WELLS + ASSOCIATES

MEMORANDUM

1420 Spring Hill Road,
Suite 610,
Tysons, VA 22102
703-917-6620
WellsandAssociates.com

TO: Andrew Jinks, P.E.
Town of Vienna

FROM: Michael R. Pinkoske, PTP
Grady P. Vaughan, P.E.
Jillian G. Kinder

RE: JP Morgan Chase – Maple Avenue
Town of Vienna, Virginia

SUBJECT: Trip Generation Analysis and Site Assessment

DATE: August 18, 2021

Introduction

This memorandum provides a trip generation analysis and site assessment for the proposed Conditional Use Permit (CUP) application for the JP Morgan Chase – Maple Avenue development. The site is located east of the Route 123 (Maple Avenue E)/Glyndon Street SE intersection as part of the Vienna Shopping Center complex. Currently the site is occupied by a 6,380 square feet (SF) restaurant served by surface parking. As proposed the existing restaurant would be razed and redeveloped with a 3,300 SF bank with drive through service. A double-lane ATM drive through would be constructed with stacking for eight (8) vehicles. The site location is shown on Figure 1.

The proposed bank would be served by 17 parking spaces. The main point of access to and from the bank will continue to be provided from unsignalized driveways on Glyndon Street SE and Maple Avenue E. A reduced copy of the concept plan is shown on Figure 2.

Site Access and Drive Through Operations

Access to and from the proposed site would continue to be provided from Maple Avenue E and Glyndon Street SE. The bank is also connected to other uses within the shopping center via an internal street grid. Once on-site, patrons will have the option to park in the surface parking lot and walk into the building or to utilize the proposed two-lane drive-through with stacking for up to 8 vehicles. The drive-through will operate one-way, from east to west ending near the access point on Glyndon Street SE. A reduced copy of the site plan is shown on Figure 2.

Parking Supply

The proposed uses require 1 space per 200 SF. Based on the proposed 3,300 SF site, approximately 17 parking spaces would be required. Within the supply, three standard handicap parking spaces and one handicap van parking space are proposed. Overall, the shopping center requires 562 spaces, with the proposed redevelopment a total of 565 parking spaces will be provided.

Pedestrian and Bicycle Facilities

The subject site is located in an area with connected sidewalks along both sides on Maple Avenue. At the signalized intersection of Maple Avenue/Glyndon Street, crosswalks with pedestrian countdown signal heads are provided on all legs of the intersection. At the signalized intersection of Maple Avenue/Branch Road crosswalks with pedestrian countdown signal heads are provided on the south and east approaches. In the vicinity of the site, Bike Fairfax identifies Church Street as the preferred bicycle route which generally parallels Maple Avenue. The existing pedestrian and bicycle facilities within the study area are depicted on Figures 3 and 4, respectively. Additionally, the applicant will be providing bike racks on-site.

Public Transit Service

The site is served by two public transit routes. The Fairfax Connector operates two routes in the area of the site, Routes 463 and 467. Route 463 provides weekday and weekend service circulating between Vienna Metro Station, Patrick Henry Library, Chain Bridge Road/Gosnell Road, and Tysons Corner Metro Station. Headways are typically 30 minutes on the weekday and 60 minutes on the weekends. Service is provided from 5:05 AM to 11:45 PM on weekdays, 6:00 AM to 11:30 PM on Saturdays, and 8:00 AM to 8:30 PM on Sundays. Route 467 provides weekday midday and evening and weekend service circulating between Dunn Loring Metro Station, Cedar Lane/Bowling Green Drive, Old Courthouse Road/Woodford Road, and Tysons Corner Metro Station. Headways are typically 30 minutes on weekdays and 75 minutes on the weekends. Service is provided from 9:00 AM to 3:30 PM and 8:00 PM to 11:40 PM on weekdays and 9:00 AM to 6:15 PM on weekends. Bus stop locations in the area of the development are depicted on Figure 5.

