WELLS + ASSOCIATES

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July 14, 2023

Corso Chevy Chase
Residential Care Facility
Comprehensive Vehicular Site Access Study

OVERVIEW

Corso DC, LLC is redeveloping the property located at 7100 Connecticut Avenue in the Town of Chevy Chase, Maryland. The proposed Residential Care Facility, Corso Chevy Chase, is a senior living community containing up to 287 Senior Adult Housing dwelling units, 190 Assisted Living beds, 30 Memory Care beds, and up to 5,000 gross square feet (gsf) of convenience retail use. The convenience retail use is intended to serve project residents and staff but will also be made available to the surrounding community. The overall project will supply 458 standard on-site garage parking spaces with 48 additional tandem and 10 surface spaces for a total of 516 parking spaces.

This document provides a review and analysis of the site access on Connecticut Avenue to develop a plan to improve vehicular and pedestrian access for the site. The review and analysis of the site access include: (1) intersection capacity analysis without existing or MNCPPC trip adjustments, (2) a full signal warrant analysis, including recent accident data/history, and (3) an evaluation of existing intersection geometrics resulting in three potential site access modification concepts.

CORSO CHEVY CHASE OPERATIONAL INPUTS

Based upon Corso Chevy Chase's proposed program as noted above, the project will generate 107 AM and 158 PM peak hour trips based on the Institute of Transportation Engineers Trip Generation Report 11th edition. This analysis is based on the ITE trip Generation rates without reduction of the prior use, or MNCPPC Bethesda/Chevy Chase Policy Area trip generation adjustments for multimodal (walk, bike, or transit) reductions.

If the MNCPPC trip generation adjustments for multimodal (walk, bike, or transit) had been used in the analysis, the vehicle trips would be approximately 13 percent less than the trips used in this study. Therefore, this analysis should be considered conservative. The ITE trip generation used in this analysis is shown on Table 1.

Table 1
Corso Chevy Chase
Trip Generation [1]

Land Use	LUC	Amount	Unit	ITE Trip Generation						
				AM Peak Hour			PM Peak Hour			ADT
				In	Out	Total	In	Out	Total	
Proposed Uses										
Assisted Living/Memory care	254	220	Beds	24	16	40	21	32	53	572
Senior Adult Housing - Multifamily	252	287	DU	19	36	55	42	30	72	854
Conv. Retail (<40k)	822	5,000	S.F.	7	5	12	17	16	33	441
			Subtotal	**50**	**57**	**107**	**80**	**78**	**158**	**1,867**

Notes:
(1) Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition.

ITE trip generation rates consider resident, staff, visitor, and vendor trips. The rates are commensurate with the total operational program anticipated for Corso Chevy Chase. In addition, the specific operational characteristic of this project (i.e., employee shift changes, transportation services, etc.) are consistent with and included in the ITE trip generation rates. A copy of the anticipated staff schedules is contained in Appendix A.

Existing Conditions

Connecticut Avenue is a six-lane divided roadway with traffic signals located at East-West Highway (MD 410) approximately 2,500-feet north of the site and Bradley Boulevard/Raymond Street approximately 1,150-feet south of the site. Connecticut Avenue has a posted speed limit of 30 miles per hour (MPH).

There are two existing points of access to/from the property on the west side of Connecticut Avenue (as shown in Figure 1). The northern point of access is an entrance only and the southern driveway is a right turn exit only from the property. The Corso Chevy Chase project will use the existing access points to the property on Connecticut Avenue. The entrance and exit are spaced approximately 130 feet apart.

Taylor Street, located on the east side of Connecticut Avenue, is halfway between the entrance and exit from property/Corso Chevy Chase. Taylor Street is a two-lane, two-way, undivided residential street with on-street parking. All turning movements are permitted to and from Taylor Avenue.

Intersection Capacity Analysis

To establish baseline traffic conditions for the study intersection, a thirteen-hour vehicular and pedestrian volume count was conducted on January 31, 2023. The morning peak hour occurred from 7:30 to 8:30 AM and the evening peak hour occurred from 4:45 to 5:45 PM. A copy of the vehicle and pedestrian hour turning movement counts are provided in Appendix B and the AM and PM peak hour trips are summarized in Figure 2.

The study intersection of Connecticut Avenue at Taylor Street and the Corso Chevy Chase site entrance was then analyzed using the existing traffic volumes shown in Figure 2, the existing lane use, side street stop conditions, and the anticipated trips generation generated by Corso Chevy Chase. An additional analysis was completed for the intersection with a traffic signal. As stated above, no multimodal trip reductions were taken which represents a "worst case" scenario for both analysis conditions. Site trips were assigned to the area road network based on the current travel patterns and added to existing peak hour traffic volumes.

The capacity analysis was completed using the *Highway Capacity Manual* (HCM) intersection operational analysis methodology for unsignalized and signalized intersections. The analysis results are presented based on the average vehicle delay, in seconds per vehicle for a one-hour period. The average vehicle delay standard is 80 seconds in the Bethesda Chevy Chase Policy Area.

The results of the intersection operation under existing side street stop and a traffic signal are summarized in Table 2 and the corresponding analysis worksheets are contained in Appendix C.

Table 2

Connecticut Avenue at the Corso Chevy Chase Site Entrance and Taylor Street

Intersection Delay Summary [(1)(2)]

Street/Approach	Movement	Future With Corso (Existing Side Street Stop) AM	Future With Corso (Existing Side Street Stop) PM	Future With Corso (With a Traffic Signal) AM	Future With Corso (With a Traffic Signal) PM
Connecticut Ave	NBL/Approach	[2.6]	[1.4]	(1.8)	(1.8)
Connecticut Ave	SBL/Approach	[0.7]	[2.7]	(2.3)	(1.8)
Corso Exit	EB Right Turn	[15.4]	[12.3]	(44.1)	(43.8)
Taylor Street	WB Approach	[14.8]	[29.7]	(44.1)	(43.6)

Note (1) Numbers in brackets [] represent delay at unsignalized intersections in seconds per vehicle.

(2) Numbers in parentheses ( ) represent delay at signalized intersections in seconds per vehicle.

Signal Warrant Analysis

To determine the feasibility of a traffic signal as analyzed above, a traffic signal warrant analysis was conducted for the Connecticut Avenue at Taylor Street and Corso Chevy Chase site entrance intersection. The results of the signal warrant analysis indicate that the applicable Maryland State Highway Administration (MDSHA) Manual on Uniform Traffic Control Devices (MUTCD) warrants are not met. The traffic volume warrants, accident history, and pedestrian volumes do not meet the minimum thresholds to warrant a signal at the intersection. A copy of the full warrant study is provided in Appendix D.

Intersection Layout Options

After meeting with the MDSHA and Montgomery County Department of Transportation (MCDOT) staff, several options for access modifications were discussed. Although the signal warrant analysis indicates a signal is not warranted at this location, signalization has been considered due to the existing crosswalk, bus stop locations, and the anticipated pedestrian demand along Connecticut Avenue and the Corso Chevy Chase site. Three of the options discussed during the meeting that staff would consider are discussed below. Concept layouts of these three options are shown on exhibits Option A, Option B, and Option C.

Option A would close the median along Connecticut Avenue at the entrance and exit of the Corso Chevy Chase. The median opening that serves Taylor Street would remain open. This option would limit all vehicles entering or exiting the Corso Chevy Chase site to right turns in and out of the site. The median break closures would be designed to accommodate emergency vehicles only. The traffic patterns on Taylor Street would not be changed from current/existing conditions. The intersection would be controlled by stop signs at the Corso Chevy Chase exit drive and on Taylor Street. Pedestrian circulation would generally remain in its current location.

Option B would close the median along Connecticut Avenue at the entrance and exit of the Corso Chevy Chase site and close the median opening that serves Taylor Street. This option would limit all vehicles entering or exiting the Corso Chevy Chase site to right turns in and out of the site. Similarly, all vehicles entering or exiting Taylor Street would be limited to right turns into and out of Taylor Street and the median break closures would be designed to accommodate emergency vehicles only. The intersection would be controlled by stop signs at the Corso Chevy Chase exit drive and on Taylor Street. Pedestrian circulation would generally remain in its current location.

Option C would close the median on Connecticut Avenue at the southern exit of the Corso Chevy Chase site permitting right turn out only from this access point. The northern entrance into the Corso Chevy Chase site will remain unchanged, southbound right turns and northbound left turns from Connecticut Avenue would be permitted. Taylor Street traffic flow would also remain the same except a new traffic signal would be installed that controls the Corso Chevy Chase inbound traffic as well as the traffic to and from Taylor Street. The existing Connecticut Avenue crosswalk

located at the south edge of Taylor Street would be relocated to the north, at the Corso Chevy Chase northern entrance. New signalization would also provide for pedestrian traffic control (push button, countdown pedestrian signals, etc.).

Currently, there is a bus stop located on the north side of the Corso Chevy Chase side of Connecticut Avenue, and it will be shifted to align with the new sidewalk network in all options.

Analysis of Intersection Options

Pro/Cons:

- **Option A**
  Pro: Reduces vehicle conflicts at the Corso Chevy Chase northern site access points.
  Con: Increases the number of U-turns for northbound Connecticut Avenue site traffic. No signal-controlled pedestrian crossing.

- **Option B**
  Pro: Reduces vehicle conflicts at the Corso Chevy Chase northern site access point and Taylor Street.
  Con: Increases the number of U-turns for northbound and Southbound Connecticut Avenue site traffic and Taylor Street, respectively. Changes traffic patterns in the Chevy Chase neighborhood on east side of Connecticut Avenue. No signal-controlled pedestrian crossing.

- **Option C**
  Pro: Signal installation protects vehicle conflict movements at the Corso Chevy Chase northern site access point and Taylor Street. Provides signal protected pedestrian crossing, relocates the pedestrian crossing and bus stop location to the north away from the majority of turning vehicles.
  Con: Increases the amount of vehicle delay at the north site access and Taylor Street.

Conclusion

Based on the data, analysis, and the design options presented in this report, intersection layout Option C with signalization and relocated crosswalk provides the best and safest option to improve pedestrian and vehicular movement and safety at the intersection of Taylor Street, Corso Chevy Chase, and Connecticut Avenue. Signalization would not change the current turning movements allowed at either Taylor Street or at the Corso Chevy Chase site entrance on Connecticut Avenue, but would enhance traffic and pedestrian safety at this location.

