



Equity Analysis for Service Changes Effective Fall 2017

**UPDATE
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Prepared by the
Pioneer Valley
Planning Commission
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Summary

This document is an updated version of the Title VI Service Equity Analysis for 15 major service changes received by the PVTA Advisory Board on July 19, 2017 and implemented August 27 and September 3-5, 2017. This analysis is required by federal civil rights laws and regulations, as well as PVTA's policies for major service changes.

The PVTA Advisory Board on May 24, 2017 directed staff to hold public hearings for 22 possible bus service changes, most of which qualified as "major service changes" (alterations of 25% or more of a route or timetable). PVTA staff held 11 public hearings (each with a separate afternoon and evening session), two public meetings of the Route and Finance Subcommittees, and a 45-day public comment period during which approximately 600 people gave more than 1,500 individual comments. These comments were presented verbatim, along with a summaries of key common concerns, to the Advisory Board for consideration on July 12, 2017 along with additional technical and financial, as well as a preliminary draft of this Title VI Service Equity Analysis (dated July 12, 2017). On July 19, 2017, after considering these public comments, receiving additional in-person comments from the public, and being briefed on the disparate impact and disproportionate burdens analyses in the draft Title VI Service Equity Analysis, the Board voted to implement 7 of the 22 changes as originally proposed; implement 8 others with modifications suggested by the public and staff; and not implement the remaining 7 changes. See Figure S-1 on the next page for a summary of the Advisory Board's final action on each of the 22 original service change options. A final version of the Title VI Service Equity Analysis could not be presented at that time, however, because the status of approximately \$1 million in operating funds that would be used in part for mitigation of impacts on some routes was unknown at the time.

No changes to PVTA's fares and fare policies were proposed or considered as part of these proposals.

Changes to PVTA service were necessary to balance the authority's FY2018 budget, which began July 1, 2017. While the PVTA Advisory Board is required to adopt a balanced budget prior to the start of each fiscal year, the amount of funds available to the authority for FY2018 was not known until late July 2017—nearly one month after the Advisory Board was obligated to approve the annual budget.

As of this date (December 18, 2017), the status of outstanding FY2018 operating funding issues is as follows: 1) PVTA's share of FY2018 state contract assistance was established at \$23.6 million by legislative action on October 19, 2017; 2) a \$400,000 CMAQ grant to operate the P21E route for one year was approved and was available to PVTA as of October 1, 2017; and 3) PVTA continues to negotiate with MassDOT for access to approximately \$400,000 in RTA restricted reserve funds. Since the start of FY2018 on July 1, 2017, PVTA's FY2018 deficit has been reduced to approximately \$300,000 through additional administrative austerity measures, a hiring freeze, and efficiencies achieved with the 15 approved major service reductions. If the continued austerity measures and service reductions do not fully eliminate the deficit by the end of FY2018, then the remainder may be carried over to FY2019.

The 22 initial service change possibilities were developed by screening all 46 PVTA bus routes with respect to ridership, operating costs, impacts on customers of color and low incomes, and the availability of substitute transit service. The overall goal was to affect the fewest number of riders possible while still achieving the immediate and necessary business purpose of balancing the FY2018 operating budget.

Figure S-1: Service Change Options Proposed and Implementation Status

Service Change Option	Route	Service Change (as proposed May 24, 2017)	Major Service Change?	Implemented as Proposed	Implemented with Modifications	Not Implemented
1	M40	Eliminate route	✓		✓	
2	M40	Eliminate Saturday service	✓	✓		
3	P20E	Eliminate route	✓	✓		
4	P20E	Eliminate Saturday service	✓			✓
5	P21E	Eliminate route	✓			✓
6	P21E	Eliminate Saturday + Sunday service	✓			✓
7	39	Eliminate route	✓			✓
8	39	Eliminate Saturday + Sunday service	✓			✓
9	46	Eliminate trips to Whately and South Deerfield	✓		✓	
10	G5	Eliminate trips to Enfield CT and south Longmeadow			✓	
11	X98	Eliminate route	✓		✓	
12	Tiger Tr.	Eliminate route	✓	✓		
13	R14E	Eliminate route	✓		✓	
14	R27	Eliminate route	✓		✓	
15	B23	Eliminate Saturday service	✓	✓		
16	R29	Eliminate Saturday + Sunday service	✓		✓	
17	B48	Reduce Saturday frequency from 30 to 60 min	✓	✓		
18	B4	Eliminate first 3 weekday morning trips; first 2 Saturday morning trips; last 2.5 Sunday evening trips			✓	
19	X90	Eliminate first 2 early morning trips		✓		
20	X90	Eliminate Sunday service north of Memorial Dr	✓	✓		
21	34 CS	Eliminate trips after 8:00PM on weekdays				✓
22	35 CS	Eliminate trips before 5:00PM on Sat+Sun+Holidays	✓			✓

Of the 15 service changes that were implemented, four (Options 9, 10, 18, and 19) do not meet PVTA's definition of a "major service change" (25% or greater change in route miles or trips on day of service), either before or after mitigation measures were added.

The remaining 11 service changes that were implemented did meet the definition of a "major service change" and therefore were evaluated for disparate (racial discrimination) impacts and disproportionate (income discrimination) impacts, as well as whether or not the proposed service change was the least discriminatory alternative available. In summary:

- 7 of the 11 major service changes had disparate (race discrimination) impacts that exceeded the 20% threshold for customers affected and therefore require mitigation.
- 5 of the 11 major service changes had disproportionate (low income discrimination) impacts that exceeded 20% threshold for customer affected and therefore require mitigation.
- 2 of the 11 major service changes had both disparate and disproportionate impacts exceeding the 20% threshold for race and income discrimination.

Numerous mitigation measures and modifications to the service change proposals were developed and incorporated in response to public comments received. Figure S-4 presents the systemwide Title VI impacts that would have occurred if the most severe of the original 22 service change options had been implemented without mitigation, as compared to the Title VI impacts that actually did occur when the 12 major service changes were implemented with mitigation.

This evaluation of the equity impacts of the major service changes as modified and implemented is that:

- All 11 of the major service changes that were implemented are the least discriminatory alternatives available to PVTA to meet the necessary business purpose of balancing the FY2018 operating budget.
- 5 of the 11 major service changes implemented involve adverse impacts that are sufficiently mitigated and are therefore consistent with the PVTA's Disparate and Disproportionate Impacts policy that the variance between persons considered Title VI population (minority and low-income) and those who are not considered to be among these Title VI populations does not exceed 20%.
- 4 of the 11 service changes implemented involve adverse impacts for which the proposed mitigation and modifications still affect proportions of customers of color and/or low income that exceed the PVTA policy threshold of 20%. In these cases, this analysis finds that while they are discriminatory, PVTA has made all possible modifications within the existing FY2018 operating budget to minimize the loss of service to Title VI populations; there are no less discriminatory alternatives available in the travel corridor; and there are no other alternatives available that will fulfill the legitimate objective of balancing PVTA's FY2018 operating budget with less disparate or disproportionate effects to customers on the basis of race, color, or national origin.

This finding is allowed by 49 CFR part 21 and Title VI case law which state that if [a federal grantee's] otherwise facially neutral program, policy, or activity will have a discriminatory impact on minority populations, that program, policy, or activity may only be carried out if:

- 1) The recipient can demonstrate a substantial legitimate justification for the program, policy, or activity;
- 2) There are no comparably effective alternative practices that would result in less disparate impacts; and
- 3) The justification for the program, policy or activity is not a pretext for discrimination. It is the conclusion of this equity analysis that these four discriminatory major service changes meet these conditions.

Fig. S-2: Summary of Service Change Proposal Modifications and Mitigation Made in Response to Public Comments

Option	Route	Original Service Change Proposal as Presented in Public Hearings	Modified and Approved Service Change and Mitigation (if any) Based on Public Comments ¹
1	M40	Eliminate route	Modify Route B43 so that 9 of its 48 weekday trips run as one-way express between Sheldon Field and Haigis Mall (3 eastbound; 6 westbound). Add 2 additional B43 round trips that run express in both directions between Sheldon Field and Haigis Mall (one at 8:15AM, and one at 3:45PM).
2	M40	Eliminate Saturday service	Encourage use of alternate B43 service available during same hours.
3	P20E	Eliminate route	Encourage use of alternate P20 service; distribute 7-day pass at no cost to former P20E customers.
4	P20E	Eliminate Saturday service	Retain P20E Saturday express service as it currently operates (no service change).
5	P21E	Eliminate route	Obtained CMAQ grant to operate service for one year.
6	P21E	Eliminate Saturday + Sunday service	Obtained CMAQ grant to operate service for one year.
7	39	Eliminate route	Retain route (no service change).
8	39	Eliminate Saturday + Sunday service	Retain route (no service change).
9	46	Eliminate trips to Whately and South Deerfield	Retain 4 of 6 trips per weekday (2 in morning peak; 2 in afternoon peak).
10	G5	Eliminate trips south of Jewish Home	Retain 4 of the 8 existing trips on weekdays south of Jewish Home (2 in morning peak; 2 in afternoon peak)
11	X98	Eliminate route	Retain 3 of 10 trips per weekday to Survival Center during food distribution. Re-route R44 to to Jackson and Barrett Streets. Distribute 7-day pass to former X98 customers.
12	Tiger Tr.	Eliminate route	Encourage use of alternate service available on R29, X90, R24, 38. Distribute one 7-day pass at no cost to former riders. Ask Mt. Holyoke College to resume food shopping van.
13	R14E	Eliminate route	Revise Route 14 to serve Heritage Nursing Home and Agawam Industrial Park. Coordinate trips with shift times. Distribute 7-day pass at no cost to former R14E customers.
14	R27	Eliminate route	Add the 3 former R27 trips to Wilbraham to the B17 schedule (no loss of trips).
15	B23	Eliminate Saturday service	Encourage use of alternate service via R10, P20, and R41. Distribute up to four 1-day passes on Saturdays to former B23 customers.
16	R29	Eliminate Saturday + Sunday service	Retain 2 trips per day (one at 7:30AM, one at 5:30PM).
17	B48	Reduce Saturday frequency from 30 to 60 min	Provide customer info about reduced frequency on Saturdays. No reduction in span of service.
18	B4	Eliminate first 3 weekday morning trips; first 2 Saturday morning trips; last 2.5 Sunday evening trips	Retain first 3 weekday morning trips as inbound only; retain first 3 Saturday morning trips as inbound only; retain last 2 Sunday evening trips as outbound only.
19	X90	Eliminate first 2 early morning trips	Encourage use of partial alternate service available via Routes G1, P20, P21, and P21E. Obtain funds to continue operating P21E.
20	X90	Eliminate Sunday service north of Memorial Dr	Retain 2 Sunday trips on Route R29 as alternate. Provide customer info about service via Routes G1, P20, P21 and P21E. Obtain funds to operate P21E on Sundays.
21	34 CS	Eliminate trips after 8:00PM on weekdays	Retain all trips (make no service change).
22	35 CS	Eliminate trips before 5:00PM on Sat+Sun+Holidays	Retain all trips (make no service change).
			¹ As approved by PVTA Advisory Board July 19, 2017 and modified by staff for implementation

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Systemwide Title VI Service Equity Analysis

This section presents the cumulative Title VI impacts of the service changes on the entire PVTA system by comparing the level of service as it existed before and after the service changes and accompanying mitigation measures were implemented.

Following is a description of the data sources and method used for this full system analysis. Individual descriptions and analyses of the service changes and mitigation for each route are presented in Section 4.

Data Sources

Revenue Miles Per Year By Route: Annual revenue miles by route for FY2017 data was obtained from PVTA's Finance Department, which receives and verifies this information from PVTA's bus and van operating companies. These are the number of miles where the bus is in service and is available to passengers, which was determined to be the most relevant measure for level of service for a systemwide evaluation because it better reflects, from the customers' perspective, both the frequency and coverage of service availability. Deadhead miles (the distance the bus travels to and from the beginning and end of the revenue service portion of its route) are excluded.

Bus Trips Per Week By Route: This information was obtained from PVTA's Google Transit Feed Specification (GTFS) files from from May 1, 2017 (before any changes were implemented) and were cross-checked and corrected as necessary to be consistent with the printed schedules that are made available to the public. This information reflects PVTA at "full service" when all academic institutions are in session. (No changes were proposed that would affect bus routes with reduced service during non-academic periods, so those schedules were not included in this data set.)

Customer Demographics: The racial and income data used for disparate and disproportionate impact analysis is from the onboard customer surveys of 2,714 PVTA riders conducted and reported in 2015 and 2016 by the Pioneer Valley Planning Commission. The survey population was sampled by route in proportion to typical ridership relative to other bus routes.

Method

1. Baseline levels of service and rider income and race demographics were established for each route.
 - Bus trips per week were established using the GTFS and printed schedule information above for a period during the academic year when all PVTA routes are at full service. Trips on weekdays, Saturdays, and Sundays were tabulated separately and summed. Late night service and other trips that occur on only certain days of the week were also tabulated and added to the total for the week.
 - The number of revenue miles per year for each route was established.
 - The proportions of riders on each route who are persons of color ("minority" according to federal guidance) and low-income (earning less than the federal poverty level in 2016, which was \$12,770 per year for an individual) was established using the 2015-2016 rider survey proportions of people in these categories for each route.
2. The impacts of the service changes that were implemented were calculated for each route.
 - The number of bus trips per week was adjusted up or down based on the approved service change and any accompanying mitigation to add back service. In the cases of the M40, R14E,

and R27, even though all the trips on these routes were eliminated, new bus trips were added to other routes (B43, R14, and B17) in the same corridor to compensate for the loss of trips.

- The number of trips that were added or subtracted was compared to the original number of trips, and the percentage difference was applied to the FY2017 revenue miles number for each route, thereby establishing the new relative levels of service for each route under the new service plan as “revenue mile-bus trips.”
- The percentage proportions of customers of color and low-income for each route were applied to the number of trips that were added or subtracted from each route by the net service change and mitigation on each route.

3. Assess the differences in people-trips per service day for the entire system.

- Sum the “before” and “after” differences in revenue miles per year by route for the entire system.
- Calculate the total difference in revenue miles per year; total difference in revenue miles per year borne by low-income riders; and total difference in revenue miles per year borne by customers with low incomes.

4. Calculate the difference in adverse impacts from service reductions borne by Title VI versus non-Title VI riders to see if the difference exceeds PVTA’s policy threshold of +20% variance allowed for disparate and disproportionate impacts.

- Compare the difference in the proportion of revenue miles lost borne by low-income riders (earning \$12,770/year or less) versus those who are not considered low income (earning more than \$12,770/year) for individual routes and the system as a whole.
- Compare the difference in the proportion of revenue miles lost borne by minority riders (anyone who is not white) versus those who are not considered white (those who responded to the face question on the survey with anything other than white) for individual routes and the system as a whole.

Systemwide Title VI Service Equity Analysis Results

This summary from Fig. S-3 shows that both the proportions of low-income and minority riders who would be adversely affected by the reduction of service are less than the PVTA’s +20% policy threshold for the variance allowed. In this case, the service changes will adversely affect a smaller proportion of Title VI riders than non-Title VI riders.

		<u>LOW-INCOME</u>	<u>MINORITY</u>
Total Proportion of All Changes Borne By:		39.6%	35.3%
Variance Between Title VI Persons Affected vs. Non-Title VI Persons Affected:		-20.9%	-29.4%
PVTA Impact Variance Thresholds:		20%	20%
OVERALL ASSESSMENT:		COMPLIES	COMPLIES
		WITH TITLE VI	WITH TITLE VI

Fig. S-3: Systemwide Title VI Analysis of Service Change Proposals After Mitigation

ROUTES WITH PROPOSED CHANGES		SERVICE BASELINE				SERVICE CHANGE IMPACTS				DI/DB IMPACTS ANALYSIS								
Option	Route	Bus Trips/Week ¹	FY2017 Revenue Miles/Year	Low Income Proportion of Riders	Minority Proportion of Riders	Bus Trips/Week Eliminated or Added	New Bus Trips/Week Total	# Revenue Miles/Year Eliminated or Added	% Revenue Miles/Year Eliminated or Added	Reduction or Increase in Revenue Miles/Year	Reduction or Increase Borne by Low Income Riders ²	Reduction or Increase Borne by Minority Riders ³	Proportion of Low Income Riders Affected	Proportion of Minority Riders Affected	Title VI vs. non-Title VI Variance?	Does Title VI Impact Exceed Minority +20% Variance?		
1	M40 Minuteman Express	55	29,512	20.0%	30.4%	-55	0	-29,512	-100.0%	-29,512	-5,902	-8,981	20.0%	30.4%	-60.0%	-39.1%		
1	B43 Northampton/Hadley/Amherst ⁴	269	227,417	56.1%	45.3%	8	277	6,763	3.0%	6,763	3,797	3,060	56.1%	45.3%	12.3%	-9.5%		
3	P20E Holyoke Mall Express	58	39,385	49.1%	71.2%	-18	40	-12,223	-31.0%	-12,223	-6,003	-8,703	49.1%	71.2%	-1.8%	42.4%		
5	P21E Holyoke/Springfield Express via I-391	89	76,008	60.4%	85.7%	0	89	0	0.0%	0	0	0	-	-	0.0%	0.0%		
7	39 Smith/Hampshire/Mt Holyoke Colleges	168	90,805	78.6%	46.4%	0	168	0	0.0%	0	0	0	-	-	0.0%	0.0%		
9	46 Whately/South Deerfield/UMass	40	27,354	31.6%	20.0%	-20	20	-13,677	-50.0%	-13,677	-4,319	-2,735	31.6%	20.0%	-36.8%	-60.0%		
10	G5 Dickinson-Jewish Home/Longm'dow/Enfield	98	70,361	48.0%	76.7%	-12	86	-8,616	-12.2%	-8,616	-4,136	-6,606	48.0%	76.7%	-4.0%	53.3%		
11	X98 Northampton Crosstown	60	21,728	66.7%	27.3%	-45	15	-16,296	-75.0%	-16,296	-10,865	-4,444	66.7%	27.3%	33.3%	-45.5%		
12	R52 Tiger Trolley South Hadley	40	48,194	25.0%	25.0%	-40	0	-48,194	-100.0%	-48,194	-12,049	-12,049	25.0%	25.0%	-50.0%	-50.0%		
13	R14E Agawam Ind Pk/Springfield	20	18,157	68.0%	42.9%	-10	10	-9,079	-50.0%	-9,079	-6,173	-3,891	68.0%	42.9%	36.0%	-14.3%		
13	R14 Agawam Feeding Hills/Springfield ⁵	76	73,046	68.0%	42.9%	10	86	9,611	13.2%	9,611	6,536	4,119	68.0%	42.9%	36.0%	-14.3%		
14	B17 Eastfield Mall via Worthington-Wilbrm Rd	99	89,916	55.3%	82.0%	20	119	18,165	20.2%	18,165	10,049	14,895	55.3%	82.0%	10.6%	64.0%		
14	R27 Wilbraham/Eastfld Mall/16 Acres	25	12,699	0.0%	21.5%	-25	0	-12,699	-100.0%	-12,699	0	-2,733	0.0%	21.5%	-100.0%	-57.0%		
15	B23 Holyoke/Westfield via HCC	80	101,122	69.7%	41.7%	-5	75	-6,320	-6.3%	-6,320	-4,405	-2,634	69.7%	41.7%	39.4%	-16.7%		
16	R29 Amherst/Holyoke via Rte 116	49	99,636	70.0%	36.4%	-10	39	-20,334	-20.4%	-20,334	-14,234	-7,406	70.0%	36.4%	40.0%	-27.2%		
17	B48 Northampton/Holyoke	136	131,815	53.3%	40.0%	-10	126	-9,692	-7.4%	-9,692	-5,169	-3,877	53.3%	40.0%	6.7%	-20.0%		
18	B4 Plainfield Street	137	35,778	62.5%	89.3%	-10	127	-2,612	-7.3%	-2,612	-1,632	-2,332	62.5%	89.3%	25.0%	78.6%		
19+20	X90 Springfield/Chicopee/Holyoke Crosstown	213	344,493	60.3%	67.1%	-20	193	-32,347	-9.4%	-32,347	-19,512	-21,718	60.3%	67.1%	20.6%	34.3%		
21	34 Campus Shuttle Northbound	290	62,230	84.0%	42.2%	0	290	0	0.0%	0	0	0	-	-	0.0%	0.0%		
22	35 Campus Shuttle Southbound	303	70,131	85.1%	36.3%	0	303	0	0.0%	0	0	0	-	-	0.0%	0.0%		
All Changes		6,474	5,200,655	61.2%	60.6%	-242	6,232	-187,060	-3.6%	-187,060	-74,016	-66,031	39.6%	35.3%	-20.9%	-29.4%		
															LOW-INCOME	MINORITY		
¹ During academic "full service"																		
² Based on Low Income proportion of riders from 2015-2016 onboard surveys															Total Proportion of All Changes Borne By:		39.6%	35.3%
³ Based on Minority proportion of riders from 2015-2016 onboard surveys															Variance Between Title VI Persons Affected vs. Non-Title VI Persons Affected:		-20.9%	-29.4%
⁴ Trips added to B43 to offset loss of M40															PVTA Impact Variance Thresholds:		20%	20%
⁵ Trips added to R14 to offset loss of R41E															OVERALL ASSESSMENT:		COMPLIES WITH TITLE VI	COMPLIES WITH TITLE VI

1. Conformance with Regulatory Requirements

This analysis has been prepared to comply with the requirements of Title VI of the Civil Rights Act of 1964 in 49 CFR Section 21.5(b)(2), 49 CFR Section 21.5(b)(7), and Appendix C Section 3 to 49 CFR part 21, and in accordance with the guidance in Federal Transit Administration Circular 4702.1B of October 1, 2012 and related guidance to FTA recipients with service areas containing 200,000 or more residents.

Under these regulations and guidelines, PVTA is required to perform a Title VI equity analysis in the course of planning a major service change or any magnitude of change to fare prices or fare media (method of payment) to determine whether proposed service or fare changes would have a discriminatory impact with regard to race, color, income, or national origin. Equity analyses are required regardless of whether proposed changes would be beneficial or detrimental to riders.

This analysis is required and being performed because PVTA is assessing the impacts of 22 different potentially service changes that taken individually or together may qualify as a major service change, and/or may have disparate or disproportionate impacts on PVTA customers of color and/or low-income riders, depending on the service changes that are implemented.

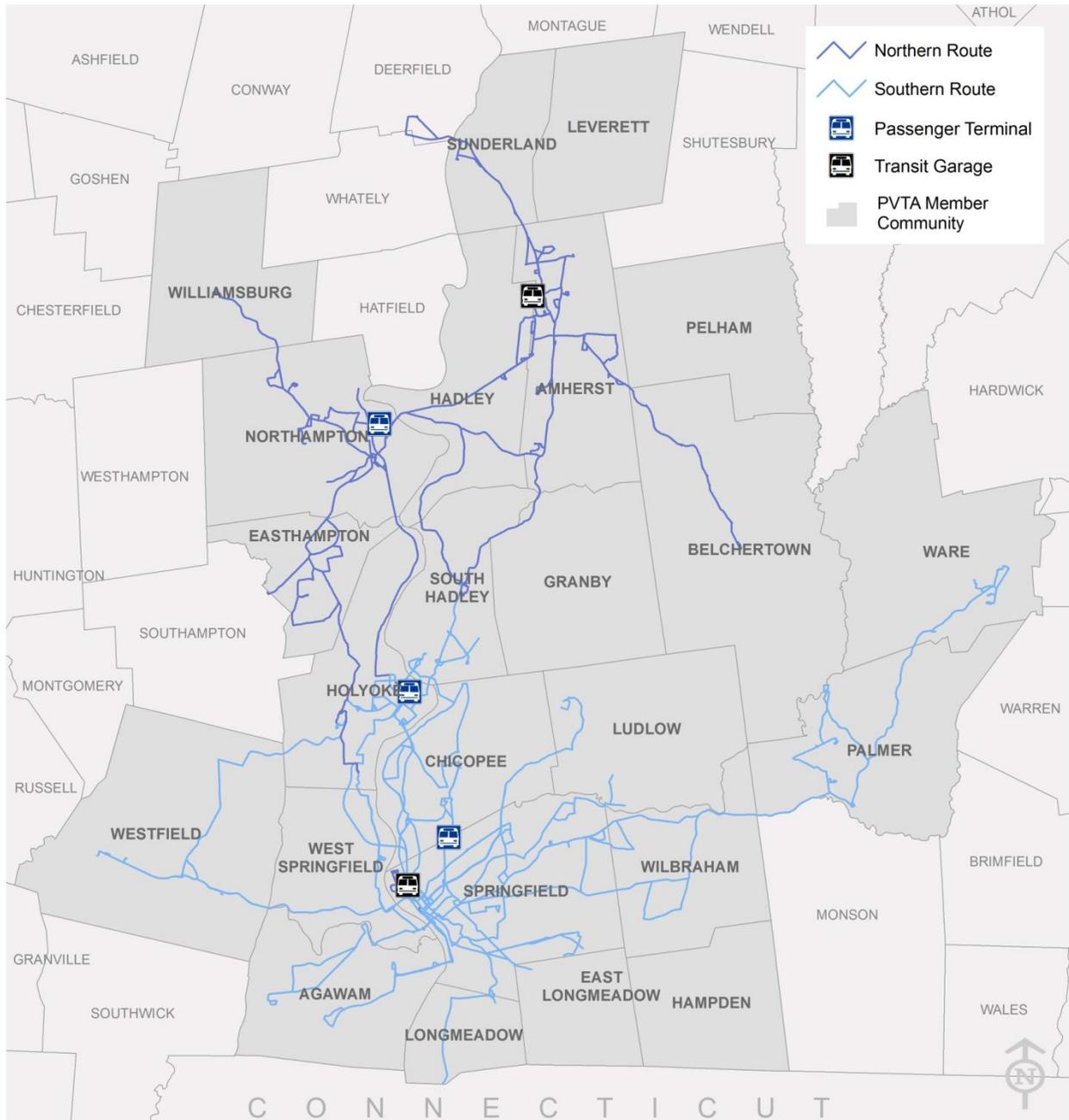
A demographic analysis of PVTA customers who may be affected is required by FTA so that PVTA can determine whether there are adverse or disproportionate burdens on minority or low-income populations and what are the effective and appropriate measures to mitigate those impacts on those transit customers.

A NOTE ON LANGUAGE: PVTA avoids the use of the term “minorities,” which is frequently used in federal documents, to refer people of color or anyone who is not white. This word can be divisive and is therefore not consistent with the intent and purpose of an equity analysis. In fact, the majority of PVTA customers—more than 62%—are people of color. Therefore, this report uses the term “minorities” only when necessary to conform to federal regulations and definitions.

2. PVTA Background Information

The Pioneer Valley Transit Authority (PVTA) serves 24 member communities in Western Massachusetts with a population of 578,218 (ACS 2015 five-year estimates). PVTA is a designated recipient of FTA funds that provides fixed route bus and ADA demand response public transportation to a geographic area measuring approximately 600 square miles that contains the Cities of Springfield, Chicopee, and Holyoke; the Five Colleges area of Northampton and Amherst, including more than 30,000 students and employees at the University of Massachusetts Amherst; and outlying suburban and rural communities.

