

# Proposed NH 120 Bus Route

## Moody Building – Etna Road

### Summary of Proposed NH 120 Service

The Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) working together with a Steering Committee comprised of local community representatives has developed a proposal for potential transit services operating along NH Route 120 (NH 120) and linking Claremont with the Lebanon and Hanover area, including the Dartmouth Hitchcock Medical Center (DHMC). Technical work to support the service design was prepared by Nelson\Nygaard Consulting Associates. The proposed service is outlined in this memo.

- The proposed service is primarily oriented around improving access to employment markets in Claremont and Lebanon with direct access to the largest employers along the NH 120 corridor. A mid-day trip is also included to support non-work trips.
- The largest employer in the region is the DHMC with over 6,000 employees. The proposed operating schedule is specifically designed to meet the largest employment shift at this facility.
- The proposed service is intended to be direct, easy to understand and easy to use. As a result, there are few variations in the service. Following this design principle, however, means that with the exception of the service to the DHMC East Entrance, riders will have to walk from the bus route to their final destination.
- The proposed NH 120 service will connect to other regional transit services, including the Community Alliance Transportation Services (CATS) in Claremont (at the Moody Building) and Advance Transit (at the Lebanon Green and at DHMC). This approach reduces service redundancies and increases regional accessibility.
- There are several potential opportunities for passengers to park and ride, including at the Moody Building at Claremont, but also at a handful of locations along NH 120.
- The service is designed to provide five round trips per day; two during the morning commute times, one mid-day trip and two trips during the afternoon commute hours.
- The proposed service is estimated to cost approximately \$180,000 per year and carry about 115 passengers per day. The estimated cost per passenger trip is \$6.30. The cost may be reduced by passenger fares.
- Partial funding for the service may be available from federal grants. However, local funding sources will be required to match federal resources.

### Description of the Proposed NH 120 Transit Service

The proposed alternative for the NH 120 transit service would travel between downtown Claremont, and downtown Lebanon with stops along NH 120 and service to DHMC and the Great Hollow Road/Etna Road corridor (see Figure 2).

The route alignment would begin/end in downtown Claremont at the Moody Building to provide connections with Community Alliance Transportation Service (CATS). Stopping in front of the Moody Building also provides park and ride opportunity from municipal spaces in the downtown parking garage. From the Moody Building, the route will travel from Tremont Square to Main

Street, turning right onto Elm Street, stopping at the entrance to the Valley Regional Hospital, turning right onto Dunning Street and then left onto NH 120 heading north.

Stops along NH 120 will vary, depending upon the time of day but will include Valley Regional Hospital, River Valley Community College, Cornish General Store, and Meriden Store for Kimball Union Academy. The service is designed to stay on NH 120 and assumes individuals disembarking from the bus will walk from NH 120 to their destination.

The route will then go into downtown Lebanon to allow for connections with Advance Transit’s (AT) Red and Blue Routes at the City Hall/Opera House stop by the green. The NH 120 service will then continue north to the east entrance of DHMC. After that, the service will return slightly southbound on NH 120 and then will take a left on Etna Road to provide service to employers there and on the continuation of the road as Great Hollow<sup>1</sup>. At the last stop, the bus will turn around and continue back to downtown Lebanon, and then continue south to Claremont along NH 120. For the return, the Valley Regional Hospital stop is instead along NH 120, allowing for entry at the back entrance.

With this alignment, the one-way northbound trip is approximately 29.8 miles, with a southbound return of 25.8 miles, bringing the roundtrip to 56.6 miles. The northbound travel time is approximately 1 hour and sixteen minutes, with the southbound at one hour and ten minutes. With recovery times at the end, the round trip takes approximately two hours and 25 minutes.

**Figure 1: Strengths and Weaknesses of Proposed NH 120 Service**

Strengths	Weaknesses
Route offers direct service between Claremont and Lebanon.	The travel times limit the ability to perfectly serve all peak commuting times in Claremont and Lebanon unless some employment allowed for flexible schedules.
Connects with AT Red and Blue routes at Lebanon Green and with CATS route at the Moody Building.	Park and ride opportunities in northern end of route are limited.
Meets primary morning commuting time for DHMC.	
Serves Etna Road employment not served by transit.	
Provides Park and Ride opportunities.	

Source: Nelson\Nygaard

## Connections to Other Transit Service

By connecting to other transit services, both in Claremont and Lebanon, the proposed NH 120 service will significantly increase mobility and accessibility for the entire region. The Moody Building, for example, serves as the main downtown stop location for all of the CATS fixed routes, serving Claremont, Newport and Charlestown. Thus, the proposed NH 120 service will support connections from Newport and Charleston to Lebanon and DHMC. Similarly, by bringing NH 120 service to downtown Lebanon, the NH 120 service can offer transfers to AT services and support linkages to Hanover and West Lebanon. Figure 3 shows the how the NH 120 service links to the regional transit systems. The service schedule also identifies transfer opportunities between NH 120 transit and other services.

