

ROUTE 9

Riverside-Winooski

ROUTE OVERVIEW

Route 9 is an Urban Local route that operates between downtown Burlington and Winooski. The route travels primarily along Elmwood Avenue and Riverside Avenue in Burlington, and circulates along local streets in Winooski (see Figure 1). The route provides service to Burlington's Old North End neighborhood, Riverside Avenue, downtown Winooski, Community College of Vermont, and housing and retail across Winooski. Riders can transfer between Route 9 Route 2 Essex Junction, Route 36 Jeffersonville Commuter, and Route 56 Milton Commuter at Champlain Mill and with other downtown routes at the Downtown Transit Center (DTC).

Figure 1: Route Map



On weekdays, Route 9 operates from 6:45 AM to 7:05 AM, every 30 minutes during peak periods and every 60 minutes during the midday (see Table 1). In addition, there is also a late night round trip that departs from the DTC at 11:25 PM that operates to Weaver Street and Tigan Street in Winooski and back to the DTC [what is the purpose of this trip?]. On Saturdays, service operates from 6:15 AM to 7:00 PM, every 60 minutes throughout the day. No Sunday service is provided.

Table 1: Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (MIN)	DAILY TRIPS (OUTBOUND/INBOUND)
Monday-Friday	6:45 AM to 7:05 PM	30/60/—	18/18
	11:25 PM to 11:52PM	1 round trip	1/1
Saturday	6:15 AM to 7:00 PM	60/60	13/13
Sunday	—	—	—

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 9 is complex and has seven service variants: all operate on weekdays and five operate on Saturdays (see Table 2). On weekdays, the primary alignment (9-16 outbound and 9-11 inbound) runs from the DTC to Champlain Mill at Winooski Falls Way, then completes a counterclockwise loop through Winooski via 83 Barlow Street, Main Street, and Weaver Street, and then travels back to Champlain Mill and the DTC in the reverse of the outbound alignment. Five outbound trips (Variant 9-19) serve the Courtyard apartments instead of 83 Barlow, and two trips (9-17 outbound and 9-12 inbound) short turn at Champlain Mill and return directly to the DTC. Variants 9-10 and 9-18 are used for the weekday late-night round trip. Variant 9-10 operates to the outer end of the route without serving either 83 Barlow or the Courtyard, and Variant 9-18 is the fastest way back to Burlington that operates via Colchester Avenue and Pearl Street. Overall, there is no clear pattern to how variant trips are scheduled.

Table 2: Service Variants

VARIANT	ORIGIN	DESTINATION	UNIQUE FEATURE	TRIPS PER DAY		
				WKD	SAT	SUN
OUTBOUND				19	13	—
9-16	DTC	Weaver St at Tigan St	Via 83 Barlow	11	3	—
9-19	DTC	Weaver St at Tigan St	Via Courtyard	5	6	—
9-17	DTC	Champlain Mill	Short turns and skips loop through Winooski	2	4	—
9-10	DTC	Weaver St at Tigan St	Skips both Courtyard and 83 Barlow	1	0	—
INBOUND				19	13	—
9-11	Weaver St at Tigan St	DTC		16	9	—
9-12	Champlain Mill	DTC		2	4	—
9-18	Weaver St at Tigan St	DTC	To DTC via Main St and Colchester Ave	1	0	—

On Saturdays, morning trips alternate between short turning at Champlain Mill (9-17 outbound and 9-12 inbound) and serving the Courtyard stop (9-19 outbound and 9-11 inbound). In the afternoon, trips alternate between serving Courtyard and 83 Barlow Street.

RIDERSHIP

Route 9 carries 509 passengers per weekday and 255 on Saturdays. By weekday ridership, it ranks second out of GMT's eight Urban Local routes.

