	2	--	3	--	3	--	2	--	3	--	2	--	3	--	3	--	3
16th Street & Emerson Street NW	Westbound LR Emerson St	300	--	98	--	36	--	73	--	36	--	15	--	21	--	45	--	18	--	25	--	41	--	19	--	31	--	42	--	15	--	27
	Southbound Left 16th St	70	--	11	--	9	--	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Piney Branch Road & Emerson Street NW	Eastbound Emerson St	300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Westbound Emerson St	120	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Northbound Piney Branch Rd	235	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Southbound Piney Branch Rd	345	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
14th Street & Emerson Street NW	Eastbound Emerson St	270	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Westbound Emerson St	915	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Northbound 14th St	225	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Southbound 14th St	60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Piney Branch Road & NW Driveway NW	Westbound LR School Driveway	50	--	0	--	1	--	0	--	0	--	1	--	0	--	8	--	6	--	2	--	8	--	6	--	2	--	11	--	5	--	2
	Southbound Right Piney Branch Rd	130	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0



14th Street & NE Driveway NW		Sign Configuration not Allowed in HCM Analysis																														
14th Street & SE Driveway NW	Eastbound LR School Driveway	140	--	4	--	4	--	1	--	4	--	4	--	1	--	25	--	12	--	4	--	26	--	12	--	5	--	34	--	9	--	5

**HCM 2000 does not report queuing for all-way stops*

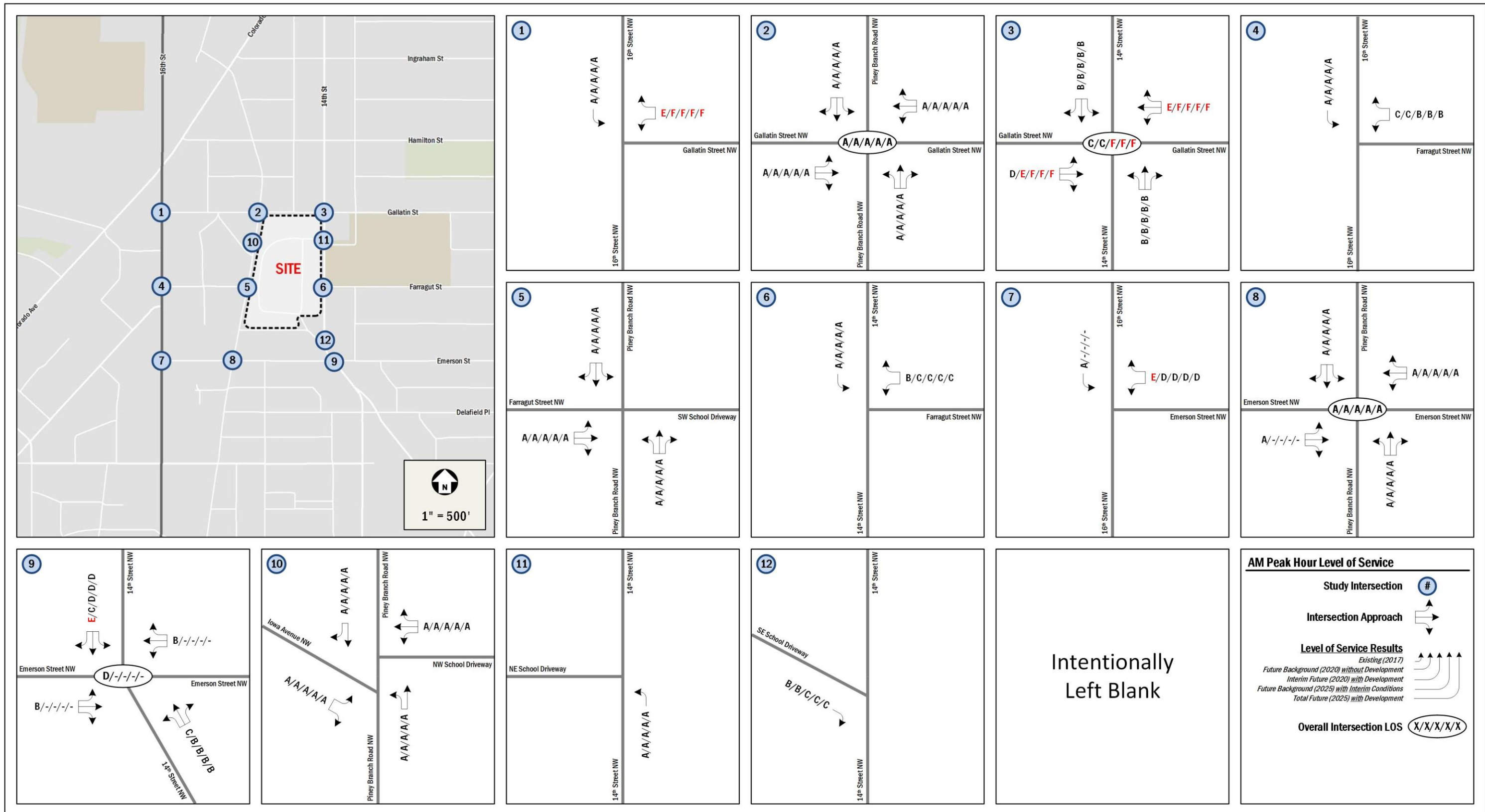


Figure 21: Morning Peak Hour Capacity Analysis Results



Figure 22: Afternoon School Peak Hour Capacity Analysis Results



Figure 23: Afternoon Commuter Peak Hour Capacity Analysis Results



Table 10: Vehicular Capacity Analysis Results with Mitigations

Intersection	Approach	Existing Conditions (2017) (Emerson Street Two-Way)						Total Future Conditions (2025)						Total Future Conditions (2025) (With Mitigations)					
		AM Peak Hour		PM School Peak Hour		PM Commuter Peak Hour		AM Peak Hour		PM School Peak Hour		PM Commuter Peak Hour		AM Peak Hour		PM School Peak Hour		PM Commuter Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
14th Street & Gallatin Street NW	Overall	21.3	C	18.1	B	9.0	A	92.8	F	25.9	C	16.1	B	33.1	C	25.5	C	15.6	B
	Eastbound Gallatin St	51.0	D	50.0	D	45.5	D	181.4	F	67.9	E	59.5	E	49.1	D	49.0	D	48.5	D
	Westbound Gallatin St	57.3	E	49.0	D	45.0	D	417.2	F	64.2	E	49.7	D	51.6	D	45.3	D	42.6	D
	Northbound 14th St	13.6	B	15.4	B	5.8	A	14.1	B	15.7	B	5.9	A	22.7	C	20.4	C	8.0	A
	Southbound 14th St	17.0	B	13.7	B	4.8	A	17.7	B	14.1	B	4.9	A	28.1	C	18.3	B	6.6	A

