



Transit Development Plan Interim Report

January 19, 2023

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1. INTRODUCTION

Advance Transit plays a critical role in the transportation system of the Upper Valley. The well-used buses operated by Advance Transit reduce congestion on the area's roadways; function as an integral component of the parking strategies of Dartmouth College, Dartmouth Medical School, Dartmouth Health (DH), and the town of Hanover; and provide transportation alternatives and mobility for the region's residents and workers.

The economically vibrant region includes the largest employer in New Hampshire (DH), but this economic vitality results in a significant amount of traffic congestion. New development in the pipeline will increase travel demand.

To effectively address a changing travel market and make most efficient use of its limited resources, Advance Transit takes a proactive stance toward planning. It has updated its short-term plan roughly every five years for the past two decades. Its Strategic Plan reinforces this approach in its number one strategic planning goal: "Support and implement service planning, development and prioritization in the core service area." The first item under this goal is to complete a new Transit Development Plan (TDP) to "evaluate core service area transit services."

Steadman Hill Consulting, Inc. is in the process of updating the TDP for Advance Transit. This report presents the interim findings of the study based on the first four months of the project. It includes six chapters:

Chapter 1 Introduction

Chapter 2 Review of Existing Services

Chapter two presents a critical review of existing Advance Transit routes and services. The review process included four steps: (1) analysis of ridership data, (2) calculation of route-by-route performance measures, (3) on-site inspections of Advance Transit bus routes, and (4) interviews with bus drivers and support staff.

Chapter 3 Passenger Survey

Chapter three presents the results of a survey distributed to Advance Transit bus riders on Tuesday, October 25, 2022. The survey examines trip purposes, transfer activity, frequency of use, residence and commute patterns, technology usage, and the employment status of Advance Transit users.

Chapter 4 General Public Survey

Chapter four presents the results of an online survey that gathered information about travel patterns, attitudes toward AT and desires for service improvements among the general public.

Chapter 5 Community Involvement

Chapter five describes efforts to involve members of the public in the study, including stakeholder meetings at Dartmouth College and Dartmouth Health, as well as meetings for the general public.

Chapter 6 Current Travel Patterns and Projected Development

Chapter six includes analysis of travel patterns in the region and lists anticipated planned construction and development projects in the Upper Valley that may be relevant for public transportation planning.

2. REVIEW OF EXISTING SERVICES

This chapter presents an analysis of existing Advance Transit routes and services. The review process included four steps: (1) analysis of ridership data, (2) calculation of route-by-route performance measures, (3) on-site inspections of Advance Transit bus routes, and (4) interviews with bus drivers. This chapter analyzes Advance Transit performance, describes how buses are currently being used, and identifies strengths and weaknesses of the current service design.

This review effort is important in part because it helps to identify needed service improvements. It also helps ensure that any proposed changes do not undermine the strengths of existing services.

The chapter begins with an overview of Advance Transit ridership patterns. The second section examines performance and productivity for individual bus routes. Sections 2.3 through 2.11 discuss more details about individual Advance Transit bus routes and services, as follows:

Section 2.1	System Ridership
Section 2.2	Route-by-Route Performance Measures
Section 2.3	Blue Route
Section 2.4	Red Route
Section 2.5	Green Route
Section 2.6	Orange Route
Section 2.7	Brown Route
Section 2.8	Yellow Route
Section 2.9	Hanover / Dartmouth Shuttle
Section 2.10	DHMC Parking Lot Shuttles
Section 2.11	Access AT

2.1. System Ridership

Systemwide Advance Transit ridership decreased from 896,201 in FY 2017 when the last Transit Development Plan was begun, to 421,680 in FY 2022. Regular fixed-route ridership accounted for 88% of the FY 2022 total. The Dartmouth Downtown Shuttle accounted for 4.5% of combined system ridership, while the DHMC Lot 20 Shuttle accounted for 6%. (The DHMC Lot 9 Shuttle has been suspended since the beginning of the pandemic.) Finally, Access AT accounted for the remaining 1.3% of ridership. Total system ridership since FY2000 is shown below in Figure 2.1.

Of course, it is impossible to consider recent ridership figures without discussing the huge impact of the COVID-19 pandemic. While ridership had dropped by a small amount since the all-time peak in FY2016 (936,047), the evaporation of ridership beginning in late March 2020 was unprecedented. FY2020 ridership dropped by 17% compared to FY2019, but the full impact was felt in FY2021 when system ridership dropped to 337,340, a level not seen in FY2001. Major ridership losses were seen on every route in the system. FY2022 has shown some recovery for all AT services.

Figure 2.2 provides additional detail by route for the past six years and includes ridership for the Dartmouth and DHMC shuttles. It can be seen that all routes lost ridership in FY2020-21, but the Red Route lost somewhat less than most of the other routes. These differences will be discussed in more detail below. Note that the Yellow Route, which started in FY2020 has much lower ridership than any of the other routes, and thus is indistinguishable from zero on this chart.

Figure 2.1 Total AT System Ridership since FY 2000

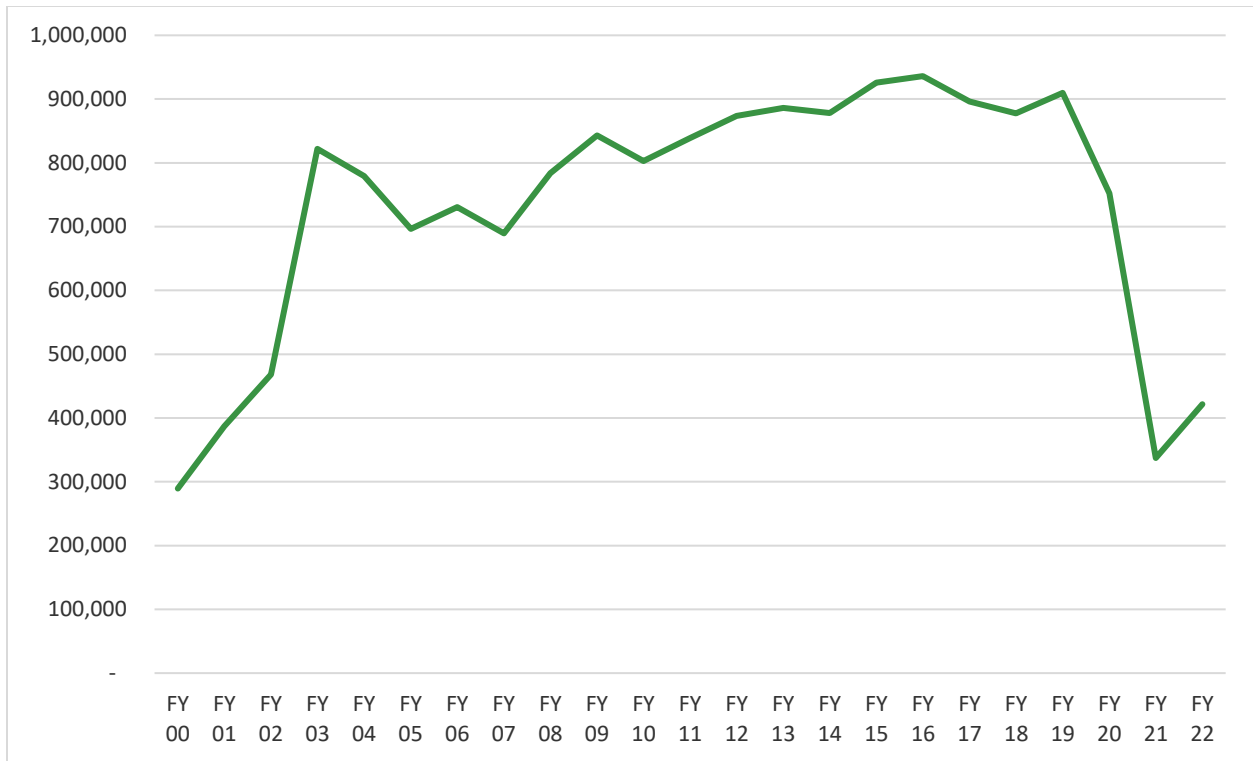
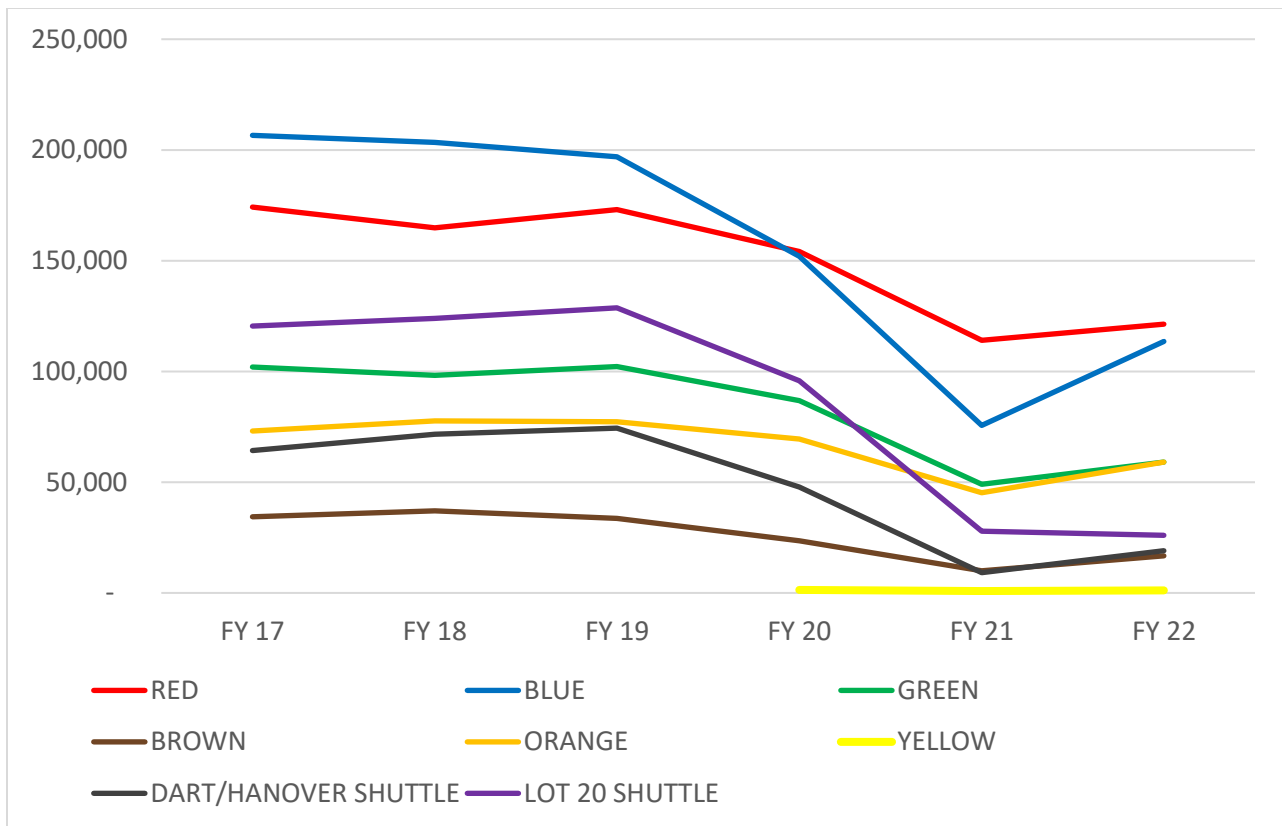


Figure 2.2 Six-Year Ridership Trend by Route



2.2. Route-by-Route Performance Measures

Performance measures were calculated for individual routes and service components for February, March and April of 2022. Measures include rides per month, rides per day, rides per revenue service hour, and rides per scheduled round trip. Note that the service level for the Blue Route changed in April, with 15-minute service all day long. The number of hours and trips used to calculate the ratios shown in the table reflect the service level prior to the implementation of 15-minute headways. The results are presented in Table 2.1.

Table 2.1 Advance Transit Performance, Feb-Mar-Apr 2022

	Total Rides	Daily Rides	Rides per Hour	Rides per Round Trip
Blue	30,630	479	11.6	10.0
Brown	4,353	68	5.9	4.0
Green	13,545	212	8.6	8.1
Orange	15,080	236	15.3	11.8
Red	29,246	457	20.5	19.9
Yellow	271	4	1.4	0.7
DH Lot 20*	8,374	190	15.9	1.3
Dartmouth/DT	5,177	81	2.9	1.4
All routes	106,676	1,726	11.0	5.1
Line routes	93,125	1,455	12.3	10.4

**The Lot 20 Shuttle did not operate in April 2022. Statistics represent February and March only.*

Table 2.2 compares route-by-route performance measures for February, March, and April 2022 with the same measures for February, March, and April 2017. The 2017 data represent, in general terms, the period prior to the pandemic. Some observations:

- ▶ All of AT's services experienced sharp ridership losses due the pandemic, but the losses on the Red route and the Orange route were less severe. Orange route losses were minimized partly because there was an increase in peak service on the Orange route due to the creation of the Orange/Yellow run in July 2019.
- ▶ The productivity loss was lowest on the Red route because it had the same service level in 2022 as before the pandemic, while the Orange route had six additional peak period trips in White River Junction.
- ▶ The Blue, Green and Brown routes, which all rely more on commuters than on shoppers, lost more than half of their riders because of the pandemic, but began gaining some back by Spring 2022.
- ▶ The Dartmouth/Downtown and Dartmouth Health shuttles lost the vast majority of their riders. The DH shuttles were shut down entirely in April 2020, but the Lot 20 shuttle was restarted in the colder months (October through March) of FY21 and FY22. Continuous service resumed in June 2022. Both shuttles have lost a substantial amount of ridership.
- ▶ The Blue route has historically had the highest ridership of any of the regular routes by a wide margin, but its relatively greater losses due the pandemic means that the Red route carries nearly as many people today. The Red route's role as access to shopping is the key reason why it has recovered from the pandemic to a much greater extent than AT's other routes.

Table 2.2 Advance Transit Performance, 2017 and 2022

FEBRUARY–APRIL 2017 AND 2022				
RIDERS PER DAY				
	2017	2022	Change	
BLUE	871	479	-45%	
GREEN	402	212	-47%	
RED	654	457	-30%	
BROWN	137	68	-50%	
ORANGE	284	236	-17%	
YELLOW	N/A	4	N/A	
DARTMOUTH	332	81	-76%	
DH	896	190	-79%	
TOTAL	3,576	1,726	-52%	
REGULAR ROUTE	2,347	1,455	-38%	
RIDERS PER VEHICLE REVENUE HOUR				
	2017	2022	Change	
BLUE	21.1	11.6	-45%	
GREEN	16.4	8.6	-48%	
RED	29.4	20.5	-30%	
BROWN	11.8	5.9	-50%	
ORANGE	23.8	15.3	-36%	
YELLOW	N/A	1.4	N/A	
DARTMOUTH	11.8	2.9	-75%	
DH	26.6	15.9	-40%	
TOTAL	20.6	11.0	-47%	
REGULAR ROUTE	21	12.3	-41%	
RIDERS PER ROUND TRIP				
	2017	2022	Change	
BLUE	24.2	10.0	-59%	
GREEN	15.5	8.1	-47%	
RED	28.4	19.9	-30%	
BROWN	8.5	4.0	-53%	
ORANGE	23.6	11.8	-50%	
YELLOW	N/A	0.7	N/A	
DARTMOUTH	6.4	1.4	-78%	
DH	4.2	1.3	-69%	
TOTAL	9.4	5.1	-46%	
REGULAR ROUTE	20.8	10.4	-50%	

Advance Transit's routes and services have survived the pandemic better than many other routes in Vermont and New Hampshire. Among the regular routes, only the Yellow route has very poor productivity. It was launched only months before the onset of the pandemic—with a minimal service level—and has thus far not been able to establish a ridership base. The Brown route was the poorest performer before the Yellow route was established, and it continues to operate with worse performance than the other line routes. The productivities achieved by AT's line routes are more typical of urban areas than the collection of small towns that make up the Upper Valley.

The Dartmouth and DH shuttle routes perform poorly in terms of riders per trip, but the Lot 20 shuttle has good productivity per hour, since the bus makes a loop every five minutes. The medical center, the college, and the town of Hanover subsidize these services. These sponsoring institutions understand that demand for parking lot shuttles varies by time of day, and that while midday buses may be less productive, employees and visitors need to be able to get back to their cars during the middle of the day.

2.3. Blue Route

Advance Transit's Blue route includes three components:

- ▶ All-day 15-minute service between downtown Lebanon and downtown Hanover, including service to the Dartmouth Health main campus and Dartmouth College
- ▶ Limited commuter service to Enfield and Canaan
- ▶ Trips to Mascoma Regional High School when school is in session

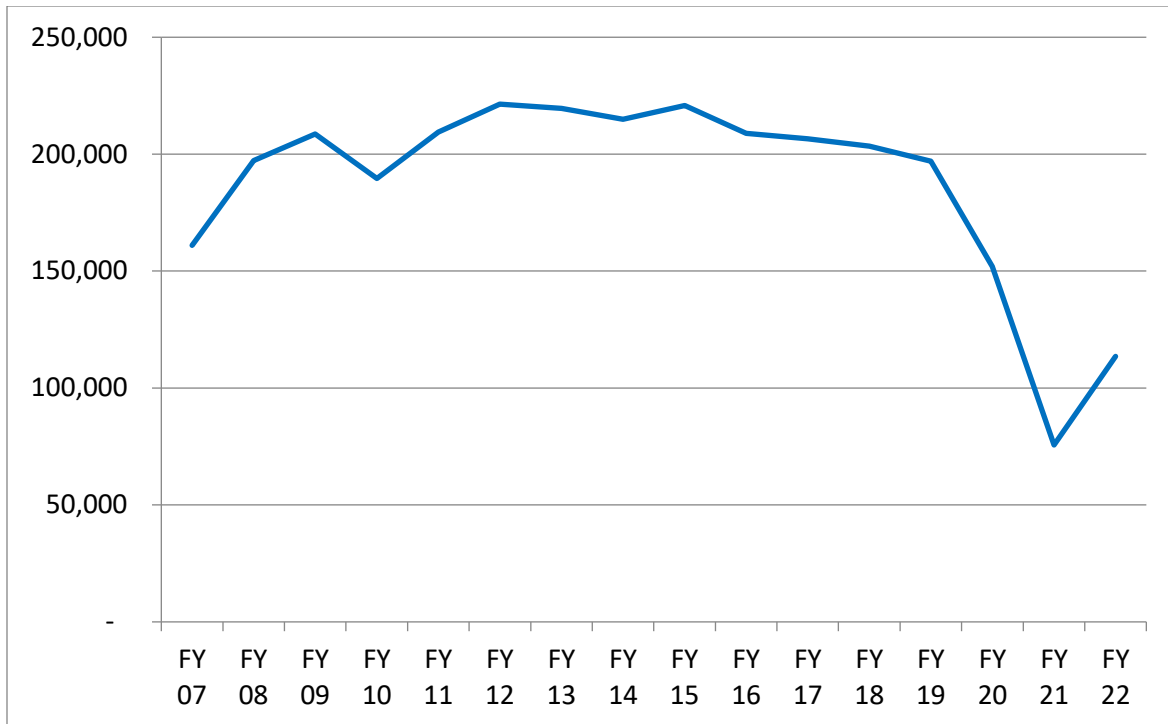
Blue route market segments include:

- ▶ Commuters traveling to jobs at Dartmouth College, DH, downtown Hanover, downtown Lebanon, and elsewhere
- ▶ Dartmouth Medical School students and staff traveling between the medical school and the hospital
- ▶ DH patients and visitors
- ▶ Dartmouth College students traveling to classes
- ▶ Area residents who use the bus for shopping and errands
- ▶ Residents of Hanover, Canaan, and Enfield who transfer to the Red Route in Lebanon to reach West Lebanon and the Route 12A shopping plazas

The Blue route is normally Advance Transit's busiest route, with nearly 500 riders per day, though it carried nearly 900 per day prior to the pandemic. Blue route ridership peaked in FY 2012, as shown in Figure 2.3 below. It was then relatively flat until the pandemic. Ridership in FY 2022 was about 50% higher than the FY 2021 total.

