CUT-THROUGH AND TRAFFIC CALMING/REDUCTION STUDY

TOWN OF CHEVY CHASE, MARYLAND

OCTOBER 2020

CLIENT:
Town of Chevy Chase
4301 Willow Lane
Chevy Chase, Maryland 20815

PREPARED BY:
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AMT Project File: 19-0574.001

CUT-THROUGH AND TRAFFIC CALMING/REDUCTION STUDY
EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This executive summary highlights the recommendations developed in coordination with the Town of Chevy Chase (Town) to address cut-through traffic and vehicle speeds within the Town.

A. Traffic Calming and Speeding

FINDINGS:

The Town's streets are generally narrow and do not support excessive speeding. The existing speed humps are installed on street segments where higher speeds would be expected and are functioning to slow vehicles on those streets. The speed study results do not support the implementation of additional physical traffic calming measures to slow vehicle speeds beyond the signing necessary to lower the Town-wide speed limit.

- For roadway segments located outside the vicinity of Chevy Chase Elementary School, the 85th percentile speeds* were shown to be under 25 MPH along all segments.
- For roadway segments located within the vicinity of Chevy Chase Elementary School, the 85th percentile speed* was shown to be above 15 MPH at all locations during the times when the 15 MPH limit applies.

  * *The 85th percentile speed is the speed at or below which 85 percent of the motorists drive on a given road when unaffected by slower traffic or poor weather. This is the speed that most motorists on that road consider safe and reasonable under ideal conditions. It is a good guideline for the appropriate speed limit for that road.*

Figure A provides the posted speeds, average speeds, and 85th percentile speeds along key streets as per the collected speed data. This figure also shows the locations of existing speed humps throughout the Town.

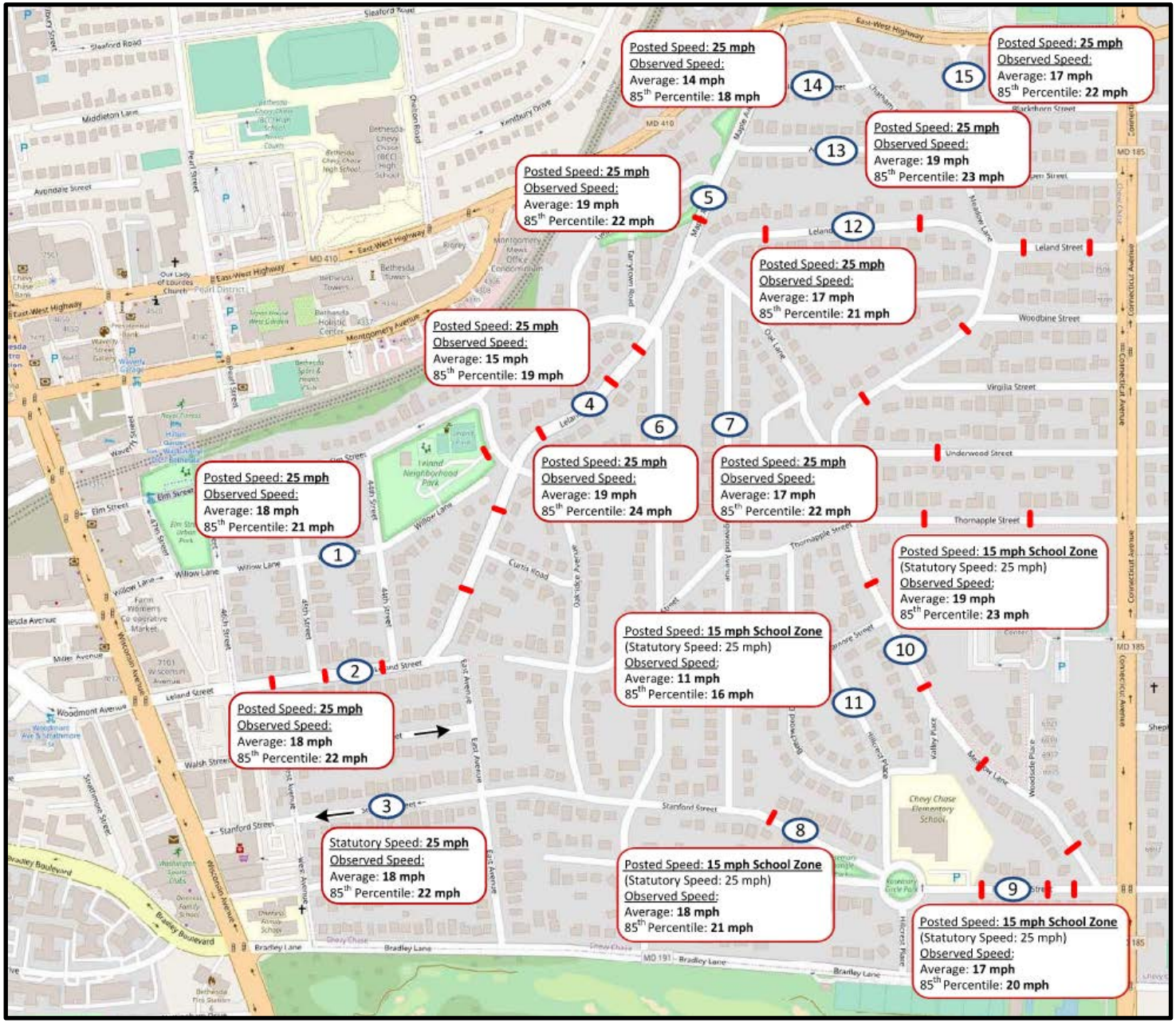
RECOMMENDATIONS & RATIONALE:

- Reduce the Town-wide speed limit to 20 MPH from 25 MPH on all streets except Pine Place and Ridgewood Terrace; which currently have lower posted speed limits.
  - On average, the 85th percentile speeds along the roadway segments included in the speed evaluation were closer to 20 MPH than 25 MPH. This supports a reduction in the town-wide speed limit as the 85th percentile speed is the speed that most motorists consider to be safe and reasonable.
  - Montgomery County's *Complete Streets Design Guide* designates the Target Speed for Neighborhood Streets to be 20 MPH.
  - 20 MPH signs would replace all existing 25 MPH signs within the Town. Supplemental signs to be installed, as needed, to cover all ingress points along Wisconsin Avenue, Bradley Lane, Connecticut Avenue and East-West Highway.
- Improve signing and increase police enforcement to achieve lower speeds during the weekday hours of 8 AM - 4 PM on streets in the vicinity of existing school zones (Chevy Chase Elementary School and the Oneness Family School). *Note: The Oneness School Zone signing was not in-place when the data was initially collected/analyzed.*
  - As speeds through school zones are predicated more on the 85% speeds and the geometrics of the particular street, recommending a reduction in School Zone speed limits below 15 MPH is not considered to be an effective mitigation strategy.
  - Existing signing assemblies around CCES include a School Zone Sign, a 15 MPH "Speed Limit" sign, and a "Fines Double in School Zone" sign. New signing would indicate that the posted speed varies based on specific days/hours and where the speed restrictions start and end along a given corridor.

Figure A: Existing Speed Data and Speed Hump Locations

All locations except #5 and #14 counted on:
1/14/2020 – Tuesday
1/15/2020 - Wednesday

#5 and #14 counted on:
1/22/2020 - Wednesday
1/23/2020 - Thursday



LEGEND:

- Existing Speed Hump
- One-Way

B. Mitigation of Cut-Through Routes by Corridor

Origin-Destination data was collected at key intersections within the Town of Chevy Chase to determine the recurring cut-through routes being used by motorists to travel between points on Wisconsin Avenue, East-West Highway, Connecticut Avenue and Bradley Lane. This data was collected over four (4) consecutive days (December 9th, 2019 to December 12th, 2019) during the weekday hours of 6AM to 7PM (i.e. 13-hours). For each the entry points captured from the origin-destination data, Table A summarizes the total 13-hour cut-through volume, the total 13-hour (6 AM to 7 PM) entering volume, and the current entry sign restrictions.

Table A: Comparison of Cut-Through Traffic to Overall Volume

Location	Total (6AM-7PM) Entering Volume	Total (6AM-7PM) Cut-Thru Volume	*Percent Cut-Thru vs. Total Volume*
Leland Street EB @ 46th Street	923	614	*67%*
East Avenue NB @ Bradley Lane	876	372	*42%*
Chatham Road SB @ East-West Hwy	179	48	*27%*
Stanford Street WB @ Hillcrest Place	353	159	*45%*
Meadow Lane NB @ Rosemary Street	425	98	*23%*

Following a detailed review of the origin-destination data, mitigation recommendations were developed to focus on the eleven (11) routes determined to have at least twenty-five (25) cut-through vehicles. Table B provides the each of the eleven (11) cut-through routes identified over the 13-hour period.

Specific mitigation measures, including modifying/adjusting entry restrictions, entry restriction hours, and directional designations, were chosen because they are relatively inexpensive, easy to implement, and easy to adjust, unlike geometric roadway reconfigurations, which are expensive, take time to implement, and are difficult and expensive to reverse. The Town should continue to coordinate with MDOT State Highway Administration (SHA) and Montgomery County Department of Transportation (MCDOT) to facilitate operational improvements along Wisconsin Avenue and Connecticut Avenue to reduce the likelihood for vehicle cut-through traffic within the Town. This may include adjustments to corridor signal timing/phasing to enhance network efficiency or the implementation of regional transportation improvements to address the long-term needs of the area. Maintaining a successful working relationship with MDOT SHA District 3 and MCDOT will be a key strategy in addressing the vehicle cut-through issues described in this report. *An updated traffic study may be authorized by the Town of Chevy Chase, at a future date, to assess any impacts resulting from the implementation of the proposed mitigation measures.*

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Table B: Summary of Cut-Through Routes

Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 1	Wisconsin Ave NB	Leland St	East-West Hwy EB	323	3-7 PM		Leland St EB @ 46th St Maple Ave NB @ Aspen St Leland St EB @ Oak Ln		
Route 2	Wisconsin Ave NB	Willow Ln [1]	East-West Hwy EB	202	3-7 PM		Leland St EB @ 46th St Maple Ave NB @ Aspen St Leland St EB @ Oak Ln		Lawton Rec. Center Parking Lot
		Leland St *(to Willow Ln)*	East-West Hwy EB	135					
Route 3	Wisconsin Ave SB	Leland St	Connecticut Ave SB	96	6-10 AM 3-7 PM		Leland St EB @ 46th St	Rosemary St EB @ Hillcrest Pl	
Route 4	Wisconsin Ave SB	Leland St	Bradley Ln EB	60	6-10 AM 3-7 PM		Leland St EB @ 46th St		
Route 5	Bradley Ln EB	East Ave *(to Leland St)*	East-West Hwy EB	114	3-7 PM	East Ave NB @ Bradley Ln	Maple Ave NB @ Aspen St		
Route 6	Bradley Ln EB	East Ave	Connecticut Ave NB	86	3-7 PM	East Ave NB @ Bradley Ln		Rosemary St EB @ Hillcrest Pl	
Route 7	Bradley Ln EB	East Ave *(to Meadow Ln)*	East-West Hwy EB	25	3-7 PM	East Ave NB @ Bradley Ln			
Route 8	Bradley Ln WB	East Ave	Wisconsin Ave NB	147	6-10 AM 3-7 PM	East Ave NB @ Bradley Ln			
Route 9	East-West Hwy WB	Chatham Rd	Wisconsin Ave SB	48	6-10 AM 3-7 PM	Chatham Rd SB @ E-W Hwy	Chatham Rd SB @ E-W Hwy		
Route 10	Connecticut Ave NB	Rosemary St	Wisconsin Ave NB	159	6-10 AM 3-7 PM	Stanford St WB @ Hillcrest Pl			
Route 11	Connecticut Ave NB	Rosemary St	East-West Hwy EB	98	3-7 PM				

[1] *Entering traffic volumes determined from Jane E. Lawton Community Recreation Center Traffic Study, dated August 2015*

The following summarizes the cut-through routes for each corridor:

CORRIDOR #1: WISCONSIN AVENUE

Route 1: To East West Highway – Entering from Leland Street and exiting via Maple Avenue, Chatham Road or Meadow Lane.

Route 2: To East West Highway - Entering from Leland Street and Willow Lane, traveling through the Lawton Center parking lot, and exiting via Maple Avenue, Chatham Road or Meadow Lane.

Route 3: To Connecticut Avenue - Entering from Leland Street and exiting via Rosemary Street.

Route 4: To Bradley Lane - Entering from Leland Street and exiting via East Avenue.

Figure B-1 shows the cut-through routes that enter by way of the Wisconsin Avenue corridor. Figure B-2 illustrates the proposed mitigation measures (i.e. access modifications) along with a narrative summarizing the recommended strategies, the supporting rational, and the anticipated impacts to users.

CORRIDOR #2: BRADLEY LANE

Route 5: To East-West Highway – Entering from East Avenue and exiting via Maple Avenue or Chatham Road.

Route 6: To Connecticut Avenue – Entering from East Avenue and exiting via Rosemary Street.

Route 7: To East West Highway – Entering from East Avenue and exiting via Meadow Lane.

Route 8: To Wisconsin Avenue – Entering from East Avenue and exiting via Leland Street or Stanford Street.

Figure C-1 shows each of the cut-through routes that enter by way of the Bradley Lane corridor. Figure C-2 illustrates the proposed mitigation measures (i.e. access modifications) along with a narrative summarizing the recommended strategies, the supporting rational, and the anticipated impacts to users.

CORRIDOR #3: EAST-WEST HIGHWAY

Route 9: To Wisconsin Avenue – Entering from Chatham Road and exiting via Leland Street.

Figure D-1 shows the cut-through routes that enter by way of the East-West Highway corridor. Figure D-2 illustrates the proposed mitigation measures (i.e. access modifications) along with a narrative summarizing the recommended strategies, the supporting rational, and the anticipated impacts to users.

CORRIDOR #4: CONNECTICUT AVENUE

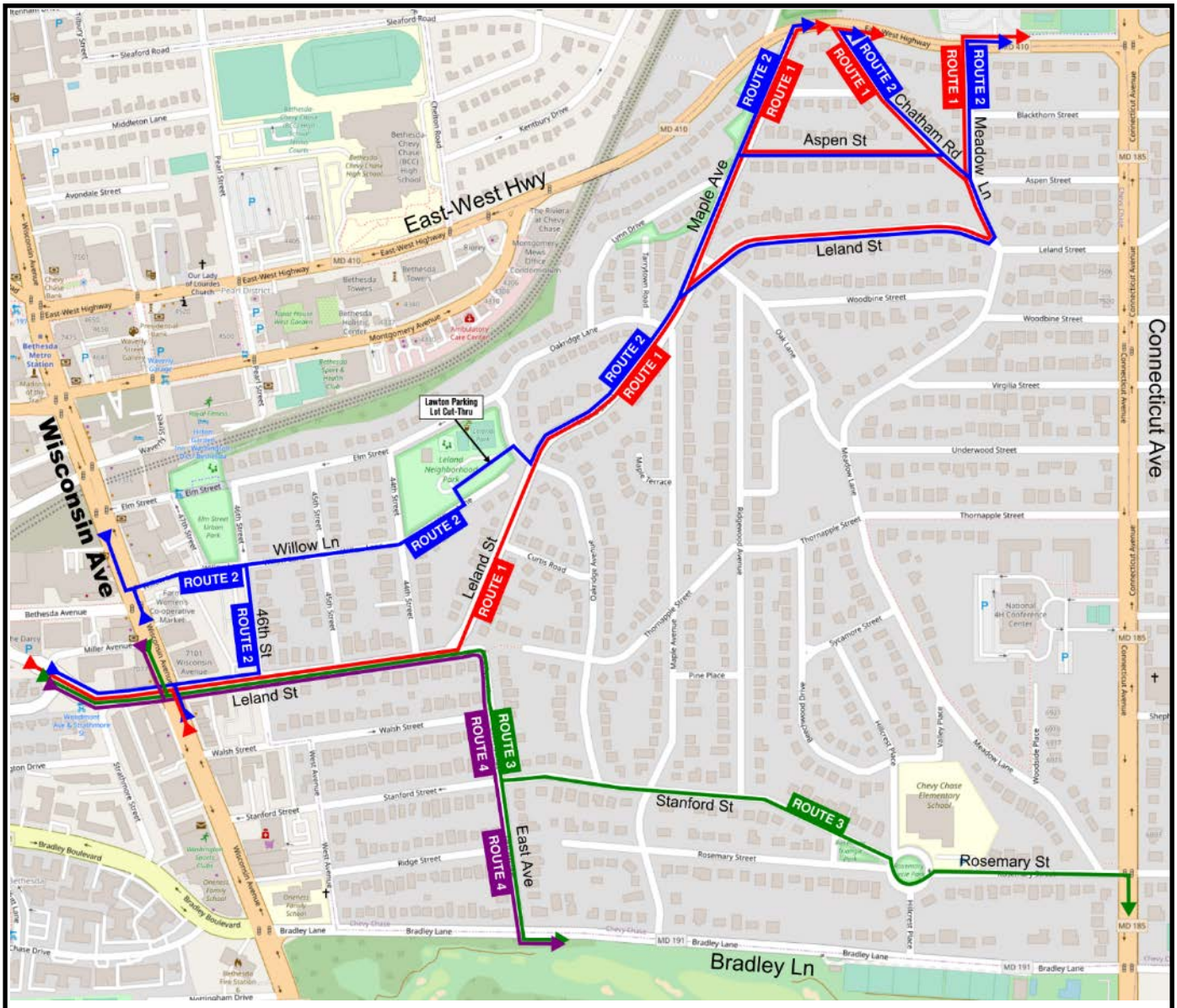
Route 10: To Wisconsin Avenue – Entering from Rosemary Street, exiting via Leland Street or Stanford Street.

Route 11: To East-West Highway – Entering from Rosemary Street and exiting via Maple Avenue, Chatham Road or Meadow Lane.

Figure E-1 shows the cut-through routes that enter by way of the Connecticut Avenue corridor. Figure E-2 illustrates the proposed mitigation measures (i.e. access modifications) along with a narrative summarizing the recommended strategies, the supporting rational, and the anticipated impacts to users.

Figure F presents the access modifications along all four (4) corridors for the AM and PM peak periods. Based on the 13-hour volumes shown on Table B, **Table C** summarizes the impacts of the proposed sign restrictions to cut-through traffic and non-cut-through traffic (i.e. Town residents) at each of the common entry points into the Town.

Figure B-1: Wisconsin Avenue - Corridor Cut-through Routes



Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 1	Wisconsin Ave NB	Leland St	East-West Hwy EB	323	3-7 PM		Leland St EB @ 46th St Maple Ave NB @ Aspen St Leland St EB @ Oak Ln		
Route 2	Wisconsin Ave NB	Willow Ln [1]	East-West Hwy EB	202	3-7 PM		Leland St EB @ 46th St Maple Ave NB @ Aspen St Leland St EB @ Oak Ln		Lawton Rec. Center Parking Lot
		Leland St *(to Willow Ln)*	East-West Hwy EB	135					
Route 3	Wisconsin Ave SB	Leland St	Connecticut Ave SB	96	6-10 AM 3-7 PM		Leland St EB @ 46th St	Rosemary St EB @ Hillcrest Pl	
Route 4	Wisconsin Ave SB	Leland St	Bradley Ln EB	60	6-10 AM 3-7 PM		Leland St EB @ 46th St		

[1] *Entering traffic volumes determined from Jane E. Lawton Community Recreation Center Traffic Study, dated August 2015*

Figure B-2: Wisconsin Avenue Corridor – Proposed Access Modifications

RECOMMENDED STRATEGIES:

- Expand AM/PM entry restriction hours (i.e. 7-10 AM, 3-7 PM) at Leland Street /46th Street to address the high volume of cut through traffic entering Leland Street between the hours of 7-10 AM, 3-4 PM and 6-7 PM.
- Routes AM/PM peak hour traffic (i.e. 7-10 AM, 3-7 PM) onto Willow Lane and around the Lawton Center via 44th Street, Elm Street and Oakridge Avenue.
- Access to Oakridge Avenue from the Lawton Center parking lot will be prohibited to prevent cut through traffic in the parking lot.
- Elm Street, between 44th Street and Oakridge Avenue, will be converted to a two-way designation to allow for routing around the Lawton Center.
- Oakridge Lane, between Elm Street/Oakridge Avenue and Maple Avenue, will be converted to one-way westbound to prevent eastbound cut-through traffic from continuing directly to Maple Avenue.
- "Do Not Enter" signs will be removed at Maple Avenue and at Leland Street to balance traffic flow and allow PM cut-through traffic (i.e. Routes 1 and 2) to exit onto East-West Highway via Maple Avenue.

RATIONALE:

- Capture the highest volume of cut through traffic entering Leland Street between the hours of 7-10 AM, 3-4 PM and 6-7 PM.
- Restrictive signing around Lawton Center provides more circuitous route and increases public safety by preventing cut through traffic in the Lawton Center parking lot.
- Willow Lane has no confronting homes between 46th Street and 44th Street, thereby reducing disturbances to residents.
- Maple Avenue has fewer confronting homes, has additional width (i.e. approx. 28' versus approx. 22'), and offers better sight lines than Aspen Street/Chatham Road/Meadow Lane.

IMPACTS:

- More traffic on Willow Lane (between 44th and 46th), but Willow Lane has no confronting homes.
- More traffic on 44th Street (north of Willow), Elm Street (east of 44th) and Oakridge Avenue (north of Leland), but these streets have sufficient width (i.e. approx. 25') with confronting homes on one side only.
- More traffic on Maple Avenue (north of Aspen), but roadway geometrics better accommodates traffic.

