Griffin Busway Feasibility Study

FINAL REPORT

EXECUTIVE SUMMARY

Prepared for

Capitol Region Council of Governments

Prepared by

Wilbur Smith Associates

In Association With

• URS Corporation AES
• Fitzgerald & Halliday, Inc.
• Howard/Stein – Hudson, Inc.
• KKO and Associates, LLC
• Susan Jones Moses Consulting
• Basil Bauman Prost Associates

April 2004

Prepared in cooperation with the U.S. Department of Transportation (including its participating agencies) and the Connecticut Department of Transportation. The opinions, findings and conclusions expressed in this publication are those of the Capitol Region Council of Governments and do not necessarily reflect the official views or policies of the Connecticut Department of Transportation and/or the U.S. Department of Transportation.
Executive Summary

Introduction

The Capitol Region Council of Governments (CRCOG) has been conducting the Griffin Busway Feasibility Study since 2002. This study has explored the potential for bus rapid transit (BRT) service in the northwest corridor from downtown Hartford to Bradley International Airport in Windsor Locks. In addition to integrating findings from previous studies, performing new technical studies and evaluation, CRCOG sought input from the public to find out the needs of the community and to help guide the direction and outcome of the study.

Study Recommendations

Construction of a busway from Union Station to the Griffin office center was selected as the preferred long-term transit option for the corridor because it would best meet long-term goals for improving mobility, preserving roadway capacity and supporting both economic and smart growth development in the area. The Griffin Busway is illustrated in Figure ES-1. In order to implement the busway, federal transportation funds would be necessary from the U.S. Department of Transportation’s Federal Transit Administration (FTA). Unfortunately, according to FTA cost-effectiveness criteria, the busway option does not rate high enough to be eligible for funding. Therefore, it is recommended that any additional planning or design of a busway be deferred, but that the corridor be preserved as a transit corridor, and no actions be taken which would diminish the ability to implement a busway in the corridor.

In the meantime, the performance of the New Britain Busway, when completed, should be monitored for its performance and cost-effectiveness. At that point, there may be findings that would argue for the Griffin Busway option to be re-evaluated.

In the near term, a set of transit improvements for the corridor should be implemented as soon as possible. Due to community interest in addressing immediate transit needs, the near-term study recommendations should focus on improving local bus service. These improvements would meet immediate travel needs and support growth in transit ridership in the corridor from downtown Hartford to Bradley Airport. A task force should be formed to investigate the implementation of these improvements, recognizing that some will take longer to implement because of funding needs. Figure ES-2 illustrates the recommended near-term transit improvements.
Figure ES-1: Recommended Busway
Figure ES-2: Near-Term Transit Improvements
Near-Term Transit Improvements Include:

1) Shelters and Stops:
   - Relocate stops on Albany Avenue to provide better spacing and better service.
   - Provide shelters on Albany Avenue as needed and as appropriate.
   - Provide some limited stop service on Albany Avenue.
   - Provide a transfer facility with comfortable passenger waiting areas in the vicinity of Copaco.
   - Provide a bus shelter in Bloomfield center, on Jerome Avenue.

2) Service modifications:
   - When Mark Twain Drive opens, serve the University of Hartford via this street, then continue service to Bloomfield via Bloomfield Avenue.
   - Establish a new route linking Copaco, the University of Hartford, Bishops Corner, and West Farms Mall.
   - Expand service to Bradley Airport to ensure that it meets the needs of air travelers.
   - When development expands in the International Drive area, it will be important to have service to this location. International Drive can be served with a route extending north from a Griffin Office Center Park-and-Ride lot, and with a route from downtown, via Interstate 91 and Route 20.

3) Park-and-Ride:
   - Locate a Park-and-Ride lot near Griffin Office Center in the vicinity of Blue Hills Avenue and Day Hill Road. Examine whether a new route is needed or if existing routes can adequately service this location.
   - When International Drive service is established, a Park-and-Ride lot should also be established in the center of East Granby.

Project Background

The potential for a major capital investment in transit in the Griffin Corridor has been examined in various studies over the past 20 years. First identified as a corridor with high potential for a transit investment in the CRCOG long-range plan developed in 1980, the Griffin corridor was the subject of a multi year study conducted under the auspices of the Greater Hartford Transit District (the Griffin Corridor Major Investment Study, 1995).

