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# Washington Street Access Management Study

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For the City of Claremont,  
New Hampshire

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Upper Valley Lake Sunapee  
Regional Planning Commission  
10 Water Street, Suite 225  
Lebanon, NH 03766

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DRAFT  
May 24, 2013



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## 1. INTRODUCTION

In implementing the recommendations from a Road Safety Audit (RSA) that was completed on Washington Street (NH Route 11/103) in 2011, the Upper Valley Lake Sunapee Regional Planning Commission (Commission) secured Unified Planning Work Program (UPWP) Special Project approval from the New Hampshire Department of Transportation (NH DOT) to complete a corridor access management study on Washington Street from the intersection of North Street travelling east to Old Newport Road in 2012.

The study seeks to:

- Assess the current conditions;
- Identify where problems exist and future problems may arise, and;
- provide recommendations for safety improvements.



Washington Street Looking West Near Moody Avenue

The assessment of the current conditions consisted of many elements. Commission collected data from the corridor, including: traffic volumes, crash history and reports, current building footprints and road geometry, and curb cut locations. Commission staff conducted multiple site visits throughout the course of the project. The assessment included input from City officials and volunteers through the Project Steering Committee and from residents and businesses along Washington Street through stakeholder meetings conducted in February 2013 and subsequent presentations of recommended improvements.

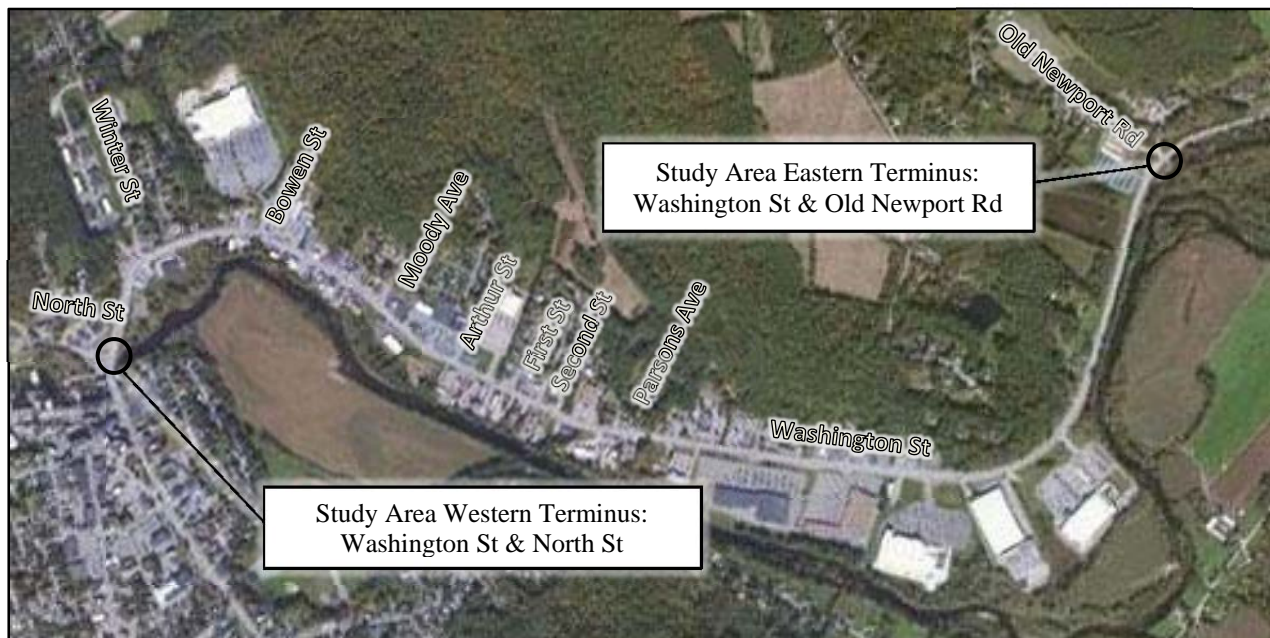


Figure 1: Washington Street Access Management Plan Study Area

## 2. EXISTING CONDITIONS

The 2.3-mile study corridor of Washington Street is between the intersection of North Street and Washington Street, traveling easterly through the commercial corridor to the intersection of Old Newport Road and Washington Street. The corridor has unique needs, as it not only serves the large retailers located along the road; it is also a principal regional east-west travel route and provides connections to Interstates 89 and 91. Additionally, there are residential neighborhoods located along Washington Street. The multiple uses of Washington Street create a steady flow of traffic along a corridor that serves many roles, from commuter route to residential and retail access which illustrates the need for a safe corridor for all users including private and commercial vehicles, pedestrians, and cyclists. With the exception of the last 1000' of the segment to Old Newport Road, the entire segment is within the Urban Compact and is maintained by the City of Claremont.

### 2.1 Traffic Volumes

Two traffic count stations along Washington Street are located north of Moody Avenue and east of Tutherly Heights Road at the easterly end of the study area. The count station along the westerly portion of the study area, near Moody Avenue, recorded an Average Annual Daily Traffic (AADT) volume of 22,000 vehicles per day in 2011. The AADT at the easterly traffic count station was 10,000 vehicles per day in 2012. Table 1 summarizes the traffic count history at the two count stations since 2002.

**Table 1: Washington Street Traffic Count History**

NH 11/NH 103 (Washington Street) North of Moody Avenue					NH 11/NH 103 (Washington Street) East of Tutherly Heights Road				
YEAR	2002	2005	2008	2011	YEAR	2004	2008	2009	2012
AADT	22,000	24,000	20,000	22,000	AADT	9,900	9,300	9,900	10,000

### 2.2 Road Geometry

Washington Street follows the path of the adjacent Sugar River with gentle horizontal curves. From North Street to Bowen Street the road has a 5-lane cross-section (2 lanes of traffic in each direction with a center turn lane) with signalized intersections at North Street, Winter Street and Bowen Street.

The segment of Washington Street from Bowen Street to Petrin Heights Road has a 4-lane cross section. The segment from Petrin Heights Road to Old Newport Road has a 4-lane cross-section with dedicated turn lanes at the signalized intersections for the Home Depot and former Lowes Plazas.



Washington Street has sidewalks on both sides of the street from North Street to the former Lowes Plaza. The sidewalk on the south side continues on Washington Street to the point where the Sugar River Rail Trail can be accessed from the road in the vicinity of the Dane Avenue intersection. The rail trail follows Washington Street for the remainder of the segment.

### 2.3 Study Area Zoning

The zoning along the corridor includes several different designations. The commercial businesses that front Washington Street from North Street to Old Newport Road are zoned Business Two (B-2), the City's highway-oriented commercial zone. There is a mix of three residential uses along this corridor including: Residential One (R-1, single-family dwellings located closer to the city, minimum 10,000 SF lots), Residential Two (R-2, multi-family dwellings, located just outside of central business district, minimum 10,000 SF lots) and Rural Residential (RR-2, 1-acre minimum lot).