HIGHLIGHTS:

- The expansion of the entry restriction at Leland Street/46th Street will address the cut through traffic for *Routes 1, 3 and 4* from 7-10 AM and 3-7 PM.
- Modifications to access via the Lawton Center Parking Lot will improve safety and increase travel time for vehicles using cut-through *Route 2*. Modifications to access at Aspen Street will reduce cut-through traffic on Aspen/Chatham/Meadow.

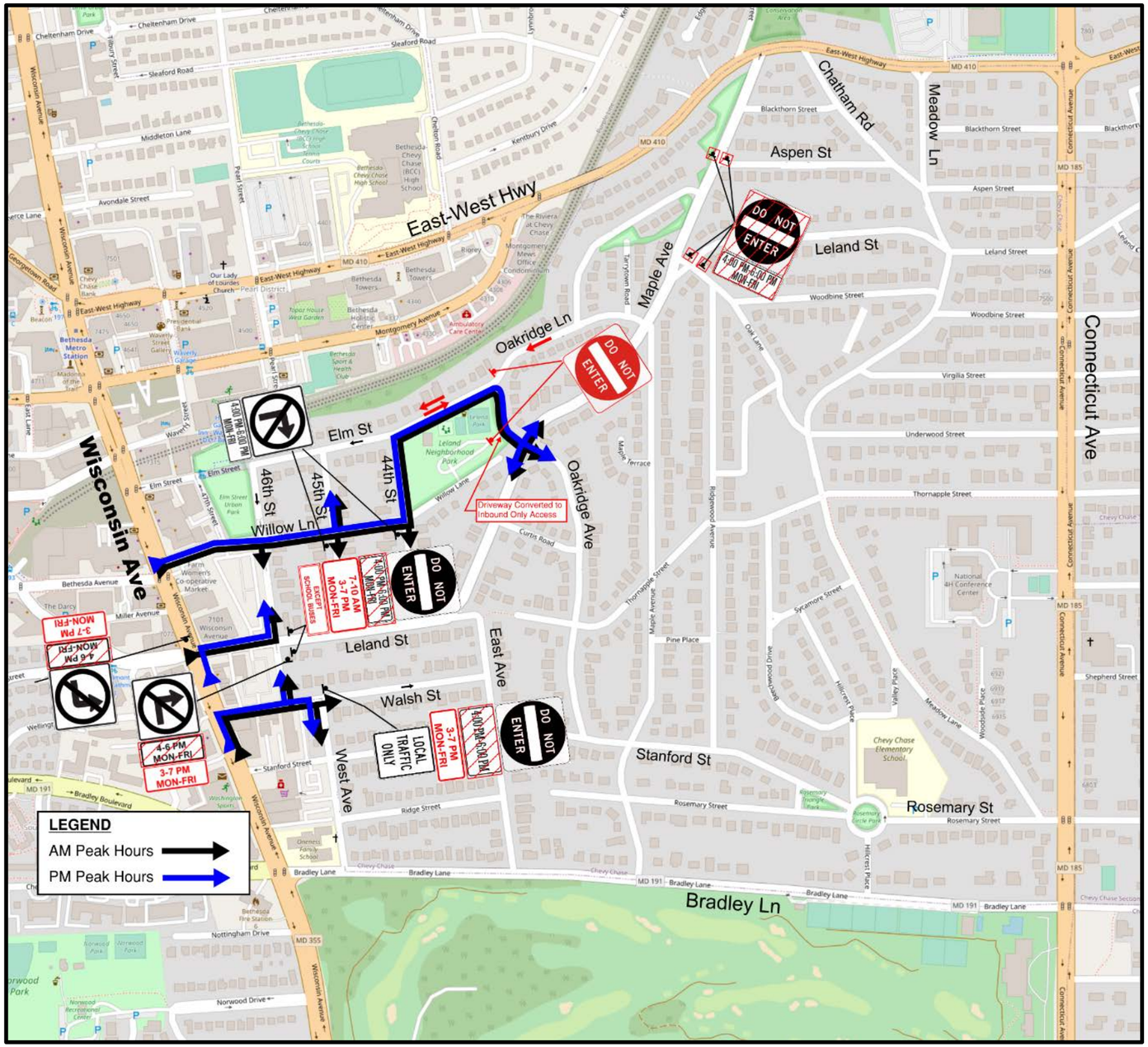
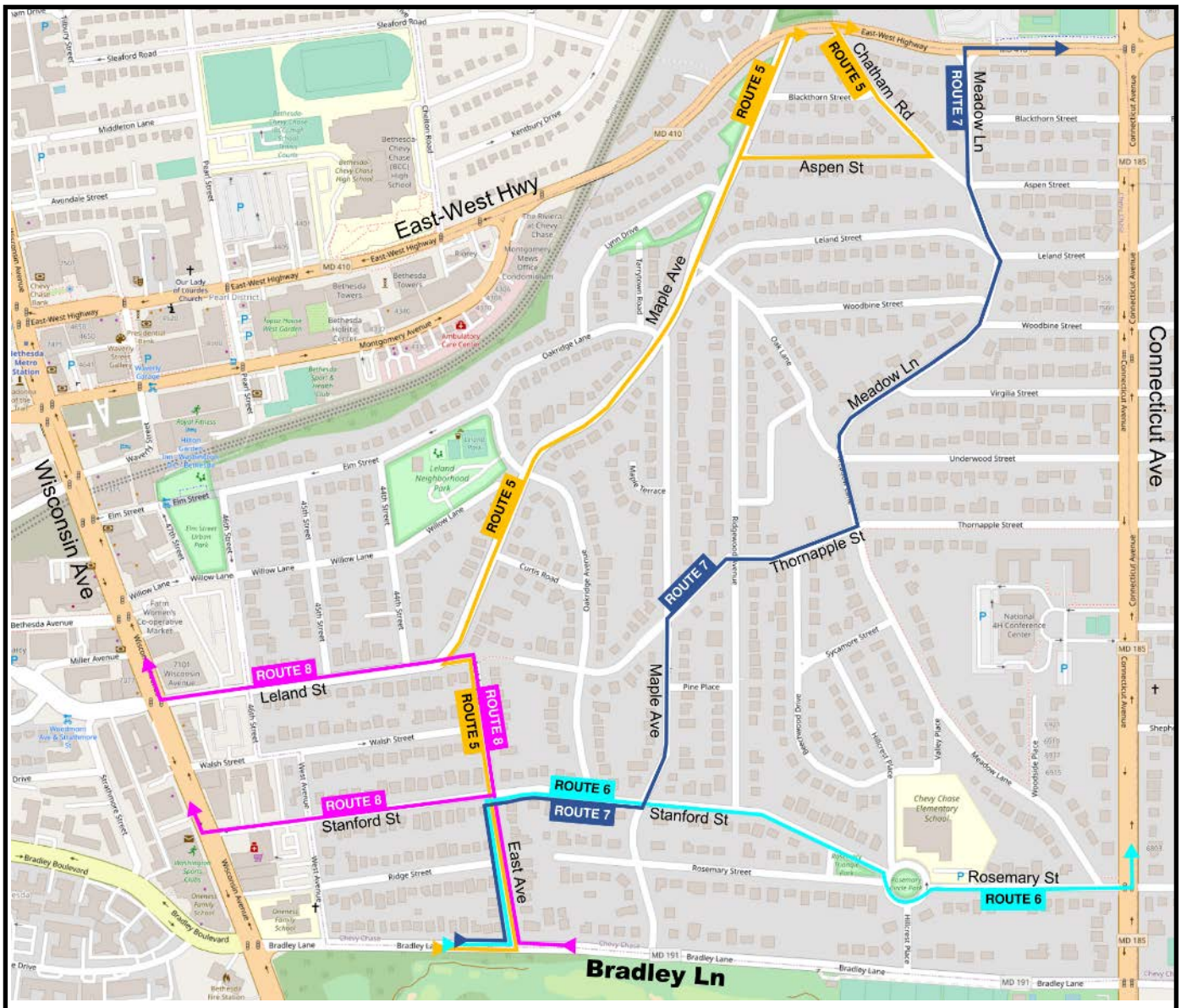


Figure C-1: Bradley Lane Corridor - Cut-through Routes



Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 5	Bradley Ln EB	East Ave *(to Leland St)*	East-West Hwy EB	114	3-7 PM	East Ave NB @ Bradley Ln	Maple Ave NB @ Aspen St		
Route 6	Bradley Ln EB	East Ave	Connecticut Ave NB	86	3-7 PM	East Ave NB @ Bradley Ln		Rosemary St EB @ Hillcrest Pl	
Route 7	Bradley Ln EB	East Ave *(to Meadow Ln)*	East-West Hwy EB	25	3-7 PM	East Ave NB @ Bradley Ln			
Route 8	Bradley Ln WB	East Ave	Wisconsin Ave NB	147	6-10 AM 3-7 PM	East Ave NB @ Bradley Ln			

Figure C-2: Bradley Lane Corridor – Proposed Access Modifications

RECOMMENDED MODIFICATIONS:

- Expand PM entry restriction hours (i.e. 3-7 PM) at Bradley Lane/West Avenue to address cut-through traffic entering from the corridor between the hours of 3-4 PM and 6-7 PM.
- Implement/Expand AM/PM entry restriction hours (i.e. 7-10 AM, 3-7 PM) at Bradley Lane/East Avenue to address the high volume of cut-through traffic entering from the corridor between the hours of 9-10 AM, 3-4 PM, and 6-7 PM.
- Expand PM entry restriction hours (i.e. 3-7 PM) at Bradley Lane/Maple Avenue to address eastbound cut-through traffic entering from the corridor between the hours of 3-4 PM.
- Expand PM entry restriction hours (i.e. 3-7 PM) at Bradley Lane/Hillcrest Place to address eastbound cut-through traffic entering from the corridor between the hours of 3-4 PM (signing excludes school buses).
- Add "Do Not Enter" restriction signing (i.e. 3-7 PM) along westbound Stanford Street, at Oakridge Avenue, to address cut-through volumes that may be displaced by the expanded PM peak period entry restrictions at Bradley Lane/East Avenue.

RATIONALE:

- Capture the highest volume of cut-through traffic entering via the Bradley Lane corridor.
- Restrictive signing creates circuitous cut-through routing by diverting traffic to other corridors.

IMPACTS:

- Increases AM peak period access restrictions onto East Avenue from Bradley Lane by one (1) hour.
- More PM peak hour traffic to Maple Avenue and to Hillcrest Place from westbound Bradley Lane.
- More AM peak hour traffic (i.e. 9-10 AM) to West Avenue and Maple Avenue from westbound Bradley Lane, however, West Avenue has few confronting homes and is adjacent to a commercial area.
- No PM peak period access to westbound Stanford Street from west of Oakridge Avenue.
- Peak period access to southwest corner of Town by residents will necessarily come from Walsh Street instead of East Avenue.

HIGHLIGHTS:

- The expansion of the entry restriction at Bradley Lane/East Avenue will address the cut-through traffic for *Routes 5, 6, 7 and 8* from 7-10 AM and 3-7 PM.
- "Do Not Enter" restriction signing (i.e. 3-7 PM) along westbound Stanford Street (at Oakridge Avenue) to address diverted cut-through volumes via Maple Avenue and via Hillcrest Place due to the expanded PM peak period entry restrictions at Bradley Lane/East Avenue.

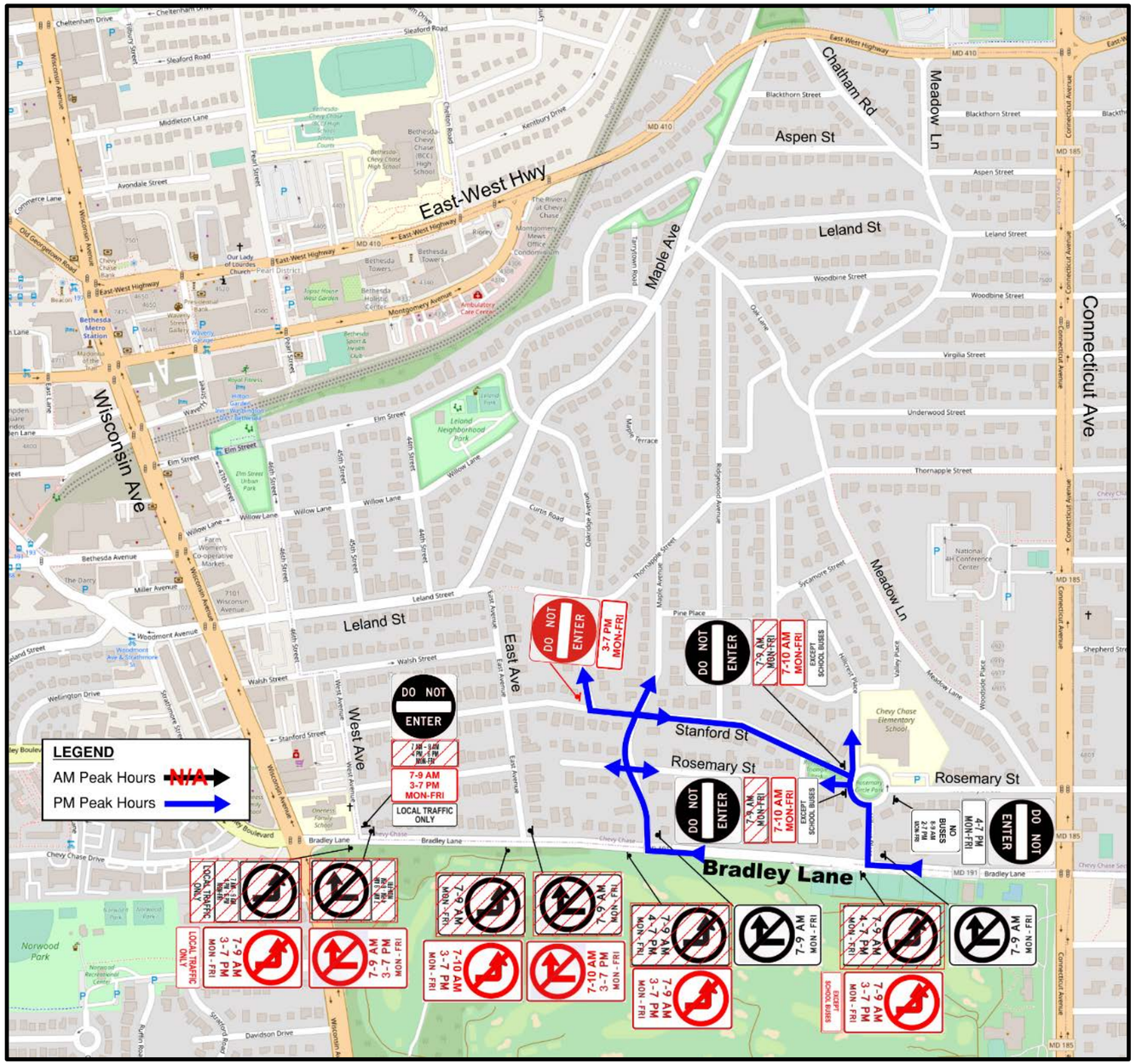
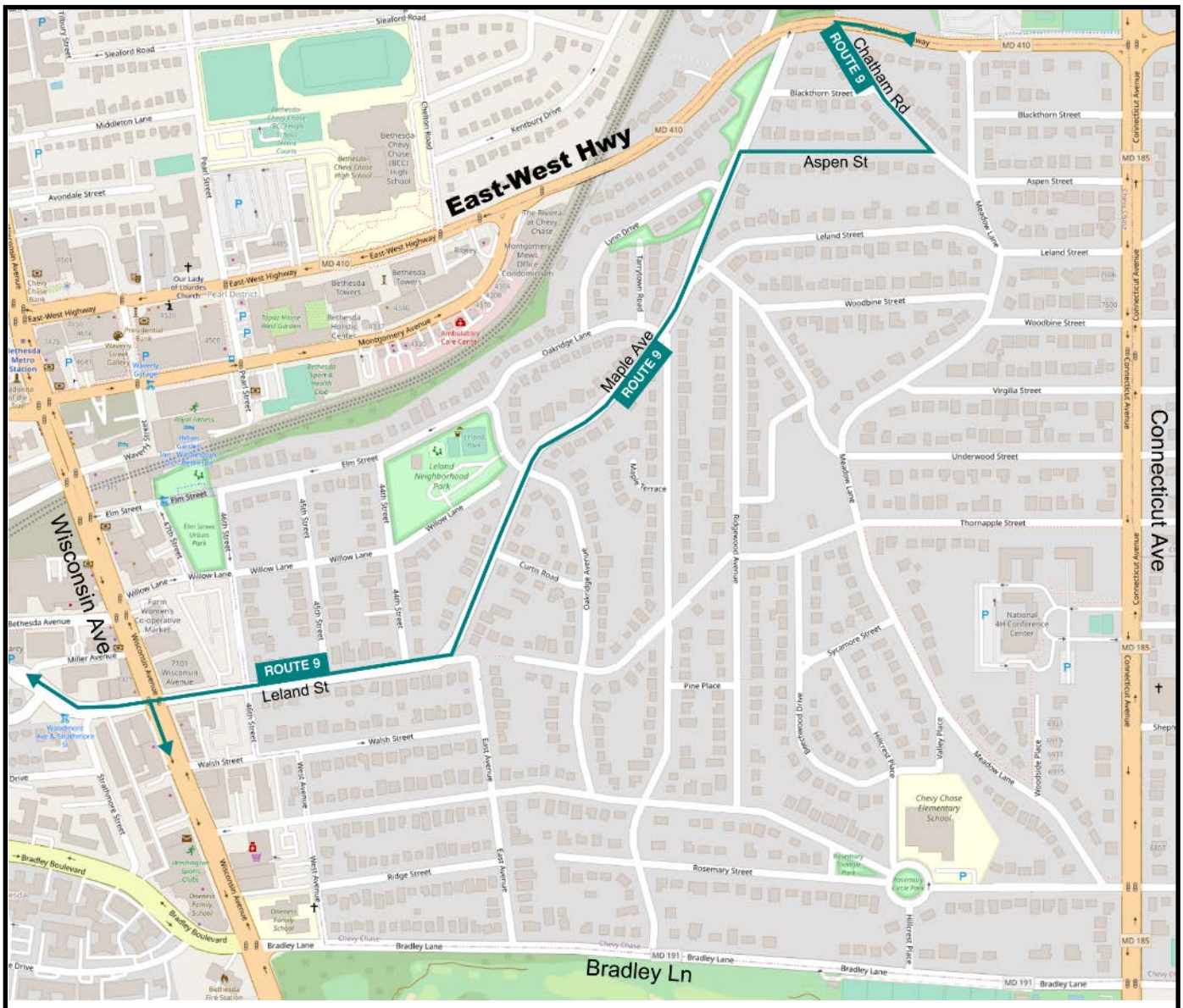


Figure D-1: East-West Highway Corridor - Cut-through Routes



Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 9	East-West Hwy WB	Chatham Rd	Wisconsin Ave SB	48	6-10 AM 3-7 PM	Chatham Rd SB @ E-W Hwy	Chatham Rd SB @ E-W Hwy		

Figure D-2: East-West Highway Corridor – Proposed Access Modifications

RECOMMENDED MODIFICATIONS:

- Expand entry restriction hours (i.e. 6-10 AM, 3-7 PM) at East-West Highway/Chatham Road to address cut through traffic entering from the corridor between the hours of 6-7 AM, 9-10 AM, 3-4 PM and 6-7 PM.
- Expand entry restriction hours (i.e. 6-10 AM, 3-7 PM) at East-West Highway/Meadow Lane to address cut through traffic entering from the corridor between the hours of 6-7 AM, 9-10 AM, 3-4 PM and 6-7 PM.

RATIONALE:

- Capture additional volumes of cut through traffic entering from East-West Highway/Chatham Road intersection between the hours of 6-7 AM, 9-10 AM, 3-4 PM and 6-7 PM.
- Expand entry restriction hours (i.e. 6-10 AM, 3-7 PM) at East-West Highway/Meadow Lane to mitigate potential diversions caused by the additional access restrictions at East-West Highway/Chatham Road.
- Restrictive signing creates circuitous cut-through routing by diverting traffic to other corridors.

IMPACTS:

- No AM or PM peak period access to the Town via the East-West Highway corridor.
- Potential PM peak period diversions to entry points along southbound Connecticut Avenue.

HIGHLIGHTS:

- The expansion of the entry restriction hours at East-West Highway/Chatham Road will address the cut through traffic for *Route 9* from 6-10 AM and 3-7 PM.
- The expansion of the entry restriction hours at East-West Highway/Meadow Lane will address diverted cut-through volumes via Meadow Lane due to the expanded AM and PM peak period entry restrictions at East-West Highway/Chatham Road.