Table 11: Queueing Results (in feet) (with Mitigations)

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2017)						Total Future Conditions (2025)						Total Future Conditions (2025) (With Mitigations)					
			AM Peak		PM School Peak		PM Commuter Peak		AM Peak		PM School Peak		PM Commuter Peak		AM Peak		PM School Peak		PM Commuter Peak	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
14th Street & Gallatin Street NW	Eastbound LTR Gallatin St	260	30	68	24	58	30	64	~186	#319	92	#162	114	176	137	207	84	140	119	181
	Westbound LTR Gallatin St	970	57	108	16	46	23	54	~175	#308	50	97	47	89	106	177	45	87	48	89
	Northbound 14th St	90	110	158	178	254	132	177	119	170	185	265	136	183	154	224	214	307	167	223
	Southbound 14th St	305	237	333	119	163	71	102	262	366	131	178	74	107	333	465	152	206	92	132

*HCM 2000 does not report queueing for all-way stops



TRANSIT

This section discusses the existing and proposed transit facilities in the vicinity of the site, accessibility to transit, and evaluates the overall transit impacts of the 5000 14th Street NW project.

The following conclusions are reached within this chapter:

- The development has adequate access to transit
- The site is located 1.1 miles from the Georgia Avenue-Petworth Metrorail station and 1.8 miles from the Fort Totten Metrorail station
- The development site is surrounded by seven (7) Metrobus routes that provide connectivity to the downtown core and other areas of the District, Maryland, and Virginia
- The site is expected to generate a manageable number of transit trips, and the existing service is capable of handling these new trips

EXISTING TRANSIT SERVICE

The study area is well served by Metrobus and Metrorail. Combined, these transit services provide local, city-wide, and regional transit connections that link the site with major cultural, residential, employment, and commercial destinations throughout the region. Figure 24 identifies the major transit routes, stations, and stops in the study area.

The site is located approximately 1.1 miles from the Georgia Avenue-Petworth Metrorail station, located at the intersection of Georgia Avenue and New Hampshire Avenue NW, and is

served by the Green and Yellow Lines. The site is also located approximately 1.8 miles from the Fort Totten Metrorail Station, near the intersection of Riggs Road and Gallatin Street NE, which is served by the Green, Yellow and Red Lines, providing direct connections to areas in the District, Maryland, and Virginia.

The Green Line connects the site to Greenbelt, MD to the north, extending through downtown Washington via Gallery Place-Chinatown and L’Enfant Plaza, before ending in Suitland, MD (Branch Avenue) to the south. The Yellow Line connects the site to the Fort Totten area of Northeast, DC to the north, extending through downtown Washington via Gallery Place-Chinatown and L’Enfant Plaza, before ending in the Alexandria area of Fairfax County, VA (Huntington) to the south. The Red Line connects the site to Rockville, MD (Shady Grove) to the northwest, extending through downtown Washington via Metro Center and Gallery Place-Chinatown, before ending in the Wheaton-Glenmont area of Montgomery County, MD (Glenmont) to the northeast. Metrorail trains run frequently during the weekday morning and afternoon peak hours between 5:00 AM to 9:30 AM and 3:00 PM to 7:00 PM and approximately every 8 to 15 minutes during the weekday midday hours from 9:30 AM to 3:00 PM and every 8 to 20 minutes during the weekday off-peak periods and on weekends.

The site is also serviced by local Metrobus routes, providing connectivity to the downtown core and other areas of the District, Maryland, and Virginia. Table 12 shows a summary of the bus route information for the routes within a quarter-mile walkshed of the site, including service hours, headway, and distance to the nearest bus stop.

Table 12: Metrobus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
S1	16th Street – Potomac Park Line	Weekdays: 5:42AM – 10:04AM 3:58PM – 7:42PM	5-15 mins 15 mins	0.3 miles, 6 minutes
S2, S4	16th Street Line	Weekdays: 5:05AM – 2:40AM Saturday: 4:17AM – 3:36AM Sunday: 4:33AM – 2:16AM	5-30 mins 5-30 mins 15-35 mins	0.3 miles, 6 minutes
S9	16th Street Limited Line	Weekdays: 6:30AM – 10:00AM 3:00PM – 9:30PM	7-10 mins 15 mins	0.3 miles, 6 minutes
52, 53, 54	14th Street Line	Weekdays: 4:15AM – 11:28PM Saturday: 6:38AM – 11:29PM Sunday: 1:47PM – 6:11PM	15-30 mins 25-30 mins 30 mins	<0.1 miles, 1 minute



Figure 24 shows a detailed inventory of the existing Metrobus stops within a quarter-mile walkshed of the site. Each stop is evaluated based on the guidelines set forth by WMATA's *Guidelines for the Design and Placement of Transit Stops*. A detailed breakdown of individual bus stop amenities and conditions is included in the Technical Appendix.

PROPOSED TRANSIT SERVICE

MoveDC

Due to growth of population, jobs, and retail in several neighborhoods in the District and the potential for growth in other neighborhoods, the District's infrastructure is challenged with the need for transportation investments to support the recent growth and to further strengthen neighborhoods. In order to meet these challenges and capitalize on future opportunities, DDOT has developed a plan to identify transit challenges and opportunities and to recommend investments. *MoveDC* is a long-range plan that provides a vision for the future of DC's transportation system, specifically in a way that expands transportation choices while improving the reliability of all transportation modes.

The MoveDC report outlines recommendations by mode with the goal of having them complete by 2040. The plan hopes to achieve a transportation system for the District that includes:

- 70 miles of high-capacity transit (streetcar or bus)
- 200 miles of on-street bicycle facilities or trails
- Sidewalks on at least one side of every street
- New street connections
- Road management/pricing in key corridors and the Central Employment Area
- A new downtown Metrorail loop
- Expanded commuter rail
- Water taxis

Outlined in the MoveDC plan, in the vicinity of the site, High-Capacity Transit service in dedicated space is proposed for 16th Street NW between Silver Spring, MD and Downtown and the North-South Corridor Streetcar line connecting Buzzard Point and Takoma/Silver Spring, MD is proposed along Georgia Avenue, two blocks east of the site.