Trip Generation

The trip generation analysis prepared for the proposed redevelopment of the J.P. Morgan Chase - Maple Avenue site is based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.

The trip generation analysis for the existing use and proposed redevelopment is presented in Tables 1A and 1B. The calculations are based on ITE trip generation rates/equations for ITE land use codes 912 (Drive-in Bank) and 932 (High-Turnover Restaurant). The trip generation provided in Table 1A and 1B assumes pass-by reduction for each use based on the ITE Trip Generation Handbook, 3rd Edition and internal capture estimates based on VDOT's *Updated Administrative Guidelines for the Traffic Impact Analysis Regulations* dated December 2018.

Table 1A assumes the existing restaurant would continue to operate consistent with operations prior to closing (no AM peak hour service) while Table 1B assumes that the restaurant would be open during the AM peak hour. As shown in the tables, the existing use generates 35 primary trips during the PM peak hour and, if open, would generate 64 primary AM peak hour trips. The proposed development is estimated to generate 23 primary AM peak hour trips and 44 primary PM peak hour trips. These estimates assume standard ITE reductions for internal capture and pass-by. When compared to the existing use, the proposed development would have a net increase of 23 AM peak hour primary trips and a net increase of 9 PM peak hour primary site trips. If the existing restaurant was open during the AM peak hour, the proposed development would generate 41 fewer primary trips during the AM peak hour.

Capacity Analysis

A capacity analysis of adjacent intersections was completed as part of the *332 Maple Avenue East Traffic Impact Analysis* (TIA) dated December 29, 2020. The study included the impacts of the existing high-turnover restaurant on the subject site as part of the capacity analysis. Based on the trip generation comparison provided in Table 1 and negligible increase in trips based on the proposed change of use, the proposed development would not impact the results of the previously completed TIA. The adjacent network would operate at consistent levels of service with existing conditions. A graphic of the study intersections and the level of service (LOS) and queueing summary tables from the December 2020 TIA are included in Attachment A.

Conclusion

For the reasons outlined herein, it is anticipated that the proposed change in uses would have a negligible impact on the surrounding transportation network. The site is well served by multimodal facilities, on-site parking, and efficient drive-through operation.

Thank you for your consideration and please feel free to contact Grady Vaughan at 703.676.3627 or gpvaughan@wellsandassociates.com with any questions or comments.

Table 1A
JPMC Maple Ave
Trip Generation Analysis (1)

Land Use	ITE Code	Size	Units	AM Peak Hour IN	AM Peak Hour OUT	AM Peak Hour TOTAL	PM Peak Hour IN	PM Peak Hour OUT	PM Peak Hour TOTAL
Existing Conditions									
High Turnover (Sit Down) Restaurant [2]	932	6,340	GSF	-	-	-	38	24	62
Pass-by Trips (43% PM)				-	-	-	(16)	(11)	(27)
Net Existing Site Trips				**-**	**-**	**-**	**22**	**13**	**35**
Proposed Conditions									
Drive-in Bank	912	3,300	SF	19	13	32	34	34	68
Pass-by Trips [3] (29% AM, 35% PM)				(6)	(3)	(9)	(12)	(12)	(24)
Net Proposed Site Trips				**13**	**10**	**23**	**22**	**22**	**44**
Net Total Site Trips				**19**	**13**	**32**	**(4)**	**10**	**6**
Net Pass-by Trips				**(6)**	**(3)**	**(9)**	**4**	**(1)**	**3**
Net Primary Site Trips				**13**	**10**	**23**	**-**	**9**	**9**

Notes:
(1) Trip generation rates and equations based on the ITE Trip Generation Manual, 10th Edition.
(2) The exiting is currently closed. Prior to closing the use was only open for lunch and dinner.
(3) Pass-by reductions based on the ITE Trip Generation Handbook, 3rd Edition.