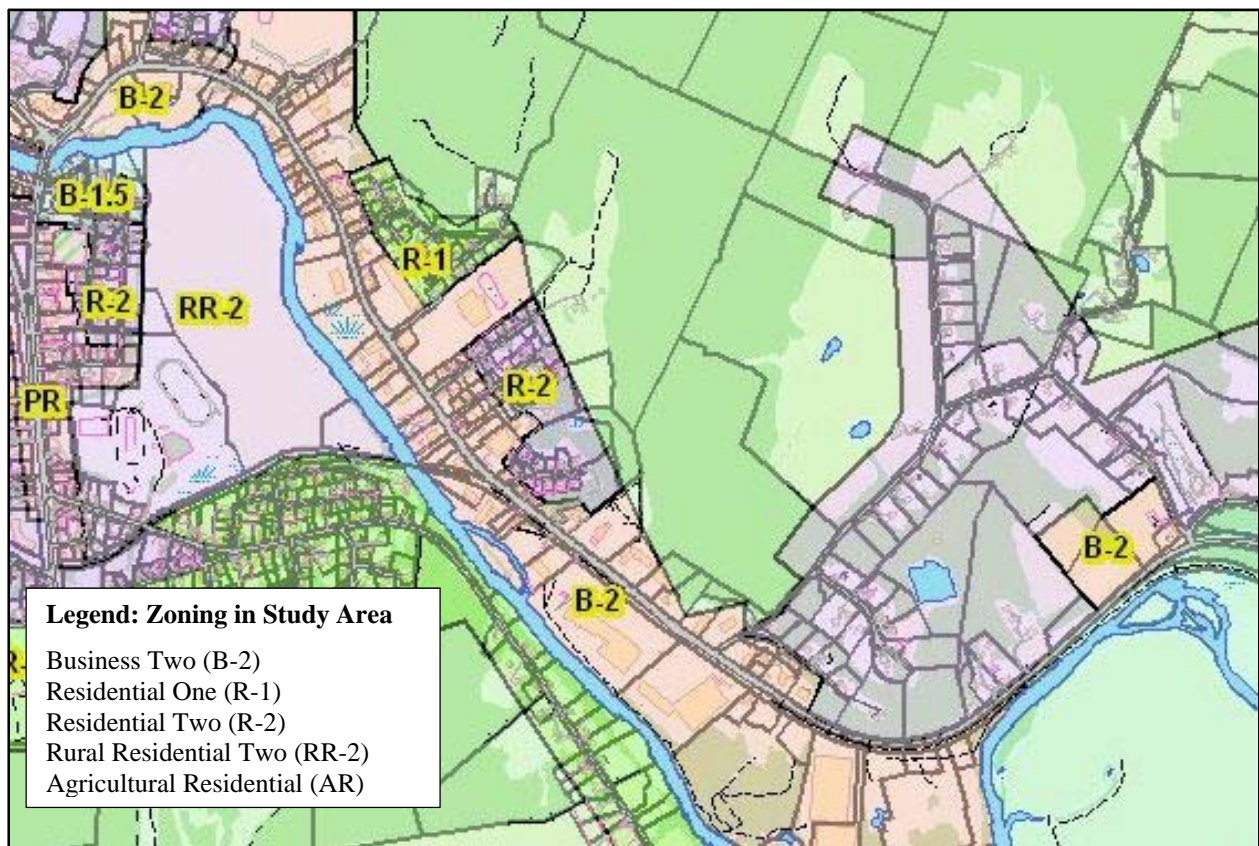


Figure 2: Washington Street Study Zoning Map

### 2.4 NHDOT Road Safety Audit

A Road Safety Audit (RSA) was completed on Washington Street from Parsons Avenue to Winter Street in 2011. The City of Claremont identified this segment of the corridor as an area of concern based on crash history and perceived unsafe conditions. The audit analyzed the safety

conditions and concerns along the corridor and made recommendations for further study or improvements. Working with the Commission, the City formed a team of Auditors representing planning, engineering, law enforcement, and emergency medical service disciplines. Staff from the Department of Transportation facilitated the audit as a function of the Highway Safety Improvement Program.

The RSA recommended some improvements to specific intersections and road segments in addition to the overall recommendation to conduct an Access Management Study:

#### ***Washington Street/Moody Avenue Intersection***

The RSA noted how Moody Avenue provides primary access for approximately forty residences and secondary access for two businesses. The RSA recommended working with the adjacent businesses to improve access points and operator sight lines. The RSA recommended alternative treatments at the Washington Street/Moody Avenue intersection including turn restrictions or the installation of a traffic signal.

#### ***Washington Street, Moody Avenue to Second Street***

The RSA identifies the presence of no fewer than fifteen access points and ten businesses along this segment of Washington Street between Moody Avenue and Second Street. Left turning traffic accounts for the majority of crashes in this area. The RSA recommends a number of options to address safety issues:

- Close Arthur Street and provide access to one or both adjacent signalized intersection.
- Consolidate the two existing signalized intersections into one new signalized intersection at Arthur Street.

#### ***Washington Street/Bowen Street Intersection Safety Improvements***

The RSA recommended that priority be placed in making improvements to the Washington Street/Bowen Street intersection. The audit found that drivers entering traffic from the access points on Washington Street are attempting to cross into the queue of vehicles at the traffic light resulting in confusion and traffic conflicts in both directions. As a result of the RSA, the NHDOT Highway Safety Improvement Program (HSIP) Committee has approved a HSIP-funded project at this intersection. The project will extend the existing medians on Washington Street, close two existing access points (Autozone and Cinnamon Wireless) and connect the to properties with a shared driveway approach to the signalized intersection. The NHDOT and the City of Claremont have committed to completing intersection improvements with the majority of the project funds coming from the Highway Safety Improvement Program. Construction is estimated to be complete by 2015.



Figure 3: Bowen Street Safety Improvement Project - Conceptual Design (Source: NHDOT)

## 2.5 Crash History

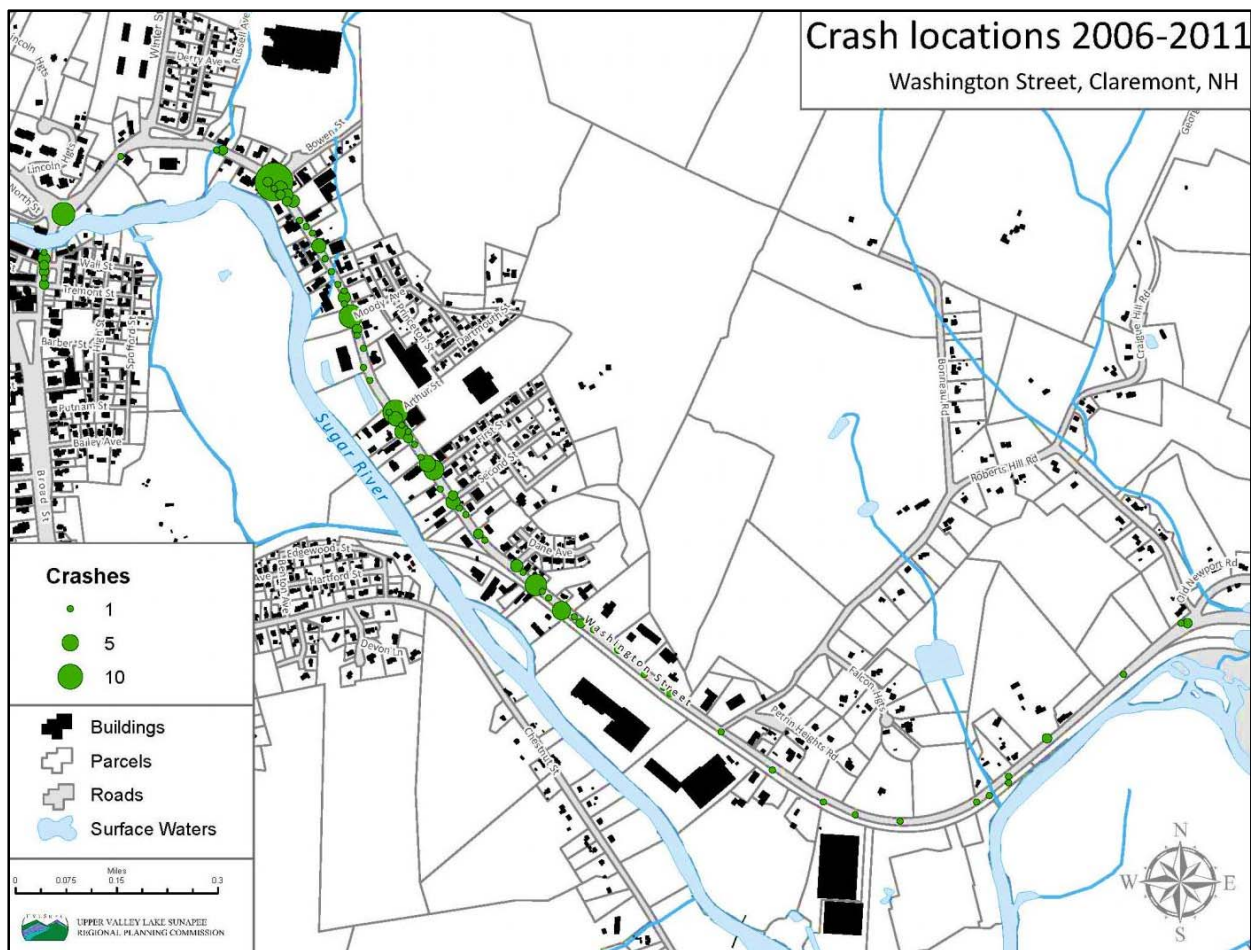
The NHDOT provided geo-referenced information related to crashes along Washington Street in the study area. These crash locations, though not comprehensive, are the best indicator of the roadway safety conditions on a detailed, segment-by-segment basis. Figures 4 and 5 illustrate analyses conducted using vehicle crash data for the latest five years available: 2006 to 2011. This time period was chosen to identify those crashes that occurred after the Washington Street improvement project was complete. Figure 4 summarizes the number of vehicle crashes in proximity to others – the circles of graduated size are larger with the more crashes on record. This figure effectively summarizes the areas where there a high frequency of crashes as well as clusters of crash locations, which can help identify road segments in need of closer attention.