WMATA and DDOT Transit Studies

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study (2008)*. The study analyzed the

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 fare card gates. For both analyses, vertical transportation and fare card gates, volume-to-capacity ratios were calculated for existing data (from 2005) and projections for the year 2030. According to the study, both the Georgia Avenue-Petworth and Fort Totten Metrorail stations can currently accommodate future growth at all access points.

SITE-GENERATED TRANSIT IMPACTS

Transit site-generated impacts are expected to be insignificant during the arrival/drop-off peak period.

As a result of the 2020 Interim Condition, the 5000 14th Street NW project is projected to generate 18 transit trips (18 inbound, 0 outbound) during the morning peak hour, 9 transit trips (0 inbound, 9 outbound) during the afternoon school peak hour, and 7 transit trips (0 inbound, 7 outbound) during the afternoon commuter peak hour.

As a result of the 2025 Ultimate Condition, the project is projected to generate 53 transit trips (53 inbound, 0 outbound) during the morning peak hour, 26 transit trips (0 inbound, 26 outbound) during the afternoon school peak hour, and 22 transit trips (0 inbound, 22 outbound) during the afternoon commuter peak hour.

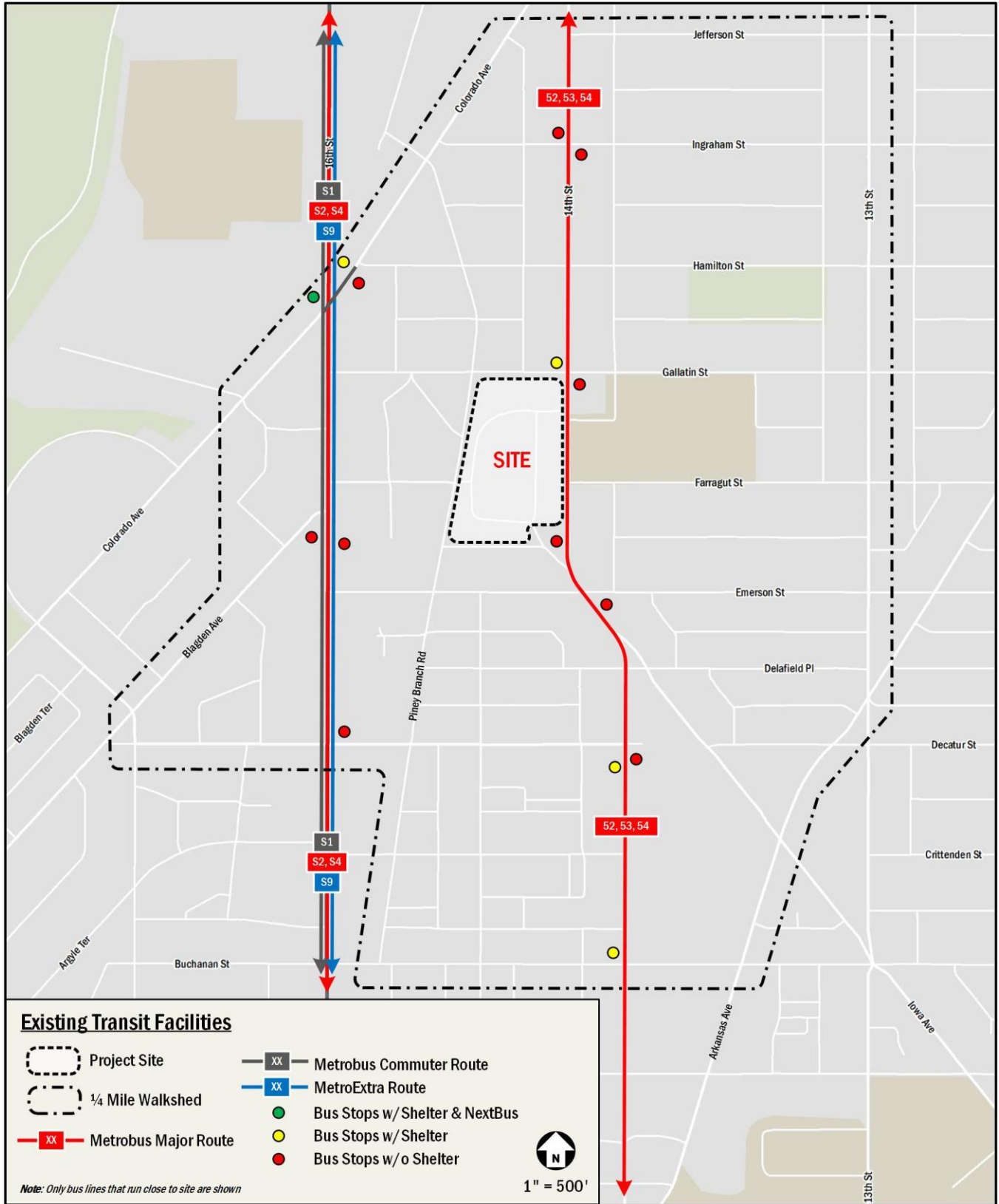


Figure 24: Existing Transit Service



PEDESTRIAN FACILITIES

This section summarizes the existing and future pedestrian access to the site and reviews walking routes to and from the 5000 14th Street NW site.

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the site provides an adequate walking environment. There are some gaps in the system, but there are sidewalks along the majority of primary routes to pedestrian destinations.
- The development is expected to generate a manageable number of pedestrian trips; however, the pedestrian trips generated by walking to and from transit will be more substantial, particularly to and from the Minnesota Avenue Metrorail Station.

PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the site were evaluated as well as routes to nearby transit facilities and prominent retail and neighborhood destinations. The site is easily accessible to transit options such as bus stops directly in the vicinity of the sites along 14th Street and 16th Street. There are some areas of concern within the study area that negatively impact the quality of and attractiveness of the walking environment. This includes roadway conditions that reduce the quality of walking conditions, narrow or nonexistent sidewalks, and incomplete or insufficient crossings at busy intersections. Figure 25 shows suggested pedestrian pathways, walking time and distances, and barriers and areas of concern.

