




Hanover Bus Stop Feasibility Study

Prepared For: *Advance Transit*

smart mobility Transportation Planning, Engineering and Design

LANDSCAPE ARCHITECTS & PLANNERS

December 2008

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Table of Contents

Hanover Bus Stop Feasibility Study Steering Committee

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Introduction

This feasibility study has been prepared to identify physical improvements to the streetscape environment of existing bus stops to make them more 'transit friendly,' while also addressing traffic congestion and pedestrian safety concerns. With increasing congestion and spiraling fuel costs, ridership on Advance Transit (AT) is growing and can be expected to continue expanding in the future. Making bus stops more attractive to existing and potential riders is one important strategy to reinforce use of the transit system. As this report is being prepared, AT is also preparing a service plan which addresses operational issues system-wide such as bus routing, frequency, operations, and so forth. Service and operational issues inform this study, but are primarily addressed in the Service Plan. This is the first study looking at the bus stop environment in particular, and has been conducted as a partnership between AT, the Town of Hanover and Dartmouth College. Recommendations contained in this report have been guided by a Steering Committee comprised of representatives of these three agencies and institutions.

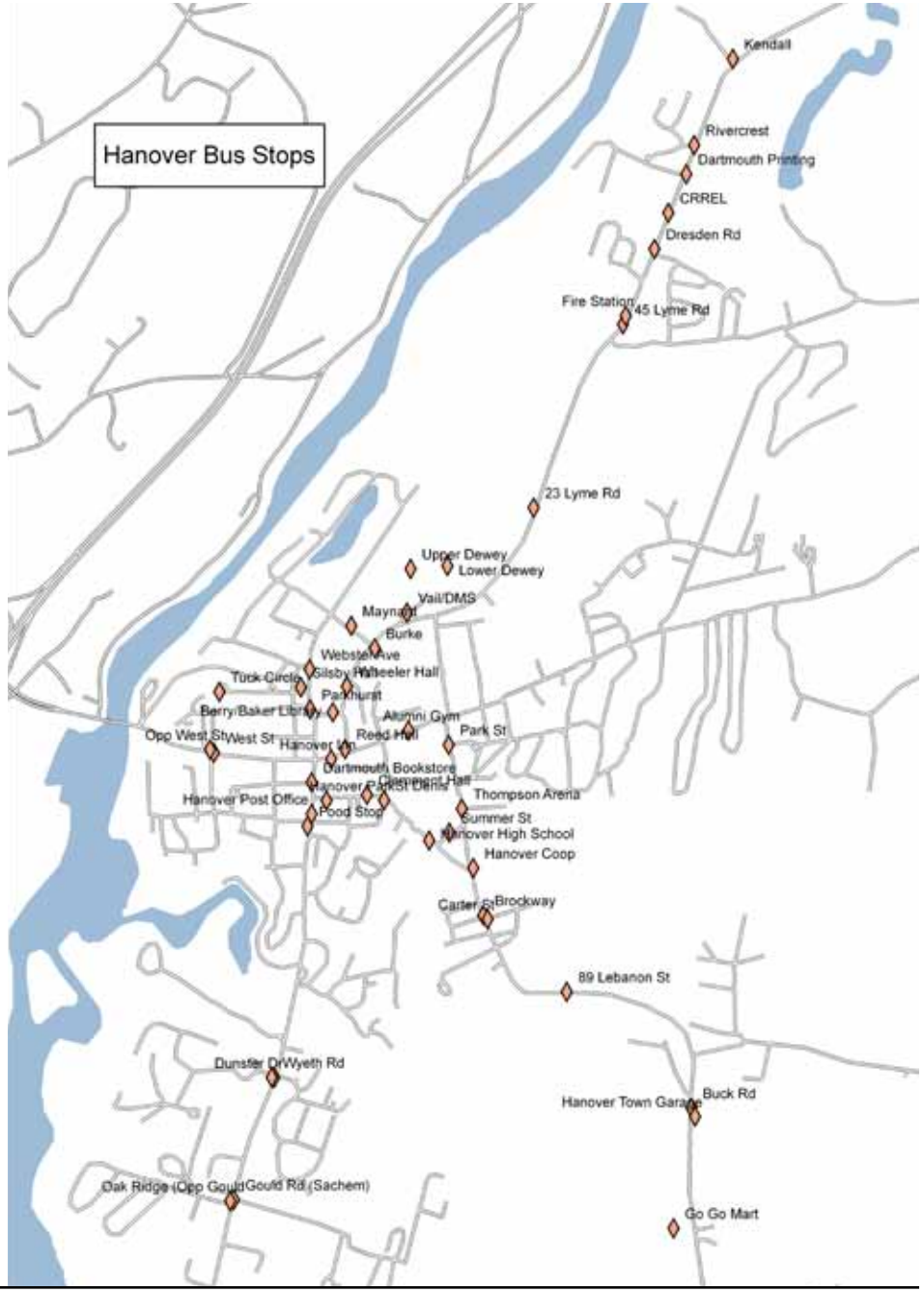
Downtown Hanover is one of the main hubs for local and intercity bus transportation within the Upper Valley region. Both local and intercity bus services and ridership are growing, in some cases straining the existing infrastructure. At the same time, both the downtown area and the college campus are changing, along with traffic and parking demands. There are a number of new building projects that are in various stages of design, permitting and construction, creating an opportunity for Advance Transit to work with the Hanover and Dartmouth communities and with other local and regional transportation providers to plan and provide for infrastructure improvements for transit services.

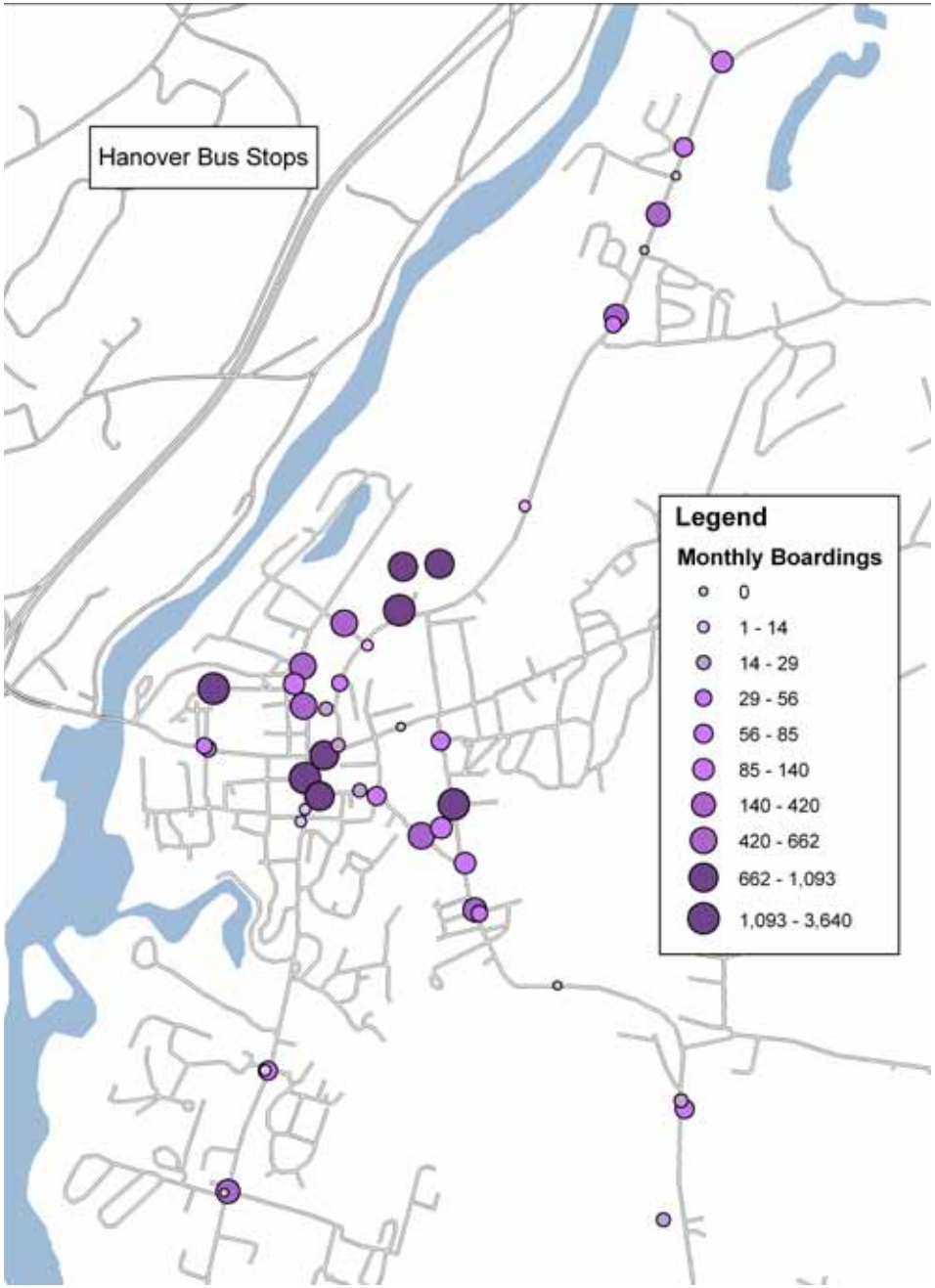
Study Goals

The goals of this study are primarily to develop a program of bus stop improvements and enhancements that will achieve the major objectives of:

- Enhancing the rider's experience;.
- Becoming an attractive asset to the community;
- Addressing potential impacts of transit service; and
- Fostering increases in ridership and transit service.

These improvements are primarily focused on specific stops, assuming largely a continuation of existing services into the future, with possible enhancements such as longer hours of operation, weekend services, or higher frequencies on some routes. In addition, several operational and routing options are considered, which have implications for the bus stop recommendations.





Bus Stop Inventory and Operations

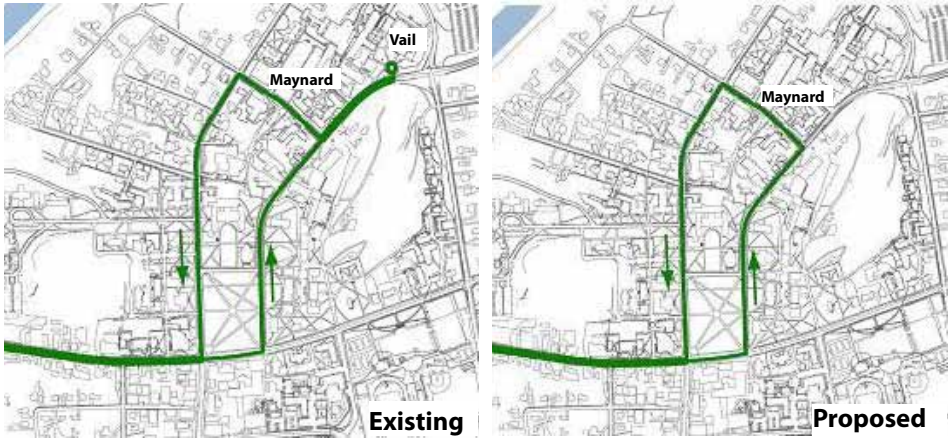
A comprehensive inventory was prepared as part of this study, which is attached to this report. The inventory includes information on activity at each stop in terms of both boardings and number of buses and routes, and the amenities including signage, shelter, information, and the pedestrian environment. This information is key for developing needs and recommendations in this report.

The figures to the left show the study area bus stops in terms of their boardings, which is one of the most important indicators of activity. On the following page is a table that summarizes the inventory information of each bus stop in the planning area.