Attached Figures and Exhibits
Figure 1: Intersection Study Area
Figure 2: Existing and Future Traffic Volumes
Option A: Site Entrances Median Closures
Option B: Site Entrances and Taylor Street Median Closures
Option C: South Entrance Median Closure and Signal

Appendix:

A. *Staff Schedules*
B. *Traffic Counts - Peak and 13 hour*
C. *HCM Intersection Analysis Worksheets*
D. *Connecticut Avenue at Taylor Street Traffic Signal Warrant Analysis*

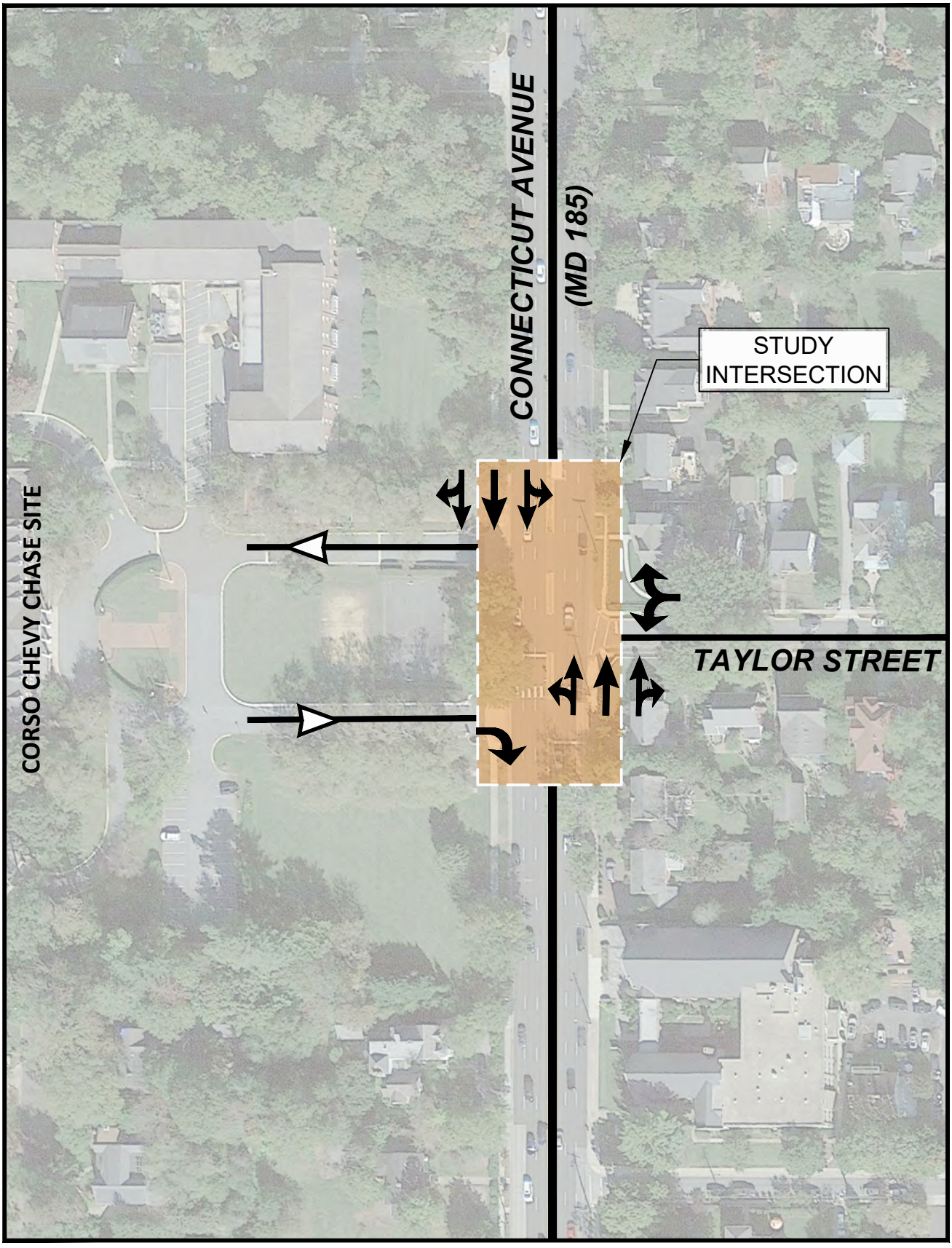

Figure 1
Connecticut Avenue at Taylor Street
Study Intersection

NORTH
Corso Chevy Chase
Town of Chevy Chase, MD

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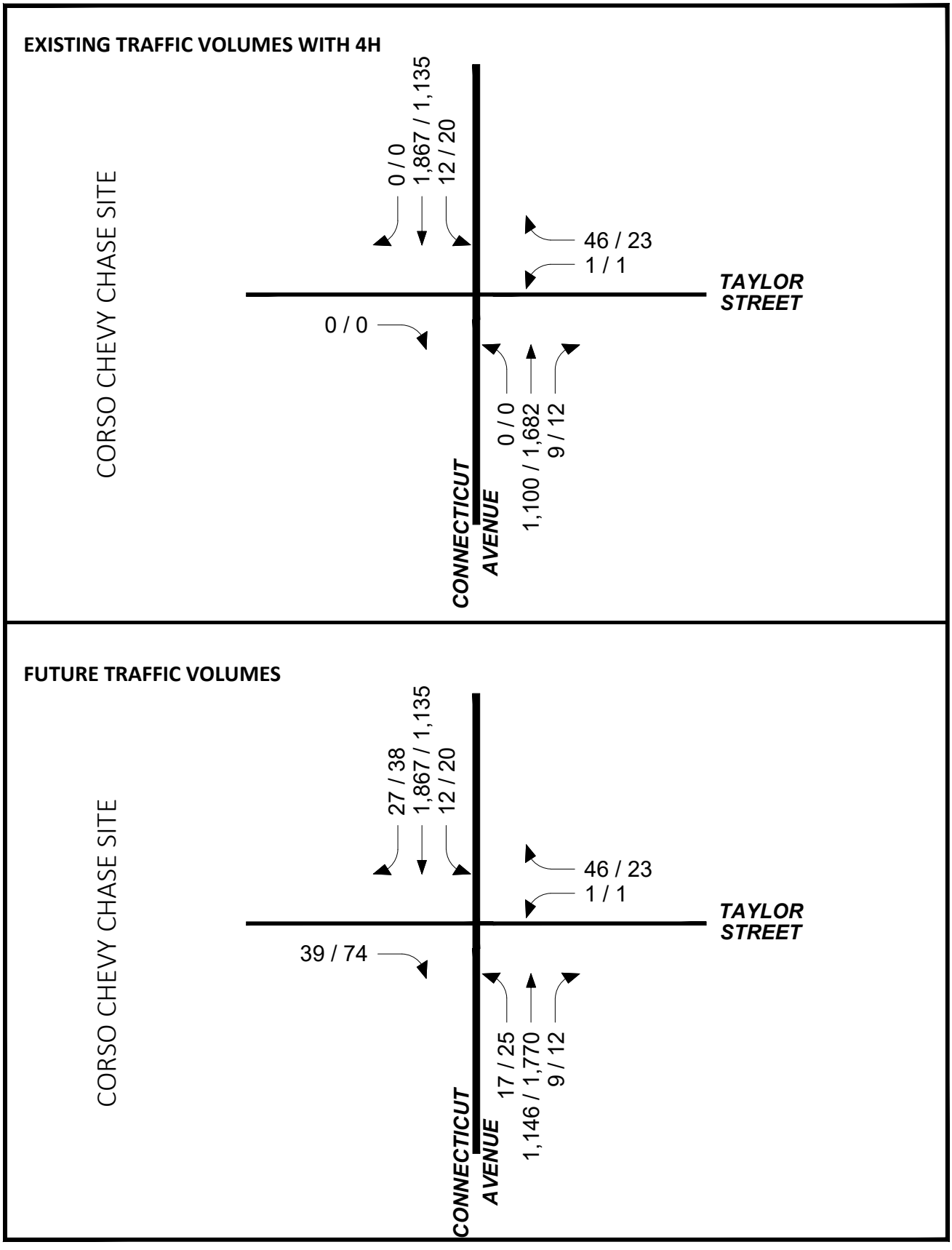


Figure 2
Connecticut Avenue at Taylor Street
Existing and Future Traffic Volumes

Corso Chevy Chase
Town of Chevy Chase, MD

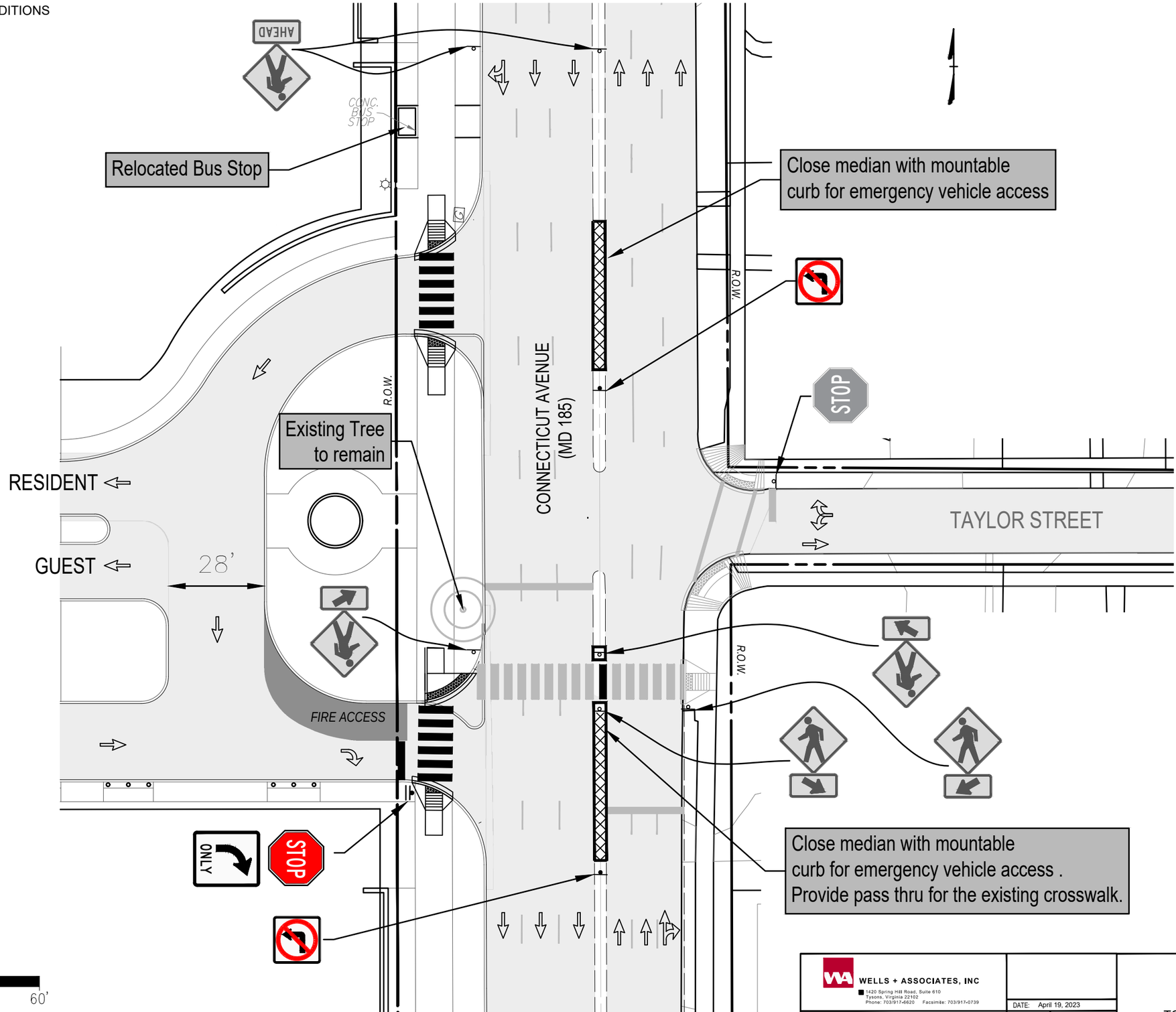
LEGEND FOR PROPOSED CONDITIONS

SIGN	DESCRIPTION
STOP	STOP
ONLY	RIGHT TURN ONLY
	NO LEFT TURN
	CROSSWALK
	STOP BAR
	CURB RAMP
	SIGN & POST

TRAFFIC FLOW AND MOVEMENTS

LEGEND FOR EXISTING CONDITIONS

SIGN	DESCRIPTION
STOP	STOP
AHEAD	AHEAD
	DOWNWARD DIAGONAL ARROW (PLAQUE)
	DOWNWARD DIAGONAL ARROW (PLAQUE)
	PEDESTRIAN
	CROSSWALK
	CURB RAMP
	STOP BAR
	SIGN & POST



