# 1 – Preferred Recommendations

## 1.1 Study Goals

The goals and objectives of this study are:

- Formulate plans of improvement for operations and safety along the major elements that define the transportation system in the study area, including roadways, access drives, transit and bicycle and pedestrian services. Plans that have the greatest potential to improve safety, reduce congestion and improve air quality will be given the greatest consideration for advancement.

- Plan for future growth and development. It is understood that the Buckland commercial area is of regional stature, with as yet unrealized potential for additional growth. Every effort will be made to identify and incorporate state, local and regional plans of development for use in identifying improvement alternatives in the study.

- Ensure transportation equity and balance by identifying transportation improvement alternatives that promote use of all transportation modes.

## 1.2 Development of Preferred Option Packages

The roadway alternatives development and screening processes for roadway options are described in Technical Memorandum No. 2. The recommendations related to TSM/TDM, transit, and bicycle and pedestrian alternatives are described in Technical Memorandum No. 3. Please see Appendix D for the graphical presentation of recommendations.

The preferred packages are described below. Some components are common between packages, but their utility is independent.

### 1.2.1 Roadway Alternatives

The following Table 1-1 summarizes screened roadway alternatives.

**TABLE 1-1: ROADWAY ALTERNATIVE PACKAGES**

| | |
|---|---|
| Option 2 | • Ramp from westbound frontage road to I-291;<br>• Red Stone Road Overpass;<br>• Half frontage roads along I-84 (between Buckland Street and Red Stone Overpass);<br>• Single Point Urban Interchange (SPUI) at the intersection of Buckland Hills Drive/Pleasant Valley Road/Buckland Street;<br>• Roundabout at the intersection of Pleasant Valley Road/I-84 westbound Ramps;<br>• Second exit ramp for I-84 westbound at exit 63. |
| Option 3 | • Ramp from westbound frontage road to I-291;<br>• Full Frontage Roads along I-84 (between Buckland Street and Exit 63);<br>• Single Point Urban Interchange (SPUI) at the intersection of Buckland Hills Drive/Pleasant Valley Road/Buckland Street;<br>• Second exit ramp for I-84 westbound at exit 63. |
| Option 9 | • Add HOV flyover ramps to multimodal transit center from I-84 EB off and to I-84 westbound on ramp. |
| Option 10 | • Ramp from westbound frontage road to I-291<br>• Auxiliary Lanes along I-84 (between Buckland Street and exit 63);<br>• Single Point Urban Interchange (SPUI) at the intersection of Buckland Hills Drive/Pleasant Valley Road/Buckland Street;<br>• A signalized 'T' Intersection at the intersection of Pleasant Valley Road/I-84 westbound Ramps;<br>• Second exit ramp for I-84 westbound at exit 63. |

### 1.2.2 TSM/TDM Alternatives

The study recommended the following TSM/TDM improvements:

- Change McIntosh Drive to right-in and right-out type access at its intersection with Deming Street;
- McDonalds driveway, located at the intersection of Deming Street and Hale Road, right-in and right-out type access;
- Change the alignment of Deming Street at its intersection with Oakland Street so that Deming Street intersects Oakland Street at approximately 90 degrees;
- Modify geometry of intersection of driveways to Best Buy/Circuit City and Slater Street;
- Provide advanced guidance signs for easy way-finding for motorists;
- Modify connectivity and linkages as detailed in Technical Memorandum No. 2;
- Coordinate traffic signal timing on arterial and collector streets;
- Expedite incidence response by provision of dynamic message signs, installation of placards to assist in pinpointing location of the incidence;

- Install Intelligent Management Systems to better utilize the existing infrastructure;
- Encourage ridesharing (carpooling and vanpooling) to reduce travel demand;
- Encourage Transit Oriented Development to provide community access to public transportation;
- Encourage employers to offer Guaranteed Ride Home programs. These programs have shown to be most successful in reducing total traffic volume and increasing the use of alternate means of transport.

### 1.2.3 Transit Alternatives

The study recommended the following Transit improvements:

- Improve bus stop signage and shelters;
- Improve/consolidate existing bus routes;
- Consolidate existing bus stops;
- Increase service frequency;
- Expand service hours;
- Provide Circulator Shuttle bus service;
- Replace bus radio system;
- Maintain/improve level of para-transit service.
- Implement Intelligent Transportation Systems;
- Acquire alternative fuel vehicles;
- Construct multi-modal transportation center;
- Provide Bus Rapid Transit to Manchester and Vernon.