Fig. 2-1: PVTA Service Area

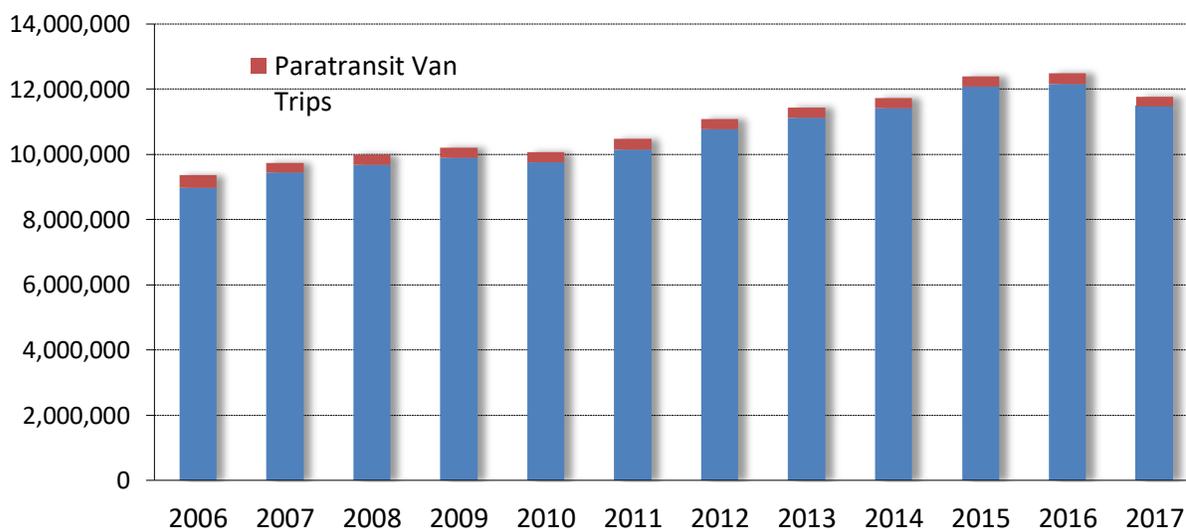


Created in 1974, PVTA had an operating budget of \$47.3 million in FY2016. Under Massachusetts law, PVTA and the Commonwealth’s 14 other regional transit authorities may not directly operate transit services. Therefore, PVTA competitively contracts with private companies to operate its fixed routes bus routes and paratransit van services. Currently, these contract operators are UMass Transit Services, First Transit, and Hulmes Transportation Services.

PVTA operates a fleet of 186 heavy duty transit buses, 144 paratransit vans, and five 18-passenger vans. There are 44 scheduled bus routes (“fixed routes”), as well as complementary paratransit accessible van service anywhere within member communities during the hours that fixed routes operate to comply with the Americans with Disabilities Act, plus a “dial-a-ride” style paratransit service for anyone age 60+ Mon-Sat from 8:00AM to 4:30PM.

PVTA provided 12.3 million passenger trips in FY2015 (July 1 to June 30), up 18.1% since FY2010. For the just-concluded FY2017 (July 1 2016 to June 30, 2017), total system ridership has decreased by approximately 7% to an estimated 11.2 million trips, a downward trend that continued during the first two quarters of FY2018. This is likely due to several circumstances, including increased employment allowing more people to buy a car; unusually low interest rates on car loans; the growing availability of Uber, Lyft, and other unregulated private car services; delays on routes in downtown Springfield due to street and lane closures near construction of the MGM Casino and side street impacts from the I-91 reconstruction; and delays on Route 9 in Hadley due to MassDOT construction projects. PVTA’s loss of ridership is consistent with a national trend of declining public transportation ridership (see Appendix 2).

Fig. 2-2: PVTA Ridership FY2006 to FY2017



Source: PVTA

3. PVTA Riders

PVTA riders are highly dependent on public transit. “Transit dependent” is generally defined as having no means other than public transit to make a typical trip. A total 68% of PVTA riders surveyed said they have “No other way to make my trip” (PVTA 2015-2016 onboard rider surveys, n=2,798).

FTA defines transit dependency as: 1) people without private transportation or private car; 2) elderly age 65 and older; 3) youths under age 18; and 4) persons below poverty or median income. With respect to these characteristics, PVTA’s most recent customer surveys found:

- 52.1% of PVTA customers do not own or have access to a private auto.
- 3.7 % are age 65 or older.
- Approximately one-fifth are 18 or younger.
- More than half (55.2%) of PVTA riders have incomes at or below the federal poverty level.

Therefore, it is reasonable to conclude that the majority of PVTA riders are transit dependent. Based on ridership, fare payment data, and customer trip frequencies reported on rider surveys, there are an estimated 15,000 to 20,000 people in the region who use PVTA on a regular basis (at least once a week).

3.1 Fixed Route Customer Demographics

Demographic information presented in this section was compiled from surveys of 2,799 riders performed in 2015 (Hampden County PVTA routes) and 2016 (Hampshire and Franklin County routes). Additional information is presented from 2014 American Community Survey five year estimates.

3.1.1 Income

PVTA customers on average have personal incomes that are significantly less than the regional average. In fact, the majority of PVTA customers report personal income that is at or below the federal poverty level, which is shown below for 2015.

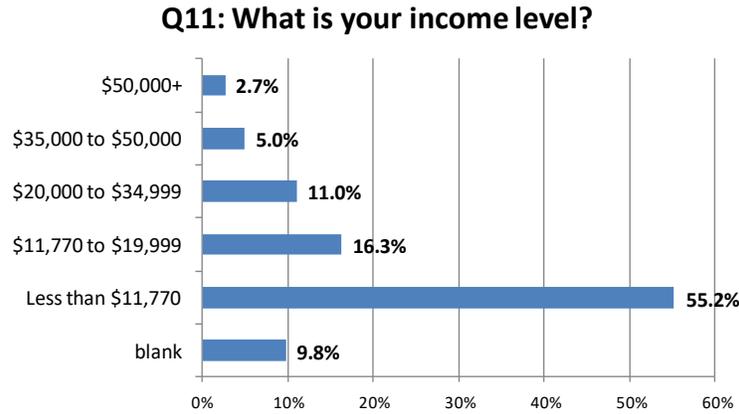
Fig 3.1.1-1: Federal Poverty Thresholds 2015

Household Size	Annual Income
1 person	\$11,770
2 people	\$15,930
3 people	\$20,090
4 people	\$24,250
5 people	\$28,410
6 people	\$32,730

Source: U.S. Department of Health and Human Services

Results from the 2015 and 2016 PVTA Customer Survey presented below show that more than 55% of PVTA customers are at or below the federal poverty level. This compares to just 17.6% of all persons living the entire 24-town PVTA region who are considered low-income (ACS 2015 five-year estimates).

Fig. 3.1.1-2: PVTA Customers' Annual Income



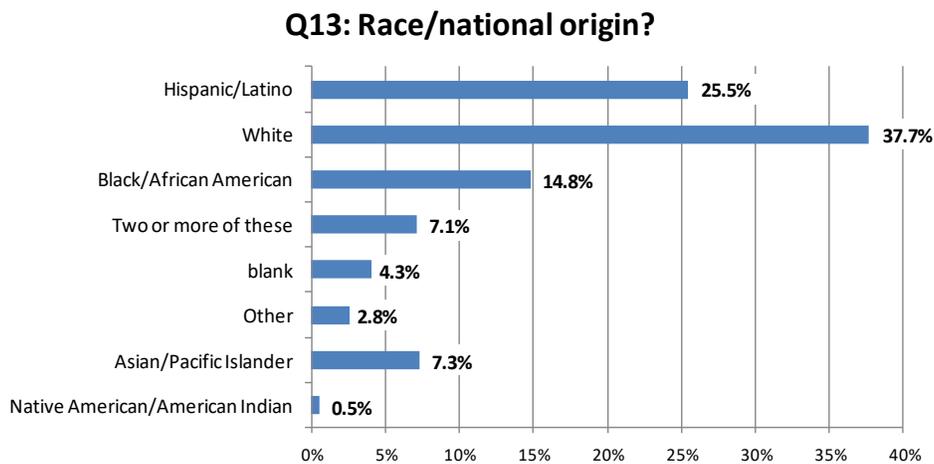
PVTA On Board Customer Surveys 2015 and 2016. N=2,798

This finding is generally consistent with U.S. Census American Community Survey 2014 five-year estimates for income, which report that 55% of commuters who take transit to work make less than \$10,000/year. Another 29% earn between \$10,000-14,999, of which approximately 6% can reasonably be estimated to be below the \$11,700 federal poverty threshold shown below. Therefore, the ACS-estimated proportion of people using transit to commute to work only in the region below the poverty level is at least 61%, which compares closely to the 55.2% proportion recorded by onboard surveying of all riders in 2015-2016 (commuting to work is the 2nd most popular trip purpose on PVTA at about 30% of all trips).

3.1.2 Race and Ethnicity

People of color are the majority of PVTA riders, constituting at least 62.3% of customers surveyed in 2015 and 2016.

Fig 3.1.2-1: Racial Characteristics of PVTA Customers



PVTA On Board Customer Surveys 2015 and 2016. N=2,798

The proportion of PVTA customers who are people of color (62.3%) is more than double the proportion of people of color who live in the region as a whole, which is 30.3%.

Fig 3.1.2-2: Regional Commuting by Public Transportation by Race

Race	Proportion of Commuters Who Take Public Transportation to Commute to Work		
	Hampden County	Hampshire County	PVTA Riders Who Use Bus to Commute to Work (25% of riders surveyed)
American Indian/Alaska Native	0.4%	0.0%	0.6%
Asian	1.4%	24.4%	3.1%
Black/African American	27.5%	3.1%	19.8%
Hawaiian/Pacific Islander	0.0%	0.0%	0.0%
Hispanic/Latino	41.8%	9.5%	33.8%
White	45.5%	70.1%	29.8%
Another Race	20.2%	0.6%	3.3
Two or more races	5.1%	1.7%	9.7%

Source: American Community Survey 2014 five-year estimates; PVTA Customer Surveys 2015 and 2016

3.1.3 Language and English Proficiency

For languages spoken, the proportion of PVTA customers surveyed in 2015-2016 who said they speak only Spanish was 1.1%. This is much lower than the regional average of 6.3%. However, 6% of PVTA riders who took the survey chose the Spanish language form, which suggests the actual proportion of PVTA customers who speak only Spanish is greater than 1.1% and probably closer to the regional average of 6.3%.

Also, in Hampden County (where two-thirds of PVTA riders live) the proportion of PVTA customers who speak both Spanish and English is nearly double (31.5%) the countywide average (16.8%). While the PVTA survey was not able to ask how well bilingual customers speak English, the ACS 2014 five-year estimates for Hampden County suggests that approximately one-third of Spanish/English bilingual persons “Do Not Speak English Well or At All.” Therefore, it is likely that at least one-third of PVTA customers in Hampden County (approximately 10%) also do not speak English well or at all. It is for this critical reason that PVTA provides all rider information in Spanish, as well as English.

4. Service Change Options and Impact Assessments

The PVTA Advisory Board on May 24, 2017 authorized public hearings on the 22 potential service change options involving the 16 fixed bus routes that are listed below.

Fig. 4-1: Service Change Options Summary List

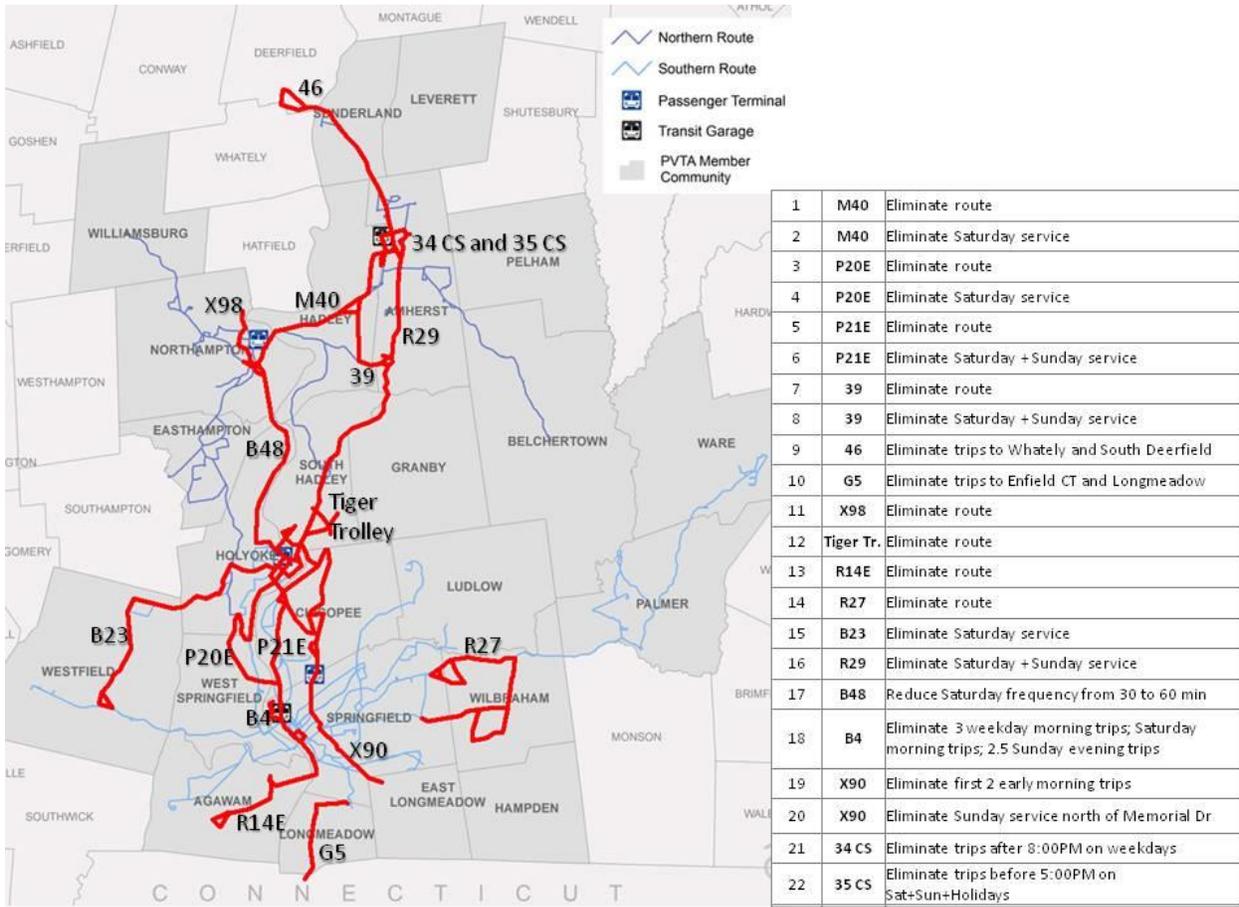
Option	Route	Service Change (proposed May 24, 2017)
1	M40	Eliminate route
2	M40	Eliminate Saturday service
3	P20E	Eliminate route
4	P20E	Eliminate Saturday service
5	P21E	Eliminate route
6	P21E	Eliminate Saturday + Sunday service
7	39	Eliminate route
8	39	Eliminate Saturday + Sunday service
9	46	Eliminate trips to Whately and South Deerfield
10	G5	Eliminate trips to Enfield CT and south Longmeadow
11	X98	Eliminate route
12	Tiger Trolley	Eliminate route
13	R14E	Eliminate route
14	R27	Eliminate route
15	B23	Eliminate Saturday service
16	R29	Eliminate Saturday + Sunday service
17	B48	Reduce Saturday frequency from 30 to 60 min
18	B4	Eliminate first 3 weekday morning trips; first 2 Saturday morning trips; last 2.5 Sunday evening trips
19	X90	Eliminate first 2 early morning trips
20	X90	Eliminate Sunday service north of Memorial Dr
21	34 CS	Eliminate trips after 8:00PM on weekdays
22	35 CS	Eliminate trips before 5:00PM on Sat+Sun+Holidays

These options were developed by initially screening all 46 PVTA routes and identifying service changes that were likely to affect the fewest number riders while still generating sufficient savings to fulfill the necessary business purpose of balancing the PVTA's FY2018 operating budget.

The options also had to be operationally feasible and able to be implemented on August 27, 2017 or September 3, 2017 so as to achieve sufficient cost savings in the remaining 10 months of FY2018 (which ends June 30, 2018).

No changes to fares or fare policies were proposed as part of any of the 22 options presented.

Fig. 4-2: Locations of Service Reduction Options



This equity assessment presents the following information for each of the original service change options directed by the Advisory Board on May 24, 2017 to be sent out for public hearings:

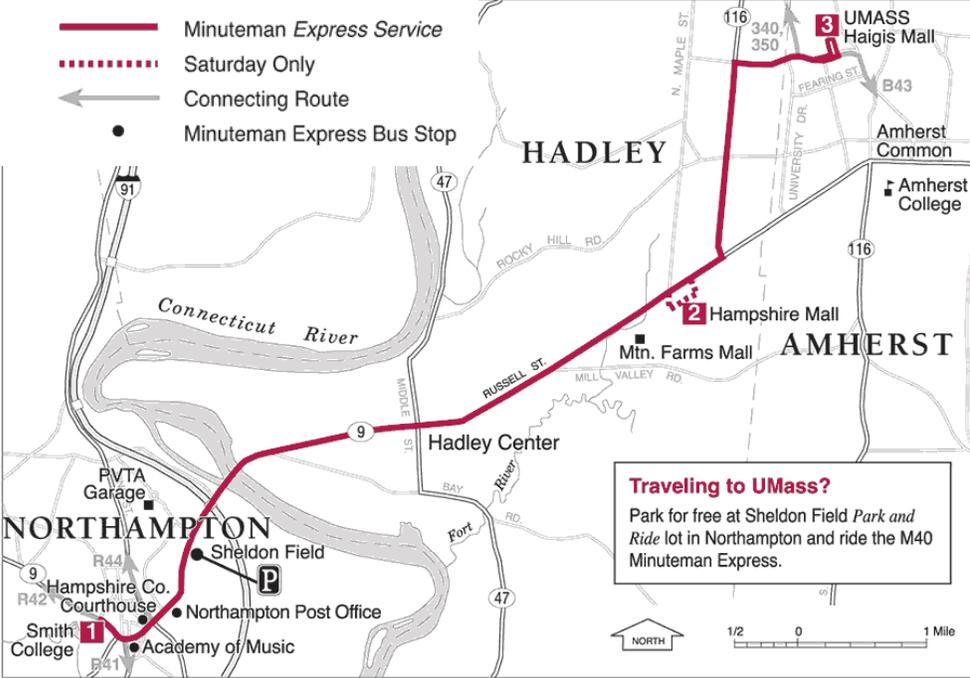
Route Description	Describes the travel corridor and route where the proposed change would occur, including trip frequency and key characteristics of the service.
Proposed Change and Rationale	Description of the service change as proposed May 24, 2017 as authorized for public hearings by the PVRTA Advisory Board; the reason(s) why the change is included as one of the 22 options being considered; and relevant information about the route’s performance for its class of service (either passengers per trip or passengers per hour). Ridership data and estimates presented in this section are from the most recently concluded PVRTA fiscal year (FY2016) unless otherwise noted.
Major Service Change	Determination whether or not the proposed service change would meet or exceed the 25% threshold in either route miles eliminated or service hours reduced (or both) on a single service day, which is the definition of a “major service change” adopted by the PVRTA Advisory Board September 23, 2015.
Communities Affected	The municipality(ies) in which the proposed change(s) would occur.
Implementation Status	Result of the July 19, 2017 Advisory Board vote on whether the service change was approved to be: 1) implemented as originally proposed

	May 24, 2017; 2) implemented with modifications and mitigation in response to public comments; or 3) not implemented as a response to public comments (considered mitigation).
Effective Date	Date the service change was implemented.
Customers Affected	<p>An estimate of the number of customers per day who would likely be affected by the proposed service change. This estimate was derived by:</p> <ul style="list-style-type: none"> • <u>Weekday</u> average riders were obtained from the passenger counters on the buses on each route for the week of October 3-7, 2016 (a typical week with full academic service and no holidays, storms, or major events that would disrupt traffic). • <u>Saturday and Sunday</u> customers were averaged from passenger counts each of the Saturdays and/or Sundays in October 2016. • Estimates of likely customers affected were then made by dividing the weekday and/or Sat-Sun daily averages by 2.5 to account for the typical rates of round trips and transfers reported on rider surveys. In cases where the nature of the service is likely to have a different rate of round trips and transfer, ranges are given for the estimates.
Disparate Impact Analysis (racial discrimination)	<p>Explains whether or not there are likely to be differences in the adverse impacts in the level of service (established as FY2017 revenue miles per year by route) that the service change will have on customers of color compared to those who are white. This is a federally required assessment known as a “disparate impact analysis.” The threshold for this analysis is established by the Disparate Impact Policy of the PVTB Advisory Board which states: “If a PVTB planned transit fare rate or media change, or major service change results in minority populations (people of color) bearing a variance that is 20 percentage points greater (+20%) in comparison to non-minority (white) populations, the resulting effect will be considered a minority disparate impact. In the course of performing a Title VI Equity Analysis, PVTB must analyze how the proposed action would impact minority as compared to non-minority populations.” Therefore, if the difference in the proportion of customers of color who will be adversely affected (i.e., lose miles of revenue service) by the service change compared to white customers is more than +20%, then the change is considered to have a disparate impact and must be mitigated.</p> <p>For example, if the rider surveys show that 60% of the riders of a route that will lose service are people of color and the remaining 40% are white, then the difference (60% minus 40%) is +20%, which meets the policy threshold of +20% to be considered a disparate impact. In another example, if 35% of riders are people of color and the remaining 65% are white, then the difference (35% minus 65%) is -30%, which is less than +20% and would therefore not be a disparate impact.</p> <p>The data sources for customer demographics are the systemwide customer surveys of 2,798 passengers conducted by PVPC in 2015 (Hampden County routes) and 2016 (Hampshire County routes).</p>

<p>Disproportionate Impact Analysis (income discrimination)</p>	<p>This section explains whether or not the proposed change would result in a loss of service (established as any reduction in FY2017 revenue miles per year by route) that would disproportionately affect customers who have low incomes, as compared to those who do not have low incomes. This is a federally required assessment known as “disproportionate impact analysis.” The threshold for such this impact is established by the PVTA Advisory Board’s Disproportionate Impact Policy which states: “If a PVTA planned transit fare rate, fare media or major service change results in low-income populations bearing a variance that is 20 percentage points greater (+20%) in comparison to those who are not low-income populations, the resulting effect will be considered a low-income disproportionate impact.” (September 23, 2015)</p> <p>For example, if 60% of the riders surveyed on a route that experiences a loss of service (measured in revenue miles per year) are low-income (earning \$11,770/year or less), then the remaining 40% are considered not to be low-income, and the difference (60% minus 40%) is +20%. This meets the policy’s +20% threshold and would therefore be considered a disproportionate impact. In another example, if 35% of riders are low-income, then 65% are not low-income, and the difference (35% minus 65%) is -30%, which is less than the +20% policy threshold, and so would not be considered a disproportionate impact.</p> <p>The data sources for this analysis are the systemwide customer surveys of 2,798 passengers conducted by PVPC in 2015 (Hampden County routes) and 2016 (Hampshire County routes).</p>
<p>ADA Van Service Impact?</p>	<p>Explains whether or not there is an impact to ADA van service areas or hours because of the change to the hours or geographic coverage of the underlying fixed route on which the local ADA service is based.</p>
<p>Alternate Transit Service Available?</p>	<p>Description of alternate bus routes and transportation available to make trips in the corridor in which the service change occurs.</p>
<p>Least Discriminatory Alternative</p>	<p>This section provides information on whether or not there is another alternative that could achieve the business purpose (in this case, balancing the PVTA FY2018 operating budget) of the approved service change that would be less discriminatory. This analysis is required by the PVTA Disparate and Disproportionate Impact Policies (adopted September 23, 2015) which states: “...in the event that the proposed service change would have an adverse impact that affects customers of color or those with low-incomes (defined as the federal poverty level) more than the non-low income or non-minority populations with a disparity that exceeds the adopted 20% thresholds, PVTA must evaluate whether there is an alternative that has a more equitable impact... and demonstrate that a legitimate business purpose cannot otherwise be accomplished and that the proposed change is the least discriminatory alternative.” (emphasis added).</p>

<p>Mitigation and Modifications in Response to Public Comments</p>	<p>If the service change was expected to have either a disparate or disproportionate impact, mitigation was proposed and implemented to lessen the effects on riders, as required by the PVRTA Disparate and Disproportionate Impact Policies (adopted September 23, 2015) which state: “...PVRTA must take measures to mitigate the impact of the proposed action on the affected minority population or low income population...”</p> <p>This section describes the nature and number of public comments received that pertain to the service changes. It also describes any mitigation measures and modifications made to the original May 24 proposal to anticipated adverse impacts of the change on riders, as well as future and ongoing monitoring and evaluation and additional service changes to reduce adverse effects on riders.</p>
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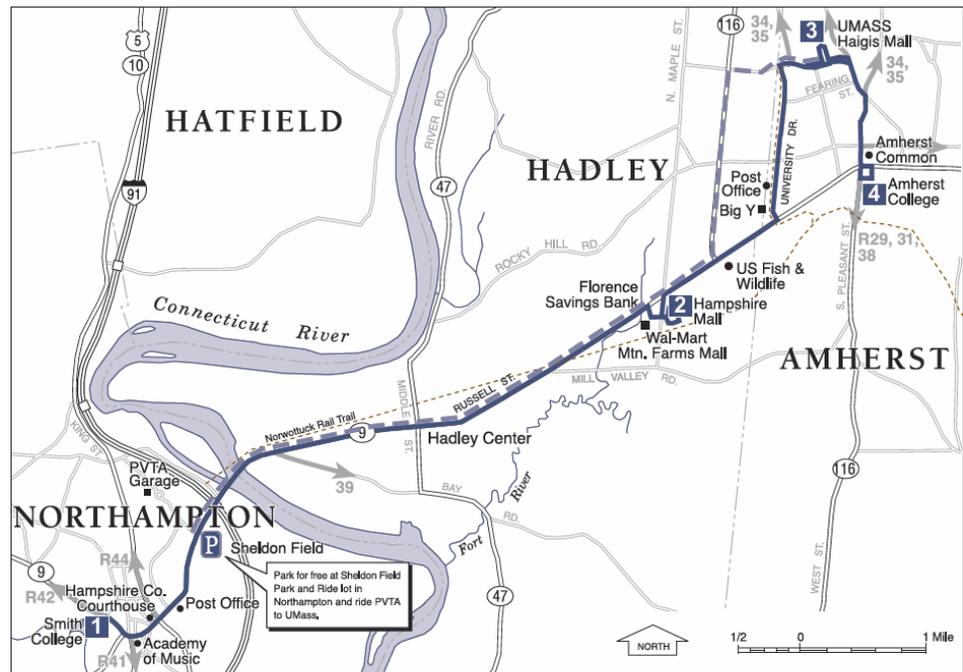
Option 1: M40 (Express)—Eliminate Route

<p>Route Description</p>	<p>The M40 is an express bus with 9 trips Mon-Fri every 60-75 min and 10 trips on Saturday every 60 min between Smith College in Northampton and Haigis Mall at UMass Amherst. The M40 schedule and stops were established in 2004 to assist students and staff traveling between the campuses of the above-mentioned institutions as a congestion mitigation strategy during reconstruction of the Coolidge Bridge on Route 9. It is funded in part by Five Colleges Incorporated. No fares are collected on board.</p> 
<p>Proposed Change and Rationale</p>	<p>This option eliminates Route M40 weekday and Saturday service. The M40 is an Express service with a performance standard of 20 passengers per trip. The M40 fails to meet this standard, carrying an average 12 passengers per trip on weekdays and 5 passengers per trip on Saturdays. The M40 operates only during the academic year. If the M40 is eliminated, customers would be able to make the same trips by using the B43 local service with an increase of 5-15 minutes in travel time, as they already do when the M40 does not operate.</p>
<p>Major Service Change?</p>	<p>Yes. 100% of route miles would be eliminated on days that the service currently operates (Mon-Sat), which exceeds the major service change threshold of 25%. Total revenue miles in FY2017 were: 29,512.</p>
<p>Communities Affected</p>	<p>Amherst, Hadley (Saturday only), Northampton</p>
<p>Implementation Status</p>	<p>IMPLEMENTED WITH MITIGATION. On July 19, 2017 the Advisory Board voted to eliminate M40 service and mitigate its loss by modifying Route B43, which runs between Smith College and Amherst College via UMass Amherst, to restore 9 one-way and add two round-trip peak hour express trips as part of the B43 schedule, as described and shown in the “Mitigation” section below.</p>

Effective Date	9/3/17
Customers Affected?	90 customers estimated per weekday. 8 on Saturdays.
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 30% of route riders are people of color and 70% are white. The minority/non-minority difference is therefore -40%, which does not exceed the +20% policy threshold that is considered to be a disparate impact for the loss of service.
Disproportionate (low-income) Impact?	NO DISPROPORTIONATE IMPACT. 20% of route riders are considered “low-income” (defined as the federal poverty rate of \$11,770 per year for an individual), and the remaining 80% are not low-income. Therefore, the low-income/non-low-income difference is -60%, which does not exceed the +20% policy threshold that is considered to be a disproportionate impact.
ADA Van Impact?	NONE.
Alternate Transit Service Available?	YES. The same boarding and destinations stops are available during the same hours of service by using Route B43.
Least Discriminatory Alternative?	<p>YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion and number of low-income riders and riders of color on the days that the service operates.</p> <p>Reductions to the B43, which is the other PVTA route serving these destinations, would affect much larger proportions of low-income riders (20% for M40 versus 56% for B43) and riders of color (30% for M40 versus 45% for B43). Also, because the B43 provides approximately 630,000 passenger rides per year, versus 35,000 for the M40, approximately 15 to 20 times more riders of color and low-income would be affected by any change(s) to the B43.</p> <p>If additional funding becomes available, eliminating M40 Saturday service only has been evaluated (Option 2), which would generate less savings but would maintain the weekday M40 service. Another possibility considered would be to reduce the number of M40 express bus trips from 4 to 2 per day (1 in morning rush hour; 1 in the afternoon); however, that option not likely to yield significant savings.</p>
Mitigation	<p>MITIGATION IS NOT REQUIRED. No disparate or disproportionate impacts were identified. However, in response to 134 public comments received about the proposed M40 elimination, PVTA implemented the mitigation measures described below, resulting in an <u>increase</u> of 16 express trips per week in peak hours in the major destination demand direction and a loss of B43 local service to 16 bus stops in Hadley (prorated estimate equivalent of 8 trips per week), for a net increase of 8 bus trips per week.</p> <ol style="list-style-type: none"> 1. Modified Route B43 so that 9 of its 48 existing weekday trips now run express in the direction of major peak hour demand between Sheldon Field and Haigis Mall (3 eastbound and 6 westbound). This is intended to accommodate the vast majority of the weekday trip demand to/from Northampton and UMass that the former M40 handled, which had approximately 95% of its morning passengers heading eastbound, and 80% of its afternoon passengers heading westbound. However, the conversion of these local trips to express service means that

customers who formerly rode one of the former 9 local trips on the B43 and boarded or got off at one of the 16 bus stops on Route 9 in Hadley must now wait an additional 20 minutes (or arrive at the bus stop 20 minutes earlier) for a local B43 trip that makes these stops. This resulted in the loss of approximately 4 trips per day on the B43 (8 one-way trips on which approximately half of the B43's bus stops in Hadley are no longer serviced), which does not constitute a major service change, and for which no mitigation was proposed or implemented.