Ridership by Stop

Weekdays

As with most Burlington routes, most ridership is to and from the DTC, which is Route 9's highest ridership stop (see Figure 2). Other high ridership stops are Champlain Mill in Winooski and the

Figure 2: Weekday Inbound Ridership by Stop

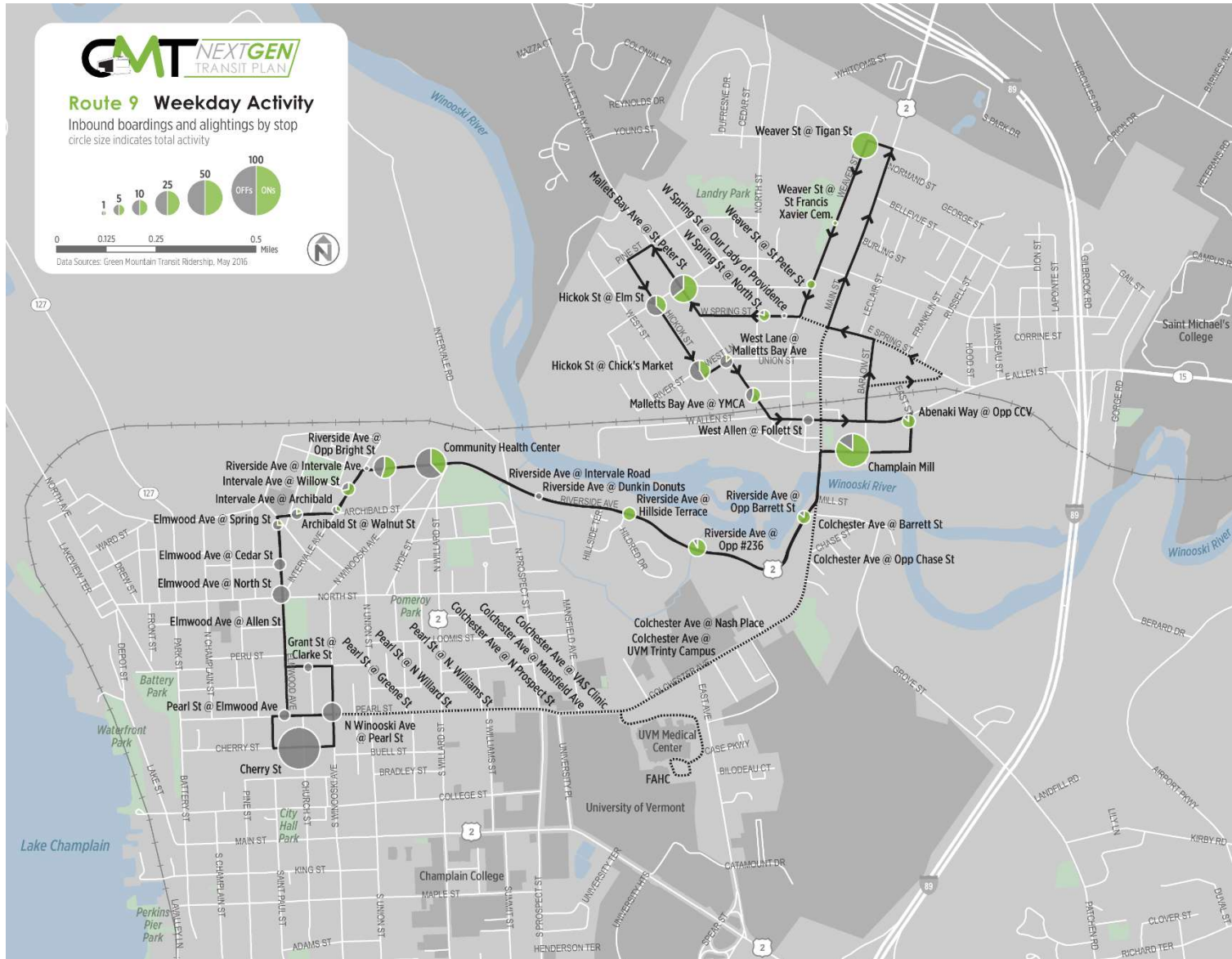
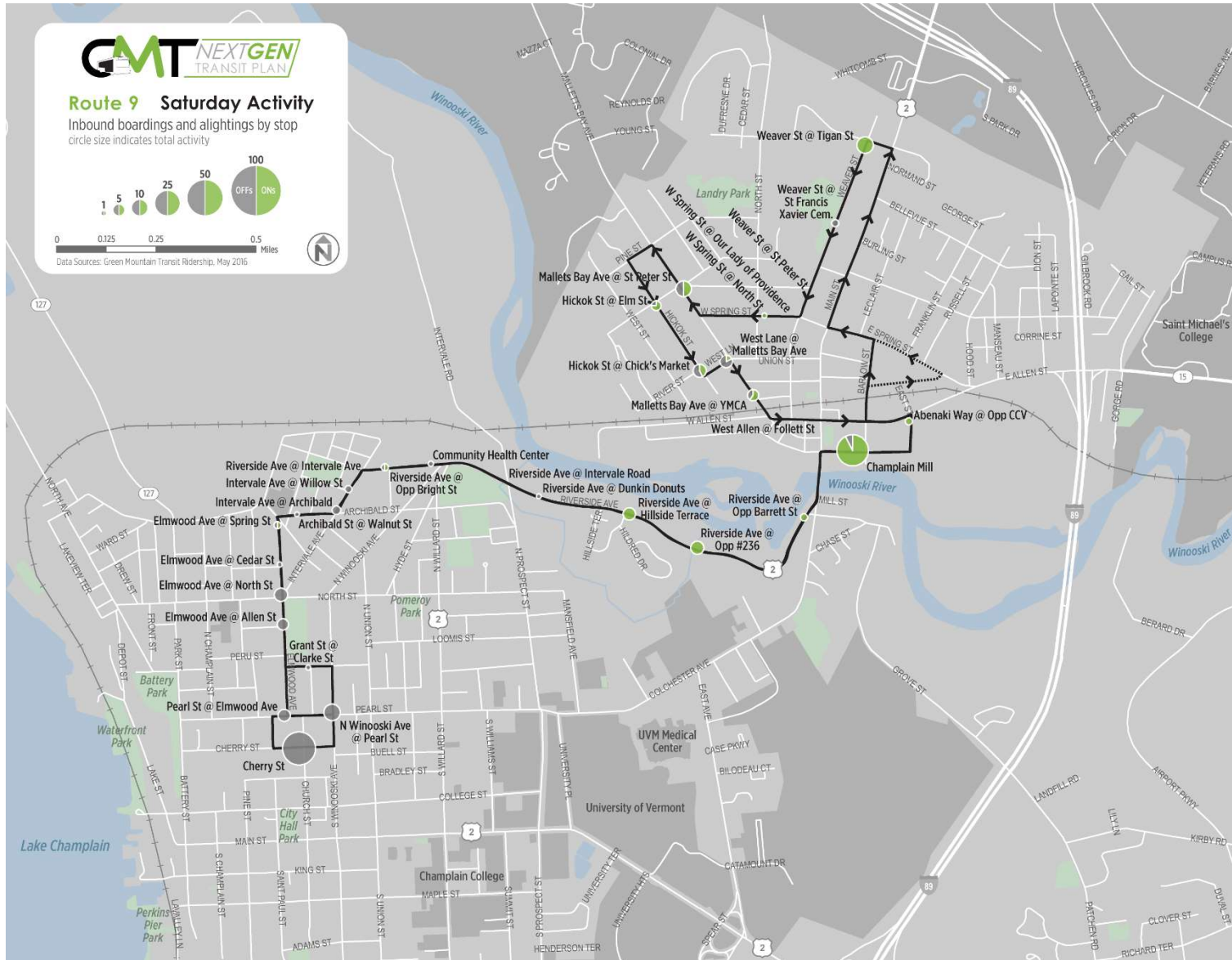