During May of 2022, five Blue route bus stops accounted for 62% of passenger boardings on the route. The busiest stop was Lebanon City Hall, with 24% of Blue route boardings. The bus stop at DH East generated 18% of Blue route boardings, while Main Street at Allen accounted for 8% of boardings and Vail/DMS generated 6%. Town of Hanover stops in downtown Hanover and in the Dartmouth College campus generated a combined total of 3,515 boardings, or 31% of the Blue route total. Stops in Canaan and Enfield accounted for 521 boardings in May of 2022, or 4.6% of the Blue route total. All of these percentages are slightly lower than those in 2017, suggesting that ridership dropped more at the peak usage locations than at other lightly used stops.

Figure 2.3 Advance Transit 15-Year Annual Blue Route Ridership



The Blue route offers convenient front-door service at the DH East Entrance and at the Dartmouth Medical School, plus centrally located bus stops in downtown Hanover and downtown Lebanon. It provides timed connections with Red route buses in downtown Lebanon, and with Green, Orange, and Brown route buses in Hanover.

There are several issues identified by drivers that could be addressed in future service planning for the Blue Route:

1. Turning left from Route 120 onto Heater Road can be very difficult, with significant backups causing delays. Transit signal priority at this intersection or a new Hanover Street bridge over I-89 would have a significant benefit for Blue route reliability.
2. With the Blue route now operating every 15 minutes all day for the full length of the base route from Lebanon to Hanover, it may be less important to coordinate transfers with other routes.
3. A stop location at Hanover Park needs to be designated with a sign.
4. The new housing at Juniper has generated significant ridership, leading to standing loads on some trips. In some cases, Dartmouth students may crowd out other passengers who do not have the option of using the campus shuttle buses. Guidance is needed on whether drivers can limit student boardings to ensure other passengers have space.
5. The traffic light at Vail seems to have a bad sensor and buses can be forced to wait through a few light cycles.

2.4. Red Route

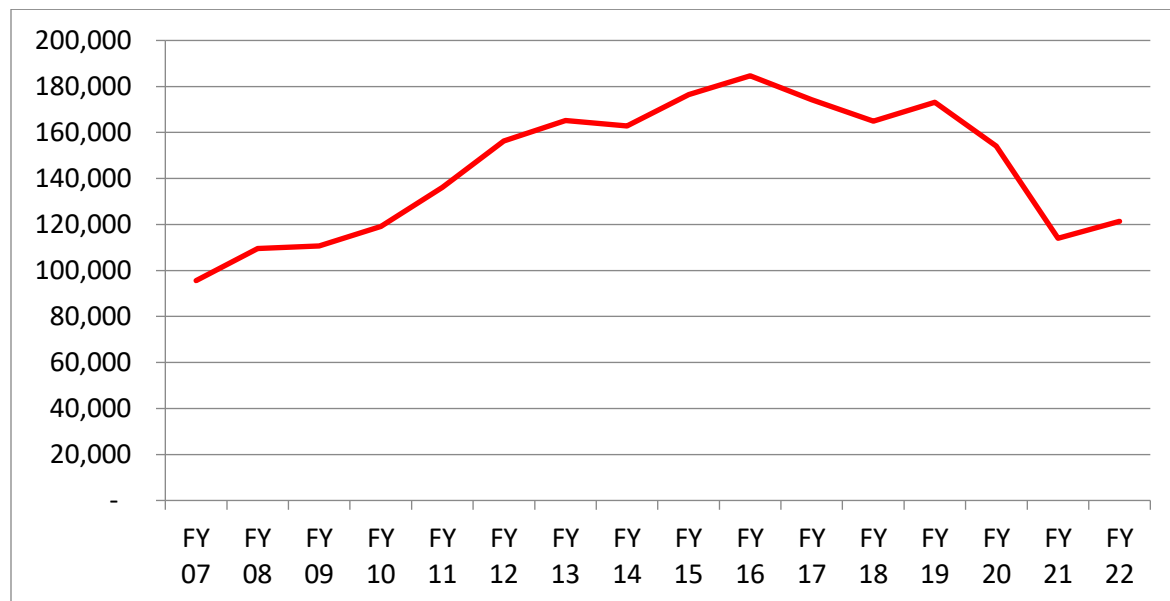
The Red route connects downtown Lebanon with West Lebanon and the Route 12A Plazas. The Red route is used by people traveling to job sites located along Route 4, in West Lebanon, and in the plaza area. Area residents use the Red route bus to reach a variety of shopping destinations, including Walmart, Shaws, and others. The Red route connects with the Blue route in downtown Lebanon and with the Orange and Green routes in West Lebanon. Some commuters from Lebanon ride the Red route and transfer to the Orange route in West Lebanon to reach the VA Hospital in White River Junction. The Red route has by far the most transfer activity of any of Advance Transit's routes (see chapter 3).

The Red route is Advance Transit's second busiest route, with over 450 riders per day. The all-time high ridership occurred in FY 2016 as shown below in Figure 2.4. The ridership loss during FY 2021 was "only" 34%, by far the smallest loss among AT's routes. Ridership grew by 6% between FY 2021 and FY 2022.

During May of 2022, three Red route bus stops accounted for 64% of passenger boardings on the route. The busiest stop was in front of Kilton Library in West Lebanon, which generated 26% of Red route boardings. Lebanon City Hall, with 25% of Red route boardings was the next busiest. Walmart accounted for 13% of boardings on this route.

Other Route 12A plaza stops (from Glen Rd Plaza south) accounted for 9% of Red route boardings. Since most people travel round trip, these figures suggest that travel to and from the Route 12A plazas accounts for 40% or more of Red route usage (since some riders likely make multiple stops among the plazas).

Figure 2.4 Advance Transit 15-Year Annual Red Route Ridership



There are several issues identified by drivers that could be addressed in future service planning for the Red Route:

1. The possibility of moving the West Lebanon transfer point from Kilton Library to the River Park development would affect the Red route more than the others. It is unclear whether that extra mileage could be accommodated in the current schedule.

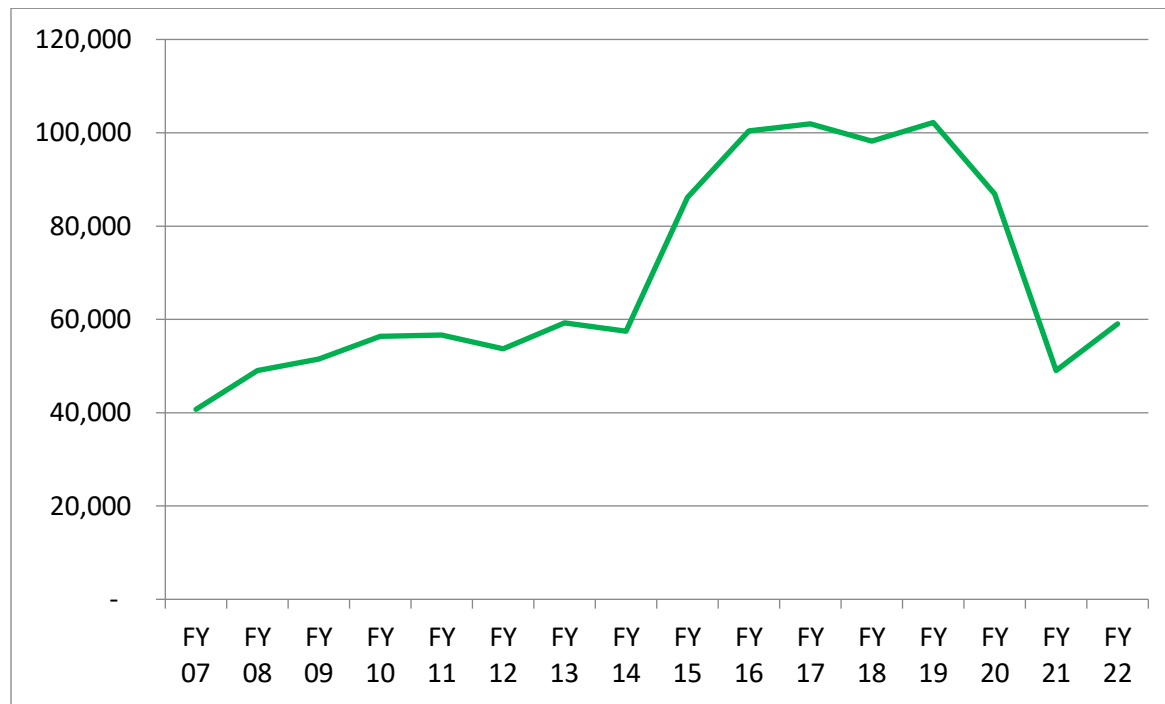
2. According to the drivers, the current schedule works well for the Red route most of the time. There can be some delays in the plazas at the busiest times in the afternoon, especially during peak shopping periods, but other drivers feel that the bus could make all stops on all trips in the afternoon (as the route does in the morning), except perhaps during holiday shopping season.
3. There are particular issues with a some Red route stops that can be addressed in the immediate term: stops should be moved away from crosswalks so that passengers do not run in front of the bus to cross the street (the bus should stop on the far side of the crosswalk; some stops are too close together).
4. The 4:45 p.m. departure time should be moved later so that people getting out of work at the plazas have a better chance to catch the bus; the current schedule has it stopping there right at 5:00 or just a few minutes after 5:00. There is no need to coordinate with the Blue route at City Hall since it now runs every 15 minutes.

2.5. Green Route

The Green route links West Lebanon and Hanover via Hartford Village and Wilder. It carries riders to Hanover, where it connects with the Blue and Brown routes, and to West Lebanon, where it connects with the Red and Orange routes. It transports many riders between bus stops within Vermont. This includes individuals who travel between Hartford Village and the Haven.

Annual Green route ridership peaked in FY 2019, as shown in Figure 2.5, maintaining its ridership surge from FY 2015 when service was doubled from one trip per hour to two. This route suffered a steep 52% loss due to the pandemic, essentially wiping out the ridership gain from the service enhancement. FY 2022 ridership was almost exactly equal to that seen in FY 2013. There was a 20% rebound in ridership from FY 2021 to FY 2022.

Figure 2.5 Advance Transit 15-Year Annual Green Route Ridership



The Green route provides Wilder and Hartford Village residents with access to social service programs at The Haven. It provides access to social services programs at the Gilman Center via a connection with the Orange route in West Lebanon. The Green route also gives Wilder and Hartford Village residents access to the Route 12A plazas via a connection with the Red route in West Lebanon.

In May of 2022, West Lebanon accounted for 22% of Green route boardings, while Town of Hanover stops within the Dartmouth College campus and in downtown Hanover accounted for 20% of Green route boardings. Assuming that most people ride round trip, this suggests that 84% of Green route usage involves trips to New Hampshire, with West Lebanon accounting for 44% and Hanover/ Dartmouth College accounting for 40%, although there are likely some people who ride all the way from West Lebanon to Hanover via the Green route, and they would be double counted by this method.

The busiest stop in Vermont is the Haven, with 573 boardings in May 2022 for the northbound and southbound stop combined. Hartford Village and other stops west of Route 5 accounted for 12% of Green route boardings (split evenly northbound and southbound).

Service planning issues for the Green route included the following:

1. Ridership has dropped significantly on the Green route, calling into question the efficacy of running two buses all day.
2. Drivers object to the new location of bus stops on West Wheelock at West Street (affecting the Brown route as well). The far side location causes the bus to block the road and make it difficult to reenter the traffic flow. The stop should be moved back to the near side or farther down the road on the far side so that the bus can clear the intersection.
3. The schedule for the first trip on run 42A is different from other trips, perhaps due to a vestigial connection to a Stagecoach route. It could be brought into synch with the rest of the run.

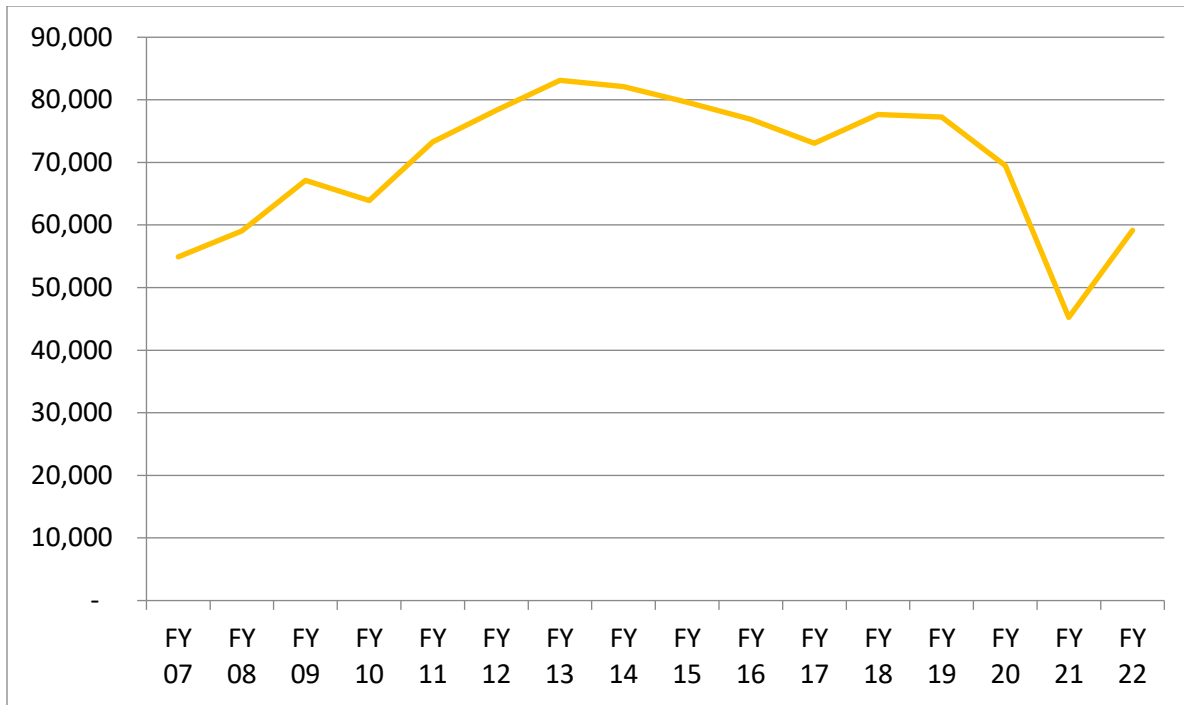
2.6. Orange Route

The Orange route links White River Junction with West Lebanon and downtown Hanover. On the Vermont side of the Connecticut River, the Orange route serves downtown White River Junction, nearby residential neighborhoods, social service agencies at the Gilman Center, the Greyhound terminal, and the VA Hospital. In New Hampshire, the route serves West Lebanon, residences adjacent to Route 10, graduate student housing at Sachem Village, downtown Hanover, and the Dartmouth College campus.

The Orange route offers connections with the Red and Green routes in West Lebanon, and with the Brown and Blue routes in Hanover. It provides car-free access to the local Amtrak station and the Greyhound bus terminal, although Orange route buses do not operate late enough in the day to meet Amtrak's northbound arrival.

Annual Orange route ridership peaked in FY 2013, as shown in Figure 2.6. By FY 2019, it had dropped by about 7%. Total ridership in FY 2020 might have set a new record if the pandemic had not occurred because of the peak-period service increase associated with the creation of the Yellow route. The new Yellow/Orange run included eight additional loops on the White River Junction portion of the Orange route. Indeed the drop in ridership from FY19 to FY20 was only 10% on the Orange route, compared to 15 to 30% drops on AT's other line routes. Ridership rebounded by 31% in FY 2022 from the low point in FY 2021.

Figure 2.6 Advance Transit 15-Year Annual Orange Route Ridership



In May of 2022, 31% of Orange route passengers boarded in White River Junction, 46% boarded within the town of Lebanon, and 22% boarded in Hanover. These figures represent a shift in boardings from Hanover to WRJ compared to 2017, which is partly due to the increase in service in WRJ and the more severe drop in demand in Hanover due to the pandemic. The busiest stop on the route was West Lebanon, which accounted for 27% of Orange route boardings. Sachem Village, with 564 boardings, is the second-busiest stop on the route, in spite of the long walk from where the housing is out to the bus stop on Route 10. That figure represents 11% of total Orange line riders. The next busiest stops were downtown White River Junction with 7% and Main at Allen (formerly the Dartmouth Bookstore) with 6%. The VA Hospital accounted for only 2% of Orange route boardings (only about 5 per day).

Town of Hanover stops in downtown Hanover and in the Dartmouth College campus combined to account for 17% of Orange route boardings. Assuming that everyone rides round trip, this would suggest that trips to and from Hanover/Dartmouth College account for 34% of Orange route usage.

Service planning issues for the Orange route include the following:

1. The introduction of the Orange/Yellow run during peak periods and having only those trips serve the Gilman Center has largely solved the running time problems on the Orange route. However, there is confusion among passengers boarding those buses as to why they have to transfer in order to get to Hanover.
2. The portion of the Orange route through the Dartmouth campus (as is true for all routes traversing those streets) is slow and dangerous because of pedestrians (mainly students) not paying attention to traffic and crossing the street at random locations without looking. Motorized scooters and skateboards are also a problem and lead to dangerous interactions with buses.

3. Drivers have noticed riders walking south on Route 5 from the bus to reach a motel a few miles south that has served as a residence for otherwise homeless people. That motel would be difficult to serve with the Orange route, however, given the distance involved.

2.7. Brown Route

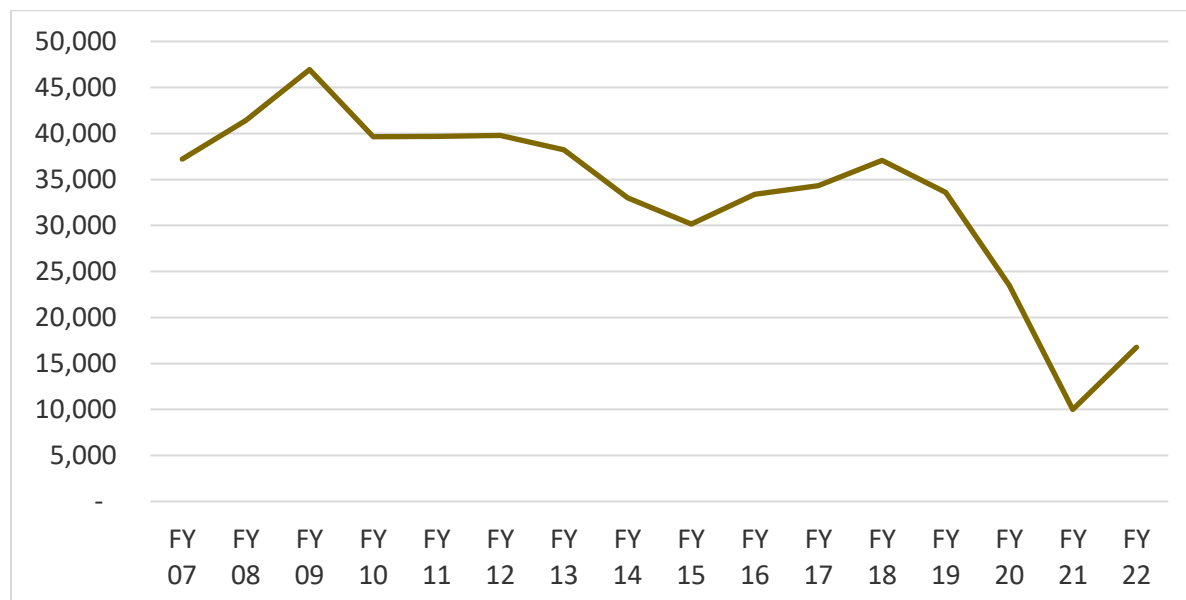
The Brown route consists of two segments. It operates between Norwich and Hanover, including peak-hour service to a Norwich park and ride lot. The Brown route also links downtown Hanover and the Dartmouth College campus with CRREL, the Frances Richmond Middle School, and the Kendal retirement community.

