



R | S | G INC.
RESOURCE SYSTEMS GROUP, INC.

■ Documentation for:

FEDERAL STREET CORRIDOR STUDY – 2005 UPDATE

■ Prepared for the:

**Northwest Regional Planning
Commission;**

City of Saint Albans; and

Town of Saint Albans

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

The 1995 Federal Street Corridor Study evaluates the feasibility of constructing an urban collector road parallel to Main Street in the City of Saint Albans, VT. The project consists of upgrading Federal Street, and other local roads one block west of Main Street, and constructing new roadway extensions to the Saint Albans State Highway in the south and the US 7-VT 105 intersection in the north.

The purpose of this study is to update the feasibility analysis in light of transportation system, land use, and transportation policy changes that have occurred since 1995.

Part I of the report provides the overall transportation planning and land use context for the Federal Street Connector and a traffic analysis which are used to develop a project purpose. The information presented in Part I will also be used to apply for state and federal funding for continued planning, design, and construction of a multi-modal transportation center on Federal Street between Lake and Kingman Streets.

Part II of this report updates the 1995 design concepts for the Federal Street connector based on the traffic volumes and policy changes that are discussed in Part I. It presents concept designs and order of magnitude cost estimates for the Federal Street Connector, identifies right-of-way impacts and acquisition needs, identifies potential natural and cultural resource impacts, and includes an implementation plan.

2.0 PART I: PLANNING CONTEXT AND TRAFFIC ANALYSIS

The need and desire for a new north/south route to accommodate through traffic and to improve access to the City's industrial area was first identified in 1974. Various studies completed since 1974 continued to identify the importance of the Federal Street Connector. The 1995 Study presented the first in-depth evaluation of the Federal Street Connector. The most significant changes that have occurred since the 1995 Study was completed are:

- Identification of the Federal Street Connector, between the Saint Albans State Highway and Newton Street, as an intermodal connector in the Western Vermont Freight Corridor Program. As a component of this program, the Federal Street project may become eligible for a broader range of federal funds.
- Adoption of the 2003-2008 Regional Transportation Plan, that emphasizes the inclusion of pedestrian and bicycle facilities as part of highway projects.
- Adoption of the VT State Standards for the Design of Roads and Streets, that allows for greater design flexibility.



- Extension of Lemnah Drive between Nason Street and Lower Weldon Street that provides an important link between the Federal Street Corridor and US 7 via Nason Street.
- Changes to zoning along the Federal Street Corridor to predominantly non-residential.
- Selection of a preferred alternative design for the US 7-VT 105 intersection by the City, Town, and NRPC. The preferred design will realign the US 7-VT 105 intersection with Rewes Drive and provides the northern terminus for the Federal Street Connector.

Based on a review of previous studies, discussion with steering committee members, and the goals of the Western Vermont Freight Gateway Program, the purpose of the Federal Street Connector is to:

- Improve access to downtown Saint Albans;
- Reduce the impact of vehicular and truck traffic passing through Main Street;
- Improve access to the existing industrial area located along the Federal Street Corridor;
- Provide capacity to support redevelopment of industrial and commercial areas within the core of the City of Saint Albans;
- Provide an efficient intermodal connection between the National Highway System and the rail-truck transfer facility at the NECR railyard;
- Improve pedestrian and bicycle travel; and
- Facilitate connections between different modes.

The following changes and clarifications to the various highway classification systems are recommended for the Federal Street Connector and are consistent with the project's purpose:

- The Federal Street Connector should be classified as an Urban Collector. This function is consistent with the purpose of the Federal Street Connector and will make the roadway eligible for federal funds.
- With the exception of Lemnah Drive, all of the existing streets along the Federal Street Corridor are currently classified as urban collectors. Since Lemnah Drive now connects the Federal Street Corridor via Nason Street to US 7, it should be reclassified as an urban collector to reflect its current function in the street system.
- The Federal Street Connector will be a locally owned and maintained roadway. When completed, all segments should be designated as class 2 town highways.
- The Federal Street Connector, when complete and the Saint Albans State Highway should be included on the VT Truck Network.