PEDESTRIAN INFRASTRUCTURE

This section outlines the existing and proposed pedestrian infrastructure within the pedestrian study area.

Existing Conditions

A review of pedestrian facilities surrounding the proposed development shows that most facilities meet DDOT standards and provide a quality walking environment. Figure 26 shows a detailed inventory of the existing pedestrian infrastructure surrounding the site. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT’s 2017 *Design and Engineering Manual* in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 13.

Within the area shown, the majority of roadways are considered residential with a low to moderate density. Most of the sidewalks surrounding the site comply with DDOT standards; however, along Gallatin Street north and west of the site and Piney Branch Road, there are areas which have inadequate sidewalks or no sidewalks at all, with insufficient or no buffer. All primary pedestrian destinations are accessible via routes with sidewalks, most of which meet DDOT standards.

ADA standards require that curb ramps be provided wherever an accessible route crosses a curb and must have a detectable warning. Additionally, curb ramps shared between two crosswalks are not desired. As shown in Figure 26, under existing conditions crosswalks and curb ramps with detectable warnings are present adjacent to the site; however, along Gallatin Street north and west of the site and, along Piney Branch Road, and areas south and east of the site, there are areas which have substandard curb ramps.

Pedestrian Infrastructure Improvements

Since the existing pedestrian infrastructure at pedestrian access points surrounding the site provide an adequate walking environment and there are sidewalks along all primary routes to pedestrian destinations, with the exception of Piney Branch Road and portions of Gallatin Street north and west of the site, there are no proposed pedestrian infrastructure improvements as a result of the school transition.

Table 13: Sidewalk Requirements

Street Type	Minimum Sidewalk Width	Minimum Buffer Width
Residential (Low to Moderate Density)	6 ft	4 ft (6 ft preferred for tree space)
Residential (High Density)	8 ft	4 ft (6 ft preferred for tree space)
Commercial (Non-downtown)	10 ft	4 ft
Downtown	16 ft	6 ft



SITE IMPACTS

Pedestrian Trip Generation

As a result of the 2020 Interim Condition, the 5000 14th Street NW project is projected to generate 8 walking trips (8 inbound, 0 outbound) during the morning peak hour, 4 walking trips (0 inbound, 4 outbound) during the afternoon school peak hour, and 3 transit trips (0 inbound, 3 outbound) during the afternoon commuter peak hour.

As a result of the 2025 Ultimate Condition, the project is projected to generate 21 walking trips (21 inbound, 0 outbound) during the morning peak hour, 12 walking trips (0 inbound, 12 outbound) during the afternoon school peak hour, and 8 walking trips (0 inbound, 8 outbound) during the afternoon commuter peak hour.

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

- Students and faculty/staff who can walk to the site;
- Retail locations outside of the site; and
- Neighborhood destinations such as, libraries, and parks in the vicinity of the site.

In addition to these trips, the transit trips generated by the site will also generate pedestrian demand between the site and nearby transit stops.

Currently the existing pedestrian network has the capacity to absorb the newly generated trips from the site. No new pedestrian connections to the site are proposed.