2. Added 2 new express round-trips to the B43 service: one at 8:15AM from Smith to UMass; and one at 3:45PM from UMass to Smith. Each of these two new trips run express in both directions between Sheldon Field and Haigis Mall (but no service to the 16 stops in Hadley).
3. Assigned two 60-foot articulated buses to Route B43 (instead of regular 40-foot buses) for trips during the highest demand periods on weekdays to increase passenger capacity.
4. Posted notices on buses and bus stops in the Amherst/Northampton areas to advise M40 passengers of the new B43 express service that is available at the same times of day plus 2 additional express trips, but will be reduced in the 16 stops in Hadley during peak hours.
5. Provided information on PVTA website, social media and other outlets. Made special efforts to notify academic institutions so they may inform students and staff prior to the start of the Fall 2017 semester.
6. Continued to perform ridership and service monitoring of the B43 local and express trips to identify any impacts to on time performance, capacity, and loss of access at the 16 Hadley stops.

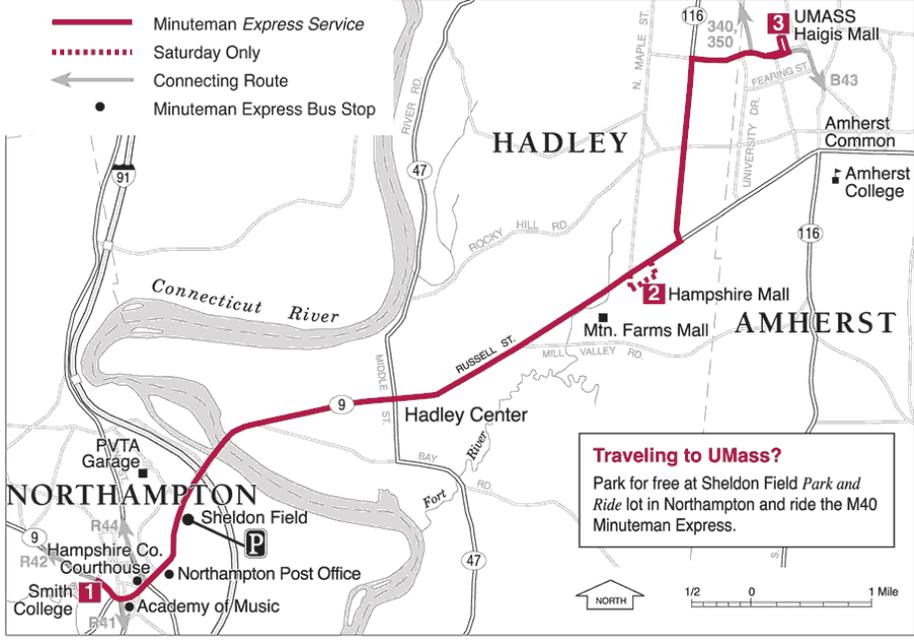


**BLUE
43**

NORTHAMPTON/HADLEY/AMHERST

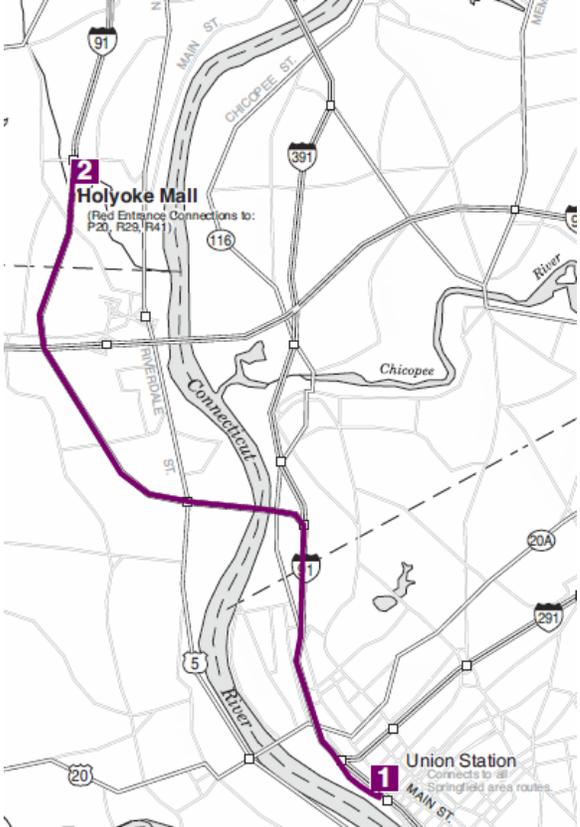
SMITH COLLEGE	HAMPSHIRE MALL	UMASS HAIGIS MALL	AMHERST COLLEGE	UMASS HAIGIS MALL	HAMPSHIRE MALL	SMITH COLLEGE
1	2	3	4	3	2	1
WEEKDAY						
TO AMHERST →			TO NORTHAMPTON →			
6:00 G	R	6:25	6:35	6:45	W	7:20
6:20 G	R	6:45	6:55	7:05	W	7:40
7:00 G	R	7:25	7:35	7:45	W	8:20
7:20	R	7:50	8:00	8:10	W	8:40
7:40 E	EXPRESS	8:10	8:20	8:30	W	9:00
8:00 G	R	8:30	8:50	9:00	9:10	9:40
8:15 E	EXPRESS	8:45	9:05 S	EXPRESS		9:30
8:20	8:40	8:50	9:10	9:20	9:30	10:00
8:40 E	EXPRESS	9:10	9:30	9:40	9:50	10:20
9:00	9:20	9:30	9:50	10:00	10:10	10:40
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11:00	11:20	11:30	11:45	12:00	12:10	12:40
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3:45 E	EXPRESS	4:15	--	4:15 E	EXPRESS	4:45 G
3:20	3:45	3:55	4:05	4:20	4:30	5:20 G
3:40	4:05	4:15	4:25	4:40 E	EXPRESS	5:30
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4:20	4:45	4:55	5:05	5:20 E	EXPRESS	6:20 G
4:40	5:05	5:15	5:25	5:40	5:50	6:30
5:00	5:20	5:30	5:45	6:00 E	EXPRESS	7:00
5:30	5:50	6:00	6:15	6:30	6:40	7:30
6:00 G	6:20	6:30	6:45	7:00	7:10	7:50 G
6:30	6:50	7:00	7:15	7:30	7:40	8:20
7:00	7:20	7:30	7:45	8:00	8:10	8:45 G
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8:30	8:50	9:00	9:15	9:30	9:40	10:00
9:15	9:35	9:45	10:00	10:15	10:25	10:45
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10:45	11:05	11:15	11:30	11:45	11:55	12:15 G,M
11:30	11:50	12:00	12:15	12:25	12:40	1:00 G,M
12:15 T	12:35 T	12:45 T	1:00 T	1:10 T	1:20 T	1:45 T
1:00 T	1:15 T	1:25 T	1:35 T	1:45 T	1:55 T	2:15 G,T
1:45 T	2:00 T	2:10 T	2:20 T	2:30 T	2:40 T	3:00 G,T

Option 2: M40 (Express)—Eliminate Saturday Service

<p>Route Description</p>	<p>The M40 is an express bus with 9 trips Mon-Fri every 60-75 min and 10 trips on Saturday every 60 min between Smith College in Northampton and Haigis Mall at UMass Amherst. The M40 schedule and stops were created in 2004 to assist students and staff traveling between the campuses of the above-mentioned institutions as a congestion mitigation strategy during reconstruction of the Coolidge Bridge on Route 9. It is funded in part by Five Colleges Incorporated. No fares are collected on board.</p>  <p> — Minuteman Express Service ⋯ Saturday Only ← Connecting Route ● Minuteman Express Bus Stop </p>
<p>Proposed Change and Rationale</p>	<p>This option eliminates Route M40 Saturday service only, approximately 5,500 revenue miles per year. The M40 is an Express service with a performance standard of 20 passengers per trip. The M40 fails to meet this standard on weekdays, carrying an average 12 passengers per trip on weekdays and 5 on Saturdays.</p> <p>The M40 operates only during the academic year. If it is eliminated, customers are able to make the same trips by using the B43 local with an increase of approximately 5-15 minutes in travel time (depending on traffic), as they already do during the evenings, Sundays, and other times when UMass is not in session.</p>
<p>Major Service Change?</p>	<p>YES. 100% of route miles would be eliminated on day that the service operates (Sat), which exceeds the major service change threshold of 25%. Total revenue miles on Saturdays for the year are approximately 5,500.</p>
<p>Communities Affected</p>	<p>Amherst, Hadley (Saturday only stop at Walmart), Northampton</p>
<p>Implementation Status</p>	<p>IMPLEMENTED AS PROPOSED. The PVTa Advisory Board voted on July 19, 2017 to eliminate all M40 service (including Saturdays) under Option 1.</p>
<p>Effective Date</p>	<p>9/3/17</p>

Customers Affected?	8 estimated on Saturdays
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 30% of route riders are people of color and 70% are white. The minority/non-minority difference is therefore -40%, which does not exceed the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	NO DISPROPORTIONATE IMPACT. 20% of route riders are considered “low-income” (defined in this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 80% are not low-income. Therefore, the low-income/non-low-income difference is -60%, which does not exceed the +20% policy threshold that is considered to be a disproportionate impact.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	YES. The same boarding and destinations stops are available during the same hours of service by using Route B43.
Least Discriminatory Alternative?	<p>YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion and number of low-income riders and riders of color on the day of service.</p> <p>Reductions to the B43, which is the other principal route serving these destinations, would affect larger proportions of low-income riders (20% for M40 versus 56% for B43) and riders of color (30% for M40 versus 45% for B43). Also, because the B43 provides approximately 630,000 trips per year, versus 35,000 for the M40, it’s likely that 15 to 20 times more riders would be affected by any change(s) to the B43.</p> <p>Another alternative considered as part of Option 2 (this option) would be to reduce the number of trips to 2 per day (1 in morning rush hour; 1 in the afternoon); however, because of the availability of labor and work schedules, it is not likely that this limited service would yield any significant savings.</p>
Mitigation	<p>MITIGATION IS NOT REQUIRED. Neither disparate nor disproportionate impacts are identified. To minimize inconvenience to M40 Saturday riders, PVTA:</p> <ol style="list-style-type: none"> 1. Posted notices on buses and stops to advise former M40 passengers that service is available via Route B43 to the same destinations and during the same (and longer) hours of operation. 2. Provided customer education on PVTA website, social media and other outlets about the service reduction or elimination. 3. Performed ridership and service monitoring of the B43 on Saturday to observe any impacts to on time performance and capacity. 4. Assigned 60-foot articulated buses to Saturday afternoon peak hour trips on the B43 to assure sufficient capacity is available to accommodate former M40 Saturday riders.

Option 3: P20E (Express)—Eliminate Route

<p>Route Description</p>	<p>The P20E is an express bus that operates 9 non-stop trips Mon-Fri every 60-120 min and 13 non-stop trips on Saturday every 60 min between the Holyoke Mall and Springfield Union Station. The majority of travel is via I-91.</p> 
<p>Proposed Change and Rationale</p>	<p>This option eliminates Route P20E. The P20E is an Express service with a performance standard of 20 passengers per trip. The P20E does not meet this standard, carrying an average 10 passengers per trip on weekdays. On Saturdays, there are an average 11 passengers per trip. If the P20E is eliminated, customers would be able to make trips from the Holyoke Mall to Union Station by using the P20 local service with an increase of approximately 10-15 minutes in travel time (from 20 minutes to 30-35 min), as they must already do on Sundays and during early morning and evening hours when the P20E does not operate.</p>
<p>Major Service Change?</p>	<p>YES. 100% of route miles would be eliminated on days that the service exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Holyoke, Springfield</p>
<p>Implementation Status</p>	<p>IMPLEMENTED WITH MITIGATION. The PVTB Advisory Board on July 19, 2017 voted to eliminate Route P20E weekday service with the mitigation measures described below, including retaining P20E Saturday service (i.e., reject Option 4 below). On Dec 17, 2017, PVTB staff restored 9 weekday one-way trips between Holyoke Mall and Union Station as further mitigation.</p>

Effective Date	8/27/17 for route elimination. 12/17/17 for full mitigation implementation.
Customers Affected?	84 customers estimated per weekday. 139 on Saturdays.
Disparate (racial discrimination) Impact?	<p>DISPARATE IMPACT IDENTIFIED. 71% of riders of the underlying P20 local bus route are people of color, and the remaining 29% are white. The minority/non-minority difference is therefore +42%, which exceeds the +20% policy threshold that is considered to be a disparate impact. This option as originally proposed would have eliminated 39,385 revenue miles per year. The retention of 13 trips on Saturday and restoration of 9 one-way trips (4.5 complete trips) on weekdays restored 27,162 (69%) of the annual revenue miles that would have been cut, resulting in a net loss of only 12,223 revenue miles per year. Of those, riders of color will bear 42.4% of this service loss (8,703 revenue miles), which is 52% less than the loss of 16,699 revenue mile that minority riders would have borne under the original proposal.</p> <p><i>(Similar rider characteristics are assumed for riders the P20E as the P20 local, as it serves the same corridor and customer base; rider surveys of the P20E were not performed during the most recent customer survey cycle.)</i></p>
Disproportionate (low-income) Impact?	<p>NO DISPROPORTIONATE IMPACT. 49% of riders of the underlying P20 local bus route are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and so the remaining 51% are not low-income. Therefore, the low-income/non-low-income difference is -2%, which does not exceed the +20% policy threshold that is considered to be a disproportionate impact.</p> <p><i>(Similar rider characteristics are assumed for riders of the P20E as the P20 local, as it serves the same corridor and customer base; rider surveys of the P20E were not performed during the most recent customer survey cycle.)</i></p>
ADA Van Impacts?	NONE.
Alternate Transit Service Available?	YES. The same boarding and destinations stops are available during the same hours of service by using Route P20. However, this adds approximately 30-40 minutes of travel time
Least Discriminatory Alternative?	<p>YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion and number of low-income riders and riders of color on the day that this service operates.</p> <p>Service changes to the P20 local, which carries 43-57 passengers per trip, would affect four to five times as many riders, thus greatly increasing the number who would experience a disproportionate (racially discriminatory) impact.</p>
Mitigation	<p>MITIGATION IS REQUIRED. A disparate impact is identified. Under the original proposal, former riders of the P20E express weekday service would have only been able to make this trip by riding the P20 local, which has a travel time of 30-35 minutes (depending on time of day) between these destinations—an increase of 15 minutes (75%) in travel time. To mitigate this impact, PVTA has:</p> <ol style="list-style-type: none"> 1. Retained P20E Saturday service (reject Option #4), which carries more riders (139 per day) than the P20E weekday (84 per day).

2. Posted notices on buses and bus stops to advise P20E passengers of the temporary service elimination, the availability of alternate P20 local service, and the replacement service that began 12/17/17.
3. Provided customer education on the PVTA website, social media and other outlets of service elimination and alternate P20 service.
4. Distributed 7-day passes at no charge to former P20E weekday customers.
5. Monitored P20 local weekday service for on time performance and capacity constraints and add more local service if needed.
6. Effective December 17, 2017 partially restored the 9 round trips that were eliminated on weekdays by adding 11 one-way express trips Mon-Fri between Union Station and Holyoke Mall (see timetable below).

EXPRESS Effective 12/17/17

P20E HOLYOKE MALL/UNION STATION I-91 EXPRESS

UNION STATION	HOLYOKE MALL	UNION STATION
1	2	1
WEEKDAY		
7:10	7:30	--
9:10	9:30	--
--	10:20	10:35
11:10	11:30	--
--	12:20	12:38
1:10	1:30	--
--	2:20	2:38
3:10	3:30	--
--	4:20	4:38
5:10	5:30	--
--	6:20	6:35
SATURDAY		
10:15	10:35	10:53
10:55	11:15	11:33
11:35	11:55	12:13
12:15	12:35	1:33
12:55	1:15	2:13
1:35	1:55	2:53
2:15	2:35	3:33
2:55	3:15	4:13
3:35	3:55	4:53
4:15	4:35	5:33
4:55	5:15	5:33
5:35	5:55	6:10 G

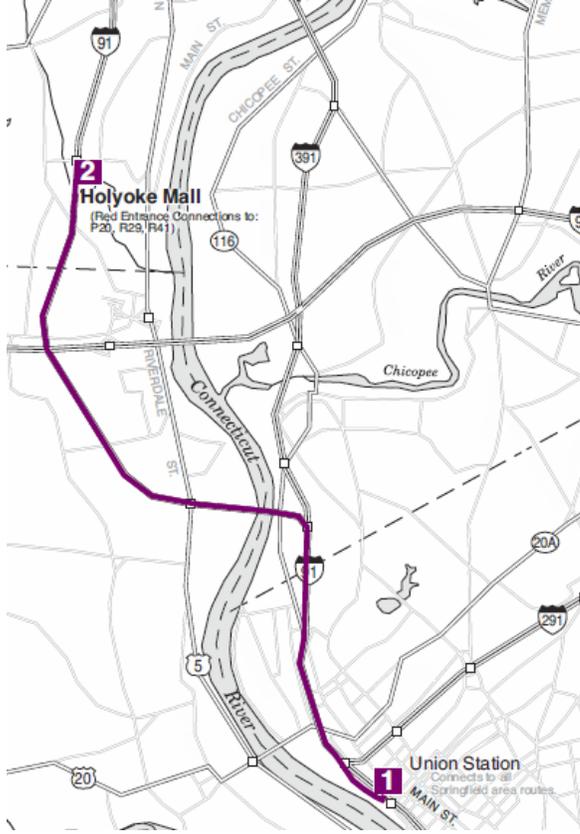
Holyoke Mall Express - Direct service between Union Station and Holyoke Mall via Interstate-91 does not serve Riverdale or other local stops.

Connects with the R29, R41 and P20 at the Holyoke Mall.

This mitigation responds to the significant number and quality of public comments received about that proposal. At least 15 commenters said eliminating Route P20E as proposed would have been unfair and that the increased travel times would cause people to be late to work on time, miss connections at Union Station, and experience other adverse consequences. Many general comments said that all of the service change proposals were unfair on the basis of income (111 comments) and race (13 comments).

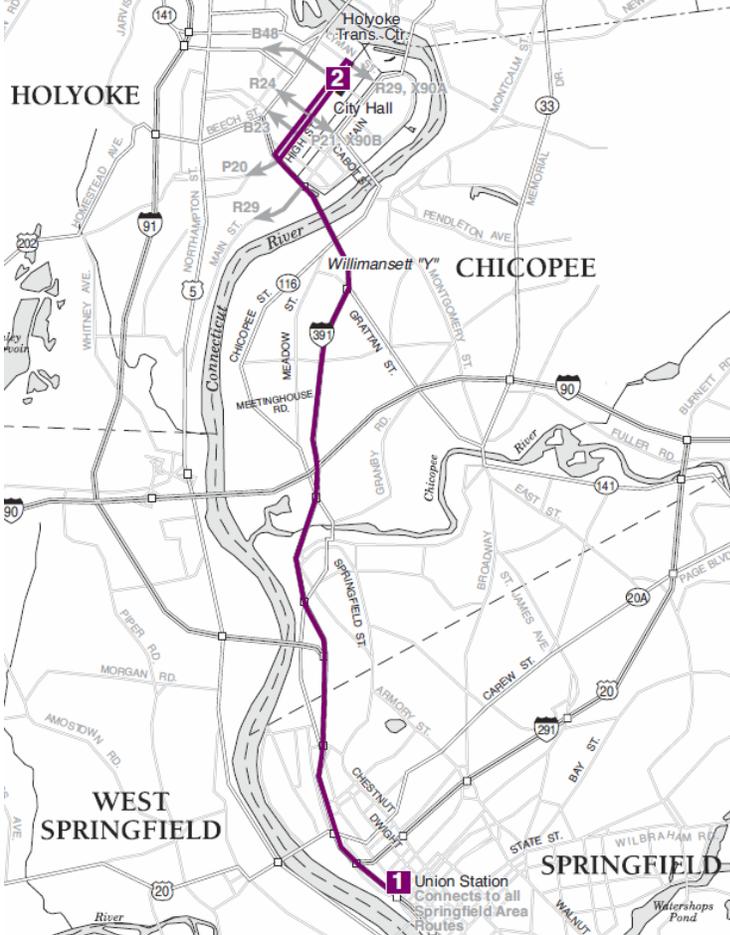
The partial restoration of weekday express service substantially addresses these comments and meets the necessary business purpose of reducing operating costs.

Option 4: P20E (Express)—Eliminate Saturday Service

<p>Route Description</p>	<p>The P20E is an express bus that operates 9 non-stop trips Mon-Fri every 60-120 min and 13 non-stop trips on Saturday every 60 min between the Holyoke Mall and Springfield Union Station. The majority of travel is via I-91.</p>  <p>The map displays the route of the P20E express bus service. It starts at Holyoke Mall (marked with a purple '2') and ends at Union Station (marked with a purple '1'). The route is primarily along Interstate 91 (I-91), which runs north-south through the region. Key streets shown include Main St, Chicopee St, and Inverdale St. The Chicopee River is also visible. The map includes various highway shields for I-91, I-291, I-20A, and I-291, as well as local routes like 116 and 20. Text on the map notes that Holyoke Mall has 'Ped Entrance Connections to: P20, R29, R41' and that Union Station 'Connects to all Springfield area routes'.</p>
<p>Proposed Change and Rationale</p>	<p>This option would eliminate P20E Saturday service. The P20E is an Express Class service with a performance standard of 20 passengers per trip. The P20E does not meet this standard, carrying an average 10 passengers per trip on weekdays and 11 passengers per trip on Saturdays. If the P20E is eliminated, customers would be able to make the same trips by using the P20 local service with an increase of approximately 15 minutes in travel time (from 15 to 30 min), as they must already do on Sundays and during early morning and evening hours when the P20E does not operate.</p>
<p>Major Service Change?</p>	<p>YES. 100% of route miles would be eliminated on days this service operates (Saturday), which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Holyoke, Springfield</p>
<p>Implementation Status</p>	<p>NOT IMPLEMENTED. The Advisory Board voted on July 19, 2017 to reject this option and retain P20E Saturday service.</p>
<p>Effective Date</p>	<p>8/27/17</p>
<p>Customers Affected?</p>	<p>139 estimated on Saturdays</p>

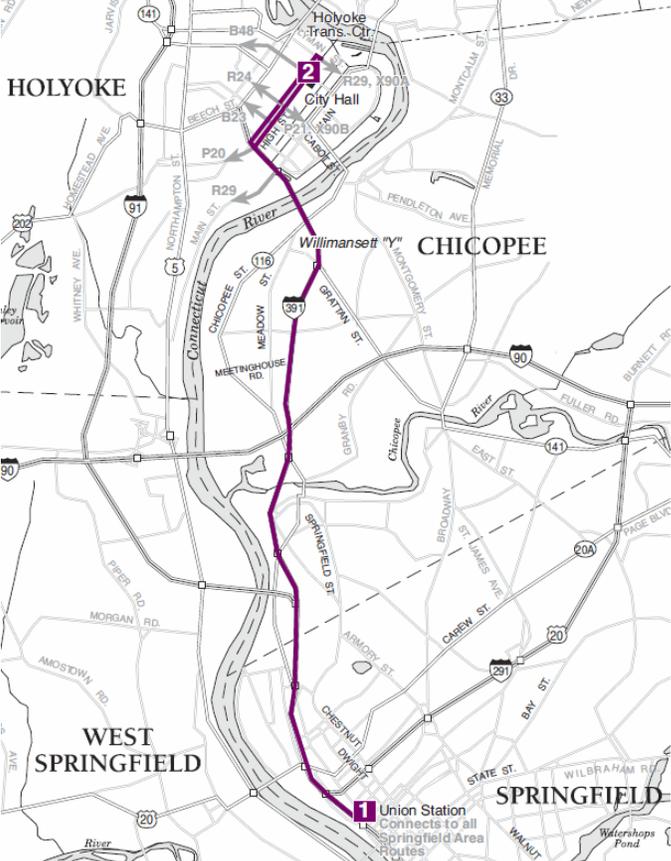
Disparate (racial discrimination) Impact?	<p>DISPARATE IMPACT IDENTIFIED. 71% of riders of the underlying P20 local bus route are people of color, and the remaining 29% are white. The minority/non-minority difference is therefore +42%, which exceeds the +20% policy threshold that is considered to be a disparate impact. There are 8,828 revenue miles per year of service that would be lost with the elimination of this route on Saturdays, and so the proportion of the loss borne by riders of color would have been 6,268 revenue miles per year, versus 2,560 revenue miles lost by white riders.</p> <p><i>(Similar rider characteristics are assumed for riders the P20E as the P20 local, as it serves the same corridor and customer base; rider surveys of the P20E were not performed during the most recent customer survey cycle.)</i></p>
Disproportionate (low-income) Impact?	<p>NO DISPROPORTIONATE IMPACT. 49% of riders of the underlying P20 local bus route are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and so the remaining 51% are not low-income. Therefore, the low-income/non-low-income difference is -2%, which does not exceed the +20% policy threshold that is considered to be a disproportionate impact.</p> <p><i>(Similar rider characteristics are assumed for riders of the P20E as the P20 local, as it serves the same corridor and customer base; rider surveys of the P20E were not performed during the most recent customer survey cycle.)</i></p>
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	YES. The same boarding and destinations stops are available during the same hours of service by using Route P20 local.
Least Discriminatory Alternative?	<p>YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion and number of low-income riders and riders of color on the day of service.</p> <p>Service changes to the P20 local Saturday service, which carries 43-57 passengers per trip, would affect four to five times as many riders, thus greatly increasing the number who would experience a disproportionate (racially discriminatory) impact.</p>
Mitigation and Revised Service Change Proposal	<p>MITIGATION IS REQUIRED. A disparate impact is identified. In response to comments received during the public hearing process, PVRTA will:</p> <ol style="list-style-type: none"> 1. Retain P20E Saturday service (make no change). 2. Provide customer education on the PVRTA website, social media and other outlets that P20E Saturday service will be retained. 3. Monitor P20 local service and P20E express service on Saturdays for on time performance and capacity impacts.