Table 2, below, displays the recorded crashes and their severity. The crash history from 2006-2011 along Washington Street indicates a total of 205 crashes: fewer than 1% of crashes resulted in severe or incapacitating injury, approximately 25% resulted in non-incapacitating injury, and slightly more than 14% resulted in possible or unknown injury. The majority of crashes in the study area, approximately 60%, resulted in only property damage.



**Table 2: Vehicle Crash History by Severity (2006-2011)**

Year	Total Crashes	Vehicle Crash Severity					
		Fatal	Severe/ Incapacitat -ing Injury	Non- Incapacitat -ing Injury	Possible Injury	Unknown	Property Damage Only
2006	21	0	0	4	5	1	11
2007	29	0	0	5	7	0	17
2008	45	0	1	16	4	1	23
2009	40	0	0	7	4	2	27
2010	46	0	1	14	2	0	29
2011	24	0	0	4	3	0	17
<b>Total</b>	<b>205</b>	<b>0</b>	<b>2</b>	<b>50</b>	<b>25</b>	<b>4</b>	<b>124</b>



**Figure 4: Vehicle Crash Location Analysis, Washington Street**

### **3. STAKEHOLDER & PUBLIC MEETINGS**

In February of 2013, there were two Stakeholder Meetings held for residents, business owners and property owners to share their concerns and experiences with Washington Street. Between the two meetings, facilitated by Commission staff, approximately 40 people participated. Presentations of the study findings and recommendations were made to the Claremont Planning Board and stakeholders in May and June 2013.

#### **3.1 Traffic Safety and Turning Vehicles**

One of the primary concerns shared at the meetings related to left turning vehicles creating traffic conflicts. In the portion of Washington Street that is 4-lanes with no turn lanes, motorists turning left are sitting stopped in a travel lane waiting to make their turn. Stakeholders suggested limiting left turns and adding turning lanes and signals as necessary. Additionally, stakeholders suggested identifying intersections, through signage and appropriate geometric treatments, for traffic to reverse direction.

#### **3.2 Business Access**

A significant concern on Washington Street is the high number of curb cuts to businesses and access points which cause confusion and traffic conflicts. The Moody Avenue intersection was identified as a particularly difficult location with the traffic coming in and out of the adjacent Dunkin Donuts at the north-west corner of the intersection with Washington Street. The Dunkin Donuts entrance lacks definition allowing cars to turn in and out without a defined traffic pattern, creating safety problems for residents of the Moody Avenue neighborhood who do not have any other access point to their homes.

Stakeholders want to be sure that there is no negative impact on businesses by limiting access. The groups also expressed the need to provide accessible turn around areas for motorists if left turns are restricted, the need is especially important for tractor trailers which need a large area to turn around.

#### **3.3 Travel Speed**

The traffic speed was also a significant concern, as motorists are perceived to be going much faster than the posted 30 mile-per-hour speed limit. Stakeholder suggestions included adding traffic signals and increasing enforcement as means of calming traffic.

#### **3.4 Bicycle and Pedestrian Facilities**

Vehicle speed and traffic volume makes the Washington Street corridor intimidating to cyclists and pedestrians. Pedestrians noted feeling most vulnerable when crossing the street at crosswalks due to the long length of the crossings and the busy streets.

## 4. CORRIDOR ANALYSIS FINDINGS

The following findings take into consideration the study corridor characteristics, crash data, traffic volumes, analysis of the development patterns, as well as comments from project stakeholders and Steering Committee.

### 4.1 Traffic Volume and Roadway Geometry

Washington Street is a major regional travel corridor. Given local road network and regional development patterns Washington Street will remain a busy, high-volume travel corridor with a substantial portion of regional truck traffic. The present 4-to-5-lane road geometry in the study area should remain to accommodate anticipated increased traffic volumes.

### 4.2 Corridor Segment Analysis

The study corridor consists of three road segments with distinct features to take into consideration in the development of an access management plan. These segments are illustrated in Figure 5.

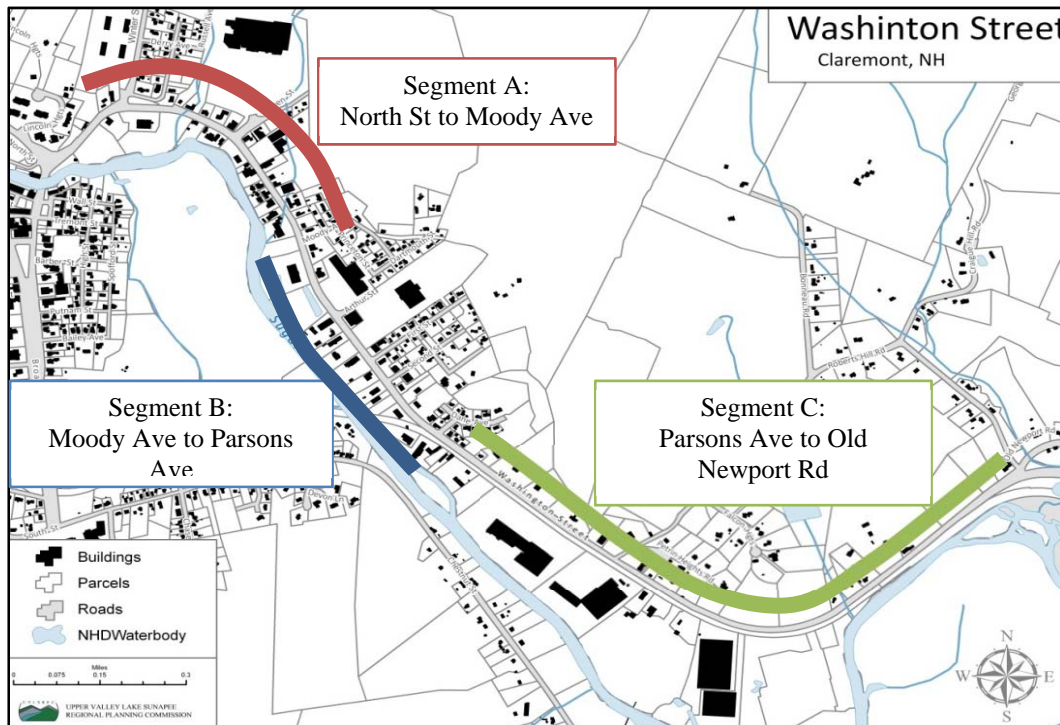


Figure 5: Corridor Segment Analysis

- Segment A: North Street to Moody Avenue – This segment of Washington Street is principally characterized by smaller, individual commercial properties. The buildings are set closer to the road right-of-way with often more than one property access or no curbed

property access along the frontage. This segment is also consistent with the highest traffic volumes and highest frequency of crashes per mile in the study area.