Table 1B
JPMC Maple Ave
Trip Generation Analysis (1)

Land Use	ITE Code	Size	Units	AM Peak Hour IN	AM Peak Hour OUT	AM Peak Hour TOTAL	PM Peak Hour IN	PM Peak Hour OUT	PM Peak Hour TOTAL
Existing Conditions									
High Turnover (Sit Down) Restaurant [2]	932	6,340	GSF	35	29	64	38	24	62
Pass-by Trips (43% PM)				-	-	-	(16)	(11)	(27)
Net Existing Site Trips				**35**	**29**	**64**	**22**	**13**	**35**
Proposed Conditions									
Drive-in Bank	912	3,300	SF	19	13	32	34	34	68
Pass-by Trips [3] (29% AM, 35% PM)				(6)	(3)	(9)	(12)	(12)	(24)
Net Proposed Site Trips				**13**	**10**	**23**	**22**	**22**	**44**
Net Total Site Trips				**(16)**	**(16)**	**(32)**	**(4)**	**10**	**6**
Net Pass-by Trips				**(6)**	**(3)**	**(9)**	**4**	**(1)**	**3**
Net Primary Site Trips				**(22)**	**(19)**	**(41)**	**-**	**9**	**9**

Notes:
(1) Trip generation rates and equations based on the ITE Trip Generation Manual, 10th Edition.
(2) Assumes the restaurant is open for breakfast, lunch and dinner service.
(3) Pass-by reductions based on the ITE Trip Generation Handbook, 3rd Edition.

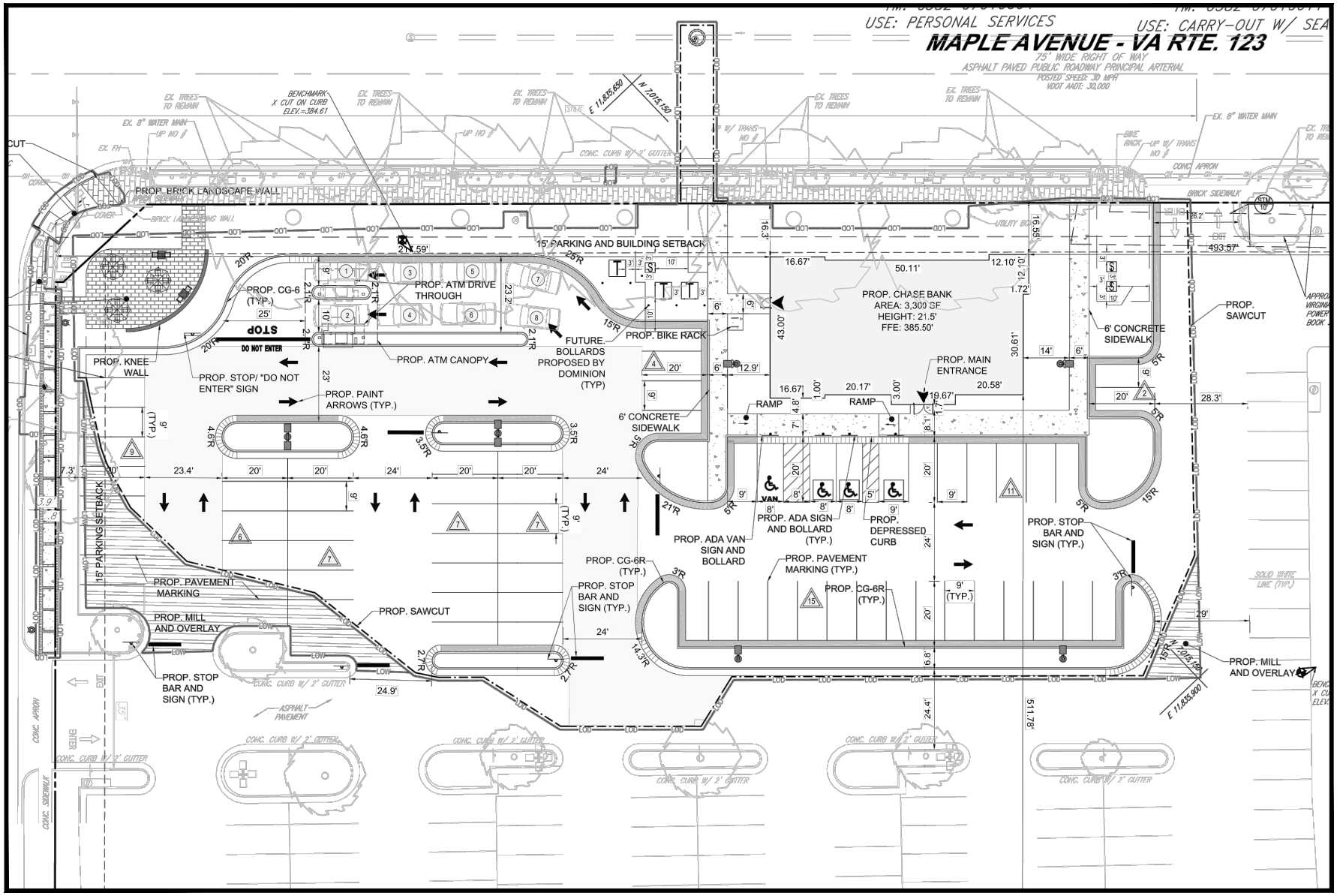
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Figure 1
Site Location