SCALE
0 30' 60'
Scale: 1" =30'

OPTION A

WELLS + ASSOCIATES, INC
1420 Spring Hill Road, Suite 610
Tysons, Virginia 22102
Phone: 703/917-6620 Facsimile: 703/917-0739

DRAWN BY: HMP DESIGNED BY: CT CHECKED BY: CT
DATE: April 19, 2023
FILE: 8736A SHEET: 1

CONCEPT LAYOUT
CORSO CHEVY CHASE
AT CONNECTICUT AVENUE
TOWN OF CHEVY CHASE, MARYLAND

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LEGEND FOR PROPOSED CONDITIONS

SIGN	DESCRIPTION
STOP	STOP
RIGHT TURN ONLY	RIGHT TURN ONLY
	NO LEFT TURN
	CROSSWALK
	STOP BAR
	CURB RAMP
	SIGN & POST

TRAFFIC FLOW AND MOVEMENTS

LEGEND FOR EXISTING CONDITIONS

SIGN	DESCRIPTION
STOP	STOP
AHEAD	AHEAD
	DOWNWARD DIAGONAL ARROW (PLAQUE)
	DOWNWARD DIAGONAL ARROW (PLAQUE)
	PEDESTRIAN
	CROSSWALK
	CURB RAMP
	STOP BAR
	SIGN & POST

AHEAD

CONC. BUS STOP

Relocated Bus Stop

Close median with mountable curb for emergency vehicle access

Close median opening

STOP

ONLY

Existing Tree to remain

R.O.W.

CONNECTICUT AVENUE (MD 185)

R.O.W.

TAYLOR STREET

RESIDENT

GUEST

28'

FIRE ACCESS

ONLY

STOP

Close median with mountable curb for emergency vehicle access . Provide pass thru for the existing crosswalk.

SCALE

0 30' 60'

Scale: 1" =30'

OPTION B

WELLS + ASSOCIATES, INC
1420 Spring Hill Road, Suite 610
Tysons, Virginia 22102
Phone: 703/917-6620 Facsimile: 703/917-0739

DRAWN BY: HMP DESIGNED BY: CT CHECKED BY: CT

DATE: April 19, 2023

FILE: 8736A SHEET: 1

CONCEPT LAYOUT
CORSO CHEVY CHASE
AT CONNECTICUT AVENUE
TOWN OF CHEVY CHASE, MARYLAND

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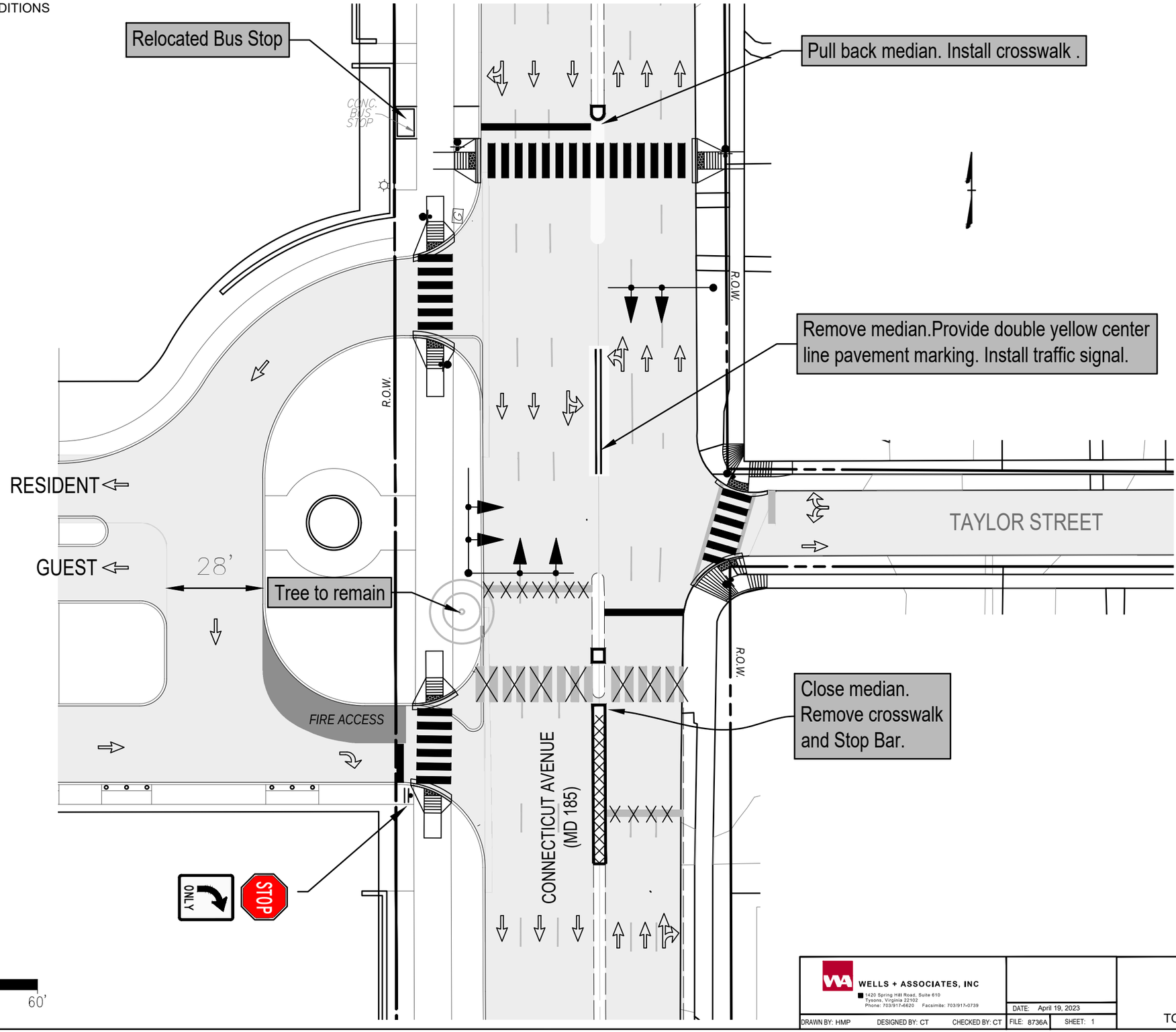
LEGEND FOR PROPOSED CONDITIONS

SIGN	DESCRIPTION
STOP	STOP
ONLY	RIGHT TURN ONLY
	NO LEFT TURN
	CROSSWALK
	STOP BAR
	CURB RAMP
	SIGN & POST
	MAST ARM & POLE
	VEHICLE SIGNAL HEAD
	PEDESTRIAN POLE WITH PUSH BUTTON

TRAFFIC FLOW AND MOVEMENTS

LEGEND FOR EXISTING CONDITIONS

	CROSSWALK
	CURB RAMP
	STOP BAR



SCALE

0 30' 60'

Scale: 1" =30'

OPTION C

CONCEPT LAYOUT

CORSO CHEVY CHASE
AT CONNECTICUT AVENUE
TOWN OF CHEVY CHASE, MARYLAND

WELLS + ASSOCIATES, INC
1420 Spring Hill Road, Suite 610
Tysons, Virginia 22102
Phone: 703/917-6620 Facsimile: 703/917-0739

DRAWN BY: HMP DESIGNED BY: CT CHECKED BY: CT

DATE: April 19, 2023

FILE: 8736A SHEET: 1

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APPENDIX A

Anticipated
Staff Schedules

Department	Shift	Number of Staff	AM Peak Period (3Hrs)			PM Peak Period (3Hrs)		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Kitchen and Food Services	5:00 am - 1:00 pm	25			0			0
	1:00 pm - 9:00 pm	14			0			0
Nursing	6:00 am - 2:00 pm	14			0			0
	2:00 pm - 10:00 pm	14			0			0
	10:00 pm - 6:00 am	9			0			0
Front Desk and Support	7:00 am - 4:00 pm	5	5	0	5	0	5	0
	4:00 pm - 9:00 pm	4	0	0	0	4	0	0
	9:00 pm - 7:00 am	4	0	4	4	0	0	0
Security	7:00 am - 7:00 pm	1	1	1	2	1	1	2
	7:00 pm - 7:00 am	1	1	1	2	1	1	2
Housekeeping	7:00 am - 2:00 pm	4	4	0	4	0	0	0
	11:00 pm - 7:00 am	4	0	4	4	0	0	0
Activities	9:00 am - 5:00 pm	6	6	0	6	0	6	6
Management	9:00 am - 5:00 pm	15	15	0	15	0	15	15
	Total	120			42			25

AM Peak Period (MNCPPC- three hours) 6:30 to 9:30 AM

PM Peak Period (MNCPPC- three hours) 4:00 to 7:00 PM

Intersection peak hour occurs 7:30- 8:30 AM and 4:45-5:45 PM

APPENDIX B
Traffic Counts – Peak and 13 Hour

Prepared by National Data & Surveying Services

Connecticut Ave & Taylor St

Peak Hour Turning Movement Count

ID: 23-280003-001
City: Chevy Chase

Day: Tuesday
Date: 1/31/2023

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	11:45 AM - 12:45 PM
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	6:00 AM - 10:00 AM
NOON	10:00 AM - 02:00 PM
PM	2:00 PM - 08:00 PM

CONTROL: 1-Way Stop(WB)

	AM	NOON	PM
TEV	3056	2345	2876
PHF	0.98	0.96	0.95

SOUTHBOUND (Connecticut Ave)

	Left	Thru	Right	U-Turn		
AM	0	2003	16	0	1027	AM
NOON	0	1043	13	1	1276	NOON
PM	0	1113	23	1	1728	PM
	0	3	0	0		

NORTHBOUND (Connecticut Ave)

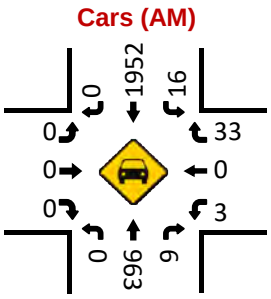
	Left	Thru	Right	U-Turn		
PM	1115	1	0	1704	10	PM
NOON	1045	0	0	1250	11	NOON
AM	2006	0	0	994	7	AM
	0	0	3	0		

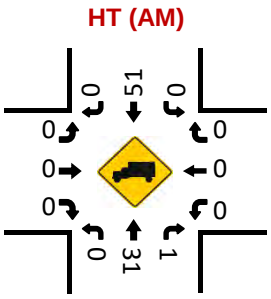
EASTBOUND (Taylor St)

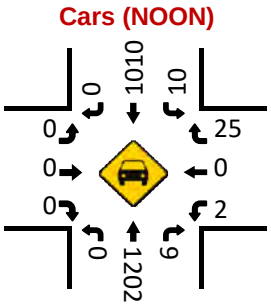
	AM	NOON	PM
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	AM	NOON	PM

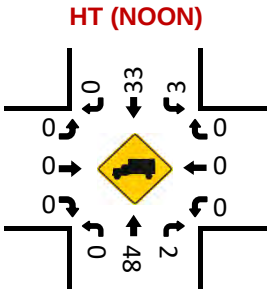
WESTBOUND (Taylor St)