<sup>1</sup> The Etna Road service will not operate during the midday trip.

Figure 2: Proposed NH 120 Service: Route Alignment

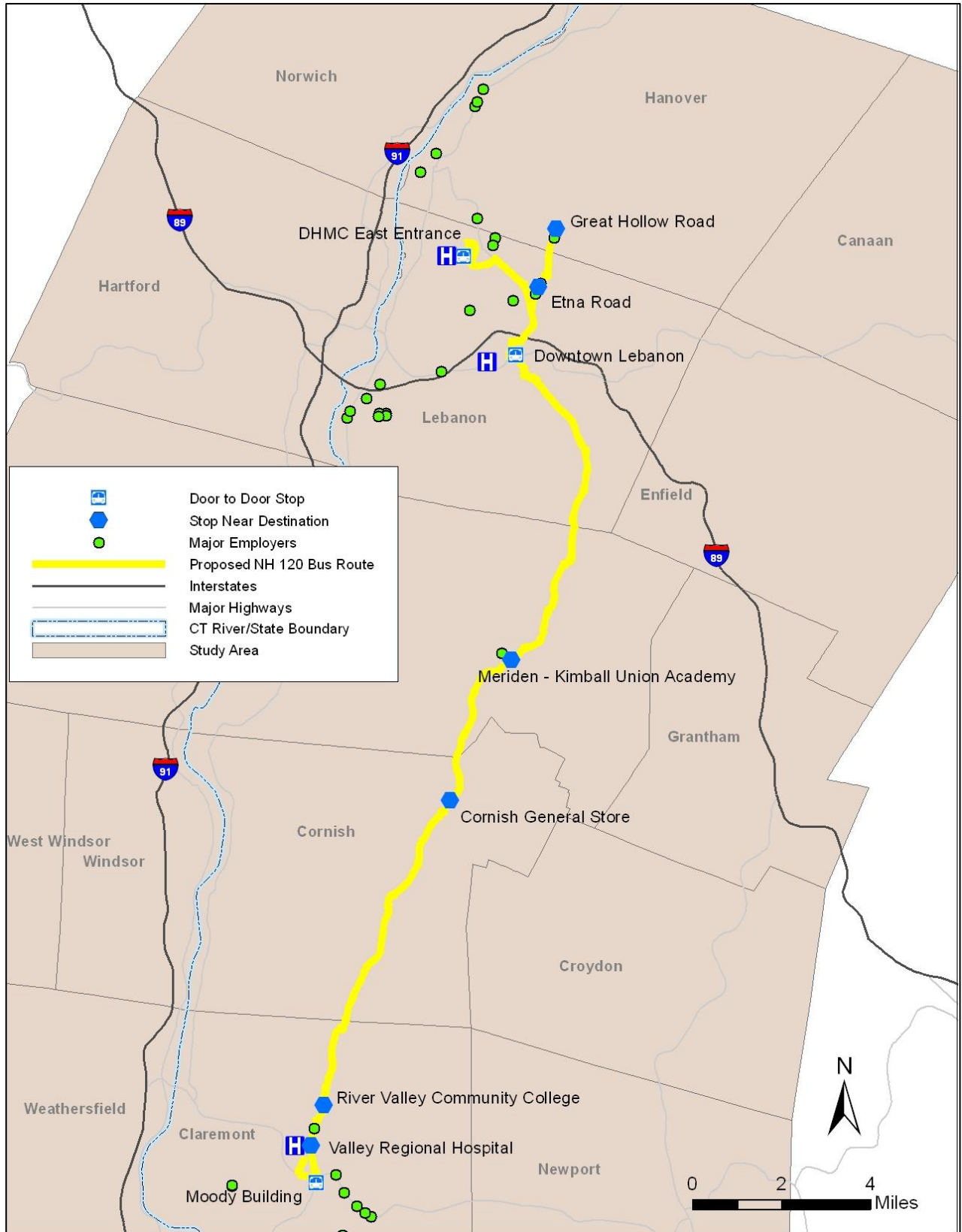
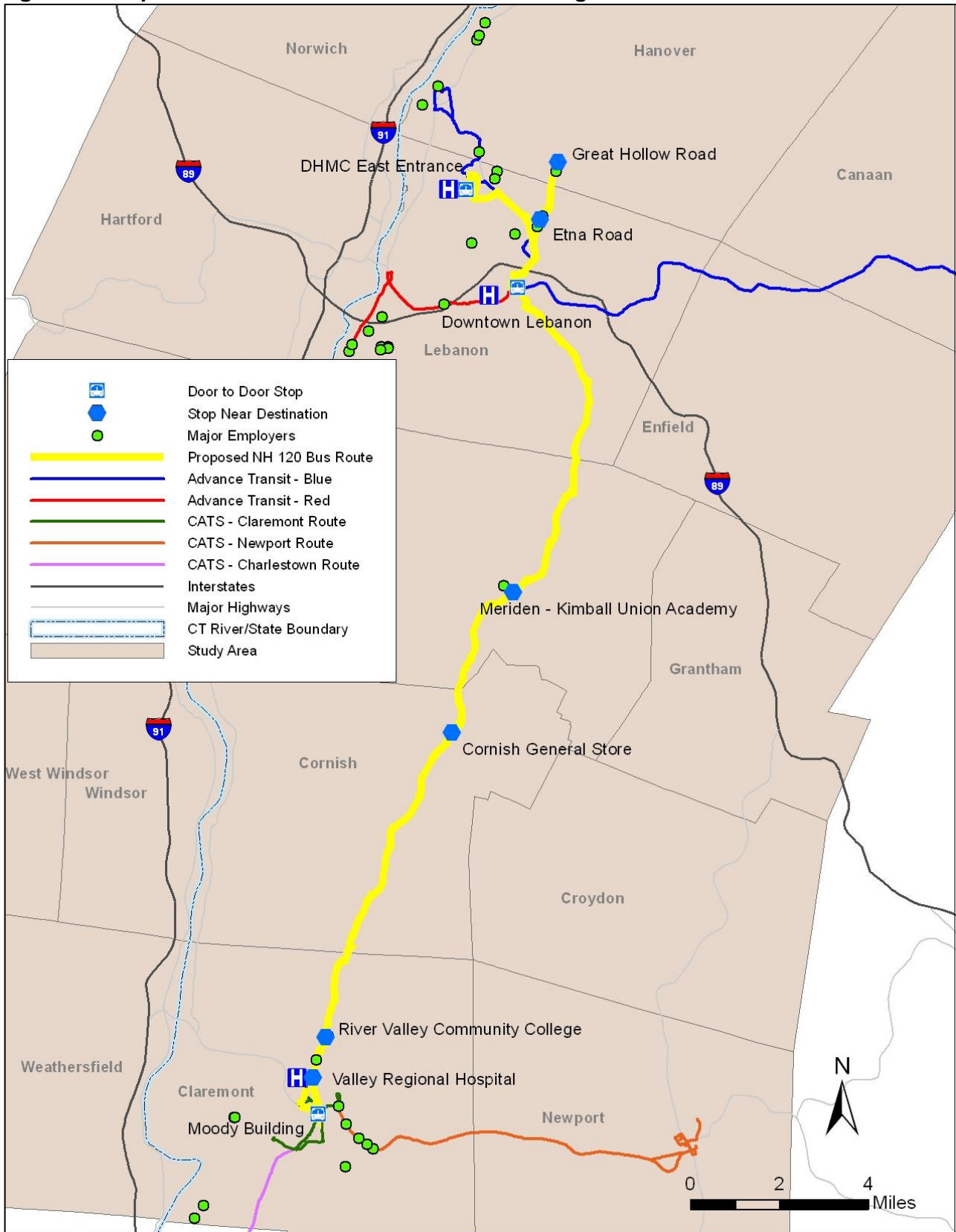