The traffic analysis evaluates whether or not the intersection designs recommended in the 1995 Study will provide adequate levels of service based on new land use assumptions and a planning year that extends to 2025. The following scenarios are analyzed:



- 2005 existing conditions;
- 2025 No-Build: assumes no changes to the existing roadway system;
- 2025 North Alternative 1: Includes the Federal Extension between the Saint Albans State Highway and Nason Street, upgrades to existing streets, and a new road segment that follows the existing railroad right-of-way to Rewes Drive, and follows Rewes Drive to its new proposed intersection with US 7 and VT 105; and
- 2025 North Alternative 2: The same as above except the northern section follows Lower Newton Street and Sunset Meadows Road, and continues on a new alignment to Rewes Drive; and follows Rewes Drive to its new intersection with US 7 and VT 105.

The key findings of the traffic analysis are:

- The intersection designs recommended in the 1995 study are projected to operate at acceptable levels of service through the 2025 planning horizon for North Alternatives 1 and 2;
- The Federal Street Connector helps reduce or eliminate congestion along the Main Street Corridor and improves accessibility to Main Street; and
- North Alternative 1 is more effective at satisfying the project's purpose than North Alternative 2.

2.1 FINDINGS RELATIVE TO THE MULTIMODAL CENTER

The City of Saint Albans is served by highway, intercity rail and bus service, an extensive sidewalk system, and is the western terminus of the Missisquoi Valley Rail-Trail. However, efficient connections between these different modes are missing. Existing passenger intermodal facilities are dispersed and there is a lack of easily accessible information about how and where a traveler can transfer from one mode to another.

The two most significant issues are:

- The Amtrak Station and the bus stops for Vermont Transit and Greyhound intercity service are separated by approximately one mile.; and
- The Missisquoi Valley Rail-Trail lacks a connection to Downtown, the Amtrak Station, and intercity bus service.

A multimodal center, in combination with the Federal Street Connector, has the following opportunities:

- The general area proposed for the multimodal center is served by a well connected and extensive sidewalk system;



- A multimodal center in the City of Saint Albans would be well situated to serve commuters from Franklin County to Chittenden County.
- The multimodal center would create an opportunity to co-locate the intercity bus service and Amtrak. The Federal Street Connector would improve accessibility for a bus from the interstate to the Amtrak Station and may make the center city location more attractive for the private intercity transit operators.
- The multimodal center is a logical place to anchor the Missisquoi Valley Rail-Trail and the Federal Street Connector could provide the missing link between the Missisquoi Valley Rail-Trail and Downtown Saint Albans.

3.0 PART II: FEDERAL STREET CONNECTOR CONCEPT DESIGN

The key design features of the Federal Street Connector are:

- The typical roadway cross-section recommended between Nason Street and Lower Newton Street consists of two 11 foot travel lanes, 4 foot bike lanes in each direction, curbing on both sides of the highway, 5 foot sidewalks where appropriate and a posted speed limit of 25 miles per hour.
- The typical roadway cross-section recommended between Lower Newton to US 7/VT 105 and between Nason Street to US 7/Saint Albans State Highway consists of 12 foot travel lanes and five foot shoulders with a posted speed limit of 25 miles per hour.
- Traffic signals and turn lanes where necessary are recommended at the following intersections: US 7-Federal Street Connector-VT 105, Federal Street Connector-Lower Newton, and US 7-Federal Street Connector-Saint Albans State Highway.
- At the Federal Street-Lake Street intersection, four design alternatives are evaluated. Overall, Alternative 4 – Roundabout with Federal Street realigned between Catherine and Market Streets provides the most benefits relative to vehicle mobility, truck access, and pedestrian access. However, this alternative is the most expensive of the four and also requires removing the entire block of buildings between Catherine and Market Streets. Alternatives 2, 3, and 4 should all be considered further in the final design.

The estimated cost of the Federal Street Connector between the US 7-Saint Albans State Highway and US 7-VT 105 intersections ranges between \$11.6 and \$13.0 million, depending on the design option at the Federal Street-Lake Street intersection. This cost estimate includes engineering, permitting, right-of-way acquisition, and construction. Costs by segment are presented in the table below.