That study examined a variety of transit options and light rail was chosen as the locally preferred option, primarily because it was perceived as having a greater potential to stimulate economic development. The study indicated, however, that light rail was a higher cost alternative and was projected to carry fewer transit riders than a busway in the corridor. Ultimately, it became apparent that financing would not be available for a light rail investment and the region removed light rail as the locally preferred option for the
The corridor was retained as a high priority for consideration of transit investment.

Since that time, other transit studies have been completed in the region: the Hartford West MIS (1999) and the Regional Transit Strategy (2001). These studies have confirmed the results of the Griffin Corridor MIS: that in a region with population and density like the Capitol Region, light rail is a higher cost option and serves fewer potential riders than a busway. For this reason, the light rail option was not re-evaluated as part of this study.

Goals and Objectives of the Study

In consultation with several neighborhood groups, transportation providers, town and city officials and other stakeholders, a set of goals and objectives for the project was developed to help guide the study.

1) Improve Transportation and Mobility
   - Improve links to work and school
   - Improve links between the city and surrounding suburbs
   - Improve transit circulation within the city as well as in the suburbs
   - Maintain and improve current transit service levels to compete with automobiles
   - Manage roadway congestion and provide for increased travel without increasing roadway capacity
   - Improve roadway safety for pedestrians and bicyclists

2) Provide for Community Livability and Quality of Life
   - Protect, preserve, and improve residential neighborhoods and their aesthetics
   - Support the City of Hartford and other major activity centers
   - Mitigate impacts on the environment by reducing energy consumption and improving air-quality
   - Encourage new urbanism and transit-oriented development
   - Provide ancillary station facilities

3) Encourage Economic Development
   - Support economic development in targeted locations
   - Encourage reuse of old industrial buildings
   - Increase the viability of existing public infrastructure
   - Facilitate freight movement through and within corridor
Public Involvement during the Study

Throughout the project, a major effort was made to reach out to the public, neighborhood groups, elected officials and stakeholders within the project area. CRCOG staff attended over 20 meetings of community groups and stakeholders to explain the project and to understand community concerns and interests. Local advisory committees were established in each of the four communities in the corridor—Bloomfield, Windsor, East Granby and Hartford. A Project Steering Committee, with representation from each of the towns and agencies with an interest in the project, provided overall guidance for the project. Additionally, three sets of public meetings were held to gain input from the public to help guide the outcome of the study.

What is Bus Rapid Transit?

Bus rapid transit (BRT) is a special roadway treatment for buses that can substantially upgrade bus system performance. Investments in infrastructure, equipment, operational improvements and technology provide the foundation for BRT and can provide for significantly faster operating speeds, greater service reliability and increased convenience, often matching the quality of rail transit when implemented in appropriate settings.

BRT measures can range from a dedicated bus roadway to a prioritization strategy for buses in mixed traffic where a dedicated roadway is impractical. BRT strategies can include measures like on-street bus lanes, bus prioritization at traffic signals, “queue jumpers” (where buses can get ahead of stopped traffic at a signal) and improved fleet management.

Benefits of BRT

- Improved transit travel times – Travel times have been improved as much as 50% in some settings in the U.S.
- Improved transit reliability - Buses are no longer subject to varying traffic conditions.
- Increased transit service - Travel times are improved so each bus can make more trips in the same length of time.
- Greater visibility of the transit system - BRT systems often include “stations” (not simply bus stops) that clearly identify the route.
- Potential for investment along the BRT - Stations can be attractive locations for new development because of the improved accessibility and mobility provided by the BRT.
Alternatives Considered in the Griffin Corridor Study

Baseline Alternative

The baseline alternative is the best estimate of what transit service in the corridor will be like in twenty years if no major capital investments are made. It includes recommendations for transit service improvements that were included in the Connecticut DOT Statewide Bus System Study and the Regional Transit Study for CRCOG.

On-Street BRT Alternative

On-Street Bus Rapid Transit (BRT) gives buses priority over other vehicles, while using the same roadway. Innovations such as priority signalization are proposed on the existing bus system in the Griffin Corridor in order to give priority treatment over automobiles.

