



N Campfield Avenue/Windsor - CTTRANSIT's Route N Campfield/Windsor operates between Bradley International Airport, Bloomfield, Windsor, and Hartford. Major stops include the Windsor Railroad Station, Poquonock Park and Ride, Griffin Office Park and Bradley International Airport. There are eight variations, three of which (N2, N4, and N6) operate via the site of the proposed Meadows Station:

With New Haven – Hartford – Springfield rail service, Route N service would be simplified to provide more consistent service and to shift some Bradley service to Windsor Locks Station. These changes would be as follows:

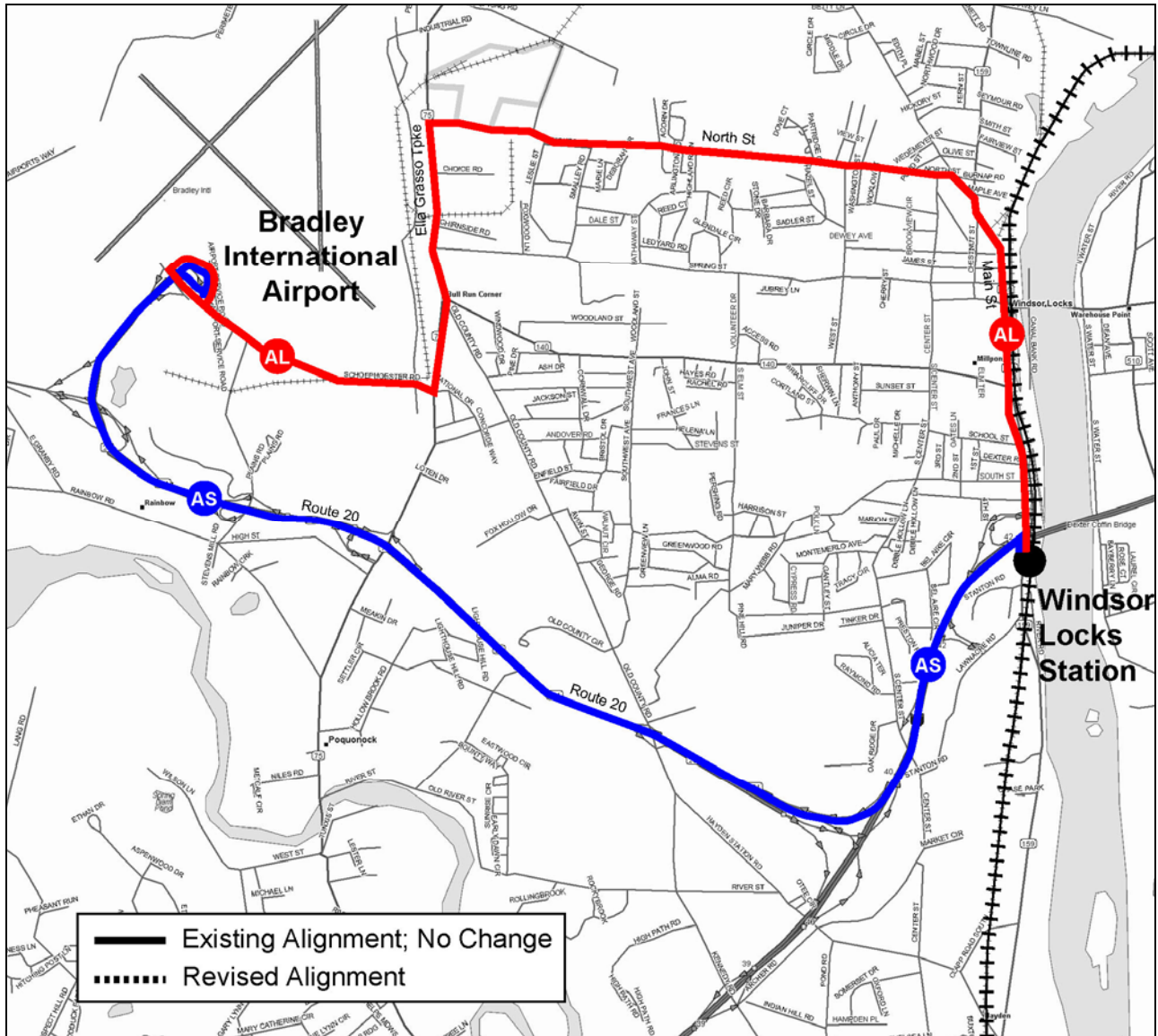
- N2 Windsor RR Station's span of service would be expanded to operate from 5:30 am to 7:00 pm, every 30 minutes during peak periods and every 60 minutes during the mid-day.
- N3 Bradley International Airport via Poquonock service would be expanded. Weekday service would operate from 6:00 am to 6:00 pm, every 60 minutes during peak periods and every 120 minutes during the mid-day. The alignment of N3 would remain unchanged.
- N4 Portman would be eliminated (replaced by expanded N2 Windsor service).
- N5 Bradley International Airport via Kennedy Road would be eliminated and replaced by the new AL Bradley - Windsor Locks route (as described above in the Windsor Locks Station section).
- N6 Matianuck Avenue service would continue to operate as at present, with one am peak inbound trip and one pm peak outbound trip.
- N7 Day Hill Road service would operate as N7x service.
- N7x service would be expanded. Weekday service would operate from 5:30 am to 7:00 pm, every 30 minutes during peak periods and every 60 minutes during the mid-day. Service would be coordinated with N2 Windsor RR Station to provide 15 minute peak headways and 30 minute off-peak headways between downtown Hartford and Windsor Station. The alignment of N7x would remain unchanged.

5.2.9 Windsor Locks Station

Windsor Locks is currently served by two CTTRANSIT Commuter Express routes: Route 5 Enfield Express, and Route 13 Windsor Locks Express. Both of these routes would be replaced by New Haven – Springfield – Hartford rail service. However, two new routes would be implemented: one that would connect Windsor Locks Station with Bradley International Airport, and another that would connect the station with the Windsor Locks Industrial area (see Figure 5-10).

5 Enfield – Somers & 13 Windsor Locks Express - CTTRANSIT's Route 5 Enfield Express and 13 Windsor Locks Commuter Express routes provide express service between Enfield, Windsor, and downtown Hartford via I-91. Route 13 also provides local service on some trips in the Windsor industrial area northeast of Bradley International Airport.

Figure 5-10
Bus Routes serving Windsor Locks Station



These routes would largely parallel New Haven – Hartford – Springfield rail service, and to avoid duplication of service, would be eliminated. The local service provided by some Route 13 trips would be replaced by new AL Bradley Airport Local service described below.

AS Bradley Airport Shuttle - With New Haven – Hartford – Springfield rail service, a new AS Bradley – Windsor Locks Station Limited route would be implemented to provide connections between Windsor Locks Station and Bradley International Airport. As shown in Figure 5-10, service would operate via South Main Street, I-91, Route 20, and then loop through the



terminals. Service would operate non-stop between Windsor Locks and Bradley, with a one way travel time of 10 minutes.

Schedules would also be coordinated with rail arrival and departures. For the maximum build alternative, weekday service would operate for the full span of rail service, every 15 minutes during peak periods and every 60 minutes during off-peak periods.

AL Bradley Airport Local - To replace Route 13 Windsor Locks local service, and to provide local connections between Windsor Locks Station and Bradley Airport, a new local route would be established. This route would operate from Windsor Locks Station north on Rt 159 (South Main and Main Street), then bear left on Suffield Street to left on North Street to left on Ella Grasso Turnpike (Route 75) to right on Schoephoester Road to airport terminals. Service would operate on weekdays from 5:00 am to 7:00 pm, every 30 minutes during peak periods and every 60 minutes during off-peak periods.

