

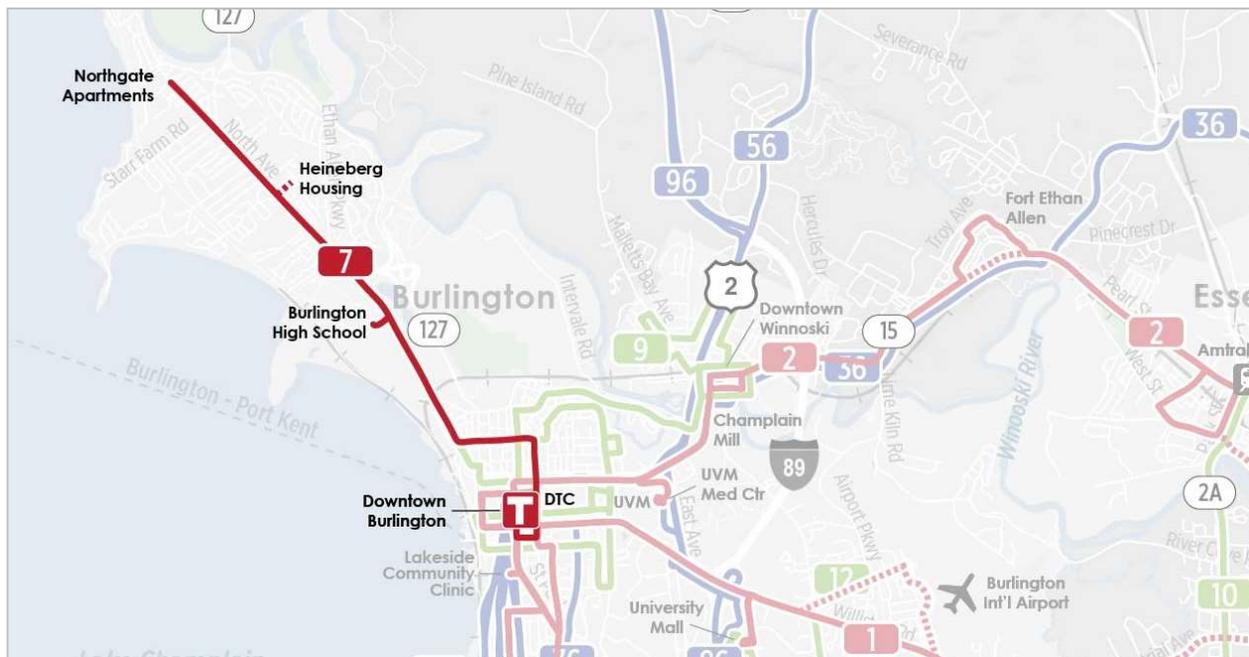
# ROUTE 7

## North Avenue

### ROUTE OVERVIEW

Route 7 is a Major Local route that operates between Downtown Burlington and Northgate Apartments. The route travels primarily along North Avenue (see Figure 1). Route 7 provides service to Burlington High School, Ethan Allen Shopping Center, and multiple housing complexes. Customers can transfer between Route 7 and other services at the Downtown Transfer Center (DTC).

**Figure 1: Route Map**



On weekdays, Route 7 operates from 5:35 AM to 10:15 PM, every 15 minutes during peak periods, every 30 minutes during the midday, and every 60 to 75 minutes during the evening (see **Error! Reference source not found..** On Saturdays, service operates from 6:15 AM to 7:55 PM, every 60 minutes early and late, and every 30 minutes for most of the day. No Sunday service is provided.

**Table 1: Schedule Statistics**

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (MIN)	DAILY TRIPS (OUTBOUND/INBOUND)
<b>Weekday</b>	5:35 AM to 10:15 PM	30/30/60-75	34/34
<b>Saturday</b>	6:15 AM to 7:55 PM	30-60/30-60	23/23
<b>Sunday</b>	—	—	—/—

Peak frequencies are calculated for service between 6:00 am – 9:00 am & 3:00 pm – 6:00 pm. Midday service is from 9:00 am – 3:00 pm. Evening service is for service after 6:00 pm. Saturday and Sunday frequencies are shown as AM/PM.