Busway Alternative

The busway alternative includes an exclusive busway running predominantly in rail right-of-way from Union Station in Hartford to the Griffin Office Park in Bloomfield. On-street routing north of the office park to Bradley International Airport would be included in the BRT system. Additionally, in the vicinity of the University of Hartford, the busway would divert from the rail right-of-way to Mark Twain Drive to avoid impacts on nearby land uses.

In addition to the busway, other BRT elements mentioned previously could be implemented to enhance the operation of the busway, especially bus stations that offer a variety of amenities and conveniences.

Partial Busway Segment Alternatives

The study also considered various busway segments in the rail right-of-way with on-road amenities in the non-busway sections. These alternatives were considered to address the goal of lowering construction costs. The four partial segments include (refer to Figure ES-1 for the stations described below):

Option 1: Union to Albany - This segment runs from Union Station to Albany Station with the northern portion of the routes running on-street to the rest of the corridor. The length of this exclusive busway segment is 1.6 miles.

Option 2: Union to Bloomfield - This segment runs from Union Station to Bloomfield Station. The length of this exclusive busway segment is 5.3 miles.

Option 3: Albany to Bloomfield - This segment uses the middle portion of the busway from Albany Station to Bloomfield Station. The length of this exclusive busway segment is 3.7 miles.
Option 4: Albany to Griffin - This segment uses the northern portion of the busway from Albany Station to Griffin Station. The length of this exclusive busway segment is 7.0 miles.

Cost Estimates

Table ES-1 provides a breakdown of the total cost to construct, operate and maintain the BRT alternatives. Costs for the BRT alternatives were compared against the Baseline Alternative, yielding incremental capital and operating expenditures that were converted to the annualized cost values used in the Cost Effectiveness calculations discussed later. Total annualized cost is determined by applying annualization factors developed by FTA and are equivalent to annual payments at a specific discount rate over the useful life of the investment. This method of cost comparison is used so that various options with different life spans can be evaluated evenly.

**Table ES-1: BRT System Cost Estimates**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Capital Cost ($ millions)</th>
<th>Capital Cost, Difference from Baseline ($ millions)</th>
<th>Annual Operating Cost ($ millions)</th>
<th>Operating Cost, Difference from Baseline ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>Existing Service plus recommendations from Statewide Bus Study and Regional Transit Strategy</td>
<td>$1.9</td>
<td></td>
<td>$8.9</td>
<td></td>
</tr>
<tr>
<td>On-Street</td>
<td>Core bus service Main – Albany – Blue Hills</td>
<td>$27.1</td>
<td>$25.2</td>
<td>$13.8</td>
<td>$4.9</td>
</tr>
<tr>
<td>Full Busway</td>
<td>Full busway from Union to Griffin</td>
<td>$131.8</td>
<td>$129.9</td>
<td>$14.3</td>
<td>$5.4</td>
</tr>
<tr>
<td>Option 1</td>
<td>Partial busway from Union to Albany</td>
<td>$56.3</td>
<td>$54.4</td>
<td>$13.8</td>
<td>$4.9</td>
</tr>
<tr>
<td>Option 2</td>
<td>Partial busway from Union to Bloomfield</td>
<td>$103.6</td>
<td>$101.7</td>
<td>$14.3</td>
<td>$5.4</td>
</tr>
<tr>
<td>Option 3</td>
<td>Partial busway from Albany to Bloomfield</td>
<td>$70.6</td>
<td>$68.7</td>
<td>$13.8</td>
<td>$4.9</td>
</tr>
<tr>
<td>Option 4</td>
<td>Partial busway from Albany to Griffin</td>
<td>$96.8</td>
<td>$94.9</td>
<td>$13.8</td>
<td>$4.9</td>
</tr>
</tbody>
</table>