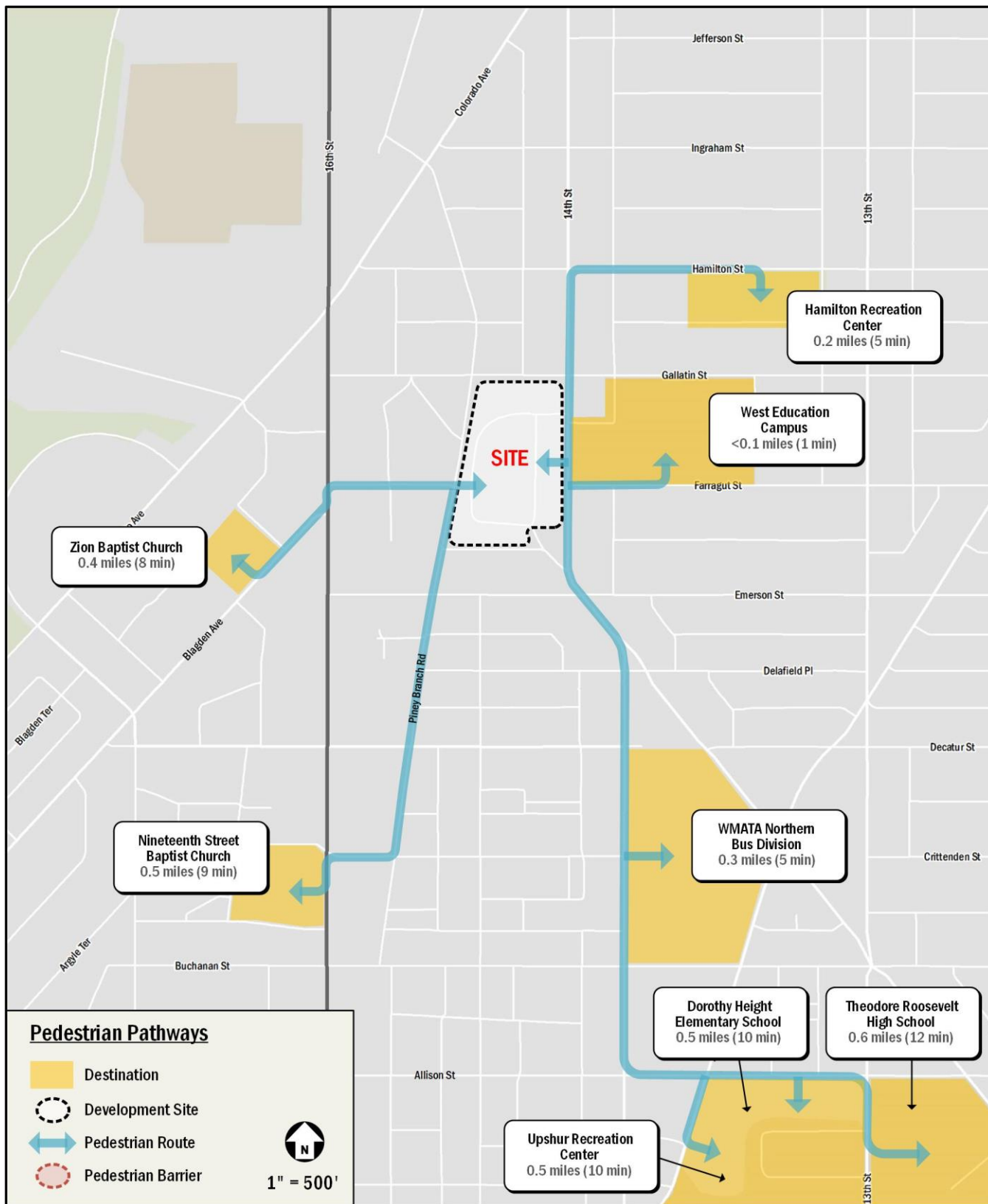


Figure 25: Pedestrian Pathways

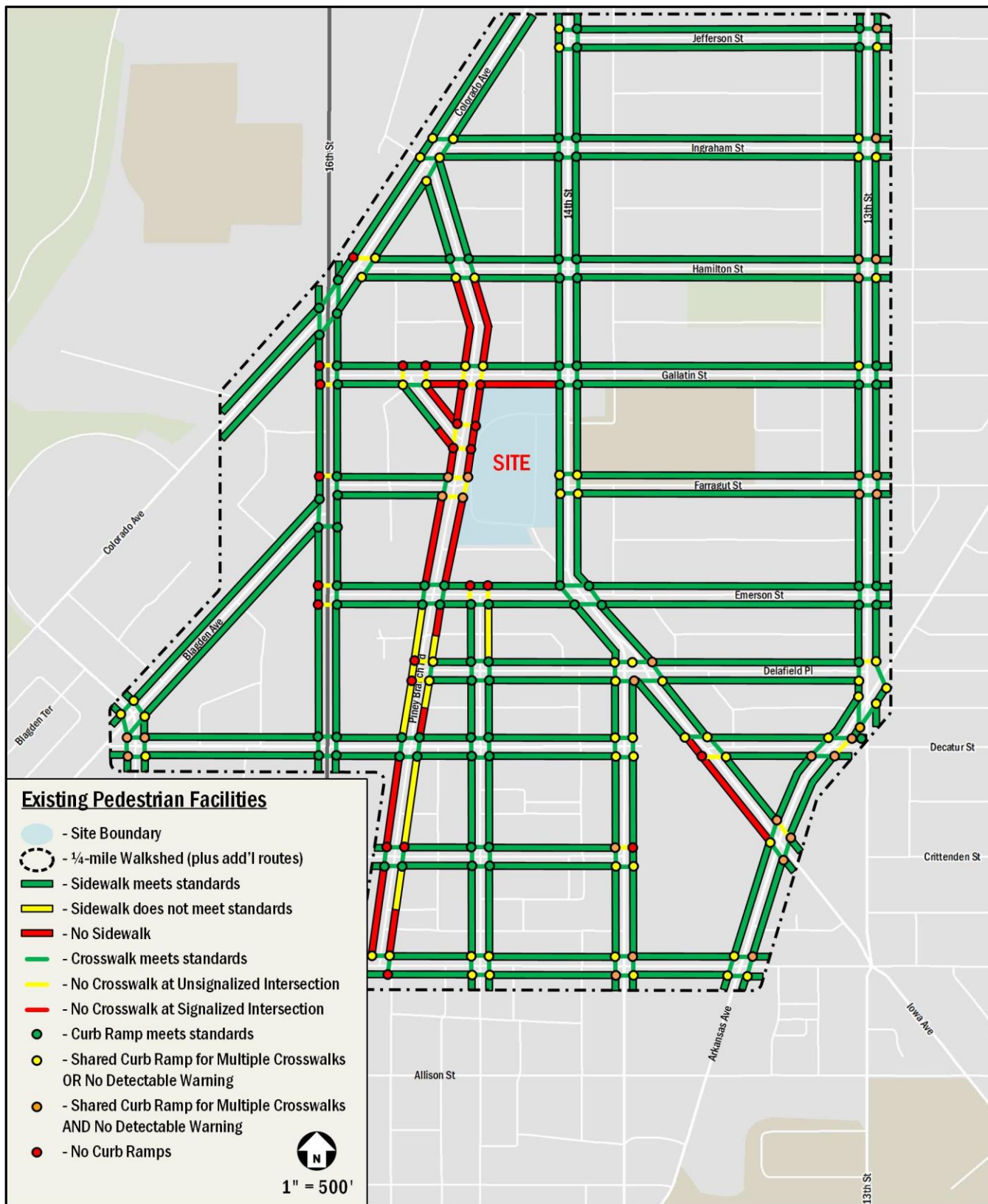


Figure 26: Existing Pedestrian Infrastructure



BICYCLE FACILITIES

This section summarizes existing and future bicycle access, reviews the quality of cycling routes to and from the 5000 14th Street NW site, and presents recommendations.

The following conclusions are reached within this chapter:

- The site has access to several on- and off-street bicycle facilities including bicycle lanes on 14th Street and the Rock Creek Trail.
- The site is not expected to generate a significant amount of bicycle trips; therefore, all site-generated bike trips can be accommodated on existing infrastructure.
- The development will include secure bicycle parking on site for residents and employees of the development.
- The development will include short-term bicycle racks along the perimeter of the site.

EXISTING BICYCLE FACILITIES

The 5000 14th Street site has excellent connectivity to existing on- and off-street bicycle facilities. Residential low volume streets surrounding the site provide connectivity to existing bicycle facilities near the site. The site is adjacent to bicycle lanes along 14th Street and one block from a signed bicycle route on 13th Street. The Rock Creek Trail is approximately 1.5 miles from the site via Blagden Avenue, and connects to downtown Washington, near Georgetown and to the Maryland-National Capital Park and Planning Commission (M-NCPPC) network of trails in Montgomery County, MD. These bicycle facilities provide the site with connectivity to areas within the District, Maryland and Virginia. Figure 27 illustrates the existing bicycle facilities in the area.

Under existing conditions there is no short-term bicycle parking located around the perimeter of the site.