Bus Stop Inventory Summary Table

Stop Name	Sign?	Shelter?	Blue	Brown	Green	Orange	DSA	DSM	DSP	Street	Traffic Volume	Traffic Speed	Bus Stop Type	Headways	No. of Routes	Buses per day	Monthly Boardings	Accessibility	Sidewalks	Ped Crossings	Bike Racks
23 Lyme Rd	No	No		X						Lyme Road	High	30	Curbside	30 mins	0	21	1	Poor	No	No	No
45 Lyme Rd	Yes	No		X						Lyme Road	High	35	Curbside	30 mins	0	21	56	Poor	No	Yes	No
89 Lebanon St	No	No	X							Lebanon Street	High	30	Curbside	50 mins	0	42	1	Poor	No	No	No
Alumni Gym	No	No					X			E. Wheelock	High	25	Curbside	10 mins	0	18	-	Fair	Yes	Yes	OK
Berry/Baker Library	Yes	No							X	Wentworth St	Low	25	Curbside	10 mins	0	42	20	Fair	Yes	Yes	OK
Brockway	Yes	No	X							Lebanon/Rt 120	Very High	30	Curbside	50 mins	0	42	154	Fair	Yes	Yes*	No
Buck Rd	Yes	No	X							Lebanon/Rt 120	Very High	35	Curbside	50 mins	0	42	19	Fair	No	No	No
Burke	No	No					X	X		College	Medium	25	Curbside	10 mins	0	30	3	Fair	Yes	Yes	OK
Carter St	Yes	No	X							Lebanon/Rt 120	Very High	30	Curbside	50 mins	0	42	42	Fair	Yes	Yes*	No
Clemment Hall	No	No					X	X	X	Lebanon Street	High	25	Curbside	10 mins	0	72	29	Fair	Yes	Yes	OK
CRREL	Yes	Yes	X							Lyme Road	High	35	Turnout	30 mins	0	21	420	Fair	Yes	OK	No
Dartmouth Bookstore	Yes	No	X			X	X	X	X	Main Street	High	25	Curbside		0	125	3,640	Poor	Yes	Yes	OK
Dartmouth Printing	No	No		X						Lyme Road	High	35	Curbside	30 mins	0	21	-	Poor	No	OK	No
Dresden Rd	No	No		X						Lyme Road	High	30	Curbside	30 mins	0	21	-	Fair	No	Yes	OK
Dunster Dr	Yes	No				X				Route 10	Medium	35	Curbside	60 mins	0	12	85	Fair	No	Yes	No
Fire Station	Yes	Yes		X						Lyme Road	High	30	Curbside	30 mins	0	21	201	Fair	Yes	Yes	No
Food Stop	No	No				X				Main Street	Medium	25	Curbside	60 mins	0	12	14	Fair	Yes	Yes	OK
Go Go Mart	Yes	No	X							Medical Ctr. Dr.	Very High	30	Curbside	50 mins	0	84	14	Fair	Yes	OK	No
Gould Rd (Sachem)	Yes	Yes				X				Route 10	High	35	Curbside	60 mins	0	12	250	Fair	Yes	Yes	No
Hanover Coop	Yes	No	X							Park/Route 120	High	25	Turnout	50 mins	0	42	102	Poor	Yes	Yes	OK
Hanover High School	Yes	No	X				X	X	X	Lebanon Street	High	25	Turnout		0	96	490	Fair	Yes	Yes	OK
Hanover Inn	Yes	Yes		X	X	X	X	X	X	W. Wheelock	High	25	Turnout		0	120	1,007	Fair	Yes	OK	OK
Hanover Park	No	No	X				X	X	X	Lebanon Street	High	25	Curbside		0	96	742	Fair	Yes	OK	OK
Hanover Post Office	Yes	No				X				Main Street	Medium	25	Curbside	60 mins	0	12	9	Fair	Yes	Yes	OK
Hanover Town Garage	Yes	No	X							Route 120	Very High	35	Curbside	50 mins	0	42	61	Fair	No	No	No
Kendall	Yes	Yes		X						Kendall Rd	High	35	Curbside	30 mins	0	21	140	Good	Yes	Yes	No
Lower Dewey	No	Yes					X	X	X	Parking Area	Low	25	Off-Street	10 mins	0	72	1,064	Fair	N/A	N/A	No
Maynard	Yes	Yes	X	X			X	X	X	Maynard	Low	25	Curbside		0	197	604	Good	Yes	Yes	OK
Oak Ridge (Opp Gould)	Yes	No				X				Route 10	High	35	Curbside	60 mins	0	12	20	Fair	No	Yes	No
Opp West St	Yes	No		X	X					W. Wheelock	Very High	30	Curbside		0	36	30	Fair	Yes	Poor	No
Park St	Yes	No	X							Park/Valley	High	30	Curbside	50 mins	0	42	59	Fair	Yes	Yes	No
Parkhurst	Yes	No	X	X			X	X	X	N. Main Street	Medium	30	Curbside		0	185	551	Fair	Yes	Yes	OK
Reed Hall	No	No					X	X	X	College Street	Medium	25	Curbside		0	72	20	Fair	Yes	Yes	OK
Rivercrest	Yes	Yes		X						Lyme Road	High	35	Curbside	30 mins	0	21	78	Fair	Yes	OK	No
Silsby Hall	No	No					X	X	X	Tuck Mall	Low	25	Curbside	10 mins	0	72	119	Fair	Yes	Yes	OK
St Denis	Yes	No	X				X	X	X	Lebanon Street	High	25	Curbside		0	96	76	Fair	Yes	Yes	No
Summer St	No	No					X	X	X	Summer Street	Low	25	Curbside	10 mins	0	72	115	Fair	Yes	Yes	No
Thompson Arena	Yes	Yes					X	X	X	Parking Area	High	30	Off-Street	10 mins	0	72	2,474	Excellent	N/A	N/A	OK
Tuck Circle	Yes	Yes					X	X	X	Tuck Mall	Low	25	Curbside	10 mins	0	72	2,078	Fair	Yes	Yes	OK
Upper Dewey	No	Yes					X	X	X	Parking Area	Low	25	Off-Street	10 mins	0	72	1,093	Excellent	N/A	N/A	Yes
Vail/DMS	Yes	Yes	X		X	X	X	X	X	College Street	Medium	35	Off-Street		0	162	2,827	Fair	Yes	Yes	OK
Webster Ave	Yes	Yes	X	X			X	X	X	N. Main Street	Medium	30	Curbside		0	120	662	Fair	Yes	Yes	OK
West St	Yes	No		X	X					W. Wheelock	Very High	30	Curbside		0	36	51	Fair	Yes	Poor	No
Wheeler Hall	Yes	No				X	X	X	X	College Street	Medium	25	Curbside		0	120	45	Fair	Yes	Yes	OK
Wyeth Rd	Yes	No				X				Route 10	Medium	30	Curbside	60 mins	0	12	11	Fair	Yes	Y	No

Proposed Change to Green Route



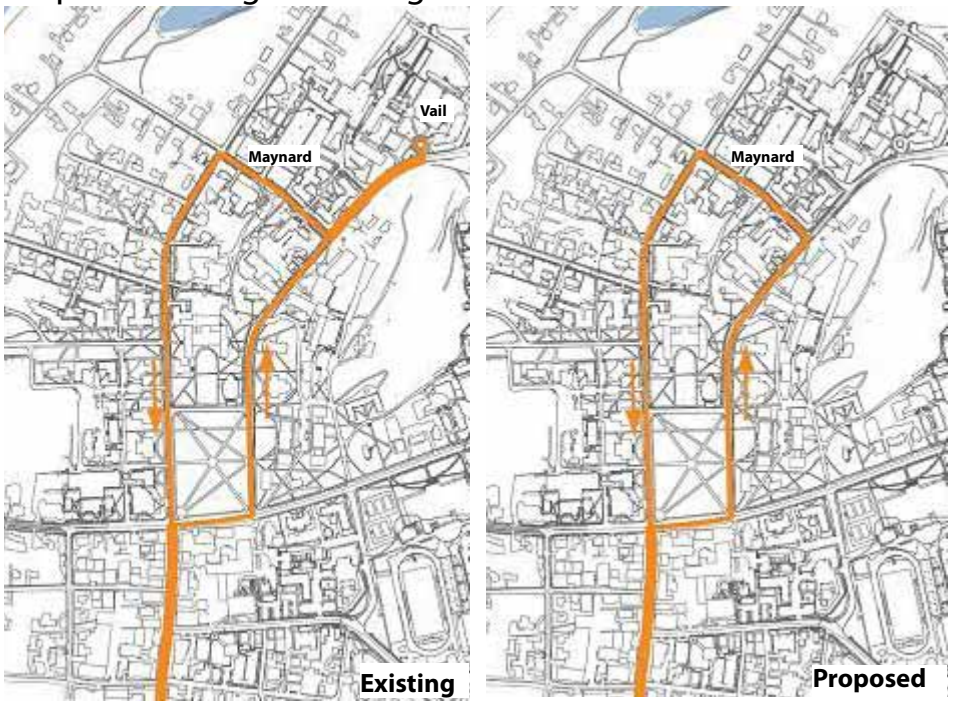
Possible Route and Transfer Changes

As part of this planning effort, several options for bus routing changes were evaluated and considered in the bus stop design.

Green and Orange Routes

The Green and Orange Routes currently terminate at the Vail/DMS bus stop, in order to allow transfers at this location. An alternative transfer point would be the Maynard Street stop, which would save valuable time, as well as fuel costs. The additional distance for each bus to extend their trip beyond Maynard Street to the Vail/DMS turnaround is 1,600 feet, which over the course of a day, for two routes, adds up to over 7 miles per day of additional bus travel. This has an impact on the AT schedule, as well as on the local streets. The proposed changes in routing to a establish a transfer point at Maynard will reduce schedule delays and traffic congestion at the Vail Circle. Adopting this change would require improvements at the Maynard Street stop, which are discussed in detail later in this report, in the section on bus stop designs.

Proposed Change to Orange Route

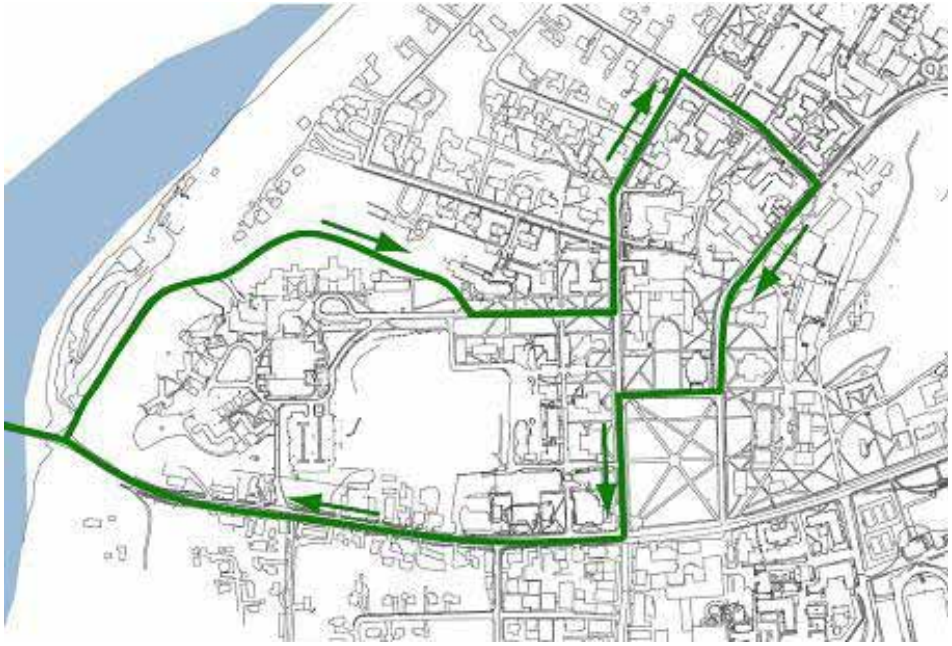


Morning Route Changes: Green and Brown Routes

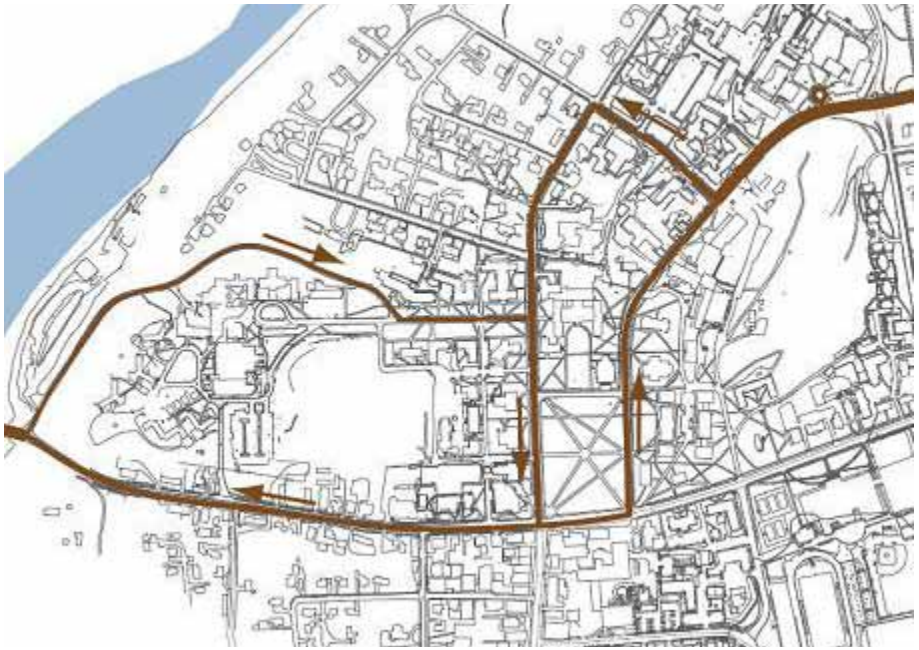
There has been interest in exploring route changes for the green and brown routes, due to long queues and delays that these routes experience during the morning peak hours as they cross the Ledyard Bridge into Hanover. These changes should be combined with efforts to develop a queue jump lane on the Norwich approach to the bridge, which has been explored by the Norwich Transportation Committee and the Dresden Transportation Committee.

The new routes would operate only between 7:00 a.m. and 9:00 a.m., and would use Tuck Drive to access Main Street. From that point, the routes would be as shown in the diagrams on the following pages.

Green Route Morning Peak Hour



Brown Route Morning Peak Hour



There are several considerations relative to implementing this route:

- Dartmouth College would need to allow buses to use Tuck Drive, which is not a public road.
- A gate would need to be installed that could be activated by buses and other college vehicles.
- In order to realize substantial time savings for the bus routes, it would need to be combined with the establishment of a queue jump lane in Norwich extending across the Ledyard Bridge.
- Any changes that result in some stops not being served by all routes is of concern, as it can create confusion, and a need to more clearly communicate changing routes and schedules over the course of a day. For example, the West Street stops would not have eastbound service during these morning peak hours.

At this time, there is not sufficient information on the operational benefits of these changes to conclude that there time savings would be worthwhile. If there is strong interest in exploring this option, a detailed study that would address the above issues should be pursued, with cooperation from the Towns of Hanover and Norwich, the Vermont and New Hampshire trnasportation agencies, and Dartmouth College. Numerous other bus service providers could also use the Tuck Drive Route.

Intercity Bus (Dartmouth Coach/ Vermont Transit) Options

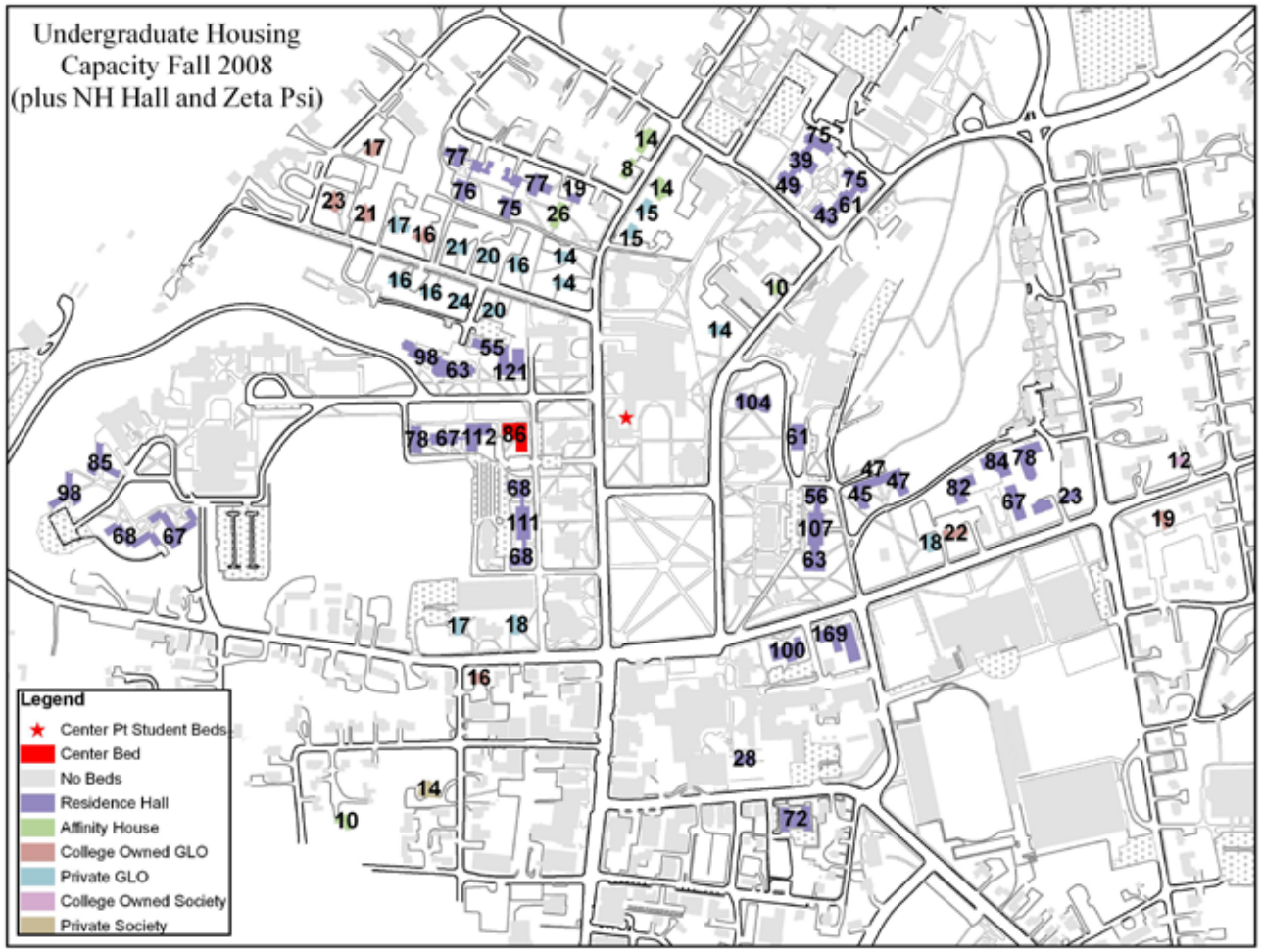
The current location for the Dartmouth Coach and Vermont Transit stop results in impacts to uses at the Hanover Inn and Hopkins Center, including:

- congestion on the sidewalk when large numbers of passengers are boarding with luggage;
- fumes and noise from idling buses; and
- passengers waiting and leaving luggage at Hanover Inn or Hopkins Center, particularly in periods of inclement weather.