NORTH

JP Morgan Chase - Maple Avenue
Town of Vienna, Virginia



PROVIDED BY: BOHLER

Figure 2
Site Plan

NORTH

JP Morgan Chase - Maple Avenue
Town of Vienna, Virginia

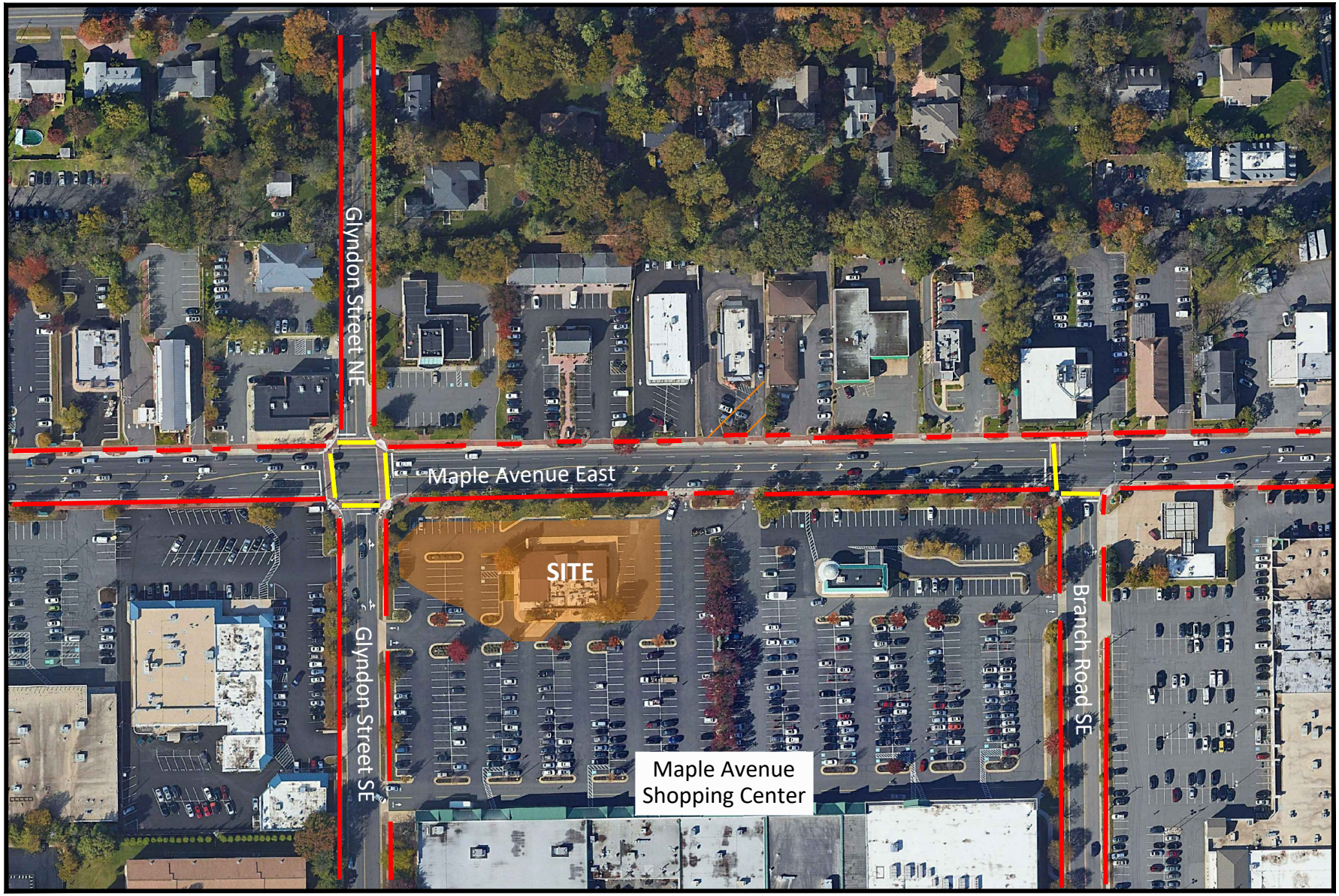


Figure 3
Existing Pedestrian Facilities

Concrete Sidewalk
Marked Crosswalk

NORTH

JP Morgan Chase - Maple Avenue
Town of Vienna, Virginia

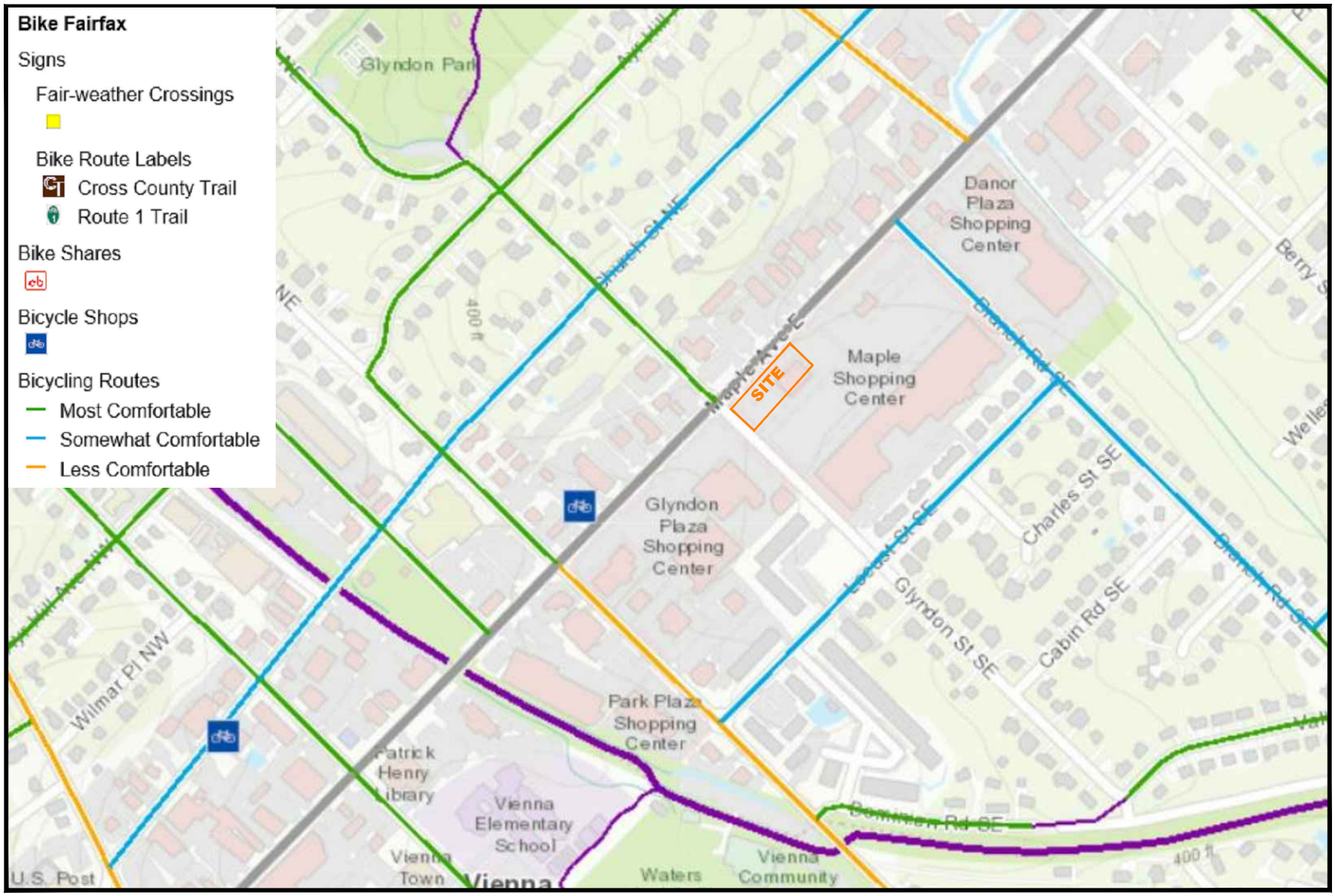


Figure 4
Existing Bicycle Facilities

NORTH

JP Morgan Chase - Maple Avenue
Town of Vienna, Virginia

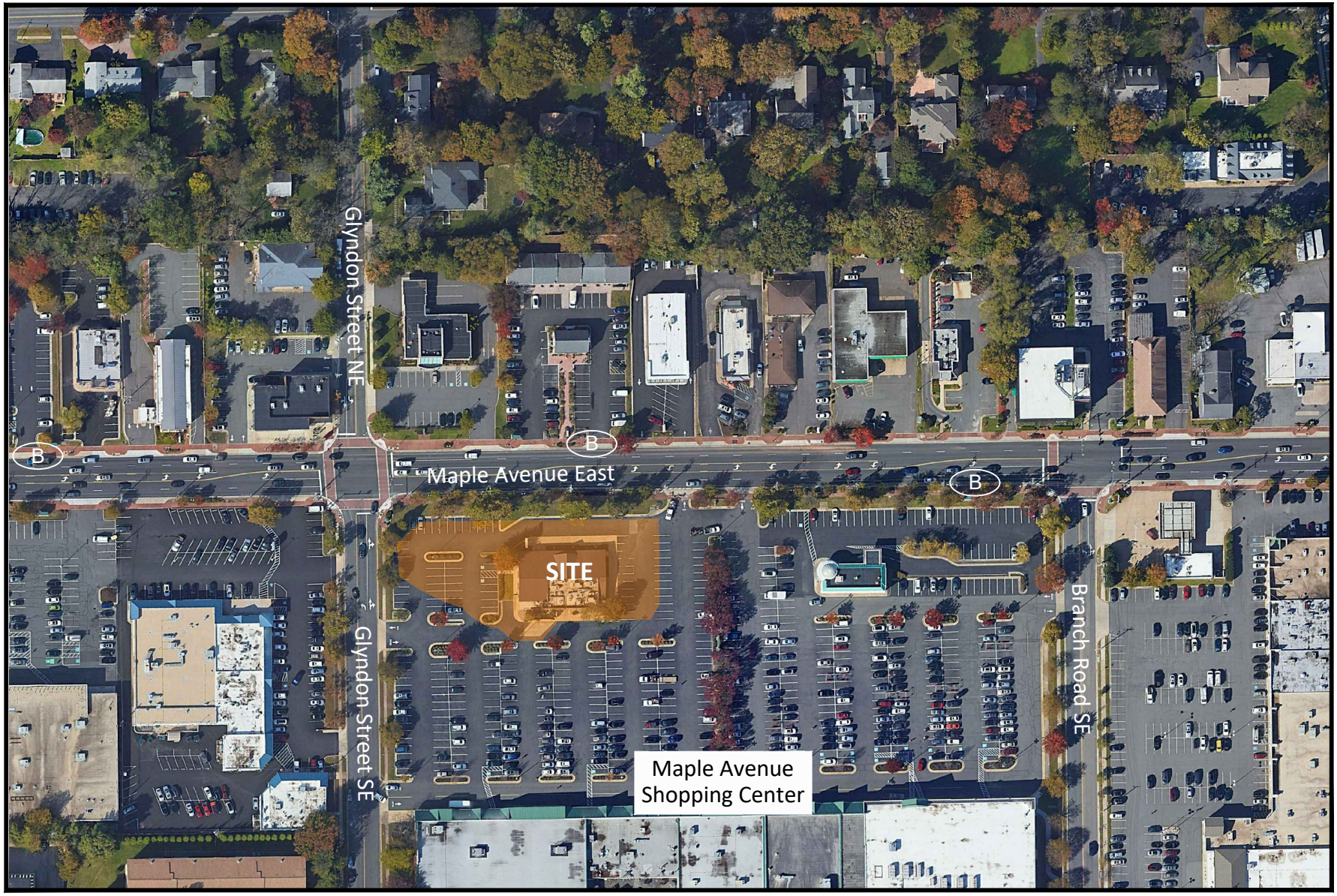


Figure 5
Existing Bus Stops and Shelters

B Represents Bus Stop

NORTH

JP Morgan Chase - Maple Avenue
Town of Vienna, Virginia

APPENDIX A

332 MAPLE AVENUE EAST

TRAFFIC IMPACT ANALYSIS (2020)

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Figure 1-2