### 1.2.4 Bicycle and Pedestrian Alternatives

The study recommended the following Bicycle/ Pedestrian improvements:

- Maintain continuity of sidewalks on all the streets identified in Technical Memorandum No. 3;
- Provide exclusive bike lanes on the roads identified in Technical Memorandum No. 3;
- Provide crosswalks and pedestrian signals at intersections identified in Technical Memorandum No. 3;
- Provide a bike station in the proposed transit center;
- Provide weather protected bike shelters at locations identified in Technical Memorandum No. 3.

## 1.3 Evaluation of Pros/Cons of Roadway Alternatives

All the options, except option 9, involve provision of SPUI, a connection to northbound I-291, a second exit ramp at exit 63 and a connection to Evergreen Walk from Pleasant Valley Road. Table 1-2 summarizes the pros and cons of improvements included in each of the specific options.

The pros and cons of these alternatives are:

Pros-

- SPUI at the intersection of Buckland Street and Pleasant Valley Road provides much needed relief from delay and congestion;
- A connection from Pleasant Valley Road ramps to northbound I-291 provides the mall shoppers an access to northbound I-291;
- A connection from Pleasant Valley Road to Evergreen Walk provides shoppers an option to bypass the intersection of Buckland Street and Pleasant Valley Road in order to visit Evergreen Walk from the west side of the study area.

Cons-

- Construction of SPUI is a capital intensive project;
- Connection to Evergreen Walk involves connecting a town road to a private road.

**TABLE 1-2: PROS AND CONS OF SCREENED OPTIONS**

| | |
|---|---|
| Option 2 | Pros:<br>• The Redstone Road extension provides an additional access for shoppers to the mall area from the south of I-84.<br>• A roundabout would fit in with the emerging trend of preference of a roundabout over a signalized intersection.<br>Cons:<br>• The Redstone Road extension involves connecting a town road to a private road.<br>• Because of very high traffic volume on Pleasant Valley Road, a two-lane roundabout fails to operate at the desired level of service. |
| Option 3 | Pros:<br>• Frontage roads on both sides of I-84 reduce weaving turbulence on the main line and thus offer relatively smooth through movement on the main line.<br>Cons:<br>• Frontage roads do not enhance the LOS of through movement in the design year.<br>• The intersection of I-84 ramps and Pleasant Valley Road fails to operate at desired LOS.<br>• No impact on Buckland Street traffic volumes. |
| Option 9 | Pros:<br>• HOV ramps provide access to the proposed transit center.<br>• HOV ramps reduce traffic on Buckland Street.<br><br>Cons:<br>• HOV flyovers over I-84 are capital intensive projects. |
| Option 10 | Pros:<br>• Auxiliary lanes provide additional mainline capacity between exits 62 and 63 and reduce weaving on the main line.<br>• T-intersection at the intersection of I-84 ramps and Pleasant Valley Road enhances the LOS of the intersection to the acceptable level.<br>Cons:<br>• Auxiliary lanes do not improve the LOS of I-84 corridor. |

## 1.4 Recommendation Plan

The technical working group finalized the most preferred set of improvements during a planning workshop conducted on December 16, 2008. Based on the pros and cons of all the options and feedback the study team received from the Advisory Committee and planning workshops, the improvements that had highest potential of meeting the study objectives were selected to arrive at the final set of alternatives that would best serve the

objectives of this study. The following alternatives summarize recommendations of this study.

### 1.4.1 Roadway Alternatives

The technical working group and the study team identified key improvements in each of the improvement options and determined which key improvements should be combined to yield the most beneficial set of recommendations. The final set of recommended improvements is described below:

1.4.4.1 Redstone Road Extension and Exit Ramp to I-291

Close the existing westbound exit from I-84 to northbound I-291 and provide a new crossover connection between the existing Frontage Road and the remaining northbound ramp to I-291. Construct a fly-over from the I-84 eastbound off ramp, over Buckland Street, over existing on ramp from Buckland Street to I-84 eastbound and connect to an extension of the existing Redstone Road which in turn will extend over I-84 to Buckland Hills Drive and the mall area. A ramp from this new Redstone Road Extension will be provided to access I-84 westbound.

1.4.4.2 Access Improvement at Exit 63 off-ramp of I-84 WB

A new off-ramp from I-84 westbound will be provided for traffic exiting to travel northbound on Route 30 (Deming Street). The ramp will merge onto Route 30 between I-84 and McIntosh Drive. The existing off-ramp will be reconfigured to merge with southbound lanes of Route 30 (Deming Street).

1.4.4.3 Transit Center and HOV ramps

Provide a direct connection with the existing HOV Lanes on I-84 through the construction of a fly-over ramp from the HOV Lanes to the existing access ramp for Pleasant Valley Road and the Westbound Frontage Road. The existing HOV off-ramp to Buckland Street will be eliminated as part of this improvement.