Norwich residents use the Brown route to commute to jobs in Hanover and Lebanon. Destination work sites include Dartmouth College, CRREL, and Kendal at Hanover. School children in Norwich use the Brown route bus to travel to the Frances Richmond Middle School. Norwich residents use the bus for a variety of midday errands in Hanover and elsewhere. Residents of the Kendal rely on the Brown route for access to Hanover.

Brown route passengers from Norwich connect with the Blue route by walking from the Hanover Inn to the Main @ Allen stop (formerly Dartmouth Bookstore), or by switching buses at Vail/DMS. They transfer to the Green and Orange routes at the Hanover Inn. Passengers from the CRREL end of the route can transfer to Blue, Green, and Orange routes at Maynard Street.

As shown in Figure 2.7, the all-time peak ridership for the Brown route was in FY 2009, just prior to a service cutback from 30-minute headways to 40-minute headways. The route suffered a steep loss from the pandemic, with about 70% fewer riders in FY 2021 compared to FY 2019. The percentage loss for this route was higher than any of the other line routes. Ridership increased by 67% in FY 2022, but from a very low base.

Figure 2.7 Advance Transit 15-Year Annual Brown Route Ridership



In May of 2022, 26% of boardings on the Brown route occurred in Norwich, down from 36% in 2017. Since most of these passengers probably traveled round trip to Hanover, this suggests that Norwich riders account for about half of Brown route usage and that slightly less than half of the usage was fully within Hanover.

The busiest Brown route stop was Dan & Whit's, with 17% of Brown route boardings, followed by the Vail/DMS with 16%, Hanover Inn with 13%, and CRREL with 13%. Combined Town of Hanover stops in the Dartmouth College campus area (including the Hanover Inn) accounted for 27% of Brown route boardings. The combined percentage for the fire station, CRREL, Rivercrest, and Kendal was 28%. The peak-hour route extension to the Norwich park and ride lot accounted for 1% of Brown route boardings though the rest of that loop generated another 2% of the ridership (with Heritage Lane by far the most important of those stops). These figures are well down from 2017, when that loop generated 12% of the ridership.

Service planning issues for the Brown route include the following:

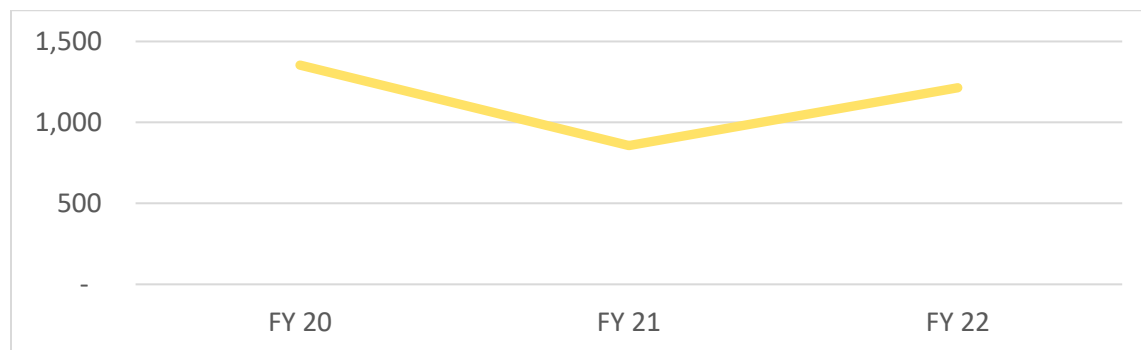
1. The Brown route suffered a serious loss of ridership during the pandemic and had the lowest productivity of any of the line routes (other than the brand-new Yellow route) even before the pandemic. New development on Lyme Road (at the golf course and at Rivercrest) may help, but a broader restructuring may be necessary.
2. Dartmouth College's shuttles from the Lewiston and Ledyard lots take potential ridership from the Brown route. Plans for more Dartmouth shuttle service in Lyme Road could cause further erosion of Brown route ridership. Coordination should be investigated.
3. The Brown route was designed in part to accommodate CRREL commuters. At the present time, there appear to be more middle school children using this stop than CRREL employees.

2.8. Yellow Route

The Yellow route began service in July 2019 with four trips in each peak period, alternating with trips on the White River Junction portion of the Orange route. The route extended coverage to the Upper Valley Aquatic Center (UVAC) and Brookview Apartments on Bugbee Street, both of which were identified as areas warranting service in the 2018 TDP.

As shown in Figure 2.8, ridership has never been high, though it did not have even a full year of operation before the pandemic hit. It has by far the lowest productivity of any of the line routes. The only stops in Vermont that generate any ridership are the UVAC and Brookview Apartments, and they each generate only one or two passengers per day. AT is committed to maintain service to the UVAC, but there may be more effective ways of doing that.

Figure 2.8 Advance Transit Annual Yellow Route Ridership



Service planning issues for the Yellow route include the following:

1. Poor productivity is the main issue with the Yellow route. Its resources could be deployed more effectively.

2. The alternating pattern with the WRJ portion of the Orange route is confusing to some passengers as mentioned earlier.
3. Rather than have the Yellow route serve apartments on Bugbee Street, it may be better for the Green route to serve it, since many of these residents are destined for the Haven. A restructuring plan involving Yellow and Green may solve this issue.

2.9. Dartmouth/Downtown Shuttle

Advance Transit operates an in-town shuttle for Dartmouth College and the Town of Hanover. The shuttle connects parking lots at Dewey and the Thompson Arena with downtown Hanover and various locations on the Dartmouth College campus.

The number of buses and shuttle headways vary according to season and time of day, as shown in Table 2.3. Evening service is offered during the regular academic season only. The evening route links the Hanover Inn with Tuck and the Dewey parking lot. There is no evening service through downtown Hanover to the Thompson parking lot.

The Dartmouth/Hanover shuttle accommodates workers and students who park in the Thompson and Dewey lots. The shuttle also facilitates various movements across the Dartmouth campus, as well as trips between college facilities and downtown Hanover.

Table 2.3 Dartmouth/Downtown Shuttle Service Levels

Full Academic Session

	Number of Buses	Headway
7:00 a.m. – 10:00 a.m.	3	10 minutes
10:00 a.m. – 3:00 p.m.	1	30 minutes
3:00 p.m. – 7:00 p.m.	3	10 minutes
7:00 p.m. – 9:00 p.m.	1 (Sachem-Hanover-DHMC)	60 minutes

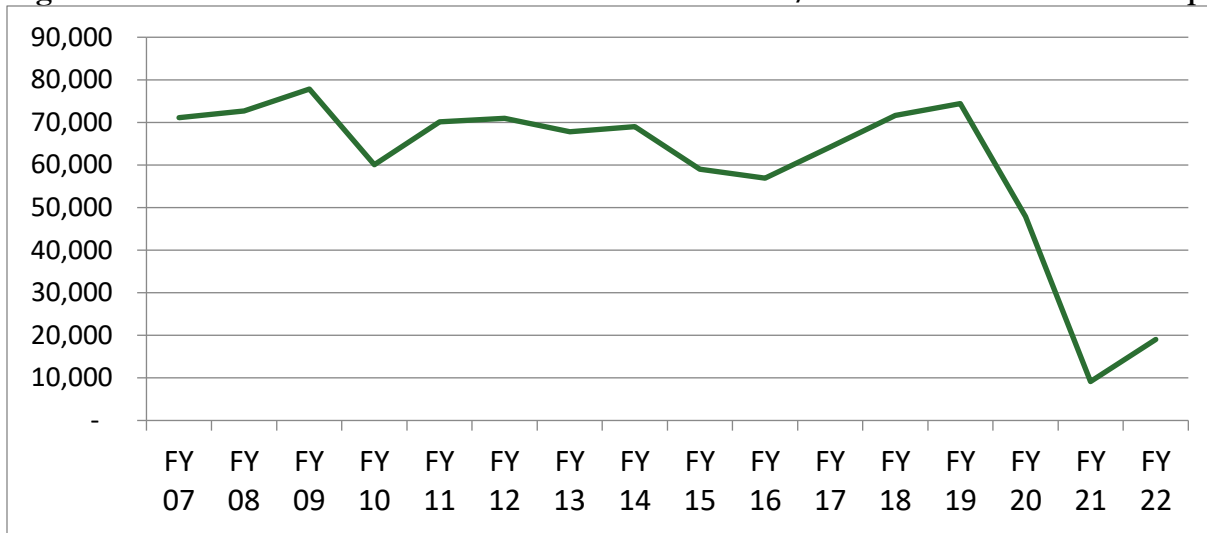
Summer, Vacations, and Holidays

	Number of Buses	Headway
7:00 a.m. – 10:00 a.m.	2	13 minutes
10:00 a.m. – 3:00 p.m.	1	30 minutes
3:00 p.m. – 7:00 p.m.	2	13 minutes
7:00 p.m. – 9:00 p.m.	none	

Prior to the pandemic, Dartmouth/Downtown Shuttle ridership had been increasing for three straight years, with an overall gain of 31% from FY 2016 to FY 2019, boosting the total to close to its all-time peak, reached in FY 2009. As shown in Figure 2.9, ridership had been flat or declining prior to FY 2016. The pandemic caused a devastating ridership loss of 88%, but it has begun to rebound, with a doubling of the total from FY 2021 to FY 2022.

The Dartmouth/Downtown shuttle is somewhat complex, due to the changing service pattern during the day and from reducing the level of service during the summer. Variations are designed to control costs, to avoid early-morning congestion in downtown Hanover, and to facilitate access from Dewey to Tuck in the morning, and from Tuck to Dewey in the afternoon.

Figure 2.9 Advance Transit 15-Year Annual Dartmouth/Downtown Shuttle Ridership



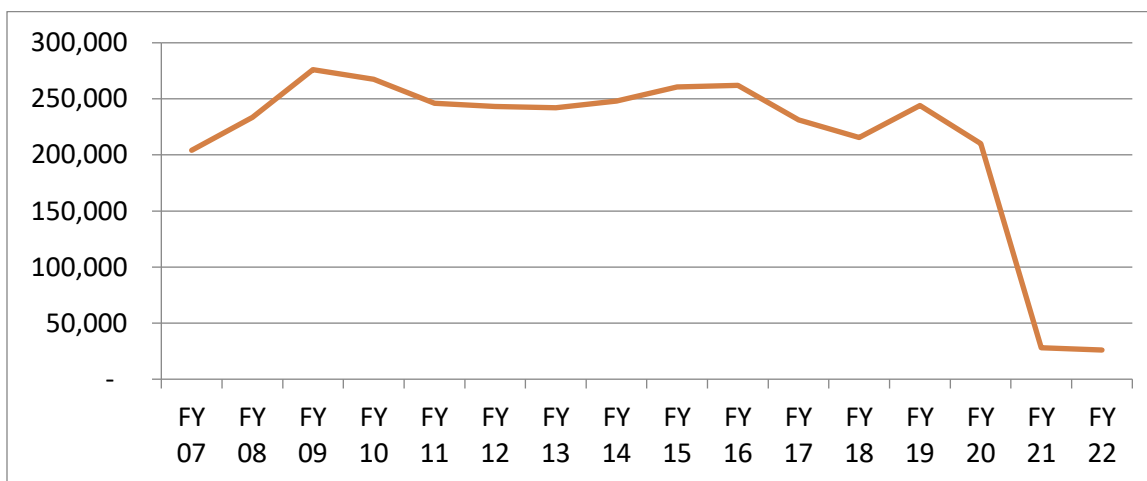
With Dartmouth College intending to expand operations of its campus shuttles, a reevaluation of the Dartmouth/Downtown shuttle may be in order to streamline service and avoid duplication.

2.10. DH Parking Lot Shuttles

Advance Transit operates parking lot shuttles at the DH campus that benefit patients, visitors, and employees. Prior to the pandemic, two buses served Lot 9, while one bus served Lot 20. The Lot 9 service has been suspended since April 2020, and Lot 20 service was run only for the October through March period in FY 2021 and FY 2022. Regular service on the Lot 20 shuttle, consisting of one bus running a continuous 5-minute loop through the lot, was reinstated in June 2022.

The Lot 9 and Lot 20 shuttles each routinely carried more than 100,000 passengers per year before the pandemic. As shown in Figure 2.10, the pandemic caused a ridership loss of nearly 90%. It is unclear when demand for the Lot 9 shuttle will reappear, as some DH employees now work remotely on a permanent basis.

Figure 2.10 15-Year Annual DH Shuttle Ridership



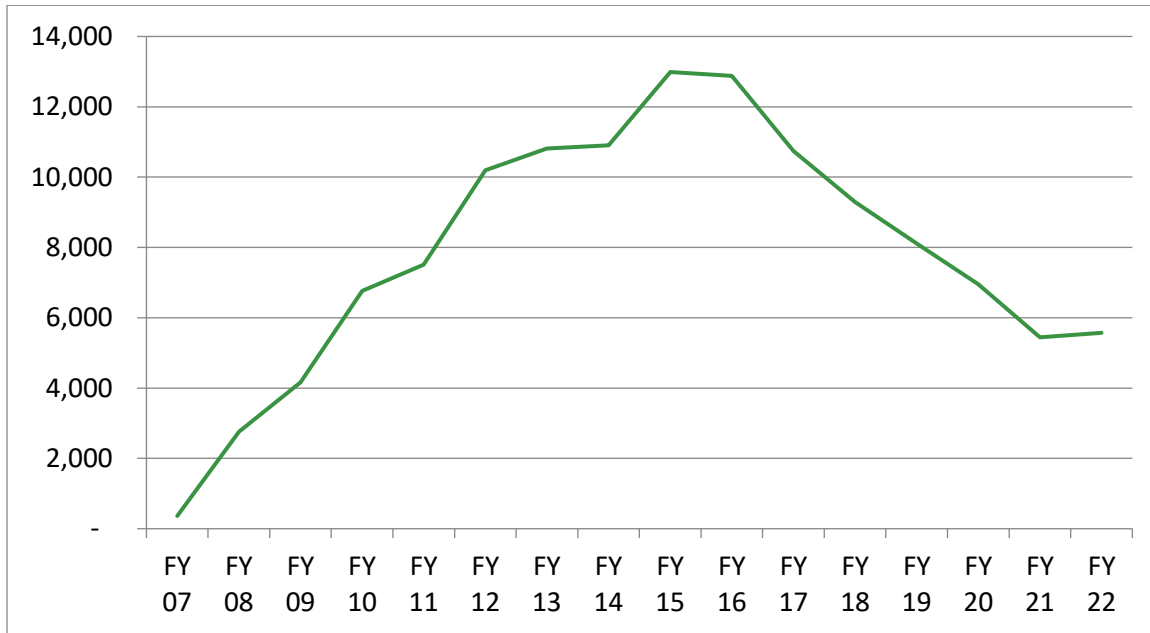
AT will continue to work with DH staff to operate an appropriate amount of parking lot shuttle service around the medical center campus.

2.11. Access AT

Advance Transit operates ADA complementary paratransit service called Access AT. Ridership trends on ADA paratransit service should be interpreted somewhat differently than fixed route ridership. The service provides essential mobility to people with disabilities, but whenever possible, it is preferable for these riders to use fixed route service if they are able to because paratransit is more expensive to operate. AT’s entire fleet is ADA accessible. Travel training and mobility assessments can help distinguish those riders who require paratransit service from those who could use the fixed route system.

As shown in Figure 2.10 below, paratransit ridership has been dropping since FY16, and there is not a sharp drop associated with the pandemic. Rather, ridership declines during the pandemic were just a continuation of the pre-existing trend.

Figure 2.10 15-Year Annual Access AT Shuttle Ridership



AT will continue to provide access to people with disabilities as required and work with each individual to ensure that their mobility is provided in the most efficient way.

3. PASSENGER SURVEY

This chapter presents the results of an onboard passenger survey distributed to Advance Transit bus riders on Tuesday, October 25, 2022. It includes comparisons with similar passenger surveys carried out in 1999, 2004, 2008, 2012, 2015, and 2017.

The survey examines trip purposes, transfer activity, frequency of use, residence and commute patterns, technology usage, and the employment status of Advance Transit users. It asked passengers to evaluate Advance Transit bus operations and to make suggestions for improving the service.

A copy of the survey form is included in Appendix A. A full transcription of passenger comments is presented in Appendix B.

The chapter is structured as follows:

- Section 3.1 Methodology and Response
- Section 3.2 Transfers between Routes
- Section 3.3 Trip Purpose
- Section 3.4 Residence by Town
- Section 3.5 Frequency and History of Transit Use
- Section 3.6 Dartmouth Students
- Section 3.7 Employment Status and Work Sites
- Section 3.8 Automobile Availability
- Section 3.9 Demographics
- Section 3.10 Use of Other Routes and Services
- Section 3.11 Service Evaluation
- Section 3.12 Transit Information and Use of Technology
- Section 3.13 Weekend and Saturday Service
- Section 3.14 Passenger Comments and Suggestions

3.1. Methodology and Response

Advance Transit bus riders were surveyed on Tuesday, October 25, 2022. Surveys were distributed on Advance Transit's six regular bus routes between 5:35 a.m. and 1:00 p.m. though on some routes, the survey ended prior to 1:00 because the desired sample had been achieved. Surveys were not distributed on the Dartmouth/Downtown Shuttle or on DH Lot 20 Shuttle.

Passengers were handed a survey form and a pencil when they boarded the bus. Passengers turned in completed forms as they exited the bus. Most individuals who were offered a survey form agreed to take one. In 2022, 414 surveys were distributed and 394 were completed and returned, for a response rate of 95%. The response rate was similar in past years. The total of 394 completed surveys in 2022 compares with 583 in 2017, 526 in 2015, 578 in 2012, 572 in 2008, 346 in 2004, and 117 completed surveys in 1999. There were fewer surveys in 2022 due to the overall lower ridership, which is an ongoing impact of the COVID-19 pandemic.

Table 3.1 shows the distribution of completed 2022 surveys by bus route. The total is greater than 394 because some respondents used more than one bus route for their trip and these riders were counted on all of the routes that they rode. Table 3.1 also shows the distribution of ridership by route for October 2022 excluding campus and parking lot shuttles. The Blue route was a bit oversampled and the Red and Green routes a bit undersampled. Many riders transfer from other routes to the Red route (see below), and thus would have already received a survey before boarding the Red route.