Study Intersections

NORTH

332 Maple Avenue
Vienna, Virginia

Table 3-3
332 Maple Avenue East
Intersection Levels of Service Summary (1) (2) (3)

Intersection	Operating Condition	Street Name	Approach/ Movement	2020 Existing AM	2020 Existing PM	2022 Background AM	2022 Background PM	2022 Total Future AM	2022 Total Future PM
1 Maple Avenue East **& Glyndon Street**	Signal	Maple Avenue East	EBL	A (2.1)	C (22.7)	A (2.1)	C (22.5)	A (2.3)	C (22.6)
			EBTR	A (9.1)	C (25.8)	A (9.6)	C (25.0)	A (9.6)	C (25.2)
		Maple Avenue East	WBL	A (5.6)	B (17.1)	A (6.4)	B (17.2)	A (5.6)	B (17.4)
			WBTR	A (4.1)	C (29.3)	A (4.3)	C (29.5)	A (4.0)	C (29.9)
		Glyndon Street SE	NBL	E (58.6)	E (55.6)	E (58.6)	E (56.2)	E (56.0)	E (56.0)
			NBTR	E (61.3)	E (58.1)	E (61.3)	E (58.2)	E (58.6)	E (58.1)
		Glyndon Street NE	SBL	E (58.4)	E (58.0)	E (58.4)	E (58.3)	E (58.5)	E (58.3)
			SBTR	E (61.4)	E (78.4)	E (61.4)	E (78.7)	E (60.1)	E (78.7)
			Overall	**B (12.0)**	**C (34.9)**	**B (12.3)**	**C (34.6)**	**B (12.2)**	**C (34.8)**
2 Maple Avenue East **& Site Exit**	STOP	Maple Avenue East	EBT	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]
		Maple Avenue East	WBT	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]
		Site Egress	SBLR	B [12.5]	C [15.3]	B [12.6]	C [15.5]	B [10.9]	B [14.4]
3 Maple Avenue East **& Site Entrance**	STOP		EBL	A [9.1]	B [11.1]	A [9.2]	B [11.2]	A [8.8]	B [11.0]
		Maple Avenue East	EBT	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]
			EBTR	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]
			WBL	B [12.4]	A [9.8]	B [12.6]	A [9.9]	B [12.4]	A [9.8]
		Maple Avenue East	WBT	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]