Route 7 operates with three variants on both weekdays and Saturdays (see Table 2). The primary alignment (7-12 outbound and 7-10 inbound) runs from the DTC to the Northgate Apartments. Variant 7-13 operates outbound via the Heineberg Senior Housing complex. In addition, and although not considered a separate variant, on weekdays, the 8:15 AM Variant 7-12 trip pulls into Burlington High School rather than serving it via the regular stop on North Avenue.

**Table 2: Service Patterns**

PATTERN	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER DAY		
				WKD	SAT	SUN
<b>OUTBOUND</b>				<b>34</b>	<b>23</b>	<b>—</b>
7-12	DTC	Northgate	Regular alignments	18	8	—
7-13	DTC	Northgate	Via Heineberg	16	15	—
<b>INBOUND</b>				<b>34</b>	<b>23</b>	<b>—</b>
7-10	Northgate	DTC	Regular alignment	34	23	—

## RIDERSHIP BY STOP

### Weekdays

The Downtown Transfer Center has the most passenger activity on Route 7. Other high activity stops on Route 7 are the Northgate Apartments, Burlington High School, and the Ethan Allen Shopping Center. The two paired stops at Burlington High School have just over 80 boardings per weekday, while the Ethan Allen Shopping Center has just under 70 boardings. Most other stops have about 10-30 boardings per day. These other stops serve mostly residential areas in both the Old North End and the New North End. As expected, there is little ridership in the low density section of North Avenue between Berry Street and Killarney Drive (see Figure 2).

### Saturdays

Weekend ridership patterns are similar to weekday patterns, but with significantly lower volumes (see Figure 3). After the Downtown Transfer Center, the Ethan Allen Shopping Center is the second highest ridership stop on Saturdays with 46 boardings on an average Saturday. Ridership on Route 7 is much lower partially due to the lack of ridership to the high school on Saturdays.

## RIDERSHIP BY TRIP

### Weekdays

On weekdays, Route 7 ridership is highest during typical commuting peaks in the morning and evening (see Figure 4). During these periods, ridership is typically between 25 and 35 passengers per trip. However, four trips carry more than 40 passengers per trip. The highest ridership is on the 8:15 AM outbound trip (55 passengers), most of whom are high school students traveling to Burlington High School.

Maximum loads are high on a few trips, including the 8:15 AM outbound trip to Burlington High School, with a maximum load of 44 passengers (see Figure 5). The 7:33 AM trip also has a high