- Segment B: Moody Avenue to Parsons Avenue – The diversity of businesses increases along this segment of Washington Street with a strong residential presence exhibited by residential street intersections at Moody Avenue, First Street, Second Street, and Parsons Avenue. The commercial properties are a mix of smaller properties along with larger properties serving plazas or larger retail stores. Access points to these properties are still somewhat uncontrolled and are cause for concern due to high crash rates.
- Segment C: Parsons Avenue to Old Newport Road – The eastern segment along Washington Street from Dane Avenue to Old Newport Road represents a collection of larger commercial properties and fewer residential properties with limited access to Washington Street. These larger retail stores or plazas have been developed more recently and benefit from considerations of traffic control, safety, and congestion management.

### 4.3 Analysis of Access Points and Overall Traffic Safety

Figure 6 integrates the crash data presented in prior sections of this report with a roadway segment analysis. The resulting data are represented as the total number of vehicle crashes per mile for each study segment using the 2006 to 2011 crash data. Figure 6 clearly indicates higher crash histories per mile in the segments between Bowen Street and Moody Avenue. The remaining road segment analysis indicates high crash rates per mile between Arthur Street and Parsons Avenue and lower crash rates east of Parsons Avenue.

Figure 7 illustrates the frequency of property access points per mile for the same road segments used in the crash analysis illustrated in Figure 6. The access point analysis is based on field observations and aerial photos, which were then geo-referenced in GIS. Each access point in the analysis represents a single access point or each 40-foot segment of an uncurbed frontage along Washington Street.

A comparison of these two figures indicates a strong correlation between the number of vehicle crashes for the period of record and the frequency of access points. The analysis revealed two focus areas for this study:

- **Bowen Street to Moody Avenue:** The improvements to the Bowen Street intersection will substantially improve traffic safety along this roadway segment. There will be further opportunities to improve traffic safety as property redevelopment progresses along Washington Street. It will be important for the City and NHDOT to evaluate the beneficial impacts of the Bowen Street intersection improvements on traffic safety after construction is complete. This analysis will help identify the remaining gaps in roadway safety.
- **Arthur Street to Second Street:** The segment analysis reveals a strong correlation between the frequency of crashes and the number of access points per mile per segment. This segment of road requires close consideration as redevelopment projects are presented to the City.



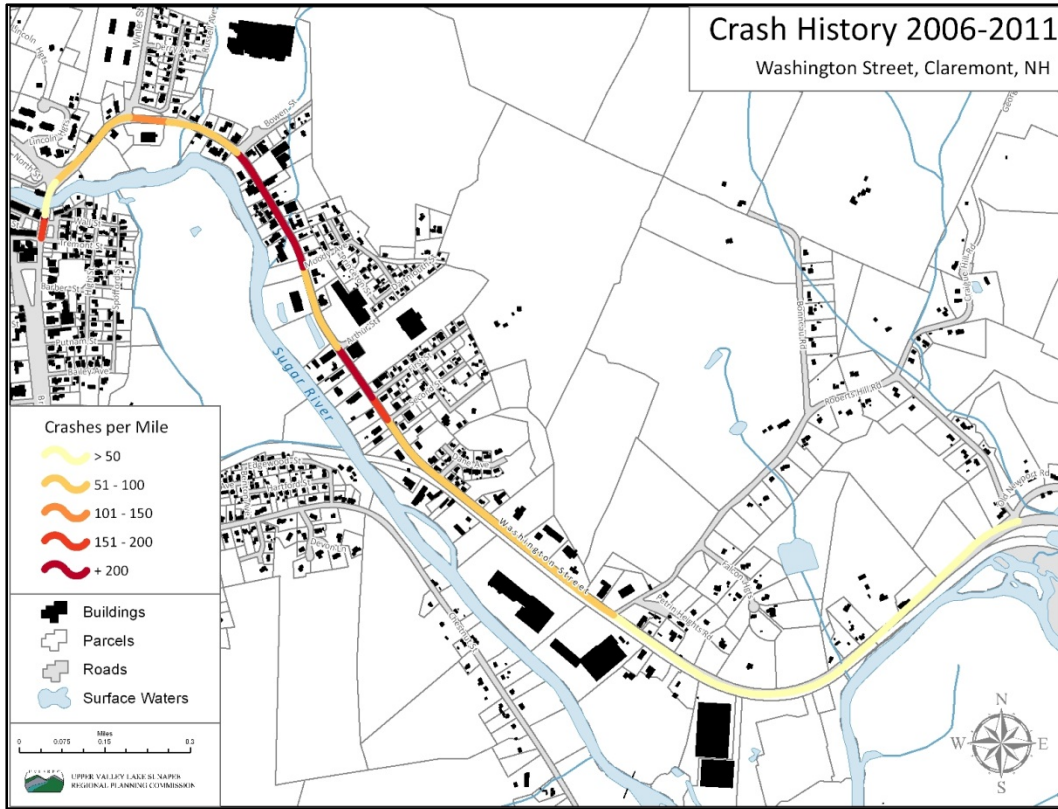


Figure 6: Segment Analysis of Crashes per Mile

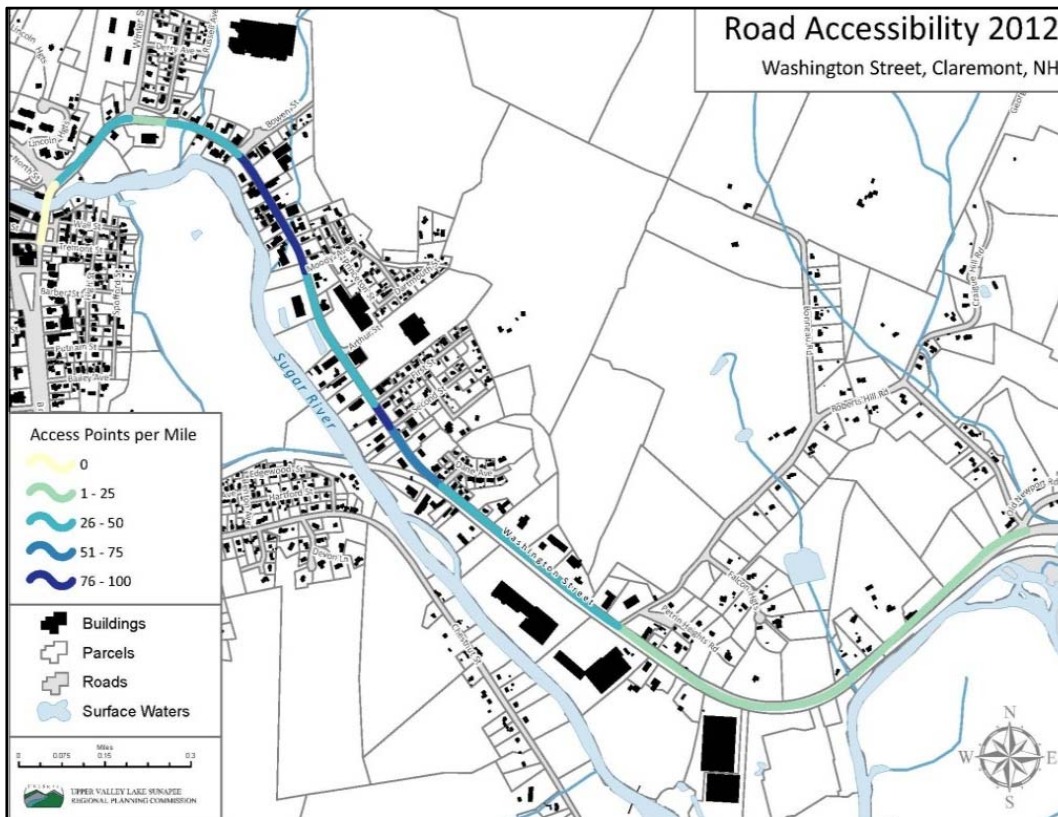


Figure 7: Segment Analysis of Access Points per Mile



## 5. WASHINGTON STREET TRAFFIC AND ACCESS MANAGEMENT

### 5.1 Traffic Signal Improvements

There is an opportunity to take advantage of the placement of new traffic signals and relocation of others to improve the flow of traffic along the corridor. Figure 8 illustrates the general approach to establish an evenly spaced series of traffic signals with coordinated signal timings:

- A coordinated series of traffic signals would promote managed travel speeds along the corridor. Vehicles traveling the posted speed limit will be more likely to have uninterrupted travel along the corridor. Faster vehicles would encounter red lights and force slower speeds.
- The even distribution of coordinated traffic signals along the corridor will establish regular, predictable clusters, or platoons, of vehicles and then intervals of open traffic conditions for vehicles to enter or exit properties along the corridor.