5.2.10 Enfield Station

The town of Enfield is currently served by two routes: CTTRANSIT's Route 5 Enfield Express to Hartford, and PVTA's Route 16 Longmeadow/Enfield service to Springfield. CTTRANSIT's Route 5 service would be replaced by New Haven – Springfield – Hartford rail service, and PVTA Route 16 service in Enfield would be replaced by a new local route that would feed the rail station (see Figure 5-11).

5 Enfield Express - CTTRANSIT's Route 5 Enfield Express route, which provides express service between Enfield, Windsor, and downtown Hartford via I-91, would parallel New Haven – Hartford – Springfield rail service. To avoid duplication of service, Route 5 would be eliminated.

16 Longmeadow/Enfield - PVTA's Route 16 Longmeadow/Enfield operates between Enfield and Springfield, MA via Longmeadow, MA. With New Haven – Hartford – Springfield rail service, Route 16 service in Enfield would be discontinued, with the rail line providing service to Springfield. With this change, the route would terminate on US 5 at the state line.

The local service now provided by Route 16 within Enfield would instead be provided by a new local route (Route EN Enfield Local, described below). This route would also provide connections with the rail line.

EN Enfield Local - Route EN Enfield Local would be a new local route that would replace PVTA Route 16 local service in Enfield. This route would provide feeder service to the rail line and to improve upon the service now provided by PVTA. Service would operate every 60 minutes from 6:00 am to 7:00 pm.



5.2.11 Springfield Union Station

Currently, all PVTA routes that serve downtown Springfield operate to, from, or through the Springfield Bus Terminal, which is located on Main Street at the intersection of Liberty Street (see Figure 5-12). With the implementation of New Haven – Hartford – Springfield rail, and the redevelopment of Union Station, these 21 routes would be relocated to Union Station, which is about one block away:

- G1 Chicopee Center-Fairfield Mall/Summer-Allen
- G2 Carew-East Springfield/Belmont-Dwight Rd
- G3 Springfield Plaza via Liberty/King-Westford
- B4 Plainfield/Walnut St-Springfield College
- B5 Dickinson-Tiffany-Jewish Home
- B6 Ludlow via Bay
- B7 State-Boston Road-Eastfield Mall
- G8 Orange-Plumtree
- R9/15 St James Avenue/Worthington Street
- R10 Westfield State via Main St & West Springfield
- P11 Holyoke Community College Express
- B12 Stonybrook Express
- B13 Maple Street/East Longmeadow
- B14 Feeding Hills
- R16 Longmeadow/Enfield/Basketball Hall of Fame
- B17 Eastfield Mall via Parker-Wilbraham Road
- P20 Holyoke via Holyoke Mall-Riverside
- P21 Holyoke via Chicopee
- 26 Downtown Trolley
- R27 Wilbraham/Eastfield Mall/Sixteen Acres

Service to and from Union Station would be via Lyman Street, where there would be direct connections to the rail platforms (see Figure 5-13). For the purposes of this study, it is assumed that, at least for buses, Lyman Street's current one-way operation (northbound only) would be converted to two-way operation.

G1 Chicopee Center-Fairfield Mall/Summer-Allen- Route G1 Chicopee Center-Fairfield Mall/Summer-Allen operates between Chicopee and the Springfield/East Longmeadow line via Main Street and the Springfield Bus Terminal in downtown Springfield. With New Haven – Hartford – Springfield rail, Route G1's alignment and operating strategy would remain unchanged, except that the Springfield terminal would be relocated to Union Station.

G2 Carew-East Springfield/Belmont-Dwight Road- Route G2 Carew-East Springfield/Belmont-Dwight Road operates between East Springfield and East Longmeadow via Main Street and the Springfield Bus Terminal in downtown Springfield. With New Haven – Hartford – Springfield rail, Route G2's alignment and operating strategy would remain unchanged, except that a short deviation would be added in and out of Union Station along Lyman Street.

Figure 5-12
Existing PVTA Bus Service in Downtown Springfield

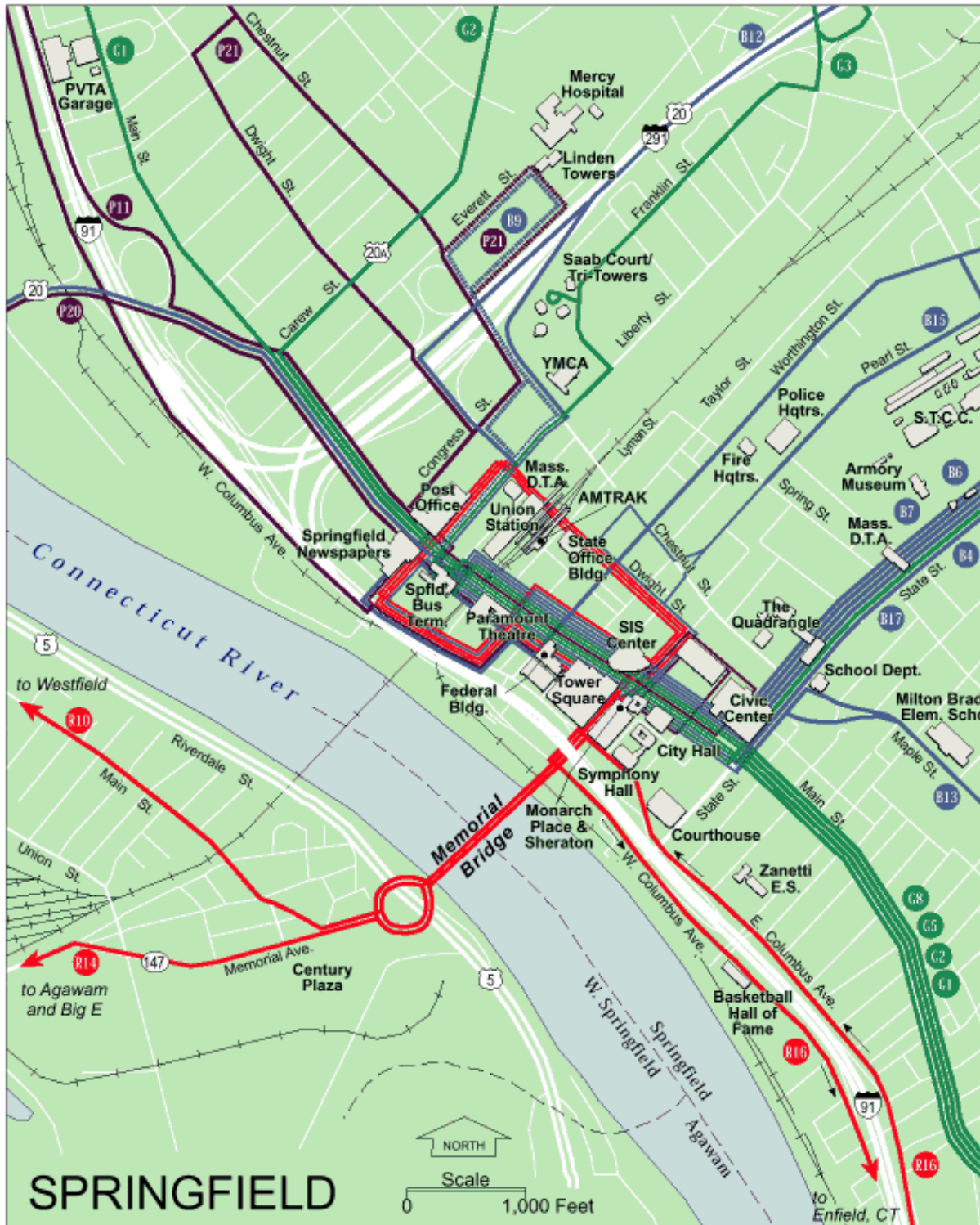
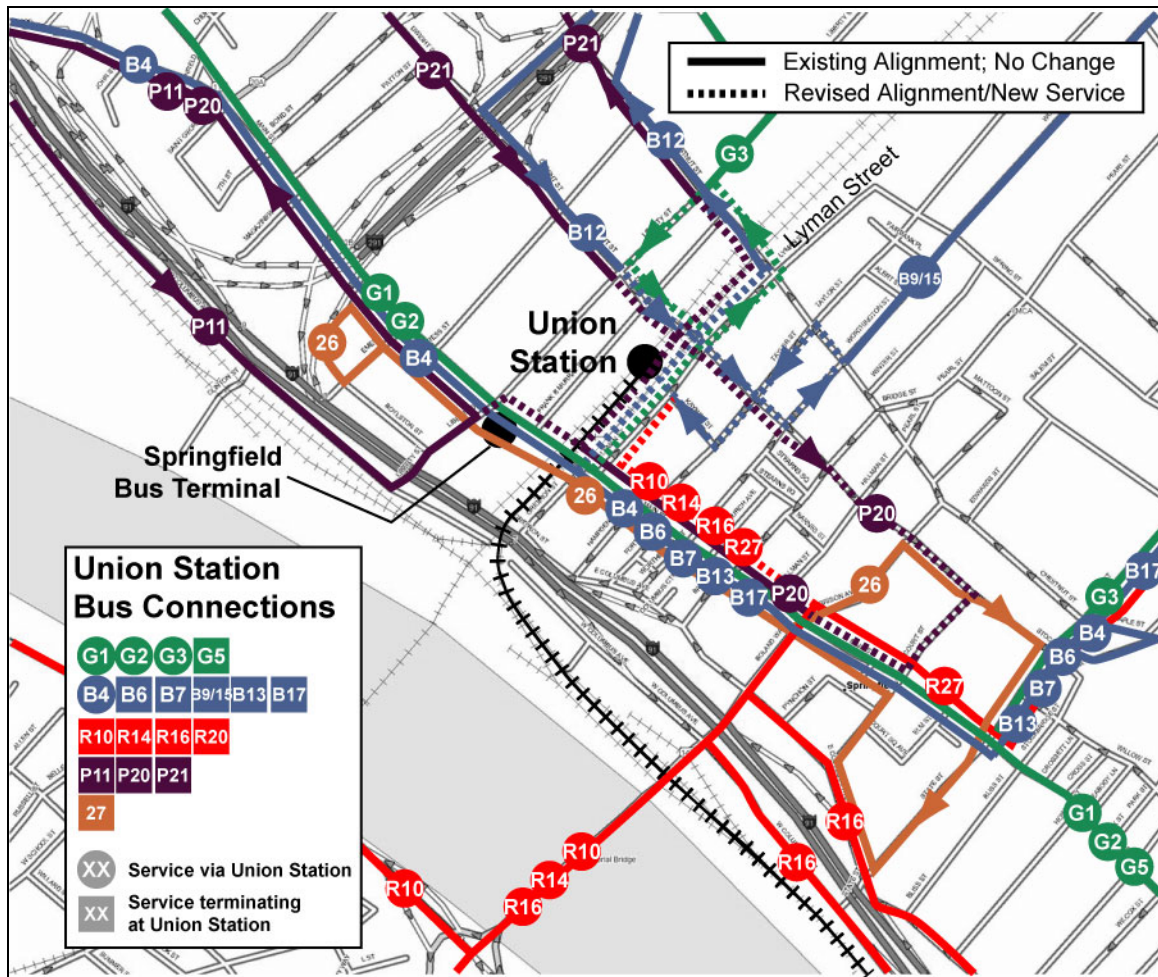