Table 3.1 Survey and Ridership Distribution

	Survey Respondents	Survey Distribution	Oct. 2022 Ridership Distribution
Blue	212	44%	35%
Red	108	22%	30%
Green	54	11%	16%
Orange	82	17%	14%
Brown	24	5%	4%
Yellow	4	1%	0%
Total	484	100%	100%

3.2. Transfers between Routes

In 2022, 25% of survey participants said their trip involved a transfer between bus routes. This compares with 26% in 2017, 28% in 2015, 27% in 2012, 26% in 2008, 14% in 2004, and 14% in 1999. This means that in 2022, 75% of the passengers surveyed used only one bus to complete their trip.

Some 55% of the survey respondents who said they used only one bus filled out a survey form on a Blue route bus. The full distribution of single-seat riders by route is shown in Table 3.2. In spite of being the second-highest ridership route, only 16% single-seat riders received a survey form on a Red route bus.

Table 3.2 Single-Seat Rides by Route

	Survey Respondents	Percent of Total
Blue	161	55%
Red	48	16%
Green	25	9%
Orange	44	15%
Brown	15	5%
Yellow	1	0%
TOTAL	294	100%

Some 60% percent of the people on the Blue route who used only one bus said they work at either DH (21%) or Dartmouth College (39%). On the Orange and Brown routes, between 35% and 41% of single-seat riders work for Dartmouth. In 2017, 38% of Green route riders worked at Dartmouth,

but only 8% of riders in the 2022 survey did so. It is also the case that the Green route suffered among the steepest ridership losses in the pandemic, and so one can surmise that many of those lost riders were Dartmouth employees.

When analyzing survey responses and transfer activity, it is important to remember that the survey addresses individuals, while transit ridership statistics address unlinked trips. An individual who boards only one bus to complete a trip counts as one ride, while an individual who boards two buses to complete a trip counts as two rides. Passengers were asked to fill out the survey only once, so an individual who filled out a survey on the Blue route and then transferred to the Red route will not show up as a Red route rider – unless second and third routes are included in the counts for each route.

For example, 25 of the 73 people who filled out a survey on the Red route said they used more than one bus to complete their trip. At first glance, this might appear to suggest that 34% of Red route riders transferred between routes. However, another 35 individuals who filled out surveys on other routes indicated that they would use the Red route to complete their trip. If these additional rides are included in the Red route count, the percentage of Red route trips that involve transfers comes to 53% (57 of 108 Red route rides). Table 3.3 shows the percentage of riders by route who transfer, no matter which route the rider was surveyed on.

Table 3.3 Transfer Activity by Route (including second and third routes)

	Transferring Riders	Survey Respondents	Percent Transfers
Blue	48	212	23%
Red	57	108	53%
Green	29	54	54%
Orange	35	82	43%
Brown	7	24	29%
Yellow	2	4	50%
Total	178	484	37%

These results suggest that while 25% percent of Advance Transit riders transfer between buses, 37% of Advance Transit’s recorded unlinked trips involve people who use more than one bus to complete their trip.

The three busiest transfer pairs all involved the Red route bus: Red/Blue (27), Red/Green (12), and Red/Orange (18). Together, these pairs accounted for 61% of all transfers. The next busiest transfer pair was Blue/Green with 8 transfers (9%), followed by Green/Orange with 7 (7%). All of the transfer pairs are shown below on Table 3.4.

There were three cases of double-transfer trips which began on the Orange route in White River Junction, crossed Lebanon on the Red route to City Hall and ended on the Blue route north of downtown Lebanon. There were also three cases where the respondent apparently received the survey form on the middle bus of a three-seat ride. These were midday riders who boarded after the survey supply had been exhausted on the first bus they boarded. Two took place on the Red route and the third on the Orange route. Table 3.5 below provides the most complete summary of transfers in the AT system, accounting for both single-transfer and double-transfer trips.

Table 3.4 Transfer Activity between Routes

CROSSTAB: BUS 1 AND BUS 2

Route2\Route 1	Blue	Red	Green	Orange	Brown	Row Total
Blue	0	9	2	3	1	15
Red	18	0	7	9	0	34
Green	6	5	0	5	0	16
Orange	2	9	2	0	0	13
Brown	4	0	2	0	0	6
Yellow	0	0	0	2	0	2
Downtown Shuttle	4	0	0	0	1	5
DH Shuttle	0	0	0	0	0	0
Centerra	0	0	0	0	0	0
TVT	0	0	0	0	0	0
MOOver	0	1	0	0	0	1
Dartmouth Campus	1	0	0	0	1	2
TOTAL	35	24	13	19	3	94

Table 3.5 Transfer Summary

CROSSTAB: BUS 1 WITH BUS 0, BUS 2 AND BUS 3

Route0+2+3\Route 1	Blue	Red	Green	Orange	Brown	Row Total
Blue	0	9	2	3	1	15
Red	18	0	7	9	0	34
Green	6	5	0	5	0	16
Orange	5	9	2	0	0	16
Brown	4	0	2	0	0	6
Yellow	0	0	0	2	0	2
Downtown Shuttle	4	0	0	0	1	5
DH Shuttle	0	0	0	0	0	0
Centerra	0	0	0	0	0	0
TVT	0	0	0	0	0	0
MOOver	0	1	0	0	0	1
Dartmouth Campus	1	0	0	0	1	2
TOTALS	37	24	13	19	2	97

The combined total of transfers at various locations in Hanover was 26, or 27% of the transfer activity reported by survey participants. West Lebanon accounted for 39 transfers, or 40% of reported transfers. Lebanon City Hall had 27 transfer movements, or 28% of recorded transfers. Five transfers (5%) took place at DH. These figures are generally consistent with the 2017 survey.

It is important to note that the absolute figures of transfers represent just the first half of the day, and should be doubled to provide an estimate of total transfer activity over the course of an entire day. Of course, the true daily total will not be exactly double these figures because not all riders make the reverse trip in the afternoon, and some riders make a variety of trips during the day.

3.3. Trip Purpose

Passengers were asked to identify the primary purpose of their bus trip. The results are presented in Table 3.6.

Table 3.6 Trip Purpose

	1999	2004	2008	2012	2015	2017	2022
Work	72%	62%	69%	58%	64%	54%	53%
Shopping/Personal business	13%	14%	9%	11%	8%	8%	11%
School or college	10%	11%	11%	17%	11%	22%	23%
Medical	2%	6%	4%	7%	7%	7%	8%
Recreation/Social	3%	4%	4%	4%	5%	4%	3%
Other		4%	3%	3%	5%	4%	3%
	100%	100%	100%	100%	100%	100%	100%

Among all of the surveys taken on Advance Transit over the past 23 years, the 2022 survey had the lowest percentage of commuters and the highest percentage of students. Other trip purposes were relatively stable, though shopping is somewhat higher than in recent surveys because the purpose “personal business” was added as a choice and is here combined with shopping. Nonetheless, Advance Transit continues to carry a high percentage of commuters when compared with other rural public transit systems.

Table 3.7 below shows the trip purpose by route. Riders who transferred between routes are included in all of the routes they rode. Thus, the total percentage shown in the rightmost column does not match the 2022 figures in Table 3.6, because transferring riders are effectively weighted more heavily in Table 3.7. Table 3.6 figures can be thought of as a representation of the purposes of the people using AT on the survey day, while Table 3.7 represents the purposes associated with boardings on the survey day.

Table 3.7 2022 Trip Purposes by Route (including transfer routes)

	Blue	Red	Green	Orange	Brown	Yellow	Total
Work	56%	45%	50%	45%	75%	75%	52%
Shopping/Personal business	7%	24%	16%	16%	0%	0%	13%
School or college	25%	5%	18%	26%	25%	0%	19%
Medical	9%	17%	5%	5%	0%	0%	9%
Recreation/Social	2%	5%	7%	3%	0%	25%	4%
Other	1%	4%	4%	5%	0%	0%	3%

Compared to the results in 2017 (shown in Table 3.8 below), the Green and Red routes show a similar pattern of trip purposes, with most of the figures within a few percentage points of prior results. The Blue route shows a significant shift from work trips to all of the other trip purposes, especially school. This may reflect new ridership from Juniper, where undergraduates are currently being housed, to the Dartmouth campus. The Orange and Brown routes show a shift in the other direction from school/college trips to work trips. It should be noted that both the Brown and Yellow routes have small sample sizes, so these results should be taken with caution.

Table 3.8 2017 Trip Purposes by Route (including transfer routes)

	Blue	Red	Green	Orange	Brown	Total
Work	70%	48%	46%	34%	33%	53%
Shopping	4%	26%	10%	12%	4%	11%
School or college	13%	3%	15%	38%	61%	18%
Medical	7%	14%	14%	6%	0%	9%
Recreation/Social	2%	4%	8%	5%	0%	4%
Other	4%	4%	8%	4%	2%	5%

3.4. Residence by Town

The distribution of bus riders by town is presented in Table 3.9. This includes a comparison with previous survey results. The ridership by town had been very stable from 2008 to 2017, but the pandemic and new developments along Mt. Support Road have resulted in a significant shift for 2022. The most obvious change is the large jump in Lebanon ridership, reflecting both new developments, such as Dartmouth’s Juniper housing, and the higher level of service on the Blue route, which has encouraged new riders to join the system. At the same time, ridership has dropped on the Green and Brown routes, thus reducing the percentages of Hartford and Norwich riders in the system.

Table 3.9 Residence of Advance Transit Bus Riders

	1999	2004	2008	2012	2015	2017	2022
Lebanon	51%	41%	44%	43%	43%	44%	57%
Hartford	16%	16%	18%	18%	23%	21%	19%
Hanover	9%	13%	11%	18%	14%	14%	14%
Norwich	1%	11%	6%	6%	5%	6%	3%
Canaan	12%	5%	6%	4%	4%	4%	3%
Enfield	3%	5%	6%	4%	4%	3%	1%
Other	7%	8%	9%	6%	7%	7%	4%

The 2022 distribution of bus riders by town and by route is presented in Table 3.10. The results show a significant change from 2017 (see Table 3.11) reflecting changes in the composition of the ridership. Residents of Canaan, Enfield, and “other” used to account for 25% of Blue route usage, but now only account for 9%. As is true all over Vermont, ridership on longer-distance commuter services suffered the steepest losses in the pandemic. Instead, the Blue route is much more focused on Lebanon, both because of the higher level of service there since April 2022 (15-minute headways all day) and the new developments on Mt. Support Road. The Orange route also exhibits a significant shift, with a higher proportion of riders coming from Hartford (White River Junction). This phenomenon reflects the doubling of Orange route service in White River Junction during peak periods in conjunction with the introduction of the Yellow route.

The Green and Red routes do not show shifts as dramatic as those on the Blue and Orange routes. As mentioned earlier, the sample sizes are small for the Brown and Yellow routes—due to low ridership on those services—making it difficult to draw strong conclusions from those figures.

The 2017 survey shows more people who live in “other” towns outside Advance Transit’s service area, including places such as Grafton, Claremont, and Thetford. The disappearance of some of these riders is consistent with the impacts of the pandemic, which encouraged people to use their private automobiles (if they had them) in order to reduce their possible exposure to the coronavirus.

Table 3.10 2022 Town of Residence by Route (including transfer routes)

	Blue	Red	Green	Orange	Brown	Yellow	Total
Lebanon	66%	68%	15%	44%	13%	0%	54%
Hartford	6%	20%	73%	40%	8%	75%	23%
Hanover	18%	2%	7%	11%	25%	0%	12%
Norwich	0%	1%	0%	2%	42%	25%	3%
Canaan	6%	3%	0%	0%	0%	0%	3%
Enfield	2%	1%	0%	0%	0%	0%	1%
Other	1%	6%	5%	4%	13%	0%	4%

Table 3.11 2017 Town of Residence by Route (including transfer routes)

	Blue	Red	Green	Orange	Brown	Total
Lebanon	46%	61%	10%	62%	8%	42%
Hartford	6%	20%	70%	27%	2%	23%
Hanover	21%	3%	10%	5%	24%	13%
Norwich	2%	1%	2%	1%	57%	5%
Canaan	8%	6%	1%	2%	0%	5%
Enfield	7%	4%	1%	0%	2%	4%
Other	10%	4%	6%	4%	6%	7%

3.5. Frequency and History of Transit Use

The majority the survey respondents use the bus every weekday. Over 80% of riders surveyed use the bus at least three days per week. Of course, it must be recognized that infrequent riders are less likely to be included in the sample in a one-day survey. That is, someone who rides every day had close to a 100% chance of being surveyed, but someone who rides only once a week (assuming that the particular day they ride changes from week to week) had at most a 20% chance of being surveyed. Among the total population of people who use AT routes at least occasionally, there are more infrequent riders than are indicated by these survey results (see section 4.2). However, these figures do provide an accurate snapshot of the people on the bus on any given day. The distribution of frequency has changed relatively little since 2004.

Table 3.12 Frequency of Use of AT Buses

	1999	2004	2008	2012	2015	2017	2022
5 days per week	62%	52%	49%	51%	53%	56%	55%
3-4 days per week	18%	31%	33%	29%	30%	27%	28%
1-2 days per week	12%	12%	10%	14%	11%	11%	11%
Less than once per week	9%	6%	8%	7%	7%	6%	6%
Total	101%	101%	100%	100%	100%	100%	100%

As shown in Table 3.13, 42% of survey respondents said they started using Advance Transit within the last year, while 28% of riders have been using the system for more than five years. The 2022 results for rider longevity are notably different from prior years with far more new riders than were seen in the past. This finding is consistent with prior statements regarding ridership loss from the pandemic and recent gains due to new developments and the increase of service on the Blue route.

Table 3.13 Number of Years Riding Advance Transit

	1999	2004	2008	2012	2015	2017	2022
Within 1 year	34%	31%	33%	27%	24%	28%	42%
1-5 years	23%	46%	45%	45%	41%	39%	30%
More than 5 years	42%	23%	22%	27%	36%	33%	28%

Just over half of the respondents who started riding within the past two years are students. Only 7% of riders who have been on the system for more than 5 years said they were students.

3.6. Dartmouth Students

Overall, 25% of survey respondents indicated that they are students. Of the student respondents, 80% were Dartmouth College students, 10% were local high school students, and the other 10% attend various other schools. The 20% of Advance Transit riders who are enrolled at Dartmouth College (80% of 25%) compares with 19% in 2017, 14% in 2015, 19% in 2012, 13% in 2008, and 12% in 2004.

The distribution of Dartmouth students by type is presented in Table 3.14.

Table 3.14 Distribution of Dartmouth College Students

	2004	2008	2012	2015	2017	2022
Undergraduate	46%	19%	37%	28%	17%	20%
Tuck	10%	8%	4%	3%	5%	10%
Thayer	5%	11%	14%	11%	17%	14%
Medical School	5%	19%	9%	15%	11%	4%
Arts & Science Graduate	24%	41%	29%	35%	32%	43%
Other Graduate	10%	3%	8%	8%	18%	9%

The Tuck School and Arts & Science Graduate students saw the largest increase in share, with the medical school and other graduate students dropping. Undergrads make up a slightly larger share than in 2017, though quite a bit lower than 2012 and 2015.

Of the Dartmouth students who participated in the survey, 49% live in Lebanon, 28% live in Hanover, 13% live in West Lebanon and 9% live in the Town of Hartford (Wilder or White River Junction). The new housing at Juniper, currently occupied by undergraduate students, contributed to a much higher percentage for Lebanon compared to prior surveys.

The impact of Juniper housing also shows up in the percentages of Dartmouth students on each of AT's routes. In the 2017 survey, 35% of Dartmouth students filled out survey forms on the Blue route, but in the 2022 survey, 67% of Dartmouth student surveys were on the Blue route. The next most common was the Orange route, at 18%, which is down from 41% percent in the 2017 survey. The other routes were below 10%.

3.7. Employment Status and Work Sites

Nearly two-thirds of Advance Transit bus riders who are not students said they are employed full-time as shown below in Table 3.15. Among the 5% who chose “other” as their employment status, most of the respondents said they were “disabled.”

Table 3.15 Employment Status among Non-Students

	<i>2008</i>	<i>2012</i>	<i>2015</i>	<i>2017</i>	<i>2022</i>
Full-time	66%	53%	62%	55%	63%
Part-time	16%	22%	16%	18%	19%
Retired	6%	6%	8%	7%	8%
Unemployed	6%	13%	9%	14%	4%
Other	6%	6%	6%	7%	5%

Advance Transit passengers were asked: “Who is your employer?” Thirty-eight percent of employed respondents said they are employed by Dartmouth College. Another 15% of employed respondents work for Dartmouth Health. Only 1% said they worked at the VA hospital.

Nearly half of the employed riders cited other employers, with about 90 individual employers mentioned. Employers that accounted for three or more Advance Transit riders include Kendal at Hanover (5), Walmart (4), BJ’s (3), Dunkin (3), Price Chopper (3) and CRREL (3). Three individuals said they were self employed.

The most common employment location cited in the survey was Downtown Hanover, with 34% of employed respondents working there. The other primary work location was the DH main campus, accounting for another 17% of employed respondents. These figures are similar to the results from the 2017 survey, though Hanover is slightly higher and DH slightly lower than in the last survey. The full distribution of work locations is shown below in Table 3.16.

Table 3.16 Employment Locations

Location	Percent	Location	Percent
Downtown Hanover	34%	Route 12A Plazas	3%
DH main campus	17%	Norwich	3%
West Lebanon	9%	Centerra	2%
WRJ	9%	DH Heater Rd	2%
Downtown Lebanon	8%	Wilder	1%
Hanover Lyme Rd	4%	Other	9%

Among the “other” work locations, the most common were the Miracle Mile on US 4 and parts of the Dartmouth campus north of downtown Hanover (most often the Medical School).

Survey results suggest that Dartmouth employees and students together account for 38% of Advance Transit ridership. This is less than the sum of Dartmouth students (20%) and Dartmouth employees (38%), because some respondents indicated that they are both Dartmouth students and Dartmouth employees. (There were a total of 101 Dartmouth employees and 77 Dartmouth students. Because 27 individuals said they were both, the net total number of individuals associated with the College was 151.)

The distribution of Dartmouth College employees was 70% on the Blue route, 19% on the Orange route, 3% on the Green route, 6% on the Brown route, and 2% on the Red route. This distribution is noticeably different from that in 2017, with many more Blue route riders and many fewer Green route riders. This result may be partly due to undersampling on the Green route (only one of the two peak buses was surveyed), but it also reflects steeper ridership losses on the Green route and additional development on Mt. Support Road since the last survey.

3.8. Automobile Availability

In 2022, 66% of Advance Transit survey respondents said they had no car available. This compares with 58% who said they had no car available in 2017, and 48% who said they had no car available in 2015. Thus the recent trend is a more transit-dependent population of bus riders. In the present survey, another 9% of riders said that someone else was using their car, and 2% said the car was in for repairs.

Stated differently, the percentage of Advance Transit riders who choose to ride instead of drive is 34%. There may well be others who chose not to buy a car in the first place because of the availability of AT service, so the 34% represents a lower bound of “choice” riders. The percentage of Advance Transit riders that left cars at home was 18%, which is somewhat lower than prior years. More detail on automobile usage is shown below in Table 3.17.

The percentage that parked near an Advance Transit bus stop was nearly 10% in 2004 and 2008 but has been only 2% in the more recent surveys. Of the 9 respondents who said that they had parked at a bus stop, 3 were in Canaan, and the other 6 were at other various locations. No survey participants indicated that they parked their car at the Norwich park and ride lot.