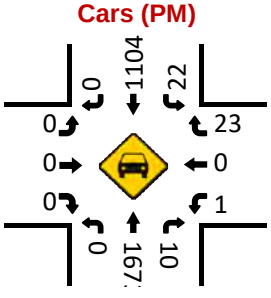
	PM	NOON	AM
	23	25	33
	0	0	0
	1	2	3
	0	0	0
	33	24	23
	PM	NOON	AM

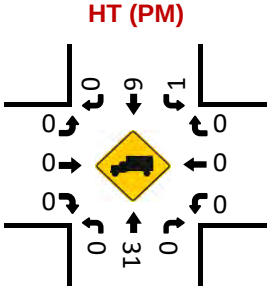


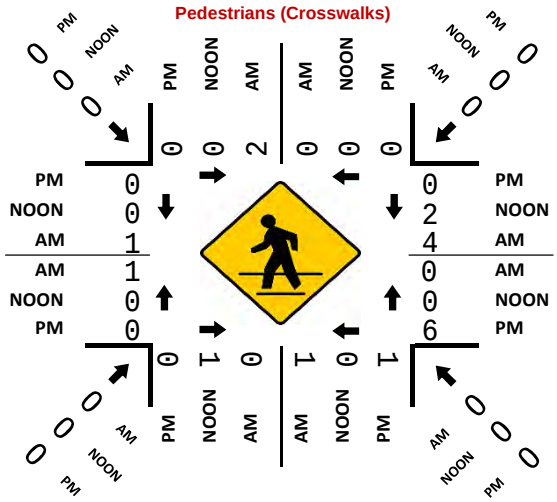












National Data & Surveying Services Intersection Turning Movement Count

Location: Connecticut Ave & Taylor St
City: Chevy Chase
Control: 1-Way Stop(WB)

Project ID: 23-280003-001
Date: 1/31/2023

Data - Total

NS/EW Streets:	Connecticut Ave				Connecticut Ave				Taylor St				Taylor St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	62	0	0	2	244	0	0	0	0	0	0	0	0	1	0	309
6:15 AM	0	77	0	0	0	296	0	0	0	0	0	0	1	0	2	0	376
6:30 AM	0	107	1	0	0	358	0	0	0	0	0	0	0	0	3	0	469
6:45 AM	0	126	0	1	1	458	0	0	0	0	0	0	0	0	0	0	586
7:00 AM	0	191	0	0	2	462	0	0	0	0	0	0	0	0	2	0	657
7:15 AM	0	233	3	0	1	452	0	0	0	0	0	0	0	0	4	0	693
7:30 AM	0	235	3	0	2	533	0	0	0	0	0	0	0	0	8	0	781
7:45 AM	0	236	0	0	8	508	0	0	0	0	0	0	2	0	3	0	757
8:00 AM	0	253	2	0	2	497	0	0	0	0	0	0	0	0	10	0	764
8:15 AM	0	270	2	0	4	465	0	0	0	0	0	0	1	0	12	0	754
8:30 AM	0	289	3	0	5	456	0	1	0	0	0	0	0	0	13	0	767
8:45 AM	0	288	2	0	1	449	0	0	0	0	0	0	0	0	11	0	751
9:00 AM	0	292	1	0	5	402	0	1	0	0	0	0	1	0	17	0	719
9:15 AM	0	265	0	0	2	387	0	1	0	0	0	0	0	0	6	0	661
9:30 AM	0	211	0	0	3	436	0	0	0	0	0	0	1	0	4	0	655
9:45 AM	0	277	0	0	2	440	0	0	0	0	0	0	0	0	6	0	725
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3412	17	1	40	6843	0	3	0	0	0	0	6	0	102	0	10424
APPROACH %'s :	0.00%	99.48%	0.50%	0.03%	0.58%	99.38%	0.00%	0.04%					5.56%	0.00%	94.44%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	994	7	0	16	2003	0	0	0	0	0	0	3	0	33	0	3056
PEAK HR FACTOR :	0.000	0.920	0.583	0.000	0.500	0.939	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.688	0.000	0.978
		0.920				0.943								0.692			

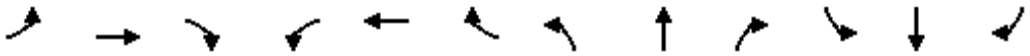
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	0	252	0	0	1	336	0	0	0	0	0	0	0	0	6	0	595
10:15 AM	0	262	0	0	3	299	0	0	0	0	0	0	1	0	9	0	574
10:30 AM	0	182	2	0	1	309	0	0	0	0	0	0	0	0	1	0	495
10:45 AM	0	209	1	0	0	281	0	0	0	0	0	0	0	0	2	0	493
11:00 AM	0	224	2	0	2	246	0	0	0	0	0	0	0	0	6	0	480
11:15 AM	0	276	3	1	2	280	0	0	0	0	0	0	0	0	7	0	569
11:30 AM	0	258	1	0	2	240	0	0	0	0	0	0	1	0	3	0	505
11:45 AM	0	306	4	0	4	283	0	1	0	0	0	0	0	0	5	0	603
12:00 PM	0	280	2	0	3	257	0	0	0	0	0	0	1	0	7	0	550
12:15 PM	0	318	1	0	2	252	0	0	0	0	0	0	1	0	5	0	579
12:30 PM	0	346	4	0	4	251	0	0	0	0	0	0	0	0	8	0	613
12:45 PM	0	267	3	0	4	259	0	0	0	0	0	0	1	0	6	0	540
1:00 PM	0	292	2	0	3	227	0	0	0	0	0	0	2	0	6	0	532
1:15 PM	0	346	1	0	1	236	0	0	0	0	0	0	0	0	8	0	592
1:30 PM	0	283	1	0	3	259	0	0	0	0	0	0	3	0	3	0	552
1:45 PM	0	335	2	0	0	220	0	0	0	0	0	0	3	0	4	0	564
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4436	29	1	35	4235	0	1	0	0	0	0	13	0	86	0	8836
APPROACH %'s :	0.00%	99.33%	0.65%	0.02%	0.82%	99.16%	0.00%	0.02%					13.13%	0.00%	86.87%	0.00%	
PEAK HR :	11:45 AM - 12:45 PM																TOTAL
PEAK HR VOL :	0	1250	11	0	13	1043	0	1	0	0	0	0	2	0	25	0	2345
PEAK HR FACTOR :	0.000	0.903	0.688	0.000	0.813	0.921	0.000	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.781	0.000	0.956
		0.901				0.918								0.844			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	0	334	0	0	2	251	0	1	0	0	0	0	0	0	8	0	596
2:15 PM	0	369	1	0	6	265	0	0	0	0	0	0	1	0	9	0	651
2:30 PM	0	370	1	0	5	293	0	2	0	0	0	0	2	0	14	0	687
2:45 PM	0	390	2	0	4	271	0	0	0	0	0	0	0	0	6	0	673
3:00 PM	0	435	3	0	0	262	0	0	0	0	0	0	1	0	5	0	706
3:15 PM	0	445	2	1	3	244	0	0	0	0	0	0	1	0	6	0	702
3:30 PM	0	419	2	0	4	263	0	0	0	0	0	0	1	0	4	0	693
3:45 PM	0	430	2	0	5	280	0	1	0	0	0	0	0	0	4	0	722
4:00 PM	0	385	1	0	4	245	0	1	0	0	0	0	0	0	4	0	640
4:15 PM	0	379	0	0	2	243	0	0	0	0	0	0	0	0	6	0	630
4:30 PM	0	422	1	0	6	253	0	1	0	0	0	0	0	0	6	0	689
4:45 PM	0	434	2	0	6	250	0	0	0	0	0	0	0	0	6	0	698
5:00 PM	0	450	2	0	4	290	0	0	0	0	0	0	1	0	9	0	756
5:15 PM	0	419	4	0	10	269	0	1	0	0	0	0	0	0	4	0	707
5:30 PM	0	401	2	1	3	304	0	0	0	0	0	0	0	0	4	0	715
5:45 PM	0	412	4	0	3	272	0	0	0	0	0	0	0	0	6	0	697
6:00 PM	0	395	3	0	4	261	0	0	0	0	0	0	2	0	5	0	670
6:15 PM	0	410	0	0	2	253	0	1	0	0	0	0	0	0	4	0	670
6:30 PM	0	405	2	0	0	266	0	0	0	0	0	0	0	0	2	0	675
6:45 PM	0	364	2	0	3	218	0	1	0	0	0	0	2	0	7	0	597
7:00 PM	0	327	2	0	2	199	0	0	0	0	0	0	1	0	5	0	536
7:15 PM	0	303	3	0	3	216	0	0	0	0	0	0	0	0	4	0	529
7:30 PM	0	309	0	0	3	197	0	0	0	0	0	0	0	0	10	0	519
7:45 PM	0	268	0	0	2	155	0	0	0	0	0	0	1	0	4	0	430
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	9275	41	2	86	6020	0	9	0	0	0	0	13	0	142	0	15588
APPROACH %'s :	0.00%	99.54%	0.44%	0.02%	1.41%	98.45%	0.00%	0.15%					8.39%	0.00%	91.61%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1704	10	1	23	1113	0	1	0	0	0	0	1	0	23	0	2876
PEAK HR FACTOR :	0.000	0.947	0.625	0.250	0.575	0.915	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.639	0.000	0.951
		0.949				0.926								0.600			

Existing Hourly Turning Movements Counts

Time Period 1 Hour	Southbound Connecticut Ave				Westbound Taylor Street				Northbound Connecticut Ave				Eastbound Corso Site Ent.				North & South	East & West	Total	Time Period
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total				
6:00-7:00	0	1,356	3	1,359	6	0	1	7	1	372	0	373	0	0	0	0	1,732	7	1,739	6:00-7:00
7:00-8:00	0	1,955	13	1,968	17	0	2	19	6	895	0	901	0	0	0	0	2,869	19	2,888	7:00-8:00
8:00-9:00	0	1,867	12	1,879	46	0	1	47	9	1,100	0	1,109	0	0	0	0	2,988	47	3,035	8:00-9:00
9:00-10:00	0	1,665	12	1,677	33	0	2	35	1	1,045	0	1,046	0	0	0	0	2,723	35	2,758	9:00-10:00
10:00-11:00	0	1,225	5	1,230	18	0	1	19	3	905	0	908	0	0	0	0	2,138	19	2,157	10:00-11:00
11:00-12:00	0	1,049	10	1,059	21	0	1	22	10	1,064	0	1,074	0	0	0	0	2,133	22	2,155	11:00-12:00
12:00-1:00	0	1,019	13	1,032	26	0	3	29	10	1,211	0	1,221	0	0	0	0	2,253	29	2,282	12:00-1:00
1:00-2:00	0	942	7	949	21	0	8	29	6	1,256	0	1,262	0	0	0	0	2,211	29	2,240	1:00-2:00
2:00-3:00	0	1,080	17	1,097	37	0	3	40	4	1,463	0	1,467	0	0	0	0	2,564	40	2,604	2:00-3:00
3:00-4:00	0	1,049	12	1,061	19	0	3	22	9	1,729	0	1,738	0	0	0	0	2,799	22	2,821	3:00-4:00
4:00-5:00	0	991	18	1,009	22	0	0	22	4	1,620	0	1,624	0	0	0	0	2,633	22	2,655	4:00-5:00
5:00-6:00	0	1,135	20	1,155	23	0	1	24	12	1,682	0	1,694	0	0	0	0	2,849	24	2,873	5:00-6:00
6:00-7:00	0	998	9	1,007	18	0	4	22	7	1,574	0	1,581	0	0	0	0	2,588	22	2,610	6:00-7:00