Figure 5-13
PVTA Bus Connections at Union Station



G3 Springfield Plaza via Liberty/King-Westford - Route G3 Springfield Plaza via Liberty/King-Westford operates between Springfield Plaza near the Springfield/Chicopee line and Westford Circle in East Springfield. With New Haven – Hartford – Springfield rail, the downtown Springfield alignment of the route would be re-routed via Union Station.

B4 Plainfield/Walnut Street-Springfield College - Route B4 Plainfield/Walnut Street-Springfield College operates between the Chicopee/Springfield line at Plainfield Street and Springfield College in East Springfield. With New Haven – Hartford – Springfield rail, Route B4’s alignment and operating strategy would remain unchanged, except that a short deviation would be added in and out of Union Station along Lyman Street.

G5 Dickinson-Tiffany-Jewish Home - Route G Dickinson-Tiffany-Jewish Home operates between South Springfield and Longmeadow and the Springfield Bus Terminal in downtown Springfield. With New Haven – Hartford – Springfield service, Route G5’s inner terminal would be relocated to Union Station.



B6 Ludlow via Bay - Route B6 Ludlow via Bay operates between Ludlow and the Springfield Bus Terminal. With New Haven – Hartford – Springfield rail, the basic operation of the route would remain unchanged, except that the inner terminal would be relocated from the Springfield Bus Terminal to Union Station.

B7 State-Boston Road-Eastfield Mall - Route B7 State-Boston Road-Eastfield Mall operates between the Eastfield Mall and the Springfield Bus Terminal largely along Boston Road, State Street, and Main Street. Service would operate in essentially the same manner as it now does, but the inner terminal would be relocated to Union Station.

G8 Orange-Plumtree - Route G8 Orange-Plumtree operates between East Springfield and the Springfield Bus Terminal via Plumtree Road and Orange Street. With New Haven – Hartford – Springfield rail, Route G8's inner terminal would be relocated to Union Station in the same manner as Routes B6 and B7.

B9/15 Saint James Avenue/Worthington Street - Route B9/15 Saint James Avenue/Worthington Street operates with three major variations, all of which operate to and from the Springfield Bus Terminal: (1) Oak Grove, (2) Cadwell Drive, and (3) East and Royalton Streets. With New Haven – Hartford – Springfield rail, Route B9/15 would continue to operate with the same variations, but with its inner terminal relocated to Union Station.

R10 Westfield State College via Main Street West Springfield - Route R10 Westfield State College via Main Street West Springfield operates between Westfield State College and the Springfield Bus Terminal. With New Haven – Hartford – Springfield rail, the basic operation of the route would remain unchanged, but the inner terminal of the route would be shifted to Union Station.

P11 Holyoke Community College Express - Route P11 Holyoke Community College Express provides express service between Holyoke Community College and the Springfield Bus Terminal. With New Haven – Hartford – Springfield rail service, the inner terminal of the route would be shifted to Union Station.

B12 Stonybrook Express - Route B12 Stonybrook Express provides express service between the Hampden County Correctional Facility at Stonybrook and the Springfield Bus Terminal. With New Haven – Hartford – Springfield rail, the inner terminal would be shifted to Union Station.

B13 Maple Street/Longmeadow - Route B13 Maple Street/Longmeadow operates between East Longmeadow and the Springfield Bus Terminal. With New Haven – Hartford – Springfield rail, the route's inner terminal would be relocated from the Springfield Bus Terminal to Union Station.

B14 Feeding Hills/Springfield - Most Route B14 Feeding Hills/Springfield service operates between Feeding Hills and the Springfield Bus Terminal. With New Haven – Hartford –



Springfield service, Route B14's inner terminal would be moved to Union Station. Otherwise, the route would continue to operate as at present.

R16 Longmeadow/Enfield - PVTA's Route R16 Longmeadow/Enfield currently operates between Enfield, CT and Springfield, MA via Longmeadow, MA. As described in the Enfield Station section, Route 16 service would be terminated at the Massachusetts/Connecticut state line. At the downtown Springfield end, the terminal would be shifted from the Springfield Bus Terminal to Union Station. Weekday service frequencies would be improved to every 60 minutes during peak period and every 120 minutes during off-peak periods.