Option 5: P21E (Express)—Eliminate Route

<p>Route Description</p>	<p>The P21E is an Express Class service that operates between the Holyoke Transportation Center and Springfield Union Station. There are 14 non-stop trips Mon-Fri every 60 min; 10 trips on Saturdays; and 9 trips on Sundays. The majority of travel is via I-391. As of June 25, 2017, all-electric buses are being deployed exclusively on this route, which has fast charging stations for these vehicles at the terminals in Holyoke and Springfield.</p> 
<p>Proposed Change and Rationale</p>	<p>This option would eliminate Route P21E, which provides a total 76,008 revenue miles of service per year. The P21E is an Express Class service with a performance standard of 20 passengers per trip. The P21E does not meet this standard, carrying an average 15 passengers per trip on weekdays. On Saturdays and Sundays, the P21E carries an average 8 passengers per trip. If the P21E is eliminated, customers will be able to make the same trips by using the P21 local service (via Chicopee) with an increase of approximately 30 minutes in travel time (from 15 min to 45 min).</p>
<p>Major Service Change?</p>	<p>YES. 100% of route miles would have been eliminated on service days (Mon-Sun), which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Holyoke, Springfield</p>

Implementation Status	NOT IMPLEMENTED. The PVTA Advisory Board voted on July 19, 2017 to reject this option and retain Route P21E for at least one more year, as a request to the Pioneer Valley MPO for a \$400,000 grant from the FHWA CMAQ program to operate the P21E for one year was approved.
Effective Date	8/27/17
Customers Affected?	146 customers estimated per weekday. 80 on Saturdays and Sundays.
Disparate (racial discrimination) Impact?	LIKELY DISPARATE IMPACT. 86% of riders of the underlying P21 local bus route are people of color, and the remaining 14% are white. The minority/non-minority difference is therefore +72%, which exceeds the +20% policy threshold that is considered to be a disparate impact. Of the 76,008 revenue miles of service that would be lost each year, riders of color would have borne 65,367 of them, versus 10,641 that would be borne by white riders. <i>(Similar rider characteristics are assumed for the P21E, as it serves the same corridor and customer base; rider surveys of the P21E were not performed during the most recent customer survey cycle.)</i>
Disproportionate (low-income) Impact?	LIKELY DISPROPORTIONATE IMPACT. 60% of riders of the underlying P21 local bus route are considered “low-income” (defined in this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 40% are not low-income. Therefore, the low-income/not-low-income difference is +20%, which meets the +20% policy threshold that is considered to be a disproportionate impact. Of the 76,008 revenue miles of service that would be lost each year, low-income riders would have borne 45,605 of them, versus 30,403 that would be borne by riders who are not low-income.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	YES. The same boarding and destinations stops are available during the same hours of service by using Route P21 local.
Least Discriminatory Alternative?	YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion and number of low-income riders and riders of color on the day of service. Service changes to the P21 local service, which carries 20-25 passengers per trip, would affect twice as many riders in total, as well as the number who would experience both disproportionate (racially discriminatory) and disparate (low-income discrimination) impacts.
Mitigation	MITIGATION IS REQUIRED. Both disparate and disproportionate impacts are identified. In response to public comments, PVTA applied to the PVMPO for a \$400,000 grant from the FHWA CMAQ program to operate the P21E for one year. To be eligible for these funds, 9 stop pairs were added in Springfield to serve Bay State Medical Center and other stops. This request was approved by the PVMPO May 23, 2017 and submitted to MassDOT on June 27 for CMAQ consultation process, and was subsequently approved. Funds became available on October 1, 2017, with a 20% match from PVTA required. P21E service has continued uninterrupted.

Option 6: P21E (Express)—Eliminate Saturday and Sunday Service

<p>Route Description</p>	<p>The P21E is an Express Class service that operates between the Holyoke Transportation Center and Springfield Union Station. There are 14 non-stop trips Mon-Fri every 60 min; 10 trips on Saturdays; and 9 trips on Sundays. The majority of travel is via I-391. As of June 25, 2017, all-electric buses have been deployed exclusively on this route, which has fast charging stations for these vehicles at the terminals in Holyoke and Springfield.</p> 
<p>Proposed Change and Rationale</p>	<p>This option would have eliminated P21E Saturday and Sunday service. The P21E is an Express Class service with a performance standard of 20 passengers per trip. The P21E did not meet this standard on Saturdays and Sundays, when it carries an average 8 passengers per trip. If the P21E had been eliminated, customers would have been able to make the same trips by using the P21 local service via Chicopee with an increase of approximately 30 minutes in travel time (from 15 to 45 min).</p>
<p>Major Service Change?</p>	<p>YES. 100% of route miles would be eliminated on days that the service currently operates (Sat-Sun), which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Holyoke, Springfield</p>
<p>Implementation Status</p>	<p>NOT IMPLEMENTED. The PVTA Advisory Board voted on July 19, 2017 to reject this option and retain Route P21E for at least one more year, as a request to the Pioneer Valley MPO for a \$400,000 grant from the FHWA</p>

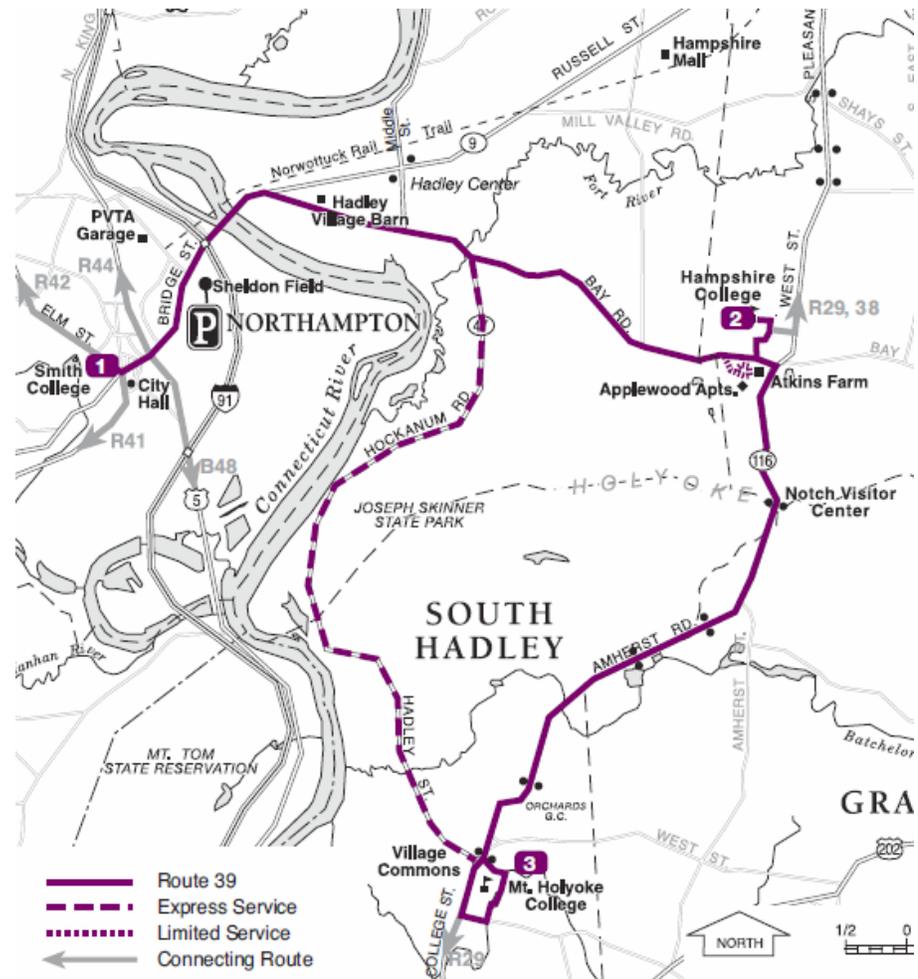
	Congestion and Air Quality Mitigation (CMAQ) program to operate the P21E for one year was approved by Massachusetts MPOs on July 14, 2017.
Effective Date	8/27/17
Customers Affected?	80 customers estimated per day on Saturdays and Sundays.
Disparate (racial discrimination) Impact?	LIKELY DISPARATE IMPACT. 86% of riders of the underlying P21 local bus route are people of color, and the remaining 14% are white. The minority/non-minority difference is therefore +72%, which exceeds the +20% policy threshold that is considered to be a disparate impact. <i>(Similar rider characteristics are assumed for the P21E, as it serves the same corridor and customer base; rider surveys of the P21E were not performed during the most recent customer survey cycle.)</i>
Disproportionate (low-income) Impact?	LIKELY DISPROPORTIONATE IMPACT. 60% of riders of the underlying P21 local bus route are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 40% are not low-income. Therefore, the low-income/non-low-income difference is +20%, which meets the +20% policy threshold that is considered to be a disproportionate impact. <i>(Similar characteristics are assumed for riders of the P21E, as it serves the same corridor and customer base; rider surveys of the P21E were not performed during the most recent customer survey cycle.)</i>
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	YES. The same boarding and destinations stops are available during the same hours of service by using Route P21 local.
Least Discriminatory Alternative?	YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion and number of low-income riders and riders of color on the day of service. Service changes to the P21 local service were also considered. However, this route carries 38-45 passengers per trip, and so reductions would affect two to three times as many riders, thus increasing the total number of people who would experience both disproportionate (racially discriminatory) and disparate (low-income discrimination) impacts.
Mitigation and Revised Service Change	MITIGATION IS REQUIRED. Both disparate and disproportionate impacts are identified. In response to public comments, PVRTA applied to the Pioneer Valley MPO for a \$400,000 grant from the FHWA Congestion Mitigation and Air Quality (CMAQ) program to operate the P21E for one year. To be eligible for these funds, 9 stop pairs will be added to the P21E in Springfield at Bay State Medical Center and along local streets to Union Station so the P21E will qualify as an eligible new service. This grant request was approved by the PVMPO on May 23, 2017. The application was submitted to MassDOT on June 27 for CMAQ consultation process, and the final approval by vote of staff of all other Massachusetts MPOs was received July 14, 2017. Funds became available October 1, 2017. There was no disruption of service.

Option 7: Route 39—Eliminate Route

Route Description

Route 39 operates between Mount Holyoke College in South Hadley, Hampshire College in Amherst, and Smith College in Northampton. There are 24 trips a day Mon-Fri every 30-90 min; 13 trips a day on Saturdays every 75-120 min; and 9 trips a day on Sundays every 75-120 min. Late night service operates up to 2:00AM on Friday and Saturday nights. A reduced service schedule of 8 to 10 trips per day operates during the academic winter break, and there is no service during the summer.

Route 39 travels primarily via Bay Road, with only one stop in Hadley. Two weekday afternoon trips and two Friday late night trips are labeled “Express”, even though this route is not classified as express class service. Route 39 is geared to assist students traveling between the campuses of the above-mentioned institutions when they are in session and is funded in part by Five Colleges Incorporated payment of municipal assessments. No fares are collected on board.



Proposed Change and Rationale	This option would eliminate Route 39. This is a Campus Service class service with a performance standard of 20 passengers per revenue hour. Route 39 does not meet this, carrying 7-10 passengers per revenue hour on weekdays. On Saturdays, Route 39 averages 9 passengers per trip, and on some early trips buses are empty. For reference, the average weekday performance for all Campus Service routes is 50-55 passengers per revenue hour on weekdays, and 35-51 on weekends. There is alternate service available (Routes 38 or R29 to Route B43) to reach all of the destinations served by Route 39 (except those in Hadley), albeit with longer travel times.
Major Service Change?	YES. 100% of route miles would be eliminated on days that the service currently operates (Mon-Sun), which exceeds the major service change threshold of 25%.
Communities Affected	Amherst, Northampton, South Hadley, Hadley (1 stop at Routes 9 and 47)
Implementation Status	NOT IMPLEMENTED. The PVTA Advisory Board on July 19, 2017 voted to reject this option and retain Route 39 with no change in operation.
Effective Date	9/3/17
Customers Affected?	96 customers estimated per weekday. 105 on Saturdays and Sundays.
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 46% of riders of Route 39 are people of color, and the remaining 54% are white. The minority/non-minority difference is therefore -8%, which is less than the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	LIKELY DISPROPORTIONATE IMPACT. 86% of riders of Route 39 are considered "low-income" (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 14% do not have low incomes. Therefore, the low-income/non-low-income difference is +72%, which exceeds the +20% policy threshold that is considered to be a disproportionate impact. Route 39 provides 90,805 revenue miles of service per year; therefore, low income riders would have borne 65,380 revenue miles lost, versus 24,425 revenue miles per year that would have been borne by non-low-income riders.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	YES. On weekdays, Five Colleges Incorporated operates 22 trips per day among these campuses using 12-passenger vans run by local contractor Seemo Shuttle. No fare is charged. The Seemo Shuttle schedule is included on the following page. It is assumed this service will continue to be available on weekdays. In addition, riders can make the same trips Mon-Sun from Mount Holyoke and Hampshire Colleges to Smith College by taking Route 38 to UMass Haigis Mall or downtown Amherst and transferring to the B43 to Smith College. Travel time would increase from 30 min to approximately 70 min.

<p>Least Discriminatory Alternative?</p>	<p>YES. This is the least discriminatory cost-saving alternative in this travel corridor (between Mt Holyoke, Hampshire, and Smith Colleges). It affects the smallest proportion and number of low-income riders and riders of color.</p> <p>PVTA also considered service changes to Route 38, which would also have disproportionate impacts, but they would affect an even greater of low-income riders because Route 38 carries four times as many passenger trips (288,000) per year as Route 39 (72,000) with similar income characteristics and therefore were not advanced.</p> <p>Service changes to Route 43 would not trigger disparate or disproportionate impacts, but would affect a larger proportion riders of color (56% for B43 versus 46% for Route 39), as well as a greater total number of riders. A total of 11 new weekday express trips were added to the B43 on September 5 as mitigation for the elimination of Route M40 (which did not require mitigation) to convert 9 local trips to one-way express trips with no stops at the 16 PVTA bus stops in Hadley.</p> <p>Reductions in Route 29 Saturday and Sunday service (eliminating 5 of 7 round trips per day) were approved by the Advisory Board and involve potentially discriminatory impacts on basis of both race and income. However, this does not affect weekday R29 service, which overlaps with Route 39 service between Hampshire College in Amherst and Mount Holyoke College in South Hadley.</p>
<p>Mitigation and Revised Service Change Proposal</p>	<p>NOT IMPLEMENTED. The retention of this route with no reduction of service is considered mitigation, as a disproportionate impact for low-income customers was identified.</p>

Inter-campus Seemo Shuttle Service Operated by Five Colleges Incorporated

MOUNT HOLYOKE COLLEGE TO/FROM SMITH COLLEGE

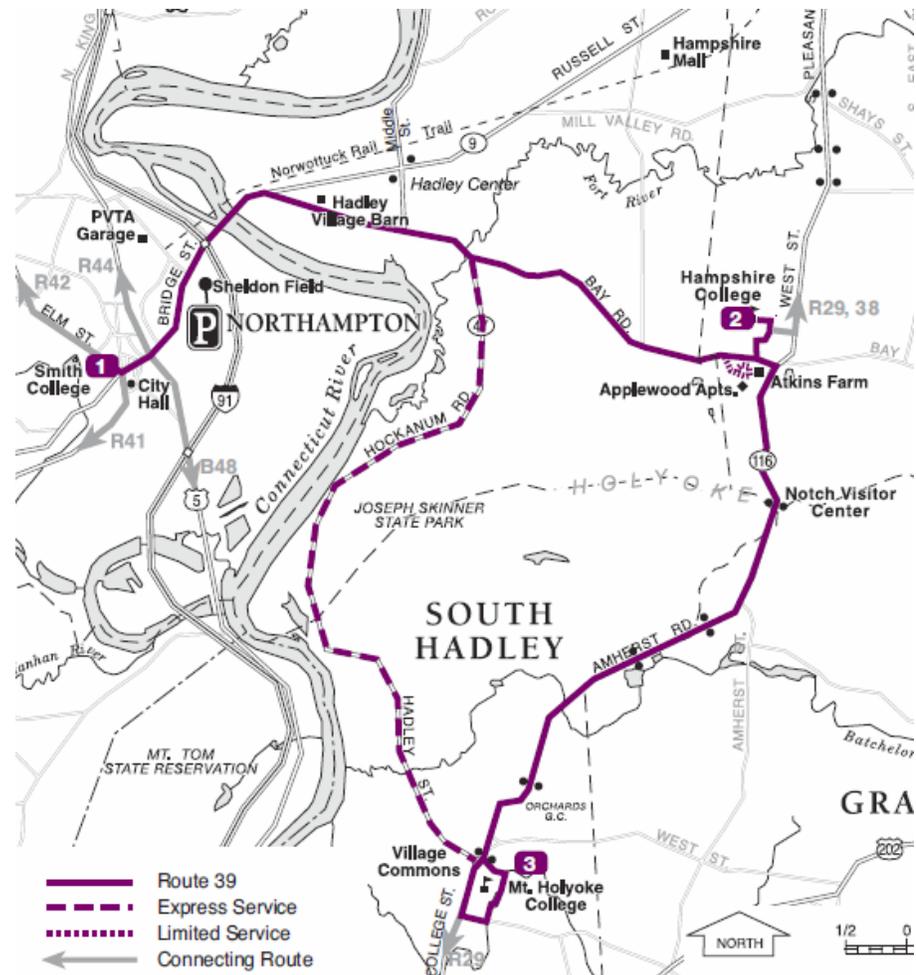
Buses from Mount Holyoke College to Smith College					Buses from Smith College to Mount Holyoke College				
Bus	Leave MHC	Arrive SC	SC classes MWF	SC classes TuTh	Bus	Leave SC	Arrive MHC	MHC classes MWF	MHC classes TuTh
38/39	7:05 AM	7:45 AM	8:00–8:50 AM, 8:30–9:50 AM	8:00–8:50 AM	Seemo	6:50 AM	7:20 AM		
Seemo	7:20 AM	7:50 AM	8:00–8:50 AM, 8:30–9:50 AM	8:00–8:50 AM	Seemo	7:50 AM	8:20 AM	8:35–9:50 AM	8:35–9:50 AM
Seemo	8:20 AM	8:50 AM	9:00–9:50 AM, 10:00–10:50 AM	9:00–10:20 AM	39/38	7:55 AM	8:50 AM	9:00–9:50 AM	9:00–9:50 AM
Seemo	9:25 AM	9:55 AM	10:00–10:50 AM	10:30–11:50 AM	Seemo	8:55 AM	9:25 AM	10:00–10:50 AM	10:00–10:50 AM, 10:00–11:15 AM
Seemo	10:25 AM	10:55 AM	11:00 AM–12:10 PM		Seemo	9:55 AM	10:25 AM	11:00–11:50 AM and –12:15 PM	11:30–12:45
Seemo	12:00 PM	12:30 PM	1:10–2:30 PM	1:00–2:50 PM	Seemo	10:55 AM	11:25 AM	12:20–1:10 PM	11:30 AM–12:45 PM
Seemo	1:05 PM	1:35 PM	2:40–4:20 PM	3:00–4:50 PM	39/38	10:50 AM	11:50 AM		
38/39	2:35 PM	4:00 PM			Seemo	12:35 PM	1:05 PM	1:15–2:05 PM	1:15–2:30 PM
Seemo	2:10 PM	2:40 PM			Seemo	1:35 PM	2:05 PM	2:40–3:55 PM	2:40–3:55 PM
Seemo	3:10 PM	3:40 PM			Seemo	2:40 PM	3:10 PM		3:15–4:05 PM
38/39	4:05 PM	4:50 PM			39/38	2:50 PM	4:20 PM		
Seemo	4:10 PM	4:50 PM			Seemo	3:40 PM	4:10 PM	4:15–5:05 PM	
Seemo	5:20 PM	5:50 PM			Seemo	4:45 PM	5:20 PM		6:00–7:30 PM
Seemo	6:30 PM	7:00 PM	7:30–8:20 PM, 7:30–9:30 PM	7:30–8:20 PM, 7:30–9:30 PM	Seemo	5:55 PM	6:30 PM		
39	8:45 PM	9:30 PM			39/38	6:15 PM	7:20 PM		
39	10:25 PM	11:10 PM			39/38	6:45 PM	8:10 PM		
39 (Friday only)	12:00 AM	12:40 AM			39	7:55 PM	8:45 PM		
					39	9:35 PM	10:25 PM		
					39	11:15 PM	12:00 AM		
					39 (Friday only)	11:15 PM	12:00 AM		
					39 (Friday only)	12:45 AM	1:30 AM		

Option 8: Route 39—Eliminate Saturday and Sunday Service

Route Description

Route 39 operates between Mount Holyoke College in South Hadley, Hampshire College in Amherst, and Smith College in Northampton. There are 24 trips a day Mon-Fri every 30-90 min; 13 trips a day on Saturdays every 75-120 min; and 9 trips a day on Sundays every 75-120 min. Late night service operates up to 2:00AM on Friday and Saturday nights. A reduced service schedule of 8 to 10 trips per day operates during the academic winter break, and there is no service during the summer.

Route 39 travels primarily via Bay Road, with only one stop in Hadley. Two weekday afternoon trips and two Friday late night trips are labeled “Express” even though this is actually a Campus Class service. Route 39 is geared to assist students traveling between the campuses of the above-mentioned institutions when they are in session and is funded in part by Five Colleges Incorporated. No fares are collected on board.



Proposed Change and Rationale	This option eliminates weekend service on Route 39, which has 13 roundtrips on Saturdays and 10 on Sundays. The 39 is a Campus Service class service with a performance standard of 20 passengers per revenue hour. Route 39 does not meet this standard on Saturdays, when it averages 9 passengers per trip, with some runs empty. For reference, the average performance for all routes in the Campus Services class on weekends is 35 to 51 passengers per trip. Also, alternate transit service is available on Saturdays (Route 38 to Route B43) that goes to all the destinations served by Route 39, albeit with longer travel times.
Major Service Change?	YES. 100% of route miles would be eliminated on days that the service currently operates (Mon-Sun), which exceeds the major service change threshold of 25%.
Communities Affected	Amherst, Northampton, South Hadley, Hadley (1 stop at Routes 9 and 47)
Implementation Status	NOT IMPLEMENTED. The PVTA Advisory Board on July 19, 2017 voted to reject this option and retain Route 39 as it previously operated.
Effective Date	9/3/17
Customers Affected?	96 customers estimated per weekday. 105 on Saturdays and Sundays.
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 46% of riders of Route 39 are people of color, and the remaining 54% are white. The minority/non-minority difference is therefore -8%, which is less than the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	LIKELY DISPROPORTIONATE IMPACT. 86% of riders of Route 39 are considered "low-income" (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 14% do not have low incomes. Therefore, the low-income/non-low-income difference is +72%, which exceeds the +20% policy threshold that is considered to be a disproportionate impact.
ADA Van Impacts?	NONE.
Alternate Transit Service Available?	YES. Riders can also make the same trips Mon-Sun from Mount Holyoke and Hampshire Colleges to Smith College by taking Route 38 to UMass Haigis Mall or downtown Amherst or Amherst College and transferring to the B43 to Smith College. Travel time would increase from 30 min to approximately 70 min. Also, for riders who are able to shift their Saturday trips to a weekday, Five Colleges Incorporated operates 22 trips per day Mon-Fri among these campuses using 12-passenger vans run by local contractor Seemo Shuttle at no cost to riders (see schedule accompanying Option 7 on page 35).

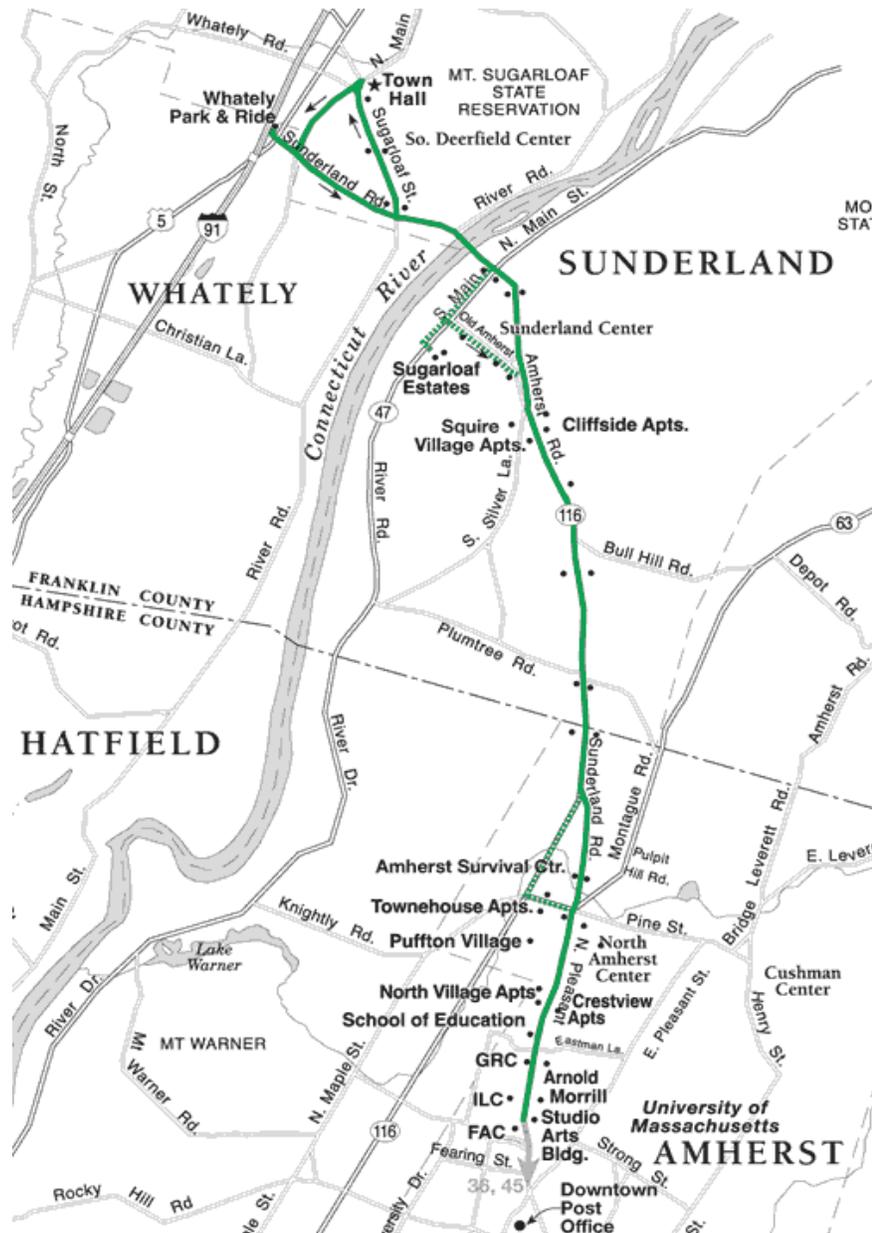
<p>Least Discriminatory Alternative?</p>	<p>YES. This is the least discriminatory cost-saving alternative in this travel corridor (between Mt Holyoke, Hampshire, and Smith Colleges). It affects the smallest proportion and number of low-income riders and riders of color.</p> <p>PVTA initially evaluated service changes to Route 38; however, those would also have disproportionate impacts that would affect an even greater of low-income riders because Route 38 carries four times as many trips (288,000) per year as Route 39 (72,000) but with similar income characteristics.</p> <p>Service changes to Route B43 were also considered, as this route also provides service in part between destinations served by Route 39 and would not trigger disparate or disproportionate impacts; however, changes to Route B43 would affect a larger proportion of riders of color (56% for B43 versus 46% for Route 39), as well as greater overall numbers of customers.</p> <p>Significant reductions to Saturday and Sunday service to Route 29 were evaluated and approved by the Advisory board as Option 16, which poses both disparate (racial discrimination) and disproportionate (income discrimination) impacts to the riders of Route 29. The travel corridor for Route 29 and Route 39 overlap between Hampshire College in Amherst and Mount Holyoke College in South Hadley.</p>
<p>Mitigation and Revised Service Change Proposal</p>	<p>NOT IMPLEMENTED. Retention of this route is considered mitigation, as a disproportionate impact was identified.</p>

Option 9: Route 46—Eliminate Route

Route Description

Route 46 is a Campus Service class service that operates 6 roundtrips per day Mon-Fri (3 in the morning, 1 midday, 2 in late afternoon) from the UMass Amherst Campus north to Sunderland, Sugarloaf Street and South Deerfield Center, and the Whately Park and Ride at I-91 and Sunderland Road. The majority of travel is via Route 116.