This overall approach to restructuring the traffic signals along the corridor integrate with other project-oriented recommendations at the locations identified in Figure 8 (below).

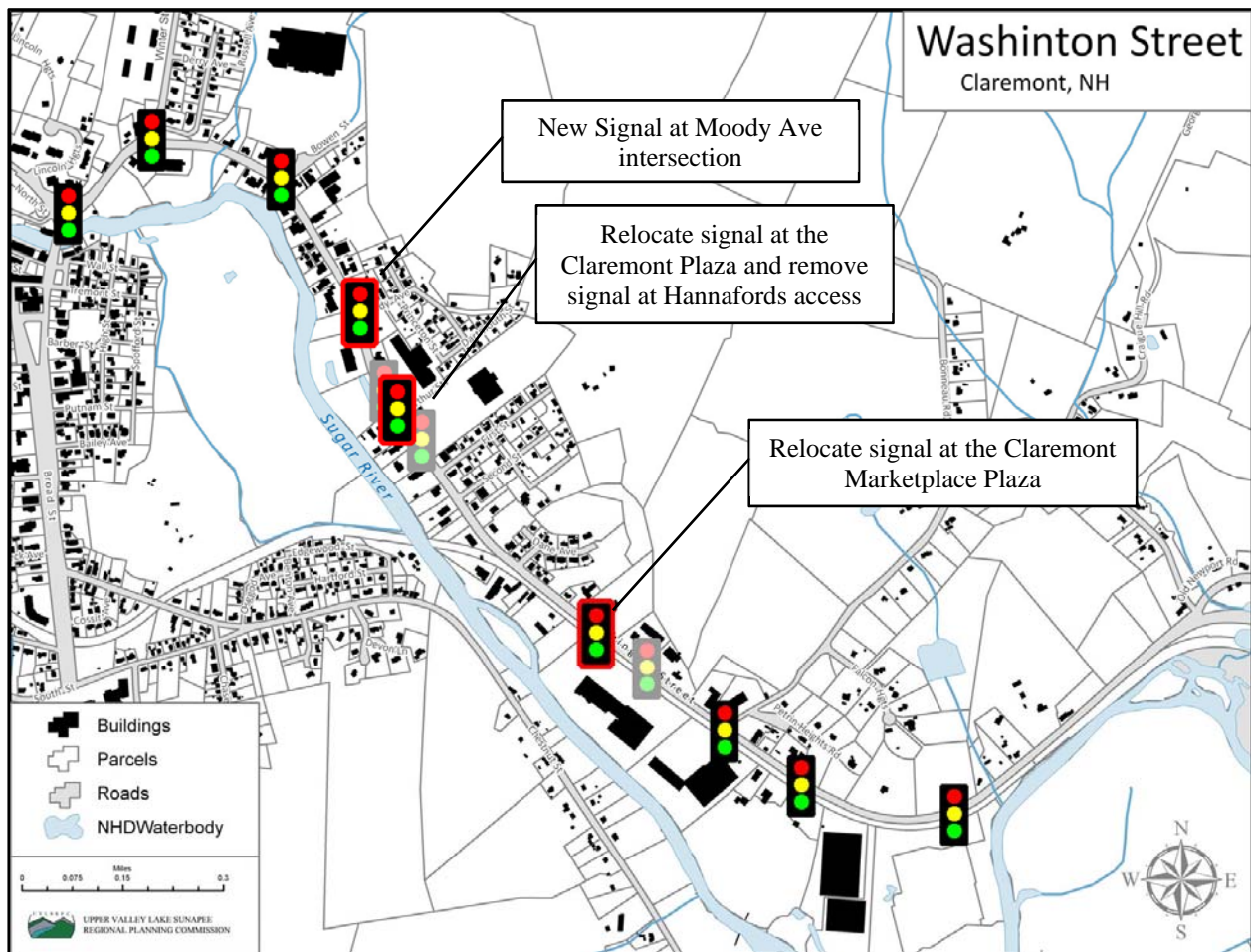
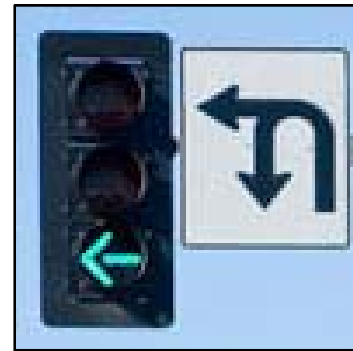


Figure 8: Proposed Traffic Signal Changes along Washington Street

## 5.2 Turn-Around Locations

Public response during the study identified the need to have clearly marked ‘U-Turn’ points along the Washington Street corridor. There are no marked ‘U-Turn’ or turn-around locations at the time of this study. Providing specific, marked turn-around opportunities for private and commercial vehicles will benefit traffic flow along the corridor. There are certain constraints along the corridor that limit the possible turn-around locations. Figure 9 identifies potential turn-around locations along with the recommended signal improvements. U-Turn locations would require dedicated left turn lanes, which already exist at existing intersections (i.e. Winter St and former Lowes driveway).



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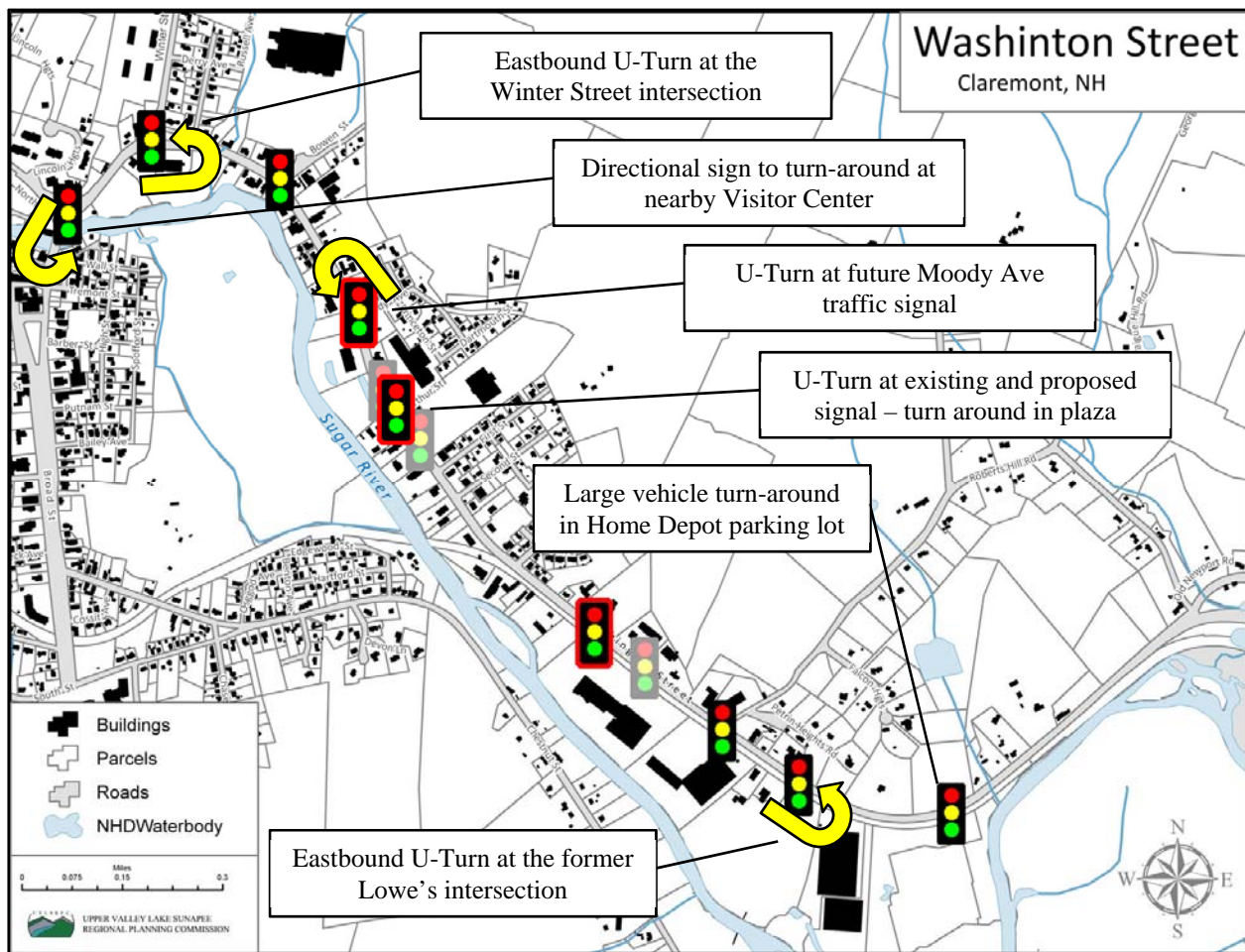