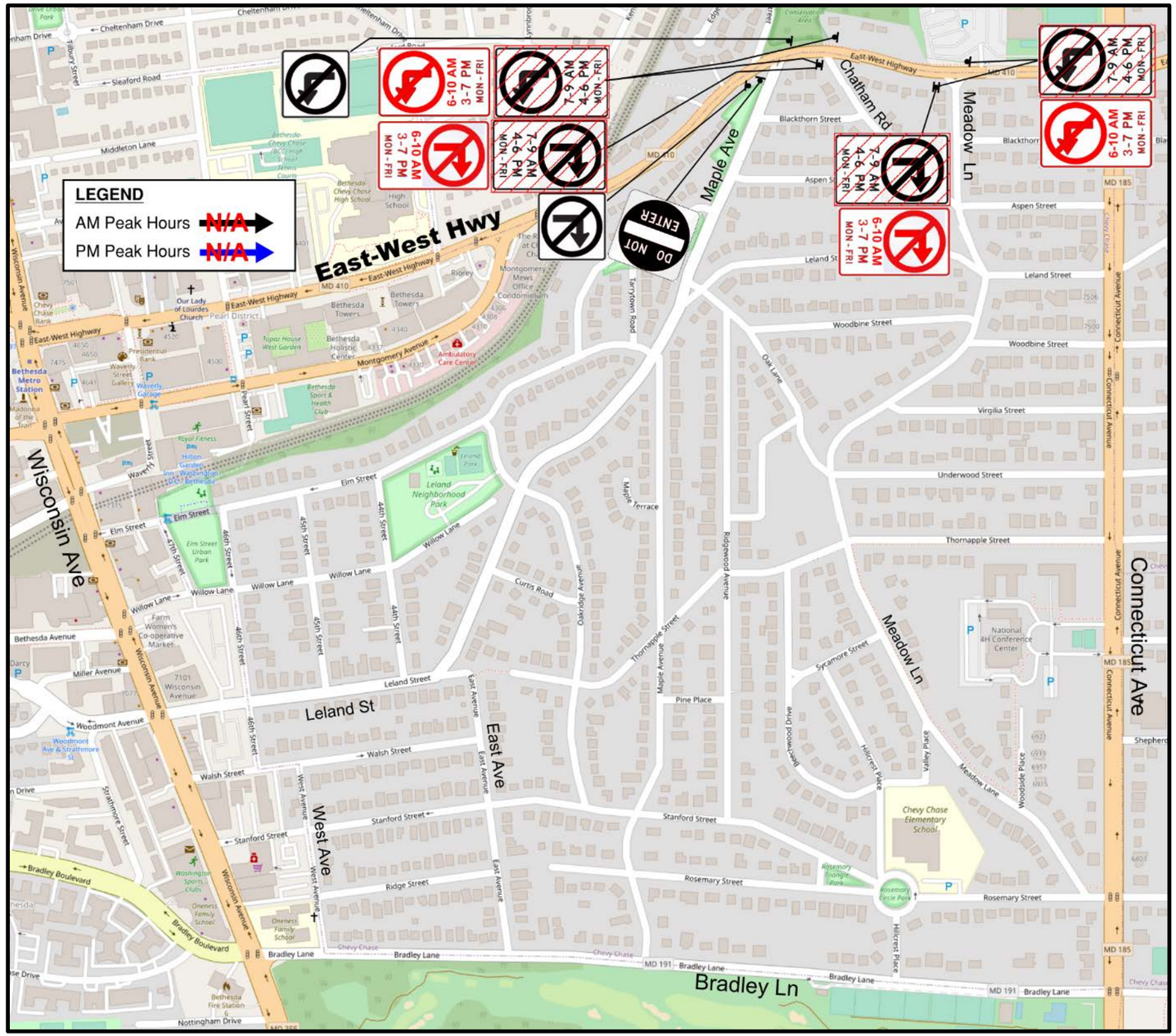
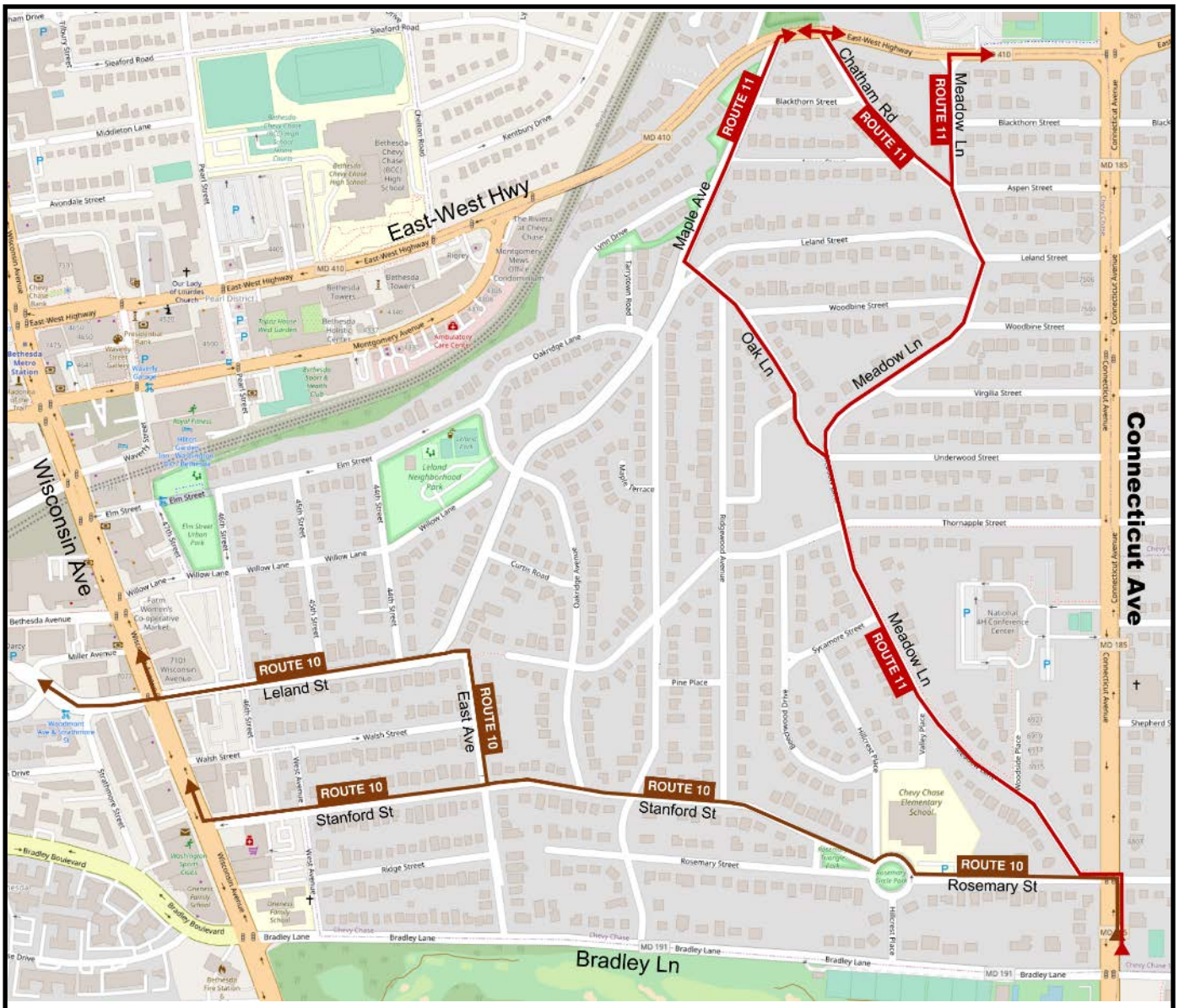


Figure E-1: Connecticut Avenue - Corridor Cut-through Routes



Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 10	Connecticut Ave NB	Rosemary St	Wisconsin Ave NB	159	6-10 AM 3-7 PM	Stanford St WB @ Hillcrest Pl			
Route 11	Connecticut Ave NB	Rosemary St	East-West Hwy EB	98	3-7 PM				

Figure E-2: Connecticut Avenue Corridor – Proposed Access Modifications

RECOMMENDED MODIFICATIONS:

- Add "Do Not Enter" restriction signing (i.e. 4-7 PM) along northbound Meadow Lane, at Rosemary Street, to address the highest volume of cut-through traffic entering from Rosemary Street and exiting onto East-West Highway.
- Add "Do Not Enter" restriction signing (i.e. 3-7 PM) along westbound Stanford Street, at Oakridge Avenue, to address the highest volume of afternoon cut-through traffic entering from Rosemary Street and exiting onto Wisconsin Avenue.
- Expand AM entry restriction hours (i.e. 7-10 AM) at Stanford Street/Rosemary Circle and Rosemary Street/Rosemary Circle to address the highest volume of morning cut-through traffic entering from Rosemary Street and exiting onto Wisconsin Avenue.

RATIONALE:

- Capture the highest volume of cut-through traffic entering from Connecticut Avenue and traveling to Wisconsin Avenue (AM/PM) and to East-West Highway (PM)
- Restrictive signing creates circuitous cut-through routing by diverting traffic to other corridors.

IMPACTS:

- No PM peak period access northbound along Meadow Lane from Rosemary Street.
- No PM peak period access to westbound Stanford Street from west of Oakridge Avenue.

HIGHLIGHTS:

- "Do Not Enter" restriction signing (i.e. 4-7 PM) along northbound Meadow Lane (at Rosemary Street) to address the highest volume of cut-through traffic for *Route 11* during the PM peak period.
- "Do Not Enter" restriction signing (i.e. 3-7 PM) along westbound Stanford Street (at Oakridge Avenue) to address the highest volume of cut-through traffic for *Route 10* during the PM peak period.
- Expand AM entry restriction hours (i.e. 7-10 AM) at Stanford Street/ Rosemary Circle and Rosemary Street/ Rosemary Circle to address the highest volume of cut-through traffic for *Route 10* during the AM peak period.

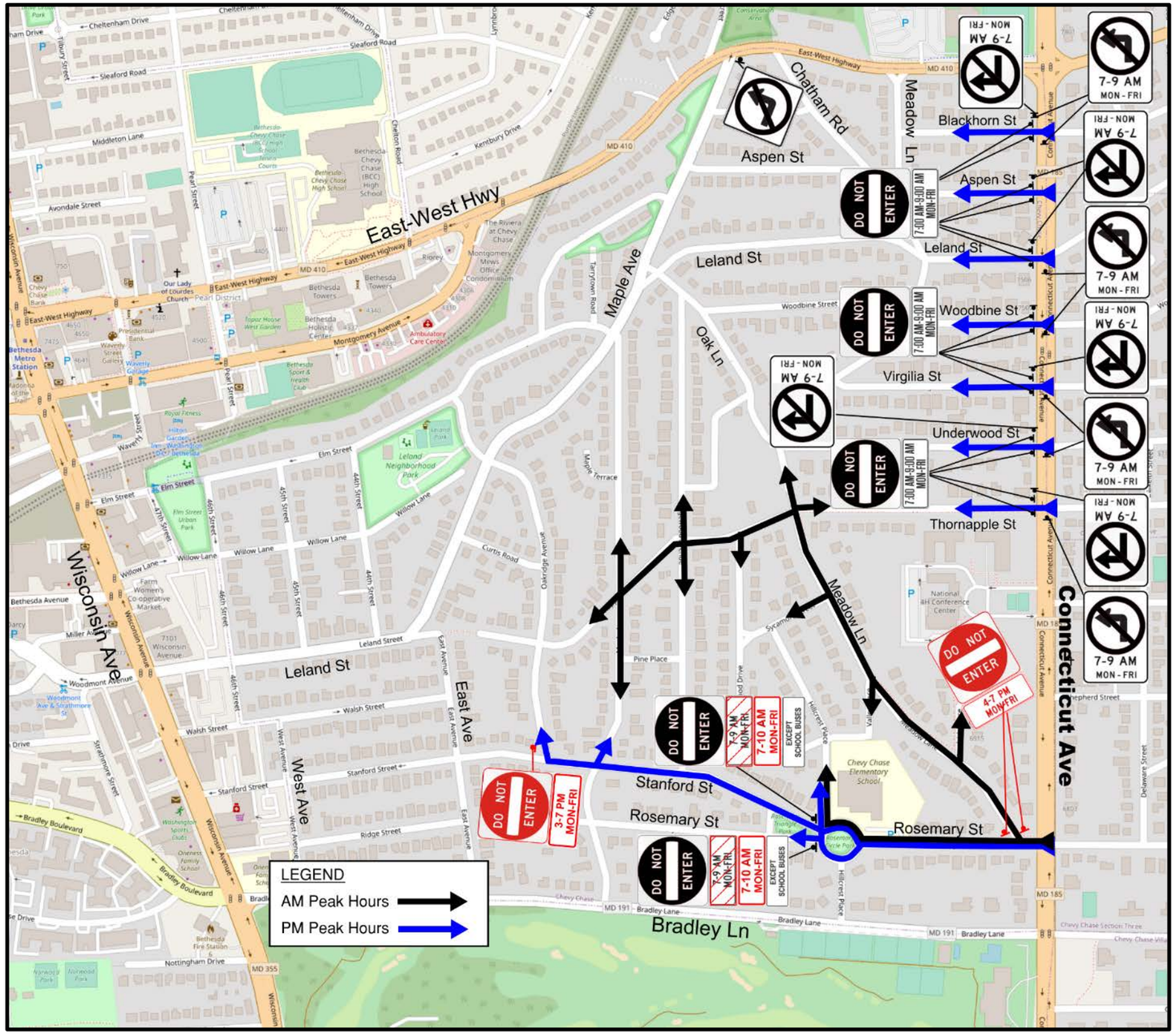


Figure F: Proposed AM and PM Peak Period Access Modifications – All Corridors

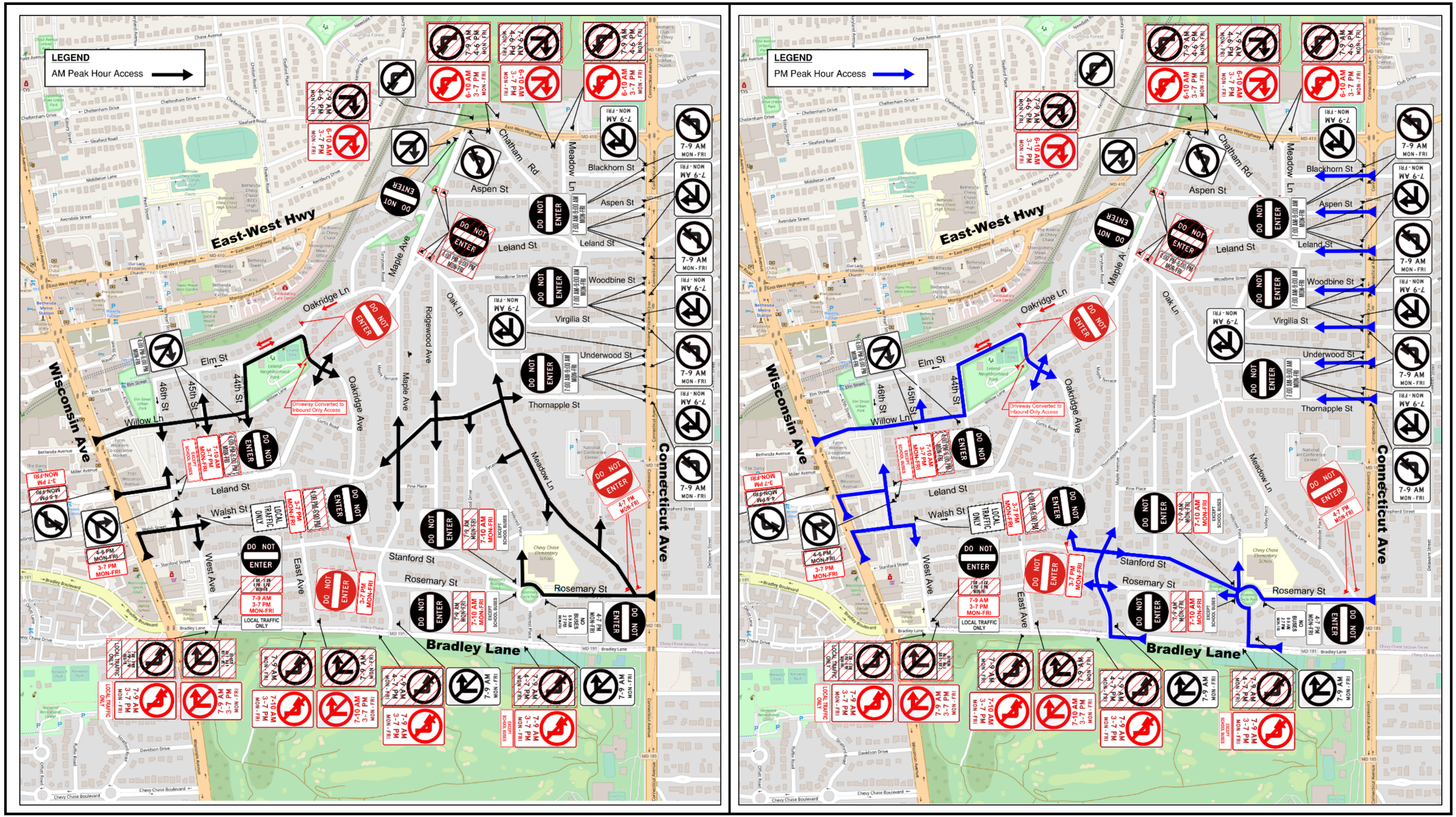


Table C: Impacts of Proposed Sign Restrictions

Intersection	Total (6AM-7PM) Entering Volume	Total (6AM-7PM) Cut-Thru Volume	*Percent Cut-Thru vs. Total Volume*	Current Weekday Restrictions	*Proposed Weekday Restrictions*	Cut-Thru Volumes Captured During Expanded Hours		Resident Volumes During Expanded Hours		% Reduction to Cut-Thru Traffic at Entry Point
Leland Street EB @ 46th Street	923	614	*67%*	4-6 PM	*7-10 AM 3-7 PM*	7-10 AM	118	7-10 AM	94	**49%**
						3-4 PM 6-7 PM:	185	3-4 PM 6-7 PM:	75	
East Avenue NB @ Bradley Lane	876	372	*42%*	7-9 AM	*7-10 AM 3-7 PM*	9-10 AM:	44	9-10 AM:	1	**81%**
						3-7 PM:	259	3-7 PM:	326	
Chatham Road SB @ East-West Hwy	179	48	*27%*	7-9 AM 4-6 PM	*6-10 AM 3-7 PM*	6-7 AM: 9-10 AM:	14	6-7 AM: 9-10 AM:	3	**29%**
						3-4 PM: 6-7 PM:	5	3-4 PM: 6-7 PM:	30	
Stanford Street WB @ Hillcrest Place	353	159	*45%*	7-9 AM (at Hillcrest Pl)	*7-10 AM (at Hillcrest Pl) 3-7 PM (at Oakridge Ave)*	9-10 AM:	24	9-10 AM:	33	**15%**
						3-7 PM:	67	3-7 PM:	66	
Meadow Lane NB @ Rosemary Street	425	98	*23%*	N/A	*4-7 PM*	N/A	N/A	N/A	N/A	**65%**
						4-7 PM:	64	4-7 PM:	52	
								Total Cut-Thru Reduction %		**60%**

CUT-THROUGH AND TRAFFIC CALMING/REDUCTION STUDY
TECHNICAL REPORT

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1. INTRODUCTION

1.1. Study Contents

This document summarizes the data collection and analysis, findings and recommendations developed in coordination with the Town of Chevy Chase (Town) to assess and address cut-through traffic and vehicle speeds within the Town limits. The following describes the contents of this Study:

- The project background information; the community concerns; a summary of all prior studies completed; description of the existing road network and key connections; identification of potential factors contributing to the cut-through conditions; and the overall Purpose & Need of the study.

- The documentation and tabulation of the existing data collection efforts: a) turning movement counts at all selected study intersections to collect vehicle, pedestrian and bicycle data; b) volume and speed data collected along several internal Town roadways to verify if and where speeding occurs; and c) an origin-destination study to determine the cut-through routes and the traffic volumes along various Town roadways.

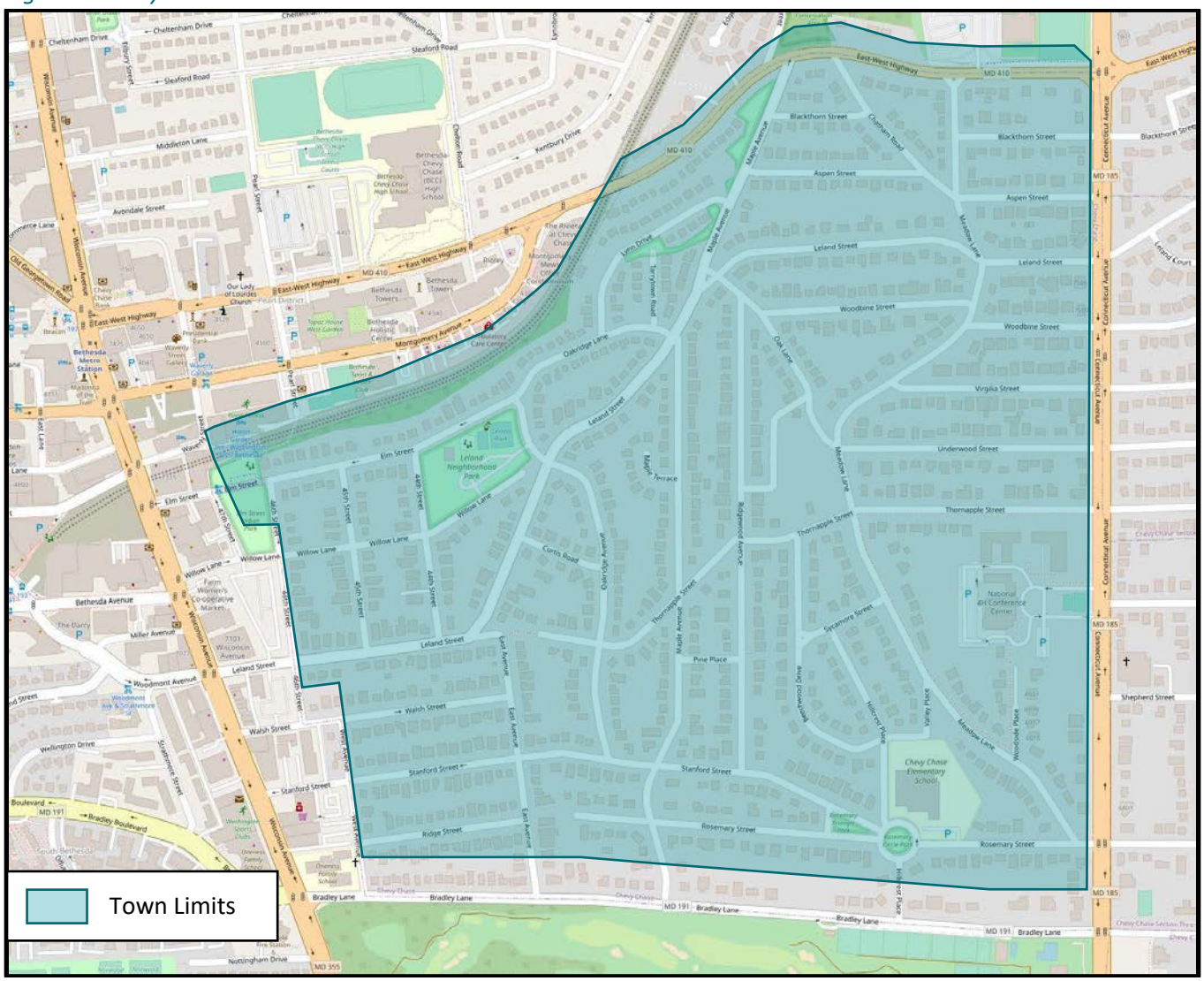
- The analysis of the traffic data to measure peak hour traffic volumes entering and exiting the Town limits; the operation of the adjacent corridors and their impact on the Town's roadways; compliance with the Town's existing signage and the effectiveness of the existing time-based access restrictions; the determination and documentation of all cut-through routes within the Town's limits.