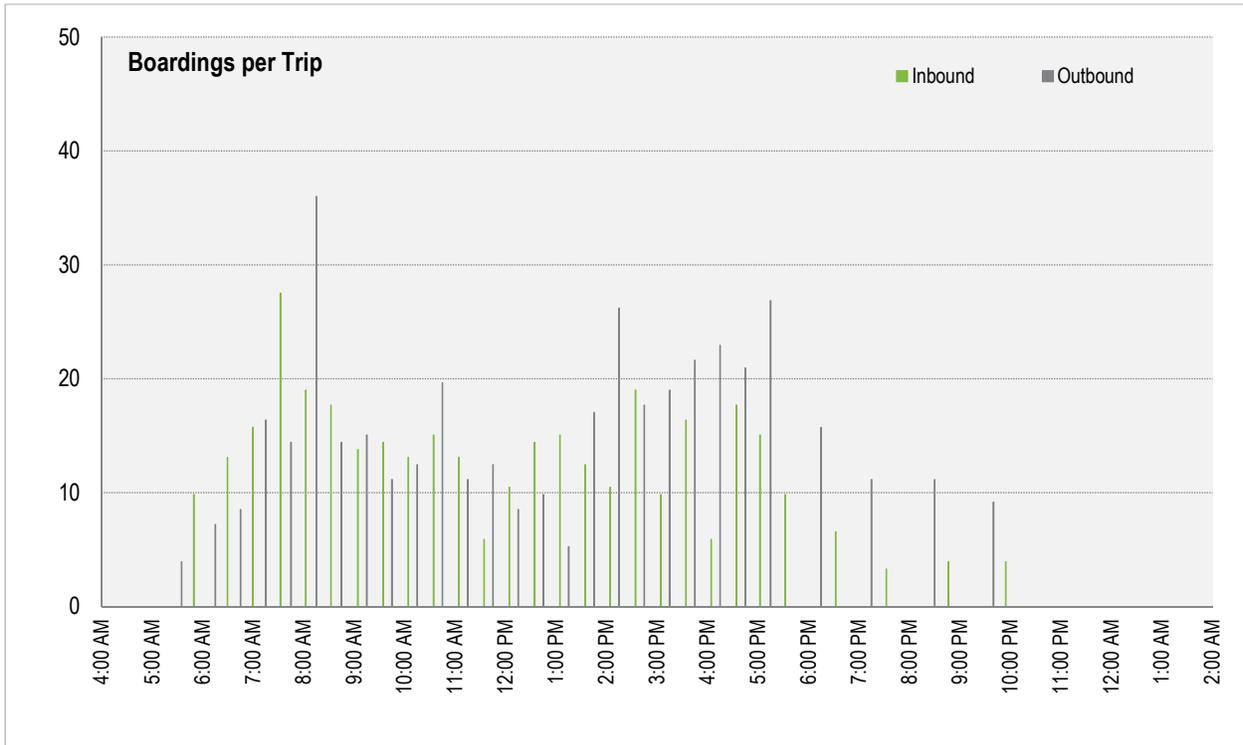
Figure 2: Weekday Inbound Ridership by Stop Map



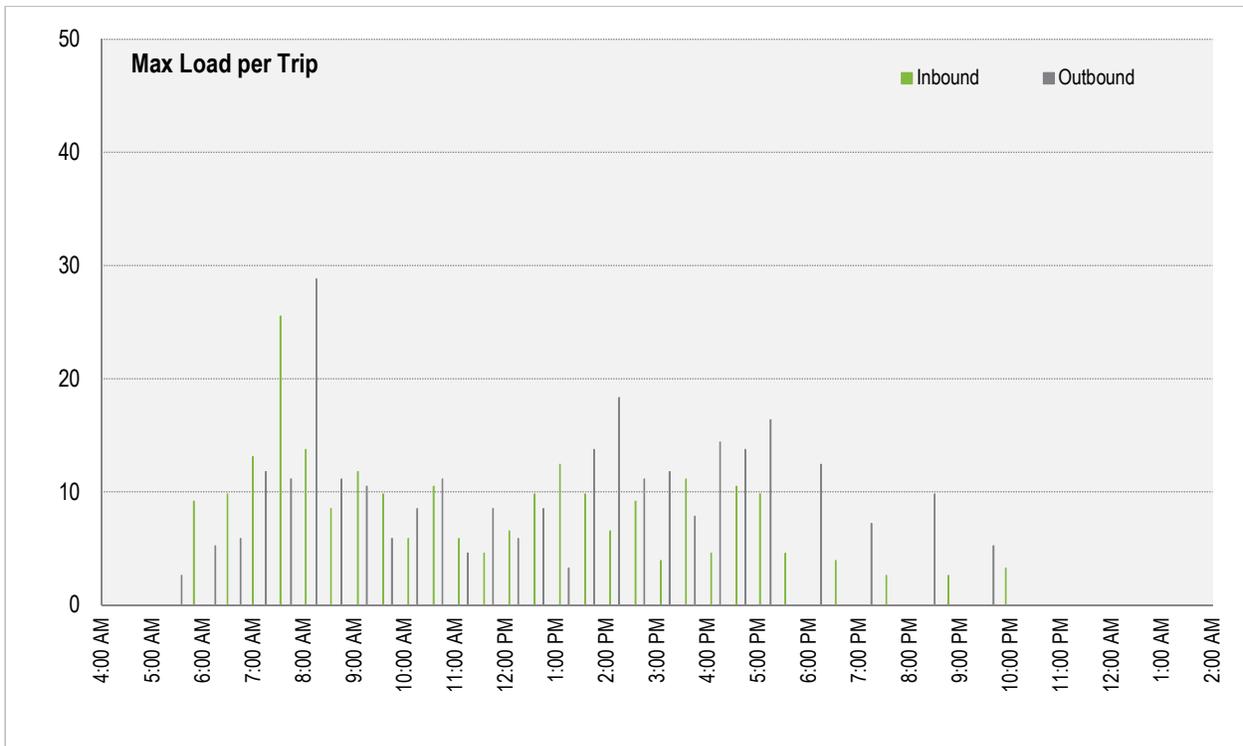
**Figure 3: Saturday Inbound Ridership by Stop Map**