Alternative locations were explored, including relocating the stop to Maynard or Leverone Field House on South Park Street. However, as these locations are far less convenient for most students base on residential distribution, and less visible location for patrons from out-of-town, relocation is not recommended. The following figure illustrates the distribution of students, who are among the primary users of these services. The numbers indicate student beds and the red star indicates the geographic center of student on-campus residences. The Hanover Inn location is the most central location that is accessible by a coach bus.

However, it will be important for proposed improvements to address the concerns noted by neighboring uses, so that it can continue to provide the convenient service desired by the college and Hanover community. The design options presented later in this report discuss this in more detail.

Distribution of Undergraduate Housing on Campus



Source: Dartmouth College Department of Planning and Construction, 2008.

Bus Stop Design Concepts

Goals and Approach

Among the key goals of these bus stop design concepts:

Facilitate and Improve Transit Service. Evaluation and design for improvements of the bus stops will incorporate changes that make transit service more efficient and convenient for the transit patron. At the same time, these improvements must be made in balance with other users of the street, which in downtown Hanover include large numbers of pedestrians, bicyclists, cars and service vehicles. The plan will establish a priority for transit vehicle operations with convenient and accessible transit stops. Improvements may include establishing bus bulbs, clearly marked pedestrian crossings, bus shelters, streetscape amenities and improved schedule and bus arrival information. Bus circulation and transfer operations are also reviewed, to improve efficiency and convenience for transit users.

Improve the Patron Experience. There are opportunities for streetscape changes that can make downtown Hanover streets more 'transit friendly', improving both the patron experience and transit operations. The visibility of transit in the streetscape with attractive signage, schedule information, and comfortable places to wait will help patrons navigate the system, 'recruit' additional users and provide visual cues to automobile drivers that they are in a transit environment and should adjust their expectations accordingly. Clearly, with core land uses that include a world class college and a number of retail storefronts, the image presented at the transit stops are an important concern. Taking a 'place making' approach and paying close attention to good design is important.

Consider the needs of stakeholders, including Advance Transit, the Town of Hanover, Downtown Businesses and Dartmouth College. The planning and design process involved the key stakeholders of Dartmouth College, the Town of Hanover and the downtown businesses in order to forge an implementable plan for transit improvements. The role of transit in the town center is key, considering ongoing concerns about traffic congestion and limited parking.

Look to the Long Term. Evaluating the bus stops in the study area has been done with one eye to the future: What is a realistic long-term vision of how transit services will operate in 10-years? Are there creative ideas that can help improve transit service in the downtown over the longer term, such as transit priority lanes, signal prioritization, or queue jump lanes? Would these changes affect operations at a specific transit stop?

Design Criteria

Bus stop design concepts consider the following issues:

- Accessibility and the proposed Access Board guidelines.
- Level of activity at the bus stop, including number of buses per day, number of boardings, traffic volumes, and traffic speeds.
- Aesthetics and context sensitive design concepts.
- Pedestrian activity.

The illustration on the following page shows the components of a complete transit.

Summary of Accessibility Guidelines for Bus Stops

- Provide bus boarding and alighting area 5-feet-wide by 8-feet-deep (minimum from curb) for lift deployment.
- Connect waiting and boarding areas to a PAR (pedestrian accessible route, i.e. sidewalk).
- If there is a bench, provide a 30-inch by 48-inch clear approach area adjacent to the bench and connected to bus boarding and alighting area.
- Keep signage from protruding into clear approach areas and/or PAR.
- Provide raised and Braille characters for route identification only (schedules, timetables, and maps are not required to have raised and Braille characters).
- For all signage (including schedules, timetables and maps) comply with current ADAAG for finish and contrast, case, style, character proportions and spacing, and stroke thickness.

Anatomy of a Transit Stop: Key components of a high-amenity transit stop. Addition of benches may be desirable depending on the location. (Photo: Seattle, Washington)

Recommendations

The following are the primary recommendations of this study.

Bus Stop Categories

Each bus stop in the study area has been assigned a "level" of A through C, based on the relative importance of each bus stop in terms of total boardings, bus frequency, and number of bus routes served. An attached inventory table provides a listing of the bus stops, relevant data, and a proposed designation. The following sections describe appropriate features of the bus stops.

Level A

These are the most important bus stops based on number of users, transfers, bus frequency, and routes served. These stops should have the highest level of amenities, including signage, a shelter, and route and schedule information (see photo above-left). The proposed Level A bus stops are as follows:

- Dartmouth Bookstore
- Hanover Inn
- Vail/Dartmouth Medical School
- Maynard

Level B

These are stops with moderate boardings and importance, and should have, at a minimum, a bus shelter; map, route and schedule information; reasonably safe pedestrian access; accessibility for disabled riders and signage. There are 19 bus stops in this category, and several are in need of shelters, signage, and improvements for accessibility and pedestrian safety. For stops on high traffic routes, these stops should be considered for bus turnouts, due to their higher frequency of use and boardings.

Level C

These are the bus stops with the lowest numbers of boardings, and therefore are relatively less critical for improvements. At a minimum, there should be signage and reasonably safe pedestrian access. Some of these stops may become more important over time, as land development projects, service improvements and fuel prices may generate additional riders. Therefore, continued monitoring of the boardings and activity at these stops should be conducted to determine if amenities are needed in the future.

Bus Stop Hierarchy Designations

Stop Name	Stop Class	buses per day	Monthly Boardings
Dartmouth Bookstore	A	125	3,640
Vail/DMS	A	162	2,827
Hanover Inn	A	120	1,007
Maynard	A	197	604
Thompson Arena	B	72	2,474
Tuck Circle	B	72	2,078
Upper Dewey	B	72	1,093
Lower Dewey	B	72	1,064
Hanover Park	B	96	742
Webster Ave	B	120	662
Parkhurst	B	185	551
Hanover High School	B	96	490
CRREL	B	21	420
Opposite Hanover Park	B	72	273
Gould Rd (Sachem)	B	12	250
Fire Station	B	21	201
Brockway	B	42	154
Kendall	B	21	140
Silsby Hall	B	72	119
Summer St	B	72	115
Hanover Coop	B	42	102
Rivercrest	B	21	78
St Denis	B	96	76
Dunster Dr	B	12	85
Hanover Town Garage	C	42	61
Park St	C	42	59
45 Lyme Rd	C	21	56
West St	C	36	51
Wheeler Hall	C	120	45
Carter St	C	42	42
Opp West St	C	36	30
Clemment Hall	C	72	29
Berry/Baker Library	C	42	20
Reed Hall	C	72	20
Oak Ridge (Opp Gould	C	12	20
Buck Rd	C	42	19
Go Go Mart	C	84	14
Food Stop	C	12	14
Wyeth Rd	C	12	11
Hanover Post Office	C	12	9
Burke	C	30	3
23 Lyme Rd	C	21	1
89 Lebanon St	C	42	1
Alumni Gym	C	18	-
Dartmouth Printing	C	21	-
Dresden Rd	C	21	-

General Design Considerations

The following sections discuss specific aspects of bus stop design, which have been considered in the final set of design recommendations.

Signage

At a very minimum, each bus stop should be clearly marked with a sign. The following features of a signage program are recommended:

- Signs should be visible to pedestrians from both directions along the street. For example, double-sided signs hanging from a bracket work well (see example photo above). Many stops are marked only with conventional traffic signage, so pedestrians approaching the stop from the downstream traffic directions cannot see the bus stop sign until they pass it.
- The signs should include information about which route stop there. This could be accomplished by supplementing the existing signs with durable stickers of each route color or a Dartmouth Shuttle sticker, as appropriate. Over the long term, the sign template could be updated to meet these recommendations.

Signage options are numerous, and over time, AT could consider establishing separate sign posts, updated sign design and more informative signs. A few examples are shown above.

Accessibility

The current proposed access board guidelines for bus stops are attached to this report, and the following are among the key considerations for the design of any bus stop improvements:

- The bus stop boarding area should be 13 feet wide, allowing for the 8 foot wide vehicle plus a 5 foot wide alley for accessing the side of the bus.
- Access between the bus boarding area and the sidewalk should not require any movement in a traveled way of a road.

As many of the existing bus stops do not fully meet these requirements, they should be considered as future street and sidewalk improvements are conducted by the Town of Hanover or Dartmouth College.

Examples of two-sided transit route signage.

There are many signage design and mounting options.

Bus Shelters

The existing AT standard shelters are both attractive and durable, and work well in most cases to provide shelter for waiting passengers. However, there are some visually sensitive bus stops where it is appropriate to consider more context sensitive options. Many communities have developed custom designed shelters that give the transit system and environs a distinctive identity, particularly for central stops where ridership and surrounding context warrant special treatment. For visually sensitive locations shelters that are transparent and integrate distinctive architectural features could provide an interesting accent to the diverse architectural fabric of downtown Hanover while also sending the message about the importance of transit riders in the community. The images to the left provide a few examples of shelters built by other agencies in prominent locations, such as the Hanover Inn or Parkhurst stops.

Shelters should also be sized based on the number of boardings.

Information

Each bus stop should provide as much information on the AT system as possible. The following show goals for each level of stop:

Level	Information
A	Real time bus arrival information
	Complete route and schedule information posted at shelter
	Name of the bus stop provided visibly on the shelter
B	Complete route and schedule information posted at shelter
	Cell phone accessible schedule information
	Name of the bus stop provided visibly on the shelter
C	Signage visible to pedestrians on both sides
	Information on which routes stop there (i.e., route color stickers placed on sign)

A variety of transit shelters that are transparent, attractive, and enhance their setting: AT Rivercrest, Hanover; Seattle, WA; Santa Monica, CA (with solar cells on roof for lighting) and Mountain View, CA.

The stop at Kendall includes an attractive and comfortable bench, but it does not meet accessibility guidelines.

The Webster stop is a 'B' level stop with appropriate amenities.

Bus Bulb in Mountainview, CA

Bus Bulbs

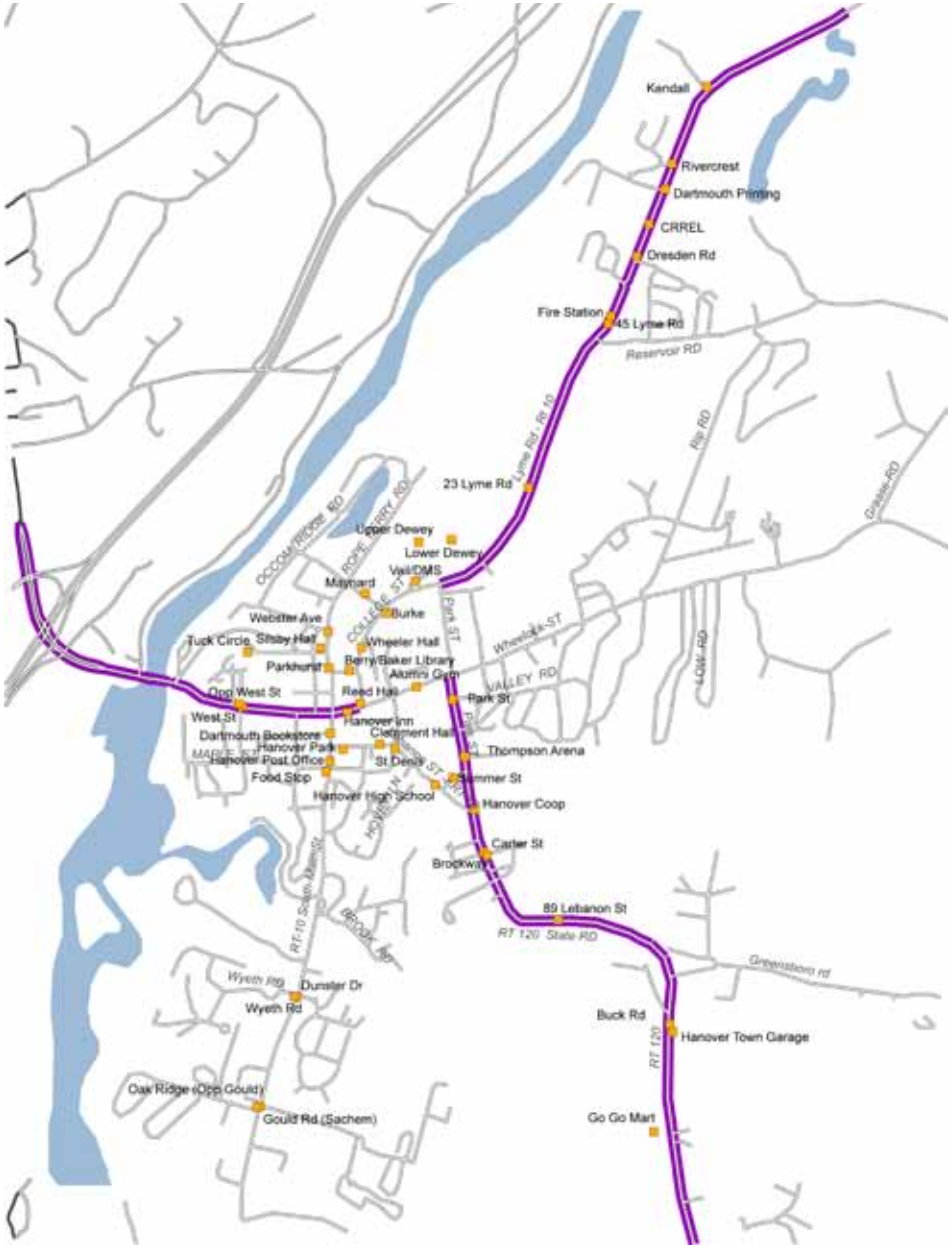
Bus bulbs improve transit operations through the eliminating the need for buses to weave in and out of traffic (see photo on previous page). Like pedestrian bulbs, they allow a bus length adjacent to the sidewalk. They also alleviate sidewalk congestion, reduce pedestrian crossing distances and make it easier for bus operators to see pedestrians and transit patorns waiting for a bus at a busy location. Bus bulbs should be considered in areas with the following characteristics:

- There is a well-developed, mixed-use, pedestrian-oriented land use pattern;
- There are high levels of pedestrian activity on the sidewalk;
- There are high levels of bus patronage at the bus stop or within the corridor;
- There are lower operating speeds on the roadway;
- There is on-street parking;
- There are difficulties for buses in re-entering the traffic stream.