Figure 3: Saturday Inbound Ridership by Stop



Riverside Community Health Center in Burlington, both of which have over 50 boardings and alightings. Other stops with more than 20 boardings and alightings include:

- Mallets Bay Avenue at Saint Peter Street, Hickok Street at both Elm Street and Chick's Market, which serve residential areas in Winooski
- Riverside Avenue at Bright Street, which serves Burlington's Old North End.

The Courtyard deviation serves a total of three boardings and one alighting.

Saturdays

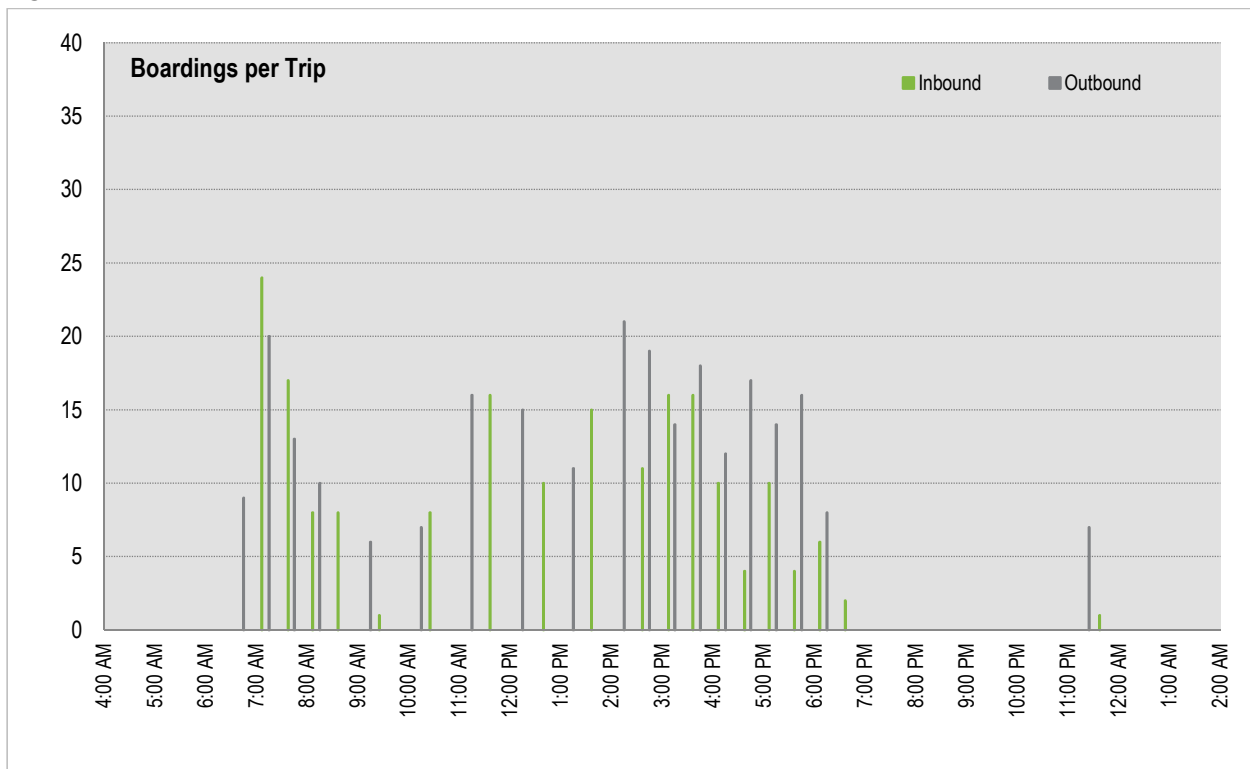
Saturday ridership is much more focused around fewer stops. The DTC and Champlain Mill have approximately 60 boardings/alightings each (see Figure 3, above). Weaver Street at Tigan Street and Mallets Bay Avenue at St. Peter Street both have at least 15 boardings or alightings. Ridership dwindles along most of Riverside Avenue in the Old North End.