In 2022, 49% percent of Advance Transit riders indicated that they have a valid drivers license. This compares with 54% in 2017, 61% in both 2015 and 2012 and 60% in 2008. This is further evidence that the current ridership pool is more dependent on transit than in the past.

Table 3.17 Automobile Usage

	2004	2008	2012	2015	2017	2022
No car available	57%	47%	61%	48%	58%	66%
Car is at home	23%	29%	23%	28%	24%	18%
Car is at DH Lot	0%	1%	3%	2%	4%	9%
Dartmouth or Hanover lot	2%	3%	2%	2%	2%	0%
Someone else is using it	8%	7%	5%	13%	7%	1%
Garage for repairs	1%	1%	3%	2%	1%	3%
Near AT bus stop	8%	10%	3%	4%	2%	2%
Other	2%	2%	1%	1%	1%	1%

3.9. Age

Distribution by age group is shown in Table 3.18. In the 2022 survey, 26% of survey participants were under the age of 26, while 33% were over the age of 40. The age distribution is similar to 2017, with somewhat greater representation of younger people and fewer older working-age riders. This finding is consistent with the greater number of students using the service compared to 2017.

Table 3.18 Distribution of Advance Transit Riders by Age Group

	1999	2004	2008	2012	2015	2017	2022
Under 18	1%	8%	3%	4%	2%	5%	5%
18-25	17%	21%	22%	26%	19%	19%	21%
26-40	39%	24%	29%	32%	36%	37%	41%
41-65	37%	40%	41%	30%	34%	32%	27%
Over 65	5%	8%	5%	7%	8%	7%	6%

3.10. Use of Other Routes and Services

A new question added to the survey in 2017 sought to capture how broadly riders use the Advance Transit system as well as other transit services in the area. In addition to the six mainline AT routes, respondents were asked whether they use, at least twice per year, the Dartmouth/Downtown shuttle, the Dartmouth Health parking lot shuttle, the DHMC/Centerra shuttle, the Dartmouth Campus shuttles, Tri-Valley Transit, MOOver (SEVT), Dartmouth Coach, and Amtrak. The results are shown below in Table 3.19. The percentages shown for the AT line routes are roughly in line with total ridership. Outside of those routes, Dartmouth Coach is the most commonly used service by AT riders.

Table 3.19 Use of Other Services by AT Riders

Route/Service	Percent Using	Route/Service	Percent Using
Blue	68%	Centerra	1%
Red	52%	TVT	1%
Green	29%	MOOver	1%
Orange	31%	Dartmouth Coach	20%
Brown	12%	Amtrak	2%
Yellow	5%	Dartmouth Campus	9%
DTShuttle	5%		
DH Lot 20 Shuttle	3%		

Table 3.20 breaks out the results by the route on which the passenger was surveyed. The percentages represent the number of citations of the service used (first column) divided by the number of surveys received for each of the mainline routes.

The results by route show some interesting patterns. Dartmouth Coach use is most common among Blue route riders, with Green and Brown route having moderate usage. Few Red route riders use Dartmouth Coach. Overall, few AT riders also use TVT, MOOver or the Centerra shuttle, but the few who do most commonly are Blue route riders. There is some overlap between the Dartmouth Campus Shuttles and the Blue route, which is expected. The apparent higher usage of Amtrak by Brown route riders is mainly due to the small sample size on that route: one of 18 surveys indicated use of Amtrak.

Table 3.20 Use of Other Services by AT Mainline Route

Service Used	Survey Route					
	Blue	Red	Green	Orange	Brown	Yellow
Blue	-	59%	37%	41%	39%	100%
Red	47%	-	50%	41%	17%	0%
Green	17%	30%	-	30%	22%	50%
Orange	18%	26%	32%	-	11%	50%
Brown	9%	5%	21%	3%	-	0%
Yellow	3%	8%	3%	8%	0%	-
Downtown Shuttle	5%	1%	3%	9%	0%	0%
DH Parking Lot	6%	0%	0%	0%	0%	0%
Centerra	3%	0%	0%	0%	0%	0%
TVT	1%	0%	0%	0%	0%	0%
MOOver	1%	0%	3%	0%	0%	0%
Dartmouth Coach	27%	8%	18%	12%	17%	0%
Amtrak	2%	1%	0%	3%	6%	0%
Dartmouth Campus	17%	0%	3%	3%	6%	0%

3.11. Service Evaluation

Passengers were asked to evaluate the quality of service provided by Advance Transit. They were asked to rate the cleanliness of buses and the politeness of bus drivers. They were asked if buses are comfortable, whether seats are readily available, whether buses ran on time, if bus schedules are easy to find and easy to understand. Riders were also asked about transfers between routes.

As shown in detail on Table 3.22 on the next page, 98% of Advance Transit passengers said buses were usually or nearly always clean. Ninety-five percent said that buses were usually or nearly always comfortable. Ninety-six percent said that bus drivers are usually or nearly always polite and helpful. Ninety-eight percent said that drivers were usually or nearly always safe. These findings are consistent with rider responses to the same questions in prior surveys, and they show a very high degree of satisfaction among riders and a recognition of high-quality service.

Table 3.21 below shows a composite rating for each measure on a 4-point scale. Higher ratings are better. Ratings from 2017 and the change from 2017 to 2022 are also shown. It can be seen that the average ratings in 2022 are very close to those from 2017 with small deviations of a few hundredths of a point up or down. The only significant changes are for the ease of transfers and being able to find schedules.

The lowest ratings among the evaluation measures were for the ease of understanding the schedule, ease of transfers, and on-time performance, moreso in the afternoon. The ratings for these measures were not bad, but they were not as high as for the other measures. Compared to 2017, being able to transfer and being able to find and understand schedules saw the greatest declines. Since the schedule booklet has not changed materially since 2014, this change in rating reflects a change in the population more than a change in what AT is doing. Newer riders may have higher expectations on the availability and ease of reading schedules based on experiences elsewhere.

Table 3.21 Composite Ratings of Service Quality Measures

	2022	2017	Change
Buses are clean	3.80	3.79	+0.01
Buses are comfortable	3.72	3.75	-0.03
It is easy to find a seat	3.64	3.62	+0.02
Drivers are polite and helpful	3.73	3.78	-0.05
Drivers are safe	3.81	3.81	0.00
Buses are on-time in the morning	3.59	3.60	-0.01
Buses are on time in the afternoon	3.51	3.53	-0.02
Bus schedules are easy to find	3.61	3.73	-0.12
Bus schedules are easy to understand	3.43	3.52	-0.09
Transfers between routes are easy	3.54	3.67	-0.13

For morning on-time performance, low ratings were distributed in proportion to the number of surveys by route, but in the afternoon, Orange route riders were much more likely to give lower ratings. The Red route also had more dissatisfaction with afternoon on-time performance. Overall, though, these ratings are still very good.

Table 3.22 Evaluation of Service Quality

2022	<i>Nearly Always</i>	<i>Usually</i>	<i>Sometimes</i>	<i>Almost Never</i>
Buses are clean	83%	15%	2%	1%
Buses are comfortable	77%	18%	4%	1%
It is easy to find a seat	71%	24%	5%	1%
Drivers are polite and helpful	78%	18%	3%	1%
Drivers are safe	84%	14%	2%	1%
Buses are on-time in the morning	67%	26%	6%	1%
Buses are on time in the afternoon	61%	29%	8%	1%
Bus schedules are easy to find	70%	22%	7%	1%
Schedules are easy to understand	60%	26%	11%	3%
Transfers between routes are easy	63%	29%	7%	1%

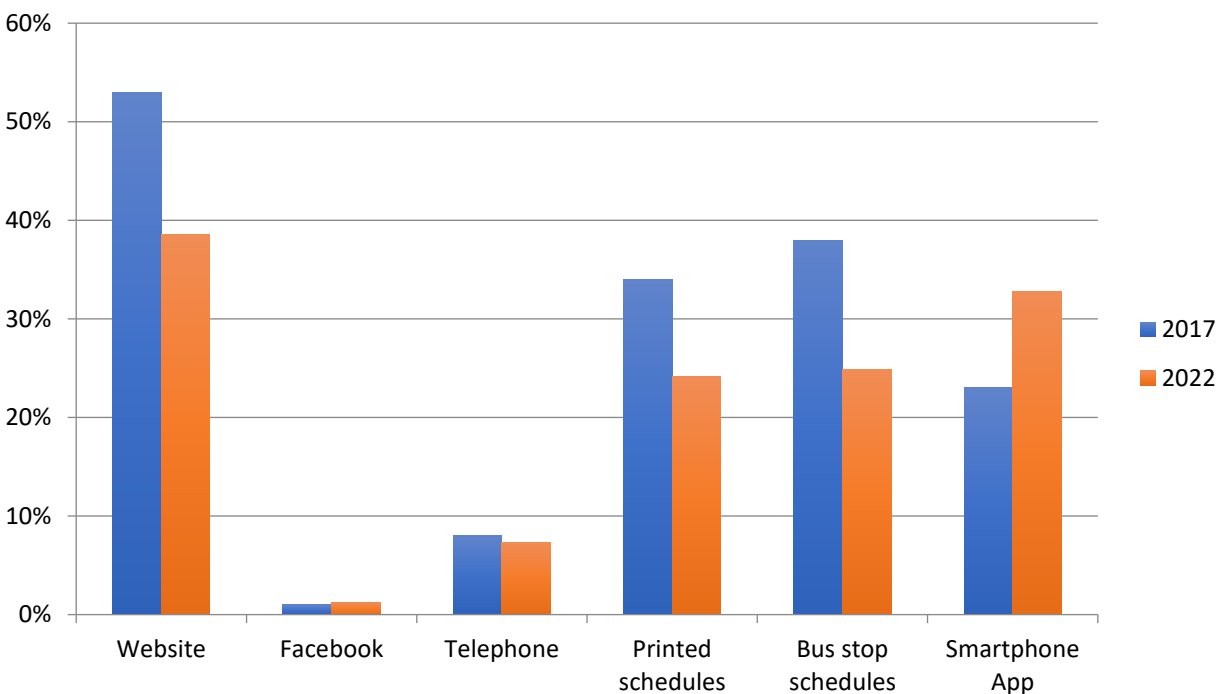
2017	<i>Nearly Always</i>	<i>Usually</i>	<i>Sometimes</i>	<i>Almost Never</i>
Buses are clean	81%	17%	1%	0%
Buses are comfortable	78%	19%	2%	1%
It is easy to find a seat	68%	27%	4%	1%
Drivers are polite and helpful	81%	17%	2%	0%
Drivers are safe	84%	14%	2%	1%
Buses are on-time in the morning	65%	30%	4%	1%
Buses are on time in the afternoon	60%	34%	6%	1%
Bus schedules are easy to find	79%	16%	5%	1%
Schedules are easy to understand	65%	24%	9%	2%
Transfers between routes are easy	71%	25%	4%	0%

3.12. Transit Information and Use of Technology

Riders were asked how they obtain information about Advance Transit. They were also asked about their use of the Internet and cell phones.

The most popular sources of transit information were the Advance Transit website (39%), the Transit app (33%), schedules posted at bus stop (25%), and printed timetables (24%). Other sources of information, cited by 12% of riders total, included Google maps, AT drivers, and word of mouth from friends and family. Figure 3.1 shows the sources of information cited in 2022 compared to those cited in the 2017 survey. The Transit app is significantly more popular than AT's own app was in 2017. Indeed, the app is the only source of information with a notably higher percentage than in the 2017 survey.

Figure 3.1 Sources of Transit Information



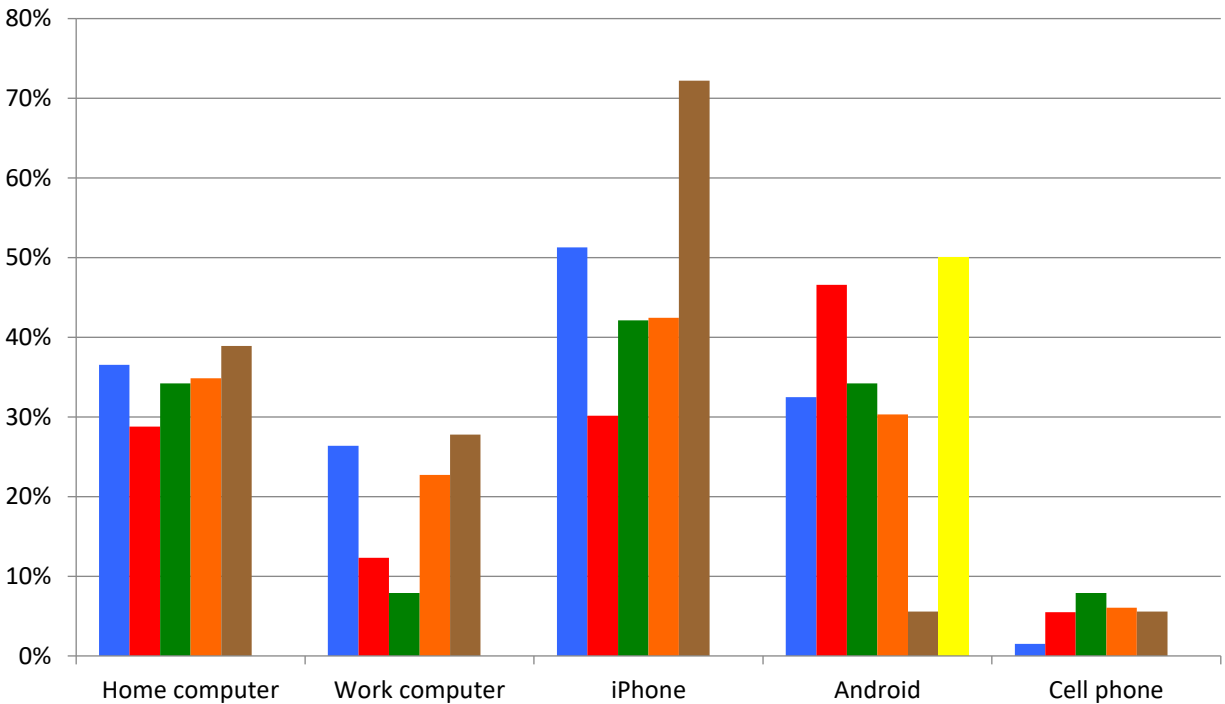
Passengers were asked whether they used the following technologies:

- Computer at home
- Computer at work
- iPhone
- Android smartphone
- Regular cell phone

Other than regular cell phones, at least 21% of riders said they used each of the technologies listed above. iPhones were the most common at 45%, followed by home computers and Android phones at 34%.

At the route level, there are notable differences in the technologies used by riders. Figure 3.2 shows the technologies cited by riders on each route, color coded in the bar chart.

Figure 3.2 Technology Use in 2022



Red and Green route riders are less likely to have a computer at home and much less likely to have one at work compared to the other routes. They (along with the few Yellow route riders in the survey) are also more likely to have Android phones than iPhones. Brown route riders are more likely than those on other routes to have a computer at home and work and to have an iPhone. Riders on the Blue and Orange routes are similar to each other, except that Orange route riders are less likely to have a computer at work or an iPhone. These findings are similar to those in the 2017 survey, though Green route riders were formerly more similar to Orange route riders..

3.13. Weekend and Evening Service

The survey did not ask any questions specifically about weekend or evening service. Without prompting, 75 Advance Transit riders (19%) used the comment section to ask for weekend service. Requests for weekend service were most common on the Blue route (48 requests = 24% of riders) and least common on the Brown (6%) route.

Nearly 40 riders requested “later” or evening service, representing 10% of the total surveys received. Over 70% of these requests came from Blue route riders, with another 15% coming from Orange route riders. Green, Brown and Red route riders had relatively fewer requests for evening service.

About 28% of the requests for weekend service came from Dartmouth students, even though they represent only 20% of the total ridership. Another 28% of requests for weekend service came from Dartmouth or DH employees (who were not also Dartmouth students). Of the requests for later evening service, exactly half came from Dartmouth employees (including those who were also students).

3.14. Passenger Comments and Suggestions

In total, 252 of the 394 respondents offered comments. Some were very brief, such as “Convenient!” or “Free!”, while others contained specific suggestions. This section attempts to summarize the comments received. Appendix B contains all of the comments recorded verbatim.

General Positive Comments

- 38 comments noted the benefit of the service being free
- 24 comments contained thanks or gratitude for the service in general
- 22 comments praised the “convenience” of the service
- 39 comments praised the drivers
- 28 comments said the service overall was “excellent” or “great”

Several of the riders emphasized how important it is that Advance Transit exists, and that they would be unable to work or take care of their basic necessities without it.

Specific Requests for More Service

In addition to the numerous comments for weekend and evening service described above, there were over 20 comments with more specific requests for increased service. Six of these requested more service to/from Canaan, either in general, or at specific times such as lunch time, or between 6:45 a.m. and 8:30 a.m. Five passengers requested an increase in service on the Orange route. Many people praised the 15-minute service on the Blue route and want to see it on other routes.

Other Specific Comments

Five riders offered comments on specific aspects of service. These are listed below:

- Please consider covered seating area at Walmart where so many elderly persons wait in inclement weather. Please ask drivers to lower volume on music they play.
- Service direct from RMS and/or Ray to Hanover Library (Howe) would be great for the kids.
- Signage for stops could be improved. 7 Lebanon has no sign at all. Better seats would be nice. Bus tends to be crowded in both AM and PM.
- The Transit App does not work on older cellphones: does not load. We would like a bus shelter at Indian Ridge. The service is free (we donate generously). The system allows us to reach all the important places we need to reach.
- Work with other transits more. The Claremont bus comes to Lebanon at 6, 8:40, 10:25, 12:39, 3:24 and 5:08. I have had issues with p.m. bus drivers remaining at the library and making me miss the last Claremont bus. I have also had issues with having to wait for my work to open and being stuck in the cold for over an hour because I'm not allowed to remain on the morning bus for an extra hour until my work opens. I understand that you don't want homeless people hanging out on the bus all day, but I only asked to stay on the bus one day for an hour because it was 29 out and I was refused. i was simply waiting until my work opened. The earlier Claremont bus was the only one that would get me to Lebanon without me being late for work.

4. GENERAL PUBLIC SURVEY

A new feature of the TDP in 2022 is an online survey of the general public. This survey was intended to complement the information in the on-board survey, capturing opinions from non-riders and infrequent riders who would not have been captured in the on-board survey. It is important to note that this is not a statistically valid sample and is not intended to replace a traditional telephone survey of the general public.

This chapter describes the method used to collect this information and presents a summary of the results. It is structured as follows:

- Section 4.1 Methodology
- Section 4.2 Findings on Recent Riders
- Section 4.3 Findings on Non-Riders
- Section 4.4 Travel Patterns
- Section 4.5 Potential Improvements
- Section 4.6 Respondent Demographics

4.1. Methodology

Working with AT staff, Steadman Hill Consulting developed a 15-question survey instrument that was uploaded to an online survey platform. Links to the survey were distributed through many channels including the AT website, posters on buses featuring a QR code, social media accounts and email lists of AT and many partner agencies. A chance to win one of four \$25 gift cards was offered as an incentive to participate in the survey.

Nearly 480 completed surveys were obtained, plus another 60 partially completed surveys. In the early phase of the survey, hundreds of additional responses generated by bots were recorded, but a “captcha” screen was then deployed to prevent further bot responses. The bot records were removed from the survey results using a variety of filters based on the location of responses and various answers.