B17 Eastfield Mall via Parker-Wilbraham Road - Route B17 operates between the Eastfield Mall in East Springfield and downtown Springfield. With New Haven – Hartford – Springfield rail service, Route B17 would continue to operate essentially as it now does, but the inner terminal would be shifted from the Springfield Bus Terminal to Union Station.

P20 Holyoke via Holyoke Mall-Riverdale - Route P20 operates between Holyoke Center and the Springfield Bus Terminal via the Holyoke Mall. Early morning trips also serve Providence Hospital and Interstate Drive Industrial Park. With New Haven – Hartford – Springfield rail, Route P20's inner terminal would be moved to Union Station (with the downtown loop via Civic Center maintained).

P21 Holyoke/Springfield via Chicopee - Route P21 Holyoke/Springfield via Chicopee operates between Holyoke Center and the Springfield Bus Terminal via Chicopee Center. With New Haven – Hartford – Springfield rail, the basic operation of the route would remain unchanged, but the Springfield terminal would be moved to Union Station.

26 Trolley Loop Service - Route 26 is a rubber-tired trolley loop that operates through downtown Springfield, and provides connections to a remote parking lot. The alignment of this route would remain unchanged, with passengers making connections to and from New Haven – Hartford – Springfield rail via a stop on Main Street at Frank B Murray Street.

Route 26 Trolley Loop service currently operates every 15 minutes from 7:00 am to 9:45 am and from 3:00 pm to 6:00 pm. With New Haven – Hartford – Springfield rail service, the pm span of service would be extended to 7:00 to provide later connections. Service would continue to operate every 15 minutes.

R27 Wilbraham/Eastfield Mall/Sixteen Acres - Route R27 Wilbraham/Eastfield Mall/Sixteen Acres is a peak period only route with service between the Eastfield Mall and either the Sixteen Acres Center in East Springfield or downtown Springfield. With New Haven – Hartford – Springfield service, all trips would operate to and from downtown Springfield, and the Springfield terminal would be moved from the Springfield Bus Terminal to Union Station.

Service levels would also be improved. Service would operate every 60 minutes during peak periods, and every 120 minutes during off-peak periods.



5.3 Transit Integration

New Haven - Springfield commuter rail is planned to connect with bus services provided by seven public transit operators (including different CTTRANSIT divisions), and with three other rail services. This can be accomplished by coordinating schedules, implementing joint fares, using rail stations as hubs for local bus services, and by combining marketing and information efforts. This section describes potential actions in these areas.

5.3.1 Schedule Coordination

One of the most fundamental ways to facilitate transit trips is to make connections as convenient as possible. The connecting bus services that were developed as part of this project, and described in the “Connecting Bus Services” chapter, were designed to facilitate bus-rail transfers. Nearly all of those services were defined to operate at 10, 15, 30, or 60 minute headways, which would allow schedules to be well coordinated New Haven – Hartford – Springfield rail service operating at 30 minute headways. As a practical matter, most of the changes that would be required to provide convenient connections would be very straight-forward. On routes with frequent service (10 minutes or less), no special scheduling efforts would be required. On routes with less frequent service, many of the changes would consist simply of shifting existing schedules forward or back by a small amount. In nearly all cases, coordinated transfers could be provided between most or all peak direction trips.

There would be connections with other transit services at all New Haven - Hartford - Springfield stations (see Table 5-1). Actions that would be taken to provide connections to a wide range of locations, and to make them as convenient as possible would be as summarized in Table 5-2 and described in the following sections.

New Haven Union and State Street Stations - At State Street and New Haven Union Stations, bus connections would be to and from New Haven - Hartford - Springfield rail, as well as with Metro-North and Shore Line East rail service. As described in the Connecting Bus Services chapter, bus connections to all of these services could be improved, and additional routes would be routed via State Street and Union Stations. However, given the frequency of the rail services at those stations, bus services would not be scheduled for connections with particular services.

North Haven Station - North Haven Station would be served by one route, which would be CTTRANSIT-New Haven’s Route C North Haven. The changes for this route that are described in the Newington Station section would also provide convenient connections with nearly all peak period NH-H-S trains at North Haven Station.



Table 5-1
Connecting Transit Services

Union Station	CTTransit -New Haven Greater New Haven Transit District Shore Line East Metro North Amtrak Acela Express and Regional routes
State Street Station	CTTransit -New Haven Greater New Haven Transit District Shore Line East Metro North
North Haven Station	CTTransit -New Haven
Wallingford Station	CTTransit -Wallingford CTTransit -New Haven
Meriden Station	CTTransit -Meriden
Berlin Station	CTTransit -New Britain
Newington Station	CTTransit-Hartford CTTransit -New Britain
Hartford Union Station	CTTransit-Hartford
Windsor Station	CTTransit-Hartford
Windsor Locks Station	CTTransit-Hartford
Enfield Station	CTTransit-Hartford
Springfield Station	Pioneer Valley Transit Authority Amtrak Vermonter, Lake Shore Limited and Regional routes

Wallingford Station - There would be connections to two routes at Wallingford Station: CTTRANSIT-Wallingford's Wallingford Route, and CTTRANSIT-New Haven's Route C North Haven. The Wallingford route currently operates every 60 minutes during the mid-day. To provide connections with NH-H-S service, the Wallingford route would be realigned to serve the rail station, service extended to the am and pm peaks, and the schedule would be shifted forward or back to provide coordinated connections with every other peak period train.

For Route C North Haven, more extensive changes would be required. The operating strategy for this route is currently very complicated, and as the route now operates, it would only be possible to provide very limited connections. However, with a restructuring of Route C as described in the Connecting Bus Services chapter, it would be possible to provide connections with nearly all rail trips.

**Table 5-2
Changes to Provide Coordinated Bus Connections**

Station/Connecting Bus Route	Peak Headways (mins)				Changes Required/Comments
	AM Peak	PM Peak	Clockface?	Possible Coordination	
New Haven Union Station					
B Whalley/Congress Ave	10-15	11-15	No	Most trains	None, service already frequent enough to provide short transfer times
J Whitney Ave/Kimberly Ave	4-30	2-30	No	Selected trains	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
M Washington Ave/State St	15-30	20-31	No	TBD	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
O Sylan Ave/Winchester Ave	10-20	10-20	No	Most trains	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
Z Goffe Street/Sargent Drive	15-20	12-20	No	Most trains	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
Commuter Connection	15	15	Yes	All trains	Increase frequency and reschedule for improved connections to all rail services
Coliseum Parking Shuttle	7.5	7.5	Yes	All trains	Increase frequency and reschedule for improved connections to all rail services
State Street Station					
C North Haven	15	15	Yes	TBD	Set schedule for coordination at North Haven and Wallingford Stations (see above)
D Grand Avenue & D Dixwell Avenue	10	10	Yes	All trains	None, service already frequent enough to provide short transfer times
F East Haven & F West Chapel Street	10-15	10-15	No	Most trains	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
G Shelton Avenue/East Chapel Street	30-42	20-35	No	Selected trains	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
Q State Street/Edgewood Avenue	15-20	14-21	No	Most trains	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
Z Goffe Street/Sargent Drive	15-20	12-20	No	Most trains	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
Commuter Connection	15	15	Yes	All trains	None, special scheduling for NH-H-S rail not warranted due to connections with variety of services
North Haven Station					
C North Haven	15	15	Yes	Most trains	Restructure and reschedule route
Wallingford Station					
NET Wallingford	60	60	Yes	Every peak direction train	Extend service through PM peak, shift bus schedule forward or back to match rail
C North Haven	15	15	Yes	Most trains	Restructure and reschedule route
Meriden Station					
A Yale Acres	60	60	Yes	Every peak direction train	Extend service through PM peak, shift bus schedule forward or back to match rail
B Kohl's - South Meriden	60	60	Yes	Every peak direction train	Extend service through PM peak, shift bus schedule forward or back to match rail
C East Main Street - West Main Street	60	60	Yes	Every peak direction train	Extend service through PM peak, reschedule bus service
Berlin Station					
BK Berlin/Kensington Local	30	30	Yes	TBD	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
Newington Station					
W Capitol Avenue	Limited service		No	Limited	Shift schedule forward or back to provide limited connections
New Britain - Hartford Busway Shuttle	15	15	Yes	TBD	Set schedule for connection at Hartford Union Station (see above)
BK Berlin/Kensington Local	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
BU Burrill Street Local	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
FA Farmington Avenue	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
OK Oak Street	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
PL Plainville Local	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
ENB East New Britain Local	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
Hartford Union Station					
Existing Services					
A Asylum Ave/Hillside Ave	7-20	10-20	No	Most trains	Shift bus schedules forward or back to match rail
B Silver Lane	30	30	Yes	Every train	Extend route to Union Station, shift bus schedules forward or back to match rail
E Farmington Ave	2-10	5-10	No	Every train	None, service already frequent enough to provide short transfer times
F Ashley St	15	15	Yes	Every train	Shift bus schedules forward or back to match rail
K North Main St/Park St	10	10	Yes	Every train	Extend route to Union Station, but no special scheduling required because service is frequent