Figure 9: Recommended U-Turn Locations along Washington Street

## 5.3 North Street to Winter Street Improvements

The Project Steering Committee reviewed traffic conditions along Washington Street with the understanding that certain segments of road should limit turning movements to the extent



possible. Improvements to the Bowen Street intersection will include extended raised medians. Another candidate site for extending raised medians is the segment of Washington Street between North Street and Winter Street (Figure 10). This improvement would reinforce the left-turn prohibition already in place along this segment of road, but indicated with road markings.

Figure 10 illustrates a long-term possible improvement to the North Street / Broad Street / Washington Street intersection by using a two-lane roundabout. As stated in the previous section, turn-around points are important for Washington Street. This revised intersection could serve as an important node in Claremont's transportation network as the City wrestles with how to manage increasing truck traffic in the downtown.

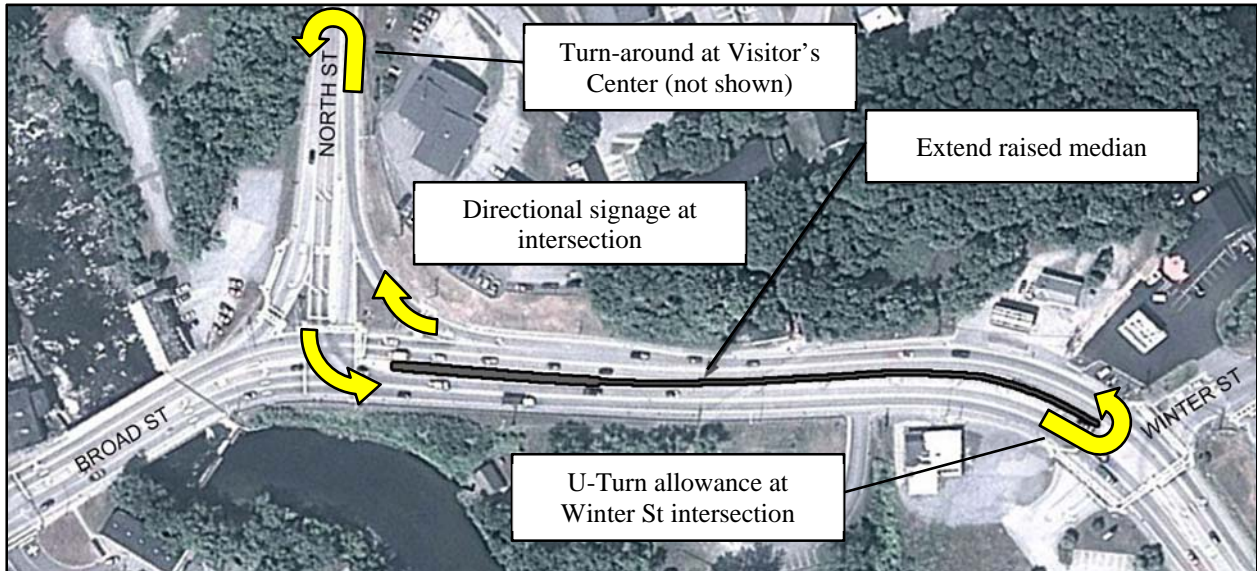


Figure 9: Conceptual Raised Median Treatment – North Street to Winter Street



Figure 10: Two-Lane Roundabout Concept with Median – Intersection of North, Broad, and Washington

## 5.4 Moody Avenue, Claremont Plaza, Arthur Street, Hannaford Supermarket Entrance

The segment of Washington Street from Moody Avenue to First Street is a particular challenge for this study because:

- Commercial uses along Moody Avenue conflict with residents who use the street;
- Two traffic signals are approximately 570 feet apart – unusually close for the study area;
- The segment of Washington Street has some of the highest crash rates in the study area;
- There are frequent and poorly defined property access points.

The schematic plan illustrated in Figure 11 integrates the overall signal plan addressed Section 5.1 while providing better definition to access to the larger shopping plazas on the easterly side of Washington Street and the many, smaller commercial properties on the westerly side.

This schematic layout will require close coordination among property owners and with the City to:

- Eliminate the Arthur Street right-of-way (recommended in the NHDOT RSA).
- Consolidate access to the Claremont Plaza and the current Hannaford Supermarket property and formalize circulation. Formalize necessary easements or access agreements (recommended in the NHDOT RSA).
- Manage access to Moody Avenue with a traffic signal and a pedestrian crossing.
- Substantially reconfigure the numerous curb cuts and internal circulation in the commercial plaza opposite the Hannaford Supermarket.

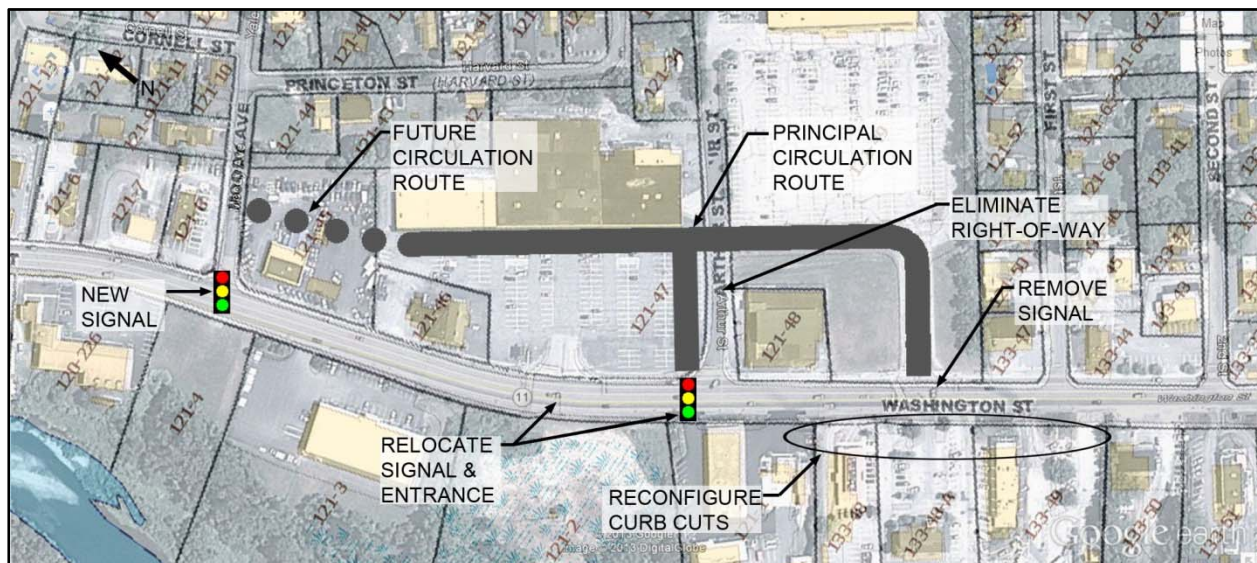


Figure 11: Schematic Plan for Revised Signal and Circulation Plan, Claremont Plaza



## 5.5 Claremont Marketplace Plaza, K-Mart Plaza

This schematic plan again integrates the overall plan to set traffic signals at regular intervals and recognizes recommendations from past plans (most recently the 2009 Claremont Truck Route Study).