**Figure 4: Weekday Ridership by Trip Chart**



**Figure 5: Weekday Maximum Loads by Trip Chart**

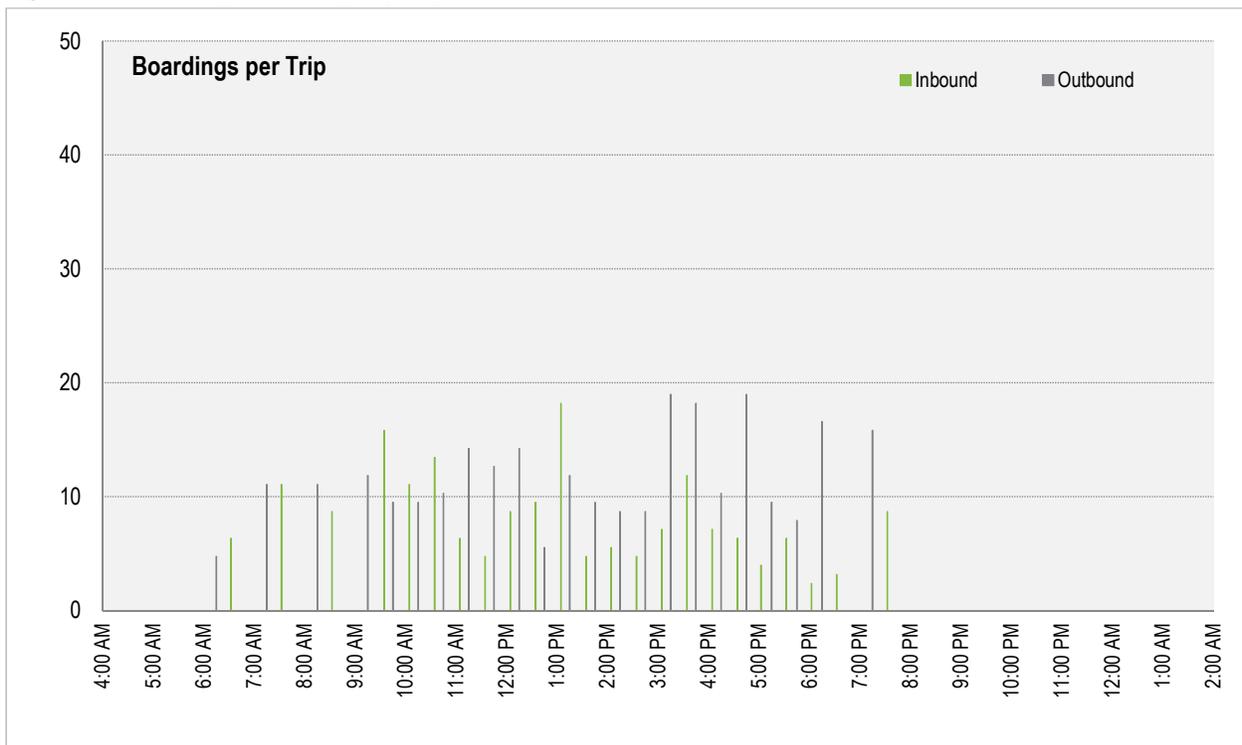


maximum load, at 39. Maximum loads on most trips are relatively close to total ridership, which indicates that most riders travel to and from downtown Burlington.