Station/Connecting Bus Route	Peak Headways (mins)				Changes Required/Comments
	AM Peak	PM Peak	Clockface?	Possible Coordination	
Hartford Union Station (cont.)					
N Campfield Ave/Windsor	15	15	Yes	TBD	Restructure and reschedule route for connections at Windsor Station (see above)
Q Vine Street/New Britain Avenue	10	10	Southb	Every train	Extend route to Union Station, reschedule for clockface headways in both directions
T Franklin Avenue/Blue Hills Avenue	5-15	3-15	No	Every train	Extend route to Union Station, reschedule for clockface headways
U Wethersfield Ave/Albany Ave	15	10-20	No	Every train	Extend route to Union Station, reschedule for clockface headways
W Capitol Avenue	Limited service		No	TBD	Schedule for coordination at Newington Station (see below)
YM Burnside Ave	13-22	15	Yes	Every train	Extend route to Union Station, reschedule AM peak service for clockface headways
Z Tolland Tpk/ Rockville/Buckland Hills	15	10-20	Outb	Every train	Extend route to Union Station, reschedule PM peak service for clockface headways
Planned New Britain - Hartford Busway Services					
New Britain - Hartford Busway Shuttle	15	15	Yes	Every train	Set new shuttle schedule based on rail schedules
BK Berlin/Kensington Local	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
BU Burrirt Street Local	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
FA Farmington Avenue	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
OK Oak Street	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
PL Plainville Local	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
ENB East New Britain Local	30	30	Yes	Limited	Busway services to be coordinated with shuttle route and each other rather than NH-H-S rail service
Windsor Station					
N Campfield Ave/Windsor	15	15	Yes	Every peak direction train	Restructure and reschedule route
Windsor Locks Station					
AS Bradley Shuttle	15	15	Yes	Every train	New route to be implemented for rail service; schedule bus route around train schedule
AL Bradley Local	30	30	Yes	Every peak direction train	New route to be implemented for rail service; schedule bus route around train schedule
Enfield Station					
EN Enfield Local	60	60	Yes	Every train	New route to be implemented for rail service; schedule bus route around train schedule
Springfield Union Station					
G1 Chicopee Center-Fairfield Mall/Summ	15	20	Yes	All peak direction trains	Shift bus schedule forward or back to match rail, increase pm peak service from 20 to 15 min
G2 Carew - E Springfield/Belmont-DwRd	15	20	Yes	All peak direction trains	Shift bus schedule forward or back to match rail, increase pm peak service from 20 to 15 min
G3 Springfield Plaza Liberty/King-Westf	15	20	Yes	All peak direction trains	Shift bus schedule forward or back to match rail, increase pm peak service from 20 to 15 min
B4 Plainfield/Walnut St.-Springfield Coll	20	20	Yes	Every other peak direction train	Shift bus schedule forward or back to match rail
G5 Dickinson-Tiffany-Jewish Home	60	60	Yes	Every peak direction train	Shift bus schedule forward or back to match rail
B6 Ludlow via Bay	20	20	Yes	Every 3rd peak direction bus trip	Shift bus schedule forward or back to match rail
B7 State-Boston Rd.-Eastfield Mall	15	15	Yes	Every peak direction train	Shift bus schedule forward or back to match rail
G8 Orange-Plumtree/Springfield	60	60	Yes	Every other peak direction train	Shift bus schedule forward or back to match rail
B9/15 St. James Avenue/Worthington St.	10-45	60	Yes	Every other peak direction train	Shift bus schedule forward or back to match rail
R10 Westfield State College W Springfie	30	30	Yes	Every peak direction train	Shift bus schedule forward or back to match rail
P11 Holyoke Community College Express	60	60	Yes	Every other peak direction train	Shift bus schedule forward or back to match rail
B12 Stonybrook Express	No service	120	Yes	Every other peak direction train	Shift bus schedule forward or back to match rail
B13 Maple Street/East Longmeadow	30	20-40	Partially	2 train trips	Shift bus schedule forward or back to match rail
R14 Feeding Hills/Springfield	60	60	Yes	Every other peak direction train	Shift bus schedule forward or back to match rail
R16 Longmeadow/Enfield	70-150	90	No	Limited	Shift bus schedule forward or back to match rail
B17 Eastfield Mall Parker-Wilbraham Rd	30	30	Yes	Every peak direction train	Shift bus schedule forward or back to match rail
P20 Holyoke/Springfield via Holyoke Mal	30	15-30	Yes	Most peak direction trains	Shift bus schedule forward or back to match rail
P21 Holyoke/Springfield via Chicopee	30	30	Yes	Every peak direction train	Shift bus schedule forward or back to match rail
26 Downtown Trolley	15	15	Yes	Every peak direction train	Shift bus schedule forward or back to match rail
R27 Wilbraham/Eastfield Mall/Sixteen A	2 trips	2 trips	No	Limited	Shift bus schedule forward or back to match rail



Meriden Station - CTTRANSIT-Meriden's three routes (A Yale Acres, B Kohl's – South Meriden, and C East Main Street – West Main Street) all operate to and from Meriden Station. With NH-H-S rail, service would be extended to the end of the pm peak. Routes A and B currently operate every 60 minutes throughout the day, while Route C operates at irregular headways. To provide connections with every other peak direction train, Route C would be rescheduled to operate every 60 minutes, and all three routes would be scheduled to arrive and depart from Meriden Station to meet every other peak period train.

Berlin Station - Berlin Station would be served by one route that would provide only limited service: Route W2 Veteran's Hospital. It would be possible to provide limited connections between this route and NH-H-S rail by shifting Route W's schedule forward or back.

Newington Station - Connections at Newington Station would be with the same New Britain – Hartford Busway routes as at Hartford Union Station section. With New Britain – Hartford shuttle service scheduled to coordinate with rail at Union Station, and other routes scheduled to provide even interval service on the busway, no specific schedule coordination actions would be taken at Newington. However, service on the busway will be very frequent (as frequent as every 2 minutes), and with this frequent service, connections to all other busway stations will be very convenient.

Hartford Union Station - Bus connections between NH-H-S rail at Hartford Union Station would be with routes that currently operate via the station, high ridership routes that would be extended to Union Station, and new routes that would be implemented with the New Britain – Hartford Busway. For the existing routes, coordinated connections could be provided with nearly all trains by shifting existing schedules forward or back, or by revising schedules to implement clockface operations.