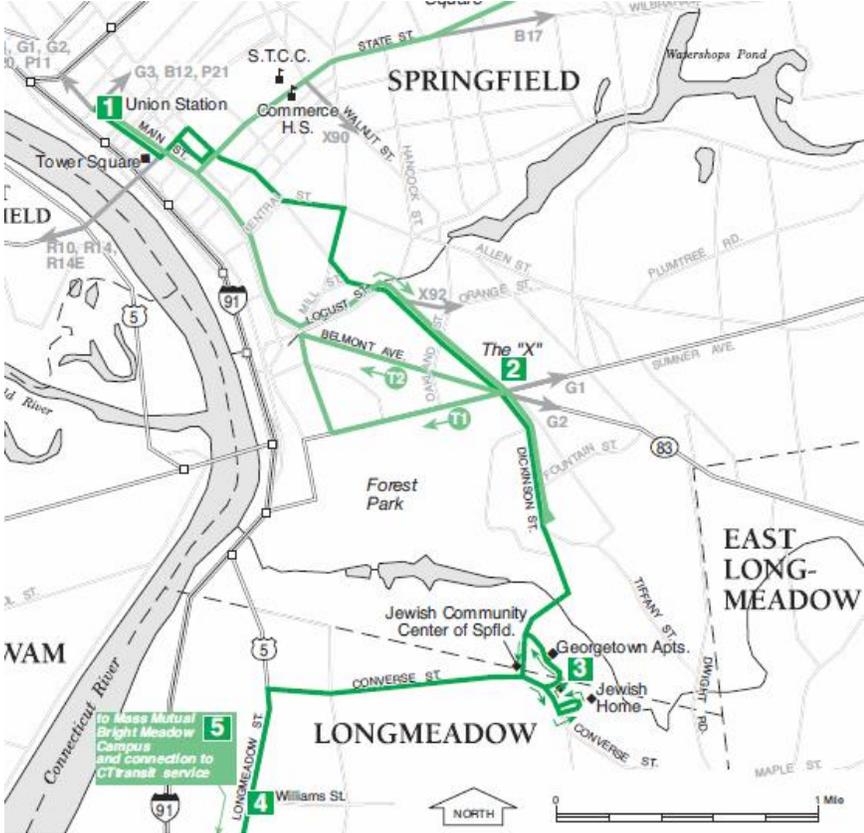
Route 46 is designed to aid students and staff of UMass in commuting to campus, and is funded in part by UMass. No fares are collected on board. Route 46 also operates during the non-academic summer months, when there are significantly fewer riders.



Proposed Change and Rationale	<p>This option eliminates Route 46, a total of 6 roundtrips on weekdays, and provides partial replacement with 3 inbound and 3 outbound one-way helper trips to/from North Amherst each day.</p> <p>Total annual revenue miles for FY2017 were 27,354. As a Campus Service class service, the performance standard for Route 46 is 20 passengers per revenue hour. However, Route 46 does not meet this standard along the majority of its route. Ridership is very low on the route segments in Sunderland, South Deerfield, and Whately. There are typically no more than 6 customers per day north of Sunderland even during peak times in the academic calendar, and 15-20 per day within Sunderland. Only when the Route 46 bus enters north Amherst and begins to pick up large numbers of students at Townhouse Apartments and other large student apartment complexes does the route reach the 20 PPRH threshold, carrying 21 to 31 PPRH depending on the time of the school year. During the non-academic summer months, overall route performance drops to 16-17PPRH for the entire route, and ridership north of the Amherst town line is very low.</p> <p>Also significant is the fact that Route 46 operates in two municipalities (South Deerfield and Whately) that are not PVTA member communities. As such, these two towns do not pay assessments to PVTA for the service they receive (based on route miles), and so the 24 PVTA member municipalities are effectively subsidizing the fixed route and paratransit services in Whately and South Deerfield. This is an inequity for PVTA member communities, as well as riders from South Deerfield and Whately, who have no representation on the PVTA Advisory Board.</p>
Major Service Change?	YES. With the modified service reduction, 33% of route miles would be eliminated on days that the service currently operates (Mon-Fri), which exceeds the major service change threshold of 25%.
Communities Affected	Amherst, Sunderland, South Deerfield (not a PVTA community), Whately (not a PVTA community)
Implementation Status	IMPLEMENTED WITH MITIGATION. The PVTA Advisory Board voted on July 19 to implement this proposal with the modification suggested by public comments that 4 of the 6 daily round trips be retained.
Effective Date	9/3/17
Customers Affected?	6 customers estimated per weekday use Route 46 as far as South Deerfield and Whately (12% of route ridership). The remaining ridership is in Sunderland (15-19 riders, or 35%, per weekday) and North Amherst (23-28 riders, or 53% of route ridership) where the loss of two Route 46 trips per day would be fully mitigated by the continued availability of frequent 15 minute service on Route 31 during the hours that the former Route 46 trips operated.

Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 20% of riders of Route 46 are people of color, and the remaining 80% are white. The minority/non-minority difference is therefore -60%, which is less than the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	NO DISPROPORTIONATE IMPACT. 32% of riders of Route 46 are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 68% do not have low incomes. Therefore, the low-income/non-low-income difference is -36%, which is less than the +20% policy threshold that is considered to be a disproportionate impact.
ADA Van Service Impact?	YES. ADA and senior service provided by PVTA within the ¾-mile buffer in South Deerfield and Whately would no longer be available. There would be no change to ADA and Senior Service paratransit in Sunderland or Amherst.
Alternate Transit Service Available?	PARTIAL. For trips between Sunderland and the UMass campus, identical service is available on Route 31, which operates every 15 minutes. For trips to/from Whately Park and Ride, riders can take FRTA Route 31 to Northampton Academy of Music and transfer to PVTA Route B43 to UMass. For travelers starting/ending their trips along Sugarloaf Street and South Deerfield Center, there is no alternative transit immediately available; customers would need to walk, bike, or get a ride to Sunderland Center to take Route 31.
Least Discriminatory Alternative?	YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color on the day of service. In this corridor, PVTA also considered the possibility of reducing service frequencies on Route 31 to achieve savings. However, the proportion and numbers of low-income riders and riders of color using Route 31 is substantially larger than Route 46, and would therefore be more discriminatory.
Mitigation and Revised Service Change Proposal	MITIGATION IS NOT REQUIRED. Neither disparate nor disproportionate impacts were identified. In response to comments received during the public hearing process, PVTA has: <ol style="list-style-type: none"> 1. Retained 4 of the 6 scheduled round trips per weekday (2 in morning peak; 2 in afternoon peak). Retention of fixed route service to South Deerfield and Whately will mean there will be no change to ADA service within the ¾ mile buffer in those municipalities. The proposed helper bus service was not implemented. The net loss in revenue miles per year was 50% (12,223 revenue miles). 2. Post notices on buses and bus stops to advise Route 46 customers of the service change. 3. Provide customer information on PVTA website, social media and other outlets about service elimination.

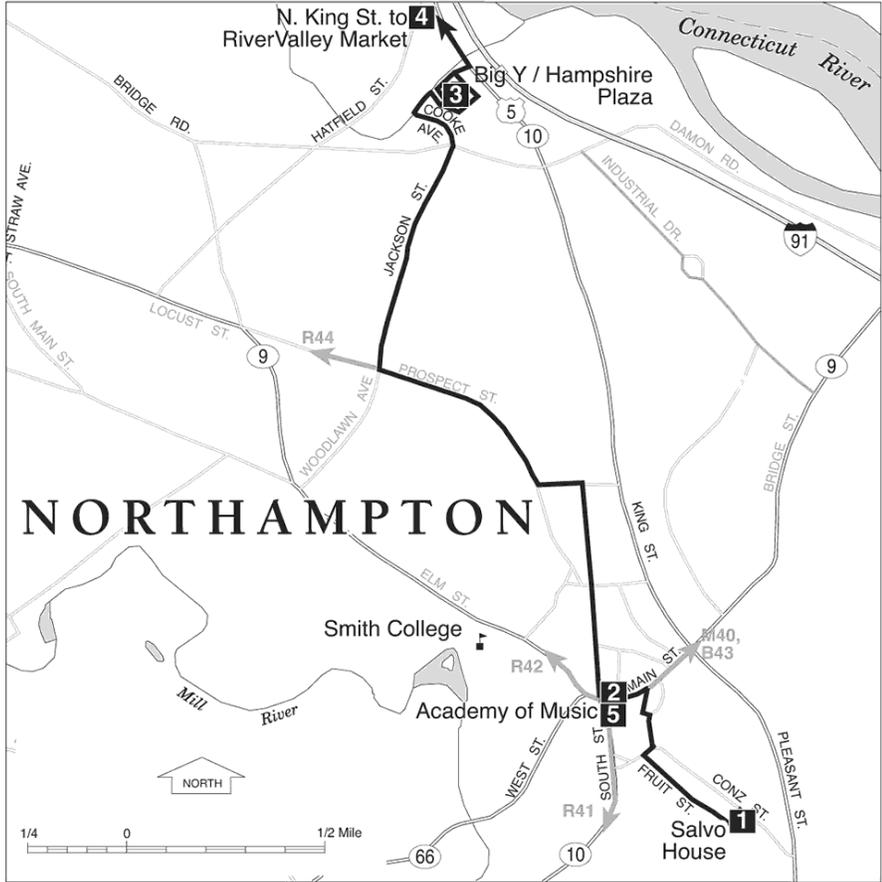
Option 10: Route G5—Eliminate Route

<p>Route Description</p>	<p>Route G5 is an Urban Radial service that operates 17 roundtrips per day Mon-Fri every 60-75 minutes and on 8 trips on Saturdays every 60-90 minutes from Springfield Union Station to the Mass Mutual Bright Meadow campus in Enfield, Connecticut via The X and Dickinson Street in Springfield and Converse and Longmeadow Streets in Longmeadow. A connection to CT Transit buses can be made in Enfield. Total revenue miles per year were 70,361 in FY2017.</p> 
<p>Proposed Change and Rationale</p>	<p>This option would eliminate the 9 trips per day that operate on the 4.7-mile segment of Route G5 south of the Jewish Home at 1146 Dickinson Street in Springfield. All of the route's 18 weekday trips would turn back at this point.</p> <p>As an Urban Radial class service, the performance standard for Route G5 is 20 passengers per revenue hour. However, Route G5 does not meet this standard in Longmeadow and Enfield CT. Ridership is very low in these communities; there are typically no more than 12 customers per day (about 1.5 per trip, and even fewer trips per revenue hour) south of the Jewish Home. Only after the route enters southern Springfield and begins picking up riders at Georgetown Condominiums, businesses, and residential areas along Dickinson Street, and eventually The X, does the G5 exceed 20 PPRH, ranging from 15 to 27 PPRH.</p> <p>Also, Route G5 operates for .5 miles in Enfield CT, which is not a PVTA community. As such, Enfield does not pay assessments for the service it</p>

	receives (based on route miles), and so the 24 PVTA municipalities are subsidizing PVTA fixed route and paratransit service in a municipality that is not a PVTA member. This is an inequity for PVTA members, as well as riders from Enfield, who have no representation on the PVTA Advisory Board.
Major Service Change?	NO. With the approved modification described above, this service change no longer meets the 25% threshold for being a “major service change.” Instead of 42.3 route miles being eliminated (26% of total route miles), the modification results in approximately 23.5 miles of the G5’s total 162 route miles per day being eliminated, which is 14.5% of the daily route miles total.
Communities Affected	Springfield, Longmeadow, Enfield CT (not a PVTA community)
Implementation Status	IMPLEMENTED WITH MODIFICATION. The Advisory Board voted on July 19 to implement this proposal with the modification that 4 of the proposed 9 trips south of Jewish Home that would have been eliminated will be retained.
Effective Date	8/27/17
Customers Affected?	12 customers estimated per weekday (south of Jewish Home).
Disparate (racial discrimination) Impact?	N/A. Not a major service change.
Disproportionate (low-income) Impact?	N/A. Not a major service change.
ADA Van Service Impact?	NO IMPACT. PVTA will continue to provide ADA service to Enfield CT within ¾ mile from the G5 route during the hours that the G5 operates (6:55AM through 5:10PM). ADA and Senior Service will continue to be provided to Longmeadow and Springfield.
Alternate Transit Service Available?	NONE.
Least Discriminatory Alternative?	YES. This is the least discriminatory alternative in this travel corridor. It affects the smallest proportion and number of low-income riders and riders of color on the day of service. The other cost-saving alternative considered was to eliminate Route G5 entirely. In that case, partial alternative service would be available to The X and Forest Park areas of Springfield on the G1, G2, and X90. However, the number of G5 customers in southern Springfield south of Sumner Avenue who would be without alternative transit service would still be much greater than the number of people affected by eliminating only the portions in Longmeadow and Enfield, Connecticut.

<p>Mitigation and Revised Service Change Proposal</p>	<p>MITIGATION IS NOT REQUIRED. This option does not constitute a major service change, as it does not alter more than 25% of route miles or bus stops on the day of service.</p> <p>In response to comments received about this minor service change during the public hearing process, PVRTA will:</p> <ol style="list-style-type: none"> 1. Retain 4 of the 9 trips on weekdays during peak commute times to mitigate the loss of access to Mass Mutual’s Enfield, Connecticut campus and Bay Path College in Longmeadow. Retention of fixed route service means there will be no change to existing ADA van service within the ¼ mi buffer in Enfield CT (provided by CT Transit). 2. Post service change information at bus stops and on vehicles in Longmeadow and Enfield. 3. Work with major employers MassMutual and Bay Path College to inform key staff prior to service changes and potential impacts to their campuses and encourage outreach to employees and students.
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Option 11: Route X98—Eliminate Route

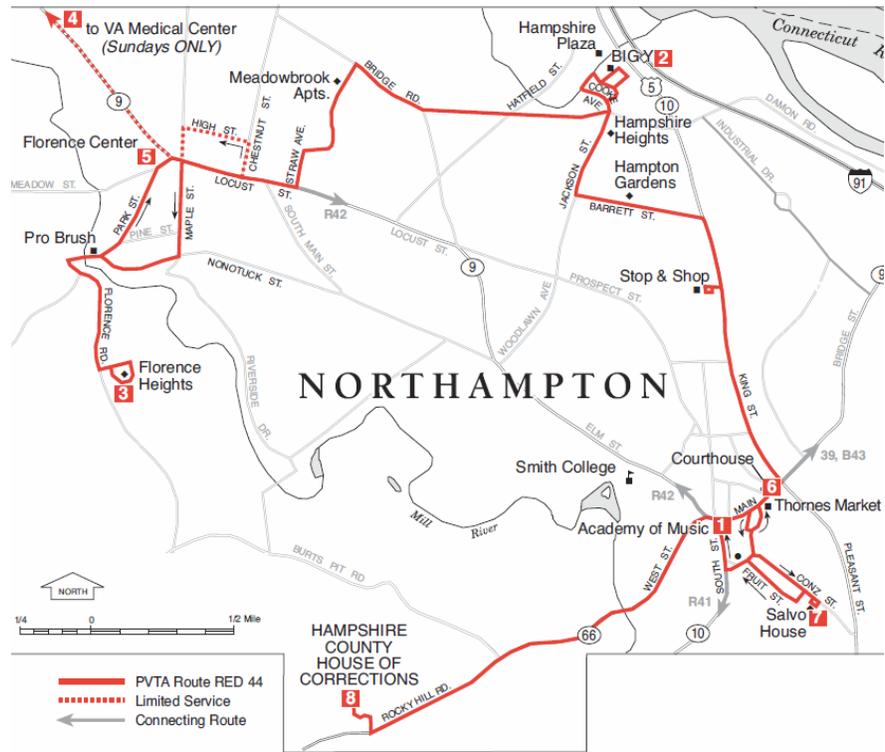
<p>Route Description</p>	<p>Route X98 is a Tier II Class service that operates Mon-Sat with 10 roundtrips per day (2 in the morning, 3 midday, 5 afternoon) from Salvo House north to State Street, Prospect Street, Jackson Street, and the River Valley Coop via Hampshire Plaza. Route X98 also serves the Northampton Survival Center at 265 Prospect Street.</p>  <p>  PVRTA Route X98  Connecting Route </p>
<p>Proposed Change and Rationale</p>	<p>This option proposes eliminating Route X98, a total of 10 roundtrips on weekdays and Saturdays. As a “Tier II” class service, the performance standard for Route X98 is 20 passengers per trip. However, Route X98 does not meet this standard, averaging just 2 passengers per trip.</p>
<p>Major Service Change?</p>	<p>YES. With the mitigation approved as described above, 70% of route miles would be eliminated on weekdays, which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Northampton</p>
<p>Implementation Status</p>	<p>IMPLEMENTED WITH MITIGATION. The Advisory Board voted on July 19, 2017 to continue operating Route X98 with the modification that 7 of the daily trips be eliminated and that the 3 remaining round trips on weekdays be operated on different schedules on Mon-Wed-Fri and Tues-</p>

	Thurs to provide service to the Northampton Survival Center during food distribution hours. Further mitigation to alter the route of the R44 to better serve neighborhoods near the Survival Center was also approved.
Effective Date	9/3/17
Customers Affected?	15 customers estimated per day.
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 27% of riders of Route X98 are people of color, and the remaining 73% are white. The minority/non-minority difference is therefore -46%, which is less than the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	LIKELY DISPROPORTIONATE IMPACT. 67% of riders of Route X98 are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 33% do not have low incomes. Therefore, the low-income/non-low-income difference is +34%, which exceeds the +20% policy threshold that is considered to be a disproportionate impact.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	PARTIAL. Route R44 provides service between Hampshire Plaza and Salvo House at the same frequency as Route X98. 78% of ridership on Route X98 is between these points, and will be adequately served by Route R44. No alternate service exists for the Northampton Survival Center. For River Valley Coop employees, a shuttle operates from Hampshire Plaza every 30 minutes.
Least Discriminatory Alternative?	YES. This is the least discriminatory cost saving alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color on the day of service. PVRTA revised the schedule on the X98 in late 2016 to encourage more ridership on the segment between downtown and Hampshire Plaza; however, ridership has not increased. As part of that schedule change, PVRTA also considered reducing the number of daily trips on the X98 from 10 to 8 or 6, which would have still triggered a disproportionate impact, and yielded relatively little cost savings.

Mitigation and Revised Service Change Proposal

MITIGATION IS REQUIRED. A disproportionate impact is identified. In response to comments received during the public hearing process, PVTa has:

1. Retained 3 of the 10 trips per weekday to provide access to/from the Northampton Survival Center during their food distribution hours. Service to River Valley Market Coop will be discontinued so that larger buses can be assigned to Route X98.
2. Restored the former route of Route R44 on Barrett and Jackson Streets (see below), to help assure that low-income riders on Route X98's route still have hourly transit service to Hampshire Plaza and downtown Northampton center. This will accommodate approximately 78% of the current X98 service area between Hampshire Plaza and Salvo House.



3. Posted notices on X98 vehicles and at affected bus stops at least 2 weeks prior to any service change.
4. Provided customer outreach via PVTa website, social media, news media.
5. Distributed 7-day passes at no cost to for X98 riders to encourage use of X98 on its new schedule, as well as the R44 and other alternate services.

It is the estimate of this analysis that the mitigation as implemented overcomes the 20% threshold for the disproportionate impacts to low-income riders. Key destinations will continue to be served by Route X98 albeit with less daily frequency, and the re-routing of the R44 provides alternative access in the corridor for former X98 riders.

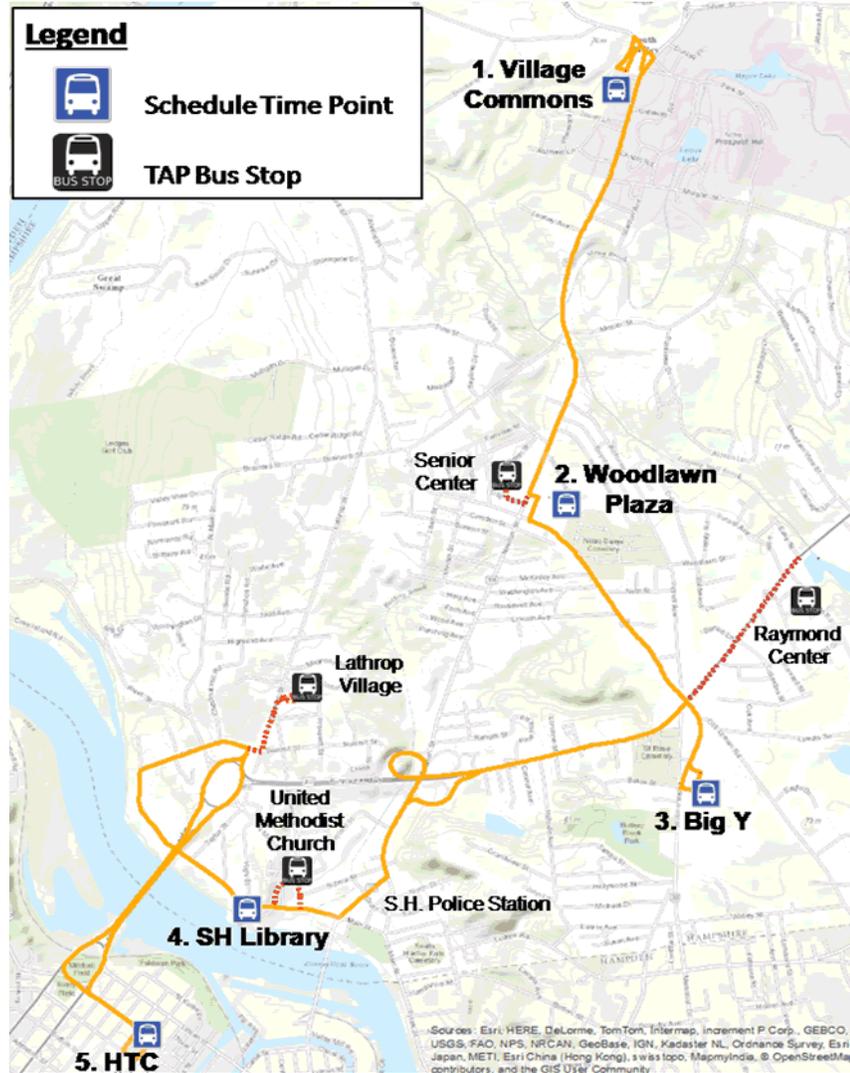
Option 12: Tiger Trolley—Eliminate Route

Route Description

The Tiger Trolley is Community Shuttle service that operates from the Holyoke Transportation center to South Hadley Village Commons and Mount Holyoke College. There are 8 roundtrips Mon-Fri every 90 minutes, Travel is via Route 116 and Main Street, with on-demand (Transportation Access Point, or “TAP”) service to destinations shown on the map below.

The service vehicle is a 12-passenger lift-equipped van, rather than a full-sized bus, due to tight turns and close maneuvering at some locations.

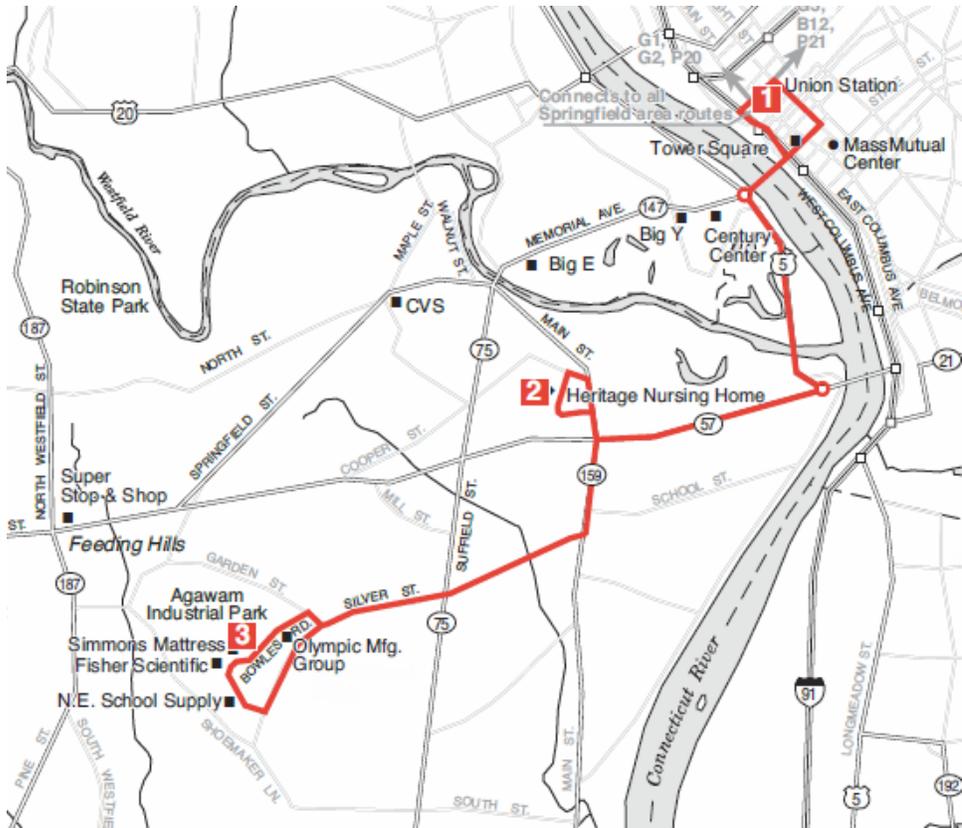
The Tiger Trolley was instituted as a pilot service in 2014.