4.2. Findings on Recent Riders

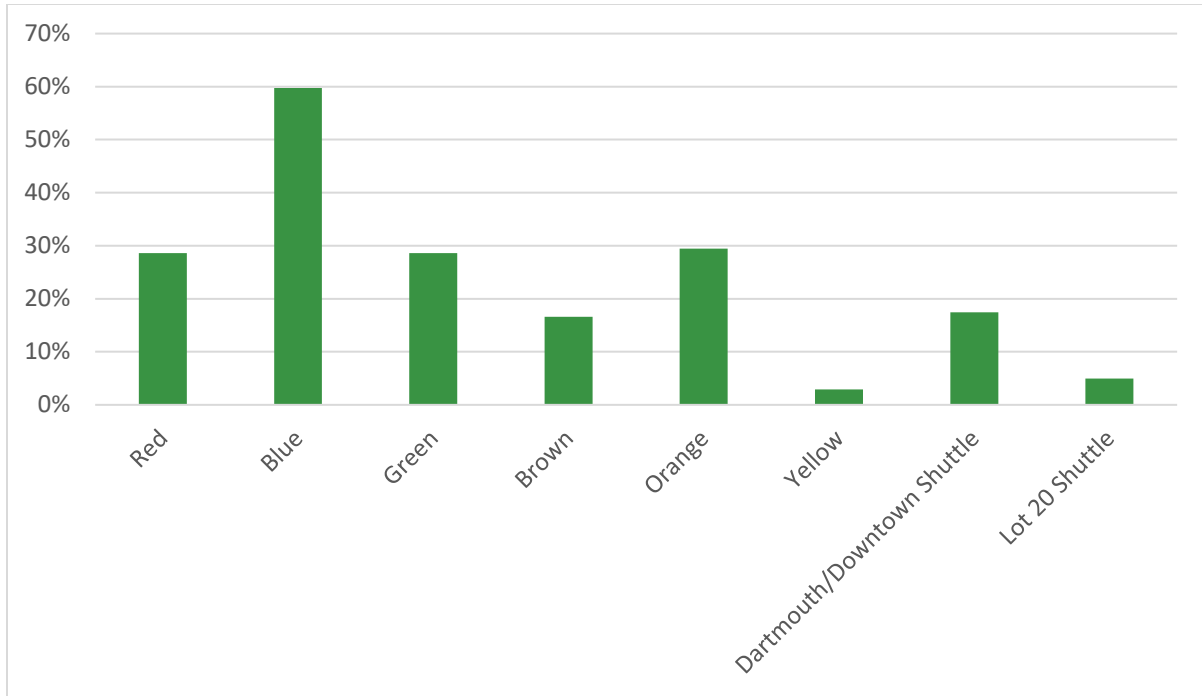
The first question on the survey asked if the respondent had used any AT service in the last three months. Those that said yes were asked a series of questions, and those that said no were asked a separate set of questions (discussed in section 4.3). Recent users were asked which routes they used, how often they ride, and what are the main reasons they ride.

Overall, 45% of respondents had used AT services within the past three months. The percentage using each of AT routes is shown below in Figure 4.1. These figures correspond reasonably well to route-level ridership totals except for under-representation of the Red route and over-representation of the Dartmouth/Downtown Shuttle. This general correspondence lends credence to the survey as a representative sample of riders.

In fact, this survey may be more representative of all people who ride AT services than the on-board survey, which is heavily skewed toward frequent riders. As mentioned in section 3.5, 83% of respondents to the on-board survey said they rode AT routes at least three days per week, but as was noted there, people who ride less frequently were much less likely to be included in the survey to

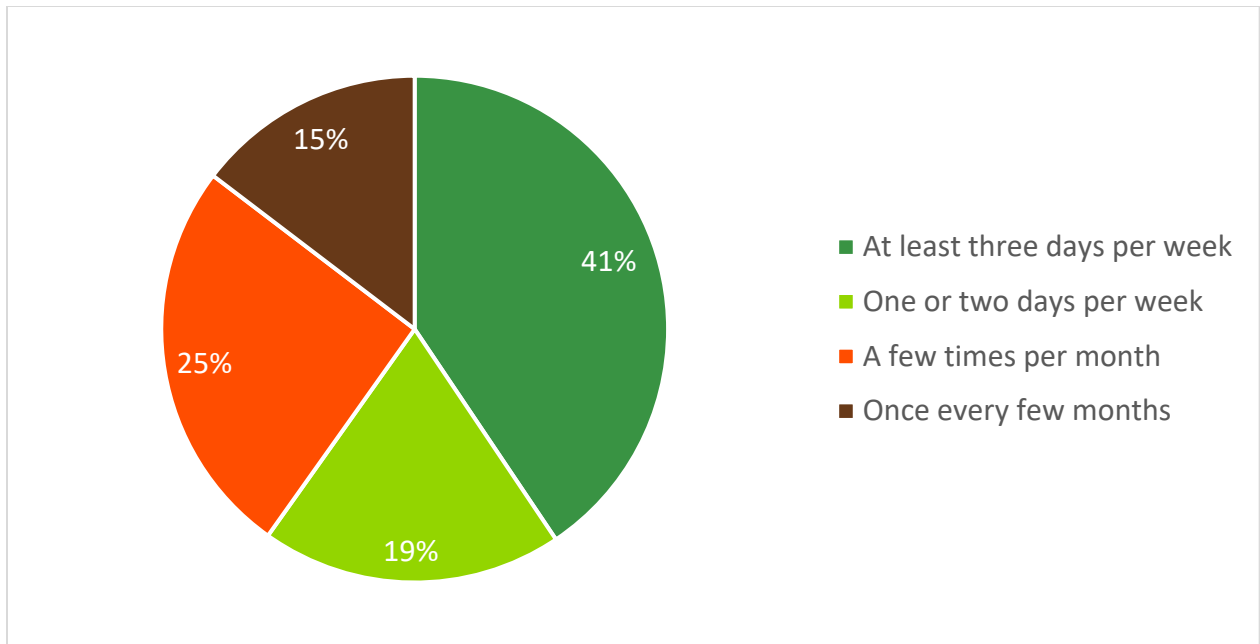
begin with, as survey forms were only distributed on one day. Only 6% of respondents in the on-board survey said they rode less than once per week.

Figure 4.1 Usage by Route among Recent Riders



In the online survey, as shown in Figure 4.2, 41% of respondents said they rode less than once per week, with 15% asserting that they rode only once every few months. Such riders were extremely unlikely to be included in the on-board survey. In contrast, only 40% of online survey respondents said they rode at least three days per week—less than half the percentage from the on-board survey.

Figure 4.2 Frequency of Use



The respondents were then asked to rate the importance of several factors to explain why they use AT services. The factors included the following:

- ▶ I don't have a car available
- ▶ I cannot drive
- ▶ It is less expensive than driving
- ▶ Parking is a challenge
- ▶ It is good for the environment
- ▶ It is convenient for me
- ▶ Other

Of these factors, the one with the highest average importance among respondents was "It is good for the environment," followed closely by "It is convenient for me." On a 10-point scale, these two factors rated 7.65 and 7.63, respectively. The next most important factor was "It is less expensive than driving" rated at 6.1 and then "Parking is a challenge" and "I don't have a car available" rated at 5.21 and 5.12, respectively. Relatively few respondents said that they could not drive at all (rating of 2.6). About 50 respondents cited other reasons, but there was a good bit of overlap with the reasons above. The most common other reason cited was a positive desire to ride the bus because of "the community" or "socializing" or just that "I enjoy using public transportation."

These findings suggest that additional service improvements that increase rider convenience can result in new riders joining the system, and that additional marketing and messaging regarding environmental benefits of public transit, including the future use of electric buses, can also be effective in drawing new riders to the system.

4.3. Findings on Non-Riders

About 55% of survey respondents had not used any AT services in the last three months. Of those, 42% had never used AT services, while the other 58% had used AT at some point. Those past users were asked why they had not ridden AT recently. The options presented to them in the survey and the percentage citing that reason are as follows:

- | | |
|--|-----|
| ▶ I'm concerned about catching COVID | 13% |
| ▶ It is no longer convenient for my travel needs | 31% |
| ▶ I was able to start driving | 12% |
| ▶ I have always been an infrequent rider | 46% |
| ▶ Other | 26% |

Concerns about Covid seem to be a minor factor in affecting choices, while the convenience of the service is a much more important factor. The largest percentage belongs to being an infrequent rider, again reinforcing the concept that the regional pool of Advance Transit users is much larger than the number of people on the bus on any given day. The most common "other" reasons cited are that the respondent is now retired or now works remotely/from home and no longer needs to commute to work. Some other respondents had moved to areas not served by AT, including Etna, Grantham, and Thetford. The lack of evening and weekend service was also cited by some respondents.

The respondents who said they had never used AT were asked why. They were presented with the following options, shown with the percentage of respondents who marked them:

- ▶ I don't know enough about the system to use it 38%
- ▶ I prefer to drive/driving is more convenient 46%
- ▶ I can walk or bike to wherever I need to go 4%
- ▶ I don't feel safe riding the bus 4%
- ▶ I don't feel safe walking to and from bus stops 2%
- ▶ The routes don't go to the places I need to reach 48%
- ▶ The service does not run frequently enough 26%
- ▶ The service does not run late enough 19%
- ▶ The service does not run on weekends 23%

There are several conclusions that can be drawn from these figures:

- Additional education about AT's services could be effective in attracting new riders.
- The system is not viewed as being unsafe.
- System coverage is more important than frequency in reaching these non-riders.
- However, it is not clear that expanding the service area would attract enough riders to justify it because nearly half of non-riders just prefer to drive.
- Frequency of service during the day and weekend service is slightly more important than evening service to these non-riders.

4.4. Travel Patterns

All survey respondents were asked about their travel patterns in the Upper Valley. They were presented with a list of 18 destinations, as shown in Table 4.1 and asked to mark any that they had traveled to more than once within the last month. Some of these are specific facilities, such as the Upper Valley Aquatic Center, while others are roadway corridors or sections of a town.

Table 4.1 Destinations Visited by Survey Respondents

<i>Destination</i>	<i>Percent</i>
Shopping areas on 12A in West Lebanon	67%
Downtown Hanover/Dartmouth College	66%
Downtown Lebanon	60%
Dartmouth Health Medical Center	52%
Locations along US 4 west of downtown Lebanon (Miracle Mile)	50%
Downtown White River Junction	49%
West Lebanon/Kilton Library area	47%
Centerra	38%
Montshire/King Arthur area	32%
Locations along US 4 east of downtown Lebanon	28%
Locations along Heater Road in Lebanon	28%
Village of Norwich	27%
Wilder/US 5 corridor	24%
Lyme Road north of downtown Hanover	23%
Locations along Etna Road in Lebanon	16%
Hartford Village	12%
Upper Valley Aquatic Center	10%
Veterans Administration Hospital	6%

The results of this question are not surprising, with the busiest parts of the Upper Valley economy ranking at the top of the list. Presumably, the Dartmouth Health main campus ranked high because many respondents work there, not because half of the population needed medical services in the past month. It is a bit surprising that the VA Hospital ranked last, given its size, but it draws from a wider region and many of the people who go there may not have been captured in the survey. Centerra ranks relatively high on the list, likely due to the Food Co-op as well as the numerous employers there.

Respondents were also asked where they reside. As shown in Table 4.2, Lebanon is very well represented in the survey, with nearly 170 responses between “Lebanon” and “West Lebanon.” This account for 34% of total responses. Enfield is perhaps over-represented with about 17% of the responses. Hanover and the Vermont side of the river are relatively under-represented. These different degrees of representation reflect varying levels of effort on the part of municipal and other partners to promote the survey as well as local coverage in the press, social media and electronic bulletin boards.

Table 4.2 Home Towns of Survey Respondents

<i>Town</i>	<i>Responses</i>	<i>Percent</i>
Lebanon	128	26%
Enfield	86	17%
Hanover	45	9%
West Lebanon	41	8%
WRJ	31	6%
Norwich	23	5%
Wilder	17	3%
Thetford	16	3%
Canaan	13	3%
Grantham	12	2%
Hartland	10	2%
Lyme	9	2%
Hartford	6	1%
Claremont	5	1%
Etna	5	1%
Sharon	5	1%
Windsor	5	1%
Fairlee	4	1%
Quechee	4	1%
Strafford	4	1%
Other	24	5%
TOTAL	493	

4.5. Potential Improvements

The survey included a question asking respondents to rank a series of potential system improvements to indicate how important or effective they would be in encouraging them to use AT services. There were seven improvements listed, as well as an eighth choice to allow people to state that none of the improvements would get them to ride. The eight options are shown below in Table 4.3 with their total point scores based on the ranking. Higher point totals are better.

Table 4.3 Rating of Potential Improvements

Improvement	Score
Run on weekends	197
Serve additional areas	191
Run later in the evening	158
Run more frequently	153
Install more shelters and lighting at stops	62
Make routes more direct/fewer transfers	60
Make it safer to walk to/from bus stops	48
Nothing, I prefer to drive or use other means of transport	43

Consistent with other surveys and outreach efforts over many years, weekend service is the most popular service improvement. Because this survey reached a broader segment of the Upper Valley population than the on-board survey, an expansion of the service area ranked a very close second. Improved frequency and later evening service are a notch down from the top two, and then there is a significant gap to options related to bus stops or improving directness. AT routes are already relatively direct, so it is not surprising that this is not viewed as a priority. Bus shelters/lighting and safe access to stops may be relatively less important to attracting more riders compared to improved service, but they are nonetheless important to retaining riders, as safety and comfort are factors that riders feel every day when they use the system.

In addition to this general set of potential improvements, the survey included a question about potential microtransit service in the Upper Valley. To avoid the use of the term microtransit, which would be unfamiliar to most people, the question was phrased as follows: “If Advance Transit ran an on-demand service (trips requested via a smartphone app or telephone) with smaller vans that ran in the evenings and on Saturdays and covered most or all of the AT service area, would you use it?”

- ▶ 64% of respondents indicated that they would use the service, with 41% saying they would use it even if it charged a fare, while 23% said they would use it only if it were free.
- ▶ Only 9% of respondents said they would not use it.
- ▶ The other 27% of respondents said they were not sure if they would use it.

This result indicates a significant interest in a microtransit-style service. The planning phase of the study, described in later chapters, develops this concept further.

The final question in this section concerns the role that AT plays in the Upper Valley transportation system. Respondents were presented with four statements and asked whether they agreed or disagreed. These statements and the results are shown below in Table 4.4.

Table 4.4 Role of Advance Transit in the Upper Valley

Statement	% Agreeing	% Disagreeing
Advance Transit is essential to mobility in the Upper Valley	87%	8%
Advance Transit is an effective tool for reducing traffic congestion	85%	6%
Advance Transit is a social welfare service for those in need	78%	10%
Advance Transit is not a useful mobility option	10%	80%

The results show strong support for AT overall, with large majorities believing that it plays an essential role in mobility. Indeed, 72% of respondents strongly agreed with the first statement, and 60% strongly disagreed with the last statement.

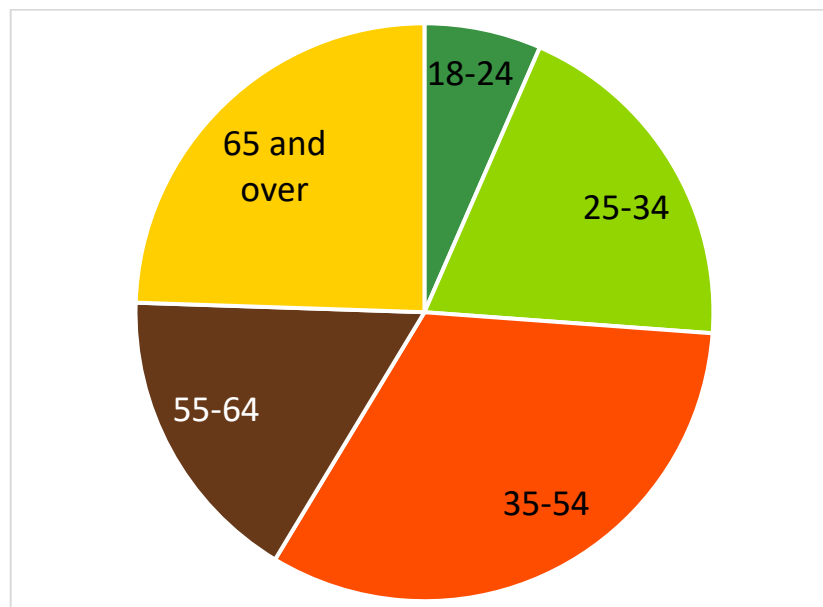
4.6. Respondent Demographics

When interpreting the results of a survey, it is important to understand the characteristics of the survey respondents. For example, the last finding in the previous section, that overwhelming majorities of the respondents thought that AT was essential for mobility and important for reducing traffic congestion, would be interpreted differently if the respondents were only people who used the bus service regularly as opposed to a mix of riders and non-riders.

As mentioned in section 4.2, a majority of respondents (55%) had not used any AT service within the past three months, and only about 19% of respondents overall were regular bus riders. While that 19% is higher than the proportion of the total population in the Upper Valley that use bus service regularly (which is most likely under 5%), the fact that 81% of respondents are not regular users indicates that the survey is broadly representative of the population.

The survey asked questions about age, automobile availability and income. The distribution by age is shown below in Figure 4.3. With the exception of the 18–24 age group, the survey has substantial representation across all ages.

Figure 4.3 Age of Survey Respondents



The availability of an automobile has a very large impact on a traveler’s choice of mode. Over two-thirds (67.5%) of respondents had an automobile available for their use “all the time” and another 18% had a car available “some of the time.” Only 10% of respondents never have a car available, with the remaining 5% saying that they “rarely” have a car available. Therefore, the survey population overall is not dependent on public transportation for mobility.

The distribution of respondents by income category is shown below in Figure 4.4. Only 9% of respondents were in the lowest income group (under \$25,000), while the most common income range in the survey were those over \$100,000 (27%). The highest income respondents outnumbered the lowest income respondents by three to one, with the middle categories (\$25,000 to \$100,000) making up just about half of the total.

Figure 4.3 Income of Survey Respondents



The one remaining question on the survey not already described here concerned the means by which respondents would like to obtain information about AT service. The most common response was via email (43%) followed by the AT website (37%) and the Transit app (26%). Newsletters and telephone ranked lower. Several respondents marked “other” and said that they get information via community listservs.

5. COMMUNITY INVOLVEMENT

This chapter describes efforts to involve members of the public in the transportation study and to obtain ideas and suggestions for the future of Advance Transit's public transportation program. Thus far in the study, there has been one meeting with stakeholder groups and two public meetings. Notes from these meetings are presented in the sections below.

5.1. Meeting with Dartmouth Health – TBD

5.2. Meeting with Dartmouth College – December 13, 2022

Representatives of Dartmouth College reached out to Advance Transit to set up a meeting about potential weekend service. To some extent, this meeting was an outgrowth of a separate study being undertaken by the College to assess its own internal campus shuttle system. Even as the College increases its investment in its own shuttles, they intend, according to Dartmouth staff, to maintain the long-time partnership with Advance Transit. Though the results of the Dartmouth study have not yet been made public, it was shared that the study identified weekend service as a priority for the Dartmouth community.

The meeting was attended by representatives of Dartmouth College, the City of Lebanon, the Town of Hanover, and Dartmouth Health. The Executive Director of AT and the TDP Project Manager represented Advance Transit. Most of the meeting centered around weekend service, but weekday evening service was also discussed.