The Capital Bikeshare program provides additional cycling options for residents, employees, and patrons of the planned development. The Bikeshare program has placed over 440 Bikeshare stations across Washington, DC, Arlington, and Alexandria, VA, Montgomery County, MD, and most recently Fairfax County, VA, with over 3,700 bicycles provided. Capital Bikeshare currently has two existing Capital Bikeshare stations with 30 available bicycle docks just over a quarter-mile from

the site at the intersection 14th Street and Crittenden Street NW and 14th Street and Colorado Avenue NW. Figure 27 illustrates the existing Capital Bikeshare facilities in the area.

PROPOSED BICYCLE FACILITIES

MoveDC

The MoveDC plan outlines several bicycle improvements in the vicinity of the site. These improvements are broken up into four tiers that rank the priority for implementation. The four tiers are broken down as follows:

Tier 1

Investments should be considered as part of DDOT's 6-year Transportation Improvement Program (TIP) and annual work program development, if they are not already included. Some projects may be able to move directly into construction, while others become high priorities for advancement through the Project Development Process.

Tier 2

Investments within this tier are not high priorities in the early years of MoveDC implementation. These investments could begin moving through the Project Development Process if there are compelling reasons for their advancement.

Tier 3

Investments within this tier are not priorities for DDOT-led advancement in the early years of MoveDC's implementation. They could move forward earlier under circumstances, such as real estate development initiatives and non-DDOT partnerships providing the opportunity for non-District-led completion of specific funding.

Tier 4

Generally, investments within this tier are not priorities for DDOT-led advancement and are lower priority for project development in the early years of implementation.

Due to the timeline of the proposed development, this report will focus on the Tier 1 and Tier 2 recommendations within the vicinity of the site.

There is one Tier 1 addition that will positively affect bicycle connectivity to and from the site. A 3.8-mile bicycle facility along 16th Street NW between the Maryland border and Spring Road NW is planned, which will greatly improve the bicycle connectivity near the site.



Although this project is discussed in the MoveDC plan, it is not currently funded nor included in DDOT's Transportation Improvement Plan, thus it will not be assumed as complete for this analysis.

On-Site Bicycle Elements

The projects will include short-term bicycle racks at street level along the perimeter of the site on 14th Street. These short-term spaces will include inverted U-racks placed in a high-visibility area. The Applicant is coordinating with DDOT to locate these racks in public space.

SITE IMPACTS

Bicycle Trip Generation

As a result of the 2020 Interim Condition, the 5000 14th Street NW project is projected to generate 6 bicycle trips (6 inbound, 0 outbound) during the morning peak hour, 3 bicycle trips (0 inbound, 3 outbound) during the afternoon school peak hour, and 2 bicycle trips (0 inbound, 2 outbound) during the afternoon commuter peak hour.

As a result of the 2025 Ultimate Condition, the project is projected to generate 15 bicycle trips (15 inbound, 0 outbound) during the morning peak hour, 8 bicycle trips (0 inbound, 8 outbound) during the afternoon school peak hour, and 6 bicycle trips (0 inbound, 6 outbound) during the afternoon commuter peak hour.

Although bicycling will be an important mode for getting to and from the site, with significant facilities located on site and existing and planned routes to and from the site, the impacts from bicycling will be relatively less than impacts to other modes.

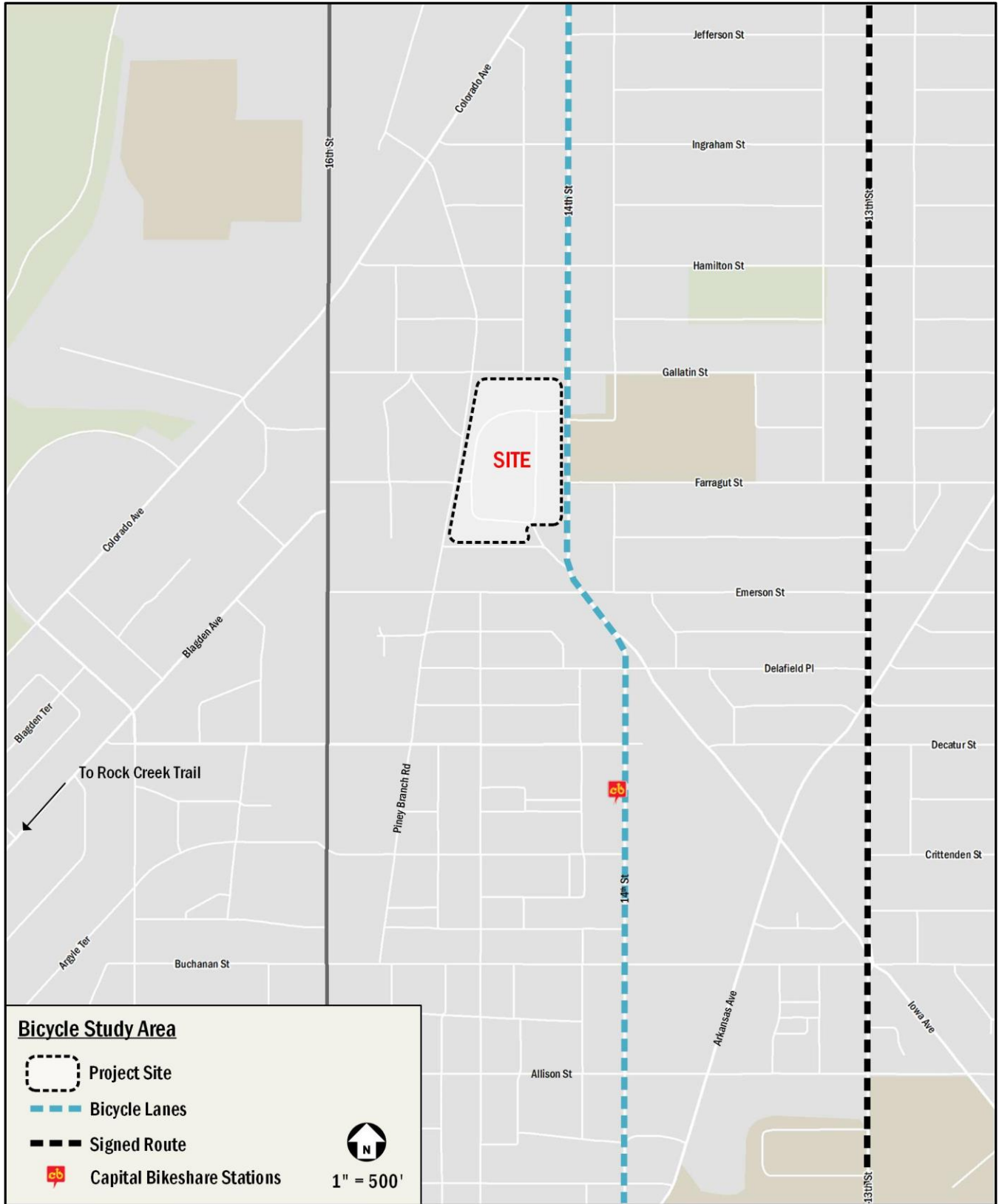


Figure 27: Existing Bicycle Facilities

CRASH DATA ANALYSIS

This section of the report reviews available crash data within the study area, reviews potential impacts of proposed development on crash rates, and makes recommendations for mitigation measures where needed.