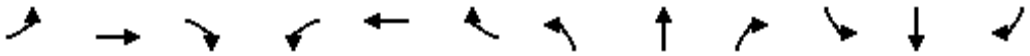
APPENDIX C
HCM Level of Service
Analysis Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	39	1	0	46	17	1146	9	12	1867	27
Future Volume (Veh/h)	0	0	39	1	0	46	17	1146	9	12	1867	27
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	42	1	0	50	18	1246	10	13	2029	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2571	3362	691	2031	3371	420	2058			1256		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2571	3362	691	2031	3371	420	2058			1256		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	89	96	100	91	93			98		
cM capacity (veh/h)	11	7	387	28	7	582	268			550		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	42	51	330	623	322	520	1014	536
Volume Left	0	1	18	0	0	13	0	0
Volume Right	42	50	0	0	10	0	0	29
cSH	387	418	268	1700	1700	550	1700	1700
Volume to Capacity	0.11	0.12	0.07	0.37	0.19	0.02	0.60	0.32
Queue Length 95th (ft)	9	10	5	0	0	2	0	0
Control Delay (s)	15.4	14.8	2.6	0.0	0.0	0.7	0.0	0.0
Lane LOS	C	B	A			A		
Approach Delay (s)	15.4	14.8	0.7			0.2		
Approach LOS	C	B						

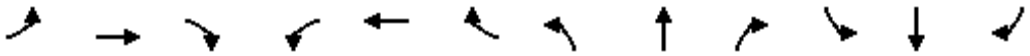
Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	54.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	74	1	0	23	25	1770	12	20	1135	38
Future Volume (Veh/h)	0	0	74	1	0	23	25	1770	12	20	1135	38
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	80	1	0	25	27	1924	13	22	1234	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2019	3290	432	2520	3304	648	1275			1937		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2019	3290	432	2520	3304	648	1275			1937		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	86	91	100	94	95			93		
cM capacity (veh/h)	29	8	572	11	7	413	540			300		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	80	26	508	962	494	330	617	350
Volume Left	0	1	27	0	0	22	0	0
Volume Right	80	25	0	0	13	0	0	41
cSH	572	172	540	1700	1700	300	1700	1700
Volume to Capacity	0.14	0.15	0.05	0.57	0.29	0.07	0.36	0.21
Queue Length 95th (ft)	12	13	4	0	0	6	0	0
Control Delay (s)	12.3	29.7	1.4	0.0	0.0	2.7	0.0	0.0
Lane LOS	B	D	A			A		
Approach Delay (s)	12.3	29.7	0.4			0.7		
Approach LOS	B	D						

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	62.0%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	39	1	0	46	17	1146	9	12	1867	27
Future Volume (vph)	0	0	39	1	0	46	17	1146	9	12	1867	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5		5.5			5.5			5.5	
Lane Util. Factor			1.00		1.00			0.91			0.91	
Frt			0.86		0.87			1.00			1.00	
Flt Protected			1.00		1.00			1.00			1.00	
Satd. Flow (prot)			1611		1615			5076			5073	
Flt Permitted			1.00		1.00			0.88			0.93	
Satd. Flow (perm)			1611		1615			4446			4704	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	42	1	0	50	18	1246	10	13	2029	29
RTOR Reduction (vph)	0	0	40	0	49	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	2	0	2	0	0	1274	0	0	2071	0
Turn Type			Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases					8		5	2		1	6	
Permitted Phases			4	8			2			6		
Actuated Green, G (s)			4.4		4.4			81.0			81.0	
Effective Green, g (s)			4.4		4.4			81.0			81.0	
Actuated g/C Ratio			0.05		0.05			0.84			0.84	
Clearance Time (s)			5.5		5.5			5.5			5.5	
Vehicle Extension (s)			3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)			73		73			3735			3952	
v/s Ratio Prot												
v/s Ratio Perm			0.00		0.00			0.29			c0.44	
v/c Ratio			0.03		0.03			0.34			0.52	
Uniform Delay, d1			44.0		44.0			1.7			2.2	
Progression Factor			1.00		1.00			1.00			1.00	
Incremental Delay, d2			0.1		0.2			0.1			0.1	
Delay (s)			44.1		44.1			1.8			2.3	
Level of Service			D		D			A			A	
Approach Delay (s)		44.1			44.1			1.8			2.3	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	74	1	0	23	25	1170	12	20	1135	38
Future Volume (vph)	0	0	74	1	0	23	25	1170	12	20	1135	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5		5.5			5.5			5.5	
Lane Util. Factor			1.00		1.00			0.91			0.91	
Frt			0.86		0.87			1.00			1.00	
Flt Protected			1.00		1.00			1.00			1.00	
Satd. Flow (prot)			1611		1618			5073			5057	
Flt Permitted			1.00		1.00			0.88			0.90	
Satd. Flow (perm)			1611		1618			4490			4539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	80	1	0	25	27	1272	13	22	1234	41
RTOR Reduction (vph)	0	0	76	0	25	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	4	0	1	0	0	1312	0	0	1296	0
Turn Type			Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases					8		5	2		1	6	
Permitted Phases			4	8			2			6		
Actuated Green, G (s)			4.4		4.4			80.1			80.1	
Effective Green, g (s)			4.4		4.4			80.1			80.1	
Actuated g/C Ratio			0.05		0.05			0.84			0.84	
Clearance Time (s)			5.5		5.5			5.5			5.5	
Vehicle Extension (s)			3.0		3.0			3.0			3.0	
Lane Grp Cap (vph)			74		74			3765			3807	
v/s Ratio Prot												
v/s Ratio Perm			c0.00		0.00			c0.29			0.29	
v/c Ratio			0.05		0.02			0.35			0.34	
Uniform Delay, d1			43.6		43.5			1.8			1.7	
Progression Factor			1.00		1.00			1.00			1.00	
Incremental Delay, d2			0.3		0.1			0.1			0.1	
Delay (s)			43.8		43.6			1.8			1.8	
Level of Service			D		D			A			A	
Approach Delay (s)		43.8			43.6			1.8			1.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX D
SIGNAL WARRANT STUDY

WELLS + ASSOCIATES

MEMORANDUM

July 14, 2023

7200 Wisconsin Avenue,
Suite 500,
Bethesda, MD 20814
301-448-1333
WellsandAssociates.com

Connecticut Avenue at Taylor Street
Traffic Signal Warrant Analysis

Corso Chevy Chase
Residential Care Facility

INTRODUCTION

The purpose of this Traffic Signal Warrant Study is to evaluate the need for a new traffic signal at Connecticut Avenue (MD 185) at Taylor Street/Corso Chevy Chase Residential Care Facility (Site) Entrance intersection. The study intersection is located in the Town of Chevy Chase, Maryland and shown on Figure 1.

Connecticut Avenue is a six-lane divided roadway with traffic signals located at East-West Highway (MD 410) to the north approximately 2,500-feet and Raymond Street to the south approximately 1,150-feet. The roadway is posted 30 miles per hour (mph).

Taylor Street is a two lane, undivided residential street. The Corso Chevy Chase project would reuse the existing one-lane entrances to the property on Connecticut Avenue.

EXISTING CONDITIONS

Existing 13-Hour Traffic Counts. Existing 13-hour traffic counts were completed on an average weekday (Tuesday, January 31, 2023) from 6:00 AM to 7:00 PM at the study intersection. The existing intersection traffic volumes are attached.

Traffic forecasts for 13-hours were developed for the Corso Chevy Chase Residential Care Facility approaches to the intersection. The forecasts are based on the development program that consists of 287 senior adult housing attached units, 190 assisted living beds, 30 memory care beds, and 5,000 gross square feet of convenience retail uses. Trips were developed using the latest edition of the Institute of Transportation Engineers (ITE), Trip Generation Manual average daily trips and diurnal rates. The resulting 13-hour total future traffic forecasts are shown attached for each use and were added to existing traffic volumes.

It should be noted that the total future traffic forecasts do not account for any reductions typically used with Maryland National Capital Park and Planning Commission (MNCPPC) Local Area Traffic Review (LATR) trip generation forecasts that consider vehicle, person, and other mode split trips. In addition, right-turn volume reductions were not used for this analysis based on shared lane usage from the minor street movements from the site and Taylor Street. Without the trip reductions noted, the signal warrant review represents a conservative analysis for the need for signal control.

TRAFFIC SIGNAL WARRANT ANALYSIS

Criteria. This traffic signal warrant study has been conducted in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition. The purpose of the study is to determine if a traffic signal is warranted under total future development traffic conditions at the study intersection.

The MUTCD lists nine (9) warrants that may indicate the need for, and appropriateness of, a new traffic signal. These nine (9) warrants are summarized below.

- Warrant 1 – Eight-Hour Vehicular Volume
  - Condition A – Minimum Vehicular Volume
  - Condition B – Interruption of Continuous Traffic
  - Condition C – Combination of Warrants
- Warrant 2 – Four-Hour Vehicular Volume
- Warrant 3 – Peak Hour
  - Condition A – Peak Hour Delay
  - Condition B – Peak Hour Volume
- Warrant 4 – Pedestrian Volume
  - Condition A – Peak Hour Volume
  - Condition B – Four-Hour Volume
- Warrant 5 – School Crossing
- Warrant 6 – Coordinated Signal System
- Warrant 7 – Crash Experience
- Warrant 8 – Roadway Network
- Warrant 9 – Intersection Near a Grade (Railroad) Crossing

The following warrants were evaluated and determined to be not applicable to this intersection analysis:

Warrant 3 – Peak Hour – This warrant is typically applied to facilities that attract or discharge large numbers of vehicles over a short period of time.

Warrant 4 – Pedestrian Volume – Pedestrian counts were fairly moderate at the existing uncontrolled crosswalk and therefore were not considered as they would not affect the warrant study. Pedestrian volume, however, is anticipated to increase should the crossing be a protected movement with a signal or other traffic control devise.

Warrant 5 – School Crossing – This warrant applies only to locations where there is an established school crossing. No established school crossing exists at this intersection.

Warrant 6 – Coordinated Signal System – This warrant applies only when progressive movement in a coordinated signal system is needed to control platooning. A traffic signal may increase or provide better platooning but in this case is not being considered.

Warrant 7 – Crash Experience – Crash data for a recent three (3) year period was reviewed but was not used as only one right angle correctable crash was shown. Five (5) correctable crashes within a one-year period are needed to trigger this warrant.

Warrant 8 – Roadway Network – This warrant applies only to the intersection of two major roadways and was not used for this analysis.

Warrant 9 – Intersection Near a Grade (Railroad) Crossing - This warrant is intended for use at a location where none of the other eight (8) warrants are met, but the intersection is in proximity to a railroad grade crossing.

It should be noted that one or more of the nine (9) warrants should be satisfied before a new traffic signal is considered for installation. However, satisfaction of a warrant does not in itself justify the need for a new signal. A new signal should improve the overall safety and/or operation of the intersection. For the purposes of this analysis, Warrant's 1 and 2 are the primary indicator of a traffic signal and are applicable for analysis based on available data.