The TDP Project Manager described how a microtransit service could address the needs identified by Dartmouth and the municipalities. A fixed route option was also discussed, as it has been included as a recommendation in past TDPs. The municipal and institutional partners indicated an openness to providing the needed local match were service to be expanded, though no specific dollar amounts were mentioned nor were there any firm commitments.

From the College's perspective, weekend service would ideally be in place by Autumn of 2023, but a slightly longer timeframe (Winter 2024) would also be acceptable. The group agreed to meet again during Winter 2023 to continue the conversation about the transportation needs of the Dartmouth Community.

5.3. Public Meeting in Lebanon – November 2, 2022

A public meeting was held at a community room at Kilton Library in Lebanon. The meeting had a hybrid format with members of the public in attendance physically as well as virtually through a videoconference. Eight individuals attended in person and three more parties joined via videoconference. Discussion topics included the following:

- ▶ Buses parked in front of Rogers House in Lebanon; complaints about fumes from buses and smoking passengers
- ▶ Ongoing relationship between Dartmouth and Advance Transit
- ▶ Need for service to Alice Peck Day hospital
- ▶ Whether user fees (fares) should be introduced to help pay for the service
- ▶ Service to locations beyond the current boundaries (including Poverty Lane in Lebanon) and the applicability of microtransit to that situation

5.4. Public Meeting in Hartford – November 2, 2022

A public meeting was held at the Hartford Town Office at noon. The meeting had a hybrid format with members of the public in attendance physically as well as virtually through a videoconference. Three individuals attended in person and two more people joined via videoconference. Discussion topics included the following:

- ▶ Weekend service and the hurdles toward reintroducing it
- ▶ Deviating the Green or Orange route into the Listen Center parking lot and serving future housing at Prospect Street
- ▶ Pedestrian connections to bus stops and adequate time to cross streets
- ▶ How to market the service to people who are not riding today.

6. TRAVEL PATTERNS AND PROJECTED DEVELOPMENT

This chapter presents some analysis of travel patterns in the Upper Valley region and then provides a listing of development projects in the pipeline, expected to take place within the planning horizon of this study. This information helps assess how well Advance Transit is serving the current market, and how it may need to change to serve the market in the near future.

6.1. Travel Patterns

The 2018 TDP included a series of maps showing the home locations of people associated with Dartmouth College, Dartmouth-Hitchcock Medical Center, and the Upper Valley Aquatic Center. These maps helped to identify clusters of people headed to these destinations who were not served by AT bus routes. The list of such clusters included the following:

- ▶ Northern part of Hanover along NH 10
- ▶ Etna Road/Hanover Center Road
- ▶ Roads surrounding Mascoma Lake in Enfield
- ▶ New Boston Road in Norwich
- ▶ Intersection of Bugbee Street and Christian Street in Hartford
- ▶ Blueberry Hill Drive and Westview Road neighborhood on the Hanover/Lebanon border
- ▶ Reservoir Road/Grasse Road in Hanover, and
- ▶ Sachem Village.

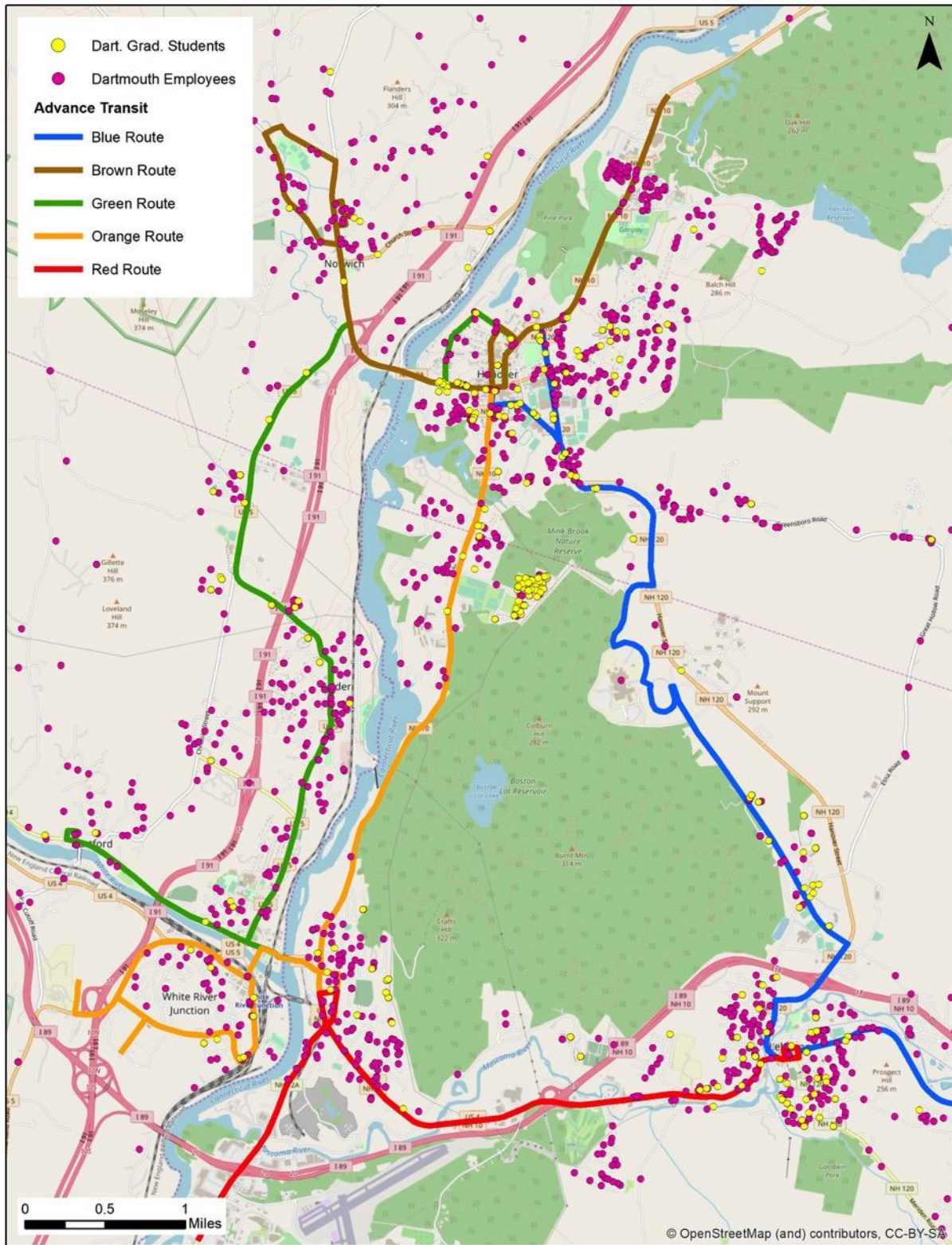
Many of these areas are visible on Figure 6.1, which is reproduced from the 2018 TDP.

For a number of reasons, it was not attempted to update these maps for the present TDP. Many of the patterns that existed in 2018 still hold true. The most significant new development since that time has occurred along Mt. Support Road south of the Dartmouth Health campus. That area is already served by the Blue route and is the focus of new campus shuttles being operated by Dartmouth College. It is also the case that AT is still in “recovery mode” from the pandemic, trying to restore ridership levels from its core service area. Expanding into new areas, seeking longer distance commuters, is likely to be a significant challenge in the near term, as commuter-oriented services were those that were most severely affected by the pandemic.

The experience of implementing the last TDP is also a cautionary tale. The Yellow route, which serves the Aquatic Center, but also serves the Bugbee/Christian intersection listed above, has not been able to attract a sustainable level of ridership. In spite of the cluster of Dartmouth College and DH employees in that area, daily ridership demand from that location is in the low single digits, often just one or two people. Having served the Upper Valley region with fixed routes for more than two decades, and having fine-tuned them through a series of five TDPs, there are few, if any, opportunities for new fixed route corridors that will be as productive as the existing routes.

Large new developments, as described in the next subsection, can be a guide for future changes to fixed routes, or the consideration of a service zone for a microtransit operation. All of the recent development along Mt. Support Road, for example, provided justification for the increase in service frequency on the Blue route that took effect in April 2022.

Figure 6.1 Dartmouth Employees and Graduate Students in AT Core Service Area (2018)

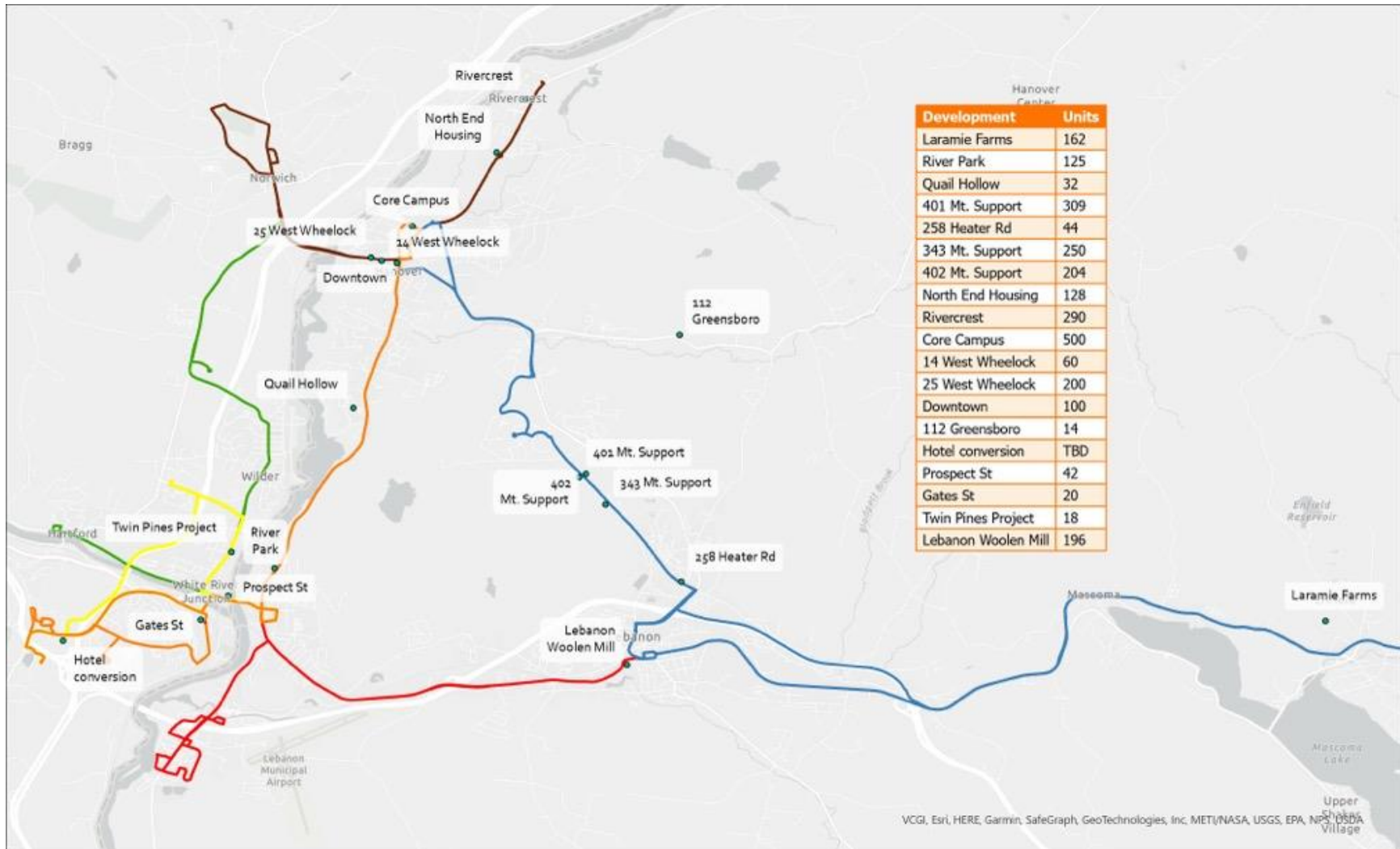


6.2. Projected Future Development

During Autumn 2022, the TDP Project Manager met with representatives from the Town of Hanover, the City of Lebanon, the Town of Hartford, and Dartmouth College to discuss near-term residential development plans. All of the significant developments within a short distance of the AT service area are mapped in Figure 6.2. The map also includes a table showing the number of proposed units in each development. Some highlights are described below.

- **Dartmouth Campus** – The College is in the midst of a large investment in new and expanded residential facilities for students and others in the Dartmouth community. The North End Housing project is nearing construction and will add 128 units along the Brown route on what is currently a golf course. Roughly 500 units in the Core Campus area will be added. Two buildings on West Wheelock are being expanded to provide hundreds of new beds. The recently completed Juniper housing complex on Mt. Support Road will be joined by several other new developments in the immediate vicinity.
- **Quail Hollow expansion** – Approximately 32 new units at existing senior living development, adding to roughly 300 units already there.
- **Woolen Mill** – This building in downtown Lebanon will see nearly 200 new housing units.
- **River Park** – The large project along NH 10 north of West Lebanon village, which has been in the planning phase for years, is projected to include commercial development, laboratory space, residential and retail space, up to 800,000 square feet. It is the potential location for a relocated bus hub in West Lebanon (to be analyzed in this project). The near-term projection for Phase 1 is 125 residential units.
- **Laramie Farms, Enfield** – This parcel near the center of Enfield is planned to include 162 residential units.
- **White River Junction** – Following several recent projects, a 20-unit project is planned for Gates Street, and one of the hotels near the VA Hospital is proposed to be converted to permanent housing.

Figure 6.2 Expected Developments in AT Service Area



APPENDIX A – SURVEY FORM

Advance Transit Passenger Survey 2022

Please take a few minutes to fill out this survey. Complete the survey only once. Thank you!

1. DATE _____ 2. TIME _____ A.M. P.M.
3. Which bus route are you on now?
 Blue Red Green Orange Brown Yellow
4. Will this trip involve a transfer between routes? Yes No
5. If yes, which other bus routes will you use for this trip?
 Blue Red Green Orange Brown Yellow
 Dartmouth / Downtown Shuttle DH parking lot shuttle DH Centerra shuttle
 TVT SEVT MOOver Dartmouth campus shuttle (Sachem, Juniper, Ledyard)
6. What is the main purpose of your bus trip? (Please check only one) To or from ...
 Work Shopping School or College Personal Business (bank, errands...)
 Medical Recreation Social Visit Other _____
7. Which town or village do you live in?
 Lebanon West Lebanon Hanover Canaan Enfield Norwich
 WRJ Hartford Village Wilder Other _____
8. How often do you usually ride Advance Transit?
 5 days per week 3-4 days per week 1-2 days per week Less than once per week
9. When did you first begin using Advance Transit?
 Within the last year 1-2 years ago 3-5 years ago More than 5 years ago
10. Are you a student? Yes No If yes, school/college _____
11. If you are a Dartmouth College student, which type?
 Undergraduate Tuck Thayer Medical School
 Arts & Science Graduate Student Other Graduate Student
12. What is your employment status?
 Full-time Part-time Childcare provider Retired Unemployed
 Student Other _____
13. If you are employed, who is your employer? DH Dartmouth VA Hospital
 Other _____
14. If you are employed, what is your primary work location?
 Downtown Hanover Hanover Lyme Rd DH main campus Centerra
 DH Heater Road Downtown Lebanon Route 12A Plazas West Lebanon
 WRJ Norwich Wilder Other _____

Please complete both sides.

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Advance Transit Passenger Survey 2022

15. If you have a car available for your use, where is that car now?

- No car available Home DHMC Lot Dartmouth or Hanover lot
 Someone else is using it Garage for repairs
 Near Advance Transit bus stop (Where?) _____
 Other _____

16. Which transit routes/services do you use at least twice per year? Check all that apply.

- Blue Red Green Orange Brown Yellow
 AT's Dartmouth/Downtown Shuttle DH parking lot shuttle DH Centerra shuttle
 TVT MOOver Dartmouth Coach Amtrak Dartmouth campus shuttles

How often are these statements about Advance Transit true?

	Nearly Always	Usually	Some-times	Almost Never
17. Buses are clean.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Buses are comfortable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. It is easy to find a seat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Drivers are polite and helpful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Drivers are safe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Buses are on time in the morning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Buses are on time in the afternoon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Bus schedules are easy to find.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Schedules are easy to understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Transfers between routes are easy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27. How do you currently obtain information about Advance Transit? Check all that apply.

- AT website Facebook Telephone Printed schedules Bus stop schedules
 Transit app Other _____

28. Which devices do you use?

- Computer at home Computer at work iPhone Android phone Other cell phone

29. What is your age?

- 17 or younger 18-25 26-40 41-65 Over 65

30. Do you have a valid drivers license? Yes No

31. What do you like about Advance Transit bus service? What can we do to improve the service?
Comments and suggestions will be posted at www.advancetransit.com.

Please complete both sides.

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APPENDIX B – VERBATIM COMMENTS FROM SURVEY

Town	Route	Comments
Canaan	Blue	Convenience! Bus drivers are friendly and quite helpful. Maybe add an Express Blue line route in afternoons, skipping Leb City Hall and show Express route(s) on schedule(s).
Canaan	Blue	Free and easy.
Canaan	Blue	Husband uses our one car that we share, so if he brings me to work, then I can et the bus home and it saves us gas money too.
Canaan	Blue	I love how polite and helpful almost all of the bus drivers are!
Canaan	Blue	It is a great service from Canaan. Save on gas for me. Times work great for my schedule. Sometimes I do have to work on the bus so it would be nice to have wifi available. :-)
Canaan	Blue	Relax, read, knit, traveling to and from work. More mid-day service to/from Enfield/Canaan.
Canaan	Blue	The drivers are always very nice even when I have seizures on the bus. Very caring about what happens to me and are nice.
Enfield	Blue	A late morning/early afternoon Canaan-Enfield- Lebanon option.
Enfield	Blue	Additional service through mid-day to Enfield/Canaan would be helpful.
Enfield	Blue	I like the service of Advance Transit, which is very helpful. There are only 2 buses that go to Enfield/Canaan in the afternoon. It is better to have another one.
Hanover	Blue	Add to the Rider Rules: Please bathe before entering bus.
Hanover	Blue	AT is a great service. It's wonderful to have it in the UV. Thank you very much!
Hanover	Blue	Buses are clean and comfortable. Schedules are nice. Drivers are very polite and friendly. A stop right at the building I work in.
Hanover	Blue	Can you please run the AT on weekends also? It is very hard to commute, especially on weekends for groceries and travel.
Hanover	Blue	Convenient, on time and better than driving. Avoid being early at stops please.
Hanover	Blue	Great free service. Frequent runs.
Hanover	Blue	I hope you can run it at least one day in the weekend. Thank you.
Hanover	Blue	I like how convenient and free it is for sure.
Hanover	Blue	I like that it is free. I wish in communities with underrepresented groups public transportation was also free. The service doesn't serve people of color as much as White and Asian community members.
Hanover	Blue	I love the convenience, friendliness, love the price! One issue: I don't find that the app works well. I miss the old app.
Hanover	Blue	I would love AT to be expanded into the weekends (and I know many people would pay for it, including me.)
Hanover	Blue	It's free.
Hanover	Blue	More evening and weekend times would be amazing.
Hanover	Blue	More evening options for travel after 6pm
Hanover	Blue	Please provide services on weekends and beyond 6pm as well for all days.
Hanover	Blue	Service direct from RMS and/or Ray to Hanover Library (Howe) would be great for the kids.
Hanover	Blue	Some drivers are reckless and rude.