Bus bulbs on two-lane streets should be considered on a case-by-case basis, considering the criteria above. The map to the right shows the streets in Hanover that typically have more than 1,000 vehicles per hour during the peak traffic hours[1], and are therefore candidates for curbside transit stops or bus turnouts based on traffic volume. The other factors noted above should also be considered in design recommendations, and were incorporated into our specific design recommendations later in this report.

1 *Dartmouth Master Plan – Traffic and Parking Report*, Resource Systems Group, 10 September, 2001.

Routes with Peak Hour Volumes Exceeding 1,000 VPH



Pedestrian crossing signage and crosswalk at the Carter AT stop on Route 120.

Pedestrian crossings at Buck Road/Hanover Town Garage on route 120 are a concern.

Pedestrian Crossings and Safety

There is growing concern among transit agencies to consider the pedestrian safety of transit stops, as patrons generally access bus stops as pedestrians. In order for a rider to use a bus stop for a round trip, such as commuting to and from work over the course of a day, it will almost certainly be necessary for the rider to cross the street to the transit stop for one end of their trip. Therefore, the pedestrian crossing opportunities are an important consideration in locating and design of transit stops.

Most of the bus stops in the core of the Dartmouth Campus and downtown Hanover have a good pedestrian environment, and existing safe crosswalks conveniently located to most bus stops. The following bus stops do not provide a marked

crosswalk within a convenient walking distance (i.e. 500 feet). This does not necessarily mean that a pedestrian cannot cross safely, or that a marked crosswalk is warranted. However, use of the stops should be monitored to determine if future improvements are needed:

- 23 Lyme Rd
- 89 Lebanon St
- West Street/Opposite West Street
- Buck Rd/Hanover Town Garage (these conditions will be improved with the build-out of Gile Hill)
- Rivercrest
- Dartmouth Printing

These locations were all found to have reasonably good sight distance, so that crossing here does not present any specific hazard. If transit ridership and crossing volumes increase at these locations in the future, a marked crosswalk may be worthy of consideration. Crosswalks on relatively higher speed facilities such as Lyme Road or Route 120 should be reinforced with traffic calming features to strengthen the visibility of the pedestrian.

Bus Stop Design Recommendations

The following sections discuss the bus stops for which more detailed design concepts were prepared. Following that is a list of general recommendations for the remaining bus stops, considering the above factors.

Hanover Inn: The Reluctant Bus Stop

The AT bus stop at the Hanover Inn.

It is readily apparent from looking at the route maps of both Advance Transit and other carrier's routes that local and regional transit activities converge at this location. The Hanover Inn has emerged as a transit node, not so much as the result of planning, but guided by its convenient and central location between the College and Downtown Hanover, and the support of a street network that accommodates bus operations. While this location is very convenient for transit patrons, there are concerns about the impact that this bus activity has on the Hanover Inn and Hopkins Center. Primary concerns include idling of large intercity buses, aesthetic impact that a node of bus activity at this location brings, the potential loss of parking spaces and the use of the public spaces of the Hopkins Center and Hanover Inn by transit patrons for shelter from the elements and temporary storage of luggage.

While the focus of this study is Advance Transit, potential alternative locations for intercity bus services (i.e., Dartmouth Coach) are discussed because of the relevance to the design of this important bus stop. Alternative locations for Dartmouth Coach proved to be difficult, as there are no other locations that meet the geometric (i.e. space) requirements of a bus loading area, and would also provide the high degree of services and amenities for the primary users of this service, namely Dartmouth students, faculty, staff and visitors to the college. The location of the current stop is relatively central to the "epicenter" of student dorm beds (see page 7) as well as academic buildings.

For the purposes of this study, it is assumed that existing transit services -- AT, Dartmouth Coach, Vermont Transit -- will remain in this location due to its convenient location from a transportation perspective.

Existing Conditions

Pedestrian Activity. This area is a busy interchange of pedestrian, transit, vehicle and bicycle activity. Pedestrian volumes are particularly high at this location, with both intersection and mid-block crossings. At the mid-block location there is a near steady stream of pedestrians walking between the west wing of the Hopkins Center complex (where student mail boxes are located) and the Dartmouth Green. Pedestrians typically jay-walk across East Wheelock Street at this location at all hours and in all weather conditions. While this activity is not specifically related to transit service, the pedestrian desire line is so strong at this location that it must be addressed in these conceptual plans.

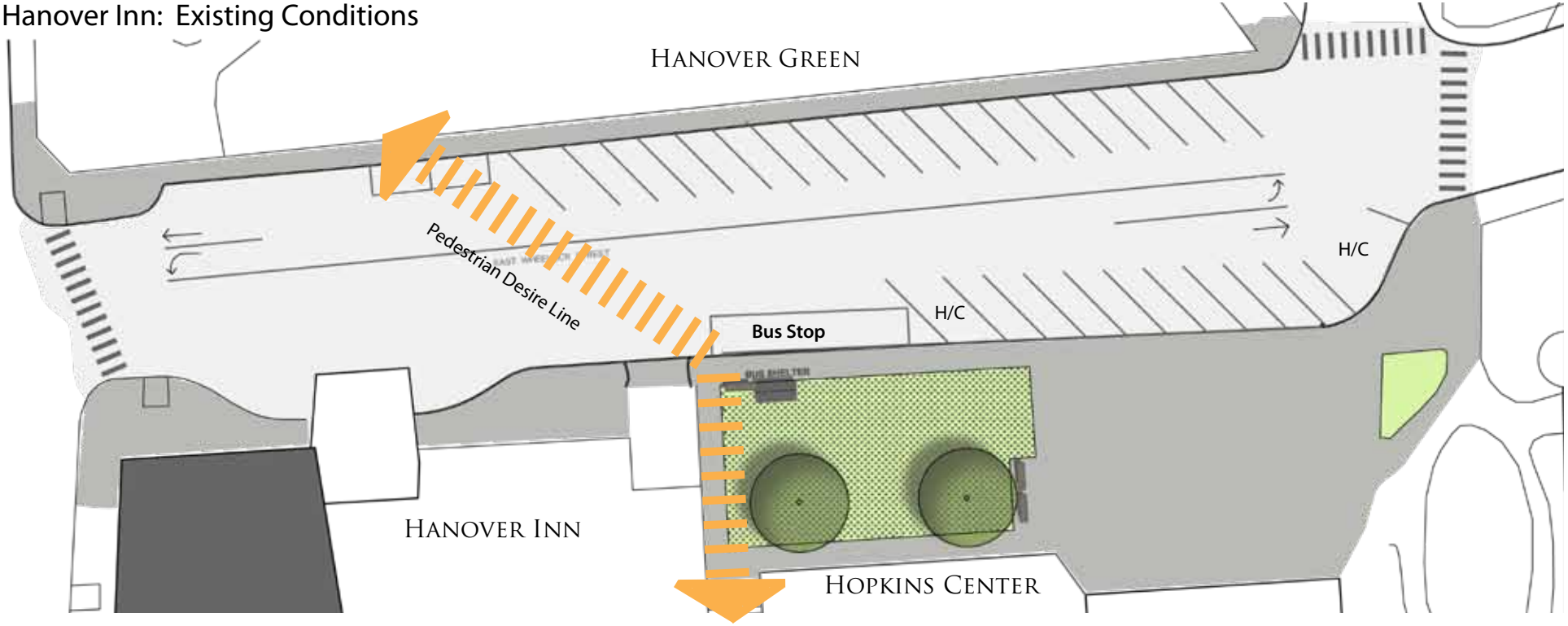
Bus Stop. There is one designated curbside bus stop on the south side of Wheelock Street just beyond the Hanover Inn. This designated space is inadequate for the number of buses that serve this location. The inadequate space allocated to bus traffic translates to haphazard bus parking in the street in order to serve this location (see photo page 18).

Wheelock Street. Wheelock Street is relatively wide at this location, which provides an opportunity to reconfigure the street space to better accommodate the heavy demands of pedestrians and transit at this location.

Hopkins Center Plaza. Despite its central location and around the clock activity, the Hopkins Center plaza is not a very hospitable space for public activity. While this is a consideration that goes beyond the scope of this study, simple improvements to the space to better accommodate pedestrians and transit patrons is one step to making this a more successful public space for all users.

Lighting. Lighting is a concern in this area. Night lighting is uneven and portions of the sidewalk and street are not well illuminated. Pedestrians crossing at the intersection of College and Wheelock are particularly hard to see in the dark. The overall photometrics of the area should be evaluated and the lighting adjusted accordingly.

Hanover Inn: Existing Conditions



Hanover Inn

Advance Transit

Route(s):	Brown, Green, Orange, Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	30 mins, 60 mins, 60 mins, 10 mins
Buses per Day:	120
Avg. Monthly Boardings:	1007
Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK

Dartmouth Coach
Buses per Day: 14

Connecticut River Transit
Buses per Day: 4

Stagecoach River Route
Buses per Day: 3

Vermont Transit/Greyhound
Buses per Day: 4

TOTAL BUSES PER DAY: 145*

* Additional 4 buses per day from Rural Community Transit are expected in 2009

Space for buses at the Hanover Inn/Hopkins Center is inadequate.

Improved crossing treatment with median island in Amherst, Massachusetts.

Conceptual Plan

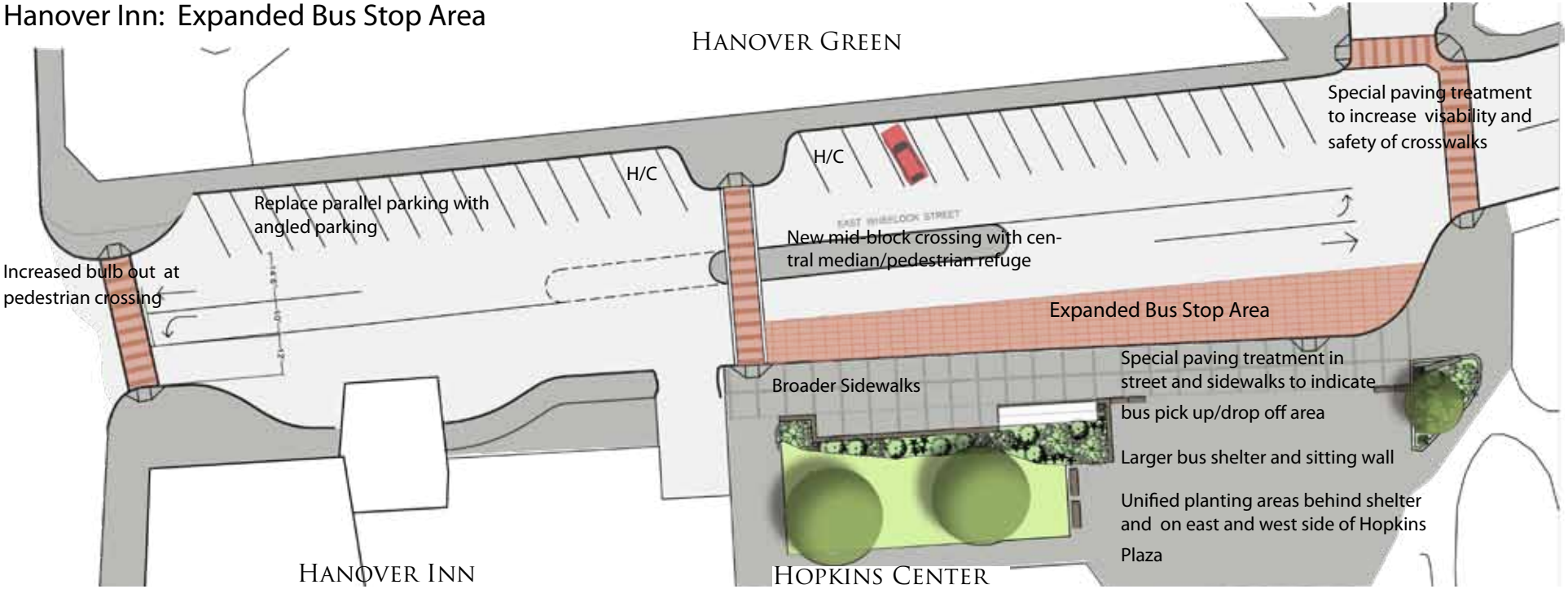
The design concept presented in the attached drawings address many of the concerns raised by area stakeholders and the project Steering Committee. Although this study is focused on AT service, design concepts for this stop must look at all the transit services that use this stop.

Expanded Transit Stop. Overall, the concept for this area includes creating an expanded bus transit zone by rearranging parking on both sides of Wheelock Street. Diagonal parking in front of the Hanover Inn and Hopkins Center on the South side of Wheelock Street is removed and replaced with an expanded curbside transit stop zone. Conceptually, intercity buses (i.e., Dartmouth Coach) would stop at the east end of the bus boarding area. This allows the local buses (AT , River Transit, Stage Coach), which are more frequent and have shorter stopping times, to stop behind the larger buses and continue along the route. This also allows the local buses to turn left at College and Wheelock more easily, while Dartmouth Coach and Vermont Transit continue down Wheelock to Park Street. This arrangement has the additional benefit of moving the larger intercity buses further away from the dining terrace at the Hanover Inn.

The improved bus stop area would provide curbside space for up to three buses. The street paving treatment is recommended to be painted and or paved with a scored/textured design to demarcate the bus zone and narrow the apparent width of the street. The width of the bus zone allows for improved accessibility for handicapped patrons, including a five-foot clearance between the parked bus and the curb. There is the opportunity to use space alongside the curb during off-peak times (i.e., afternoon, evenings) for other needs, including loading and unloading for deliveries, parking shuttles, patron drop-off, and/or valet parking for events at the Hopkins Center.

Reconfigured Parking. In order to minimize the loss of parking spaces, parking on the north side of Wheelock Street is re-configured to 60 degree angled parking and the taxi/bus zone on the north side of Wheelock is eliminated. Overall, reconfiguring the parking and bus zones in this manner would result in the loss of two parking spaces.