			WBTR	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]	A [0.0]
		Shopping Center Entrance	NBLTR	C [17.3]	B [12.2]	C [17.7]	B [12.2]	B [14.8]	B [11.8]
4 Maple Avenue East **& Branch Road SE**	Signal	Maple Avenue East	EBL	A (1.5)	B (10.7)	A (1.4)	B (10.4)	A (1.3)	B (10.7)
			EBTR	A (4.3)	B (14.9)	A (4.4)	B (15.2)	A (3.9)	B (15.2)
		Maple Avenue East	WBL	B (19.9)	A (9.3)	C (20.6)	A (9.5)	C (20.0)	A (9.4)
			WBTR	B (11.7)	B (10.2)	B (11.4)	B (10.1)	B (11.5)	B (10.2)
		Branch Road SE	NBL	E (64.5)	E (76.2)	E (64.5)	E (76.2)	E (64.4)	E (76.0)
			NBTR	E (60.0)	E (69.9)	E (60.0)	E (69.9)	E (60.1)	E (70.0)
		Bank Entrance	SBLTR	E (66.5)	E (75.5)	E (66.5)	E (75.5)	E (66.5)	E (75.5)
			Overall	**B (10.5)**	**B (18.9)**	**B (10.5)**	**B (18.9)**	**B (10.2)**	**B (18.9)**