Proposed Change and Rationale	<p>This option eliminates the Tiger Trolley route. As a Community Shuttle class of service, the performance standard for the Tiger Trolley is 5 passengers per revenue hour. However, the trolley does not meet this standard, with ridership of ranging from 1 to 3 passengers per revenue hour. The route was implemented with multiple “Transportation Access Points” (TAP) where riders could summon a ride on demand.</p> <p>PVTA worked with the Town of South Hadley in 2016 to improve the routing to reduce travel time and provide service to the Holyoke Transportation Center via the Route 116 Bridge and South Hadley Center, instead of crossing at Route 202, to improve the coverage area. Public hearings were held and additional marketing and outreach was conducted. However, ridership has not increased since the improvements were implemented in January 2017.</p>
Major Service Change?	YES. 100% of route miles would be eliminated on days that the service currently operates (Mon-Fri), which exceeds the major service change threshold of 25%. Total annual revenue miles eliminated were: 48,194.
Communities Affected	South Hadley, Holyoke
Implementation Status	IMPLEMENTED AS PROPOSED. The Advisory Board voted on July 19, 2017 to eliminate the Tiger Trolley route.
Effective Date	8/27/17
Customers Affected?	15 customers estimated per weekday.
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT IDENTIFIED. 25% of riders of the Tiger Trolley are people of color, and the remaining 75% are white. The minority/non-minority difference is therefore -50%, which is less than the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	NO DISPROPORTIONATE IMPACT. 25% of riders of Route G5 are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 75% do not have low incomes. Therefore, the low-income/non-low-income difference is -50%, which is less than the +20% policy threshold that is considered to be a disproportionate impact.
ADA Van Service Impact?	NONE. ADA service will still be available throughout all areas of South Hadley and Holyoke during the same days and hours.
Alternate Transit Service Available?	<p>YES. In the Route 116 corridor, weekday service is provided every 60 minutes by Route R29 between Holyoke Transportation Center and UMass Haigis Mall. Stops include Main Street in South Hadley Falls, Woodlawn Plaza, Mt Holyoke College and Village Commons.</p> <p>In the portions of the route in Holyoke and in the South Hadley Falls area, PVTA Route X90 also provides alternate service along Route 116 toward Chicopee.</p> <p>Direct service to the former Transit Access Points (TAPs) on the Tiger Trolley will no longer be available; customers from those destinations will need to walk or receive a ride to the R29 at stops on Route 116 and Main Street.</p>

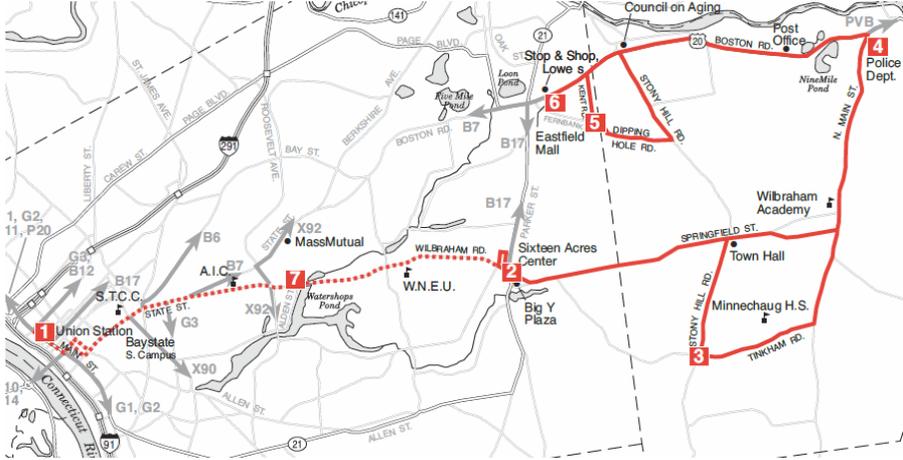
	<p>PVTA Senior Service also is available to residents age 60+ Mon-Sat from 8:00AM to 4:30PM at the paratransit fare price (\$2.50 per trip) to any destination in any adjacent community.</p>
<p>Least Discriminatory Alternative?</p>	<p>YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color on the day of service than reductions in service to any of the other routes serving this area.</p> <p>PVTA considered cost-saving reductions in weekday service to the X90 in Holyoke and South Hadley, and those are also being considered as part of Options 19 and 20. Option 19 is not a major service change, but Option 20 would be. In either case, because the X90 carries greater numbers and proportions of riders of color and low income, reductions to the X90 would be more discriminatory.</p> <p>PVTA also considered reductions in weekday service to the R29, which services much of the Tiger Trolley route. However, any reductions to weekday R29 would affect greater numbers and proportions of riders of color (70% for R29, versus 25% for Tiger Trolley) and low income (69% for R29 versus 25% for Tiger Trolley) than would be affected by eliminating the Tiger Trolley. The R29 also carries approximately 16 passengers per trip, versus 1 to 3 passengers on the Tiger Trolley – so approximately five times more riders would be affected.</p>
<p>Mitigation</p>	<p>NO MITIGATION IS REQUIRED. Neither disparate nor disproportionate impacts are anticipated. To minimize inconvenience to Tiger Trolley riders and in response to comments received during the public hearing process, PVTA has:</p> <ol style="list-style-type: none"> 1. Posted information about this service change (route discontinued) and alternate transit service available on all Tiger Trolley vans at least 2 weeks prior to the end of service. 2. Posted service change information at bus stops and Transportation Access Points (TAPs) served by Tiger Trolley. 3. Performed special outreach to town officials and major employers along the Tiger Trolley route prior to discontinuance. 4. Distributed one 7-day pass at no cost to former Tiger Trolley riders to encourage use of the alternate transit services. 5. Monitored ridership on R29 weekday, X90, and R24 routes after the Tiger Trolley service ends to identify any capacity or performance issues from additional ridership. (None necessary as of 12/19/17)

Option 13: Route 14E (Express)—Eliminate Route

<p>Route Description</p>	<p>Route R14E is an Express Class service that operates Mon-Fri with 4 roundtrips per day (1 in the morning, 1 midday, 2 in afternoon) from Springfield Union Station to Heritage Nursing Home and Agawam Industrial Park. Route R14E is designed to provide express bus access to locations not served by Route R14.</p> 
<p>Proposed Change and Rationale</p>	<p>This option eliminates Route R14E, a total of 4 roundtrips on weekdays and Saturdays. Total revenue miles were 18,157 in FY2017. As an “Express” class service, the performance standard for Route R14E is 20 passengers per trip. However, Route R14E does not meet this standard (average 8-13 PPT).</p> <p>There are also opportunities to combine service with the underlying R14 local and effectively service the majority of customers now using both routes.</p>
<p>Major Service Change?</p>	<p>YES. 100% of route miles would be eliminated on days that the service currently operates (Mon-Fri), which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Springfield, Agawam</p>
<p>Implementation Status</p>	<p>IMPLEMENTED WITH MITIGATION. The Advisory Board voted on July 19, 2017 to eliminate Route 14E and mitigate the loss of its 4 trips per weekday to the Agawam Industrial Park and Heritage Nursing Home by adding those destinations to Route R14.</p>
<p>Effective Date</p>	<p>8/27/17</p>

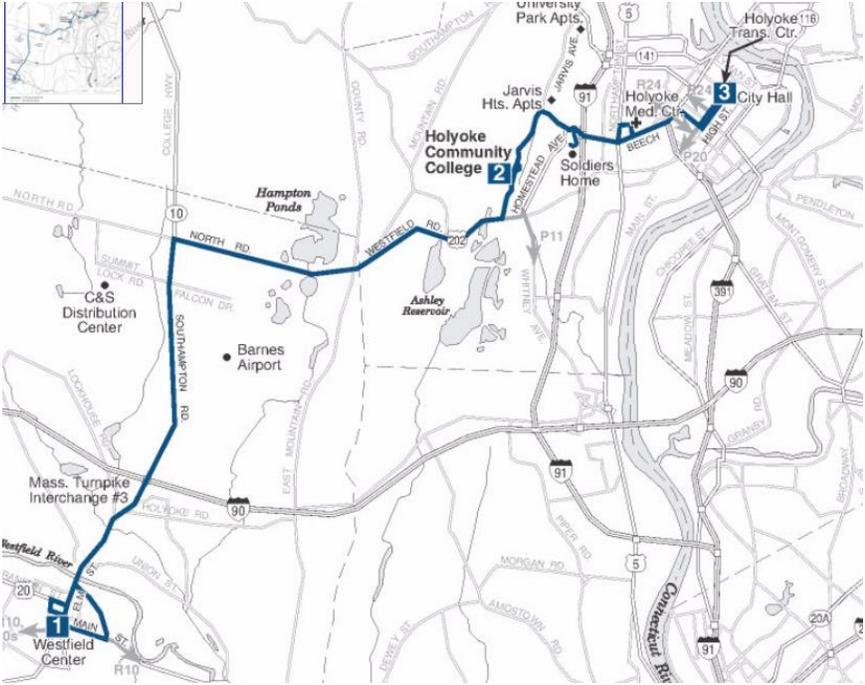
Customers Affected?	21 customers estimated per day.
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 43% of riders of Route R14E are people of color, and the remaining 57% are white. The minority/non-minority difference is therefore -14%, which is less than the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	DISPROPORTIONATE IMPACT IDENTIFIED. 68% of R14E riders are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual); the remaining 32% do not have low incomes. Therefore, the low-income/non-low-income difference is +36%, which exceeds the +20% policy threshold that is considered to be a disproportionate impact. Of the 18,157 annual revenue miles that would be lost, 12,347 would be borne by people with low incomes, versus 5,810 revenue miles that would be lost by people who do not have low incomes.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	PARTIAL. PVTA Senior Service remains available to residents age 60+ Mon-Sat from 8:00AM to 4:30PM at the paratransit fare price (\$2.50 per trip) to any destination in any adjacent community. Agawam COA provides van service by request Tues to Fri 8:00AM to 12:00PM.
Least Discriminatory Alternative?	YES. This is the least discriminatory cost-saving alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color on the day of service.
Mitigation and Revised Service Change Proposal	<p>MITIGATION IS REQUIRED. A disproportionate impact is identified. In response to comments received during the public hearing process, PVTA has:</p> <ol style="list-style-type: none"> 1. Modified Route 14 to include 4 trips (same number) per weekday to Heritage Nursing Home and Agawam Industrial Park. (These destinations account for roughly half of passengers currently using the Route R14E.) This modification has added another 9,611 annual revenue miles of service to the R14, which compensates for the net loss of 9,079 annual revenue miles by eliminating the R14E. 2. Worked with Agawam Industrial Park to coordinate revised R14 arrival/departure times to better accommodate work shift changes. 3. Provided customer information on the PVTA website, social media, and at Springfield Union Station for revised R14 schedule serving same destinations. 4. Distributed one 7-day pass at no cost to former riders of the R14E to encourage use of Route R14 on its new schedule. <p>This analysis estimates that the mitigation as implemented reduces the loss of annual revenue miles from +36% to +18%, which is less than the 20% policy threshold for the disproportionate impacts to low-income riders.</p>

Option 14: Route R27—Eliminate Route

<p>Route Description</p>	<p>Route R27 is a Village Connector Class service that operates Mon-Fri with 5 one-way trips per day (2 inbound in the morning, 1 outbound in midday, 1 outbound and 1 inbound in afternoon) between Eastfield Mall and Springfield Union Station via Sixteen Acres. Route R27 is designed to provide access to/from downtown Springfield, Wilbraham, and the Eastfield Mall. Total annual revenue miles were 12,699 in FY2017.</p>  <p>The map shows the route starting at Union Station (1), heading to Baystate S. Campus (2), then to Sixteen Acres Center (3), Wilbraham Center (4), Eastfield Mall (5), and ending at Union Station (6). A dotted line indicates an alternative route through Wilbraham (7).</p>
<p>Proposed Change and Rationale</p>	<p>This option eliminates Route R27, a total of 5 one-way trips on weekdays. As a Village Connector service, the performance standard for Route R27 is 15 passengers per revenue hour. However, Route R27 does not meet this standard, averaging 7-14 passengers per revenue hour.</p> <p>There are also opportunities to consolidate R27 service with existing B17 service, which also travels to Eastfield Mall along this same route.</p>
<p>Major Service Change?</p>	<p>YES. 60% of route miles would be eliminated on days that the service currently operates (Mon-Fri), which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Springfield, Wilbraham</p>
<p>Implementation Status</p>	<p>IMPLEMENTED WITH MITIGATION. The Advisory Board voted on July 19, 2017 to eliminate Route 27 and mitigate the loss of 5 trips per weekday to Wilbraham Center by adding 3 trips to/from Wilbraham to the Route B17 schedule.</p>
<p>Effective Date</p>	<p>8/27/17</p>
<p>Customers Affected?</p>	<p>13 customers estimated per day.</p>
<p>Disparate (racial discrimination) Impact?</p>	<p>NO DISPARATE IMPACT. 50% of riders of Route R27 are people of color, and the remaining 50% are white. The minority/non-minority difference is therefore 0%, which is less than the +20% policy threshold that is considered to be a disparate impact.</p>

Disproportionate (low-income) Impact?	NO DISPROPORTIONATE IMPACT. 0% of riders of Route R27 are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 100% do not have low incomes. Therefore, the low-income/non-low-income difference is -100%, which is less than the +20% policy threshold that is considered to be a disproportionate impact.
ADA Van Service Impact?	NONE. ADA and Senior Service vans would still be available throughout Wilbraham.
Alternate Transit Service Available?	PARTIAL. Two of the five trips provided by Route R27 are presently operated as Route B17 variants. These trips will continue to be operated, ensuring that Wilbraham retains transit access to Eastfield Mall, Sixteen Acres, and downtown Springfield.
Least Discriminatory Alternative?	YES. This is the least discriminatory alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color on the day of service.
Mitigation and Revised Service Change Proposal	MITIGATION IS NOT REQUIRED. There are no disparate or disproportionate impacts required. To minimize inconvenience to customers, PVTA has: <ol style="list-style-type: none"> 1. Retained 3 trips per day that were being operated as R27 trips and add them to the B17 schedule to consolidate the service provided by these two routes. This has retained the same level of service to Wilbraham. 2. Posted notices on R27 buses, at Union Station, and other key location on the route at least 2 weeks prior to this service change. 3. Provided customer information on PVTA website, social media, and other outlets.

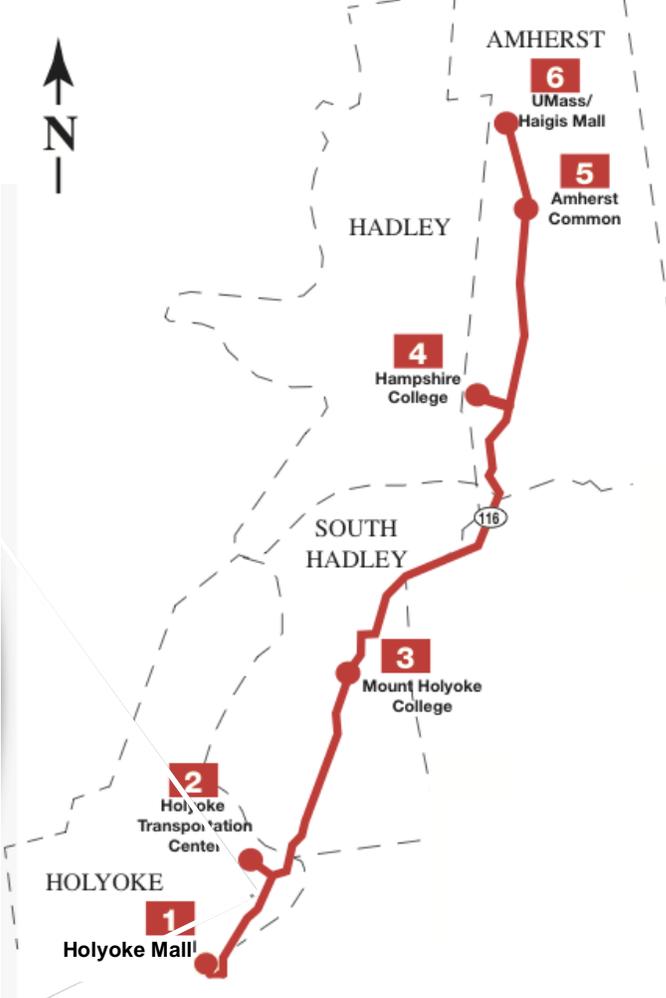
Option 15: Route B23—Eliminate Saturday Service

<p>Route Description</p>	<p>The B23 is a Village Connector service that operates 15 trips Mon-Fri every 60 min and 5 trips on Saturday every 120 min between the Holyoke Transportation Center and the Olver Transit Pavilion in downtown Westfield. Travel is via the Holyoke Soldiers Home, Holyoke Community College, Route 202 and Westfield Road. At the Westfield Transit Pavilion, the B23 connects to the R10 and R10S, both of which provide a short ride to Westfield State University—and key destination for students on class days. Total annual revenue miles for Saturday service were 6,320 in FY2017.</p>  <p>The map shows the route starting at Westfield Center (1), heading north on Westfield Road, then east on Route 202 through Holyoke, passing Holyoke Community College (2) and Holyoke Soldiers Home, and ending at Holyoke Transportation Center (3). Key landmarks include Barnes Airport, Ashley Reservoir, and various local roads like North Rd and Westfield Rd.</p>
<p>Proposed Change and Rationale</p>	<p>This option eliminates Route B23 Saturday service. As a Village Connector class service, the B23 has a performance standard of 15 passengers per revenue hour. The B23 usually exceeds this standard on weekdays, carrying 12 to 28 passengers per revenue hour, depending on the month and academic calendar at Westfield State University. But on Saturdays, passenger volumes are typically just 5 passengers per revenue hour.</p>
<p>Major Service Change?</p>	<p>YES. 100% of route miles would be eliminated on day that service operates (Saturday), which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Holyoke, Westfield</p>
<p>Implementation Status</p>	<p>IMPLEMENTED WITH MITIGATION. The Advisory Board voted on July 19, 2017 to eliminate Route B23 Saturday service.</p>
<p>Effective Date</p>	<p>8/27/17</p>
<p>Customers Affected?</p>	<p>28 estimated on Saturdays.</p>

Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 42% of route riders are people of color and 58% are white. The minority/non-minority difference is therefore -16%, which does not exceed the +20% policy threshold considered to be a disparate impact.
Disproportionate (low-income) Impact?	DISPROPORTIONATE IMPACT IDENTIFIED. 70% of route riders are considered “low-income” (defined in this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 30% are not low-income. Therefore, the low-income/non-low-income difference is +40%, which exceeds the +20% policy threshold that is considered to be a disproportionate impact.
ADA Van Service Impact?	NONE. PVRTA’s policy of providing ADA service to the entirety of each PVRTA community will continue on Saturdays in Holyoke and Westfield.
Alternate Transit Service Available?	PARTIAL. The majority (57%) of B23 Saturday ridership occurs between the Soldiers Home and downtown Westfield. Among these riders, for those who are traveling from downtown Holyoke to downtown Westfield, the alternate transit is to take Route P21 (or Route 21E, if it is not eliminated) from HTC to Springfield Union Station and transfer to the R10 to Westfield. For riders seeking to reach destinations in the part of the corridor from Cherry Street and Northampton to Route 202 to Westfield Road, there is no alternate transit service on Saturday. For the remaining 43% of Saturday riders who are not traveling west of Northampton Rd, alternative transit is available in downtown Holyoke using the 7 hourly trips of the R24 to destinations that include Holyoke Hospital, Stop & Shop, City Hall, YMCA, Transportation Center, and other destinations along Dwight and Maple Streets; service to the east side of downtown is also available on the X90 (and R29, if it is not eliminated).
Least Discriminatory Alternative?	YES. This is the least discriminatory cost-savings alternative in this corridor. It affects the smallest number and proportion of riders of color and low incomes. PVRTA considered reductions to other routes that can be used to travel between Holyoke and Westfield on Saturdays (P20 or P21 transferring to the R10); however, these would trigger a disparate impact and aggravate the existing disproportionate impact because the proportions of low-income and riders of color who regularly ride those routes (P20, P21, R10) are significantly greater than on the B23. Another possible alternative service change that was considered would be to reduce the number of trips from 5 to 2 per day (1 in morning; 1 in the afternoon); however, operating this “lifeline” service involved higher than expected costs, as there are few vehicles available to interline from other routes at the times of day that these 2 trips would be needed. The cost of another vehicle and driver were significant and would not generate the level of savings required.
Mitigation	MITIGATION IS REQUIRED. There is a disproportionate impact to low-income riders. In response to comments received during the public hearing process, PVRTA has: 1. Encouraged use of alternate service available via R10, P20, and R41.

	<ol style="list-style-type: none"> 2. Provided customer education on PVTA website, social media about the availability of alternative transit on Saturday 3. Posted notices on buses and bus stops at least 2 weeks before implementation about the availability of alternative transit on Saturday. 4. Distributed 1-day passes at no cost on the first four Saturdays that this service is discontinued to assist former B23 customers needing to make the connection between these two hubs. 5. Monitored ridership and performance of P20, P21, and R10 on Saturdays. <p>It is the estimate of this analysis that the mitigation proposed is not sufficient to overcome the 20% threshold for disproportionate impacts to riders with low incomes—which are estimated to be 70% of the Saturday B23’s estimated 28 users. Of the 6,320 annual revenue miles that have been eliminated, 4,424 are borne by low-income riders. To overcome the 20% threshold, the proportion of lost annual revenue miles borne by low-income riders must be reduced to at least 3,792. For impacted riders, at least 18 of the 28 Saturday riders would need to have comparable service available between downtown Holyoke and Westfield Center.</p> <p>PVTA will need to continue to evaluate strategies for serving low-income riders who need to travel between downtown Holyoke and Westfield Center on Saturdays and present options for doing so to its Route Committee before the end of FY2018.</p>
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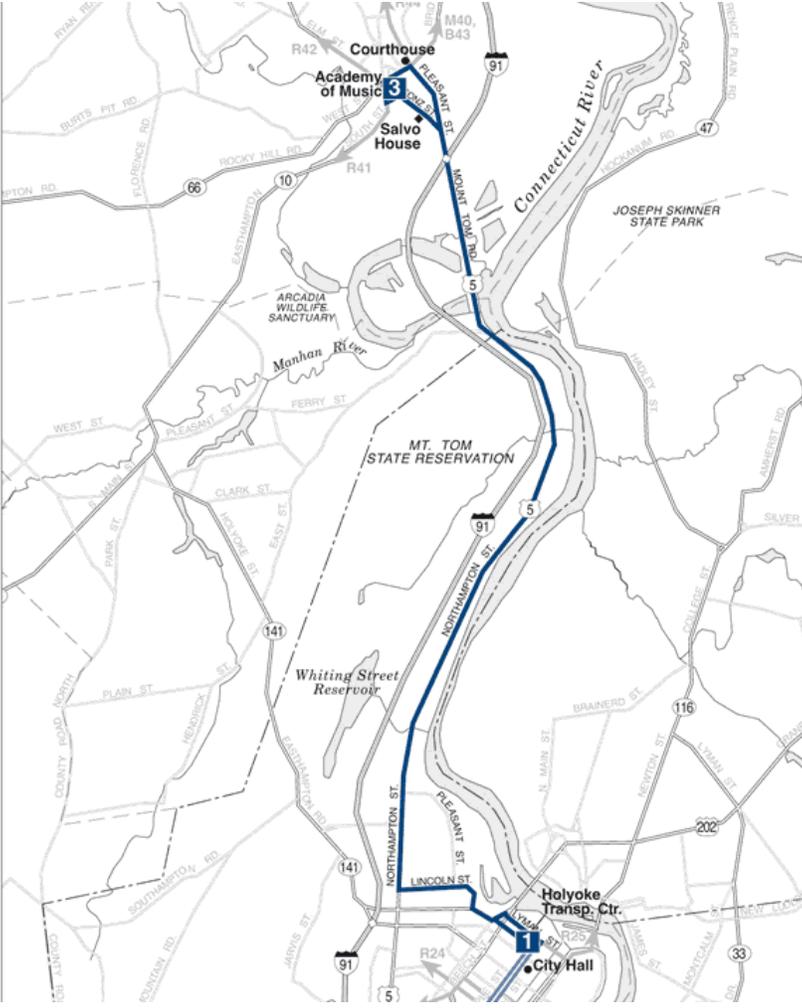
Option 16: Route R29—Eliminate Saturday and Sunday Service

<p>Route Description</p>	<p>Route R29 is an Express Class service that operates Mon-Sun from the Holyoke Mall north to UMass Amherst via Holyoke Transportation Center, Mount Holyoke College, Hampshire College, and Amherst Center. There are 6 roundtrips per day (2 in the morning, 2 midday, 2 late afternoon) during the week, and seven per day on weekends. Route R29 was instituted in 2015 to provide a direct link between UMass Amherst and Holyoke.</p> 
<p>Proposed Change and Rationale</p>	<p>This option eliminates Saturday and Sunday service on Route R29, a total of 6 daily trips and 20,334 revenue miles per year (based on FY2017). As an Express service, the performance standard for Route R29 is 20 passengers per trip. However, Route R29 does not meet this standard, averaging 9-19 passengers per trip.</p>
<p>Major Service Change?</p>	<p>YES. 100% of route miles would be eliminated on Saturdays and Sundays, which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Amherst, Granby, South Hadley, Holyoke</p>

Implementation Status	IMPLEMENTED WITH MODIFICATIONS. The Advisory Board voted on July 19, 2017 to retain Route R29 Saturday service but to reduce the frequency from 7 round trips per day to just 2 (one at 7:30AM and one at 5:30PM) to provide “lifeline” service for people needing to get to work. This reduces the number of annual revenue miles of service lost from 30,501 to 20,334.
Effective Date	8/27/17
Customers Affected?	83 customers estimated per day (Saturday or Sunday).
Disparate (racial discrimination) Impact?	DISPARATE IMPACT IDENTIFIED. 69% of riders of Route R29 are people of color, and the remaining 31% are white. The minority/non-minority difference is therefore +38%, which is more than the +20% policy threshold that is considered to be a disparate impact. The proportion of the 10,167 miles of annual revenue service lost borne by riders of color is 7,015 versus 3,125 borne by white riders.
Disproportionate (low-income) Impact?	DISPROPORTIONATE IMPACT IDENTIFIED. 70% of riders of Route R29 are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 30% do not have low incomes. Therefore, the low-income/non-low-income difference is +40%, which exceeds the +20% policy threshold that is considered to be a disproportionate impact. The proportion of the 10,167 miles of annual revenue service lost borne by riders with low incomes is 7,117 versus 3,050 for riders who do not have low incomes.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	PARTIAL. Ridership on Route R29 is concentrated in areas where more frequent alternative transit service is available (between Holyoke Transportation Center and the Holyoke Mall, and between Mount Holyoke College and UMass). Ridership on the portion between Mount Holyoke College and Holyoke Transportation Center is less than 3% of overall ridership on Route R29. Route 38 duplicates Route R29 between Mount Holyoke College and UMass while classes are in session, and Route 36 duplicates Route R29 between Atkins Farm and Amherst Center during school vacations. Both routes operate fare-free and more frequently than the R29, although Route 36 does not operate on Sundays. Trips between Holyoke Transportation Center and Holyoke Mall can be made using the P20, which operates year round and more frequently than the R29. No alternate service exists between Mount Holyoke College and Holyoke. If R29 weekend trips are eliminated, during the academic year passengers would need to ride Route 38 north to Amherst, transfer to Route B43 to Northampton, and then transfer again to Route B48 to Holyoke. During nonacademic time of year, there is no alternate service south of Atkins Farm to Holyoke; to make that trip, passengers would need to ride Route 36 north to Amherst, transfer to Route B43 to Northampton, and transfer to Route B48 to Holyoke.