Hanover Inn: Expanded Bus Stop Area

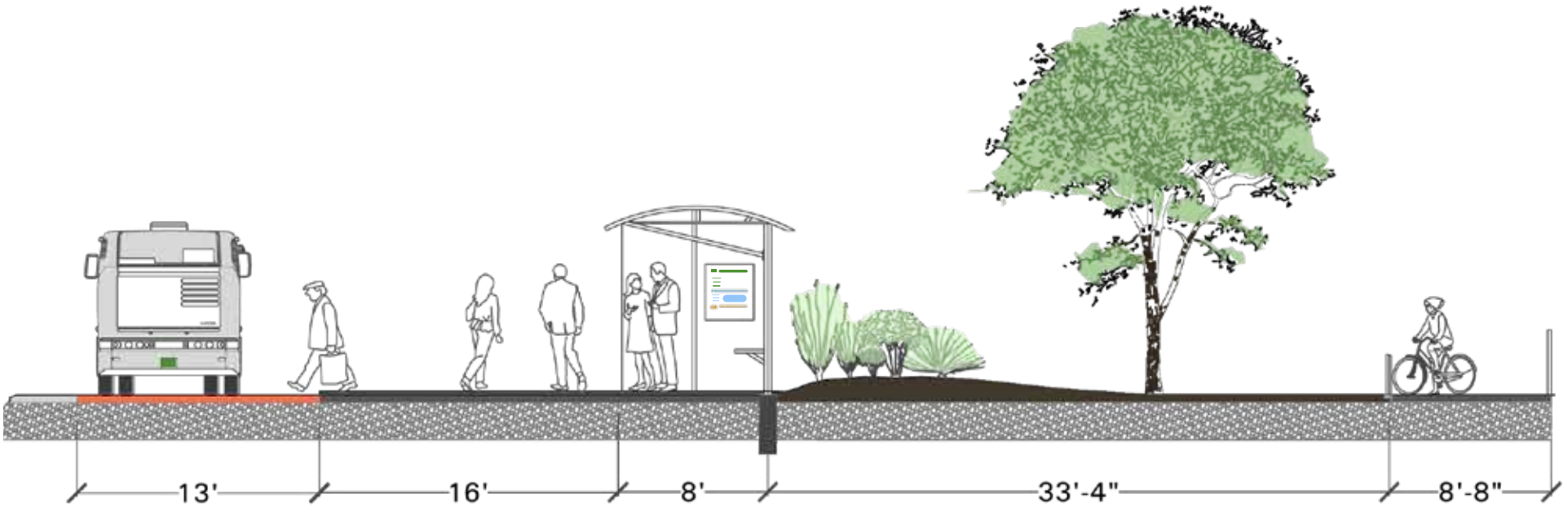


Pedestrian Walkways and Crossings. Broader pedestrian walkways along Wheelock Street and the western edge of the Hopkins Center plaza space, where pedestrian volumes are heaviest, will help pedestrian circulation and give these spaces a more gracious feeling. Special paving treatment, which could be as simple as changes to the scoring patterns or the use of special paving blocks, is recommended to emphasize the prominent pedestrian zones. A larger transit shelter and a sitting wall along the edge of the landscaped area would help accommodate higher volumes of transit patrons. As this is one of the highest level transit stops, real time transit arrival information is recommended to be integrated into the shelter, as well as route and schedule information and location signage.

Improved pedestrian crossings at both intersections and a new mid-block crossing will improve pedestrian accessibility to the transit stop as well as the Hopkins Center area. A small median is an optional element that can serve as a pedestrian refuge and act as a traffic calming feature can be accommodated as a part of the reconfiguration of the street as well. The visibility of pedestrian crossings should be emphasized with textured colored paving and striping.

Improved Patron Services. There are a couple of approaches to providing improved services and amenities for transit patrons at the Hanover Inn/Hopkins Center stop. Services and amenities including a heated waiting environment, newsstand, ticketing, and luggage holding area (for intercity bus services) are important elements to improving the livability and utility of this stop. One option would be to integrate café /casual dining space into the Hanover Inn as a part of the planned renovation in a manner that allows the café/dining space to open onto the plaza. In addition to typical dining space, a newstand, and some space for holding luggage and purchasing tickets would improve the function of this space for transit patrons. As a design approach, this option would have the added benefit of creating a more lively, sociable public space overall, particular if outdoor seating is incorporated into the mix, as well as providing improved services and amenities for transit patrons and the larger student and downtown community.

Hanover Inn: Expanded Bus Stop Section



Street treatment indicating bus pick up/drop off area

Bus lane width to accomodate 5'
H/C lane between bus and sidewalk

Wider sidewalks to accomodate those waiting and pedestrians en route

Planting area contributes to aesthetics of bus stop and unifes this area with west and east side of Hopkins Plaza

Bike rack area maintained

Example of improved pedestrian crossing in Middlebury, Vermont.

A second option would be to provide a stand-alone kiosk in the plaza that could provide shelter/heated waiting space, newsstand, café, ticketing and a luggage holding area. A kiosk in this location should be a signature architectural piece that provides an interesting counterpoint to the other noteworthy structures in the area. The design of the structure could be handled as a design competition. In either option, there is also the opportunity to include a permanent home for visitor information on Hanover and Dartmouth College, which is currently only provided seasonally.

AT bus stop at the Dartmouth Bookstore.

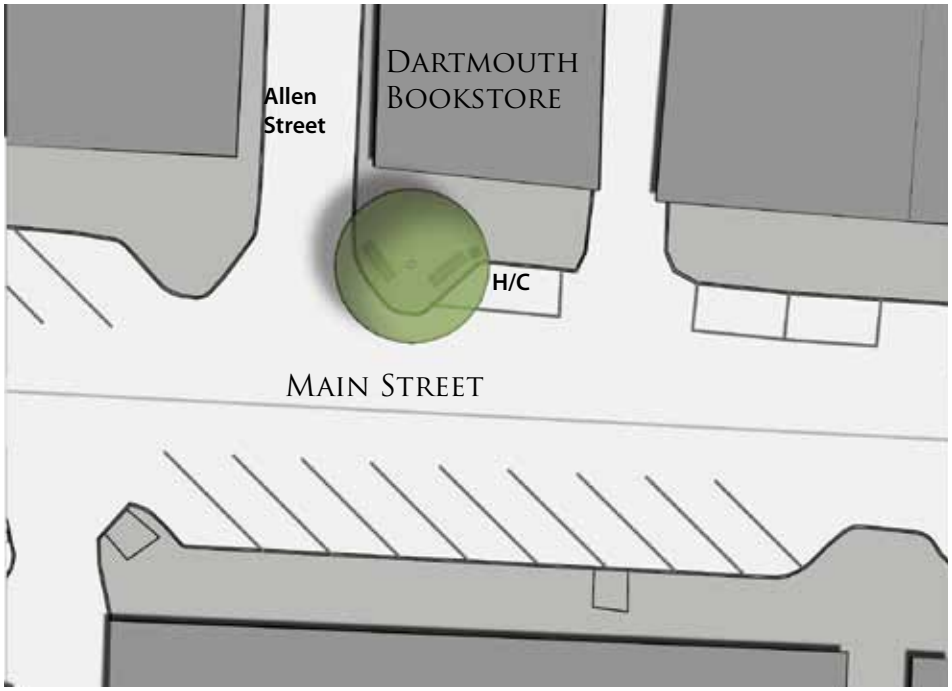
Dartmouth Book Store (Main Street)

Of all the stops in Hanover, this stop has the highest number of AT boardings, and most frequent bus service. With coffee, newspapers, a nearby ATM and heated buildings open to the public, this is perhaps the most amenable place to wait for the bus in downtown Hanover. The area is constrained primarily by congested sidewalk space for Main Street pedestrians and transit patrons. More benches would help this area as it is a popular spot for lingering on Main Street as well as waiting for the bus. At this location there is no space for a shelter. For the most part, patrons can take cover under the awning or in the entry vestibule to the Dartmouth Bookstore which are only a few steps away.

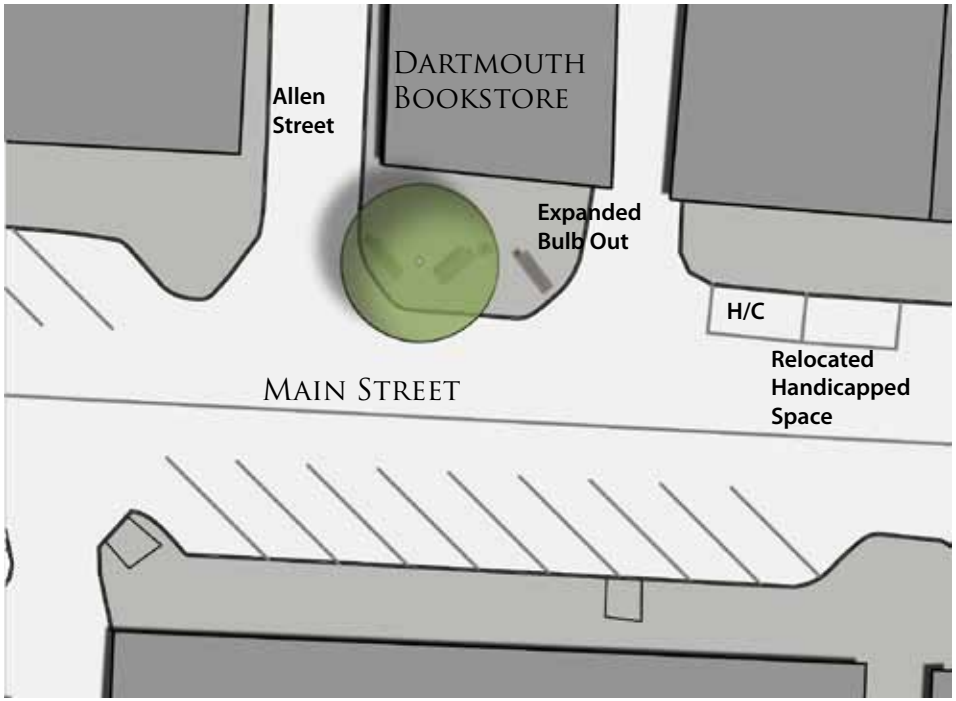
The design recommendation for this space is to expand the existing bulb out to provide a larger area for additional benches and waiting space. The designated handicapped space can be moved up the street one spot.

Maynard Street

Dartmouth Bookstore: Existing Conditions



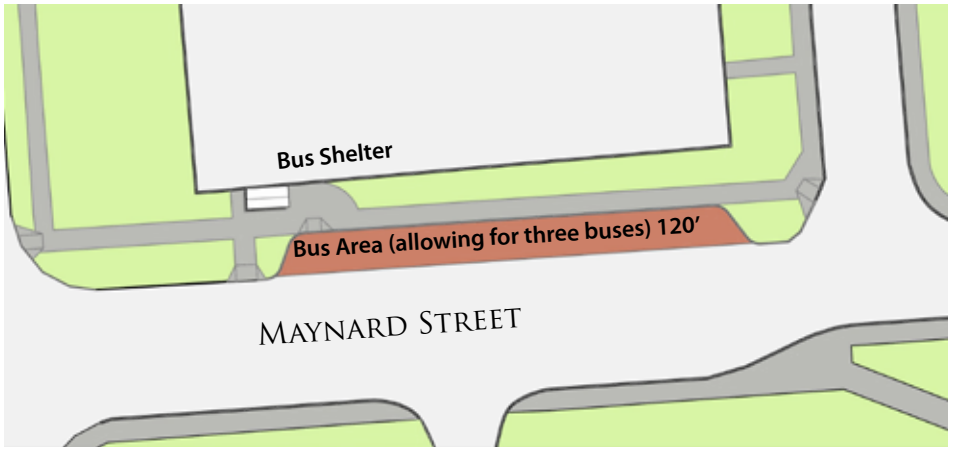
Dartmouth Bookstore: Proposed Bus Bulb



Dartmouth Bookstore

Route(s):	Blue, Orange, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 60 mins, 10 mins
Buses per Day:	125
Avg. Monthly Boardings:	3,640
Accessibility:	Poor
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	Yes

Maynard: Proposed New Transfer Stop



Maynard

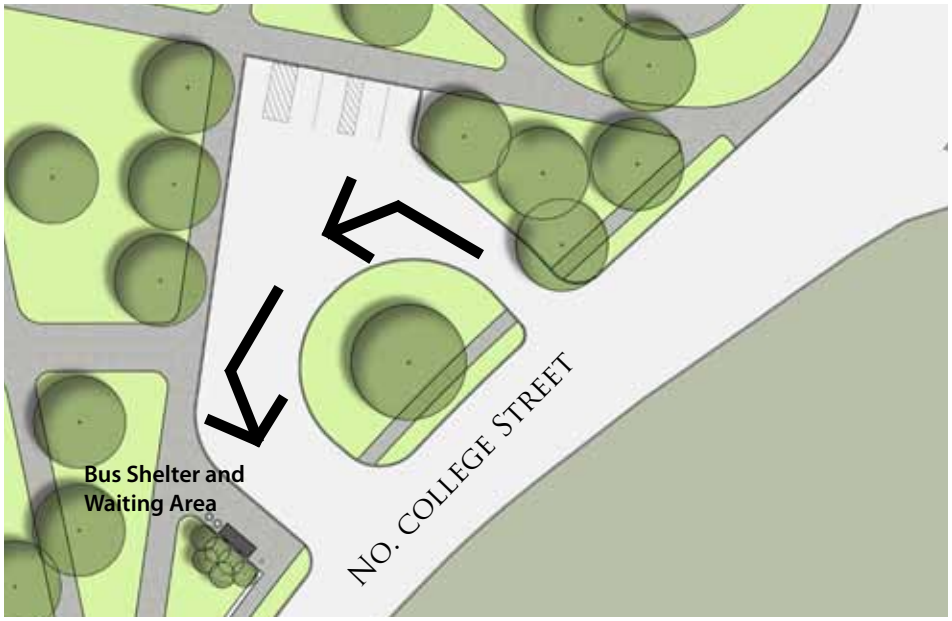
Route(s):	Blue, Brown, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 30 mins, 10 mins
Avg. Monthly Boardings:	604
Accessibility:	Good
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK

One of the recommendations of the draft Service Plan for Advance Transit is to make Maynard the terminus of the Orange and Green lines rather than the current location at Vail/DMS. This would allow buses to save travel time between the intersection of Maynard and College Streets and the Vail circle area for the Green and Orange routes. While the distance is not long, the relocation would save few minutes of travel time for each bus on the orange and green routes, allowing them to stay closer to their schedules during peak hours of traffic congestion.

The design requirements for an expanded stop at Maynard would involve a bus bay large enough to accommodate three buses, approximately 120 feet in length. This can be accomplished on the north side of Maynard Street, just west of the parking drive and the existing Maynard stop.