Notes : (1) Numbers in parentheses ( ) represent delay at signalized intersections in seconds per vehicle.
(2) Numbers in brackets [] represent delay at unsignalized intersections in seconds per vehicle.
(3) Roadway names in bold are considered north/south for purposes of this analysis

Table 3-4
332 Maple Avenue East
Intersection Queue Summary (1) (2)

Intersection	Operating Condition	Street Name	Approach/ Movement	Available Storage	2020 Existing AM	2020 Existing PM	2022 Background AM	2022 Background PM	2022 Total Future AM	2022 Total Future PM
1 Maple Avenue East	Signal	Maple Avenue East	EBL	110	2	24	2	23	2	23
& Glyndon Street			EBTR		777	345	791	344	777	344
		Maple Avenue East	WBL	175	7	19	8	17	5	17
			WBTR		46	563	48	580	35	578
		Glyndon Street SE	NBL	70	59	230	59	246	59	242
			NBTR		60	181	60	181	59	181
		Glyndon Street NE	SBL	150	56	85	56	86	53	84
			SBTR		58	223	58	223	58	223
2 Maple Avenue East	STOP	Maple Avenue East	EBT		0	0	0	0	0	0
& Site Exit		Maple Avenue East	WBT		0	0	0	0	0	0
		Site Egress	SBLR		20	14	21	14	1	6
3 Maple Avenue East	STOP		EBL		7	5	7	5	1	2
& Site Entrance		Maple Avenue East	EBT		0	0	0	0	0	0
			EBTR		0	0	0	0	0	0
			WBL		1	2	1	2	1	2
		Maple Avenue East	WBT		0	0	0	0	0	0
			WBTR		0	0	0	0	0	0
		Shopping Center Entrance	NBLTR		2	7	2	7	3	7
4 Maple Avenue East	Signal	Maple Avenue East	EBL	130	0	5	0	5	0	5
& Branch Road SE			EBTR		264	374	266	371	204	372
		Maple Avenue East	WBL	100	59	80	58	79	59	79
			WBTR		207	311	212	317	205	316
		Branch Road SE	NBL	125	82	121	82	121	78	119
			NBTR		60	0	60	0	60	0
		Bank Entrance	SBLTR		0	42	0	42	0	42

Notes: (1) Turning movement queue length is based on the 95th percentile queue as reported by Synchro, Version 10.
(2) Roadway names in bold are considered north/south for purposes of this analysis