- A summary of the key findings; identification of the specific routes or locations where mitigation measures should be focused; and the strategies identified to potentially reduce the amount of cut-through traffic and vehicle speeds.

1.2. Project Location

The Town of Chevy Chase is located one (1) mile north of Washington D.C. Figure 1 shows the limits of the Town which extends to East-West Highway (MD 410) to the north, Bradley Lane (MD 191) to the south, Connecticut Avenue (MD 185) to the east, and Wisconsin Avenue (MD 355) to the west and 47th Street, 46th Street and West Avenue to the west.

Figure 1: Study Area Limits



1.3. Project Background

OVERVIEW

Over the years, the Town has conducted several traffic studies to address neighborhood cut-through traffic and vehicle speeding. To date, the Town has implemented time-based travel restrictions and installed twenty-seven (27) speed humps on its neighborhood roads to address cut-through traffic and speeding. However, the Town has continued to receive feedback from the community regarding vehicle speeds and cut-through traffic as safety issues on Town streets. In addition, downtown Bethesda has seen intense residential and commercial development and the new Purple Line light rail is under construction. Traffic patterns are expected to change as a result of this new transportation system.

For these reasons, the Town has requested a new traffic study to measure the Town-wide traffic patterns and develop recommendations to address the ongoing cut-through traffic and lower vehicle speeds within the Town limits.

BACKGROUND INFORMATION

A project kick-off meeting was scheduled on Monday, October 7th, 2019 with the PSC, the Town Manager, and AMT staff. The primary goal of this meeting was to outline AMT's approach for completing this cut-through and vehicle speed study. The following information was provided during this meeting:

- The Town provided AMT with community feedback in the form of comments provided by the Town's residents. The feedback included concerns related to speeding, pedestrian and vehicular safety, as well as increases in cut-through traffic on numerous Town streets.
- Several of the suspected existing cut-through routes through the Town, as well as their respective entry and exit points were discussed. These initial cut-through routes were based primarily on recent field observations and taking into consideration current traffic conditions along the adjacent arterial roadways (i.e. Wisconsin Avenue, MD 191, etc.).
- The prior traffic studies completed for the Town were discussed to provide an understanding of previously recommended traffic mitigation measures and turning restrictions. The following provides a summary of these studies:

  Traffic Assessment -Town of Chevy Chase, dated May 2002:

  This study included an evaluation of existing traffic controls and other qualitative observations based on traffic counts collected at specific intersections and roadway segments. The following strategies were proposed to reduce vehicular speeds and cut-through traffic within the Town:

  - Recommended Strategies:
    - Willow Lane – Open connection to Oakridge Avenue to eliminate/reduce cut-through traffic via the Lawton Recreation Center
    - Rosemary Street – Remove existing Watts humps (2) and replace with Flat Top humps (3)
    - Stanford Street – Install speed humps between Maple Avenue/Hillcrest Place, install traffic circle at West Avenue, and install speed humps between West Avenue/Oakridge Avenue
    - East Avenue – Convert from two-way to one-way east of Leland Street
    - Leland Street – Implement a raised intersection at Maple Avenue, construct traffic circle at Maple Avenue & Oak Lane, and convert to one-way with speed humps between Oak Lane/Meadow Lane
    - Thornapple Street – Install speed humps between Meadow Lane/ Connecticut Avenue, construct traffic circle at Meadow Lane, and implement a raised Intersection at Maple Avenue & Ridgewood Avenue
    - Woodbine Street – Convert to one-way with speed humps between Oak Lane/Meadow Lane
  - Strategies Implemented:
    - Ten (10) speed humps were installed along the following roadway segments:
      - Stanford Street, one (1) between Ridgewood Avenue/Hillcrest Place
      - Leland Street, four (4) between 44th Street/46th Street and between Oakridge Avenue/Maple Avenue
      - Thornapple Street, two (2) between Connecticut Avenue and Meadow Lane
      - Rosemary Street, two (2) between Rosemary Circle/Connecticut Avenue (replaced) and one (1) near Meadow Lane

Jane E. Lawton Community Recreation Center Traffic Study, dated August 2015:

The purpose of this Study was to address the Town's concerns regarding cut-through traffic via the Lawton Recreation Center parking lot. Traffic data collection focused on roadways surrounding the Center including Elm Street, Willow Lane, Leland Street, Oakridge Avenue, 44th Street, and 45th Street. The following strategies were proposed:

- Recommended Strategies:
  - Willow Lane - "DO NOT ENTER/4PM-6PM/MON-FRI" signage at the entrance to the Lawton Recreation parking lot.
  - Elm Street - Convert from one-way (westbound) to two-way between 44th Street/Oakridge Avenue.
  - Oakridge Lane - "NO LEFT TURN /4PM-6PM/MON-FRI" signage at Oakridge Avenue.
- Strategies Implemented:
  - To-date, the recommendations have not been implemented. Cut-through traffic via the Lawton Recreation Center parking lot continues to of concern to the Town.

EXISTING ROADWAY NETWORK

Surrounding the Town limits are four (4) major thoroughfares: Wisconsin Avenue (MD 355) to the west; Bradley Lane (MD 191) to the south; Connecticut Avenue (MD 185) to the east, and East-West Highway (MD 410) to the north. Wisconsin Avenue, Connecticut Avenue and East-West Highway are classified as Principal Arterials (high traffic volumes, longer trips, higher speeds). Bradley Lane is classified as a Minor Arterial (moderate trip length, moderate speeds, supplement the principal arterial system). All Town roadways are classified as "Local" in accordance with MDOT SHA's Roadway Functional Classification mapping.

The local Town roadway network consists primarily of one- or two-travel lane streets (depending if the road is one- or two-way). Permit on-street parking from 7AM-7PM is allowed along one or both sides of the neighborhood streets within the Town (permit parking restrictions vary). Many residents park their vehicles on the streets as that may be their only parking resource. Field observations show that on certain narrow two-way roadway sections, residents park on both sides of the street allowing only a single vehicle to pass at one time.

POTENTIAL FACTORS CONTRIBUTING TO THE CUT-THROUGH CONDITIONS

Several factors have been identified that could be contributing to the current cut-through conditions:

- Wisconsin Avenue, Bradley Lane, Connecticut Avenue, and East-West Highway experience excessive congestion and delays throughout various time periods of the day (this is discussed further in the *Findings* section of this report). Daily commuters familiar with this area utilize the Town's local road network to bypass the congestion. For the less-familiar drivers, traffic navigation apps such as Google Maps and Waze promote cut-through by recommending the use of local roads as an alternative to remaining on congested arterial roadways.
- The hours of the existing access restrictions may need to be extended to capture additional commuter-oriented cut-through traffic.
- Police resources are not sufficient to ensure that the existing access restrictions at all locations throughout the Town are adhered to.

1.4. Community Input

AMT received community feedback from the Town that included comments from the residents through November 2019. The comments assisted AMT in determining several of the volume and speed count locations.

- Approximately 52% of the residents' comments mentioned vehicle speeds and 26% mentioned cut-through traffic as safety issues along Town streets.
- Approximately 22% of the residents' comments mentioned other safety issues such as general congestion, impacts of construction vehicles/delivery trucks, and the need for a pedestrian crosswalk.

2. EXISTING CONDITIONS

2.1. Existing Traffic Control

The following section summarizes the existing traffic control devices within and surrounding the Town's limits; the access restriction signage; the posted speed limits for the local roadway network; and the location of the existing speed humps within the Town limits.

TRAFFIC CONTROL DEVICES

The external intersections of Wisconsin Avenue at East-West Highway, Wisconsin Avenue at Bradley Lane, Bradley Lane at Connecticut Avenue, and Connecticut Avenue at East-West Highway operate under traffic signal control. All intersections within the Town limits operate under stop-control.

ACCESS RESTRICTION SIGNAGE

Access restrictions are provided throughout the Town in the form of restricting turn and through movements during peak periods of the day or permanently, as well as by making specific roadway sections one-way (by installing "One-Way" signs) and installing "Do Not Enter" signs to restrict entry. The intent of these access restrictions is to deter non-residents from entering the Town to bypass the congested principal and minor arterials surrounding the Town limits. These restrictions, however, apply to both residents and non-residents entering the Town streets. Most of the access restrictions were observed to be on weekdays (Monday to Friday) from 7AM to 9AM and from 4PM to 6PM. The location and type of existing access restrictions signage is shown in Figure 2.

POSTED SPEED LIMITS

The majority of the Town's local streets have a posted speed limit of 25 miles per hour (MPH). On roadway segments without posted speeds, the legal speed limit is 25 MPH per the Town of Chevy Chase Road Codes. Several roadways including Oak Lane, and Oakridge Lane have a posted speed limit of 20 MPH. Certain sections of Hillcrest Place, Rosemary Street, Stanford Street, and Meadow Lane have a posted speed limit of 15 MPH due to their close proximity to Chevy Chase Elementary School. These streets are heavily traveled by children and parents walking to school. The posted speed limit for those roadways is intended to be 25 MPH outside of the hours of 8AM to 4PM according to the Town Code. The advisory speed limit of 15 MPH is posted at speed humps.

Figure 2: Existing Access Restriction Signing

2.2. Data Collection

The following section describes the type of traffic data that was collected, the methodology used to collect the data, and graphical summaries of each type of data collected.

INTERSECTION TURNING MOVEMENT COUNTS

To determine traffic flow patterns within the Town limits, as well as intersection traffic patterns, video turning movement counts were conducted at thirty (30) intersections. These intersections were selected based upon discussions with the Town Staff and community feedback. Counts were conducted between the hours of 6AM to 10AM and 3PM to 7PM for all the study intersections at 15-minute intervals on a weekday when schools were open. The video equipment was attached to an approved pole or other roadway appurtenance, and recorded data for a specific period of time. The video heads were programmed and oriented correctly in the field. Intersections #1 through #24 were counted on Tuesday, October 15th and Thursday, October 17th, 2019. Due to adverse weather conditions, intersections #25 through #30 were counted on Tuesday, October 22nd, 2019. The intersection traffic volumes during these periods were used to determine the number of sign restriction violations at key intersections within the study area. *Appendix A* contains the turning movement count data as well as a figure showing the weekday 4-hour morning (6AM-10AM) and 4-hour afternoon (3PM-7PM) total turning movement volumes at each of the 30 intersections.

LOCAL ROADWAY SPEED DATA

Based on community feedback, discussions with Town Staff, as well as reviewing the turning movement counts data that provided traffic flow patterns within the Town limits, vehicle speed data was collected along fifteen (15) roadway sections. The primary purpose of conducting these counts was to determine whether there are speeding issues along the Town streets.

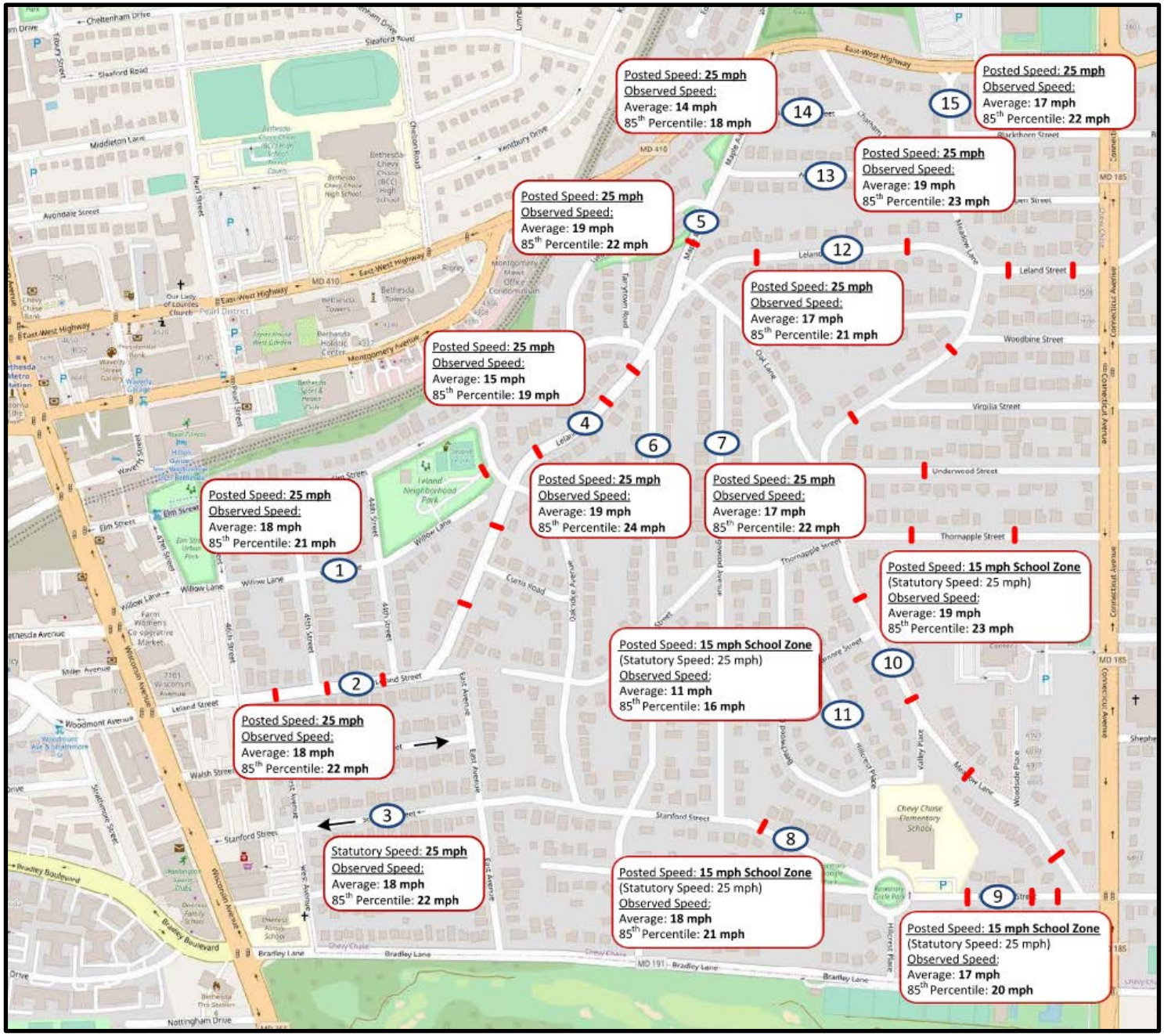
Vehicle speed data was collected over two (2) consecutive weekdays (48-hours). The count equipment consisted of pneumatic roadway tubes attached to the road using nails and tape. During the set-up, the count equipment was programmed with the correct date, time, site location, and recorded data in 15-minute intervals. All count equipment was monitored for accuracy before the count crews left the site. All count equipment was chained and locked down to a road sign, utility pole, light pole, etc. When the count period ended, the count equipment and road tubes were removed and all mounting hardware was cleared before leaving the site (nails, unfastened tape). The counts were conducted from January 14th to 15th, 2020 and from January 22nd to 23rd, 2020.

Figure 3 shows the roadway segments for the vehicle speed counts, with posted speed limits, average speeds, and 85th percentile speeds, as well as the locations of the twenty-seven (27) speed humps that were previously installed by the Town. The summary speed data sheets are included in *Appendix A*.

Figure 3: Existing Speed Data and Speed Hump Locations

All locations except #5 and #14 counted on:
1/14/2020 – Tuesday
1/15/2020 - Wednesday

#5 and #14 counted on:
1/22/2020 - Wednesday
1/23/2020 - Thursday



LEGEND:

- Existing Speed Hump
- One-Way

AVERAGE DAILY TRAFFIC VOLUMES

The 48-hour speed data collected at the selected fifteen (15) local roads also yielded volume data that were used to determine the average daily traffic (ADT) on those selected roadways. The ADT volume is the average 24-hour volume traveling in both directions (or one direction in the case of a one-way street) at a specific location along a roadway for a specific period of time (1 year, 6 months, 1 week, or in the case of this study: 2 days/48-hours). ADT volumes are used for various planning and traffic operational studies.

The 2018 ADT volumes along the surrounding principal and minor arterials (i.e. Wisconsin Avenue, East-West Highway, Connecticut Avenue, and Bradley Lane) were also identified based on the MDOT SHA Highway Location Reference – Montgomery County (data as of December 31, 2018). With the new Purple Line light rail under construction and continued surrounding residential and commercial growth, traffic volumes are forecasted to continue to increase along these arterials.

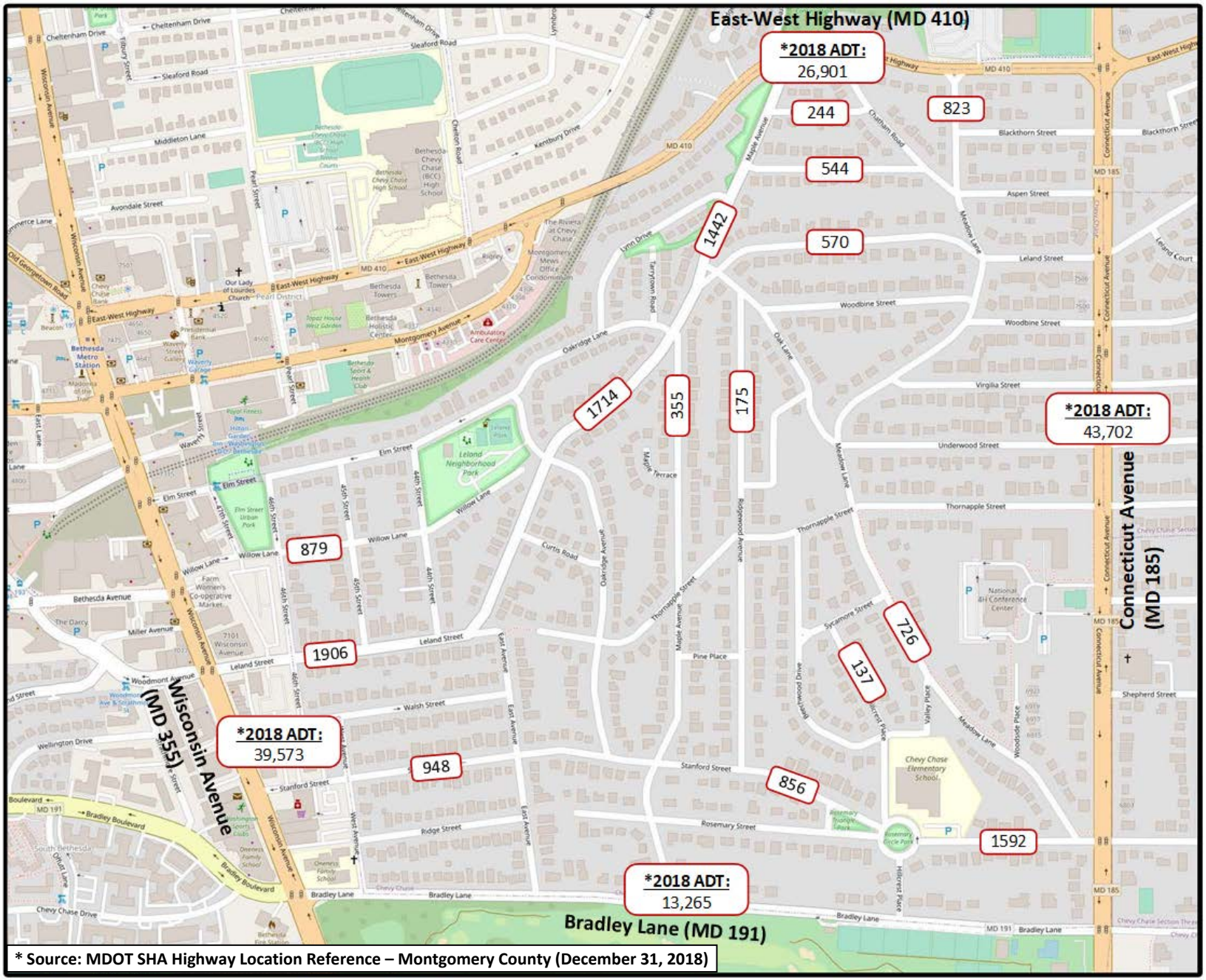
The ADT volumes for the principal/minor arterials and all selected local roads are shown on **Figure 4** and summarized in **Table 1** below.