The proposed changes depicted in Figure 12 would:

- Relocate an existing signal and entrance to the Marketplace Plaza.
- Better define principal circulation routes for the plazas on both sides of Washington Street to encourage internal vehicle circulation and away from Washington Street.
- Eliminate non-critical access points.
- Set the foundation for a easterly Sugar River crossing and connection to Chestnut Street.

As with the Claremont Plaza proposal above there would be substantial easement and right-of-way work and cooperation among property owners and the City to complete the plan.

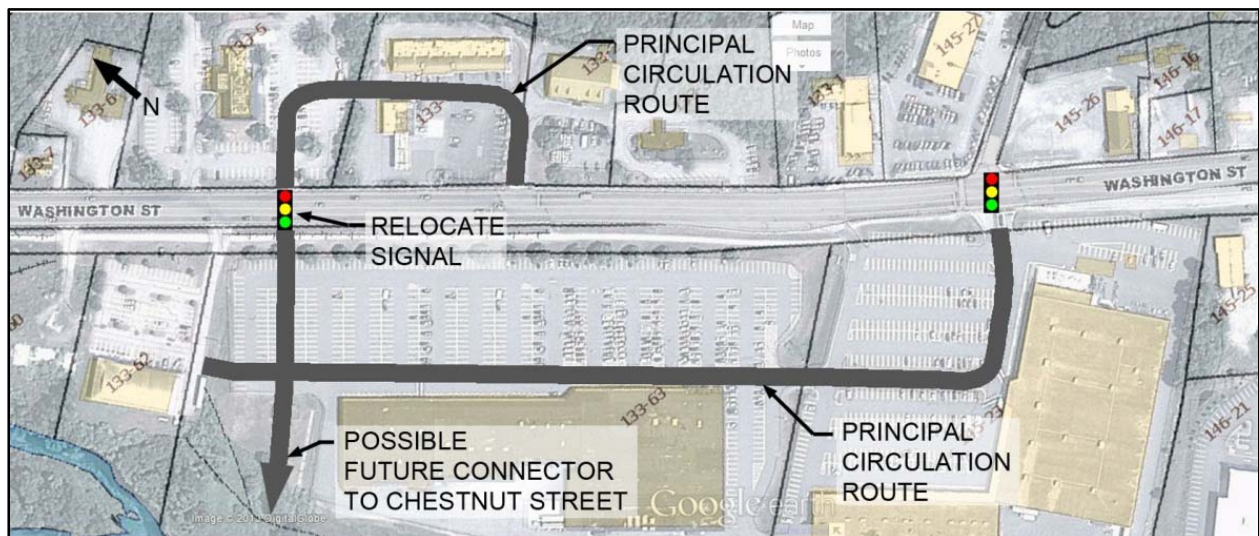


Figure 12: Schematic Plan for Revised Signal and Circulation Plan, Claremont Marketplace Plaza



## 6. REGULATORY APPROACH TO ACCESS MANAGEMENT

The Washington Street corridor requires several different strategies to properly address the safety concerns that are present. Through the use of several different tools, the corridor can be improved to provide a safe environment. The following recommendations are based on the Rockingham Planning Commission Local Access Management Manual.

### 6.1 Memorandum of Understanding with NHDOT District II

A short segment of the study area is outside the City's Urban Compact and managed by the NHDOT District II office. Regardless, enhanced communication between the Claremont Planning Board and NHDOT District II would improve the overall parcel-specific access management in the City. An agreement between the City and NHDOT could take the form of a Memorandum of Understanding to outline timely communication between NHDOT and the Planning Board during the development review process.

### 6.2 Site Plan Review Regulations

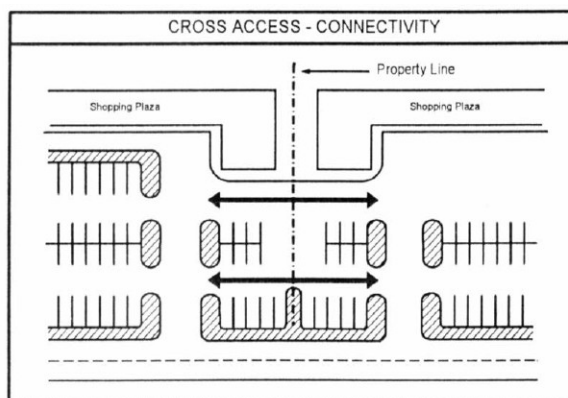
Applicable tools include local land use regulations and zoning approaches. The following model language is recommended for inclusion in Claremont's Site Plan Review Regulations:

#### *Maximum Number of Driveways per Lot*

Lots which have frontage on one highway only shall be allowed a single driveway, except that two, one-way driveways may be substituted for a single driveway, provided that the minimum required distance between driveways can be met.

#### *Interconnecting Driveways*

The Planning Board may require the use of cross access drives, and other access management techniques to reduce the number of access points on to public roadways. A system of joint-use driveways shall be established wherever feasible, along all state roads, and roads with minor collector classification or higher. The location, width, and pavement treatment of all driveways and access points within 200 feet of the site shall be shown on the site plan. The applicant is encouraged to discuss with the Planning Board their plans to minimize access points and provide for joint use driveways and cross easements prior to submitting a formal site plan application.



Source: Rockingham Planning Commission - Local Access Management Manual

Where cross access arrangements are proposed or requested by the Planning Board, the site plan design shall incorporate the following:

1. A least one (1) cross-easement or right-of-way to each abutting parcel, whether developed or not. Said easement or right-of-way shall be recorded with the deed of each parcel allowing for shared or cross access to and from other properties by the joint use driveways and/or access drives;
2. Connecting drives shall be constructed with a design speed of 15 mph and sufficient cart-way width of at least 22 feet to accommodate two-way travel;
3. The applicant will record an agreement with the deed that remaining access rights along the roadway providing frontage to the development will be dedicated to the Town and pre-existing driveways will be closed and eliminated after the construction of the joint-use driveway; and
4. All agreements will be recorded with the deed, including but not limited to maintenance agreements and shall be reviewed and approved by the Town Attorney. Cost of legal review of all documentation will be borne by the Applicant. All costs shall be paid by the applicant prior to the signing of the final plat.

#### ***Access to lots with multiple frontages***

Lots with frontage on both an arterial highway and an adjacent or intersecting road shall not be permitted to access the arterial highway, except where it can be proven that other potential access points would cause greater environmental or traffic impacts.

#### ***Driveway Width***

Commercial driveways shall not exceed 36 feet in width, measured perpendicular to the driveway at its narrowest point. The driveway shall be flared at the property line with minimum radii of 25'. All commercial driveway entrances (regardless of the presence of curbing on the highway) shall be curbed from the edge of the highway to at least the end of the radii at the driveway throat.

### **6.3 Subdivision Regulations**

The following model language is recommended for inclusion in the community's Subdivision Regulations:

#### ***Interconnecting Driveways***

All projects subject to Subdivision Review shall provide interconnecting driveways or easements for future construction of driveways that will provide and promote vehicular and pedestrian access between adjacent lots, without accessing the highway to all property lines, and shall be designed to provide safe and controlled access to adjacent developments where they exist. Every

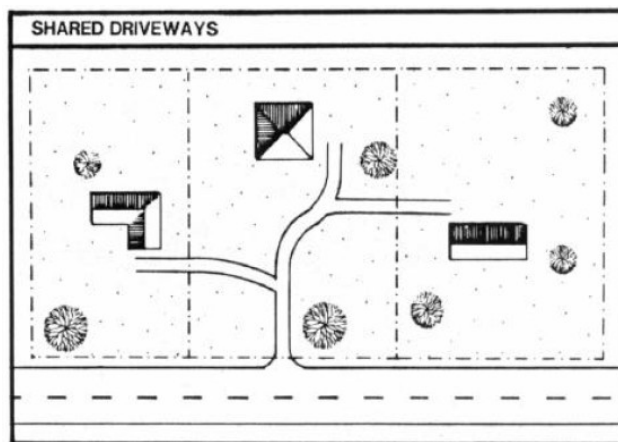
effort should be made by the Planning Board to require construction of these driveways in anticipation of future developments.