Warrant Analysis. An evaluation of the MUTCD warrants guidelines using TEAPAC software was prepared based on forecasted 13-hour traffic volumes and roadway geometry. The resulting TEAPAC analysis worksheets are attached to this document and Table 1 provides a summary of the signal warrant evaluation.

Table 1

Connecticut Avenue at Taylor Street and Site Entrance

Traffic Signal Warrant Summary (1)

Warrant	Warrant Condition	Requirements	Initial Conditions	
			Analysis Results	Warrant Results
1A	8 - Hour Minimum Vehicular Volume	8 hours	-	Not Met
1B	8 - Hour Interruption of Continuous Traffic	8 hours	1	Not Met
1C	8 - Hour Combination of Warrants (80%)	8 hours	-/8	Not Met
2	4 - Hour Vehicular Volume	4 hours	1	Not Met
	Summary of MUTCD Traffic Signal Warrant Analysis(2)		**Not Met**	

Notes: (1) Warrant summary based on 2009 MUTCD Warrant Analysis using TEAPAC.
(1) Warrants 3 thru 9 were evaluated an determined not applicable to the warrant study.

The signal warrant analysis indicates that under total future project development traffic conditions for Corso Chevy Chase, the applicable volume warrants are ***not*** satisfied.

CONCLUSIONS

The signal warrant analysis completed for the Connecticut Avenue at Taylor Street/Site Entrance intersection indicates that a traffic signal is ***not*** warranted for the applicable volume warrants and a traffic signal is ***not*** recommended for installation at the study intersection.

Attached:

A. *Existing 13-hour Traffic Count – 60min*
B. *Corso Chevy Chase Project ADT Trip Generation*
C. *Senior Adult Housing 13-hour Trip Forecasts*
D. *Active Adult/Memory Care 13-hour Trip Forecasts*
E. *Retail 13-hour Trip Forecasts*
F. *Connecticut Avenue at Taylor Street/Corso Site Entrance Total Future 13-hour Trip Forecasts*
G. *Connecticut Avenue at Taylor Street/Corso Site Entrance Warrant Analysis (TEAPAC) Results*

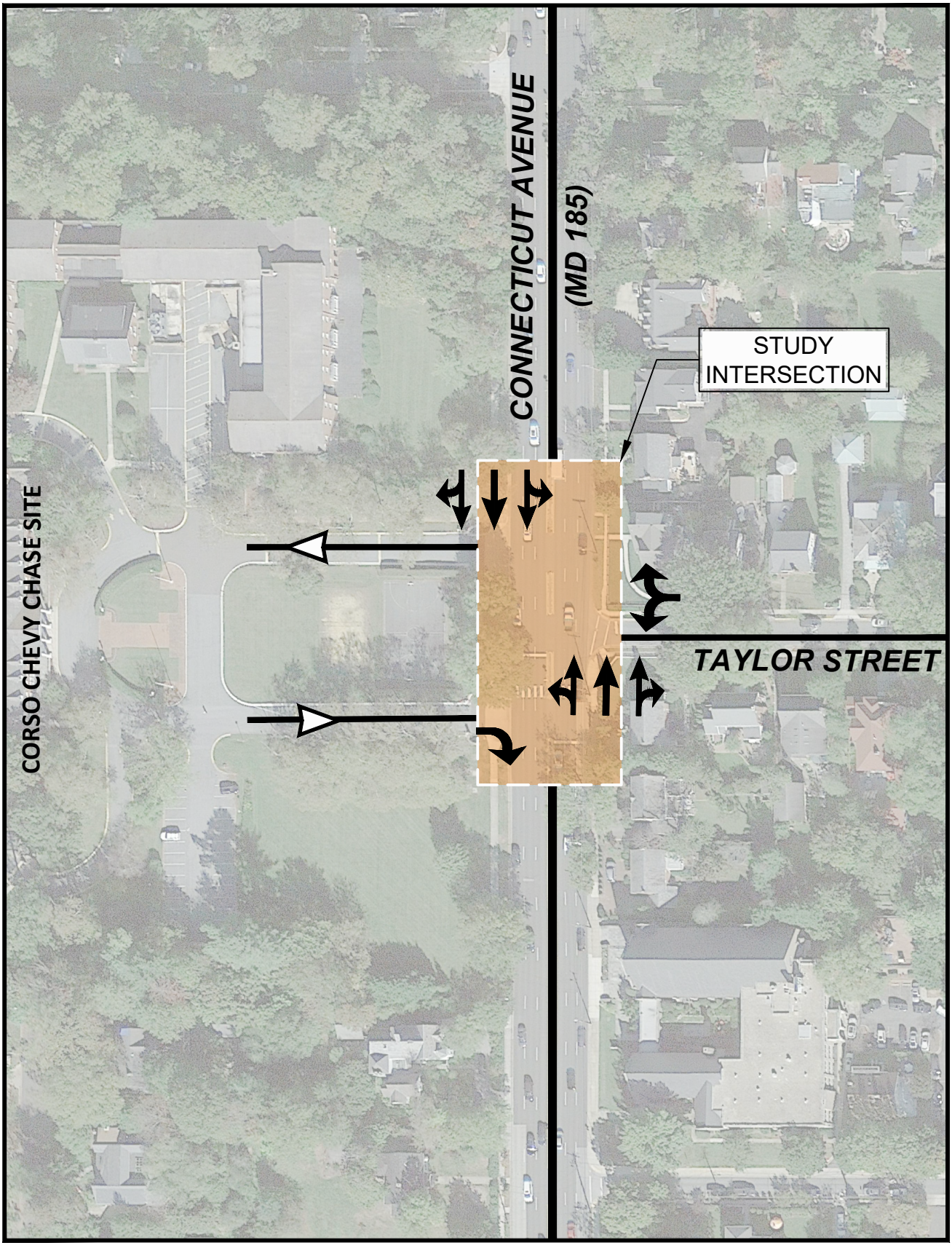


Figure 1
Connecticut Avenue at Taylor Street
Study Intersection

NORTH
Corso Chevy Chase
Town of Chevy Chase, MD

Attachment A

Prepared by National Data & Surveying Services

Connecticut Ave & Taylor St

Peak Hour Turning Movement Count

ID: 23-280003-001
City: Chevy Chase

Day: Tuesday
Date: 1/31/2023

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	11:45 AM - 12:45 PM
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	6:00 AM - 10:00 AM
NOON	10:00 AM - 02:00 PM
PM	2:00 PM - 08:00 PM

CONTROL

1-Way Stop(WB)

	AM	NOON	PM
TEV	3056	2345	2876
PHF	0.98	0.96	0.95

Connecticut Ave — SOUTHBOUND

AM	0	2003	16	0	1027	AM
NOON	0	1043	13	1	1276	NOON
PM	0	1113	23	1	1728	PM

Taylor St — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

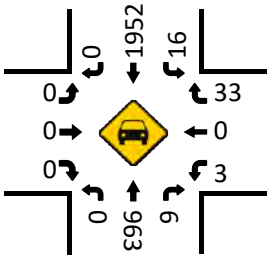
WESTBOUND — Taylor St

PM	NOON	AM	
23	25	33	0
0	0	0	1
1	2	3	0
0	0	0	0
33	24	23	
PM	NOON	AM	

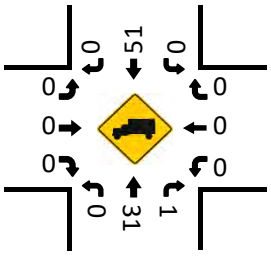
Connecticut Ave — NORTHBOUND

PM	1115	1	0	1704	10	PM
NOON	1045	0	0	1250	11	NOON
AM	2006	0	0	994	7	AM

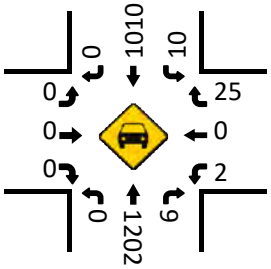
Cars (AM)



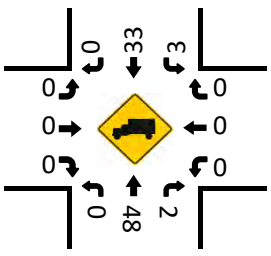
HT (AM)



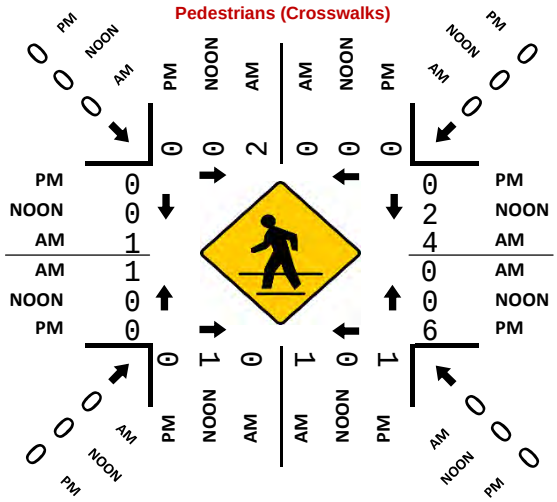
Cars (NOON)



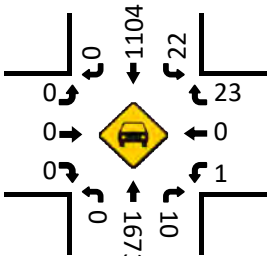
HT (NOON)



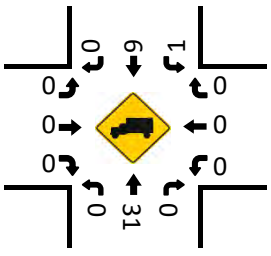
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Connecticut Ave & Taylor St
City: Chevy Chase
Control: 1-Way Stop(WB)

Project ID: 23-280003-001
Date: 1/31/2023

Data - Total

NS/EW Streets:	Connecticut Ave				Connecticut Ave				Taylor St				Taylor St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	62	0	0	2	244	0	0	0	0	0	0	0	0	1	0	309
6:15 AM	0	77	0	0	0	296	0	0	0	0	0	0	1	0	2	0	376
6:30 AM	0	107	1	0	0	358	0	0	0	0	0	0	0	0	3	0	469
6:45 AM	0	126	0	1	1	458	0	0	0	0	0	0	0	0	0	0	586
7:00 AM	0	191	0	0	2	462	0	0	0	0	0	0	0	0	2	0	657
7:15 AM	0	233	3	0	1	452	0	0	0	0	0	0	0	0	4	0	693
7:30 AM	0	235	3	0	2	533	0	0	0	0	0	0	0	0	8	0	781
7:45 AM	0	236	0	0	8	508	0	0	0	0	0	0	2	0	3	0	757
8:00 AM	0	253	2	0	2	497	0	0	0	0	0	0	0	0	10	0	764
8:15 AM	0	270	2	0	4	465	0	0	0	0	0	0	1	0	12	0	754
8:30 AM	0	289	3	0	5	456	0	1	0	0	0	0	0	0	13	0	767
8:45 AM	0	288	2	0	1	449	0	0	0	0	0	0	0	0	11	0	751
9:00 AM	0	292	1	0	5	402	0	1	0	0	0	0	1	0	17	0	719
9:15 AM	0	265	0	0	2	387	0	1	0	0	0	0	0	0	6	0	661
9:30 AM	0	211	0	0	3	436	0	0	0	0	0	0	1	0	4	0	655
9:45 AM	0	277	0	0	2	440	0	0	0	0	0	0	0	0	6	0	725
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	3412	17	1	40	6843	0	3	0	0	0	0	6	0	102	0	10424
APPROACH %'s :	0.00%	99.48%	0.50%	0.03%	0.58%	99.38%	0.00%	0.04%					5.56%	0.00%	94.44%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	994	7	0	16	2003	0	0	0	0	0	0	3	0	33	0	3056
PEAK HR FACTOR :	0.000	0.920	0.583	0.000	0.500	0.939	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.688	0.000	0.978
		0.920				0.943								0.692			