Table 1: 2018/2019 ADT Volumes

ROADWAY NAME	ADT VOLUMES
Willow Lane (btw 45th and 46th St)	879
Leland Street (btw 45th and 46th St)	1,906
Leland Street (north of Oakridge Ave)	1,714
Leland Street (btw Oak Lane and Meadow Lane)	570
Maple Avenue (south of Leland St)	355
Maple Avenue (north of Oak Lane)	1,442
Ridgewood Avenue (south of Oak Lane)	175
Stanford Street (btw East and West Ave)	948
Stanford Street (east of Ridgewood Ave)	856
Rosemary Street (east of CC Elem School)	1,592
Hillcrest Place (north of CC Elem School)	137
Meadow Lane (north of Valley Place)	726
Meadow Lane (south of MD 410)	823
Aspen Street (btw Maple Ave and Chatham Rd)	544
Blackthorn St (btw Maple Ave and Chatham Rd)	244
Connecticut Avenue (MD 185)	43,702 *
Wisconsin Avenue (MD 355)	39,573 *
East-West Highway (MD 410)	26,901 *
Bradley Lane (MD 191)	13,265 *

**Source: MDOT SHA Highway Location Reference – Montgomery County (Data as of December 31, 2018)*

Figure 4: Existing Average Daily Traffic (ADT) Volumes



ORIGIN-DESTINATION DATA

A cut-through or origin-destination study was based upon the volume of traffic entering from the surrounding access points of the Town and following each vehicle as it traverses through the Town from one access point to another. When the traffic data collected at each of the thirty (30) key intersections were reviewed by AMT and Town Staff, key intersections where cut-through traffic would most likely be recorded were identified. These key intersections would become the basis for the determination of the cut-through traffic taking place within the Town limits. Multiple factors were taken into consideration when determining where the cut-through data would be recorded:

- As part of the background information provided by the Town, rough sketches of several of the suspected cut-through routes, as well as their respective entry and exit points were identified.

- The intersection turning movement counts collected by AMT provided valuable insight as far as which roadways carried the most traffic, as well as where the key entry/exit points into/out of the Town limits were located (Leland Street, Stanford Street, East Avenue, etc.).

- Key internal intersections such as Leland Street at East Avenue, Maple Avenue at Aspen Street, Stanford Street at Maple Avenue, etc., were considered critical because they support multiple entry/exit points.

- Community feedback regarding safety, speeding, or increases in normal traffic volumes along specific roadways.

The cut-through traffic was analyzed by placing video cameras at thirteen (13) major intersections to capture the main routes within the Town. Data was collected over a 13-hour period (6AM-7PM) for four (4) consecutive days (December 9th, 2019 to December 12th, 2019). The origin-destination output sheets are located in *Appendix B*.

3. FINDINGS

3.1. Traffic Operations along the Adjacent Corridors

Wisconsin Avenue (MD 355), Bradley Lane (MD 191), Connecticut Avenue (MD 185), and East-West Highway (MD 410) experience excessive congestion and delays throughout various time periods of the day. During peak traffic periods, these arterial roadways operate at over-capacity and are the logical outlet for local motorists to detour onto the nearby neighborhood streets connecting the arterial roadways. For example, during the PM peak period, a large number of motorists traveling northbound along Wisconsin Avenue utilize East-West Highway as a primary connection to their destination. However, due to vehicle backups caused by longer travel times, motorists are rerouting to Town roadways such as Leland Street or East Avenue in order to cut-through to East-West Highway and points north.

Based upon Google Maps data, the typical traffic conditions along the arterial roadways surrounding the Town are shown for the AM, midday and PM peak periods on **Figures 5, 6 and 7**, respectively. These "heat maps" highlight the typical traffic expected in both directions of travel based on recent historical information pulled by tracking the moving speeds of Android phones in motorist's vehicles. A green roadway or movement indicates that traffic conditions are at free flow with no congestion or delay. A red roadway or movement indicates heavy congestion and delays with vehicles traveling at very low speeds (i.e. stop-and-go traffic conditions). An orange roadway or movement operates better than a red movement, but traffic conditions are not ideal (i.e. congestion and delays are still present, vehicles are traveling at speeds lower than the posted speed limits).

Figure 5: AM Peak Period Traffic Conditions (via Google Maps)

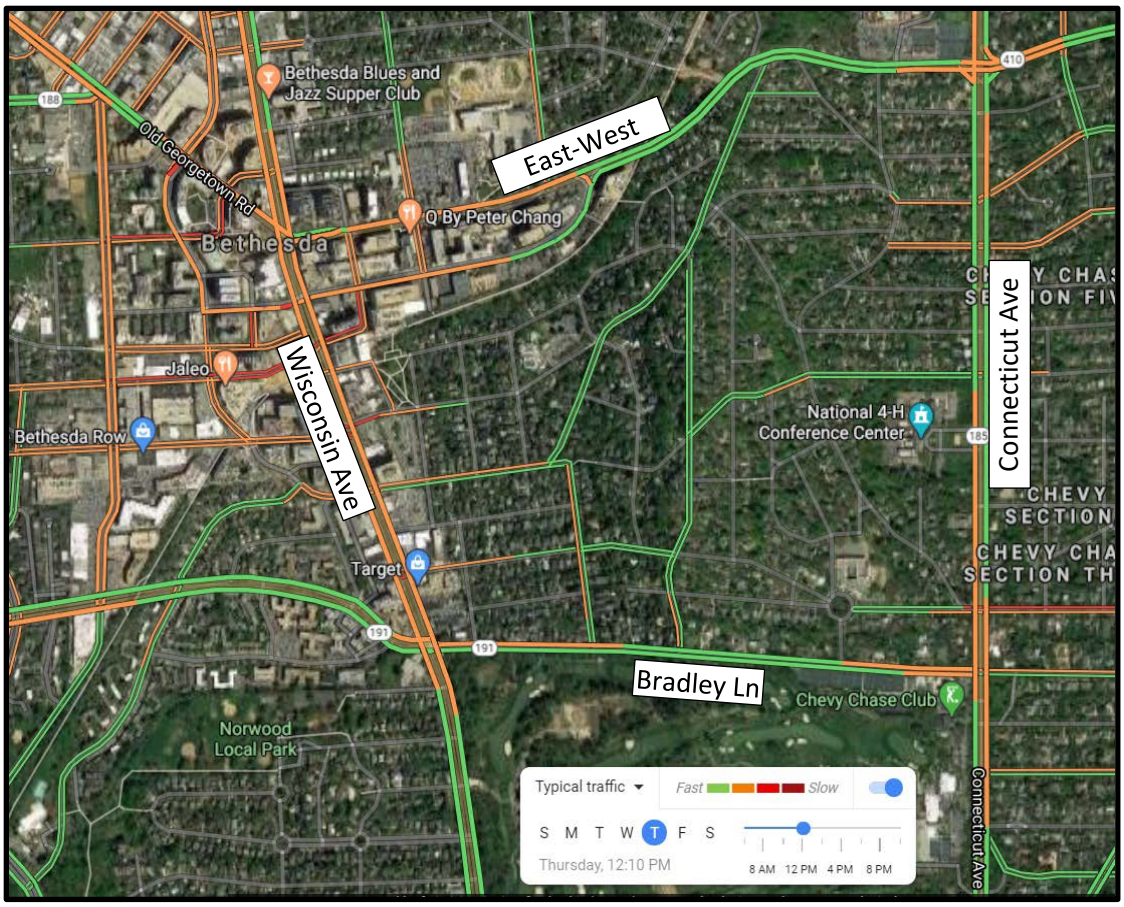


Figure 6: Midday Peak Period Traffic Conditions (via Google Maps)

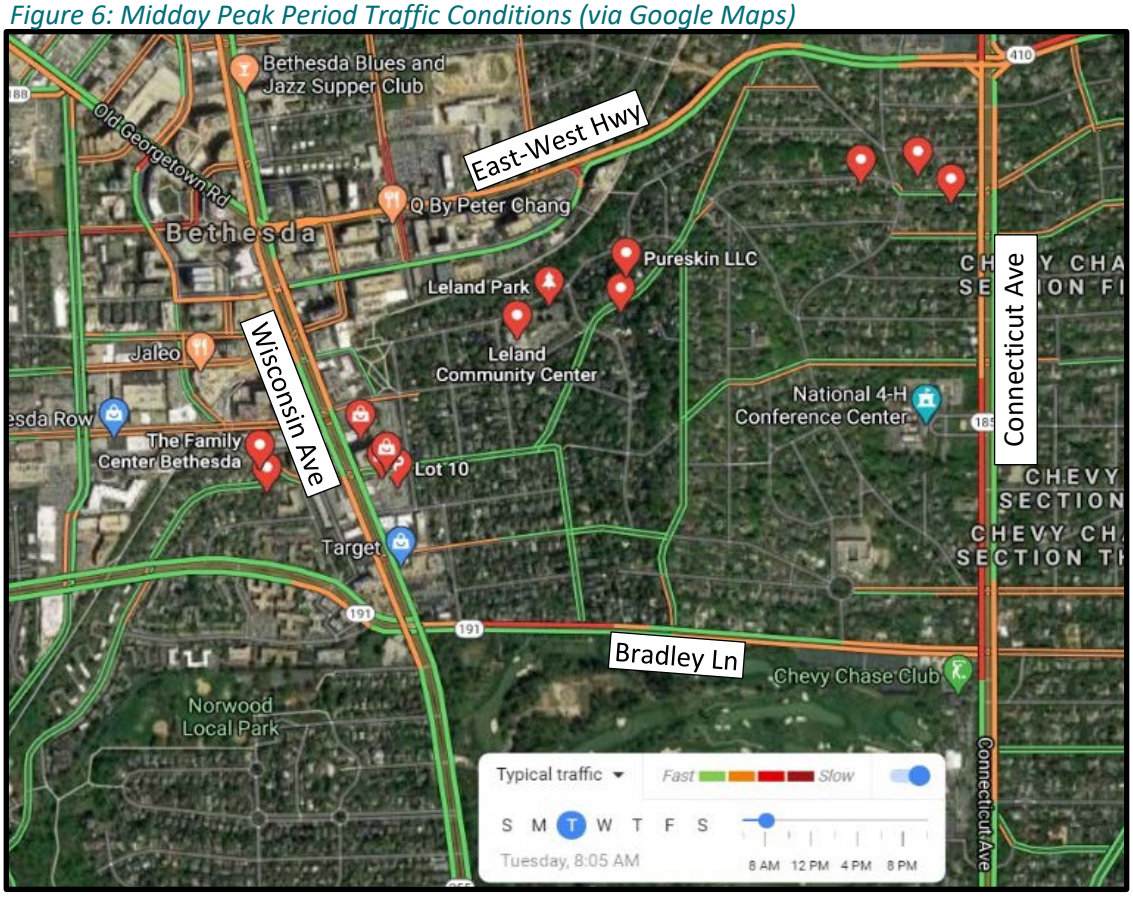


Figure 7: PM Peak Period Traffic Conditions (via Google Maps)

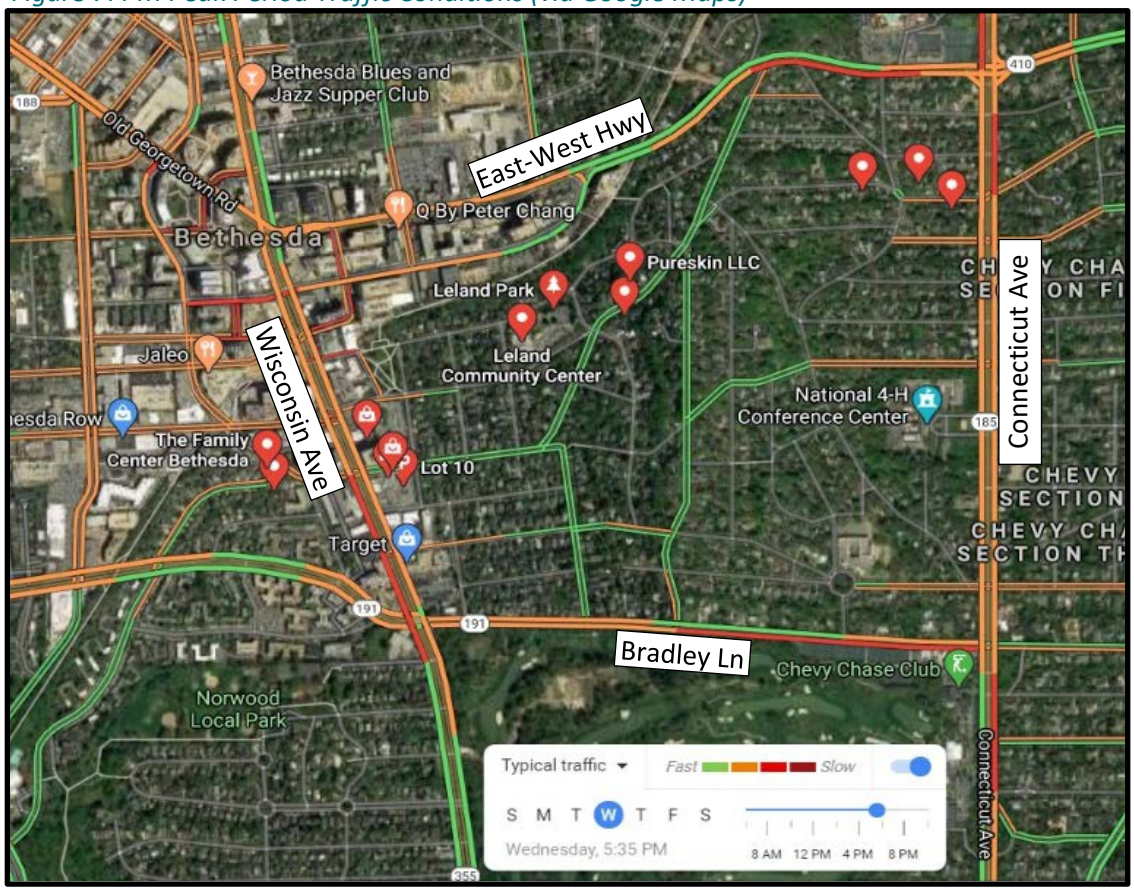


Table 2 summarizes the typical operations of the bi-directional traffic movements for the arterials surrounding the Town's roadway network during the AM, midday, and PM peak hours based on the heat mapping shown on Figures 5, 6 and 7, respectively. The orange color represents moderate delays with vehicles traveling at speeds lower than the posted speed limit. The red color represents heavy congestion and delays with vehicles traveling at speeds significantly lower than the posted speeds limits.

Table 2: Level of Congestion at Adjacent Principal/Minor Arterial Intersections

Movement	AM Peak Period	Midday Peak Period	PM Peak Period
NB Wisconsin Ave towards East-West Hwy			
SB Wisconsin Ave towards Bradley Lane			
WB Bradley Lane towards Wisconsin Ave			
EB Bradley Lane towards Connecticut Ave			
NB Connecticut Ave towards East-West Hwy			
SB Connecticut Ave towards Bradley Lane			
EB East-West Hwy towards Connecticut Ave			
WB East-West Hwy towards Wisconsin Ave			

Table 2 clearly indicates that the bi-directional traffic along the arterials surrounding the Town's limits operate under less than adequate traffic operations during all three (3) key peak periods, which supports why the Town's local roadway network is being utilized as cut-through routes by motorists.

3.2. Compliance with Existing Posted Speed Limit Signs

Based on the speed data collected by AMT, the study locations maintain average speeds between 11 and 19 MPH and 85th percentile speeds between 16 and 24 MPH. Table *3* compares the 85th percentile speed at each location to the posted speed limit on that particular roadway. The 85th percentile speed is defined as the speed at or below which 85 percent of all vehicles are observed to travel under free-flow conditions, regardless of the posted speed limit.

Table 3: Summary of Speed Data Results (Posted vs. Actual)

ROADWAY NAME		85th PERCENTILE SPEEDS	POSTED SPEED LIMIT
Willow Lane (between 45th St & 46th St)		21 MPH	25 MPH
Leland Street (between 45th St & 46th St)		22 MPH	25 MPH
Leland Street (north of Oakridge Ave)		19 MPH	25 MPH
Leland Street (between Oak Ln & Meadow Ln)		21 MPH	25 MPH
Maple Avenue (south of Leland St)		24 MPH	25 MPH
Maple Avenue (north of Oak Ln)		22 MPH	25 MPH
Ridgewood Avenue (south of Oak Ln)		22 MPH	25 MPH
Stanford Street (between East Ave & West Ave)		22 MPH	25 MPH
Stanford Street (east of Ridgewood Ave)	*School Hours 8AM-4PM*	21 MPH	15 MPH
	PM Peak Period 4PM-6PM	20 MPH	25 MPH
Rosemary Street (east of CC Elem School)	*School Hours 8AM-4PM*	20 MPH	15 MPH
	PM Peak Period 4PM-6PM	20 MPH	25 MPH
Hillcrest Place (north of CC Elem School)	*School Hours 8AM-4PM*	16 MPH	15 MPH
	PM Peak Period 4PM-6PM	16 MPH	25 MPH
Meadow Lane (north of Valley Pl)	*School Hours 8AM-4PM*	22 MPH	15 MPH
	PM Peak Period 4PM-6PM	23 MPH	25 MPH
Meadow Lane (south of East-West Hwy)		22 MPH	25 MPH
Aspen Street (between Maple Ave & Chatham Rd)		23 MPH	25 MPH
Blackthorn Street (between Maple Ave & Chatham Rd)		18 MPH	25 MPH

The speed data confirmed that motorists are traveling under the posted speed limit on the majority of Town roadways, while segments of Rosemary Street, Hillcrest Place, and Meadow Lane, and Stanford Street exhibit an 85th percentile speed higher than their respective posted speed limits. Roadway segments with speeds exceeding the posted speed limit are summarized below:

- *Rosemary Street* - the posted speed limit is 15 MPH between the hours of 8AM to 4PM due to the close proximity to the Chevy Chase Elementary School, and 25 MPH during all other hours of the day. Where the speed counts were taken along Rosemary Street, there are three (3) speed humps in close proximity. Speed data indicates an 85th percentile speed of 20 MPH during school and non-school hours. The average speed at this location was found to be 17 MPH throughout the day.
- *Hillcrest Place* - the posted speed limit is 15 MPH between the hours of 8AM to 4PM due to the close proximity to the Chevy Chase Elementary School, and 25 MPH during all other hours of the day. Speed data indicates an 85th percentile speed of 16 MPH during school and non-school hours. The average speed at this location is 11 MPH.
- *Meadow Lane* - the posted speed limit is 15 MPH north of Valley Place between the hours of 8AM to 4PM due to the close proximity to the Chevy Chase Elementary School, and 25 MPH during all other hours of the day. Similar to Rosemary Street, where the speed counts were taken, there are three (3) speed humps in close proximity. Speed data indicates an 85th percentile speed of 22 MPH during school hours and 23 mph during non-school hours. The average speed at this location is 19 MPH.
- *Stanford Street* - the posted speed limit is 15 MPH east of Ridgewood Ave between the hours of 8AM to 4PM due to the close proximity to the Chevy Chase Elementary School, and 25 MPH during all other hours of the day. Speed data indicates an 85th percentile speed of 21 MPH during school hours and 20 MPH during non-school hours. The average speed at this location is 18 MPH.

3.3. Compliance with Existing Access Restriction Signage

Access restriction signage is provided throughout the Town in the form of restricting turn and through movements during peak periods of the day or permanently, as well as by making specific roadway sections one-way (by installing "One-Way" signs) and installing "Do Not Enter" signs to restrict entry. The intent of these access restrictions is to deter non-residents from entering the Town to bypass the congested principal and minor arterials surrounding the Town limits. These restrictions, however, apply to both residents and non-residents entering the Town streets. Most of the access restrictions were observed to be on weekdays (Monday to Friday) from 7AM to 9AM and from 4PM to 6PM. The intersection traffic volumes during these periods were used to determine the number of sign restriction violators at key intersections within the study area.

While the majority of drivers do obey the entry restriction signing throughout the Town; the traffic data indicated that motorists are violating restrictions at numerous locations. **Table 4** provides a summary of the observed violations of access restrictions at the key entry points within the Town.