For connections to and from New Britain – Hartford Busway services, the major New Britain – Hartford Shuttle route, which would operate every 15 minutes during peak periods, could be scheduled to provide connections with all trains. However, most other New Britain – Hartford Busway routes would be scheduled to provide service at even intervals on the busway, and thus could not be specifically coordinated with NH-H-S rail service.

Windsor Station - Windsor Station would be served by one route, N Campfield Avenue/Windsor. As described in the Connecting Bus Services chapter, the operating strategy for this route is very complicated, and as this route now operates, it would only be possible to provide very limited connections. However, if Route N were restructured as described in the Connecting Bus Services chapter, it would be possible to provide connections between Route N and all rail trips.

Windsor Locks Station - Windsor Locks Station would be served by two routes, both of which would provide connections between the station and Bradley Airport: AS Bradley



Airport Shuttle, and AL Bradley Airport Local. The AS shuttle route would meet all trains in both directions, and the AL local route would meet all peak direction trains.

Enfield - Enfield would be served by one route, EN Enfield, which would be specifically designed to provide connections between Enfield and NH-H-S rail, and which would operate every 60 minutes. Depending upon the rail schedules that are ultimately set, it may be possible to provide peak direction bus connections for all trains. At a minimum, it will be possible to provide coordinated connections in the peak direction for every other train.

Springfield - The New Haven – Hartford – Springfield rail study assumes that PVTA’s downtown Springfield terminal would be relocated from the Peter Pan bus terminal to Union Station (about one block to the northeast). With this relocation, direct connections would be possible between NH-H-S rail service and all of PVTA’s downtown Springfield routes.

Most PVTA service operates at clockface headways, and most peak direction bus trips could be coordinated with peak direction train trips simply by shifting existing schedules forward or back. On routes with 15 or 30 minute headways during both peak periods (5 of 20 routes), coordinated connections could be provided for every peak direction train. On routes with 20 or 60 minute headways (10 of 20 routes), coordinated connections could be provided with every other peak direction train. On other routes, the shifting of bus schedules forward or back could provide coordinated connections with selected train trips.

5.3.2 Fare Coordination

Trips involving New Haven - Springfield commuter rail service and one or more connecting services will involve two or more transit operators. Ideally, regular riders would be able to use a single fare media on corridor rail service, and on all connecting transit services. These would include:

- New Haven – Hartford – Springfield commuter rail
- Amtrak service between New Haven and Springfield
- PVTA bus service
- CTTRANSIT bus service (Hartford, New Britain, Meriden, Wallingford, and New Haven divisions)
- Greater New Haven Transit District Trolley
- Metro-North commuter rail
- Shore Line East commuter rail

While the number of different operators that would be involved would be large, there are already a number of joint fare arrangements in place. These include:



- **Shore Line East/Metro-North UniRail:** The UniRail pass is a combined Shore Line East and Metro-North monthly pass. It provides unlimited travel on Shore Line East and Metro-North New Haven Line service, and provides a \$44 to \$48 discount from the price of individually purchased Shore Line East and Metro-North monthly passes.
- **Metro-North/Connecting Bus UniTicket:** the UniTicket is a monthly pass available to Metro-North monthly pass holders that is valid on connecting bus service, including CTTRANSIT service in Connecticut. For trips to and from Milford and New Haven, a UniTicket with bus connections at one end is priced at \$24. With bus connections at both ends, the cost is \$41.
- **Shore Line East/Commuter Connection Monthly Plus:** The Monthly Plus pass provides unlimited travel on Shore Line East and CTTRANSIT Commuter Connection bus service in New Haven. This pass is priced at the cost of a Shore Line East monthly pass plus \$8, which is a \$32 discount from the price of regular Shore Line East and CTTRANSIT passes.
- **CTTRANSIT:** CTTRANSIT provides free transfers between all of its services, including those operated by different divisions, as well with some private services that are subsidized by the state (DATTCO's S-Route in South Central Connecticut). CTTRANSIT 31-Day passes are also valid on all services operated by all CTTRANSIT divisions, and on the same private services with which there are free transfers.

While none of these joint fare arrangements cover all service, they could provide the foundation for a NH-H-S corridor joint pass. One approach that would include all corridor services would be to (see also Table 5-3):

1. Expand the UniRail pass program to include new New Haven - Hartford - Springfield rail service. The existing pass price structure, which is based on origin and destination stations, could be easily expanded to New Haven - Hartford - Springfield service. This would produce a pass that would cover New Haven - Hartford - Springfield rail, Shore Line East, and Metro-North's New Haven Line.
2. Negotiate an agreement with Amtrak to allow monthly pass or UniRail pass holders to use Amtrak services in the New Haven - Hartford - Springfield corridor. Amtrak has recently begun entering joint fare agreements with local transit operators, and now has agreements in place in Southern California and Virginia. In the Los Angeles area, Metrolink monthly pass holders can now use their passes on Amtrak trains within the limits of their pass. In San Diego, the North San Diego County Transit District recently implemented a similar joint fare arrangement on a six month trial basis. In Virginia, Virginia Railway Express



pass holders can ride Amtrak trains for \$1.⁵ An agreement with Amtrak to allow use of UniRail tickets on their trains would produce a pass that was valid on all rail services within the corridor, and on all connecting services.

3. Expand the UniTicket option to UniRail passes. This would produce a pass that would be valid on all rail services and all connecting bus services.

The existing joint fare arrangements would also provide a framework for pass handling procedures, and for cost and revenue sharing. As long as New Haven - Springfield commuter rail service used the same fare collection practices as Shore Line East service, the same fare media could be used as on that service. Fare handling for the UniTicket option on connecting bus services would be the same as at present, where the pass is simply used as a flash pass. The financial agreements that have been developed for the UniRail and UniTicket programs would provide a framework from which to expand these programs within Connecticut and to Massachusetts services (New Haven - Hartford - Springfield rail and PVRTA bus service).

**Table 5-3
Potential Joint Monthly Pass Types**

Pass Type	Valid On:
NH-H-S Monthly Pass	New Haven – Hartford-Springfield Rail
Above plus Amtrak Agreement	New Haven – Hartford-Springfield Rail Amtrak
Above plus UniRail	New Haven – Hartford-Springfield Rail Amtrak Shore Line East Metro North Railroad
Above plus UniTicket	New Haven – Hartford-Springfield Rail Amtrak Shore Line East Metro North Railroad PVRTA Connecting Bus CTTransit Connecting Bus (all divisions)

5.3.3 Common Stations

As described in the Connecting Bus Services chapter, many local bus services would be reconfigured to operate to, from, or via rail stations. These changes would help integrate local and regional transit services, both public and private:

⁵ Until June 28, 2004, VRE pass holders could ride Amtrak at no additional cost. The \$1 charge was implemented as part of a fare increase.



State Street and New Haven Union Stations - In a similar manner to Hartford's Union Station, New Haven's two rail stations are already served by Amtrak, CTTRANSIT, and private carrier bus services (Union Station). They are also served by Metro-North commuter rail to New York City and Shore Line East service from New London. As at Hartford's Union Station, the implementation of New Haven - Hartford - Springfield rail service and associated connecting bus changes would strengthen the connections that could be made at these locations.

Meriden Station - Meriden Station acts as the hub for CTTRANSIT-Meriden services. With the implementation of New Haven - Hartford - Springfield service, those bus services would be improved, and the combination of New Haven - Hartford - Springfield service and local bus services would greatly improve commuting options and regional travel options.

Hartford Union Station - Hartford's Union Station is already a major transportation hub that is currently served by Amtrak, CTTRANSIT, and private carrier bus services. Union Station will also be the downtown terminal for the planned New Britain – Hartford Busway, and with New Haven - Hartford - Springfield service, additional CTTRANSIT routes would be operated to and from Hartford's Union Station.