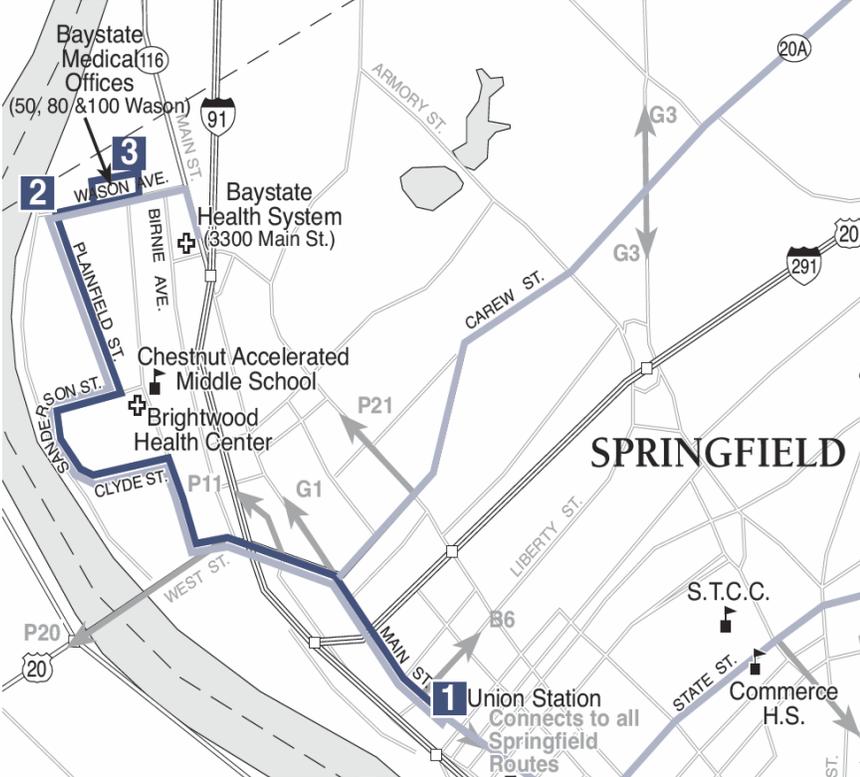
<p>Least Discriminatory Alternative?</p>	<p>YES. This is the least discriminatory alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color on the day of service.</p> <p>PVTA considered service reductions to Route 38, which operates in much of this corridor, but larger numbers of low-income riders would be affected.</p> <p>PVTA is also considering service reductions to the X90, which overlaps the Holyoke portions of the R29’s route. Those reductions, if approved, will affect significant proportions and numbers of riders of color and low income.</p>
<p>Mitigation and Revised Service Change Proposal</p>	<p>MITIGATION IS NECESSARY. This service change would have both disparate and disproportionate impacts. In response to comments received during the public hearing process, PVTA has:</p> <ol style="list-style-type: none"> 1. Retained 2 of the 7 trips on Saturdays and Sundays (1 in early morning; 1 in late afternoon). This has restored 10,167 of the 20,334 annual revenue miles of service that would have been lost under the original proposal to eliminate Saturday service entirely. 2. Distributed 1-day passes at no cost on the first four Saturdays that this new schedule is in effect to encourage customers who formerly used the R29 during times when this service will not be available to use alternate transit during those hours on Saturdays and Sundays. 3. Posted information about this service change to customers aboard R29 buses and at bus stops served by this route. 4. Provided route change information to major employers and municipalities on the R29 route. <p>It is the estimate of this analysis that the modifications to the original service change proposal (to retain 2 of 7 weekend day round trips) plus the mitigation measures do not overcome either the disparate (race) or disproportionate (low-income) discrimination impacts identified. There are an estimated 83 riders of this route on weekend days. Of these, 69% (57) are people of color, and 70% (58) have low incomes. To reduce the number of riders of color and low income so that impacts do not exceed 20%, at least 9% (7) more customers of color and 10% (8) more customers with low incomes would need to be offered comparable service to that which was previously available. It is not evident that the modification and mitigation implemented achieve that.</p> <p>PVTA will to continue to: 1) conduct follow-on customer surveys of R29 Saturday service, and 2) evaluate strategies for increasing service to low-income customers and riders of color who need to travel between downtown Holyoke and Amherst Center and UMass on Saturdays and present options for doing so to its Route Committee before the end of FY2018.</p>

Option 17: Route B48—Reduce Saturday Frequency from 30 to 60 min

<p>Route Description</p>	<p>Route B48 is a Tier II Class service that operates Mon-Sun from Academy of Music in Northampton to Holyoke Transportation Center via Route 5. There are 21 trips per weekday; 20 trips on Saturday; and 11 trips on Sundays. Return trips from Holyoke go via Salvo House instead. There are timed transfers available at Holyoke Transportation Center to Route P20 (for the Holyoke Mall) and P21E (for Springfield). Route B48 is designed to provide an efficient bus connection between Holyoke and Northampton. Total annual revenue miles of service on Saturdays were 19,384 in FY2017.</p> 
<p>Proposed Change and Rationale</p>	<p>This option reduces the Saturday service frequency on Route B48 from every 30 minutes to every 60 minutes. This will reduce the total number of roundtrips from 20 to 10 on Saturdays only. (Weekday service is not affected.) 30-min service was instituted in 2015; prior that, it was every 60 min. Total annual revenue miles of service on Saturdays would be reduced from 19,384 to 9,692. As a Tier II class service, the performance standard for Route B48 is 20 passengers per trip. Route B48 approaches but does not meet this standard on Saturdays, averaging 16 passengers per trip.</p>

Major Service Change?	YES. 39% of route miles would be eliminated on Saturdays, which exceeds the major service change threshold of 25%.
Communities Affected	Northampton, Holyoke, Easthampton (flag stop area on Route 5 only)
Implementation Status	IMPLEMENTED AS PROPOSED. The PVRTA Advisory Board on July 19, 2017 voted to reduce Saturday service frequencies on the B48 from every 30 minutes to every 60 minutes.
Effective Date	9/3/17 (Saturday 9/9/17 would be first day)
Customers Affected?	31 customers estimated per day.
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 40% of riders of Route B48 are people of color, and the remaining 60% are white. The minority/non-minority difference is therefore -20%, which is less than the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	NO DISPROPORTIONATE IMPACT. 53% of B48 riders are "low-income" (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 47% do not have low incomes. Therefore, the low-income/non-low-income difference is +6%, which is less than the +20% policy threshold.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	YES. Route B48 will still operate every 60 min on Saturdays, a total of 10 trips. In addition, Peter Pan operates two round trips on Saturdays between Holyoke and Northampton. Amtrak also operates 1 round trip per day between these two cities.
Least Discriminatory Alternative?	YES. This is the least discriminatory cost saving alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color on the day of service. PVRTA also considered eliminating B48 Sunday service, which also does not achieve the 20 passengers per trip standard; however, that would eliminate all travel opportunities for transit customers in this corridor on Sundays. PVRTA also considered eliminating fewer trips on Saturdays (5 instead of 10), but those would still require a second bus and driver, which would offset most savings.
Mitigation	MITIGATION IS NOT REQUIRED. PVRTA has taken the following steps to minimize inconvenience to B48 customers: <ol style="list-style-type: none"> 1. Posted information on B48 buses and bus stops about the change. 2. Provided customer information on PVRTA.com, and other outlets.

Option 18: Route B4—Eliminate 3 Weekday AM Trips; 2 Sat AM Trips; and 2 Sun PM Trips

<p>Route Description</p>	<p>The B4 is a Tier II service that operates between downtown Springfield and the Bay State Medical Offices on Wason Ave via the Brightwood Neighborhood and Plainfield Street. There are 20 trips Mon-Fri every 40 min; 25 trips on Saturday every 30 min; and 12 trips on Sunday every 60 min. Travel is via North Main Street to Plainfield Street, with deviation to service senior housing on Clyde and Sanderson Streets.</p> 
<p>Proposed Change and Rationale</p>	<p>As a Tier II service, the B4 is expected to carry 20 passengers per trip. However, it has averaged only 8-13 passengers per trip. This option would make the following three trip reductions:</p> <ul style="list-style-type: none"> • On weekdays, eliminate the first 3 trips of the day (6:00, 6:42, and 7:22AM). The first trip of the day would depart Wason Ave at 7:42AM; the last trip of the day would still depart Union Station at 6:20PM. This would reduce the number of weekday trips from 20 to 17. Ridership does not typically exceed 5 passengers on these three trips. • On Saturdays, eliminate the first 3 trips of the day (6:00, 6:30, and 7:00AM). The first trip of the day would depart Wason Ave at 7:30AM; the last trip of the day would still depart Union Station at 5:45PM. This would reduce the number of Saturday trips from 25 to 22. • On Sundays, eliminate the last two trips of the day (6:00 and 6:30PM departures from Union Station) and re-route the 5:45PM departure from Wason Ave to return to the PVTA Garage at 2808 Main Street, rather than Union Station.

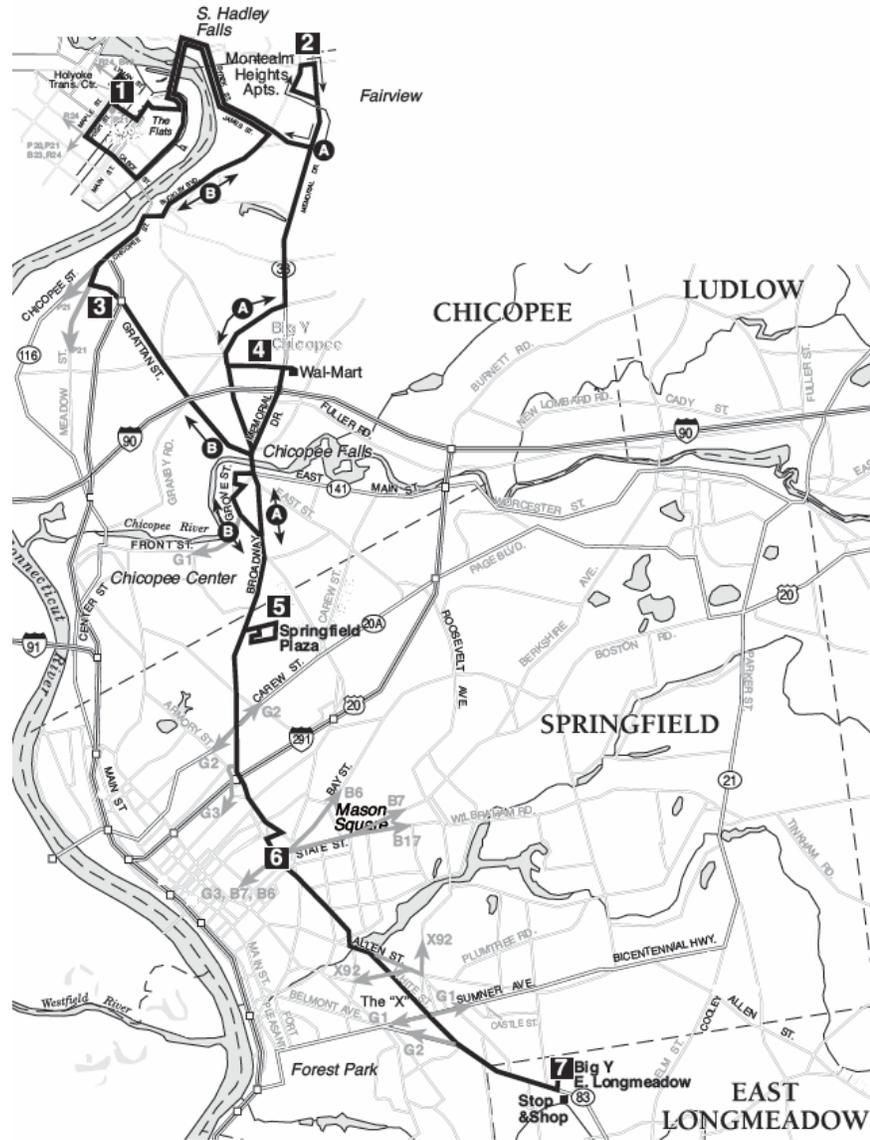
Major Service Change?	NO. Approximately 15% of route miles would be eliminated on weekdays, 10% on Saturdays, and 21% on Sundays, none of which exceed the major service change threshold of 25% during a single service day. Of the total 35,778 annual revenue service miles for this route in FY2017, this option would eliminate 5,223 (14.6% of service).
Communities Affected	Springfield (Plainfield and Brightwood Neighborhoods, Bay State Medical offices on Wason Ave).
Implementation Status	IMPLEMENTED WITH MODIFICATIONS. The PVRTA Advisory Board on July 19, 2017 voted to implement this service change with modifications to the schedule that are described below.
Effective Date	8/27/17
Customers Affected?	8 estimated on weekdays, Saturdays and Sundays
Disparate (racial discrimination) Impact?	NOT APPLICABLE (not a major service change) However: 89% of route riders are people of color and 11% are white. The minority/non-minority difference is therefore +78%, which would exceed the +20% policy threshold for a disparate impact if this were a major change.
Disproportionate (low-income) Impact?	NOT APPLICABLE (not a major service change) However: 63% of route riders are considered "low-income" (defined in this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 37% are not low-income. Therefore, the low-income/non-low-income difference is +26%, which would exceed the +20% policy threshold for a disproportionate impact if this were a major service change.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	<p>MINIMAL. There is no alternative transit for the majority of the neighborhood served by the B4 during the hours that trips are proposed to be eliminated.</p> <p>On weekdays between 6:00AM and 7:40AM, riders who currently take second or third of the first three B4 trips of the day (before 7:42AM) and live in the southern end of the Brightwood neighborhood (i.e., Edgewater Apartments) could walk via Riverside Road or Avocado St to the inbound bus stop on the south side of Route 20/West Street (Pride Station) and catch the P20, the first trip of which arrives at approximately 6:45AM and reaches Union Station at 6:55AM, with trips every 30 min thereafter.</p> <p>However, for riders who currently take the first B4 trip of the day (6:00AM departure), there is no alternate transit. And for riders who live further than walking distance from Route 20, there is no alternative transit at this time of day on weekdays.</p> <p>On Saturdays, there is no alternate transit, as the P20 does not begin serving the bus stop on Route 20 until 7:50AM, which is after the proposed new first Saturday morning trip on the B4</p> <p>On Sundays, there is one P20 trip at the bus stop on Route 20; otherwise, there is no P20 service after the proposed last trip of the B4 at 5:45PM.</p>

<p>Least Discriminatory Alternative?</p>	<p>YES. This is the least discriminatory cost saving alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color. There are no other routes that run between the Plainfield/Brightwood Neighborhood during the times that trips are proposed to be eliminated.</p> <p>PVTA considered eliminating more than 3 trips on weekdays on the B4, but this option would have significant disproportionate and disparate impacts as it would likely be considered a major service change.</p> <p>PVTA also considered eliminating B4 Sunday service entirely. However, this change was not fully evaluated due to the importance mobility for shopping and religious activities on that day of the week and the fact that even more riders (more than 100) would be affected, and that there would be significant disparate and disproportionate impacts.</p>
<p>Mitigation and Revised Service Change Proposal</p>	<p>MITIGATION IS NOT REQUIRED. This option does not meet the threshold for a major service change. In response to comments received during the public hearing process, PVTA has taken the following steps to minimize inconveniences to existing B4 riders:</p> <ol style="list-style-type: none"> 1. Retained the first 3 weekday morning trips as inbound only service from Wason Ave to Union Station. 2. Retained the first 3 Saturday morning trips as inbound only from Wason Ave to Union Station. 3. Retained the last 2 Sunday evening trips as outbound only from Union Station to Wason Ave. 4. Post notices on buses and bus stops at least 2 weeks before this revised schedule goes into effect. 5. Work with Bay State Medical to identify longer term sources of support for weekday early morning service to its Wason Avenue offices. <p>These steps reduced the loss of service from 5,223 in annual revenue miles (14.6% of service) to 2,612 (7.3% of service).</p>

Option 19: Route X90—Eliminate First 2 Morning Trips Mon-Sat

Route Description

The X90 is a Tier II service providing service from the Holyoke Transportation Center to the Big Y store in East Longmeadow. There are 31 trips Mon-Sat every 30 min, and 11 trips on Sundays every 60 min. From East Longmeadow, X90 buses travel via White, Dickinson, and Walnut Streets to STCC, and north on Liberty Street to Springfield Plaza, and into Chicopee Center. After crossing the Willimanset Bridge, the X90 splits into two segments, with “A” buses traveling up Grattan Street to the Willimanset neighborhood, and “B” buses traveling north on Broadway. The segments reunite at James Street and take Route 116 into the Holyoke Flats, downtown, and Transportation Center. This route was created in 2014 to provide crosstown mobility and transfers to PVTA’s routes that radiate from downtown Springfield.



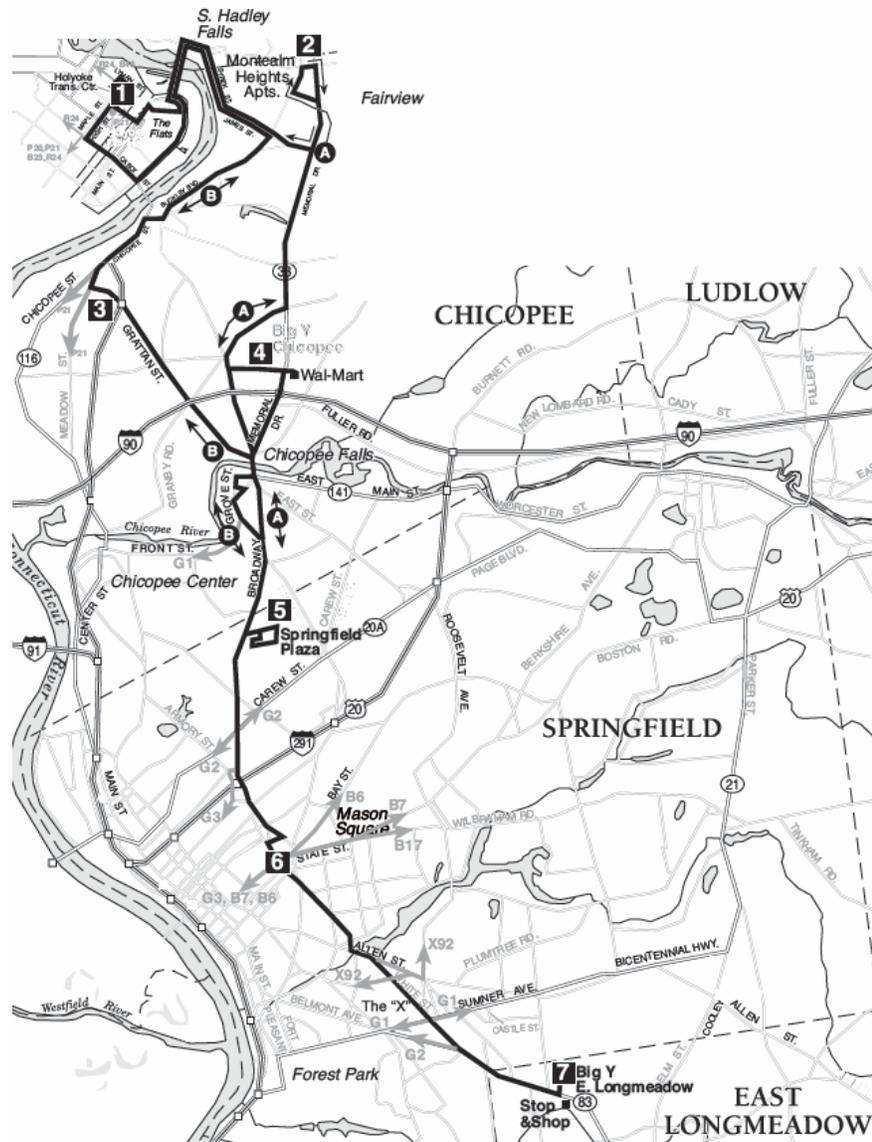
Proposed Change and Rationale	<p>This option eliminates the first 2 trips of the day (5:50AM departure from Springfield Plaza and 5:45AM departure from East Longmeadow Big Y). This would mean the first southbound departure from Holyoke Transportation Center would be at 7:43AM, and the first northbound departure from East Longmeadow Big Y would be at 6:15AM. Total annual revenue miles eliminated were 19,408, which is a loss of 5.6% of the total 344,493 annual miles of revenue service that this route provides.</p> <p>As a Tier II service, the X90 is expected to carry 20 passengers per trip. During the most recent year, it averaged 19 passengers per trip, with heaviest rider volumes during the mid-morning and afternoon peaks. The first trip of the day carries approximately 10 riders; however, the second and third trips average 1-3 riders each.</p>
Major Service Change?	NO. Approximately 6% of route miles would be eliminated on weekdays and Saturdays which does not exceed the major service change threshold of 25% during a single service day.
Communities Affected	East Longmeadow, Springfield, Chicopee, Holyoke
Implementation Status	IMPLEMENTED AS PROPOSED. The PVRTA Advisory Board on July 19, 2017 voted to eliminate the X90's first two trips on weekdays.
Effective Date	8/27/17
Customers Affected?	9 estimated on weekdays and Saturdays
Disparate (racial discrimination) Impact?	NOT APPLICABLE (Not a major service change)
Disproportionate (low-income) Impact?	NOT APPLICABLE (Not a major service change)
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	<p>PARTIAL. Alternate transit is available on segments of the X90 corridor from 5:50AM to 7:00AM when X90 service would no longer be available.</p> <ul style="list-style-type: none"> • In downtown Holyoke, the P20 begins operating at 6:00AM from HTC to Holyoke Mall and Riverdale Street on to Springfield; the P21 begins operating at 5:15 and provides service through to Chicopee Center; and the R24 begins operating at 6:00AM, providing service along the Maple and Dwight Streets. • In Chicopee, the G1 begins operating at 6:25AM with service to/from Walmart Plaza on Memorial Drive to downtown Springfield (Union Station) where through service and/or connections to G2 and G5 provide access to the Dickinson/White/Orange Street areas.
Least Discriminatory?	NOT APPLICABLE (not a major service change)

Mitigation	<p>MITIGATION IS NOT REQUIRED. This is not a major service change. In response to comments received during the public hearing process, PVTA has:</p> <ol style="list-style-type: none">1. Posted notices on all X90 and connecting buses and terminals about the availability of alternative service at least 2 weeks prior to discontinuation of the 2 morning trips.2. Provided customer info on PVTA website, social media, and other outlets.
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Option 20: Route X90—Eliminate Sunday Service North of Chicopee Big Y (Memorial Dr)

Route Description

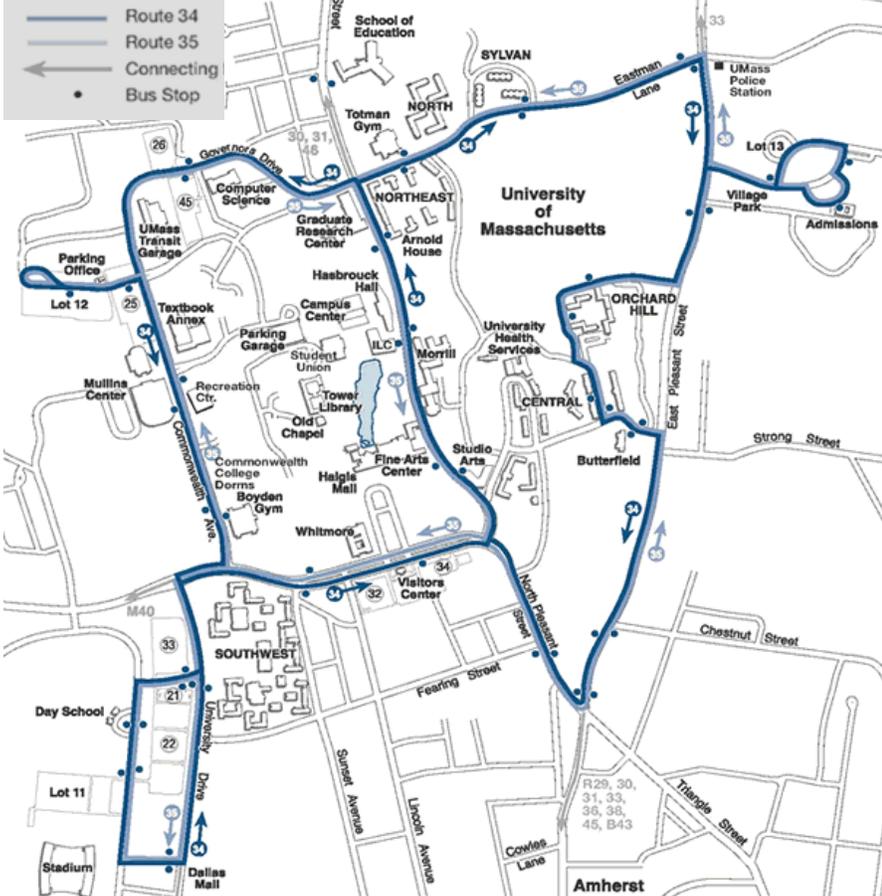
The X90 is a Tier II service with 31 trips Mon-Sat every 30 min, and 11 trips on Sundays every 60 min from the Holyoke Transportation Center to the Big Y store in East Longmeadow. From East Longmeadow, X90 buses travel via White, Dickinson, and Walnut Streets to STCC, and north on Liberty Street to Springfield Plaza, and into Chicopee Center. After crossing the Willimansett Bridge, the X90 splits into two segments, with “A” buses traveling up Grattan Street to the Willimansett neighborhood, and “B” buses traveling north on Broadway. The segments reunite at James Street and take Route 116 into the Holyoke Flats, downtown, and Transportation Center. This route was created in 2014 to provide crosstown connections and transfers to PVTA’s routes that radiate from its downtown Springfield hub.



Proposed Change and Rationale	<p>This option eliminates X90 service on Sundays north of the Chicopee Big Y/Walmart Plaza on the “A” segment on Memorial Drive. The “B” segment would not split off to Grattan Street; all trips would travel along the “A” routing to the Big Y only, where they would turn back.</p> <p>On this part of the X90 route on Sundays, there are an average of 66 trips on both the “A” and “B” segments, which is an estimated 26-33 customers, assuming round trip and transfers reported by customer surveys. This would be an average 6 passengers per trip. However, as a Tier II service, the X90 is expected to carry 20 passengers per trip. During FY2017, it averaged 19 passengers per trip for all runs, with heaviest rider volumes during the mid-morning and afternoon peaks.</p>
Major Service Change?	YES. Approximately 50% of route miles would be eliminated on Sundays, which exceeds the major service change threshold of 25% during a single service day. Total annual revenue miles eliminated are 12,939, which is 3.8% of all service on this route.
Communities Affected	East Longmeadow, Springfield, Chicopee, Holyoke
Implementation Status	IMPLEMENTED AS PROPOSED. The PVRTA Advisory Board on July 19, 2017 voted to eliminate service on Route X90 as described above.
Effective Date	8/27/17
Customers Affected?	26-33 estimated on Sundays
Disparate (racial discrimination) Impact?	DISPARATE IMPACT IDENTIFIED. 67% of riders of Route R29 are people of color, and the remaining 33% are white. The minority/non-minority difference is therefore +34%, which is more than the +20% policy threshold that is considered to be a disparate impact. Of the 12,939 revenue miles per year of service that will be eliminated, 8,669 will be borne by riders of color, versus 4,270 by riders who are white.
Disproportionate (low-income) Impact?	DISPROPORTIONATE IMPACT IDENTIFIED. 60% of riders of Route R29 are considered “low-income” (defined for purpose of this analysis as the federal poverty rate of \$11,770 per year for an individual), and the remaining 30% do not have low incomes. Therefore, the low-income/non-low-income difference is +20%, which meets the +20% policy threshold that is considered to be a disproportionate impact. Of the 12,939 revenue miles per year that will be eliminated by this option, 7,763 will be borne by low income riders, versus 5,176 borne by riders who do not have low incomes.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	<p>PARTIAL. Alternate transit service is available on the segment of the X90 route between Chicopee Big Y and downtown Holyoke where service would no longer be available on Sundays.</p> <ul style="list-style-type: none"> In downtown Holyoke, available Sunday service in the area currently served by the X90 is also partially served by the P20, which begins operating hourly service at 9:00AM from the Holyoke Transportation Center to the Holyoke Mall and Springfield Union Station.

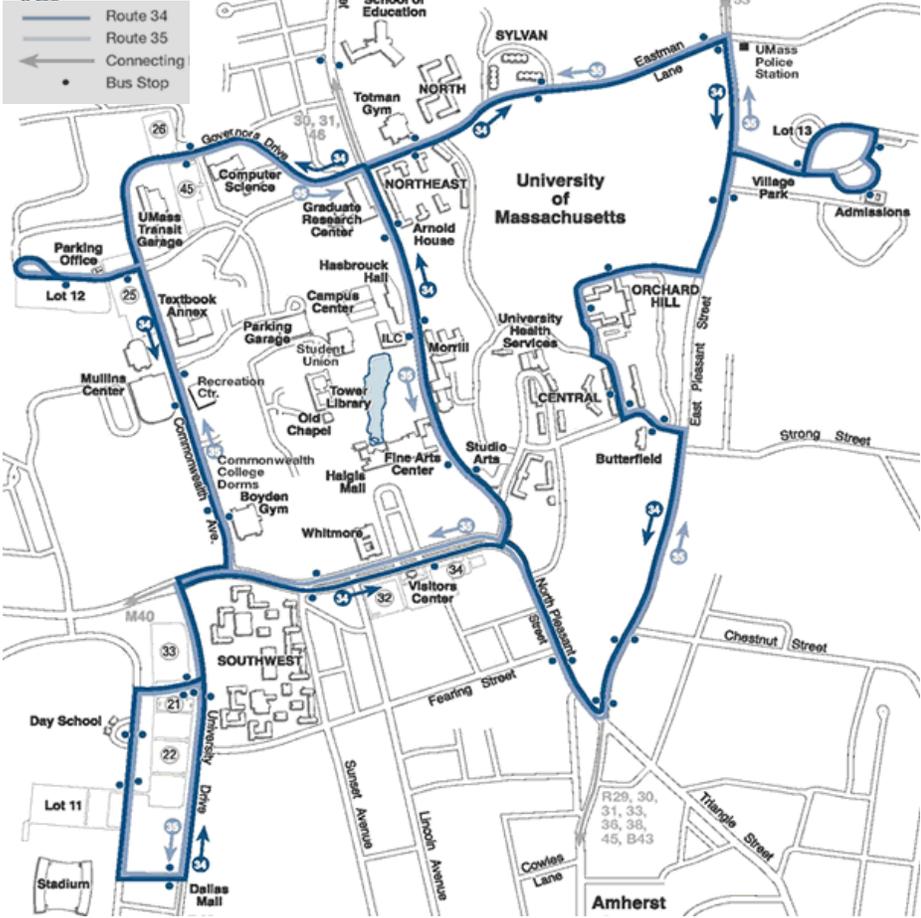
	<ul style="list-style-type: none"> • In Chicopee, service from Big Y Plaza on Memorial Drive south is available on Sundays on the G1 every 45 minutes from 7:00AM. • South of Memorial Drive, there would be no change on Sundays.
<p>Least Discriminatory Alternative?</p>	<p>YES. This is the least discriminatory cost saving alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color. There is alternative service available on Sundays.</p> <p>Another possible alternative service change that was considered to save cost was to eliminate X90 Sunday service entirely. However, this change was not evaluated due to the importance mobility for shopping and religious activities on that day of the week and the fact that even more riders (more than 100) would be affected than the 26 riders who would likely be affected by this option.</p>
<p>Mitigation</p>	<p>MITIGATION IS REQUIRED. This is a major service change with both disparate and disproportionate impacts. In response to comments received during the public hearing process, PVRTA has:</p> <ol style="list-style-type: none"> 1. Posted notices on all X90 and connecting buses and at terminals at least 2 weeks prior to discontinuation of Sunday service north of Chicopee Big Y. 2. Provided customer information on PVRTA website, social media, and other outlets. 3. Provided 1-day passes at no cost to riders who formerly rode the Sunday X90 north of Chicopee Big Y to encourage use of alternative transit service. 4. Monitored ridership on alternate routes. 5. Prioritized the study of potential options to restore or add service between Memorial Drive and the Holyoke Transportation Center to improve mobility in this area on Sundays, if and when operating funds become available. <p>It is the estimate of this analysis that the adverse disparate and disproportionate impacts from the loss of service with this option are not sufficiently mitigated. The availability alternative transit in the affected corridor on Sundays, along with the relatively small number of customers of color and low-incomes who would need to be offered comparable service during these hours. Approximately four trips per Sunday between Memorial Avenue in Chicopee and the Holyoke Transportation Center would need to be restored to add back a sufficient number of revenue miles to reduce mitigate this loss.</p>

Option 21: Route 34 Campus Shuttle—Eliminate Weekday Trips after 8:00PM

<p>Route Description</p>	<p>Route 34 is a Campus Service route that operates Mon-Fri with 57 roundtrips per day (every 15 minutes) in a figure-eight pattern around UMass campus. Together, Routes 34 and 35 are designed to aid students and staff of UMass in getting around campus. Total annual revenue miles were 62,230 in FY2017.</p> 
<p>Proposed Change and Rationale</p>	<p>This option reduces service on Route 34 by eliminating trips after 8PM, a total of 6 roundtrips, and a loss of 2,725 revenue miles per year (4% of all revenue miles). As a Campus Class service, the performance standard for Route 34 is 20 passengers per revenue hour. Route 34 significantly exceeds this, averaging between 30 and 50 passengers per revenue hour overall. This option is proposed because Route 35 offers duplicate service in the same travel corridor (UMass campus).</p>
<p>Major Service Change?</p>	<p>NO. 11% of route miles would be eliminated on days that the service currently operates (Mon-Fri), which is below the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Amherst, Hadley</p>
<p>Implementation Status</p>	<p>NOT IMPLEMENTED. The Advisory Board voted on July 19, 2017 to reject this option and retain Route 34 Campus Shuttle service as it previously operated.</p>
<p>Effective Date</p>	<p>9/3/17</p>

Customers Affected?	40 customers estimated per weekday.
Disparate (racial discrimination) Impact?	NOT APPLICABLE (not a major service change)
Disproportionate (low-income) Impact?	NOT APPLICABLE (not a major service change)
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	YES. Route 35 duplicates Route 34, but in the opposite direction. Routes 30, 31, 33, 36, B43, 45, and 46 also duplicate parts of Route 34.
Least Discriminatory Alternative?	NOT APPLICABLE (not a major service change)
Mitigation and Revised Service Change Proposal	This service change proposal was not implemented as a mitigation measure.