Vail/DMS

Vail: Future Plan with Life Sciences Building



Vail/DMS

Route(s):	Blue, Green, Orange, Brown, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 60 mins, 60 mins, 30 mins, 10 mins
Buses per Day:	162
Avg. Monthly Boardings:	2827
Accessibility:	Fair
Sidewalks:	Yes/Not Across the Street
Crosswalks:	Yes
Bike Racks:	OK

With the proposed relocation of the Green and Orange line terminus to Maynard, the use of this stop would serve the Blue, Brown and Dartmouth Shuttle lines. This stop is being redeveloped as shown in conjunction with the construction of the Life Sciences building. This stop needs an improved pedestrian crossing of College Street, perhaps in conjunction with a sidewalk on the opposite side of the street and planned improvements to the intersection of Lyme Rd, Park St and College St.

Lebanon Street/Hanover Park

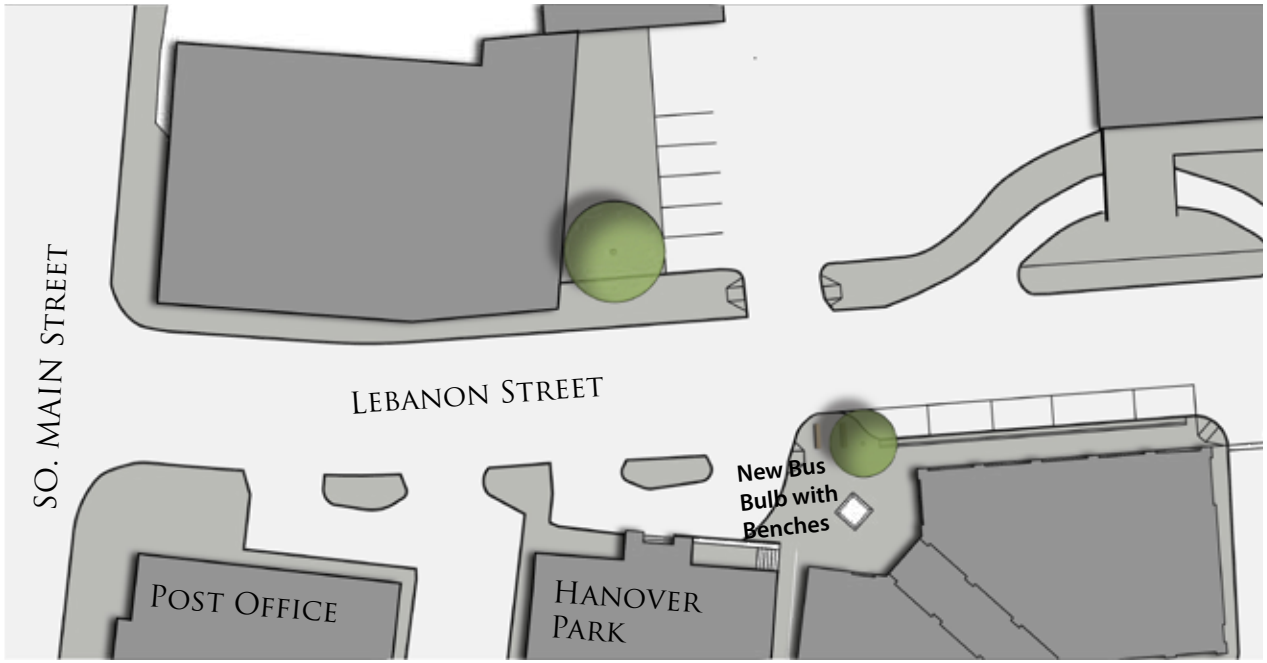
Hanover Park

Route(s): Blue, Dartmouth AM, Dartmouth PM
Headway: 15 and 30 mins, 10 mins
Buses per Day: 96
Avg. Monthly Boardings: 742
Accessibility: Fair
Sidewalks: Yes
Crosswalks: Yes
Bike Racks: No

Hanover Park, Opposite Side

Route(s): Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway: 10 mins
Buses per Day: 72
Avg. Monthly Boardings: 273
Accessibility: Fair
Sidewalks: Yes
Crosswalks: Yes
Bike Racks: OK

Hanover Park: Enhanced South Side Bus Stop



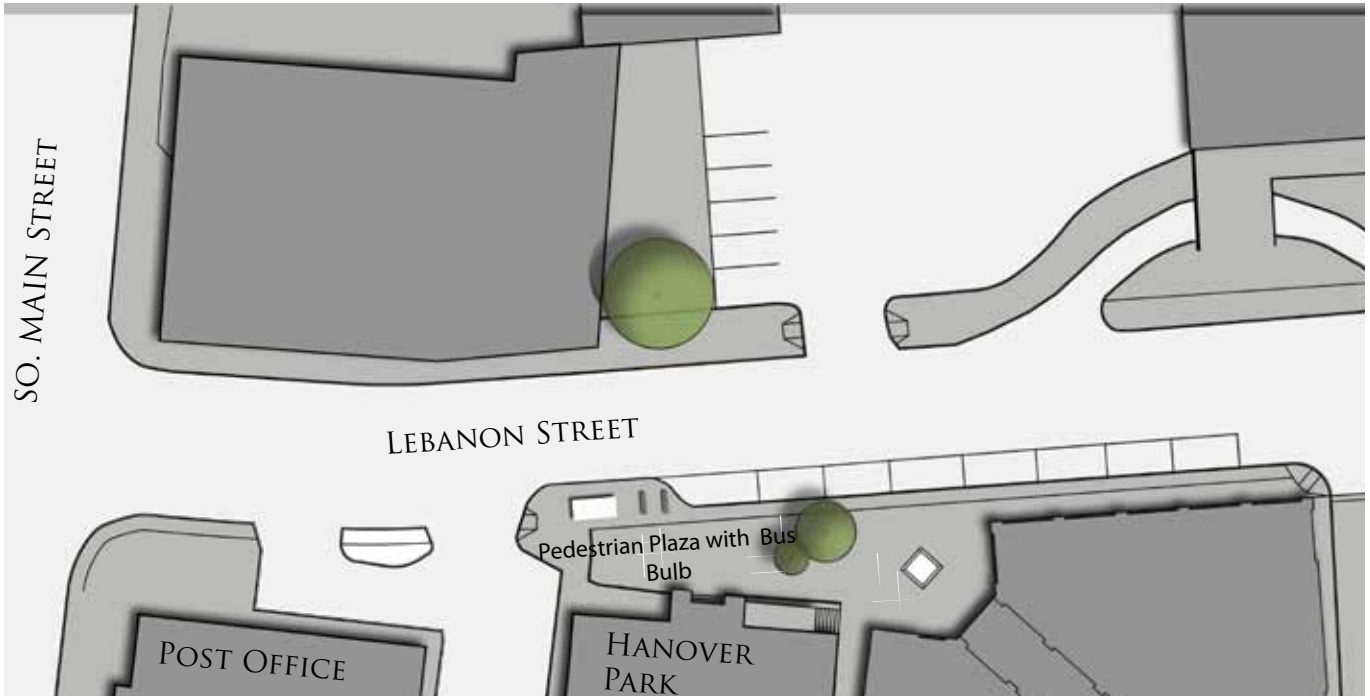
This is another heavily used stop and an important transfer location for some routes. However, the conditions along the south side of Lebanon Street are far from ideal, due to the multiple curb cuts serving the Post Office mailbox set and the Hanover Park building entrance. These curb cuts have been designed for the convenience of drivers to access mailboxes and businesses in the Hanover Park building, and are not appropriate for the pedestrian-oriented context of this street. Between the curb cuts, the narrow sidewalk and the relatively wide street space, this stop is very poorly articulated in the downtown fabric. Patrons cannot tell where the stop is located and become 'lost' in the jumble of curb cuts, cars, truck loading and do not have confidence that the bus will see them an stop for them at this location.

The design concepts for the Hanover Park stops include both a short term and long term option. In the near term, a bus bulb should be constructed with benches, signage and street trees to create a more visually pronounced and hospitable waiting environment, similar to the Dartmouth Bookstore bulb. In the long term, it would be desireable to eliminate the curb cuts and driveways associated with Hanover Park and the Post Office. This would allow for broader sidewalk/plaza spaces that would improve the environment for pedestrians and transit patrons. In our observations, the geometry of the Hanover Park drive does not work for deliveries, which occur in the street. The curb cuts and car traffic over the sidewalk substantially degrade the pedestrian environment and is inappropriate in this central downtown setting. The elimination of these curb cuts should be a goal of the Town of Hanover, and a consideration as a part of any future development and/or permitting associated with the Post Office or Hanover Park.

A shelter is not warranted in the west bound direction, and the sidewalk is too crowded for a shelter in the eastbound direction. In the long term however, a shelter should be integrated into the design of this bus stop in the eastbound direction, once the Hanover Park curb cuts are removed. While taking shelter at the Hanover Park building is possible, it is set back from the street a distance that is uncomfortable for a patron waiting for a bus, and particularly for mobility impaired patrons.

Lebanon Street/Proposed Visual Arts Center

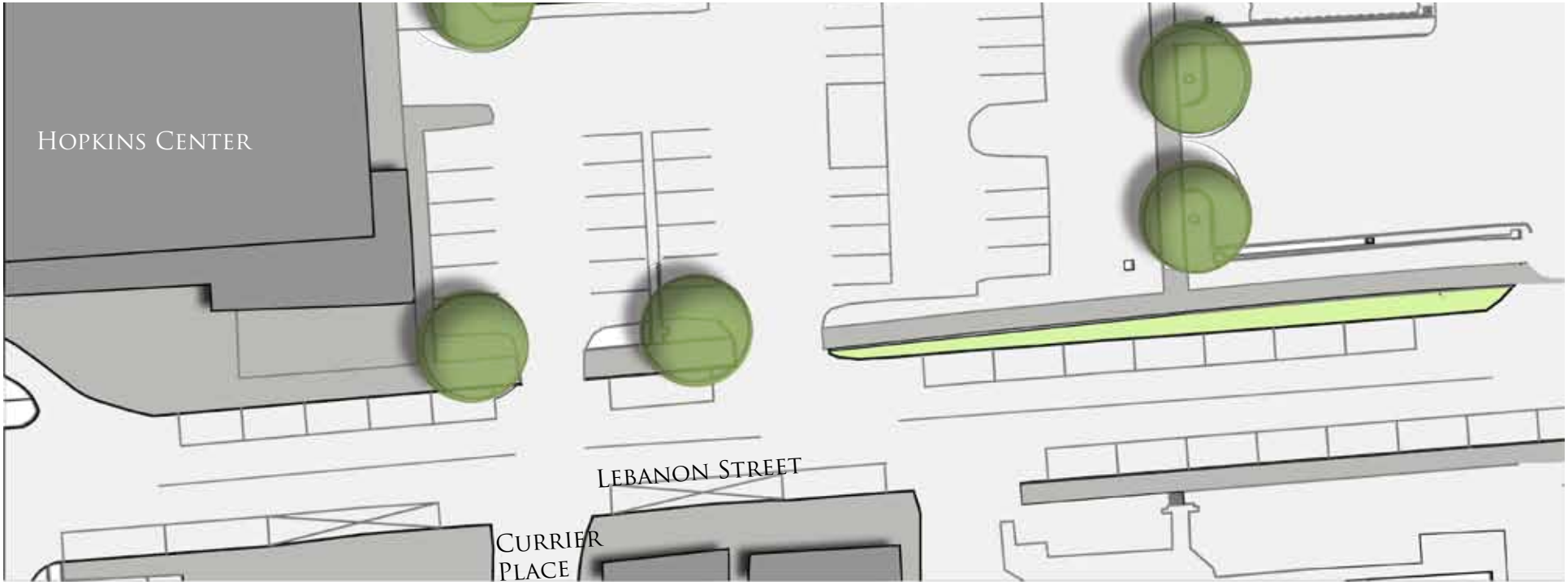
Hanover Park: Option for Improved Bus Stops with Closed Driveways at Hanover Park



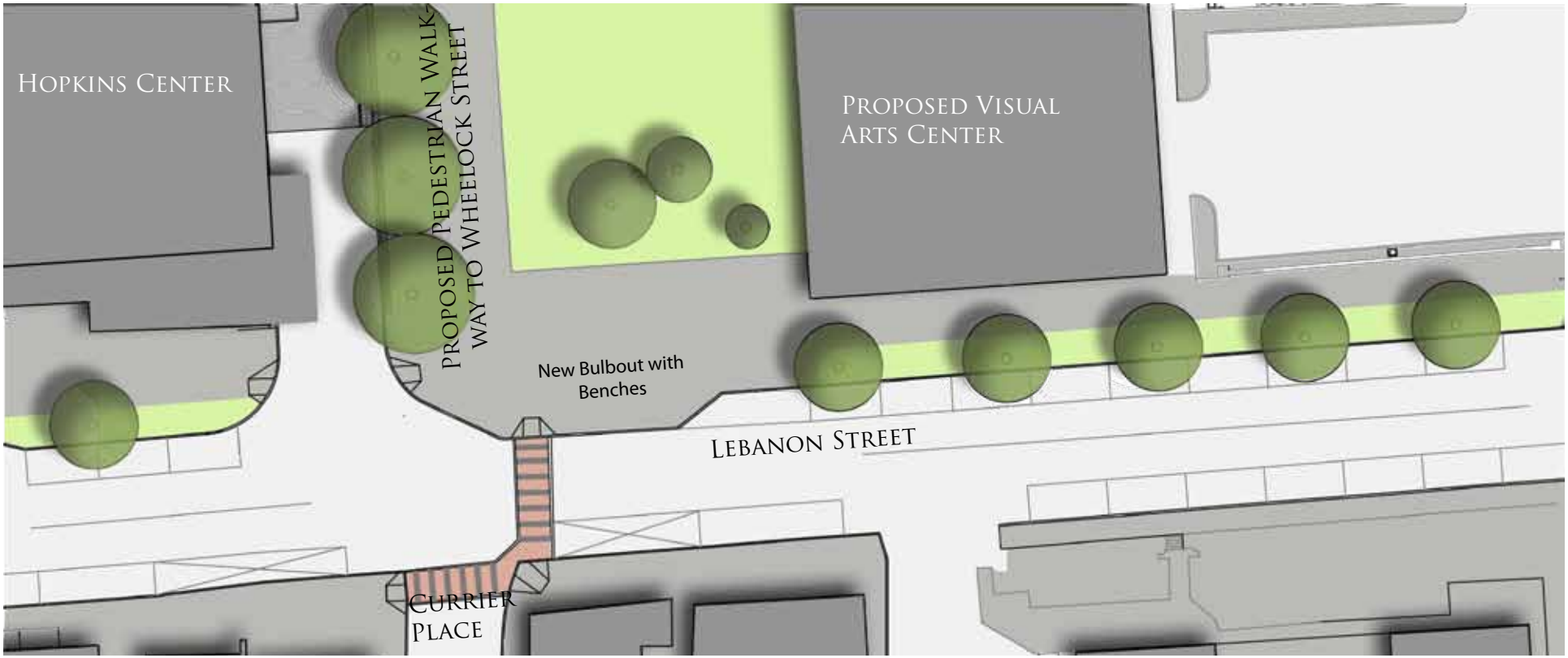
With the development of the Visual Arts Center, there is an opportunity to improve the bus stops at this location, which is essentially the eastern gateway to the downtown. At the present time, Lebanon Street is used in the eastbound direction by the Blue Route and in the westbound direction by the Dartmouth Shuttle. The shuttle stop is on the north side of the street, Clemment Hall, and there is not currently a stop on the south side of the street.