SUMMARY OF AVAILABLE CRASH DATA

A crash analysis was performed to determine if there was an abnormally high crash rate at any study area intersection. DDOT provided the last three years of intersection crash data, from 2013 to 2015 for the study area. This data was reviewed and analyzed to determine the crash rate at each location. For intersections, the crash rate is measured in crash per million-entering vehicles (MEV). The crash rates per intersections are shown in Table 14.

According to the Institute of Transportation Engineers' *Transportation Impact Analysis for Site Development*, a crash rate of 1.0 or higher is an indication that further study is required. As shown in Table 14, no intersections in this study area meet this criterion. The 5000 14th Street NW project should be developed in a manner to maintain or minimize the conflicts at the study intersections.

Table 14: Intersection Crash Rates

Intersection	Total Crashes	Ped Crashes	Bike Crashes	Rate per MEV*
1. 16th Street & Gallatin St, NW	2	0	0	0.04
2. Piney Branch Road & Gallatin St, NW~	--	--	--	--
3. 14th Street & Gallatin St, NW	3	0	0	0.23
4. 16th Street & Farragut St, NW	3	0	0	0.07
5. Piney Branch Road & Farragut Street / SW School Driveway, NW~	--	--	--	--
6. 14th Street & Farragut Street, NW	2	0	0	0.16
7. 16th Street & Emerson St, NW	6	0	0	0.15
8. Piney Branch Road & Emerson St, NW	1	0	0	0.25
9. 14th Street & Emerson St, NW~	--	--	--	--
10. Piney Branch Road & NW School Driveway, NW^	--	--	--	--
11. 14th Street & NE School Driveway, NW^	--	--	--	--
12. 14th Street & SE School Driveway, NW^	--	--	--	--

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

~ - No reported crashes between 01/01/2013 and 12/31/2015

^ - Crash Data Unavailable



SUMMARY AND CONCLUSIONS

This report is a Comprehensive Transportation Review (CTR) of the school transition at 5000 14th Street NW. This report reviews the transportation aspects of the project's Board of Zoning Adjustment (BZA) application (BZA Case Number 19851). This report concludes that **the project will not have a detrimental impact** to the surrounding transportation network assuming that all TDM measures are implemented.

Proposed Project

The 5000 14th Street NW site is generally bounded by Gallatin Street to the north, a public alley to the south, 14th Street to the east, and Piney Branch Road to the west. The site is currently occupied by the Kingsbury Center, which is a private school that serves students with learning differences. Currently, Kingsbury has a student enrollment of 108, ranging from kindergarten to 12th grade, and 71 staff members. The proposed plan for the site is to transition the site to the Latin American Bilingual Public Charter School (LAMB). LAMB is expected to start operating out of the 5000 14th Street site in autumn of 2018, and for an interim period, both LAMB and Kingsbury will occupy the space. During the interim period, the maximum number of students that will occupy the building for both Kingsbury and LAMB will be 485 and the maximum number of faculty staff for both schools will be 116 (175 students/80 faculty at Kingsbury; 310 students/36 faculty at LAMB). After Kingsbury has fully vacated the property, LAMB proposes to accommodate 600 students and 110 faculty/staff members.

Under existing conditions, vehicular access to the 5000 14th Street site is from four curb cuts: two (2) along 14th Street (the Northeast and Southeast Driveways) and two (2) along Piney Branch Road (the Northwest and Southwest Driveways). The Northeast and Southwest Driveways currently operate as inbound only while the Southeast and Northwest Driveways operate as outbound only. Additionally, the Southeast Driveway operates as right out only due to the proximity of the adjacent intersection and the skewed geometry.

These curb cuts provide access to approximately 107 parking spaces and separate pick-up/drop-off areas for private vehicles and school buses. As part of the interim conditions and ultimate conditions, the locations and operations of vehicular access points and number of parking spaces is not expected to

change; however, the internal circulation as it relates to pick-up/drop-off areas and the allocation of parking spaces will change.

As part of the interim plan, the primary Kingsbury entrance will be relocated to the northern portion of the building. As such, all Kingsbury-related pick-up/drop-off activity will take place along the northern side of the site. Given the size of the student population and the amount of students that take the school bus, this amount of space is expected to adequately accommodate the pick-up/drop-off needs of Kingsbury.

Under interim and ultimate conditions, LAMB's primary entrance will be along the east side of the building, adjacent to the dual parking/circulation lanes. The overall pick-up/drop-off operations of LAMB differ from those of Kingsbury in that school buses are not used. Additionally, PK3-2nd Grade students are expected to be escorted into and out of the school by their parent or guardian. As such, pick-up/drop-off operations require both a pick-up/drop-off queuing area and designated parking spaces.

Under interim and ultimate conditions, vehicular pick-up/drop-off will take place along the upper circulation lane. Under interim conditions, it is expected that only 50 feet of queueing space will be needed as the majority of students will be in PK3-2nd Grade. Under ultimate conditions, it is expected that 320 feet of queueing space will be needed as the student population will increase and be more evenly distributed.

Designated pick-up/drop-off parking will be located along the lower circulation lane and along the southern side of the building. These areas are located nearest to the entrance without impeding, or being impeded by pick-up/drop-off queues.

Under the interim conditions, it is expected that LAMB will have a faculty/staff parking demand of 21 spaces and the LAMB pick-up/drop-off operations is expected to have a demand of 29 spaces. In addition to LAMB, Kingsbury faculty/staff members will require parking during the interim conditions. Kingsbury will have a faculty/staff parking demand of approximately 56 parking spaces. Overall, this amounts to an overall parking demand of 106 spaces, with the pick-up/drop-off spaces doubling as visitor parking during the school day.