Springfield Union Station - With the redevelopment of Union Station, which is now underway, the implementation of New Haven - Hartford - Springfield rail service and the relocation of PVTA's hub to Union Station, Union Station will be the focal point of most Springfield area public transit. Although not examined as part of this study, there would also be opportunities to shift private carrier bus services from the Springfield bus terminal to Union Station.

5.3.4 Joint Marketing / Information

Riders of New Haven - Hartford - Springfield rail and connecting services will need to become familiar with services provided by multiple transit operators. For this to be accomplished, the provision of effective service information will be especially important. Service information should be provided via a number of different outlets and in a variety of formats.

The organization responsible for New Haven - Hartford - Springfield service should be the primary provider of information, and should develop maps, schedules, and a website. The New Haven - Hartford - Springfield rail operator should also provide information on connecting services. In turn, operators of connecting services should also provide information on New Haven - Hartford – Springfield rail. At a minimum, this should include phone numbers and web links for additional information. For trips that involve multiple connections, web-based itinerary planning systems can also facilitate travel. These systems ask the user a number of questions about their trip, including their origin



and destination, the time they want to travel, and other preferences. They then respond with specific directions for the trip, including information on all transit legs and scheduled times.

5.4 Connector Bus Operating Costs

This section estimates increases in operating costs and vehicle requirements for connecting bus services associated with the Recommended Action for New Haven – Hartford – Springfield commuter rail service. It also describes the methodologies used to develop the estimates.

Operating costs for connecting bus services would require an additional expenditure of approximately \$3.8 million per year, and bus vehicle requirements would increase by 12, at a capital cost of \$3.6 million (see Table 5-4). Approximately half of the operating cost increases would be in the Hartford area, with much of that increase attributable to the implementation of two new routes to connect the New Haven-Hartford-Springfield rail service with Bradley Airport. Relative to existing costs, operating cost increases would also be large in Wallingford and Meriden, where spans of service would be lengthened to provide peak period connections. Operating cost increases in the Springfield area would be very small, as the relocation of the Springfield bus terminal to Union Station would result in only negligible increase in vehicle miles and no increases in vehicle hours.

Table 5-4
Projected Annual Operating Costs and Vehicle Requirements

	Increase in Operating Costs	Increase in Vehicle Requirements
CTTRANSIT-New Haven	\$1,158,001	6
CTTRANSIT-Wallingford	\$230,912	0
CTTRANSIT-Meriden	\$624,448	0
CTTRANSIT-New Britain	\$1,077	0
CTTRANSIT-Hartford	\$1,736,323	6
CTTRANSIT Total	\$3,750,761	12
Pioneer Valley Transit Authority	\$6,101	0
Total	\$3,756,863	12

Note: \$2002, per year

Increases in peak vehicle requirements would be split between the Hartford and New Haven areas, where each would require 6 additional buses. In the Hartford area, a total of 15 additional vehicles would be required to provide new and or expanded service to provide connections. However, this increase would be partially offset by a savings of 9 vehicles due to the elimination of Route 9/15, which would be replaced by the proposed rail service. With this savings, the net increase in the Hartford area would be 6 buses.



In the New Haven area, 6 additional vehicles would be required, largely due to the provision of more frequent peak period service on two routes (C North Haven and Commuter Connection). Vehicle requirements in other areas (for CTTRANSIT-Wallingford, CTTRANSIT-Meriden, CTTRANSIT-New Britain, and PVTA) would remain the same as at present.

5.4.1 Operating Costs

In total, in FY 2002 dollars, the bus service changes that would be made to provide convenient connections to New Haven-Hartford-Springfield rail would increase costs by \$3.8 million. Virtually all of this increase would be borne by CTTRANSIT; operating cost increases to PVTA would be negligible (see Table 5-5). By transit operator, operating cost increases would be as described in the following sections.

Table 5-5
Operating Cost Increases by Operator

	Increase in Operating Costs
CTTRANSIT-New Haven	\$1,158,001
CTTRANSIT-Wallingford	\$230,912
CTTRANSIT-Meriden	\$624,448
CTTRANSIT-New Britain	\$1,077
CTTRANSIT-Hartford	\$1,736,323
CTTRANSIT Total	\$3,750,761
Pioneer Valley Transit Authority	\$6,101
Total	\$3,756,863

Note: \$2002, per year

CTTRANSIT-New Haven

In the New Haven area, CTTRANSIT-New Haven operating cost increases would be largely attributable to changes on three routes (see Table 5-6):

- The additional time required to re-route Route B Whalley/Congress via Union Station.
- A doubling of peak period service levels on Route C North Haven to provide connections with every train.
- A quadrupling of peak period service levels on the Commuter Connection route in order to provide connections with every train.



Table 5-6
CTTRANSIT-Hartford Operating Cost Increases by Route

	Increase in Operating Costs
<i>CTTRANSIT-NEW HAVEN</i>	
B Whalley/Congress Ave	\$562,093
C North Haven	\$361,468
M Washington Ave/State St	\$13,987
Z Goffe Street/Sargent Drive	\$25,482
Commuter Connection	\$194,971
CTTRANSIT-New Haven Total	\$1,158,001

Note: \$2002, per year

CTTRANSIT-Wallingford and CTTRANSIT-Meriden

In Wallingford and Meriden, the operating cost increases are entirely attributable to extending spans of service to provide peak period connections (see Table 5-7). In Wallingford, service would begin earlier and end later, while in Meriden, service would be extended in the afternoon to 6:30 pm.

Table 5-7
CTTRANSIT-Wallingford and -Meriden Operating Cost Increases by Route

	Increase in Operating Costs
<i>CTTRANSIT-WALLINGFORD</i>	
NET Wallingford	\$230,912
<i>CTTRANSIT-MERIDEN</i>	
A Yale Acres	\$217,928
B Kohl's - South Meriden	\$201,164
C East Main Street - West Main Street	\$205,355
CTTRANSIT-Meriden Total	\$624,448

Note: \$2002, per year



CTTRANSIT-New Britain

In New Britain, operating cost increases would be negligible, and attributable to the short additional distance that buses would travel in and out of Berlin Station (see Table 5-8).

Table 5-8
CTTRANSIT-New Britain Operating Cost Increases by Route

	Increase in Operating Costs
CTTRANSIT-NEW BRITAIN	
BK Berlin Kensington	\$1,077

Note: \$2002, per year

CTTRANSIT-Hartford

In the Hartford area, CTTRANSIT-Hartford operating cost increases, summarized in Table 5-9, would be largely attributable to the following changes:

Table 5-9
CTTRANSIT-Hartford Operating Cost Increases by Route

	Increase in Operating Costs
CTTRANSIT-HARTFORD	
AL Bradley Airport Local	\$303,391
AS Bradley Airport Shuttle	\$530,189
B Silver Lane	\$86,506
EN Enfield Local	\$306,185
K North Main St/Park St	\$190,086
N Campfield Ave/Windsor	\$530,527
Q Vine Street/New Britain Avenue/Westfarms Flyer	\$133,852
T Franklin Avenue/Blue Hills Avenue	\$188,712
U Wethersfield Ave/Albany Ave	\$93,271
W Weston Street	\$68,660
YM Burnside Ave	\$66,010
Z Tolland Tpk/ Rockville/Buckland Hills	\$99,839
5/13 Enfield-Somers/Windsor Locks Express	-\$860,907
CTTRANSIT-Hartford Total	\$1,736,323

Note: \$2002, per year



- The implementation of two new routes (AL Bradley Airport Local and AS Bradley Airport Shuttle) to provide connections between Windsor Locks Station and Bradley Airport.
- The implementation of a new EN Enfield Local route to provide connections between Enfield Station and Enfield (and which would also replace PVTA's Enfield service⁶).
- Increases in Route N7x Day Hill Road Limited service to provide connections between Windsor Station and the Day Hill Road area.