This area is undergoing significant change. With the new Visual Arts Center, devel-

Lebanon Street at Proposed Visual Arts Center: Existing Conditions



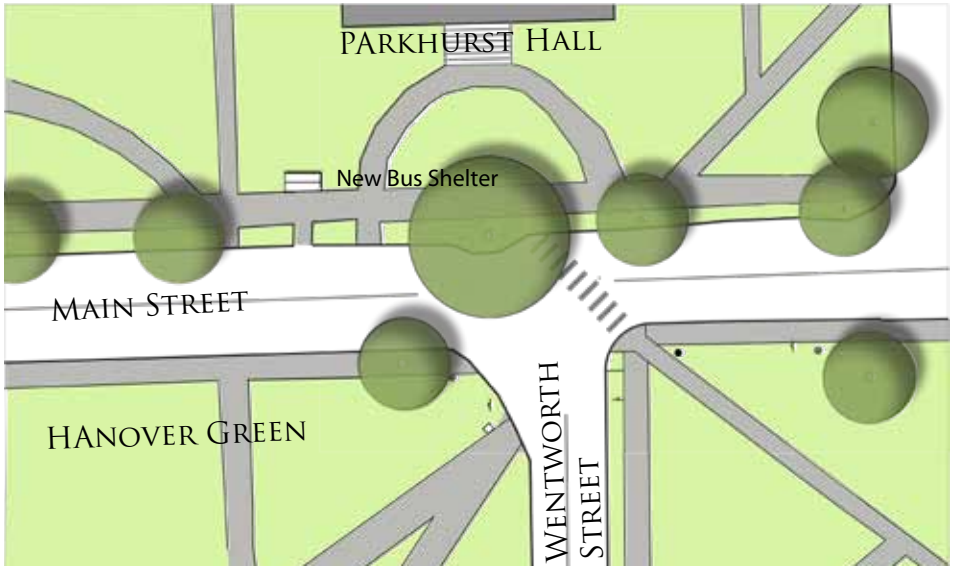
Lebanon Street at Proposed Visual Arts Center: Proposed Bus Shelter and Bus Bulbs



opment currently under construction at Sargent Place, and the nearby South Block development, more activity is being introduced into this area. In general, the density and configuration of this development reinforces pedestrian and transit use over driving, and it is expected that pedestrian activity and transit usage in this area will increase over time.

The bus stop design concepts for this area provide a bus/pedestrian bulb at the Visual Arts Center in the westbound directon. These bulb outs will accommodate both increased pedestrian demand between the Visual Arts Center, and the parking garage and shops on the south side of Lebanon Street as well as increased bus transit usage.

Parkhurst: New Bus Shelter



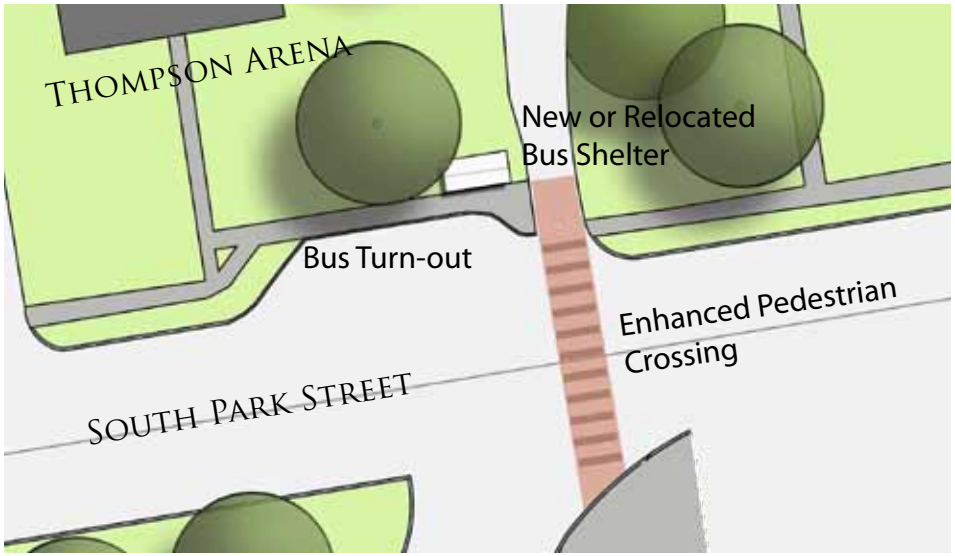
PARKHURST

Route(s): Blue, Brown, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway: 15 and 30 mins, 30 mins, 10 mins
Buses per Day: 185
Avg. Monthly Boardings: 551
Accessibility: Fair
Sidewalks: Yes
Crosswalks: Yes
Bike Racks: OK

Parkhurst

This is a moderately important bus stop, but currently does not provide a bus shelter. While its prominent location on the Dartmouth Green will require a high degree of sensitivity to aesthetics and context, there are many very attractive bus shelter options that could be appropriate at this location. Relocation of the stop to the curbside just south of the intersection of Main Street with Wentworth is also recommended, as the Dartmouth Shuttle uses Wentworth Street and cannot pick-up riders above Wentworth Street. While this location may be more visually sensitive, the area is well screened by the mature trees along the green, and there are already other elements along the street (i.e. Fed Ex /UPS Drop Boxes, lighting) that would make the addition of a transit shelter of less significance.

Thompson Arena: Proposed Bus Shelter and Pedestrian Zone



Thompson Arena

The shuttle route currently passes through the entire Thompson Arena parking area, requiring substantial travel time on every shuttle route throughout the day. One option that is presented would relocate the Thompson Arena stop to Park Street, near the entrance to the arena, for mid-day service. This requires a longer walk for some passengers (up to 900 feet from the parking area), but would significantly improve travel times on the shuttle routes. Thompson Arena is a stop with high numbers of boardings, so a relatively large shelter is needed. This facility would also be very useful for the Dewey shuttle service that serves Thompson Arena and/or Leverone Field House during special events. A bus turn-out is also recommended, due to high traffic volumes on Park Street.

Thompson Arena

Route(s):	Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	10 mins
Buses per Day:	72
Avg. Monthly Boardings:	2474
Accessibility:	Excellent
Sidewalks:	N/A
Crosswalks:	N/A
Bike Racks:	OK

The existing AT stop at Buck Road.

Route 120 at Buck Road and Greensboro Road

Currently, there are bus stops at the intersection of Buck Road with Route 120, as well as across Route 120 at the Hanover Town Garage entrance. These are lightly used, and do not have a good pedestrian environment. However, with the construction and occupation of the Gile Hill development, and the planned pedestrian connection between the housing development and the Buck Road intersection, these stops could see increased use. As the Gile Hill development is completed, pedestrian improvements will be constructed as shown in the above figure. They will include a pedestrian connection between the development and Buck Road, a sidewalk along the west side of Route 120 between Buck Road and Greensboro Road, and pedestrian crossings at the Greensboro/Route 120 Intersection. Route 120 southbound will be narrowed to one lane between Buck Road and Greensboro Road. These improvements will dramatically improve the pedestrian connections to this bus stop, although the remaining concern is the need for Buck Road transit users to cross Route 120 to for northbound service, and vice versa. The road narrowing will help, as that will reduce both pavement width and traffic speeds.

These bus stops, due to the crossing safety and distance, do not serve the Greensboro Road neighborhoods very well, so a new stop at the intersection of Greensboro and Route 120 is also recommended. The northbound stop should be equipped with bike racks, to serve the residences within bicycling distance of this stop. Secure bike racks could help extend the reach of this stop into an un-served neighborhood along Greensboro Road.

Recommendations for Other Stops

The following table shows recommendations for the other bus stops within the study area.

Summary of Recommendations for Other Stops

Bus Stop	Level	Recommendations
23 Lyme Rd	C	Reconsider need for this stop; signage and pedestrian access
45 Lyme Rd	C	Will move to Lyme Coop, Shelter if Coop doesn't provide waiting area
89 Lebanon St	C	Reconsider need for this stop or relocate to Greensboro Road; signage and pedestrian access
Alumni Gym	C	Signage
Berry/Baker Library	C	May not be necessary if Parkhurst relocates to south of Wentworth Drive
Brockway	B	Shelters
Buck Rd	C	Design turnout, shelter area, and bike racks as part of Gile Hill Improvements
Burke	C	Signage
Carter St	B	Shelters
Clemment Hall	C	Signage, Consider relocating as shown in Visual Arts Center bus stop design
CRREL	B	Pedestrian crossing unprotected; accessibility ramp needed
Dartmouth Printing	C	Signage
Dresden Rd	C	Signage
Fire Station	B	Accessibility ramp needed
Food Stop	C	Signage
Go Go Mart	C	Unsafe passenger waiting area; needs protected platform
Gould Rd (Sachem)	B	Need Bike Racks, consider turnout
Greensboro Rd.	-	NEW stop -- bike racks, sign
Hanover Coop	B	Shelter, improved turnout
Hanover High School	B	Shelter
Hanover Park	B	Improve signage, demarcation of pavement in short term, long term design option
Hanover Town Garage	C	Unprotected pedestrian crossing and waiting area, monitor boardings from Gile Hill, consider turnout and shelter
Kendall	B	Accessibility ramp needed
Lower Dewey	B	Signage
Maynard	B	Relocate Vail Transfers here for efficiency, Redesign as shown on attached.
Opposite West St	C	Pedestrian crossing unprotected, consider traffic calming measures and marked pedestrian crossing
Park St	C	Consider turnout due to high traffic volumes.
Parkhurst	B	Relocate stop south of Wentworth intersection, add shelter
Reed Hall	C	Signage
Rivercrest	B	Pedestrian crossing unprotected, increased boardings from Rivercrest development may warrant crosswalk
Silsby Hall	B	Signage
St Denis	B	Shelter, improved accessibility.
Summer St	B	Signage and Shelter; pedestrian access difficult due to sidewalk on only one side of street
Thompson Arena	B	Consider relocating to Park Street for efficiency, construct turnout and shelter area near Thompson entrance.
Upper Dewey	B	Signage
West St	C	Pedestrian crossing unprotected, consider traffic calming measures and marked pedestrian crossing

References

Transportation Research Board, "*The Role of Transit Amenities and Vehicle Characteristics in Building Transit Ridership: Amenities for Transit Handbook and the Transit Design Game Workbook*," TCRP Report 46, National Academy Press, Washington, DC, 1999.

Transportation Research Board, "*Guidebook for Mitigating Fixed-Route Bus and Pedestrian Collisions*" TCRP Report 125, National Academy Press, Washington, DC, 2008.

Transportation Research Board, "*Evaluation of Bus Bulbs*," TCRP Report 65, National Academy Press, Washington, DC, 2001.

Institute of Transportation Engineers, "*Context Sensitive Solutions in the Design of Major Urban Thoroughfares in Walkable Communities, A Proposed Recommended Practice*," Washington DC, 2005.

Bus Stop Inventory

An inventory of AT bus stops in the plan area were inventoried at the outset of the planning process in order to document the basic physical conditions, traffic and transit service characteristics of each stop. The inventory contains the following information for each stop:

Route: Which AT bus routes serve this stop?

Headway: What is the timing of bus routes serving this stop?

• Blue:	9 am to 4:30	Every 15 minutes
	Other Hours	Every 30 minutes
• Brown:		Every 30 minutes
• Green:		Every 60 minutes
• Orange:		Every 60 minutes
• Dartmouth Shuttle AM:	7 AM to Noon	Every 10 minutes
• Dartmouth Shuttle PM:	Noon to 7 PM	Every 10 minutes

Street: Street location of bus stop

Sign: Is there a sign identifying the bus stop?

Shelter: Is the bus stop served by a shelter?

Bus Stop Type: There are two configurations of bus stops in Hanover:

- **Curbside:** Buses pull up to the curb. This is the most common configuration for a bus stop for a number of reasons; chiefly it does not require any changes to the street environment. A curbside stop may be in the travel lane or on a shoulder in the road.

- **Turnout:** There is a recessed curb area that allows the bus to pull out of the flow of traffic. Bus turnouts are recommended where warranted by vehicle speeds and volumes, passenger boardings, longer dwell times for buses. Turnouts are not desirable in some cases as they create difficulties for buses re-entering the traffic stream, particularly during peak commuting hours.

Buses per Day: How many buses per day serve this stop? This is one useful measure of the relative importance of the stop.

Average Monthly Boardings: How many passengers board a bus at this stop? The boarding data includes riders boarding a bus at the particular stop. This data does not include passengers alighting or getting off the bus at the stop, so in this manner, it does not reflect the total rider traffic at a bus stop. This is another useful measure of the relative importance of a bus stop.

Accessibility: This is a general assessment of how easy or difficult the stop is for persons with disabilities, particularly wheelchairs. Accommodation for accessibility varies widely by stop. At the Lower Dewey and Thompson stops there are wheelchair ramps, detectable warnings, and space for maneuvering wheelchairs within the bus shelters. Other stops would be impossible for persons in wheelchairs due to a lack of paved ground space outside of the traveled way. Many stops are somewhere in between and get a 'fair' rating, with sidewalks that make the stop workable, but do not necessarily meet ADA requirements.

Sidewalks: Is the bus stop served by sidewalks? This is an important indicator of how well the bus stop is integrated into the pedestrian network. This is an important consideration as most bus stops begin or end as a pedestrian trip.

Crosswalks: Are there crosswalks nearby? Like sidewalks, crosswalks are an important indicator of how well the bus stop is served by the pedestrian network. Crossings nearby are important because transit patrons often arrive on one side of the street and depart on the other.

Bike Racks: Accommodation of bicycles at bus stops is another important consideration. Arriving at a bus stop by bike is an attractive option, particularly at stops where homes may be located a distance that is a bit outside of a comfortable walking radius. This documents whether bike racks are located at or nearby the stop.

Traffic Volume: Daily traffic volumes are a consideration in bus stop design, particularly for whether or not a turnout is warranted. The traffic volume on each street was estimated from the most recent available traffic data, and has been characterized based on "natural breaks" in the data as follows:

Low:	Less than 2,000 vehicles per day.
Medium:	3,500 to 7,000
High:	8,000 to 11,000
Very High:	over 16,000

Traffic Speed: The prevailing speed of traffic is another consideration that affects both the need for a bus turnout, and the pedestrian safety of the bus stop. While site specific speed data is not available for most of the stops, the posted speed limit is noted as an indicator of the typical prevailing speed. Motorist speeds will vary by time of day, and are likely to be near or below the posted speed limit during peak hours of traffic. During off-peak or evening hours, traffic speeds are likely to exceed the posted speed limit in some locations.