Under the ultimate conditions, it is expected that LAMB will have a faculty/staff parking demand of 64 spaces. The LAMB pick-up/drop-off operations is expected to have a demand of 40 spaces. Overall, this amounts to an overall parking demand of 104 paces, with pick-up/drop-off spaces doubling as visitor parking during the school day.

Multi-Modal Impacts and Recommendations

Transit

5000 14th Street NW is served by regional and local transit services via Metrobus and Metrorail. The site is located 1.1 miles from the Georgia Avenue-Petworth Metrorail. There are also seven (7) Metrobus routes that service the site along major corridors.

Although the project will be generating new transit trips, existing facilities have enough capacity to handle the new trips.

Pedestrian

The 5000 14th Street NW site is surrounded by a generally well-connected pedestrian network. Most roadways within a quarter-mile radius provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes. However, there are residential streets to the north and west of the site which lack sidewalks, curb ramps, or crosswalks that meet DDOT and ADA standards.

Since the existing pedestrian infrastructure at pedestrian access points surrounding the site provide an adequate walking environment and there are sidewalks along all primary routes to pedestrian destinations, with the exception of Piney Branch Road and portion of Gallatin Street north and west of the site, there are no proposed pedestrian infrastructure improvements as a result of the school transition.

Bicycle

The 5000 14th Street NW site has adequate connectivity to existing on- and off-street bicycle facilities. The site is adjacent to bicycle lanes along 14th Street and one block from a signed bicycle route on 13th Street. The Rock Creek Park Trail is also approximately 1.5 miles to the west of the site.

Vehicular

The 5000 14th Street site is well-connected to several principal and minor arterials such as Military Road, Missouri Avenue, Georgia Avenue, Arkansas Avenue, 16th Street, 14th Street and

13th Street and an existing network of collector and local roadways.

In order to determine impacts that the proposed developments will have on the transportation network, this report projects future conditions with and without the development of the site and performs analyses of intersection delays and queues. Two future scenarios were considered: a 2020 interim future condition scenario where both LAMB and Kingsbury will occupy the space and a total future condition scenario where Kingsbury has fully vacated the property. These results were compared to the acceptable levels of delay set by DDOT standards as well as existing queues to determine if the site will negatively impact the study area. The analysis concluded that two intersections trigger mitigations for the 2020 Interim Condition scenario, and the same two intersections trigger mitigations for the 2025 Ultimate Condition scenario.

The following conclusions are reached within this chapter:

- Under existing conditions the study area intersections generally operate under acceptable conditions with the exception of four intersections along 14th Street and 16th Street.
- Under background conditions, Emerson Street is converted from two-way operations to one-way westbound operations between 14th Street and 13th Street and one-way eastbound operations between 14th Street and 16th Street as a result of the 16th Street Heights Neighborhood Traffic Safety Study. This results in a significant increase in delay along Gallatin Street, which serves as the main primary east-west connection in replace of Emerson Street.
- As a result of 2020 Interim Future scenario, two intersections trigger the need to explore mitigations:
 - 16th Street & Gallatin Street, NW
 - 14th Street & Gallatin Street, NW
- As a result of 2025 Total Future scenario, two intersections trigger the need to explore mitigations:
 - 16th Street & Gallatin Street, NW
 - 14th Street & Gallatin Street, NW
- Mitigation measures were analyzed with the following mitigation measures being proffered for the both the 2020 Interim and 2025 Total Future scenarios of the development:
 - It was determined that the 14th Street & Gallatin Street intersection can be improved by traffic



signal timing modifications by giving additional green time to the Gallatin Street approaches. This improves delay along Gallatin Street without detrimental impact to 14th Street operations.

- Capacity concerns at the 16th Street & Gallatin Street intersection can be primarily attributed to the re-routing of east-west trips due to the change in traffic operations along Emerson Street to the south. Mitigation measures were explored at this intersection; however, this report ultimately proposes that DDOT continue to evaluate the operations of Gallatin Street as part of subsequent phases of the 16th Street Heights Neighborhood Traffic Safety Study.

ensure any traffic concerns can be addressed in a timely manner.

- The School will assign a staff member to serve as Transportation Management Coordinator (TMC) who will be responsible for oversight of the TDM plan, adherence to driving and parking regulations, and encourage and facilitate car-pooling.
- The School will implement policies for deliveries to the campus to minimize the impact of this traffic on the neighborhood.
- The School will install outdoor bicycle parking racks to promote additional bicycle activity on-campus.
- The school will participate in the Safe Routes to School Program

Transportation Demand Management (TDM)

This report has outlined the following TDM measures for both the interim and ultimate school occupancy conditions:

- Student TDM Elements
 - The School will encourage carpooling and publically recognize at Peace Ceremonies any parent who regularly drives 3 or more students to school.
 - The School will offer DC One Cards to all students to encourage the use of public transportation
 - Require all drop-off and pick-up activities to be within areas specifically designated on campus.
 - The School will offer a parent listserv which will allow parents to find carpool matches.
 - The school will coordinate bike safety/education courses for students.
- Faculty/Staff TDM Elements
 - The School will offer a transit benefit program to faculty and staff to encourage the use of public transportation.
 - All faculty and staff who drive to school will be instructed to park on campus.
 - The School will encourage carpooling and publically recognize any faculty or staff who regular drives 2 additional faculty or staff members to school.
 - All faculty/staff will be complete training on TDM procedures
- School-Wide TDM Elements
 - The School will continue to work with the neighborhood through periodic public meetings to

Summary and Recommendations

Overall, the project contains many positive transportation features, including:

- The site is within close proximity to Metrobus stops of routes along major corridors.
- All queuing for drop-off/pick up is accommodated internally.
- All parking demand is accommodated internally.
- A robust Transportation Demand Management (TDM) plan to reduce the demand of single-occupancy vehicles, private vehicles during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.
- The development is proposing to mitigate vehicular capacity concerns at the intersection of 14th Street and Gallatin Street NW.

Based on these features and the technical analysis contain within, this report concludes that **the proposed project will not have a detrimental impact** to the surrounding transportation network assuming that all planned site design elements and mitigation measures are implemented.