Hanover	Blue	The drivers have been excellent for when I needed to transfer between routes! Thank you! I love the transit buses. Frankly, without them it would be very difficult for me to get to work!
Hanover	Blue	Weekend rides and transit in the evening.
Hanover	Blue	Weekends and later than 7pm during week. Sometimes my experiments unexpectedly run late and then I have to panic and worry how I will get home.
Hanover	Blue	Work on weekends and wifi on bus.
Lebanon	Blue	1) Offer services in different routes. 2) Provide services late evening and weekends.
Lebanon	Blue	1/2 day weekend for student
Lebanon	Blue	15 mins service on weekdays
Lebanon	Blue	A near stop in Centerra.
Lebanon	Blue	All the services
Lebanon	Blue	Available part of weekends.
Lebanon	Blue	Blue line is frequent.
Lebanon	Blue	Buses are randomly exactly on time to 10 min. late. Today I was 30 sec. late to the bus, sprinting across the green, which transferred to by being 23 minutes late to work. The 15 min schedule is more of a flow with 2 buses within 5 minutes of each other. Also, night and weekends are a must. That buses only run to carry people to Hanover for work and remove them so they can't enjoy the town is classist bullshit.
Lebanon	Blue	Coffee on the NYC coach.
Lebanon	Blue	Continue the bus service during Saturdays and Sundays, frequency of the buses can be less than usual schedule.
Lebanon	Blue	Convenience.
Lebanon	Blue	Convenience. I wish there was Saturday service at least twice a day.
Lebanon	Blue	Convenient pick-up locations. Weekend hours would be nice.
Lebanon	Blue	Easy to get to work.
Lebanon	Blue	Efficiency and cleanliness
Lebanon	Blue	Everything so far. It's be nice if service was later in the p.m. It would allow me to work later.
Lebanon	Blue	Excellent service! Two suggestions: later buses in the evening and at least half a day service on weekends. Thank you so much!
Lebanon	Blue	Gets me where I need to go.
Lebanon	Blue	Happy to have a bus every 15 minutes on the blue line. Wish there was service on Saturdays.
Lebanon	Blue	Have more evening options and longer operating hours and weekends please!
Lebanon	Blue	I am from Pakistan. The bus service is like a blessing for me in this area. I wish this service commute on weekends too.
Lebanon	Blue	I hope it's available on weekends.
Lebanon	Blue	I like Advance Transit because it works Monday- Friday
Lebanon	Blue	I like everything about AT bus service. The drivers are good!
Lebanon	Blue	I like how nice the drivers are and that the bus comes every 15 min. Lots of students would greatly benefit from at least hourly additional times at night and during weekends.



Lebanon	Blue	I like quick convenient rides to work so I don't have to start my car to drive 1.2 miles to work and find a parking space. I use it if I'd rather not walk to work due to weather or time.
Lebanon	Blue	I love being able to get basically anywhere I need to in the area. Can't drive due to seizures. Thanks! :-)
Lebanon	Blue	I love that it is free! Lots of recurring buses come by. Driver is great.
Lebanon	Blue	I love that it's free, usually on time, and most drivers are polite, friendly etc. (Except one woman who has purposefully driven past me twice and listens to earbuds while driving).
Lebanon	Blue	I really appreciate the frequency/reliability. No critiques. :-)
Lebanon	Blue	I wish all buses were "live" on the app to have more exact time/schedule of when they'll arrive.
Lebanon	Blue	I wish they could be made available on weekends.
Lebanon	Blue	I would appreciate it if the bus runs over the weekends and in the evenings. I love the politeness and welcoming of the drivers.
Lebanon	Blue	I would like it to run on weekends as well.
Lebanon	Blue	I would really like a glass shelter on Dartmouth Av. And would like the bus stop to be back down from the other one on the other side, where it used to be. There is one guy didn't like to put down the ramp without giving me a disappointed look. It's what its there for.
Lebanon	Blue	If it ran weekends that would be very helpful.
Lebanon	Blue	If they could run on weekends even if there was a fee. Taxis get expensive. Even if we had to call ahead and set up service- that would help too. Thanks.
Lebanon	Blue	If you are able to extend the routes to the weekends, it would be very much appreciated!
Lebanon	Blue	If you could have late night shuttles and weekend shuttles that would be perfect. Thank you very much!!
Lebanon	Blue	It brings me to school.
Lebanon	Blue	It is safe, free, dependable and so convenient!
Lebanon	Blue	It makes it possible to get to work so I can feel human and be part of "society." Have a nice day. Thank you.
Lebanon	Blue	It's super easy to navigate and makes life much easier when you don't have a car. I very much appreciate having it as an option.
Lebanon	Blue	It's very comfortable.
Lebanon	Blue	It's very on time. My suggestion is to access up to 9pm and weekends.
Lebanon	Blue	Keep to schedule.
Lebanon	Blue	Later bus times after 6pm
Lebanon	Blue	Longer service hours.
Lebanon	Blue	Love drivers.
Lebanon	Blue	Maybe can have some, but less buses on weekend.
Lebanon	Blue	More hours and weekend, please!
Lebanon	Blue	More hours at night time up to 8:30 pm.
Lebanon	Blue	No pass required, solid hours and schedule. Only way to improve is make it available on weekends.
Lebanon	Blue	Please have rides for later times after 6:20pm as classes and work usually end later than that. Thank you!
Lebanon	Blue	Please we need weekend service. Late night service please. 6-9pm at least. You are doing great work! Weekends please.



Lebanon	Blue	Reliable service to and from work. No complaints. Service on Saturday would be nice.
Lebanon	Blue	Reliable. Weekend.after hours service would be great.
Lebanon	Blue	Run on weekends and a bit longer on weekdays (8pm maybe).
Lebanon	Blue	Run until later at night. Run on weekends, please!
Lebanon	Blue	Safe drivers. Thank you for your service.
Lebanon	Blue	Service is wonderful!
Lebanon	Blue	Service on weekends. Thank you!
Lebanon	Blue	Shelters in more locations. Service on 120 S of Lebanon. Evening service and Saturday.
Lebanon	Blue	Signage for stops could be improved. 7 Lebanon has no sign at all. Better seats would be nice. Bus tends to be crowded in both AM and PM.
Lebanon	Blue	Some routes that run on the weekend! Love the bus! Thank you!
Lebanon	Blue	Some schedules are only for major stops and that's helpful, but would be nice to know all. I like the APP, helps to know if there are delays or where the bus is.
Lebanon	Blue	Thank you.
Lebanon	Blue	Thanks!
Lebanon	Blue	That it's free. That i don't have to use my car and deal with parking or traffic- much more peaceful! The buses are super reliable.
Lebanon	Blue	That the Blue leaves every 15 minutes.
Lebanon	Blue	The 15 minute service from Lebanon to Hanover is great but additional buses after 6:15 on the Blue line from Hanover to Lebanon is needed. Also weekends!
Lebanon	Blue	The blue line is so easy to take every day.
Lebanon	Blue	The convenience is great. Back and forth to work has saved my vehicle.
Lebanon	Blue	The drivers are very respectful, busses are on time and it is free!
Lebanon	Blue	The timeliness is what I like about AT. I can't think of anything that needs to be improved.
Lebanon	Blue	The timings, drivers and bus stop locations.
Lebanon	Blue	Timeliness
Lebanon	Blue	Updated schedule online
Lebanon	Blue	Weekend service would be helpful.
Lebanon	Blue	Weekends (especially Saturday) bus will greatly enhance my life. Thanks.
Lebanon	Blue	Well-run, clean, friendly, easy to use, on-time, no cost, advantageous.
Lebanon	Blue	Wifi internet and snacks.
Lebanon	Blue	Working over weekend. Working after 6pm
Lebanon	Blue	You guys are doing great. Love your new Blue Line schedule.
Other	Blue	Hard to beat a free bus service. I like being able to read or nap on my commute. A 3:45 bus to Canaan would be awesome.
Other	Blue	Schedules are hard to read from app.
West Lebanon	Blue	Hope that there will be more buses scheduled in the Orange line (just like the Blue line).
West Lebanon	Blue	I like the service. More helpful [to have it] every Saturday.
West Lebanon	Blue	I really enjoy your services.
West Lebanon	Blue	It's cool. I don't have much to say about it.
West Lebanon	Blue	Please consider covered seating area at Walmart where so many elderly persons wait in inclement weather. Please ask drivers to lower volume on music they play.



Wilder	Blue	Extend schedule after 6pm and weekends.
Wilder	Blue	I mostly like it.
WRJ	Blue	Great service overall! Would love to have more buses in the evening and weekends, but I understand this is difficult.
WRJ	Blue	Have buses run longer hours and weekends.
WRJ	Blue	It's a great service. Drivers play loud music sometimes which is annoying. We need service from Hanover to 41 Centerra in the a.m. and late afternoon. It's dangerous to walk from DHMC to Centerra as there is no sidewalk. I am not familiar with the DH Centerra Shuttle listed on this survey.
0	Brown	Its free, which is really important so that everyone can go where they need to be.
Hanover	Brown	Generally like the service. Could use more evening routes.
Hanover	Brown	I love this service!
Hanover	Brown	It should run later in the night as well!!
Norwich	Brown	H provides an essential mode of transportation.
Norwich	Brown	It's wonderful!
Norwich	Brown	Its free! Amazingly! Drivers and passengers are nice. Its stress free. I'm not putting miles on my car. I can combine it with exercise: walk home.
Norwich	Brown	More buses please! Thanks!
Norwich	Brown	Weekend service would be good for young and non-drivers for shopping and recreation.
Other	Brown	Bus in Kendal Tuesday Friday.
Other	Brown	Excellent service.
Hanover	Green	n/a!
Hanover	Green	On time.
Hartford Vill	Green	Its nice.
Hartford Vill	Green	More buses to use at all time of the night for money to be used by stores, to place a bathroom on the bus.
Hartford Vill	Green	Weekend service and extend service into the evenings on weekdays.
Lebanon	Green	Gets me to places free.
Other	Green	I like the bike racks, drivers, price, community of riders. Convert to electric buses and expand to weekend.
West Lebanon	Green	Having Advance Transit is great for our community. I volunteer at Dartmouth and know a good amount of students that use this as their primary transportation.
Wilder	Green	Bus drivers are nice.
Wilder	Green	Convenient, great transportation alternative when my car need servicing. Grateful for donors who allow AT to provide service at no charge.
Wilder	Green	Everything
Wilder	Green	I like the 1/2 hour availability and that it is free!
Wilder	Green	I like the drivers and that it is a free bus service, but it would be helpful to have it on weekends.
Wilder	Green	I would like to use the bus during the night and on weekends.
Wilder	Green	Its free and easy to use.
Wilder	Green	Weekend bus?
WRJ	Green	Drivers are polite and helpful, but not some. some are a crazy driver - green.
WRJ	Green	I find your service helpful in completing my everyday tasks. Thank you.



WRJ	Green	I get to Turning Point and anywhere else that I have to go.
WRJ	Green	Its free.
WRJ	Green	Maybe run a bus or two on the weekends. But all and all its pretty good.
WRJ	Green	Reliable, safe and extremely helpful getting me to work.
WRJ	Green	Wish there was weekend availability. I would pay for that.
Hanover	Orange	Buses stop running too early.
Hanover	Orange	Easy to use and affordable.
Lebanon	Orange	The drivers are always helpful and friendly.
Lebanon	Orange	The Transit App does not work on older cellphones: does not load. We would like a bus shelter at Indian Ridge. The service is free (we donate generously). The system allows us to reach all the important places we need to reach.
Norwich	Orange	I like how it is free since I don't have a car.
Norwich	Orange	Y'all doing good and I really appreciate the service.
Other	Orange	Hours on weekends
West Lebanon	Orange	Buses should run at least Saturday 10-6. We need to go for household shopping at Plaza. Please run the bus on Saturday.
West Lebanon	Orange	Convenient and free.
West Lebanon	Orange	Evening service: doesn't even need to be every hour, but should run till 9:30pm or 10pm. Buses are tidy but the floors and seats need more thorough cleaning.
West Lebanon	Orange	Free public transportation is sustainable and easy. :-)
West Lebanon	Orange	Friendly, free, on time, helpful (they radio each other to wait for people meeting connecting buses!) :-)
West Lebanon	Orange	I appreciate free transit to/from Dartmouth and around Lebanon. I wish there was a night run of the bus sometime between 9 and 11pm.
West Lebanon	Orange	I would really appreciate if there were more buses (more frequently). Also, if the buses would run on weekends and till late on weekdays would be way helpful. I won't mind if I have to pay a little for the service.
West Lebanon	Orange	It would be amazing to have routes that ran on the weekends in some capacity, even 1/2 or 1/3 volume.
West Lebanon	Orange	Its always on time and drivers are really nice. I wish it would run on weekends even if frequency is lower.
West Lebanon	Orange	Its on time, drivers are friendly and its free.
West Lebanon	Orange	Jim is great!
West Lebanon	Orange	Later evening buses would be helpful.
West Lebanon	Orange	Like: Reliable, Convenient, Responsive to feedback, Community-oriented, locally owned. Improve: More frequent routes during rush hours (7-9am, 4-6 pm).
West Lebanon	Orange	Love that it's free and that the drivers actually communicate with each other to make sure people get where they need to go. I'm not sure I fully understand the timetable schedule b/c the stops aren't clearly marked, so that was confusing for a newcomer.
West Lebanon	Orange	More frequency with orange line.
West Lebanon	Orange	More frequent shuttle bus. Thanks.
West Lebanon	Orange	Only my 2nd day using it, but so far so good! App/website seem to have conflicting information, but I've been able to figure it out. Very convenient :-)
West Lebanon	Orange	Orange line is 1 bus/hr. More buses will be better. Thank you.
West Lebanon	Orange	Please add more times for the orange line. Once every hour is troublesome and inconvenient. Other lines are more frequent.



West Lebanon	Orange	The people are kind. The service is great. Expand Red Line (before 6 AM). Expand Orange Line to half hour service.
Wilder	Orange	Drivers are always polite. It helps set m day off with a good vibe.
Wilder	Orange	Free, but it takes too long between routes.
WRJ	Orange	Bus driver very polite.
WRJ	Orange	Easy to use.
WRJ	Orange	Free and convenient
WRJ	Orange	Good Service
WRJ	Orange	I appreciate that it is here and free, but I would honestly pay for it if there was extended service in the evenings and on weekends. Some drivers can be rough.
WRJ	Orange	I like how kind the drivers are and that the bus is available for everyone. I could use more routes past 6pm.
WRJ	Orange	I like that I don't have to walk very far for bus stops. I appreciate that it is free. Would be very nice on weekends.
WRJ	Orange	Is good idea for the people need and good polite and is safe.
WRJ	Orange	More stops per house and Saturday service. Purchase electric vehicles. Keep up the good work. :-)
WRJ	Orange	Orange bus driver is amazing. I don't know much more you could do.
WRJ	Orange	The convenience
WRJ	Orange	Yes, the bus service is very convenient and provides a good help for me to go to campus.
0	Red	Could not make it without AT. Thank you everyone. You are great.
0	Red	I like that I can get to placed I need to go. I don't like how some of the drivers drive.
0	Red	The drivers are awesome!
Hanover	Red	Professional and kind drivers. Safety on buses. Comfort while driving.
Hartford Vill	Red	If a stop is on the schedule, then STOP! Maybe offer Saturday runs, but charge \$1-\$2 to help cover costs? I'd be willing to pay. Too often some, not all, of the drivers blow past the stop, even when you ARE standing in the shelters. If it says 6:18, don't pull away until then.
Lebanon	Red	Advance Transit is a great way for those who don't have the privilege of driving to get to where they need to be. Only suggestions would be to run later and on weekends.
Lebanon	Red	Bus driver is friendly, has communication, is helpful. :-)
Lebanon	Red	Clean and courteous. Weekends (Saturday).
Lebanon	Red	Convenience. Would have difficulty getting groceries or to appointments otherwise. Transportation on weekends would be great.
Lebanon	Red	Convenience/free.
Lebanon	Red	Cross walks at bus stops, more covered bus stops, split orange line in 2 at library- it's confusing.
Lebanon	Red	Cushion seats. :-)
Lebanon	Red	Cushioned seats. Bring back weekends.
Lebanon	Red	Everything.
Lebanon	Red	Goes in the snow!
Lebanon	Red	I think having buses on the weekend would be helpful.
Lebanon	Red	I think service on weekend would be great.
Lebanon	Red	It gets me to where i need to go. I like the people.



Lebanon	Red	It is a smooth and peaceful ride.
Lebanon	Red	Less crowded on Hanover 6:20pm bus to Lebanon with students who live at Summit of Juniper. Most of the time it is over crowded.
Lebanon	Red	Less gossip.
Lebanon	Red	My wish is for Advance Transit to operate on the weekend. That would be nice. :-)
Lebanon	Red	Overall I think you guys are killin it.
Lebanon	Red	Sat. very 6:14 a.m. - another at 5:00 pm. Leb, West Leb, WRJ, Hanover.
Lebanon	Red	The bus drivers are nice and greet and tell what buses to get on to go to their destination.
Lebanon	Red	The drivers are awesome.
Lebanon	Red	The polite service offered to the Upper Valley.
Lebanon	Red	The service is perfect!
Lebanon	Red	Weekend service even if reduced significantly would be beneficial
Lebanon	Red	Would love a 7:45am route. Lots of people could use it for work. I am so grateful for Advance Transit! The drivers are exceptionally kind people, very helpful and I always feel safe.
Lebanon	Red	Would love weekend transportation. Other than that, every driver is helpful and wonderful. Keep up the GREAT work!! :-)
Other	Red	I appreciate AT providing free transportation to those who need it.
Other	Red	I like Advance Transit bus for their availability. What I can suggest for times and place which are limited- try to revise the hours. This is a suggestion for me. Won't it be possible to drop off the person, for example at Walgreens in West Lebanon to pick up the medicine?
Other	Red	Open windows no sundday days!
Other	Red	Work with other transits more. The Claremont bus comes to Lebanon at 6, 8:40, 10:25, 12:39, 3:24 and 5:08. I have had issues with p.m. bus drivers remaining at the library and making me miss the last Claremont bus. I have also had issues with having to wait for my work to open and being stuck in the cold for over an hour because I'm not allowed to remain on the morning bus for an extra hour until my work opens. I understand that you don't want homeless people hanging out on the bus all day, but I only asked to stay on the bus one day for an hour because it was 29 out and I was refused. i was simply waiting until my work opened. The earlier Claremont bus was the only one that would get me to Lebanon without me being late for work.
West Lebanon	Red	Convenient, free.
West Lebanon	Red	Cushioned seats!
West Lebanon	Red	Fairly convenient and the two drivers for morning that drive red and blue are awesome.
West Lebanon	Red	I like that it is easy and convenient to use as well as being FREE. Thank you for ALL that ALL of you do! :-)
West Lebanon	Red	I would like to see the bus run on the weekend and to run later.
West Lebanon	Red	It's good that the buses are usually quiet.
West Lebanon	Red	It's simple and accessible. Maybe hiring daily cleaners.
West Lebanon	Red	Make an extra route to Canaan during the early afternoon.
West Lebanon	Red	None
West Lebanon	Red	The fact that it is free is incredible, as most places it is not. Thank you for the service.



WRJ	Red	Attitudes of some drivers are horrible-kick people off for no reason because they are having a bad day. The lady red bus driver is excellent.
WRJ	Red	I like that they help me to get to work and places i need to get it and it helps out a lot. Also that its free.
WRJ	Red	Their quick and easy services.
Hartford Vill	Yellow	Yes so glad to have it. I'd be walking if it wasn't for the bus.