## Saturdays

On Saturdays, Route 7 ridership is highest inbound during the mid-morning outbound in the evenings (see Figure 6)). The sustained ridership throughout the day is typical for shopping trips or for workers with service jobs or irregular hours. Additionally, ridership in the outbound direction is still relatively high for the last trip on Saturday, possibly indicating demand for later service on Saturday.

**Figure 6: Saturday Ridership by Trip Chart**



Maximum loads are well below seated capacity on all trips.

## SERVICE PRODUCTIVITY

Route 7 ranks 3<sup>rd</sup> of the 4 Major Local routes in the study area in terms of weekday ridership and 1<sup>st</sup> of 4 in terms of ridership per revenue hour (see Table 3). On weekdays the route carries an average of 841 passengers per day, or 33.4 passengers per revenue hour. On Saturdays, Route 7 carries 384 passengers, or 19.5 passengers per revenue hour. Route 7 meets the VTrans thresholds for productivity and effectiveness.

**Table 3: Productivity Statistics**

	WEEKDAY	SATURDAY	SUNDAY
<b>Average Daily Ridership</b>	<b>841</b>	<b>384</b>	—
<b>Pax/Revenue Service Hour</b>	<b>33.4</b>	<b>19.5</b>	—
Major Local Average	26.2	22.2	25.1
<b>Pax/One-Way Trip</b>	<b>14.5</b>	<b>17.5</b>	—
Major Local Average	14.8	15.3	14.7
<b>Pax/Revenue Mile</b>	<b>4.79</b>	<b>2.28</b>	—
VTrans Productivity Threshold	1.95	1.95	1.95
<b>Cost/Passenger</b>	<b>\$1.81</b>	<b>\$3.74</b>	—
VTrans Effectiveness Threshold	\$4.37	\$4.37	\$4.37

Source: Green Mountain Transit, May 2016; VTrans Performance Reviews (2016)

## SERVICE IMPROVEMENT OPTIONS

Opportunities to strengthen Route 7 are listed below. Some suggestions may be contradictory, as there is usually more than one approach to improving a route.

- Operate Weekday Peak Service Every 20 Minutes.** For an hour in the morning peak and an hour and a half in the afternoon peak, the frequency on Route 7 increases from every 30 minutes to every 15 minutes. For more consistency across all peak hours service could be provided at 20 minutes during the peak. 20 minute service would also fit within the 35 minute run time and would allow enough recovery time to have 40 minute cycle times, requiring only 2 buses during peak service.
- Provide More Frequent Weekday Evening Service:** Evening service operates with uneven headways that range from 60 to 75 minutes. Given high ridership during the day, more frequent service would likely be justified until later in the evening. Also, headways above 60 minutes deter all but the most dedicated transit riders, and thus, evening service should operate at least every 60 minutes.
- Extend Saturday Evening Service.** The last two Saturday outbound trips are in the top five highest ridership trips for Saturday service. These trips also have high loads compared to ridership, with people most likely taking trips home. This higher evening ridership indicates a demand for later service on Route 7.
- Provide Sunday Service.** As a Major Local Route with strong weekday and Saturday ridership, there is likely demand for Sunday service.
- Eliminate Heineberg Housing Deviation.** The Heineberg Housing complex is located about one-tenth of a mile, or about a 2 minute walk, from North Avenue and a pair of Route 7 stops (North Ave @ Heineberg Rd and North Ave @ Shore Rd). On an average weekday, 9 passengers board at Heineberg Housing and 21 get off. Since Heineberg is only served in one direction, most of the inbound trips already board on North Avenue at the North Ave @ Shore Rd stop, which has 15 daily boardings. Not serving the front door of Heineberg Housing complex will simplify Route 7 schedules and alignment. This change easier to understand and faster for through passengers.
- Extend Service to Malletts Bay/Colchester Shopping Plaza.** During the midday, buses have long layover times (20 minutes out of a total of 60 minutes for each round trip,

which is not efficient. Some of this time could be used to extend service to the Colchester Shopping Plaza,