Amenities: This is an overall assessment of how the waiting experience is at this stop. How does one feel about waiting for the bus here? Do you feel relatively comfortable? Or would you feel undervalued and uncomfortable at the bus stop? For example, with the nearby coffee, newsstand, heated space for lingering, lively and attractive streetscape environment, the Dartmouth Bookstore is a very pleasant place to wait for the bus. At the other extreme, the stop on Route 120 at Buck Road is very hostile to anybody who is not in a car.

23 Lyme Road

Route(s):	Brown
Headway:	30 mins
Street:	Lyme Road
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	21
Avg. Monthly Boardings:	1

Accessibility:	Poor
Sidewalks:	No
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	30 mph
Amenities:	Fair
Notes:	Can't tell it's a bus stop

23 Lyme Road, Opposite

Route(s):	Brown
Headway:	30 mins
Street:	Lyme Road
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	21
Avg. Monthly Boardings:	no data

Accessibility:	Poor
Sidewalks:	Yes
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	High
Traffic speed:	30 mph
Amenities:	Fair
Notes:	Can't tell it is a bus stop

45 Lyme Road

Route(s):	Brown
Headway:	30 mins
Street:	Lyme Road
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	21
Avg. Monthly Boardings:	56

Accessibility:	Poor
Sidewalks:	No
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	35 mph
Amenities:	Fair
Notes:	Will move to Lyme Rd Coop/ Turnout/Sidewalk/Shelter

89 Lebanon Street

Route(s):	Blue
Headway:	15 and 30 mins
Street:	Route 120
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	42
Avg. Monthly Boardings:	1

Accessibility:	Poor
Sidewalks:	No
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	30 mph
Amenities:	Poor
Notes:	Difficult location/No destination

89 Lebanon Street, Opposite

Route(s):	Blue
Headway:	15 and 30 mins
Street:	Route 120
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	42
Avg. Monthly Boardings:	no data

Accessibility:	Poor
Sidewalks:	Yes
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	30 mph
Amenities:	Poor
Notes:	Difficult location/No destination

Alumni Gym

Route(s):	Dartmouth AM 7-10
Headway:	10 mins
Street:	E. Wheelock
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Parking Lane
Buses per Day:	18
Avg. Monthly Boardings:	0

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	High
Traffic Speed:	25 mph
Amenities:	Good
Notes:	Can't tell it is a shuttle stop

Baker/Berry Library

Route(s):	Dartmouth PM
Headway:	10 mins
Street:	Wentworth Street
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	42
Avg. Monthly Boardings:	20

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Low
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Brockway

Route(s):	Blue
Headway:	15 and 30 mins
Street:	Lebanon Street/Route 120
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	42
Avg. Monthly Boardings:	154

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	30 mph
Amenities:	Good
Notes:	Crossing well marked but difficult

Buck Road

Route(s):	Blue
Headway:	15 and 30 mins
Street:	Route 120
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	42
Avg. Monthly Boardings:	19

Accessibility:	Fair
Sidewalks:	No
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	35 mph
Amenities:	Poor
Notes:	Terrible place to wait but has potential with Gile Tract nearby

Burke

Route(s):	Dartmouth AM, Dartmouth 7-10
Headway:	10 mins
Street:	College
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	30
Avg. Monthly Boardings:	3

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Medium
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Carter Street

Route(s):	Blue
Headway:	15 and 30 mins
Street:	Lebanon/Route 120
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	42
Avg. Monthly Boardings:	42

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	30 mph
Amenities:	Good
Notes:	Crossing marked but difficult

Clemment Hall

Route(s):	Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	10 mins
Street:	Lebanon
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	72
Avg. Monthly Boardings:	29

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	High
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

CRREL

Route(s):	Brown
Headway:	30 mins
Street:	Lyme Road
Sign:	Yes
Shelter:	Yes
Bus Stop:	Turnout
Buses per Day:	21
Avg. Monthly Boardings:	420

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	35 mph
Amenities:	Good
Notes:	

Dartmouth Bookstore

Route(s):	Blue, Orange, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 60 mins, 10 mins
Street:	Main Street
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	125
Avg. Monthly Boardings:	3640

Accessibility:	Poor
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	Yes
Traffic Volume:	High
Traffic Speed:	25 mph
Amenities:	Excellent
Notes:	Nice place to wait/ crowded sidewalk

Dartmouth Printing

Route(s):	Brown
Headway:	30 mins
Street:	Lyme Road
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	21
Avg. Monthly Boardings:	0

Accessibility:	Poor
Sidewalks:	No
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	35 mph
Amenities:	Fair
Notes:	

Dewey, Lower

Route(s):	Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	10 mins
Street:	Parking Area
Sign:	No
Shelter:	Yes
Bus Stop:	Parking Lot
Buses per Day:	72
Avg. Monthly Boardings:	1064

Accessibility:	Excellent
Sidewalks:	N/A
Crosswalks:	N/A
Bike Racks:	Yes
Traffic Volume:	Low
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Dewey, Upper

Route(s):	Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	10 mins
Street:	Parking Area
Sign:	No
Shelter:	Yes
Bus Stop:	Parking Lot
Buses per Day:	72
Avg. Monthly Boardings:	1093

Accessibility:	Fair
Sidewalks:	N/A
Crosswalks:	N/A
Bike Racks:	Yes
Traffic Volume:	Low
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Dresden Road

Route(s):	Brown
Headway:	30 mins
Street:	Lyme Road
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	21
Avg. Monthly Boardings:	0

Accessibility:	Fair
Sidewalks:	No
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	30 mph
Amenities:	Good
Notes:	

Dunster Drive

Route(s):	Orange
Headway:	60 mins
Street:	Route 10
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	12
Avg. Monthly Boardings:	85

Accessibility:	Fair
Sidewalks:	No
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	Medium
Traffic Speed:	35 mph
Amenities:	Good
Notes:	

Fire Station

Route(s):	Brown
Headway:	30 mins
Street:	Lyme Road
Sign:	Yes
Shelter:	Yes
Bus Stop:	Curbside: Shoulder
Buses per Day:	21
Avg. Monthly Boardings:	201

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	30 mph
Amenities:	Good
Notes:	

Food Stop

Route(s):	Orange
Headway:	60 mins
Street:	Route 10
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	12
Avg. Monthly Boardings:	14

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	Medium
Traffic Speed:	25 mph
Amenities:	Poor
Notes:	

Go Go Mart

Route(s):	Blue
Headway:	15 and 30 mins
Street:	Medical Center Drive
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	84
Avg. Monthly Boardings:	14

Accessibility:	Fair
Sidewalks:	No
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	30 mph
Amenities:	Poor
Notes:	Potential

Gould Road (Sachem)

Route(s):	Orange
Headway:	60 mins
Street:	Route 10
Sign:	Yes
Shelter:	Yes
Bus Stop:	Curbside: Travel Lane
Buses per Day:	12
Avg. Monthly Boardings:	250

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	35 mph
Amenities:	Good
Notes:	Need bike racks

Gould Road, Opposite

Route(s):	Orange
Headway:	60 mins
Street:	Route 10
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	12
Avg. Monthly Boardings:	20

Accessibility:	Fair
Sidewalks:	No
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	35 mph
Amenities:	Fair
Notes:	

Hanover Coop

Route(s):	Blue
Headway:	15 and 30 mins
Street:	Park Street/Route 120
Sign:	Yes
Shelter:	No
Bus Stop:	Turnout
Buses per Day:	42
Avg. Monthly Boardings:	102

Accessibility:	Poor
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	High
Traffic Speed:	25 mph
Amenities:	Fair
Notes:	Lots of Potential

Hanover High School

Route(s):	Blue, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 10 mins
Street:	Lebanon Street
Sign:	Yes
Shelter:	No
Bus Stop:	Turnout
Buses per Day:	96
Avg. Monthly Boardings:	490

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	High
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Hanover Inn

Route(s):	Brown, Green, Orange, Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	30 mins, 60 mins, 60 mins, 10 mins
Street:	E. Wheelock
Sign:	Yes
Shelter:	Yes
Bus Stop:	Curbside: Bus Bay
Buses per Day:	120
Boardings:	1007

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	No
Bike Racks:	OK
Traffic Volume:	High
Traffic Speed:	25 mph
Amenities:	Excellent
Notes:	Lots of Potential

Hanover Park

Route(s):	Blue, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 10 mins
Street:	Lebanon Street
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	96
Avg. Monthly Boardings:	742

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Traffic Volume:	High
Traffic Speed:	25 mph
Bike Racks:	No
Amenities:	Good
Notes:	Busy, difficult area--needs clarification

Hanover Park, Opposite

Route(s):	Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	10 mins
Street:	Lebanon Street
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	72
Avg. Monthly Boardings:	273

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	High
Traffic Speed:	25 mph
Amenities:	Good
Notes:	Busy, difficult area--needs clarification

Hanover Post Office

Route(s):	Orange
Headway:	60 mins
Street:	Main Street
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	12
Avg. Monthly Boardings:	9

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Medium
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Hanover Town Garage

Route(s):	Blue
Headway:	15 and 30 mins
Street:	Route 120
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	42
Avg. Monthly Boardings:	61

Accessibility:	Fair
Sidewalks:	No
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	35 mph
Amenities:	Poor
Notes:	Terrible place to wait/difficult crossing

Kendall

Route(s):	Brown
Headway:	30 mins
Street:	Kendall Road
Sign:	Yes
Shelter:	Yes
Bus Stop:	Parking Area
Buses per Day:	21
Avg. Monthly Boardings:	140

Accessibility:	Good
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	
Traffic Speed:	
Amenities:	Good
Notes:	

Maynard

Route(s):	Blue, Brown, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 30 mins, 10 mins,
Street:	Maynard Street
Sign:	Yes
Shelter:	Yes
Bus Stop:	Curbside: Travel Lane
Buses per Day:	197
Avg. Monthly Boardings:	604

Accessibility:	Good
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Low
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Park Street

Route(s):	Blue
Headway:	15 and 30 mins
Street:	S. Park/Route 120
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	42
Avg. Monthly Boardings:	59

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	30 mph
Amenities:	Good
Notes:	Potential / Future Bike Lanes

Parkhurst

Route(s):	Blue, Brown, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 30 mins, 10 mins
Street:	N. Main Street
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Shoulder
Buses per Day:	185
Avg. Monthly Boardings:	551

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Medium
Traffic Speed:	30 mph
Amenities:	Good
Notes:	

Reed Hall

Route(s):	Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	10 mins
Street:	College
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	72
Avg. Monthly Boardings:	20

Accessibility:	Poor
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Medium
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Rivercrest

Route(s):	Brown
Headway:	30 mins
Street:	Lyme Road
Sign:	Yes
Shelter:	Yes
Bus Stop:	Curbside: Shoulder
Buses per Day:	21
Avg. Monthly Boardings:	78

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	35 mph
Amenities:	Good
Notes:	Would expect ridership to go up significantly after construction

Silsby Hall

Route(s):	Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	10 mins
Street:	Tuck Drive
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	72
Avg. Monthly Boardings:	119

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Low
Traffic Speed:	25 mph
Amenities:	Good
Notes:	Can't tell it is a shuttle stop

St. Denis

Route(s):	Blue, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 10 mins
Street:	Lebanon Street
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Parking Lane
Buses per Day:	96
Avg. Monthly Boardings:	76

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	High
Traffic Speed:	25 mph
Amenities:	Good
Notes:	Shelter or bench would improve area

Summer Street

Route(s):	Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	10 mins
Street:	Summer Street
Sign:	No
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	72
Avg. Monthly Boardings:	115

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	Low
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Thompson Arena

Route(s):	Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	10 mins
Street:	Parking Area
Sign:	Yes
Shelter:	Yes
Bus Stop:	Parking Area
Buses per Day:	72
Avg. Monthly Boardings:	2474

Accessibility:	Excellent
Sidewalks:	N/A
Crosswalks:	N/A
Bike Racks:	OK
Traffic Volume:	High
Traffic Speed:	30 mph
Amenities:	Good
Notes:	

Tuck Circle

Route(s):	Dartmouth AM, Dartmouth AM 7-10, Dartmouth PM
Headway:	10 mins
Street:	Tuck Circle
Sign:	Yes
Shelter:	Yes
Bus Stop:	Curbside: Travel Lane
Buses per Day:	72
Avg. Monthly Boardings:	2078

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Low
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Vail/DMS

Route(s):	Blue, Green, Orange, Brown, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	15 and 30 mins, 60 mins, 60 mins, 30 mins, 10 mins
Street:	College
Sign:	Yes
Shelter:	Yes
Bus Stop:	Turnaround
Buses per Day:	162
Avg. Monthly Boardings:	2827

Accessibility:	Fair
Sidewalks:	Yes/Not Across the Street
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Medium
Traffic Speed:	35 mph
Amenities:	Good
Notes:	Need bike racks and pedestrian crossing/sidewalk on opposite side of College St

Webster

Route(s):	Blue, Green, Orange, Brown, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	10 mins
Street:	North Main
Sign:	Yes
Shelter:	Yes
Bus Stop:	Curbside: Travel Lane
Buses per Day:	120
Avg. Monthly Boardings:	662

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Medium
Traffic Speed:	30 mph
Amenities:	Good
Notes:	

West Street

Route(s):	Brown, Green
Headway:	30 mins, 60 mins
Street:	W. Wheelock
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	36
Avg. Monthly Boardings:	51

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	30 mph
Amenities:	Good
Notes:	Needs pedestrian crossing

West Street, Opposite

Route(s):	Brown, Green
Headway:	30 mins, 60 mins
Street:	W. Wheelock
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	36
Avg. Monthly Boardings:	30

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	No
Bike Racks:	No
Traffic Volume:	Very High
Traffic Speed:	30 mph
Amenities:	Fair
Notes:	Needs pedestrian crossing

Wheeler Hall

Route(s):	Orange, Brown, Dartmouth AM 7-10, Dartmouth AM, Dartmouth PM
Headway:	60 mins, 30 mins, 10 mins
Street:	College Street
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	120
Avg. Monthly Boardings:	45

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	OK
Traffic Volume:	Medium
Traffic Speed:	25 mph
Amenities:	Good
Notes:	

Wyeth

Route(s):	Orange
Headway:	60 mins
Street:	Route 10
Sign:	Yes
Shelter:	No
Bus Stop:	Curbside: Travel Lane
Buses per Day:	12
Avg. Monthly Boardings:	11

Accessibility:	Fair
Sidewalks:	Yes
Crosswalks:	Yes
Bike Racks:	No
Traffic Volume:	Medium
Traffic Speed:	30 mph
Amenities:	Good
Notes:	