In addition, in the Hartford area, rail service would replace current Route 5/13 Enfield/Windsor Locks express service. The savings attributable to the elimination of this route (nearly \$900,000 per year) would offset much of the cost of the additional services described above.

Pioneer Valley Transit Authority

Changes to PVTA's actual operating costs would be negligible, as the shift of the Springfield hub from the Springfield Bus Terminal to Union Station would not significantly impact service miles or service hours (see Table 5-10). However, while PVTA operating costs would remain relatively unchanged, PVTA would lose a \$70,000 a year payment from the town of Enfield for the operation of the Enfield portion of PVTA Route 16 that would be replaced by CTTRANSIT-Hartford service. Including this amount, the net impact on PVTA would be approximately \$75,000 per year.

⁶ Note that the Town of Enfield currently pay PVTA \$70,000 per year for the PVTA's Route 16 service in Enfield. These estimates attribute the cost of the new service to CTTRANSIT-Hartford, rather than to the town.



**Table 5-10
Pioneer Valley Transit Authority Operating Cost Increases by Route**

	Increase in Operating Costs
PVTA	
G1 Chicopee Center-Fairfield Mall/Summer-Allen	\$1,926
G2 Carew - East Springfield/Belmont-Dwight Road	\$2,001
G3 Springfield Plaza via Liberty/King-Westford	\$0
B4 Plainfield/Walnut St.-Springfield College	\$1,316
G5 Dickinson-Tiffany-Jewish Home	\$782
B6 Ludlow via Bay	\$765
B7 State-Boston Rd.-Eastfield Mall	\$1,181
G8 Orange-Plumtree/Springfield	\$248
B9/15 St. James Avenue/Worthington St.	\$389
R10 Westfield State College via W. Springfield	\$584
P11 Holyoke Community College Express	\$305
B12 Stonybrook Express	\$32
B13 Maple Street/East Longmeadow	\$43
R14 Feeding Hills/Springfield	\$300
R16 Longmeadow/Enfield	-\$5,017
B17 Eastfield Mall via Parker-Wilbraham Rd	\$41
P20 Holyoke/Springfield via Holyoke Mall	\$940
P21 Holyoke/Springfield via Chicopee	\$264
R27 Wilbraham/Eastfield Mall/Sixteen Acres	\$3
PVTA Total	\$6,101

Note: \$2002, per year

5.4.2 Vehicle Requirements

Vehicle requirements would increase by 12 vehicles: 6 each for CTTRANSIT-New Haven and CTTRANSIT-Hartford (as summarized in Table 5-11). Vehicle requirements for other operators would not be impacted. The estimated cost for the purchase of these 12 vehicles is \$300,000 each for a total of \$3.6 million.

These vehicle requirement increases are attributable to the service changes described above. In New Haven, the additional vehicles would be required on Route B Whalley/Congress, Route C North Haven, and the Commuter Connection. In Hartford, additional vehicles would be required on most of the routes that would provide connections, offset by vehicle savings due to the elimination of Route 5/13 Enfield/Windsor Locks Express.



Table 5-11
Vehicle Requirement Increases by Operator

	Increase in Vehicle Requirements
CTTRANSIT-New Haven	6
CTTRANSIT-Wallingford	0
CTTRANSIT-Meriden	0
CTTRANSIT-New Britain	0
CTTRANSIT-Hartford	6
CTTRANSIT Total	12
Pioneer Valley Transit Authority	0
Total	12
Cost per vehicle	\$300,000
Total cost for vehicles	\$3,600,000

5.4.3 Operating Cost Methodology

Operating costs estimates for connecting bus services were developed based on the cost structures of each individual operator as reported in FTA’s National Transit Database. These estimates include all costs (including non-vehicle maintenance and administration), and are in 2002 dollars. Using this data, cost models were developed that allocate direct bus operating costs of the basis of vehicle service hours and vehicle service miles, and indirect costs as factors (see Table 5-12).

- Vehicle operations costs were allocated on the basis of vehicle service hours (since most of these costs are driven by labor, which is based on the number of hours worked).
- Vehicle maintenance costs were allocated on the basis of vehicle service miles (since most of these costs are mileage driven).
- Non-vehicle maintenance costs, which are for facility maintenance (for example, admin buildings, fare collection equipment, bus stops, etc.), were allocated as a percent of vehicle operations and vehicle maintenance costs.

For the changes that are considered for this project, an incremental approach was used that presumes that there would be increases in non-vehicle maintenance, but that the relatively small magnitude of the changes would not increase administrative costs. On this basis, the cost formulas for new services include direct costs for vehicle operations on a vehicle service hour basis, vehicle maintenance on a vehicle service mile basis, and non-vehicle maintenance as a percent of operations and vehicle maintenance costs:

$$CTTRANSIT-New Haven: ((\$44.88 * VSH) + (\$1.40 * VSM)) * 1.048$$



CTTRANSIT-Wallingford: $((\$41.48 * VSH) + (\$0.84 * VSM)) * 1.021$
 CTTRANSIT-Meriden: $((\$41.48 * VSH) + (\$0.84 * VSM)) * 1.021$
 CTTRANSIT-New Britain: $((\$25.59 * VSH) + (\$0.49 * VSM)) * 1.025$
 CTTRANSIT-Hartford: $((\$45.52 * VSH) + (\$1.34 * VSM)) * 1.045$
 PVTA (Springfield): $((\$32.16 * VSH) + (\$0.62 * VSM)) * 1.031$

**Table 5-12
Operating Cost Allocation**

	Vehicle Ops	Vehicle Maint	Non- Vehicle Maint	General Admin	Total
CTTRANSIT-NEW HAVEN					
FY 2002 Actuals	\$12,445	\$4,597	\$818	\$2,990	\$20,977
Vehicle Service Hours (VSH)					277.3
Vehicle Service Miles (VSM)					3,282
Cost per VSH	\$44.88				\$75.65
Cost per VSM		\$1.40			
Non-Veh-Maint & GA Factors			4.8%	17.5%	22.3%
CTTRANSIT-WALLINGFORD & MERIDEN					
FY 2002 Actuals	\$3,024	\$749	\$80	\$1,007	\$4,895
Vehicle Service Hours (VSH)					73.0
Vehicle Service Miles (VSM)					890.2
Cost per VSH	\$41.42				\$67.05
Cost per VSM		\$0.84			
Non-Veh-Maint & GA Factors			2.1%	26.7%	28.8%
CTTRANSIT-NEW BRITAIN					
FY 2002 Actuals	\$151	\$48	\$5	\$43	\$250
Vehicle Service Hours (VSH)					5.9
Vehicle Service Miles (VSM)					97.5
Cost per VSH	\$25.59				\$42.37
Cost per VSM		\$0.49			
Non-Veh-Maint & GA Factors			2.5%	21.6%	24.1%
CTTRANSIT-HARTFORD					
FY 2002 Actuals	\$21,859	\$8,572	\$1,370	\$5,165	\$36,966
Vehicle Service Hours (VSH)					480.2
Vehicle Service Miles (VSM)					6,374.2
Cost per VSH	\$45.52				\$76.98
Cost per VSM		\$1.34			
Non-Veh-Maint & GA Factors			4.5%	17.0%	21.5%
PIONEER VALLEY TRANSIT AUTHORITY					
FY 2002 Actuals	\$12,380	\$3,101	\$475	\$3,487	\$19,636
Vehicle Service Hours (VSH)					384.9
Vehicle Service Miles (VSM)					4,984.0
Cost per VSH	\$32.16				\$51.02
Cost per VSM		\$0.62			
Non-Veh-Maint & GA Factors			3.1%	22.5%	25.6%