Ridership by Trip

Weekdays

On weekdays, Route 9's ridership is highest in the morning between 7:00 and 8:00 AM, with strong ridership in both directions, and in the afternoon between 2:00 and 6:00 PM, with higher ridership outbound (see Figure 4). During these periods, ridership generally exceeds 15 passengers per trip, and one morning inbound trip and one afternoon outbound trip carry more than 20 passengers. Late morning trips, which operate to and from Champlain Mills, carry fewer riders, in part due to the shorter route length. Outbound ridership is relatively high after 4:30 PM,

Figure 4: Weekday Ridership by Trip



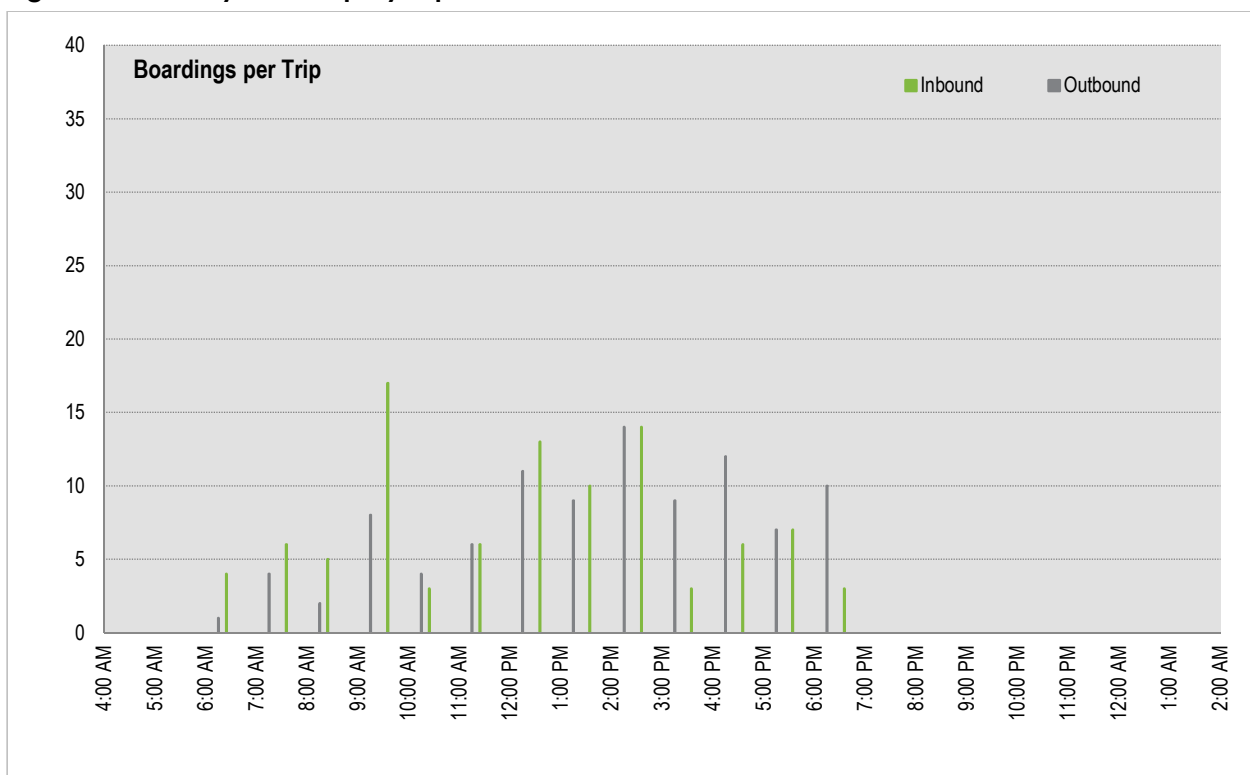
but inbound ridership is low, at fewer than five boardings per trip. The outbound trip at 11:25 PM carries seven passengers and its inbound counterpart one.

Except for two morning trips, the maximum load on Route 9 never exceeds 15 passengers.