Table 4: Summary of Number of Violators vs. Existing Restrictions (based on the TMC Data)

ROADWAY NAME/MOVEMENT	RESTRICTIONS (Mon-Fri)	# OF VIOLATORS [1]	
		AM	PM
Wisconsin Ave onto Leland St [2]	No Left Turns 4PM-6PM	N/A	18
Bradley Ln onto West Ave	No Left/Right Turns 7AM-9AM, 4PM-6PM	28	27
Bradley Ln onto East Avenue	No Left/Right Turns 7AM-9AM	59	N/A
Bradley Ln onto Maple Ave	No Left/Right Turns 7AM-9AM; No Left Turns 4PM-7PM	48	88
Bradley Ln onto Hillcrest Pl	No Left/Right Turns 7AM-9AM; No Left Turns 4PM-7PM	50	37
Maple Ave towards Aspen St	Do Not Enter 4PM-6PM	N/A	134
E-W Hwy onto Meadow Ln	No Left/Right Turns 7AM-9AM, 4PM-6PM	43	22
E-W Hwy onto Chatham Rd	No Left/Right Turns 7AM-9AM, 4PM-6PM	23	42
E-W Hwy onto Maple Ave	No Left/Right Turns Anytime	4	3
Maple Avenue onto E-W Hwy	No Left Turns Anytime	1	2
Connecticut Ave onto Leland St	No Left/Right Turns 7AM-9AM	29	N/A

[1] The volumes shown on Table 4 include both cut-through and non-cut-through traffic.

[2] Located outside of the Town limits

***Note: In many instances, violations were minimal during the restricted times and then** increased significantly during the hours directly before and/or after. This occurs primarily along Leland Street at 46th Street (i.e. PM Peak) and along Bradley Street at East Avenue (i.e. AM Peak)*

3.4. Cut-Through Analysis

Origin-Destination data was collected at key intersections within the Town of Chevy Chase to determine the recurring cut-through routes being used by motorists to travel between points on Wisconsin Avenue, East-West Highway, Connecticut Avenue and Bradley Lane. This data was collected over four (4) consecutive days (December 9th, 2019 to December 12th, 2019) during the weekday hours of 6AM to 7PM (i.e. 13-hours). The findings presented in this section represent the cut-through volumes associated with the worst-case day; which was determined to be Tuesday, December 10, 2019.

The primary origin-destination entry/exit points are provided below:

- Wisconsin Avenue: To East-West Highway, Connecticut Avenue and Bradley Lane
- Bradley Lane: To Wisconsin Avenue, East-West Highway, and Connecticut Avenue
- Connecticut Avenue: To Wisconsin Avenue and East-West Highway
- East-West Highway: To Wisconsin Avenue

For each the entry points captured from the origin-destination data, Table 5 summarizes the total 13-hour cut-through volume, the total 13-hour (6 AM to 7 PM) entering volume, and the current entry sign restrictions.

Table 5: Comparison of Cut-Through Traffic to Overall Volume

Location	Total (6AM-7PM) Entering Volume	Total (6AM-7PM) Cut-Thru Volume	*Percent Cut-Thru vs. Total Volume*
Leland Street EB @ 46th Street	923	614	*67%*
East Avenue NB @ Bradley Lane	876	372	*42%*
Chatham Road SB @ East-West Hwy	179	48	*27%*
Stanford Street WB @ Hillcrest Place	353	159	*45%*
Meadow Lane NB @ Rosemary Street	425	98	*23%*

As a supplement to this information, AMT also utilized the report titled: *Jane E. Lawton Community Recreation Center Traffic Study*, prepared for the Town of Chevy Chase, dated August 2015, to estimate the total cut-through traffic using the Lawton Recreation Center parking lot (via Willow Lane) to travel between Wisconsin Avenue NB and East-West Highway EB. Motorists primarily use this route to avoid the restrictive PM peak period signing posted along Leland Street at Wisconsin Avenue and 46th Street, respectively.

Based upon the Origin-Destination data and the information contained in the August 2015 Lawton Recreation Center Study, AMT identified eleven (11) of the most prevalent cut-through routes (criteria set at > 25 vehicles over the 13-hour period) that are used by motorists to travel between arterials located outside of the Town of Chevy Chase (i.e. Wisconsin Avenue, East-West Highway, Connecticut Avenue and Bradley Lane). Accordingly, Table 6 provides the each of the eleven (11) cut-through routes identified over the 13-hour period.

Table 6: Summary of Cut-Through Volumes

Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 1	**Wisconsin Ave NB**	Leland St	**East-West Hwy EB**	323	3-7 PM		Leland St EB @ 46th St Maple Ave NB @ Aspen St Leland St EB @ Oak Ln		
Route 2	**Wisconsin Ave NB**	Willow Ln [1] Leland St *(to Willow Ln)*	**East-West Hwy EB** **East-West Hwy EB**	202 135	3-7 PM		Leland St EB @ 46th St Maple Ave NB @ Aspen St Leland St EB @ Oak Ln		Lawton Rec. Center Parking Lot
Route 3	**Wisconsin Ave SB**	Leland St	**Connecticut Ave SB**	96	6-10 AM 3-7 PM		Leland St EB @ 46th St	Rosemary St EB @ Hillcrest Pl	
Route 4	**Wisconsin Ave SB**	Leland St	**Bradley Ln EB**	60	6-10 AM 3-7 PM		Leland St EB @ 46th St		
Route 5	**Bradley Ln EB**	East Ave *(to Leland St)*	**East-West Hwy EB**	114	3-7 PM	East Ave NB @ Bradley Ln	Maple Ave NB @ Aspen St		
Route 6	**Bradley Ln EB**	East Ave	**Connecticut Ave NB**	86	3-7 PM	East Ave NB @ Bradley Ln		Rosemary St EB @ Hillcrest Pl	
Route 7	**Bradley Ln EB**	East Ave *(to Meadow Ln)*	**East-West Hwy EB**	25	3-7 PM	East Ave NB @ Bradley Ln			
Route 8	**Bradley Ln WB**	East Ave	**Wisconsin Ave NB**	147	6-10 AM 3-7 PM	East Ave NB @ Bradley Ln			
Route 9	**East-West Hwy WB**	Chatham Rd	**Wisconsin Ave SB**	48	6-10 AM 3-7 PM	Chatham Rd SB @ E-W Hwy	Chatham Rd SB @ E-W Hwy		
Route 10	**Connecticut Ave NB**	Rosemary St	**Wisconsin Ave NB**	159	6-10 AM 3-7 PM	Stanford St WB @ Hillcrest Pl			
Route 11	**Connecticut Ave NB**	Rosemary St	**East-West Hwy EB**	98	3-7 PM				

[1] *Entering traffic volumes determined from Jane E. Lawton Community Recreation Center Traffic Study, dated August 2015*

The following summarizes the cut-through routes for each corridor:

Corridor #1: Wisconsin Avenue

Route 1: To East West Highway – Entering from Leland Street and exiting via Maple Avenue, Chatham Road or Meadow Lane.

Route 2: To East West Highway - Entering from Leland Street and Willow Lane, traveling through the Lawton Center parking lot, and exiting via Maple Avenue, Chatham Road or Meadow Lane.

Route 3: To Connecticut Avenue - Entering from Leland Street and exiting via Rosemary Street.

Route 4: To Bradley Lane - Entering from Leland Street and exiting via East Avenue.

Figure 8 shows the cut-through routes that enter by way of the Wisconsin Avenue corridor.

Corridor #2: Bradley Lane

Route 5: To East-West Highway – Entering from East Avenue and exiting via Maple Avenue or Chatham Road.

Route 6: To Connecticut Avenue – Entering from East Avenue and exiting via Rosemary Street.

Route 7: To East West Highway – Entering from East Avenue and exiting via Meadow Lane.

Route 8: To Wisconsin Avenue – Entering from East Avenue and exiting via Leland Street or Stanford Street.

Figure 9 shows each of the cut-through routes that enter by way of the Bradley Lane corridor.

Corridor #3: East-West Highway

Route 9: To Wisconsin Avenue – Entering from Chatham Road and exiting via Leland Street.

Figure 10 shows the cut-through routes that enter by way of the East-West Highway corridor.

Corridor #4: Connecticut Avenue

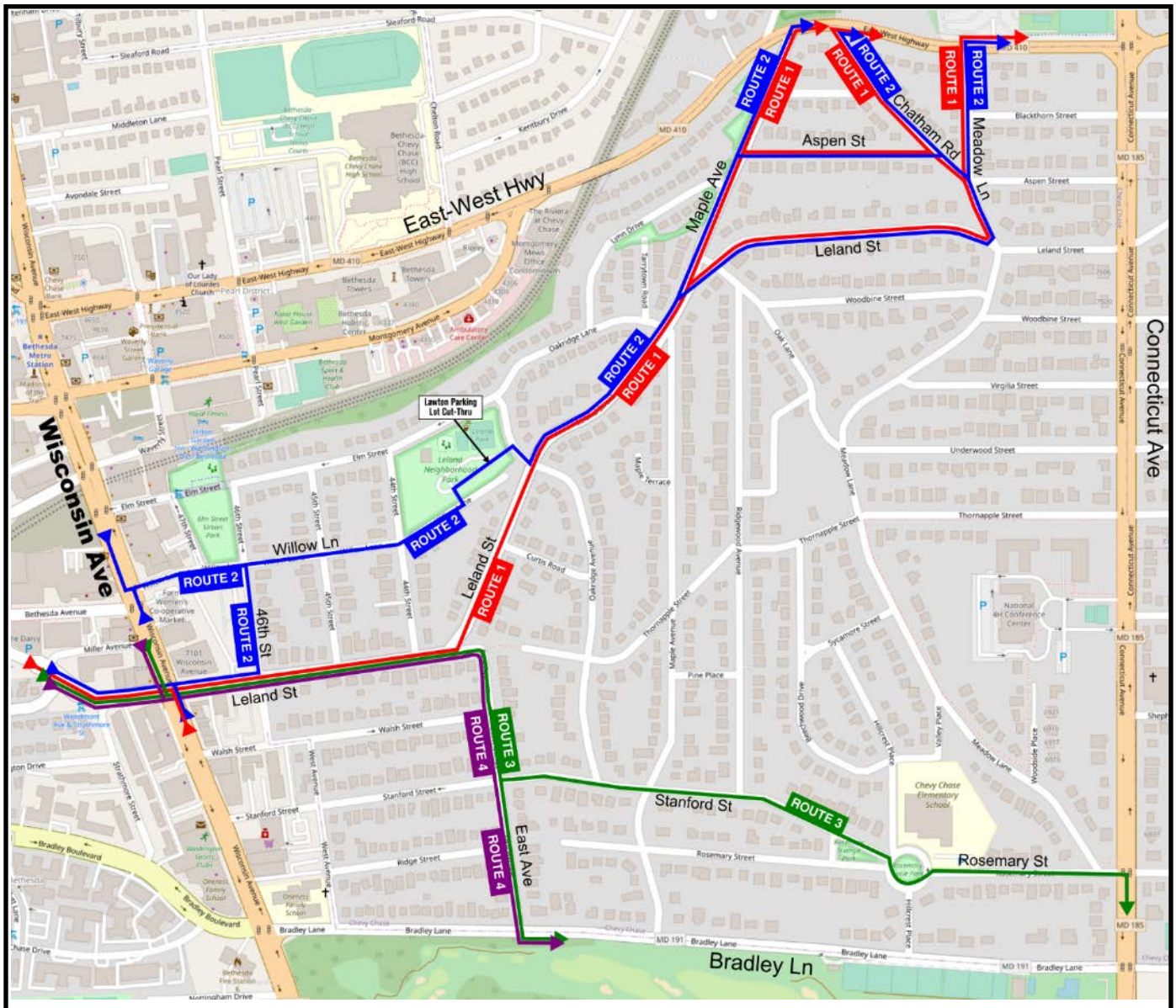
Route 10: To Wisconsin Avenue – Entering from Rosemary Street, exiting via Leland Street or Stanford Street.

Route 11: To East-West Highway – Entering from Rosemary Street and exiting via Maple Avenue, Chatham Road or Meadow Lane.

Figure 11 shows the cut-through routes that enter by way of the Connecticut Avenue corridor.

Note: The color-coding used to indicate each of routes on Table 5 corresponds to those used on Figures 8-11.

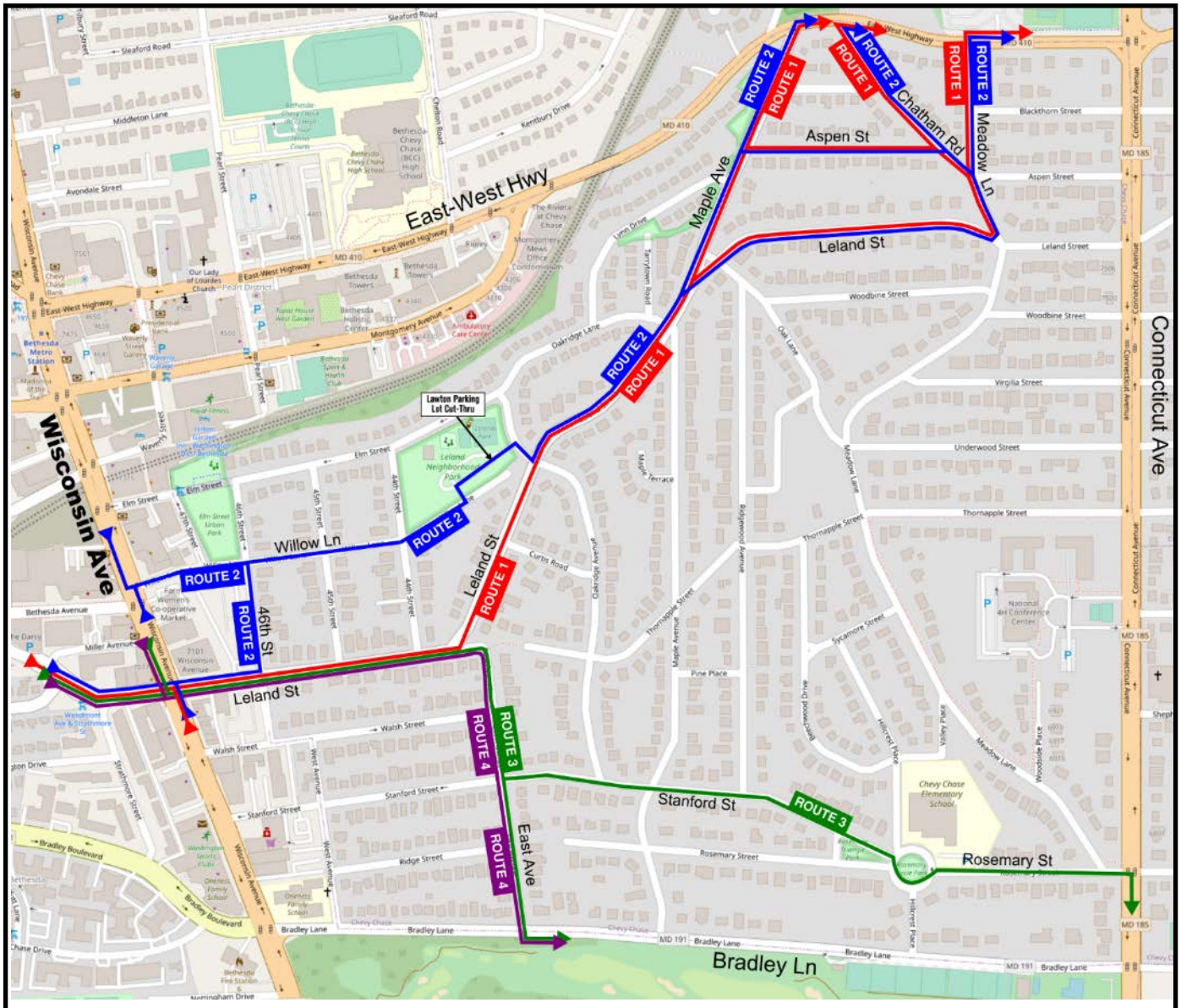
Figure 8: Wisconsin Avenue - Corridor Cut-through Routes



Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 1	Wisconsin Ave NB	Leland St	East-West Hwy EB	323	3-7 PM		Leland St EB @ 46th St Maple Ave NB @ Aspen St Leland St EB @ Oak Ln		
Route 2	Wisconsin Ave NB	Willow Ln [1]	East-West Hwy EB	202	3-7 PM		Leland St EB @ 46th St Maple Ave NB @ Aspen St Leland St EB @ Oak Ln		Lawton Rec. Center Parking Lot
		Leland St *(to Willow Ln)*	East-West Hwy EB	135					
Route 3	Wisconsin Ave SB	Leland St	Connecticut Ave SB	96	6-10 AM 3-7 PM		Leland St EB @ 46th St	Rosemary St EB @ Hillcrest Pl	
Route 4	Wisconsin Ave SB	Leland St	Bradley Ln EB	60	6-10 AM 3-7 PM		Leland St EB @ 46th St		

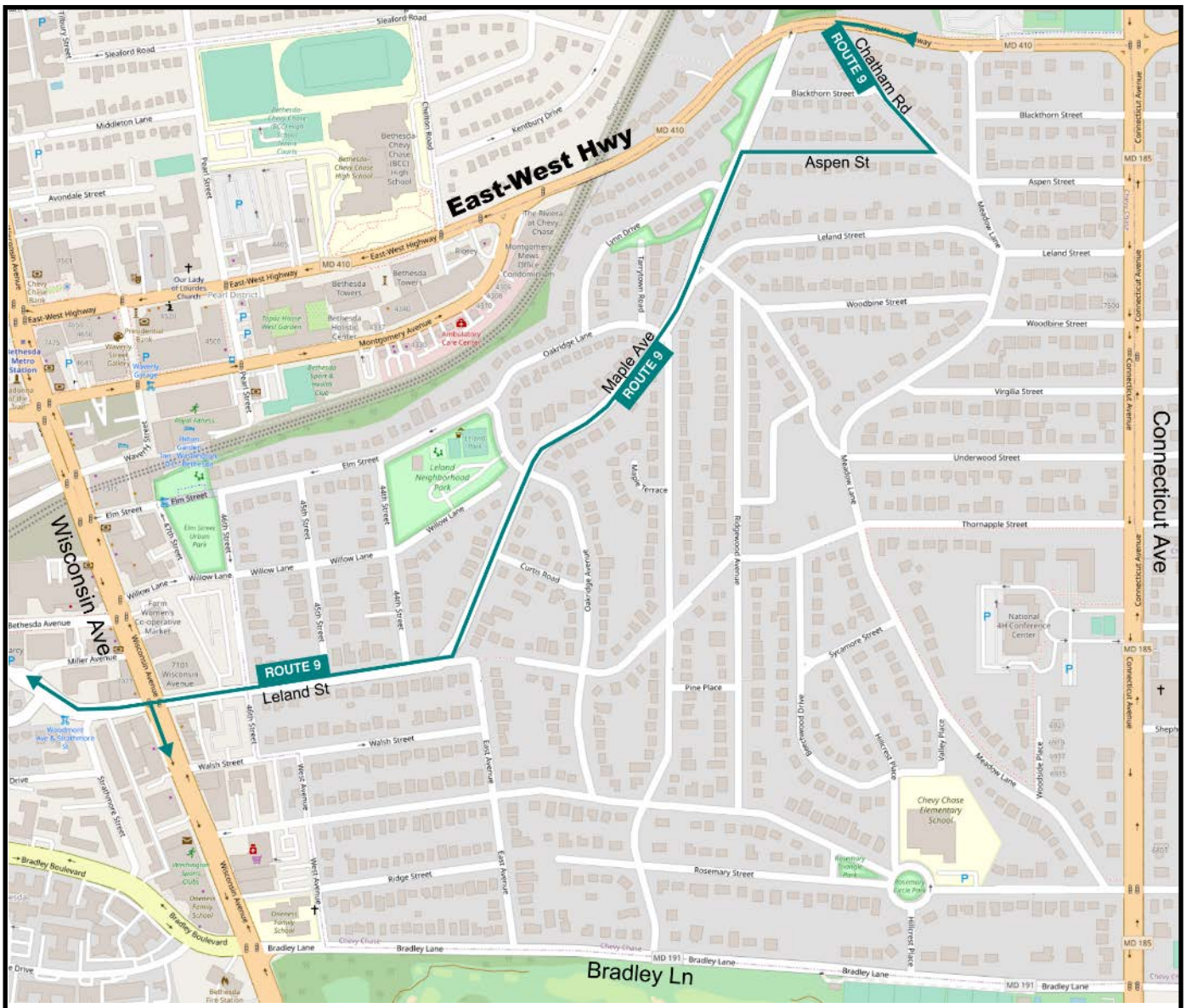
[1] *Entering traffic volumes determined from Jane E. Lawton Community Recreation Center Traffic Study, dated August 2015*

Figure 9: Bradley Lane Corridor - Cut-through Routes



Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 5	Bradley Ln EB	East Ave *(to Leland St)*	East-West Hwy EB	114	3-7 PM	East Ave NB @ Bradley Ln	Maple Ave NB @ Aspen St		
Route 6	Bradley Ln EB	East Ave	Connecticut Ave NB	86	3-7 PM	East Ave NB @ Bradley Ln		Rosemary St EB @ Hillcrest Pl	
Route 7	Bradley Ln EB	East Ave *(to Meadow Ln)*	East-West Hwy EB	25	3-7 PM	East Ave NB @ Bradley Ln			
Route 8	Bradley Ln WB	East Ave	Wisconsin Ave NB	147	6-10 AM 3-7 PM	East Ave NB @ Bradley Ln			

Figure 10: East-West Highway Corridor - Cut-through Routes



Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 9	East-West Hwy WB	Chatham Rd	Wisconsin Ave SB	48	6-10 AM 3-7 PM	Chatham Rd SB @ E-W Hwy	Chatham Rd SB @ E-W Hwy		

Figure 11: Connecticut Avenue - Corridor Cut-through Routes

Route #	Origination	Entry Point	Destination	Total 13-Hr Cut-Thru Volume	Peak Period for Cut-thru	Cut-Thru Route Signage Restrictions			Other
						7-9 AM (Mon-Fri)	4-6 PM (Mon-Fri)	4-7 PM (Mon-Fri)	
Route 10	Connecticut Ave NB	Rosemary St	Wisconsin Ave NB	159	6-10 AM 3-7 PM	Stanford St WB @ Hillcrest Pl			
Route 11	Connecticut Ave NB	Rosemary St	East-West Hwy EB	98	3-7 PM				

4. RECOMMENDATIONS

4.1. Traffic Calming

AMT collected speed data along fifteen (15) roadway segments (Table 3) within the Town of Chevy Chase. The 85th percentile speed was shown to be under 25 MPH and also lower than the posted speed limit at all but four (4) locations (each of those having posted speeds equal to or less than 20 MPH). Table 7 summarizes the speed data at the four (4) locations where the 85th percentile speeds exceeded that of the posted/legal speed limit:

Table 7: Summary of Locations that Exceeded Posted/Legal Speed Limit

ROADWAY SEGMENT	85th PERCENTILE SPEED	POSTED SPEED LIMIT	% ABOVE SPEED LIMIT	EXISTING SPEED HUMPS?
Stanford Street, east of Ridgewood Avenue	21 MPH	15 MPH*	40%	Yes
Rosemary Street, east of Chevy Chase Elem. School	20 MPH	15 MPH*	33%	Yes
Hillcrest Place, north of Chevy Chase Elem. School	16 MPH	15 MPH*	7%	No
Meadow Lane, north of Valley Place	22 MPH	15 MPH*	47%	Yes

* School Zone Signing (Monday-Friday, 8AM-4PM)

Note: The 85th percentile speed is the speed at or below which 85 percent of the motorists drive on a given road when unaffected by slower traffic or poor weather. This is the speed that most motorists on that road consider safe and reasonable under ideal conditions. It is a good guideline for the appropriate speed limit for that road.