The Full Busway would require the highest capital investment at approximately $131.8 million. The major capital costs for the Full Busway, and the Partial Busway Segments, include new buses, relocation of the rail line, pavement for the busway, earthwork, and retaining wall and bridge structures. The On-Street alternative, on the other hand, would have the lowest cost at approximately $27.1 million in capital expenditures. The major capital cost items for the On-Street option include new buses and signal prioritization at intersections. Each of the Partial Busway options fall between the On-Street and Full Busway options based upon the scale of construction required for each. The Baseline option would cost an estimated $1.9 million, consisting only of new vehicles for expanded services in the region.
In terms of annual operating costs, the BRT alternatives are comparable to each other. In all cases, the services provided would exceed the Baseline option, which would have estimated annual operating costs of $8.9 million. The Full Busway and Option 2 (Partial busway from Union to Bloomfield) would cost approximately $14.3 million annually in operating costs, whereas all the other options, including the On-Street BRT option would cost approximately $13.8 million annually. Unlike the difference in capital costs, the annual operating costs for each option are similar in magnitude, with the Full Busway and Option 2 being slightly higher due to the greater maintenance costs and additional operating costs associated with more bus service.

Findings of the Study

The Good News

The draft study’s findings show that an exclusive busway has the greatest potential to meet all the goals of the project—increasing ridership more than any other alternative, providing a quick bus trip for individuals traveling in the northwest corridor, offering opportunities for economic development in station areas and providing the greatest service efficiencies.

Other alternatives meet some of the goals of the project to varying degrees. The partial segments and the On-Street BRT provide some of the improvements to transportation and mobility that a full busway provides, and at less cost and in less time. However, none of these alternatives have the same potential to enhance community livability, quality of life, and economic development as the full busway option.

The Bad News

The reality of making substantial capital transit improvements in the Griffin Corridor (or any other setting in the U.S.) is that local and state government must rely heavily on federal financial assistance. These federal funds, made available by the Federal Transit Administration, are limited, creating a highly competitive arena among important transit projects. FTA has a cost-effectiveness formula to rate the relative strengths of projects: comparing the full costs of a project (capital and operating) against its effectiveness (time savings afforded to existing and new transit riders). As Table ES-2 on the following page indicates, none of the alternatives considered in this study rate higher than a “low-medium” on the FTA scale and most achieve a low rating. Such low ratings make it highly unlikely that federal transit funds could be secured in the near-term.
Table ES-2: BRT Cost Effectiveness

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Length (mi)</th>
<th>New Daily Riders</th>
<th>Annualized Cost ($)</th>
<th>FTA Cost Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Street</td>
<td>Core bus service Main-Albany-Blue Hills</td>
<td>NA</td>
<td>1,200</td>
<td>7,145,097</td>
<td>Low</td>
</tr>
<tr>
<td>Full Busway</td>
<td>Full busway from Union to Griffin</td>
<td>8.7</td>
<td>2,100</td>
<td>17,027,588</td>
<td>Low</td>
</tr>
<tr>
<td>Option 1</td>
<td>Partial busway from Union to Albany</td>
<td>1.6</td>
<td>1,700</td>
<td>10,059,063</td>
<td>Low-Medium</td>
</tr>
<tr>
<td>Option 2</td>
<td>Partial busway from Union to Bloomfield</td>
<td>5.3</td>
<td>2,000</td>
<td>14,658,503</td>
<td>Low</td>
</tr>
<tr>
<td>Option 3</td>
<td>Partial busway from Albany to Bloomfield</td>
<td>3.7</td>
<td>1,400</td>
<td>11,170,075</td>
<td>Low</td>
</tr>
<tr>
<td>Option 4</td>
<td>Partial busway from Albany to Griffin</td>
<td>7.0</td>
<td>1,500</td>
<td>13,398,596</td>
<td>Low</td>
</tr>
</tbody>
</table>

Notes: All busway alternatives would utilize Mark Twain Drive from Albany to the University of Hartford. This estimate includes airport and university riders, which were modeled separately by CRCOG.

Recommendations of the Study

During the course of this study, the public identified many near-term improvements that should be made to improve bus transit services and facilities in the Griffin Corridor and area. These would provide strong benefits to travelers in the region, as well as build a transit constituency that might one day support a possible Griffin BRT alternative. This study recommends that CRCOG work with other appropriate agencies to find funding to implement the near-term improvements.

Additionally, CRCOG will continue to monitor the New Britain-Hartford Busway. Experience gained from evaluating the New Britain-Hartford Busway operation will help CRCOG better determine when to advance a busway in the Griffin Corridor.