Saturdays

Saturday ridership per trip is low before 9:00 AM, at six or fewer passengers per trip, but then increases to an average of more than 10 passengers per trip (see Figure 5). As on weekdays, trips with lower ridership are those that short-turn at Champlain Mill instead of circulating through Winooski. Conversely, the highest ridership trip is the 9:36 AM trip that is the last to circulate through Winooski until noon.

Figure 5: Saturday Ridership by Trip



Except for one trip in the afternoon with a maximum load of 12 boardings, no Saturday trip exceeds a maximum load of 10 passengers.

SERVICE PRODUCTIVITY

Route 9 performs well. It ranks second of GMT's eight Urban Local routes in terms of weekday ridership and first in terms of ridership per revenue hour (see Table 3). On weekdays, the route carries an average of 509 passengers per day, or 34.9 passengers per revenue hour, well above the average for Urban Local routes. On Saturdays, Route 9 carries 255 passengers, or 30.2 passengers per revenue hour. Route 9 significantly exceeds the VTrans thresholds for productivity and effectiveness.

Table 3: Productivity Statistics

	MONDAY-FRIDAY	SATURDAY	SUNDAY
Average Daily Ridership	509	255	—
Pax/Revenue Service Hour	34.9	30.2	—
Urban Local Average	21.9	13.8	14.4
Pax/One-Way Trip	13.4	9.8	—
Urban Local Average	6.9	4.0	12.9
Pax/Revenue Mile	2.7	2.2	—
VTrans Productivity Threshold	1.95	1.95	1.95
Cost/Passenger	\$2.46	\$3.28	—
VTrans Effectiveness Threshold	\$4.37	\$4.37	\$4.37

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

SERVICE IMPROVEMENT OPTIONS

Route 9 is a strong but overly complicated route, and opportunities to improve and strengthen it are listed below. Some suggestions may be contradictory, as there is usually more than one approach to improving a route.

- Operate All Trips Along Full Alignment:** Most trips provide service along the full loop through Winooski, but many do not. There is no clear pattern for which trips provide full service and which do not, which is confusing and inconvenient for passengers. There is also a three hour gap in service to the full loop on weekdays between approximately 8:30 and 11:30 AM. The route's performance is strong, and the operation of all trips along the full loop would greatly improve service to riders beyond Champlain Mill.
- Simplify Service:** Route 9's schedule is complex and service operates with seven different variants with no clear patterns on which locations are served at which time. As described above, one potential change would be to operate all service the entire length of the line. The route could be further simplified by consistently alternating trips between 83 Barlow and the Courtyard.
- Start Weekday Service Earlier:** The highest ridership trip on Route 9 is the first trip, which arrives at the DTC at 7:32 AM and carries an average of 24 passengers. For connecting passengers, this is also too late for many work start times. High ridership on this first trip indicates likely demand for earlier service.
- Simplify Alignment through Winooski:** Route 9 operates as a large one-way loop through Winooski before returning to Champlain Mill, which is scheduled to take 20-25 minutes to complete. Due to the local road network and the distribution of key destinations, there are limited options for simplifying this alignment. However, the loop could be streamlined by turning right from Weaver Street onto St. Peter Street instead of W Spring Street, still serving existing riders and expanding coverage one block north. The route could also then turn left on Elm Street instead of Pine Street since there is no ridership past the St. Peter Street and Elm Street stops (however, left-turn restrictions for trucks onto Elm may preclude this).
- Discontinue Courtyard Variant:** Courtyard variant service serves only seven boardings and three alightings per weekday and complicates the route and is only a three minute

mostly flat walk to the closest regular stop on Barlow Street. The elimination of this variant would simplify service while still serving existing riders at a nearby stop.

- **Reassess the Need for the Late Weekday Route Trip:** Route 9's late evening route round trip (that departs at 11:25 PM) is a hybrid of Route 2 Essex Junction and Route 9. The operation of this trip should be reassessed to determine how to provide service that is more consistent with the overall route network.