Option 22: Route 35 Campus Shuttle—Eliminate Trips Before 5:00PM on Sat, Sun, Holidays

<p>Route Description</p>	<p>Route 35 is a Campus Service route that operates Mon-Sun in a figure-eight pattern every 15 minutes on weekdays around UMass campus. There are 19 roundtrips per day during weekends and holidays (every 40-50 min). Together with Route 34, Route 35 is designed to aid students and staff of UMass in getting around campus. Total revenue miles were 70,131 in FY2017.</p> 
<p>Proposed Change and Rationale</p>	<p>This option proposes eliminating trips before 5PM on weekends and holidays, a total of 8 roundtrips, which would have been a loss of 5,721 revenue miles per year (7% of all service). As a “Campus Service” class service, the performance standard for Route 35 is 20 passengers per revenue hour. Route 35 significantly exceeds this performance standard, averaging between 40 and 70 passengers per revenue hour overall, however, weekend ridership significantly underperforms relative to weekday ridership (only 20% as many passengers on average).</p>
<p>Major Service Change?</p>	<p>YES. 42% of route miles would be eliminated on weekends and holidays, which exceeds the major service change threshold of 25%.</p>
<p>Communities Affected</p>	<p>Amherst, Hadley</p>

Implementation Status	NOT IMPLEMENTED. The Advisory Board voted on July 19, 2017 to reject this option and retain Route 35 Campus Shuttle service as it previously operated.
Effective Date	9/3/17
Customers Affected?	100 customers estimated per day.
Disparate (racial discrimination) Impact?	NO DISPARATE IMPACT. 36% of riders of Route 35 are people of color, and the remaining 64% are white. The minority/non-minority difference is therefore -28%, which is less than the +20% policy threshold that is considered to be a disparate impact.
Disproportionate (low-income) Impact?	DISPROPORTIONATE IMPACT IDENTIFIED. 85% of Route 35 riders are considered “low-income” (defined as the federal poverty rate of \$11,770 per year for an individual), and the remaining 15% do not have low incomes. Therefore, the low-income/non-low-income difference is +70%, which exceeds the +20% policy threshold that is considered to be a disproportionate impact. Of the 5,721 revenue miles per year that would have been lost, 4,863 would have been borne by people with low incomes, versus 858 borne by people who do not have low incomes.
ADA Van Service Impact?	NONE.
Alternate Transit Service Available?	PARTIAL. Routes 30, 31, 33, 36, and B43 duplicate parts of Route 35 on weekends and holidays.
Least Discriminatory Alternative?	YES. This is the least discriminatory cost savings alternative in this travel corridor. It affects the smallest proportion of low-income riders and riders of color on the day of service. PVRTA also considered reducing the frequency on this route from every 40-50 min to every 60-70 min. However, because of the short distance of this route, such a schedule would likely require the bus and driver to simply wait an extra 20 minutes without being productive. PVRTA also considered reducing weekday frequencies on both Routes 34 and 35; however, there are already overloads on many of those weekday trips, and reducing service would worsen overcrowding.
Mitigation and Revised Service Change Proposal	This service change proposal was not implemented as a mitigation measure.

6. Public Outreach and Consultation

PVTA reached out for public comments and engagement about the service change proposals in public meetings, at public hearings, and through email and voicemail comments. This section summarizes the input received from the public through these processes.

6.1 Public Meetings

The public outreach and consultation process for the consideration of the 22 service change options included the following public meetings:

- PVTA Finance Subcommittee on May 23, 2017.
- PVTA Route Subcommittee on May 24, 2017.
- PVTA Advisory Board on May 24, 2017.
- PVTA Route Subcommittee on June 28, 2017.
- PVTA Advisory Board on June 28, 2017.
- PVTA Route Subcommittee on July 18, 2017.
- PVTA Finance Subcommittee in July 19, 2017.
- PVTA Advisory Board on July 19, 2017.

6.2 Public Hearings

In accordance with the PVTA Public Hearing Policy, the PVTA Advisory Board on May 24, 2017 authorized the following 11 public hearings to obtain public input on the 22 service change options presented. These hearings were held on the following dates at the following locations. Each hearing consisted of two sessions, the first beginning at 4:00PM and the second beginning at 6:00PM.

HOLYOKE	Monday, June 19, Holyoke Transportation Center, 206 Maple Street
SPRINGFIELD	Tuesday, June 20, Pioneer Valley Planning Commission, 60 Congress Street
AMHERST	Wednesday, June 21, Bangs Community Center, 70 Boltwood Walk
LONGMEADOW	Thursday, June 22, Bay Path University, Wright Hall, 588 Longmeadow Street
AGAWAM	Monday, June 26, Agawam Public Library, 750 Cooper Street
SOUTH HADLEY	Tuesday, June 27, South Hadley Public Library, 2 Canal Street
WILBRAHAM	Wednesday, June 28, Senior Center, 45B Post Office Park
NORTHAMPTON	Thursday, June 29, City Council Chambers, 212 Main Street
SUNDERLAND	Wednesday, July 5, Sunderland Public Library, 20 School Street
WESTFIELD	Thursday, July 6, Olver Transit Pavilion, 10 Arnold Street
CHICOPEE	Monday, July 10, Chicopee City Hall, 17 Springfield Street

The number of non-staff attendees is reported. Comments and themes are summarized below. At each meeting, PVTA staff presented summaries of the 22 options, focusing on those that were likely to be most relevant to the attendees in the geographic area in which the hearing was held. Key themes of public comments received were:

Location	Attendees*	General Themes of Public Comments Made**
HOLYOKE	10	<ul style="list-style-type: none"> • Please do not cut Route G5 to Enfield CT. Peter Pan is too expensive. • Early morning runs on X90 should be kept. • PVTA should be expanding service and creating more interconnections with transportation services in other regions. • Holyoke Community College depends on PVTA • At least one of the express routes should be kept. • P21E is a very busy route and should be kept. • There is alternative transit to make up for loss of Tiger Trolley.
SPRINGFIELD	42	<ul style="list-style-type: none"> • Route B4 changes will affect employment. • Fare increase should be considered. • Legislature should be contacted for adequate funding. • Service cuts have adverse environmental consequences. • Route P20E changes should not be made. • Impacts to people with disabilities should be considered. • Bus service cuts are discriminatory on basis of race and income. • Route R14E should be kept or modified. • Homeless people are especially dependent on public transportation; please do not reduce service. • We should be adding service to Union Station, not reducing it.
AMHERST	26	<ul style="list-style-type: none"> • Please do not eliminate Routes 39, M40, R29. • Five Colleges has been left out of the public process. • People who are homeless and in poverty depend on public transportation; please do not reduce service. • Academic institutions contribute more than \$600,000 to municipalities to support PVTA. • Some of the proposed cuts would leave students who are coming back for the fall semester with no way to reach classes on other campuses. • Bus service supports the local economy. • A fare increase and/or surcharge for service outside PVTA service area should be considered.
LONGMEADOW	13	<ul style="list-style-type: none"> • General concern about loss of ADA van service if Route G5 is reduced. • People in the south end of Longmeadow depend on Route G5. • G5 service to Bay Path is needed for students; it's also a major employer. • People with disabilities also ride the fixed route bus, so reduction of G5 would be a loss for them. • PVTA should consider reducing G5 service, not cutting it all.

AGAWAM	11	<ul style="list-style-type: none"> Route 14E is critical for employees of Industrial Park and Heritage Nursing Home. Please retain this route. Bus service is essential for employment in Agawam Seniors at Heritage depend on bus service for families visiting State funding of public transportation is unfair to Western Mass. The cuts to the P20E and P21E will cause overcrowding on the P20 and P21 locals.
SOUTH HADLEY	33	<ul style="list-style-type: none"> Many people depend on the P21E. Tiger Trolley should be retained. Town of South Hadley does not support service reductions.
WILBRAHAM	5	<ul style="list-style-type: none"> Please keep Route 27 to Wilbraham Please don't make any changes to ADA or Senior Service paratransit
NORTHAMPTON	70	<ul style="list-style-type: none"> Route M40 is important service for commuters to UMass and should be retained. Route 39 is important for service between Mount Holyoke and Hampshire; a petition to keep this route is being circulated that now has 700 signatures and will be submitted by July 11. X98 should be retained because many families use it to access the Survival Center and food pick-ups. There is not enough information being provided about PVTA's reasons and methods for choosing the routes for changes. PVTA needs to clarify that most options involve changes to service, not eliminations. Some confusion about whether or not service changes are being considered for Route B43 (they are not). Route R29 is an important service that should be retained.
SUNDERLAND	27	<ul style="list-style-type: none"> Many people are on vacation and not able to comment. People with disabilities depend on the bus to access services, jobs, other critical daily trips. Loss of service would be a real hardship for many students. There needs to be more of public transit funding, not less. Cutting bus service is unfair to working class, people with low incomes; car drivers won't be affected.
WESTFIELD	8	<ul style="list-style-type: none"> Could B23 run later on weekdays? That would be a good trade-off. The transfers on Saturdays to make the same trip that the B23 now makes are too long. Nobody will ride that long a trip. College students will be affected by B23 reduction. Rider depends on G5 to reach job at MassMutual in Enfield CT. R10 service up Mountain Road wastes time and gas.
Chicopee	15	<ul style="list-style-type: none"> Please don't eliminate Tiger Trolley. Consider raising fares or getting non-public funds for budget. Please don't reduce X90 service
TOTAL	250	

* Both 4:00pm and 6:00pm sessions

**Not a comprehensive list. Verbatim transcripts are available upon request .

6.3 Summary of Public Comment Received

PVTA’s public hearing process encourages members of the public to offer comments at public hearings (as described in Section 6.2), as well as by email and voicemail. PVTA posted legal and general notices of the public hearings and public comment process on the 22 proposed service change options May 25, 2017. The deadline for comments was Tuesday, July 11, 2017 (comments accepted up to 11:59PM). Following is a summary of all public comments received through that date.

Fig. 6.3-1: Summary of Public Comments Received Related to Potentially Affected Routes

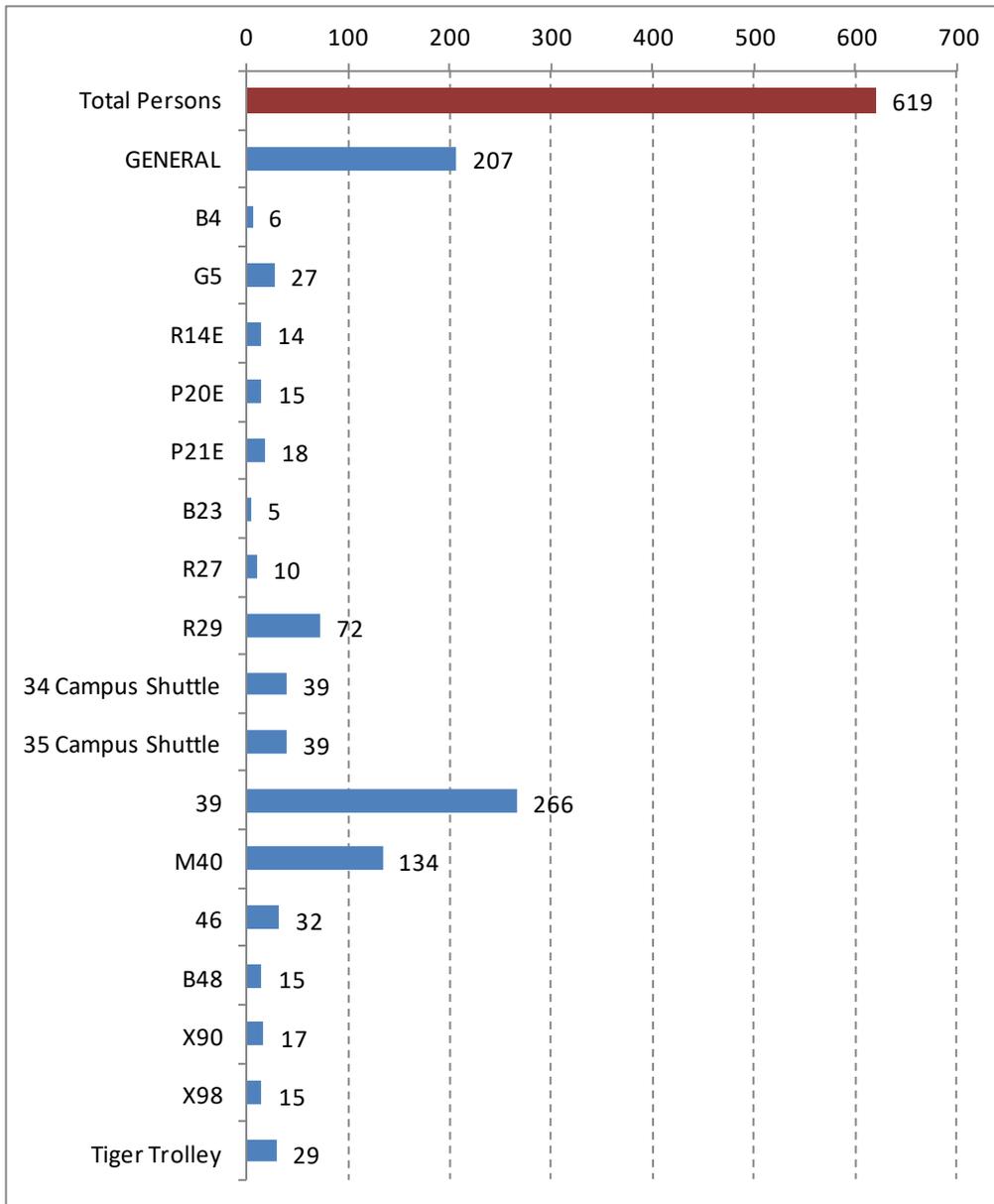
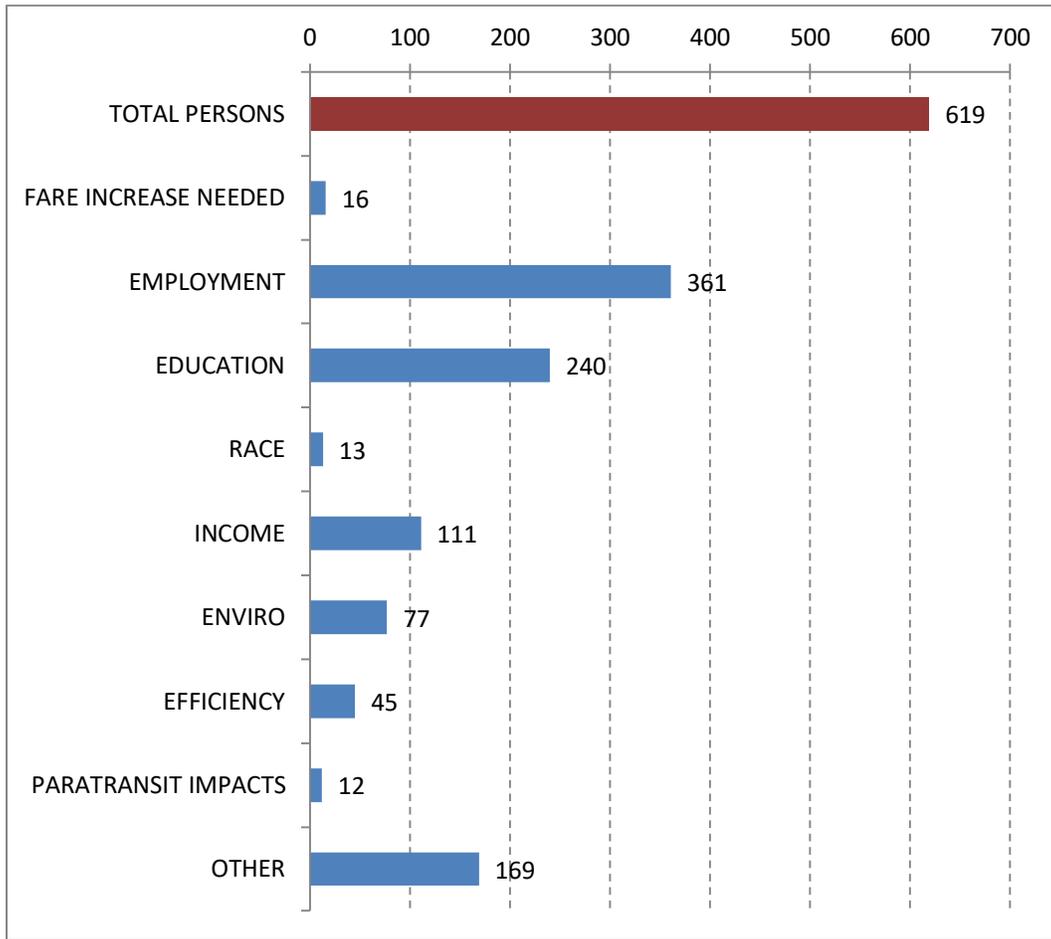


Fig. 6.3-2: Summary of Public Comments Received Involving General Topics



7. Conclusions

PVTA has demonstrated that the service changes, as implemented with mitigation, must be made to achieve the necessary business purpose of balancing the FY2018 operating budget. Without a balanced and approved operating budget for FY2018 (which began on July 1, 2017), the capacity and quality of all PVTA services are at risk, which could cause adverse impacts for a much larger proportion and number of riders.

- The service change options and associated mitigation as proposed are the least discriminatory alternatives available to PVTA for meeting the necessary business purpose of balancing the agency's FY2018 operating budget.
- PVTA conducted an extensive and thorough public hearing process that fulfills the agency's public hearing policy. Approximately 600 individuals submitted comments at public hearings, by email, or voicemail. More than 1,500 individual comments on the service change options were received, read by staff, logged, categorized, and summarized.
- PVTA reviewed all the comments and in response made many substantive changes to the original service change proposals to mitigate adverse impacts on customers of color and those with low incomes that were described in the comments received.
- The proposed service changes and mitigation measures are consistent with PVTA's policy for disparate and disproportionate impacts, which states: "...in the event that the proposed service change would have an adverse impact that affects customers of color or those with low-incomes (defined as the federal poverty level) more than the non-low income or non-minority populations with a disparity that exceeds the adopted 20% thresholds, PVTA must evaluate whether there is an alternative that has a more equitable impact... and demonstrate that a legitimate business purpose cannot otherwise be accomplished and that the proposed change is the least discriminatory alternative."

7.1 Individual Service Change Options Sufficiently Mitigated

PVTA has implemented adequate modifications to the original service change proposals to sufficiently offset the 20% variance policy threshold for disparate or disproportionate impacts for these options:

Option	Route	Original Service Change Presented in Public Hearings	Final Service Change as Modified/Mitigated in Response to Public Comments and Approved by Advisory Board July 19, 2017 ¹
1	M40	Eliminate route	Replaced with 9 one-way express trips on B43 (4 in AM to UMass Amherst; 5 in PM to Smith) plus 2 additional express round trips.
2	M40	Eliminate Saturday service	Encouraged use of B43 service available during same hours, which has adequate capacity to accommodate riders.
3	P20E	Eliminate weekday service	Restored partial service on 12/17/17 with 9 weekday one-way trips. Provides one-seat ride to/from Union Station and UMass.
4	P20E	Eliminate Saturday service	Retained P20E Saturday express service (no change).
5	P21E	Eliminate route	Obtained \$500,000 CMAQ grant to operate for one year.
6	P21E	Eliminate Sat + Sun service	Obtained \$500,000 CMAQ grant to operate service for one year.
7	39	Eliminate route	Retained route (no change).
8	39	Eliminate Sat + Sun service	Retained route (no change).
9	46	Eliminate trips to Whately and South Deerfield	Retained 4 of 6 trips per weekday.
10	G5	Eliminate trips to Enfield CT and south Longmeadow	Retained 4 of 9 trips per weekday (2 in morning peak; 2 in afternoon peak) south of Springfield Jewish Home.
11	X98	Eliminate route	Retained 3 trips per weekday to Survival Center; modified R44 to serve Jackson and Barrett Streets; distributed 7-day passes.
13	R14E	Eliminate route	Revised Route 14 to Heritage Nursing Home and Agawam Indust. Park; coordinate trips with shift times; distributed 7-day passes.
14	R27	Eliminate route	Added 3 former R27 trips to the B17 schedule to provide the same number of trips per day to Wilbraham.
17	B48	Reduce Saturday service frequency from 30 to 60 min	Provided customer information about reduced B48 frequency on Saturdays. No change in service span.
18	B4	Eliminate first 3 weekday AM trips; first 2 Saturday AM trips; last 2.5 Sunday PM trips	Retained first 3 weekday morning trips as inbound only service; retain first 3 Saturday morning trips as inbound only; retain last 2 Sunday evening trips as outbound only.
19	X90	Eliminate first 2 early AM trips	Encouraged use of Routes G1, P20, and P21. Obtained funds to continue operating P21E as alternate service weekdays.
21	34 CS	Eliminate weekday trips after 8:00PM	Retained all trips (made no change).
22	35 CS	Eliminate trips before 5:00PM on Sat+Sun+Holidays	Retained all trips (made no change).

¹ As approved by the PVTA Advisory Board on July 19, 2017 and modified by staff as necessary for implementation on Aug 27, Sept 3, and Sept 5, 2017.

7.2 Individual Service Change Options for Which There is No More Equitable Alternative

This Equity Assessment finds that for the following options and proposed mitigation there is no alternative that would be more equitable than the one proposed in the transit corridor that still achieves the necessary legitimate business purpose of balancing the FY2018 operating budget, but for which the 20% variance policy threshold for either disparate (race) or disproportionate (low-income) discrimination impacts is not overcome in the estimate of this analysis:

Option	Route	Original Service Change Proposal Presented in Public Hearings	Final Service Change as Modified/Mitigated in Response to Public Comments and Approved by PVTA Advisory Board July 19, 2017 ¹
12	Tiger Trolley	Eliminate route	Encouraged use of alternate service available on R29, X90, R24, 38; distributed 7-day pass to former Tiger Trolley riders; seeking restoration of Mt. Holyoke College-operated van for food shopping.
15	B23	Eliminate Saturday service	Encouraged use of alternate service via R10, P20, and R41; distributed up to four 1-day passes on Saturdays to former B23 customers.
16	R29	Eliminate Saturday + Sunday service	Retained 2 of 7 trips on Saturdays and Sundays (1 in early morning; 1 in late afternoon) as “lifeline” service.
20	X90	Eliminate Sunday service north of Memorial Dr	Retained early morning and late afternoon trips on Sundays on Route R29; provided customer information about alternate service available via Routes R29, G1, P20, and P21; obtained funds to operate P21E as an alternate service on Sundays (with expanded service in downtown Springfield).

¹ As approved by the PVTA Advisory Board on July 19, 2017 and modified by staff as necessary for implementation on Aug 27, Sept 3, and Sept 5, 2017.

In the case of these options, PVTA has listed the mitigation measures that were taken to assist its riders in finding other transit service, either on its own routes or with other providers, and has described future planning and research that will be undertaken to further mitigate the loss of service when additional operating funds are restored.

Appendices

Appendix 1: Service Change Monitoring Template

TITLE VI PERFORMANCE MONITORING: ROUTE XX

MM/DD/YY thru MM/DD/YY

	FY18	FY17
OTP (% of late trips)		
Capacity (avg on-board count)		
Reported Overloads		n/a
Total Complaints		n/a

Index of Complaints (to be provided by PVTA Customer Service):

- (complaint 1)
- (complaint 2)

Appendix 2: Public Transportation Ridership 2015 to 2016

UZA Name	Sum of 2015	Sum of 2016	Change
Seattle, WA	178,640,154	185,913,534	4.1%
Houston, TX	83,285,295	85,180,489	2.3%
Milwaukee, WI	40,610,851	41,476,982	2.1%
Detroit, MI	36,734,180	37,079,598	0.9%
New York-Newark, NY-NJ-CT	4,222,700,561	4,241,214,495	0.4%
San Francisco-Oakland, CA	454,952,418	454,996,256	0.0%
Boston, MA-NH-RI	403,464,723	402,554,159	-0.2%
Pittsburgh, PA	63,990,430	63,570,697	-0.7%
Denver-Aurora, CO	101,021,365	99,777,407	-1.2%
Portland, OR-WA	112,440,100	110,985,034	-1.3%
San Antonio, TX	37,983,886	37,290,201	-1.8%
Salt Lake City-West Valley City, UT	44,909,741	43,776,825	-2.5%
Minneapolis-St. Paul, MN-WI	96,636,368	93,716,857	-3.0%
Chicago, IL-IN	623,466,948	603,747,357	-3.2%
Urban Honolulu, HI	68,587,549	66,361,162	-3.2%
Las Vegas-Henderson, NV	72,044,767	69,420,973	-3.6%
Dallas-Fort Worth-Arlington, TX	75,998,371	72,137,725	-5.1%
Baltimore, MD	111,070,976	105,214,371	-5.3%
Atlanta, GA	141,154,134	132,925,293	-5.8%
Philadelphia, PA-NJ-DE-MD	369,644,085	346,276,496	-6.3%
Phoenix-Mesa, AZ	69,525,177	64,898,486	-6.7%
San Diego, CA	94,921,830	88,507,937	-6.8%
St. Louis, MO-IL	47,250,866	44,020,031	-6.8%
Cleveland, OH	46,844,074	43,507,057	-7.1%
Los Angeles-Long Beach-Anaheim, CA	619,459,557	572,589,716	-7.6%
San Jose, CA	44,718,244	40,763,554	-8.8%
Miami, FL	156,449,301	141,556,090	-9.5%
Washington, DC-VA-MD	441,222,366	396,260,838	-10.2%
Austin, TX	32,795,531	28,893,986	-11.9%
San Juan, PR	38,853,326	32,289,221	-16.9%

Source: National Transportation Database 2016