1.4.4.4 Auxiliary Lanes between Exits 62 & 63

Utilizing the existing right-of-way, auxiliary lanes between Exit 62 and Exit 63 can be constructed by reallocation of the space available for travel lanes, shoulders and the separator between the HOV Lanes and the main traffic lanes.

1.4.4.5 Single Point Urban Interchange (SPUI) at the intersection of Buckland Street, Pleasant Valley Road and Buckland Hills Drive.

A bridge connecting Pleasant Valley Road and Buckland Hills Drive will carry through traffic over Buckland Street. Since the traffic movement at the intersection of Buckland Street and flyover ramps is controlled by a single three phase signal, traffic models predicted improvement in the level of service of this intersection. However, as per the recommendation of the Advisory Committee, the need and feasibility of creating SPUI will be assessed in future.

1.4.4.6 Realignment of Pleasant Valley Road at the connection to the Frontage Road to I-84 westbound, with a connection to the proposed transit center

Provide a connection to the proposed Transportation Center by realigning the Intersection of Pleasant Valley Road and the connector to the Frontage Road to I-84 westbound to form a four-way intersection. The fourth leg of the intersection will serve as the access to the future transit center.

1.4.4.7 Connection from Pleasant Valley Road to Evergreen Walk

A connection from Pleasant Valley Road to Evergreen Walk shopping area will provide additional access to shoppers in and out of Evergreen Walk. This additional access will improve level of service of the intersection of Pleasant Valley Road, Buckland Hills Drive and Buckland Street.

Please refer to Appendix D for the graphical presentation of these recommendations.

### 1.4.2 TSM/TDM Alternatives

The congestion experienced as a result of various issues identified in Technical Memorandum No. 1 limits free movement and hinders emergency vehicle access in the Buckland Hills Area. While increasing an existing roadway capacity is one option to mitigate congestion, it is often very expensive to add capacity to an existing roadway network. The other option is to either use existing roadway network more efficiently or reduce the traffic demand.

Transportation Systems Management (TSM) techniques support making the existing transportation system operate in a more efficient manner.

Transportation Demand Management (TDM) techniques support the application of strategies and policies to reduce automobile travel demand or to redistribute demand in space and time.

TSM/TDM techniques recommended by this study are as below:

- Change McIntosh Drive to right-in and right-out type facility at its intersection with Deming Street;
- McDonalds driveway, located at the intersection of Deming Street and Hale Road, right-in and right-out type facility;
- Change the alignment of Deming Street at its intersection with Oakland Street so that Deming Street intersects Oakland Street at approximately 90 degrees;
- Provide advanced guidance signs for easy way-finding for tourists;
- Modify connectivity and linkages as detailed in Technical Memorandum No. 2;
- Coordinate traffic signal timing on arterial and collector streets;
- Expedite incidence response by provision of installation of placards to assist in pinpointing location of the incidence;
- Install Intelligent Management Systems to better utilize the existing infrastructure;
- Encourage ridesharing (carpooling and vanpooling) to reduce travel demand;
- Encourage Transit Oriented Development to provide community access to buses or rail;
- Encourage employers to offer Guaranteed Ride Home programs. These programs have shown to be most successful in reducing total traffic volume and increasing the use of alternate means of transport.

### 1.4.3 Transit Alternatives

Existing transit service within the Buckland Hills area consists of a network of local and express bus routes operated by Connecticut Transit (CT Transit), plus Para-transit and shuttle buses serving specific market areas.

The study team, based on the feedback from the Advisory Committee and stakeholders, recommended the following improvements:

- Improve bus stop signage and shelters;
- Improve/consolidate existing bus routes;
- Consolidate existing bus stops;
- Provide Circulator Shuttle bus service;
- Replace bus radio system;
- Maintain/improve level of para-transit service;
- Implement Intelligent Transportation Systems;
- Construct multi-modal transportation center; and
- Provide Bus Rapid Transit to Manchester and Vernon.

### 1.4.4 Bicycle/Pedestrian Alternatives

The study team took the inventory of various bike/ped facilities, such as sidewalks, crosswalks, bike lanes and pedestrian signals, within the study area. The study team analyzed the inventory for gaps/discontinuities among these facilities. Based on the feedback from stakeholders and the Advisory Committee as well as the data collected, the study team recommended the following improvements:

- Maintain continuity of sidewalks on all the streets identified in Technical Memorandum No. 3;
- Provide exclusive bike lanes on the roads identified in Technical Memorandum No. 3;
- Provide crosswalks and pedestrian signals at intersections identified in Technical Memorandum No. 3;
- Provide a bike station in the proposed transit center;
- Provide weather protected bike shelters at locations identified in Technical Memorandum No. 3.