Figure 3: Proposed NH 120 Service: Connections to Regional Transit Services



### Indicative Service Schedule and Costs

As discussed, the proposed NH 120 service would operate between the Claremont Moody Building and downtown Lebanon, DHMC, and Etna/Great Hollow Roads via NH 120. The current plan for this service is that it continues in the same pattern of stops throughout the day. There is an option to skip certain stops, based on ridership expectations for certain times of day; for example the first trip of the day would likely not stop at the River Valley Community College.

#### Northbound

Trip	Moody Building <sup>2</sup>	Valley Regional Hospital	River Valley Community College	Cornish General Store	Meriden	Downtown Lebanon <sup>3</sup>	DHMC East Entrance <sup>4</sup>	Etna Road	Great Hollow Road
Trip 1	6:00 AM	6:04 AM	-	6:18 AM	6:24 AM	6:45 AM	7:01 AM	7:11 AM	7:14 AM
Trip 2	8:30 AM	8:34 AM	8:36 AM	8:50 AM	8:56 AM	9:17 AM	9:33 AM	9:43 AM	9:49 AM
Trip 3	11:00 AM	11:04 AM	11:06 AM	11:20 AM	11:26 AM	11:47 AM	12:03 PM	-	-
Trip 4	2:30 PM	2:34 PM	2:36 PM	2:50 PM	2:56 PM	3:17 PM	3:33 PM	3:43 PM	3:49 PM
Trip 5	5:00 PM	5:04 PM	5:06 PM	5:20 PM	5:26 PM	5:47 PM	6:03 PM	6:13 PM	6:19 PM

#### Southbound

Trip	Downtown Lebanon	Meriden	Cornish General Store	River Valley Community College	Valley Regional Hospital	Moody Building
Trip 1	7:33 AM	7:54 AM	8:00 AM	8:14 AM	8:16 AM	8:20 AM
Trip 2	10:07 AM	10:26 AM	10:32 AM	10:46 AM	10:48 AM	10:55 AM
Trip 3	12:15 PM	12:34 PM	12:40 PM	12:54 PM	12:56 PM	1:02 PM
Trip 4	4:07 PM	4:26 PM	4:32 PM	4:46 PM	4:48 PM	4:55 PM
Trip 5	6:37 PM	6:56 PM	7:02 PM	7:16 PM	7:18 PM	7:25 PM

<sup>2</sup> CATS Connections: Newport - AM: 6:25, 8:35, 10:53, PM: 2:30, 4:30; Claremont - AM: 8:20, 8:51, 10:51, 11:20, PM: 12:20, 12:51, 2:25, 2:55, 4:20, 4:44, 5:05; Charlestown AM - 9:41, 11:15, PM: 3:00, 4:30

<sup>3</sup> Advance Transit Connections: Red Route - Service departs every thirty minutes at :15 and :45 between 8:15 AM and 6:15 PM (also at 6:15 and 7:15 AM); Blue Route -

<sup>4</sup> Advance Transit Connections: Blue Route - Service times vary, but generally service every 15 minutes, starting on the hour

## Estimated Cost

Based on the schedule and assuming that the service will operate on weekdays, exclusive of holidays, for approximately 250 days a year with an hourly operating cost of \$60, the annual cost of service is estimated at \$181,250. This estimated cost does not include the capital expense of vehicle purchase.

## Vehicle Specifications

Based on the experience of other local and regional transit agencies, we recommend operating the route with a heavy duty, mid-sized transit vehicle that would be capable of accommodating 34 to 36 passengers. While some trips would not need this much seating, this vehicle size may be necessary for some trips and would also allow the ridership to grow over time.

## Estimated Ridership and Performance

As part of our development of the alternative, the study team estimated likely ridership for this service based on a variety of sources. We considered the communities served by the route and referenced the US 2000 Census<sup>5</sup> data that reports the number of people working in the Claremont and Lebanon census tracts. We removed one Claremont census tract that is not directly served by transit, and took 50% of the Claremont and Lebanon totals as the market that could potentially use this service. This discount factor allows for jobs that are outside of the “traditional” business hours that the bus route is designed to serve. Using half of the jobs in Claremont and Lebanon as our market (i.e. the commuter travel market), we created three sets of assumptions (low, medium and high) of the number of people who might use the bus; these assumptions are 1%, 2% and 3% of the commuter market. These ratios are consistent with the survey data collected as part of this study and with anticipated increased transit ridership due to serving the new Etna/Great Hollow Road Market.

Given our more detailed understanding of the hospital employment market and taking into consideration parking shortages and existing transit mode split, we assumed employees traveling to DHMC, Alice Peck Day Memorial Hospital, and Valley Regional Hospital would use public transportation services at the following rates of 1% (low), 1.5% (medium) and 2.5% (high). These assumptions are conservative based on the experience at DHMC, but account for the longer travel time associated with the route and other medical facilities that have not recorded high transit use. Ridership for the midday trip was based on an estimate of the older adults and persons with disabilities within walking distance (a quarter-mile) of the NH 120 stops. Estimates of ridership on the proposed NH 120 service are shown in Figure 4.

**Figure 4: Proposed NH 120 Service: Estimated Demand and Performance Measures**

Preferred Alternative	Low	Medium	High
Annual Ridership	15,484	28,786	40,977
Passengers per Day	61.9	115.1	163.9
Passengers per Trip	6.2	11.5	16.4
Cost per Trip	\$72.5	\$72.5	\$72.5
Cost per Passenger Trip	\$11.71	\$6.30	\$4.42

Source: Nelson\Nygaard

<sup>5</sup> The 2000 Census data was the most recently available data at the time this analysis was prepared.