ROADWAY SEGMENTS LOCATED OUTSIDE THE VICINITY OF CHEVY CHASE ELEMENTARY SCHOOL

- The 85th percentile speed was shown to be under 25 MPH and also lower than the posted speed limit at all but four (4) locations (i.e. in the vicinity of Chevy Chase Elementary School with 15 MPH posted speeds).
- Montgomery County's *Complete Streets Design Guide* designates the Target Speed for Neighborhood Connectors and Streets to be 25 MPH and 20 MPH, respectively.
- It is recommended that the Town-wide speed limit be reduced to 20 MPH from 25 MPH as per Town Code.
    - Maryland Law requires that a traffic engineering study be performed to reduce the posted speed limit below the required minimum of 25 MPH. Accordingly, AMT applied FHWA's USLIMITS2 online Speed Limit Recommendation Tool (based on NCHRP 3-67) to evaluate the following key streets: Leland Street, Maple Avenue, Ridgewood Avenue and Meadow Lane. The USLIMITS2 output reports, provided in *Appendix C*, support a Town-wide posted speed limit of 20 MPH.
    - 20 MPH signs would replace all existing 25 MPH signs within the Town. Supplemental signs to be installed, as needed, to cover all ingress points along Wisconsin Avenue, Bradley Lane, Connecticut Avenue and East-West Highway.
- Based on discussions with Town Staff, there are no indications that traffic and/or pedestrian accidents are occurring as a result of excessive vehicle speeds within the Town.

ROADWAY SEGMENTS LOCATED WITHIN THE VICINITY OF CHEVY CHASE ELEMENTARY SCHOOL

- The roadway segments surrounding Chevy Chase Elementary School were reduced to 15 MPH based upon a previous evaluation performed by the Town.
- According to the Town Code, the posted speed limit of 15 MPH is applicable Monday-Friday during the hours of 8AM-4PM.

- The 85th percentile speed was shown to be above 15 MPH at all locations during the times when the 15 MPH limit applies. As speeds in school zones are influenced more by the "normal" speed limit and the geometrics of the particular street, recommending a reduction in School Zone signing below 15 MPH was not deemed to be an effective mitigation strategy.
- As depicted in ***Figure 12***, existing signing assemblies around Chevy Chase Elementary School include a School Zone Sign, a 15 MPH "Speed Limit" sign, and a "Fines Double in School Zone" sign. They do not, however, indicate that the posted speed varies based on specific days/hours, nor where the speed restrictions start and end along a given corridor.
- For these locations, it is recommended that improved signing and increase police enforcement to achieve lower speeds during the weekday hours of 8 AM - 4 PM on streets in the vicinity of existing school zones (Chevy Chase Elementary School and the Oneness Family School). New signing would indicate that the posted speed varies based on specific days/hours and where the speed restrictions start and end along a given corridor. ***Figure 13*** illustrates the proposed signs that would replace the existing sign shown on Figure 12. *Note: The Oneness School Zone signing was not in-place when the data was initially collected/analyzed.*

Figure 12: Existing School Zone Signing

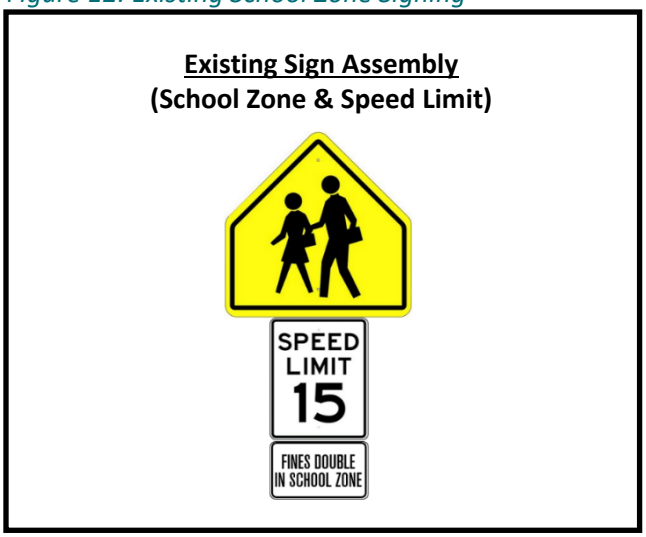
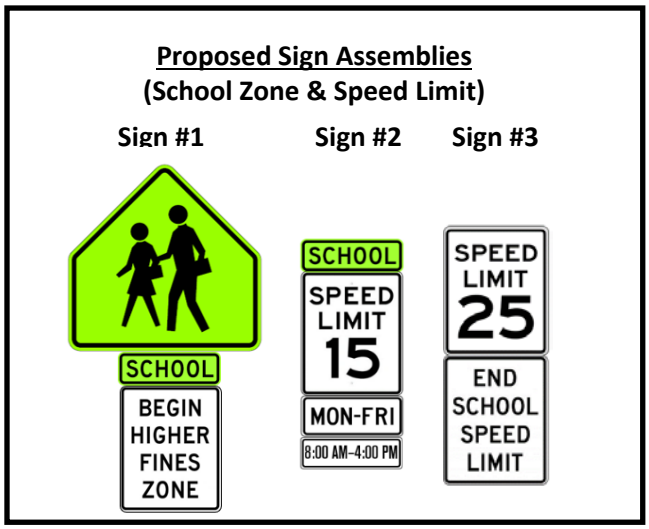


Figure 13: Proposed School Zone Signing



4.2. Mitigation of Cut-through Routes by Corridor

The goal of this Study was to develop mitigation strategies that may be implemented by the Town to reduce the use of cut-through routes caused by traffic congestion along adjacent arterials. AMT identified the most prevalent cut-through routes used by motorists to travel between the following corridors bordering the Town: 1) Wisconsin Avenue, 2) Bradley Lane, 3) East-West Highway, and 4) Connecticut Avenue.

Mitigation recommendations focused on the eleven (11) routes with at least twenty-five (25) cut-through vehicles. These Specific measures, including modifying/adjusting entry restrictions, entry restriction hours, and directional designations, were chosen because they are relatively inexpensive, easy to implement, and easy to adjust, unlike geometric roadway reconfigurations, which are expensive, take time to implement, and are difficult and expensive to reverse. The Town should continue to coordinate with MDOT State Highway Administration (SHA) and Montgomery County Department of Transportation (MCDOT) to facilitate operational improvements along Wisconsin Avenue and Connecticut Avenue to reduce the likelihood for vehicle cut-through traffic within the Town. This may include adjustments to corridor signal timing/phasing to enhance network efficiency or the implementation of regional transportation improvements to address the long-term needs of the area. Maintaining a successful working relationship with MDOT SHA District 3 and MCDOT will be a key strategy in addressing the vehicle cut-through issues described in this report. *An updated traffic study may be authorized by the Town of Chevy Chase, at a future date, to assess any impacts resulting from the implementation of the proposed measures.*

CORRIDOR #1: WISCONSIN AVENUE

Recommended Strategies:

- Expand AM/PM entry restriction hours (i.e. 7-10 AM, 3-7 PM) at Leland Street /46th Street to address the high volume of cut through traffic entering Leland Street between the hours of 7-10 AM, 3-4 PM and 6-7 PM.
- Routes AM/PM peak hour traffic (i.e. 7-10 AM, 3-7 PM) onto Willow Lane and around the Lawton Center via 44th Street, Elm Street and Oakridge Avenue.
- Access to Oakridge Avenue from the Lawton Center parking lot will be prohibited to prevent cut through traffic in the parking lot.
- Elm Street, between 44th Street and Oakridge Avenue, will be converted to a two-way designation to allow for routing around the Lawton Center.
- Oakridge Lane, between Elm Street/Oakridge Avenue and Maple Avenue, will be converted to one-way westbound to prevent eastbound cut-through traffic from continuing directly to Maple Avenue.
- "Do Not Enter" signs will be removed at Maple Avenue and at Leland Street to balance traffic flow and allow PM cut-through traffic (i.e. Routes 1 and 2) to exit onto East-West Highway via Maple Avenue.

Rationale:

- Capture the highest volume of cut through traffic entering Leland Street between the hours of 7-10 AM, 3-4 PM and 6-7 PM.
- Restrictive signing around Lawton Center provides more circuitous route and increases public safety by preventing cut through traffic in the Lawton Center parking lot.
- Willow Lane has no confronting homes between 46th Street and 44th Street, thereby reducing disturbances to residents.
- Maple Avenue has fewer confronting homes, has additional width (i.e. approx. 28' versus approx. 22'), and offers better sight lines than Aspen Street/Chatham Road/Meadow Lane.

Impacts:

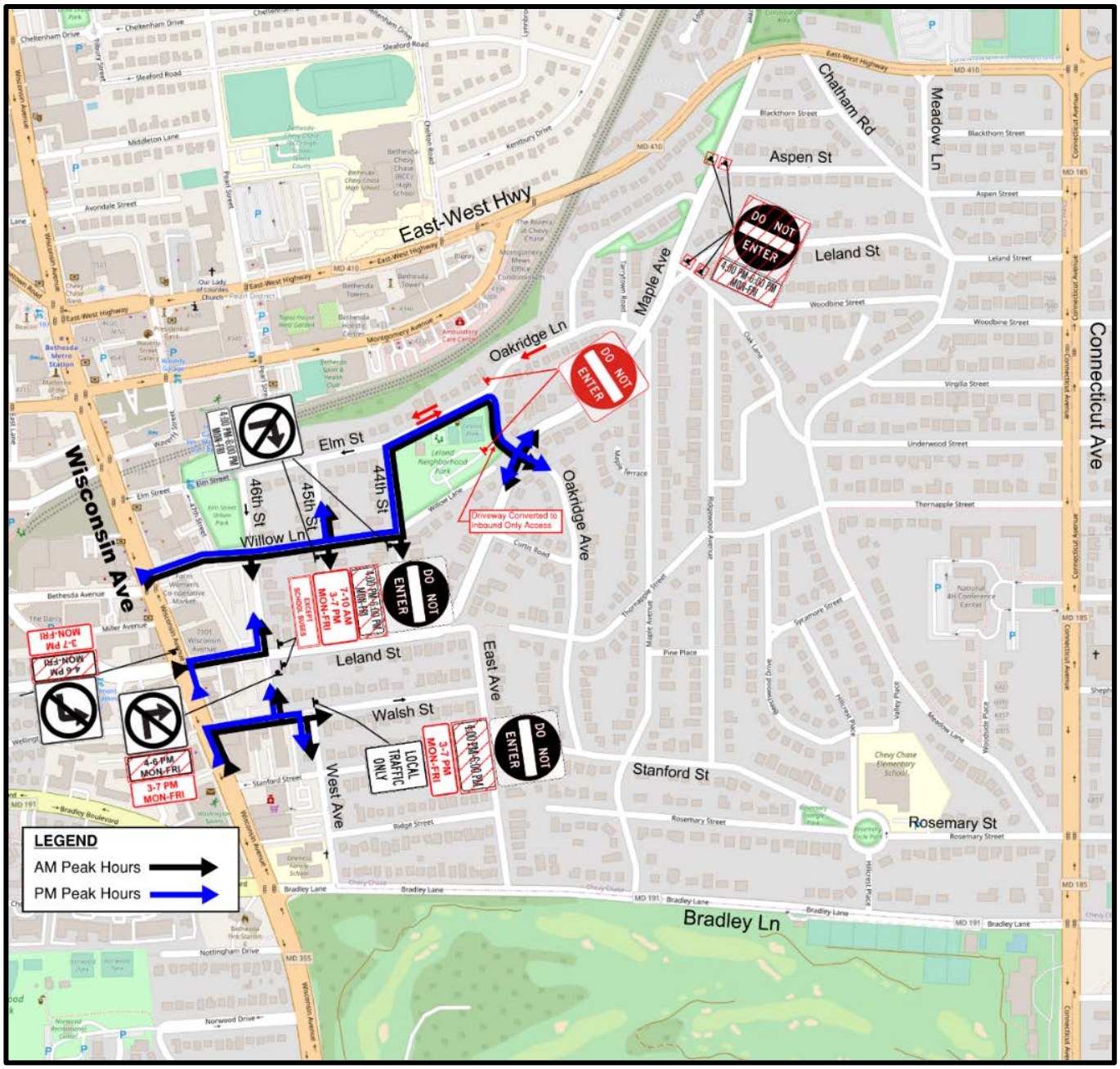
- More traffic on Willow Lane (between 44th and 46th), but Willow Lane has no confronting homes.
- More traffic on 44th Street (north of Willow), Elm Street (east of 44th) and Oakridge Avenue (north of Leland), but these streets have sufficient width (i.e. approx. 25') with confronting homes on one side only.
- More traffic on Maple Avenue (north of Aspen), but roadway geometrics better accommodates traffic.

Highlights:

- ❖ The expansion of the entry restriction at Leland Street/46th Street will address the cut through traffic for Routes *1, 3 and 4* from 7-10 AM and 3-7 PM.
- ❖ Modifications to access via the Lawton Center Parking Lot will improve safety and increase travel time for vehicles using cut-through *Route 2*. Modifications to access at Aspen Street will reduce cut-through traffic on Aspen/Chatham/Meadow.

Figure 14 illustrates the proposed mitigation measures (i.e. access modifications) for the Wisconsin Avenue study area corridor.

Figure 14: Wisconsin Avenue Corridor - Proposed Access Modifications



CORRIDOR #2: BRADLEY LANE CORRIDOR

Recommended Strategies:

- Expand PM entry restriction hours (i.e. 3-7 PM) at Bradley Lane/West Avenue to address cut-through traffic entering from the corridor between the hours of 3-4 PM and 6-7 PM.
- Implement/Expand AM/PM entry restriction hours (i.e. 7-10 AM, 3-7 PM) at Bradley Lane/East Avenue to address the high volume of cut-through traffic entering from the corridor between the hours of 9-10 AM, 3-4 PM, and 6-7 PM.
- Expand PM entry restriction hours (i.e. 3-7 PM) at Bradley Lane/Maple Avenue to address eastbound cut-through traffic entering from the corridor between the hours of 3-4 PM.
- Expand PM entry restriction hours (i.e. 3-7 PM) at Bradley Lane/Hillcrest Place to address eastbound cut-through traffic entering from the corridor between the hours of 3-4 PM (signing excludes school buses).
- Add "Do Not Enter" restriction signing (i.e. 3-7 PM) along westbound Stanford Street, at Oakridge Avenue, to address cut-through volumes that may be displaced by the expanded PM peak period entry restrictions at Bradley Lane/East Avenue.

Rationale:

- Capture the highest volume of cut-through traffic entering via the Bradley Lane corridor.
- Restrictive signing creates circuitous cut-through routing by diverting traffic to other corridors.

Impacts:

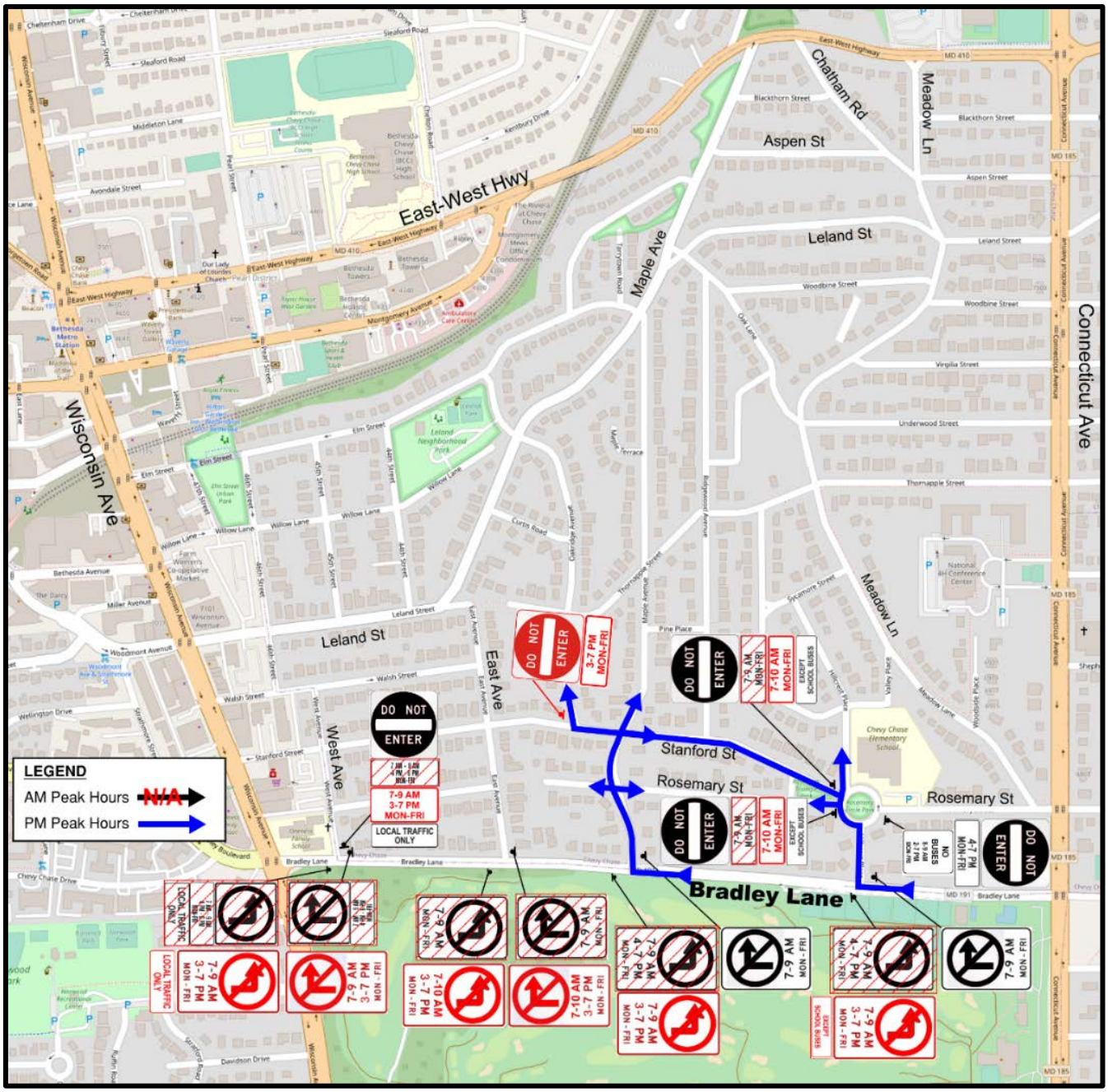
- Increases AM peak period access restrictions onto East Avenue from Bradley Lane by one (1) hour.
- More PM peak hour traffic to Maple Avenue and to Hillcrest Place from westbound Bradley Lane.
- More AM peak hour traffic (i.e. 9-10 AM) to West Avenue and Maple Avenue from westbound Bradley Lane, however, West Avenue has few confronting homes and is adjacent to a commercial area.
- No PM peak period access to westbound Stanford Street from west of Oakridge Avenue.
- Peak period access to southwest corner of Town by residents will necessarily come from Walsh Street instead of East Avenue.

Highlights:

- ❖ The expansion of the entry restriction at Bradley Lane/East Avenue will address the cut-through traffic for Routes 5, 6, 7 and 8 from 7-10 AM and 3-7 PM.
- ❖ "Do Not Enter" restriction signing (i.e. 3-7 PM) along westbound Stanford Street (at Oakridge Avenue) to address diverted cut-through volumes via Maple Avenue and via Hillcrest Place due to the expanded PM peak period entry restrictions at Bradley Lane/East Avenue.

Figure 15 illustrates the proposed mitigation measures (i.e. access modifications) for the Bradley Lane study area corridor.