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	0	252	0	0	1	336	0	0	0	0	0	0	0	0	6	0	595
10:15 AM	0	262	0	0	3	299	0	0	0	0	0	0	1	0	9	0	574
10:30 AM	0	182	2	0	1	309	0	0	0	0	0	0	0	0	1	0	495
10:45 AM	0	209	1	0	0	281	0	0	0	0	0	0	0	0	2	0	493
11:00 AM	0	224	2	0	2	246	0	0	0	0	0	0	0	0	6	0	480
11:15 AM	0	276	3	1	2	280	0	0	0	0	0	0	0	0	7	0	569
11:30 AM	0	258	1	0	2	240	0	0	0	0	0	0	1	0	3	0	505
11:45 AM	0	306	4	0	4	283	0	1	0	0	0	0	0	0	5	0	603
12:00 PM	0	280	2	0	3	257	0	0	0	0	0	0	1	0	7	0	550
12:15 PM	0	318	1	0	2	252	0	0	0	0	0	0	1	0	5	0	579
12:30 PM	0	346	4	0	4	251	0	0	0	0	0	0	0	0	8	0	613
12:45 PM	0	267	3	0	4	259	0	0	0	0	0	0	1	0	6	0	540
1:00 PM	0	292	2	0	3	227	0	0	0	0	0	0	2	0	6	0	532
1:15 PM	0	346	1	0	1	236	0	0	0	0	0	0	0	0	8	0	592
1:30 PM	0	283	1	0	3	259	0	0	0	0	0	0	3	0	3	0	552
1:45 PM	0	335	2	0	0	220	0	0	0	0	0	0	3	0	4	0	564
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	4436	29	1	35	4235	0	1	0	0	0	0	13	0	86	0	8836
APPROACH %'s :	0.00%	99.33%	0.65%	0.02%	0.82%	99.16%	0.00%	0.02%					13.13%	0.00%	86.87%	0.00%	
PEAK HR :	11:45 AM - 12:45 PM																TOTAL
PEAK HR VOL :	0	1250	11	0	13	1043	0	1	0	0	0	0	2	0	25	0	2345
PEAK HR FACTOR :	0.000	0.903	0.688	0.000	0.813	0.921	0.000	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.781	0.000	0.956
		0.901				0.918								0.844			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	0	334	0	0	2	251	0	1	0	0	0	0	0	0	8	0	596
2:15 PM	0	369	1	0	6	265	0	0	0	0	0	0	1	0	9	0	651
2:30 PM	0	370	1	0	5	293	0	2	0	0	0	0	2	0	14	0	687
2:45 PM	0	390	2	0	4	271	0	0	0	0	0	0	0	0	6	0	673
3:00 PM	0	435	3	0	0	262	0	0	0	0	0	0	1	0	5	0	706
3:15 PM	0	445	2	1	3	244	0	0	0	0	0	0	1	0	6	0	702
3:30 PM	0	419	2	0	4	263	0	0	0	0	0	0	1	0	4	0	693
3:45 PM	0	430	2	0	5	280	0	1	0	0	0	0	0	0	4	0	722
4:00 PM	0	385	1	0	4	245	0	1	0	0	0	0	0	0	4	0	640
4:15 PM	0	379	0	0	2	243	0	0	0	0	0	0	0	0	6	0	630
4:30 PM	0	422	1	0	6	253	0	1	0	0	0	0	0	0	6	0	689
4:45 PM	0	434	2	0	6	250	0	0	0	0	0	0	0	0	6	0	698
5:00 PM	0	450	2	0	4	290	0	0	0	0	0	0	1	0	9	0	756
5:15 PM	0	419	4	0	10	269	0	1	0	0	0	0	0	0	4	0	707
5:30 PM	0	401	2	1	3	304	0	0	0	0	0	0	0	0	4	0	715
5:45 PM	0	412	4	0	3	272	0	0	0	0	0	0	0	0	6	0	697
6:00 PM	0	395	3	0	4	261	0	0	0	0	0	0	2	0	5	0	670
6:15 PM	0	410	0	0	2	253	0	1	0	0	0	0	0	0	4	0	670
6:30 PM	0	405	2	0	0	266	0	0	0	0	0	0	0	0	2	0	675
6:45 PM	0	364	2	0	3	218	0	1	0	0	0	0	2	0	7	0	597
7:00 PM	0	327	2	0	2	199	0	0	0	0	0	0	1	0	5	0	536
7:15 PM	0	303	3	0	3	216	0	0	0	0	0	0	0	0	4	0	529
7:30 PM	0	309	0	0	3	197	0	0	0	0	0	0	0	0	10	0	519
7:45 PM	0	268	0	0	2	155	0	0	0	0	0	0	1	0	4	0	430
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	9275	41	2	86	6020	0	9	0	0	0	0	13	0	142	0	15588
APPROACH %'s :	0.00%	99.54%	0.44%	0.02%	1.41%	98.45%	0.00%	0.15%					8.39%	0.00%	91.61%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1704	10	1	23	1113	0	1	0	0	0	0	1	0	23	0	2876
PEAK HR FACTOR :	0.000	0.947	0.625	0.250	0.575	0.915	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.639	0.000	0.951
		0.949				0.926								0.600			

Existing Hourly Turning Movements Counts

Time Period 1 Hour	Southbound Connecticut Ave				Westbound Taylor Street				Northbound Connecticut Ave				Eastbound Corso Site Ent.				North & South	East & West	Total	Time Period
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total				
6:00-7:00	0	1,356	3	1,359	6	0	1	7	1	372	0	373	0	0	0	0	1,732	7	1,739	6:00-7:00
7:00-8:00	0	1,955	13	1,968	17	0	2	19	6	895	0	901	0	0	0	0	2,869	19	2,888	7:00-8:00
8:00-9:00	0	1,867	12	1,879	46	0	1	47	9	1,100	0	1,109	0	0	0	0	2,988	47	3,035	8:00-9:00
9:00-10:00	0	1,665	12	1,677	33	0	2	35	1	1,045	0	1,046	0	0	0	0	2,723	35	2,758	9:00-10:00
10:00-11:00	0	1,225	5	1,230	18	0	1	19	3	905	0	908	0	0	0	0	2,138	19	2,157	10:00-11:00
11:00-12:00	0	1,049	10	1,059	21	0	1	22	10	1,064	0	1,074	0	0	0	0	2,133	22	2,155	11:00-12:00
12:00-1:00	0	1,019	13	1,032	26	0	3	29	10	1,211	0	1,221	0	0	0	0	2,253	29	2,282	12:00-1:00
1:00-2:00	0	942	7	949	21	0	8	29	6	1,256	0	1,262	0	0	0	0	2,211	29	2,240	1:00-2:00
2:00-3:00	0	1,080	17	1,097	37	0	3	40	4	1,463	0	1,467	0	0	0	0	2,564	40	2,604	2:00-3:00
3:00-4:00	0	1,049	12	1,061	19	0	3	22	9	1,729	0	1,738	0	0	0	0	2,799	22	2,821	3:00-4:00
4:00-5:00	0	991	18	1,009	22	0	0	22	4	1,620	0	1,624	0	0	0	0	2,633	22	2,655	4:00-5:00
5:00-6:00	0	1,135	20	1,155	23	0	1	24	12	1,682	0	1,694	0	0	0	0	2,849	24	2,873	5:00-6:00
6:00-7:00	0	998	9	1,007	18	0	4	22	7	1,574	0	1,581	0	0	0	0	2,588	22	2,610	6:00-7:00

Attachment B

Corso Chevy Chase

Trip Generation [1]

Land Use	LUC	Amount	Unit	ITE Trip Generation						
				AM Peak Hour			PM Peak Hour			ADT
				In	Out	Total	In	Out	Total	
Proposed Uses										
Assisted Living/Memory care	254	220	Beds	24	16	40	21	32	53	572
Senior Adult Housing - Multifamily	252	287	DU	19	36	55	42	30	72	854
Strip Retail Plaza (<40k)	822	5,000	S.F.	7	5	12	17	16	33	441
			Total Trips	**50**	**57**	**107**	**80**	**78**	**158**	**1,867**

Notes:

(1) Trip Generation based on the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition.

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use
Source: ITE *Trip Generation Manual* , 10th Edition

Attachment C

Land Use Code	252
Setting	Senior Adult Housing
Time Period	Gen Urban/Suburban
Trip Type	Weekday
Units	287

	% of 24-Hour Traffic		ADT	854	Turning Movement Distributions											
					Southbound Connecticut Ave			Westbound Taylor St			Northbound Connecticut Ave			Eastbound Corso Site Ent		
					1	2	3	4	5	6	7	8	9	10	11	12
					Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Time	Entering	Exiting	Enter	Exit	60%							60%	40%	40%		
12-1 AM	0.3%	0.4%	1	2	1							1	0	1		
1-2 AM	0.2%	0.5%	1	2	1							1	0	1		
2-3 AM	0.2%	0.1%	1	0	1							0	0	0		
3-4 AM	0.1%	0.2%	0	1	0							1	0	0		
4-5 AM	0.2%	0.5%	1	2	1							1	0	1		
5-6 AM	0.9%	2.2%	4	9	2							5	2	4		
6-7 AM	1.3%	3.0%	6	13	4							8	2	5		
7-8 AM	2.1%	5.1%	9	22	5							13	4	9		
8-9 AM	3.9%	6.3%	17	27	10							16	7	11		
9-10 AM	4.7%	6.7%	20	29	12							17	8	12		
10-11 AM	6.4%	7.5%	27	32	16							19	11	13		
11-12 PM	6.8%	6.5%	29	28	17							17	12	11		
12-1 PM	8.5%	9.0%	36	38	22							23	14	15		
1-2 PM	7.7%	8.0%	33	34	20							20	13	14		
2-3 PM	9.1%	6.7%	39	29	23							17	16	12		
3-4 PM	8.7%	5.7%	37	24	22							14	15	10		
4-5 PM	8.3%	6.3%	35	27	21							16	14	11		
5-6 PM	7.3%	5.7%	31	24	19							14	12	10		
6-7 PM	6.3%	5.2%	27	22	16							13	11	9		
7-8 PM	5.8%	5.2%	25	22	15							13	10	9		
8-9 PM	4.8%	4.1%	20	18	12							11	8	7		
9-10 PM	3.1%	2.2%	13	9	8							5	5	4		
10-11 PM	2.5%	1.8%	11	8	7							5	4	3		
11-12 AM	1%	1.1%	3	5	2							3	1	2		
	100%	100%	426	427	257							253	169	174		

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Attachment D

Land Use Code	254
Setting	Assisted Living
Time Period	Gen Urban/Suburban
Trip Type	Weekday
Units	220