***Access to lots with multiple frontages.***

Lots with frontage on both an arterial highway and an adjacent or intersecting road shall not be permitted to access the arterial highway, except where it can be proven that other potential access points would cause greater environmental or traffic impacts.

***Shared Driveways***

In order to minimize the number of driveways along arterial highways, shared driveways shall be encouraged for adjacent residential sites.



Source: Rockingham Planning Commission - Local Access Management Manual

**6.4 Zoning Strategies - Incentives**

The following language provides examples of incentive-based zoning to encourage access-management related activities such as the provision of shared access drives. In addition, language recently approved by the town of Warner is also included below.

***Front Setback***

1. An incentive bonus standard has been developed wherein front structure setback requirements may be relaxed for those who choose to develop sites utilizing one of the following options:
  - a. Placement of all parking and circulation pavements to the side and rear of proposed buildings.
  - b. Provision of shared access drives and parking.
  - c. Development of a landscaped berm within the front setback area, with a height no less than 8 feet.
2. Those who choose to take advantage of this Incentive Bonus Standard may reduce their required front structure setback by fifty percent (50%) of that otherwise required within this District, subject to the minimum front structure setback dimension. In effect, use of this Incentive Bonus Standard expands the envelope of available building area on any given site.

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***Maximum Impervious Coverage***

1. No more than 50% of the lot may be covered by impermeable surfaces, such as buildings and paved areas.
2. An incentive bonus standard has been developed wherein Maximum Impervious Coverage may be increased for those who choose to develop sites utilizing one of the following options:
  - a. Placement of all parking and circulation pavements to the side and rear of proposed buildings.
  - b. Provision of shared access drives and parking.
3. Those who choose to take advantage of this Incentive Bonus Standard may increase their allowable maximum impervious coverage up to 60% of the gross lot area, provided all landscape strips, parking lot landscape requirements, and other screening is provided as required by this ordinance.

***Shared Driveways***

In order to minimize the number of driveways along highways, shared driveways shall be encouraged for adjacent sites.

The following dimensional requirements may be reduced if shared driveways are provided as follows:

1. The minimum lot size and the minimum road frontage shall be reduced by a total of 10% if the entire site is accessed by a single shared driveway with an adjacent site.
2. The minimum lot size and the minimum road frontage shall be reduced by a total of 20% if the entire site is accessed by a single shared driveway with an adjacent site on a highway other than the main arterial, and which is appropriately zoned for the use.

## 7. SUMMARY/IMPLEMENTATION

Safety and access management issues along Washington Street (NH Route 11/103) in Claremont, which is one of the busiest roads in the City. Washington Street is an important regional arterial route with high vehicle traffic volumes expected to continue to increase in the future. Conflicts between through traffic and numerous access points along the corridor impede both safety and traffic flow and degrade the quality of life for the residents who live along the corridor.

The information contained within this study emphasizes the need to use a variety of approaches to improve safety and ensure that Washington Street continues to operate in an efficient manner. Implementation recommendations range from intersection and property access improvements at specific parcels to identifying changes in land use regulations and zoning.

### 7.1 Issues along the Washington Street Corridor

Key issues in the Washington Street identified in the Washington Street Access Management Study include:

- Travel speeds are in excess of the posted speed limit and require immediate attention to improve overall safety concerns.
- The residents in the study area are concerned about safe access to and egress from their neighborhoods. Considerations for this study should cover all travel modes.
- There is a strong correlation between the frequency of vehicle crashes per mile and the number of access points per mile along the study corridor.
- This study corroborates the findings of a Road Safety Audit conducted by NHDOT in 2011:
  - The Washington Street/Bowen Street intersection requires improvements, which NHDOT is in the process of resolving through the Highway Safety Improvement Program. Planned intersection improvements will help resolve observed points of conflict in the vicinity of the intersection.
  - The segment of Washington Street from Moody Avenue to First Street needs substantial improvements to manage access points and improve safety at the Moody Avenue intersection.

### 7.2 Implementation Strategies

Implementation of the recommendations outlined in Sections 5 and 6 in this report will require consideration of both physical improvement projects and amending existing municipal policies. The following summary of the implementation strategies may take longer than others. Therefore, the following strategies are separated into short-term (0 to 5 years) and long-term (5+ years) implementation timelines.



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***Short-Term Implementation (within 5 years)***

- Continue City cooperation and, when appropriate, collaboration with NHDOT to complete improvements to the Washington Street/Bowen Street intersection. Monitor the changes in crash history for the intersection to determine next steps in improving safety in the vicinity of the intersection.
- Permit applications for new driveways (Department of Public Works), site plan or subdivision (planning board), or zoning (zoning board of adjustment) should be reviewed with consideration of the information provided in this study. The study information will help inform both City staff and land use board members of possible traffic safety issues or concerns.
- Review, revise, and amend land use regulations including driveway design standards, Site Plan and Subdivision Regulations, and the Zoning Ordinance through a transparent, public process. This study emphasizes possible amendments associated with the study area, but the City could seek to address issues city-wide.
- Bicycle and pedestrian safety along the corridor and within individual parcels should be a principal consideration when reviewing development impacts.
- Install a raised median along the segment of Washington Street between North Street and Winter Street.
- Install signage identifying existing Washington Street intersections or locations where vehicles can safely change direction (U-turn). Intersections identified for u-turn signage are Winter Street and the former Lowes traffic signal (if it is operational). Signage directing vehicles to turn around at the Visitor's Center on North Street should be placed for westbound traffic approaching the North Street intersection.
- Install a traffic signal at the Moody Avenue intersection. The traffic signal will improve safe access and egress for residents, improve safety conditions for pedestrians, and introduce a u-turn opportunity for eastbound traffic. Provision of an eastbound u-turn will require an exclusive left turn lane to Moody Avenue along the eastbound approach.
- Manage traffic signals coordination to mitigate speeding traffic. The traffic signals along Washington Street are presently coordinated and managed by the Claremont Fire Department. Ongoing monitoring of signal coordination performance will be important.
- Enforce speeding violations along the study corridor.
- Place signs that measure display travel speeds and the posted speed limit for motorists to see. This active feedback signage will help educate motorists how fast they are traveling and how much they are exceeding the speed limit.
- Integrate planned improvements identified in the short-term and long-term implementation programs into the City's Capital Improvement Program.

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***Long-Term Implementation (more than 5 years)***

The following implementation points recognize that there are many recommendations that require coordination with property owners, development of easements or other legal agreements among property owners and the City, and costly projects that may not be feasible in the short-term timelines.

- Eliminate the Arthur Street right-of-way and develop a revised circulation and access plan for the parcels between Moody Avenue and First Street as illustrated in Figure 11. This process will include consolidating two traffic signals to one location and removing redundant unnecessary access points.
- Relocate the traffic signal at the Claremont Marketplace plaza and develop revised circulation plans as illustrated in Figure 12. Prepare necessary easements, access agreements, and right-of-way ownership in cooperation with property owners.
- Complete the traffic signal coordination program to include the relocated and signals identified in Figures 11 and 12.
- Complete the u-turn strategy for Washington Street to improve circulation and direction change opportunities.
- Conduct a feasibility study for the possible construction of a connector route and bridge to Chestnut Street to address local and regional travel needs and patterns, likely impacts on Claremont's road network and neighborhoods, and possible economic impacts on Claremont's residents and businesses.
- Construct a two-lane roundabout at the Broad Street/North Street/Washington Street intersection to develop an important node in the City's transportation network to address potential future truck route and congestion issues.