Figure 15: Bradley Lane Corridor - Proposed Access Modifications



CORRIDOR #3: EAST-WEST HIGHWAY CORRIDOR

Recommended Strategies:

- Expand entry restriction hours (i.e. 6-10 AM, 3-7 PM) at East-West Highway/Chatham Road to address cut through traffic entering from the corridor between the hours of 6-7 AM, 9-10 AM, 3-4 PM and 6-7 PM.
- Expand entry restriction hours (i.e. 6-10 AM, 3-7 PM) at East-West Highway/Meadow Lane to address cut through traffic entering from the corridor between the hours of 6-7 AM, 9-10 AM, 3-4 PM and 6-7 PM.

Rationale:

- Capture additional volumes of cut through traffic entering from East-West Highway/Chatham Road intersection between the hours of 6-7 AM, 9-10 AM, 3-4 PM and 6-7 PM.
- Expand entry restriction hours (i.e. 6-10 AM, 3-7 PM) at East-West Highway/Meadow Lane to mitigate potential diversions caused by the additional access restrictions at East-West Highway/Chatham Road.
- Restrictive signing creates circuitous cut-through routing by diverting traffic to other corridors.

Impacts:

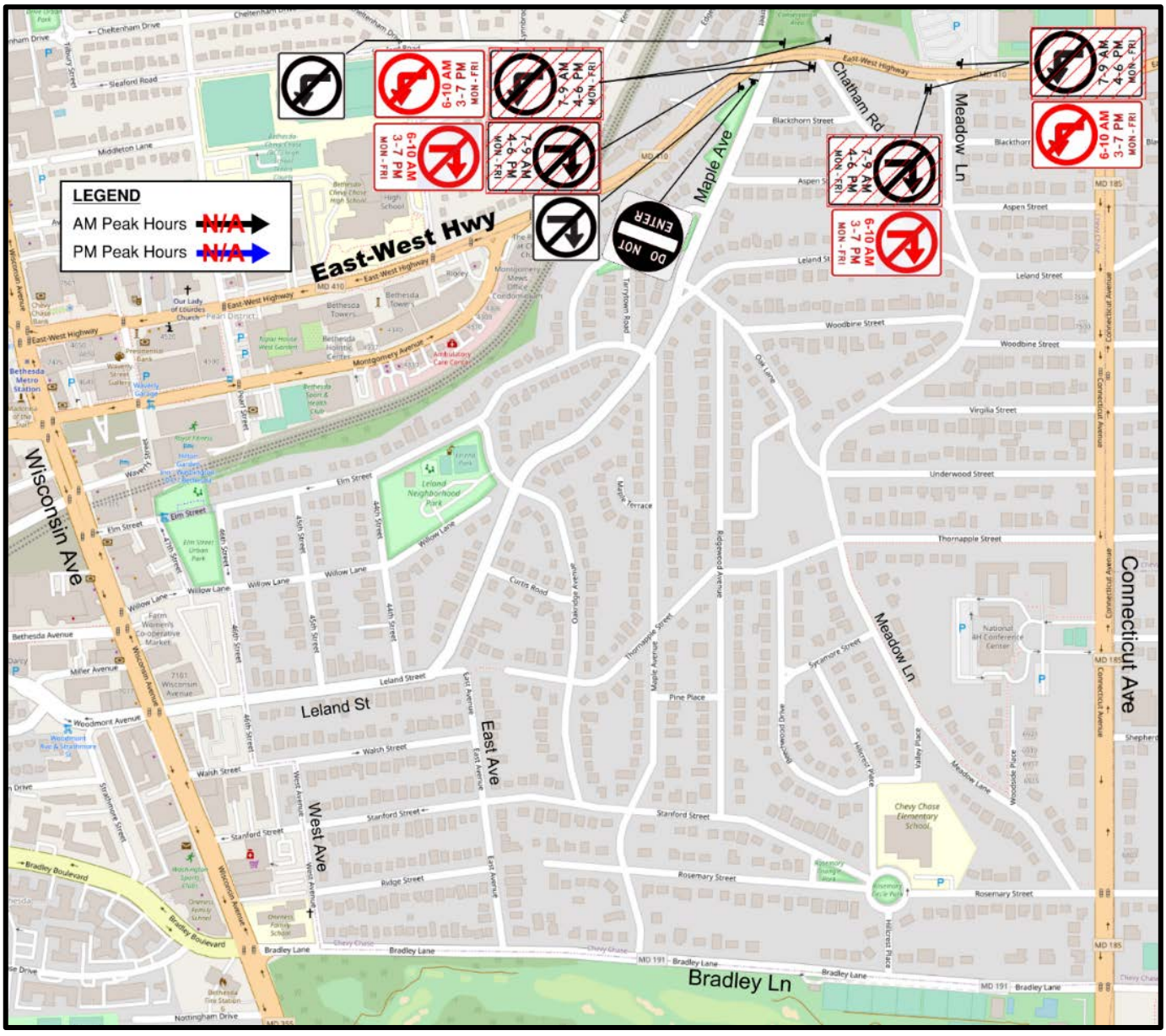
- No AM or PM peak period access to the Town via the East-West Highway corridor.
- Potential PM peak period diversions to entry points along southbound Connecticut Avenue.

Highlights:

- ❖ The expansion of the entry restriction hours at East-West Highway/Chatham Road will address the cut through traffic for Route 9 from 6-10 AM and 3-7 PM.
- ❖ The expansion of the entry restriction hours at East-West Highway/Meadow Lane will address diverted cut-through volumes via Meadow Lane due to the expanded AM and PM peak period entry restrictions at East-West Highway/Chatham Road.

Figure 16 illustrates the proposed mitigation measures (i.e. access modifications) for the East-West Highway study area corridor.

Figure 16: East-West Highway Corridor - – Proposed Access Modifications



CORRIDOR #4: CONNECTICUT AVENUE HIGHWAY CORRIDOR

Recommended Strategies:

- Add "Do Not Enter" restriction signing (i.e. 4-7 PM) along northbound Meadow Lane, at Rosemary Street, to address the highest volume of cut-through traffic entering from Rosemary Street and exiting onto East-West Highway.
- Add "Do Not Enter" restriction signing (i.e. 3-7 PM) along westbound Stanford Street, at Oakridge Avenue, to address the highest volume of afternoon cut-through traffic entering from Rosemary Street and exiting onto Wisconsin Avenue.
- Expand AM entry restriction hours (i.e. 7-10 AM) at Stanford Street/Rosemary Circle and Rosemary Street/Rosemary Circle to address the highest volume of morning cut-through traffic entering from Rosemary Street and exiting onto Wisconsin Avenue.

Rationale:

- Capture the highest volume of cut-through traffic entering from Connecticut Avenue and traveling to Wisconsin Avenue (AM/PM) and to East-West Highway (PM)
- Restrictive signing creates circuitous cut-through routing by diverting traffic to other corridors.

Impacts:

- No PM peak period access northbound along Meadow Lane from Rosemary Street.
- No PM peak period access to westbound Stanford Street from west of Oakridge Avenue.

Highlights:

- ❖ "Do Not Enter" restriction signing (i.e. 4-7 PM) along northbound Meadow Lane (at Rosemary Street) to address the highest volume of cut-through traffic for Route 11 during the PM peak period.
- ❖ "Do Not Enter" restriction signing (i.e. 3-7 PM) along westbound Stanford Street (at Oakridge Avenue) to address the highest volume of cut-through traffic for Route 10 during the PM peak period.
- ❖ Expand AM entry restriction hours (i.e. 7-10 AM) at Stanford Street/ Rosemary Circle and Rosemary Street/ Rosemary Circle to address the highest volume of cut-through traffic for Route 10 during the AM peak period.

Figure 17 illustrates the proposed mitigation measures (i.e. access modifications) for the Connecticut Avenue study area corridor.

Figures 18 and 19 present the access modifications along all four (4) corridors for the AM and PM peak periods, respectively. Table 8 summarizes the impacts of the proposed sign restrictions to cut-through traffic and non-cut-through traffic (i.e. Town residents) at each of the common entry points into the Town.

Figure 17: Connecticut Avenue Corridor - Proposed Access Modifications

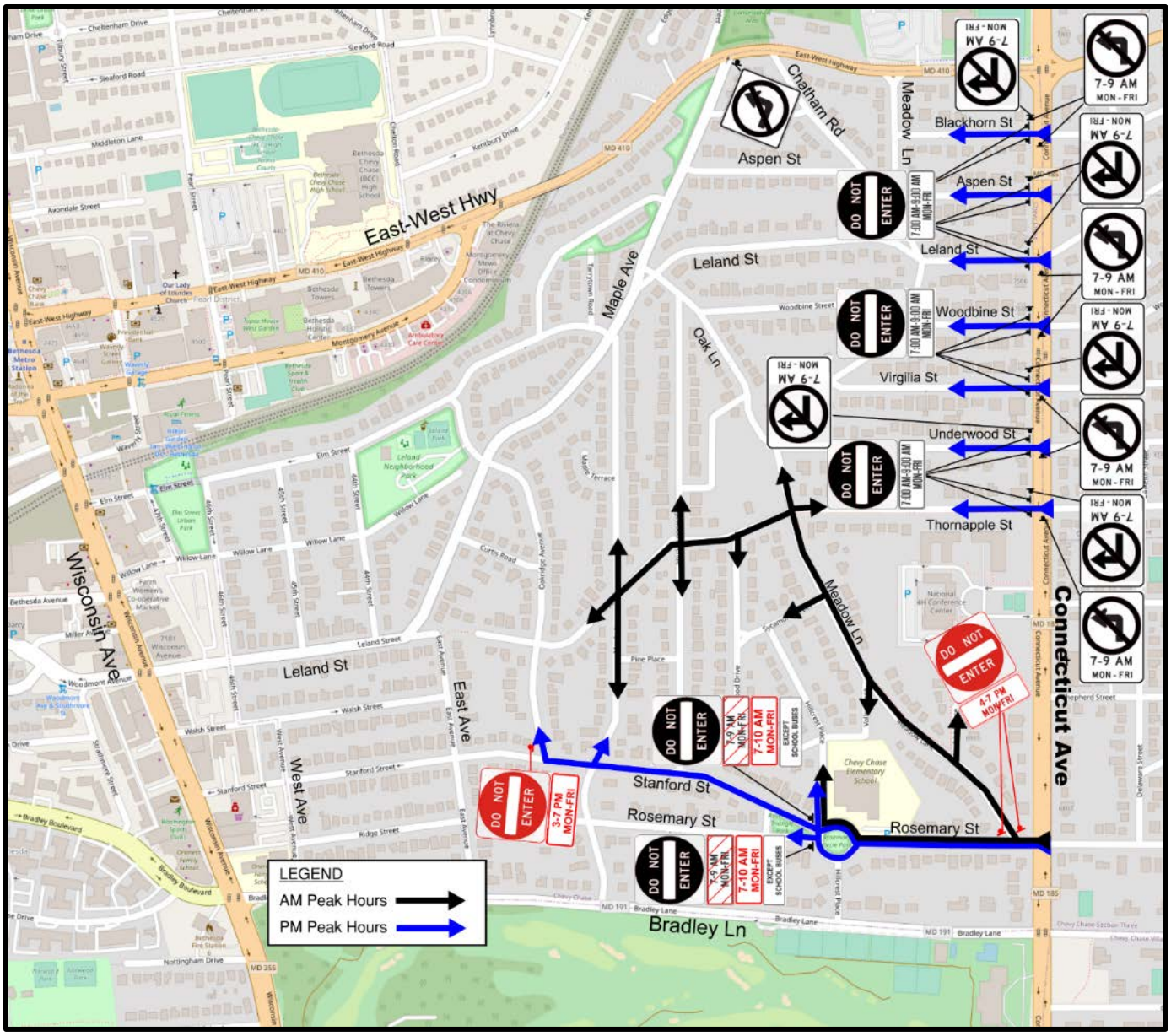


Figure 18: Proposed AM Peak Period Access Modifications – All Corridors

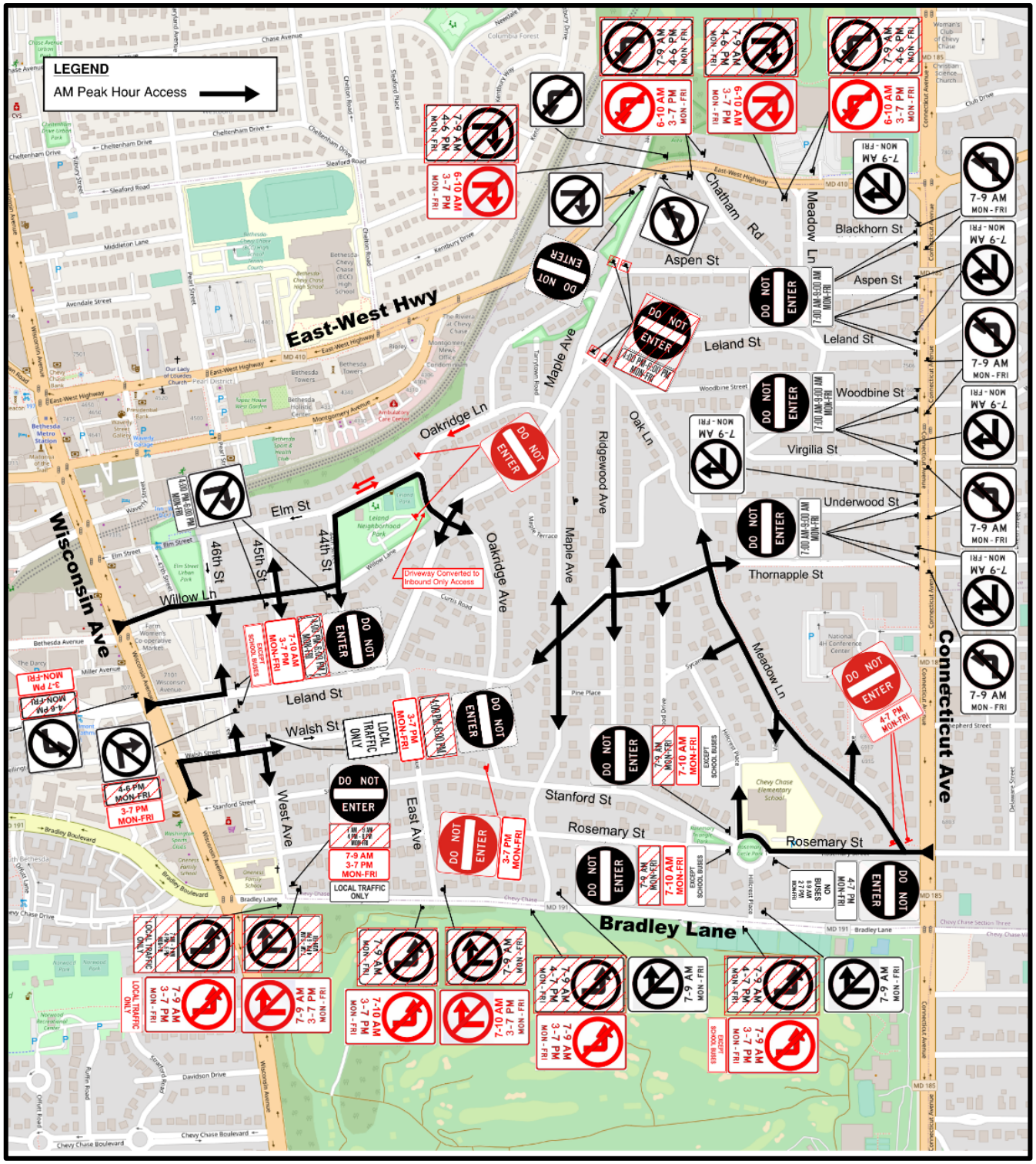


Figure 19: Proposed PM Peak Period Access Modifications – All Corridors

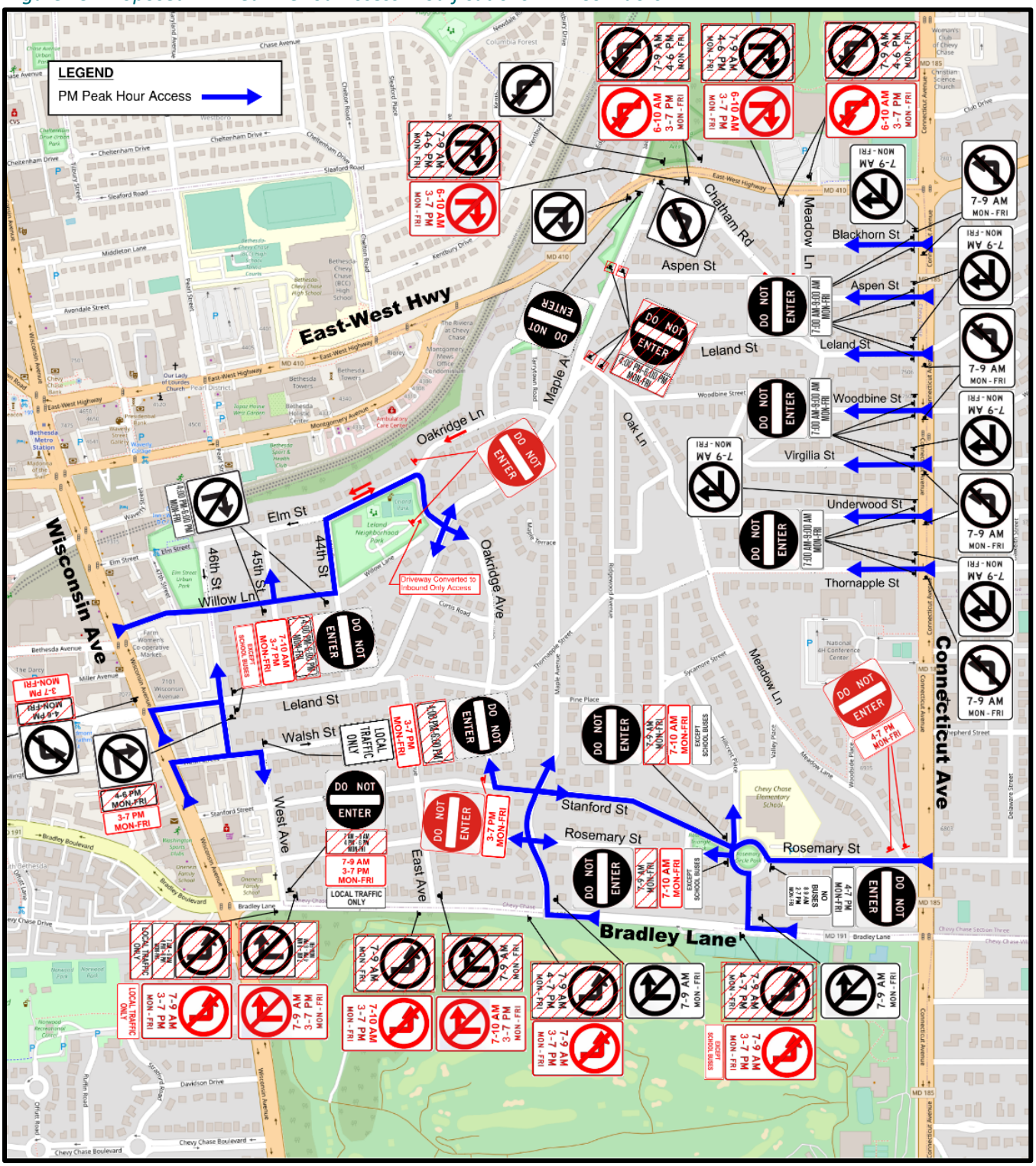


Table 8: Impacts of Proposed Sign Restrictions

Intersection	Total (6AM-7PM) Entering Volume	Total (6AM-7PM) Cut-Thru Volume	*Percent Cut-Thru vs. Total Volume*	Current Weekday Restrictions	*Proposed Weekday Restrictions*	Cut-Thru Volumes Captured During Expanded Hours		Resident Volumes During Expanded Hours		% Reduction to Cut-Thru Traffic at Entry Point
Leland Street EB @ 46th Street	923	614	*67%*	4-6 PM	*7-10 AM 3-7 PM*	7-10 AM	118	7-10 AM	94	**49%**
						3-4 PM 6-7 PM:	185	3-4 PM 6-7 PM:	75	
East Avenue NB @ Bradley Lane	876	372	*42%*	7-9 AM	*7-10 AM 3-7 PM*	9-10 AM:	44	9-10 AM:	1	**81%**
						3-7 PM:	259	3-7 PM:	326	
Chatham Road SB @ East-West Hwy	179	48	*27%*	7-9 AM 4-6 PM	*6-10 AM 3-7 PM*	6-7 AM: 9-10 AM:	14	6-7 AM: 9-10 AM:	3	**29%**
						3-4 PM: 6-7 PM:	5	3-4 PM: 6-7 PM:	30	
Stanford Street WB @ Hillcrest Place	353	159	*45%*	7-9 AM (at Hillcrest Pl)	*7-10 AM (at Hillcrest Pl) 3-7 PM (at Oakridge Ave)*	9-10 AM:	24	9-10 AM:	33	**15%**
						3-7 PM:	67	3-7 PM:	66	
Meadow Lane NB @ Rosemary Street	425	98	*23%*	N/A	*4-7 PM*	N/A	N/A	N/A	N/A	**65%**
						4-7 PM:	64	4-7 PM:	52	
								Total Cut-Thru Reduction %		**60%**

CUT-THROUGH AND TRAFFIC CALMING/REDUCTION STUDY
APPENDICES

APPENDIX A:
1. TURNING MOVEMENT FIELD SHEETS
2. VEHICLE VOLUME AND SPEED DATA

APPENDIX B:
ORIGIN-DESTINATION OUTPUT SHEETS

APPENDIX C:
USLIMITS2 OUTPUT REPORTS