	% of 24-Hour Traffic		ADT	572	Turning Movement Distributions											
					Southbound Connecticut Ave			Westbound Taylor St			Northbound Connecticut Ave			Eastbound Corso Site Ent		
					1	2	3	4	5	6	7	8	9	10	11	12
					Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Time	Entering	Exiting	Enter	Exit	60%							60%	40%	40%		
12-1 AM	0.0%	0.0%	0	0	0							0	0	0		
1-2 AM	0.0%	0.0%	0	0	0							0	0	0		
2-3 AM	0.0%	0.0%	0	0	0							0	0	0		
3-4 AM	0.0%	0.0%	0	0	0							0	0	0		
4-5 AM	0.0%	0.0%	0	0	0							0	0	0		
5-6 AM	2.8%	2.5%	8	7	5							4	3	3		
6-7 AM	5.0%	1.9%	14	5	8							3	6	2		
7-8 AM	14.5%	4.1%	41	12	25							7	16	5		
8-9 AM	7.2%	3.1%	21	9	13							5	8	4		
9-10 AM	6.6%	6.9%	19	20	11							12	8	8		
10-11 AM	6.0%	7.0%	17	20	10							12	7	8		
11-12 PM	8.5%	8.2%	24	23	14							14	10	9		
12-1 PM	9.4%	10.3%	27	29	16							17	11	12		
1-2 PM	11.3%	6.9%	32	20	19							12	13	8		
2-3 PM	6.9%	9.1%	20	26	12							16	8	10		
3-4 PM	7.9%	7.9%	23	23	14							14	9	9		
4-5 PM	6.0%	11.6%	17	33	10							20	7	13		
5-6 PM	4.1%	10.1%	12	29	7							17	5	12		
6-7 PM	0.9%	6.3%	3	18	2							11	1	7		
7-8 PM	0.6%	0.9%	2	3	1							2	1	1		
8-9 PM	0.3%	0.0%	1	0	1							0	0	0		
9-10 PM	0.0%	0.3%	0	1	0							1	0	0		
10-11 PM	1.3%	0.3%	4	1	2							1	2	0		
11-12 AM	0.6%	2.5%	2	7	1							4	1	3		
	100%	100%	287	286	171							172	116	114		

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use

Source: ITE *Trip Generation Manual*, 10th Edition

Attachment E

Land Use Code	820/822
Land Use	Retail
Time Period	Weekday
Amount	5000 SF

	% of 24-Hour Traffic		ADT	442	Turning Movement Distributions											
					Southbound Connecticut Ave			Westbound Taylor St			Northbound Connecticut Ave			Eastbound Corso Site Ent		
					1	2	3	4	5	6	7	8	9	10	11	12
					Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
					60%							60%	40%	40%		
Time	Entering	Exiting	Enter	Exit												
12-1 AM	0.0%	0.3%	0	1	0							1	0	0		
1-2 AM	0.0%	0.2%	0	0	0							0	0	0		
2-3 AM	0.0%	0.0%	0	0	0							0	0	0		
3-4 AM	0.0%	0.0%	0	0	0							0	0	0		
4-5 AM	0.0%	0.0%	0	0	0							0	0	0		
5-6 AM	0.1%	0.1%	0	0	0							0	0	0		
6-7 AM	0.3%	0.2%	1	0	1							0	0	0		
7-8 AM	1.4%	0.9%	3	2	2							1	1	1		
8-9 AM	2.6%	1.5%	6	3	4							2	2	1		
9-10 AM	4.7%	2.5%	10	6	6							4	4	2		
10-11 AM	7.1%	4.1%	16	9	10							5	6	4		
11-12 PM	9.7%	6.8%	21	15	13							9	8	6		
12-1 PM	10.6%	9.4%	23	21	14							13	9	8		
1-2 PM	9.2%	9.5%	20	21	12							13	8	8		
2-3 PM	8.9%	9.2%	20	20	12							12	8	8		
3-4 PM	8.5%	9.0%	19	20	11							12	8	8		
4-5 PM	8.9%	9.4%	20	21	12							13	8	8		
5-6 PM	9.2%	9.4%	20	21	12							13	8	8		
6-7 PM	7.6%	8.5%	17	19	10							11	7	8		
7-8 PM	5.3%	6.9%	12	15	7							9	5	6		
8-9 PM	3.2%	5.6%	7	12	4							7	3	5		
9-10 PM	1.6%	4.3%	4	10	2							6	2	4		
10-11 PM	0.7%	1.5%	2	3	1							2	1	1		
11-12 AM	0.3%	0.7%	1	2	1							1	0	1		
	99.9%	100.0%	222	221	134							134	88	87		

Attachment F

Time Period 1 Hour	Future Hourly Turning Movement Forecasts																		Total	Time Period
	Southbound Connecticut Ave				Westbound Taylor Street				Northbound Connecticut Ave				Eastbound Corso Site Ent				North & South	East & West		
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total				
6:00-7:00	13	1,356	3	1,372	6	0	1	7	1	383	8	392	7	0	11	18	1,764	25	1,789	6:00-7:00
7:00-8:00	32	1,955	13	2,000	17	0	2	19	6	916	21	943	15	0	21	36	2,943	55	2,998	7:00-8:00
8:00-9:00	27	1,867	12	1,906	46	0	1	47	9	1,123	17	1,149	16	0	23	39	3,055	86	3,141	8:00-9:00
9:00-10:00	29	1,665	12	1,706	33	0	2	35	1	1,078	20	1,099	22	0	33	55	2,805	90	2,895	9:00-10:00
10:00-11:00	36	1,225	5	1,266	18	0	1	19	3	941	24	968	25	0	36	61	2,234	80	2,314	10:00-11:00
11:00-12:00	44	1,049	10	1,103	21	0	1	22	10	1,104	30	1,144	26	0	40	66	2,247	88	2,335	11:00-12:00
12:00-1:00	52	1,019	13	1,084	26	0	3	29	10	1,264	34	1,308	35	0	53	88	2,392	117	2,509	12:00-1:00
1:00-2:00	51	942	7	1,000	21	0	8	29	6	1,301	34	1,341	30	0	45	75	2,341	104	2,445	1:00-2:00
2:00-3:00	47	1,080	17	1,144	37	0	3	40	4	1,508	32	1,544	30	0	45	75	2,688	115	2,803	2:00-3:00
3:00-4:00	47	1,049	12	1,108	19	0	3	22	9	1,769	32	1,810	27	0	40	67	2,918	89	3,007	3:00-4:00
4:00-5:00	43	991	18	1,052	22	0	0	22	4	1,669	29	1,702	32	0	49	81	2,754	103	2,857	4:00-5:00
5:00-6:00	38	1,135	20	1,193	23	0	1	24	12	1,726	25	1,763	30	0	44	74	2,956	98	3,054	5:00-6:00
6:00-7:00	28	998	9	1,035	18	0	4	22	7	1,609	19	1,635	24	0	35	59	2,670	81	2,751	6:00-7:00

Attachment G

Corso Chevy Chase 07/08/23
Connecticut Ave at Taylor St and Site Ent 16:33:08

TEAPAC[Ver 9.50.02] - MUTCD Warrant Analysis

Conditions Used for Warrant Analysis	2009 MUTCD
Intersection # 1	
Major Street Direction	NorthSouth
Number of Lanes in North-South direction	3
Number of Lanes in East-West direction	1
Approach speed on major street is greater than 40 mph	No
Isolated community has population less than 10,000	No
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to improve conditions	Yes
Number of accidents correctable by a signal	0
Peak hour stop sign delay for worst minor approach (veh-hours)	0
Number of accidents correctable by a multi-way stop	0
Peak hour average delay for all minor approaches (sec/veh)	0

TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal

Warrant 1A Analysis - 8-Hour Minimum Vehicular Volume

Start Time	1200	1600	1300	1400	1700	1500	1100	1000	Req.
Minor Volume	88	81	75	75	74	67	66	61	150
Major Volume	2392	2754	2341	2688	2956	2918	2247	2234	600
Warrant Met?	No	No	No	No	No	No	No	No	8

Number of 1-hour periods meeting the warrant	0
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 1A IS NOT MET <<

Warrant 1B Analysis - 8-Hour Interruption of Continuous Traffic

Start Time	1200	1600	1300	1400	1700	1500	1100	1000	Req.
Minor Volume	88	81	75	75	74	67	66	61	75
Major Volume	2392	2754	2341	2688	2956	2918	2247	2234	900
Warrant Met?	Yes	Yes	Yes	Yes	No	No	No	No	8

Number of 1-hour periods meeting the warrant	4
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 1B IS NOT MET <<

TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal

Warrant 1A Analysis (80%) - 8-Hour Minimum Vehicular Volume

Start Time	1200	1600	1300	1400	1700	1500	1100	1000	Req.
Minor Volume	88	81	75	75	74	67	66	61	120
Major Volume	2392	2754	2341	2688	2956	2918	2247	2234	480
Warrant Met?	No	No	No	No	No	No	No	No	8

Number of 1-hour periods meeting the warrant 0

Warrant 1B Analysis (80%) - 8-Hour Interruption of Continuous Traf

Start Time	1200	1600	1300	1400	1700	1500	1100	1000	Req.
Minor Volume	88	81	75	75	74	67	66	61	60
Major Volume	2392	2754	2341	2688	2956	2918	2247	2234	720
Warrant Met?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8

Number of 1-hour periods meeting the warrant 8

Warrant 1C Analysis - 8-Hour Combination of Warrants

80% of Warrants 1A and 1B are met	No
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to reduce delays	Yes

>> WARRANT 1C IS NOT MET <<

Warrant 2 Analysis - 4-Hour Vehicular Volume

Start Time	1200	1600	1300	1400	1700	1500	1100	1000	Req.
Minor Volume	88	81	75	75	74	67	66	61	———
Minor Reqrmt	80	80	80	80	80	80	80	80	<--
Warrant Met?	Yes	Yes	No	No	No	No	No	No	4

Number of 1-hour periods meeting the warrant	2
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 2 IS NOT MET <<

TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal

Warrant 3A Analysis - Peak Hour Delay

Start Time	1200	1600	1300	1400	1700	1500	1100	1000	Req.
Minor Volume	88	81	75	75	74	67	66	61	100
Total Volume	2509	2857	2445	2803	3054	3007	2335	2314	800
Warrant Met?	No	No	No	No	No	No	No	No	1

Number of 1-hour periods meeting the warrant	0
Signal will not seriously disrupt progressive traffic flow	Yes
Delay for worst minor approach (must be at least 4 veh-hours)	0

>> WARRANT 3A IS NOT MET <<

Warrant 3B Analysis - Peak Hour Volume

Start Time	1200	1600	1300	1400	1700	1500	1100	1000	Req.
Minor Volume	88	81	75	75	74	67	66	61	———
Minor Reqrmt	100	100	100	100	100	100	100	100	<--
Warrant Met?	No	No	No	No	No	No	No	No	1

Number of 1-hour periods meeting the warrant	0
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 3B IS NOT MET <<

Warrant 7 Analysis - Crash Experience

80% of Warrant 1A or 1B is met	Yes
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to reduce accidents	Yes
Number of correctable accidents (must be 5 or more per year)	0

>> WARRANT 7 IS NOT MET <<

Summary of MUTCD Traffic Signal Warrant Analysis

Warrant 1A 8-Hour Minimum Vehicular Volume	NOT MET
Warrant 1B 8-Hour Interruption of Continuous Traffic	NOT MET
Warrant 1C 8-Hour Combination of Warrants	NOT MET
Warrant 2 4-Hour Vehicular Volume	NOT MET
Warrant 3A Peak Hour Delay	NOT MET
Warrant 3B Peak Hour Volume	NOT MET
Warrant 7 Crash Experience	NOT MET

>> Traffic Signal Warrant is NOT MET <<