Segment	Alternative 1	Alternative 2	Alternative 3	Alternative 4
US 7 to Lower Newton	\$ 4,676,350	\$ 4,676,350	\$ 4,676,350	\$ 4,676,350
Lower Newton to Kingman	\$ 2,025,365	\$ 2,025,365	\$ 2,025,365	\$ 2,025,365
Kingman to Lower Weldon	\$ 1,385,000	\$ 2,301,920	\$ 2,371,580	\$ 2,848,810
Lower Weldon to Nason	\$ 1,961,935	\$ 1,961,935	\$ 1,961,935	\$ 1,961,935
Nason to SASH	\$ 1,502,210	\$ 1,502,210	\$ 1,502,210	\$ 1,502,210
Totals	\$ 11,550,860	\$ 12,467,780	\$ 12,537,440	\$ 13,014,670

The Federal Street Connector will require the acquisition of right-of-way from numerous land owners along the corridor and has potential impacts to the following natural and cultural resources:

- The proposed project lies within an impaired waterway identified by the State of Vermont, and will increase impervious surface by more than one acre which will require stormwater mitigation.
- The proposed alignment will require a detailed wetlands delineation survey by the Vermont Agency of Natural Resources to determine the class of existing wetlands at the two extremes of the project site.
- Potential impacts to a rare fish species in the Stevens Brook.
- A number of potential and identified hazardous waste sites must be further investigated.
- Historic impacts are likely and should be identified by a qualified architectural historian and consulting archeologist.

4.0 NEXT STEPS

The recently approved Federal Transportation Bill, SAFETEA-LU includes earmarked funds totaling \$2,460,000. Given that the potential impacts of the Federal Street Connector may be significant, but are not yet clearly established, an Environmental Assessment must be completed before the project can access these funds. The earmarked funds can be used to fund 80% of the cost of the EA which could range between \$300,000-\$500,000.

Accounting for the cost to complete an Environmental Assessment, and assuming a source for the non-federal match is available, approximately \$2.7 million would be available for final design, right-of-way acquisition and construction. This amount would cover 100% of the cost for the section between the Saint Albans State Highway and Nason Street and about 60% of the cost of the section between Nason Street and Lower Weldon Street.

Options to pay for the remaining sections include additional earmarked funds, federal surface transportation funds administered through the annual VTrans capital program, and municipal bonds. Municipal bonds could be paid for with special assessment taxes, tax incremental financing, or if the legislature passes a new law, local option sales taxes. Careful review of the advantages of each method, including reliable estimates on how these options affect local tax rates, is necessary before they can be incorporated into a funding mechanism.



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INTRODUCTION

The 1995 Federal Street Corridor Study (1995 Study) evaluates the feasibility of constructing an urban collector road parallel to Main Street in the City of Saint Albans. The project consisted of upgrading Federal Street, and other local roads one block west of Main Street, and constructing new roadway extensions to the Saint Albans State Highway in the south and the US 7-VT 105 intersection in the north.

The purpose of this study is to update the feasibility analysis in light of transportation system, land use, and transportation policy changes that have occurred since 1995. The updated information to be provided in this study will be used to support efforts at obtaining funding for more detailed engineering work, the environmental permitting necessary when federal funds are used, and construction.

Part I of this report describes the study area, summarizes the key findings and recommendations of previous studies; describes the Federal Street Connector in the context of existing and future land use and the overall transportation system; describes the characteristic of the transportation system in the study area; describes travel patterns; and presents a traffic analysis for existing and 2025 no-build and build scenarios. This information is used as a basis for defining the overall purpose of the project and lays the groundwork for the design work presented in Part II of the study.

The information presented in Part I also provides the planning context, purpose and need for a multi-modal center proposed along Federal Street. This information will be used to apply for state and federal funding for continued planning, design, and construction of that facility.

Part II of this study updates the 1995 design concepts for the Federal Street connector based on the traffic volumes and policy changes that have occurred over the last ten years. It presents concept designs and order of magnitude cost estimates for the Federal Street Connector, identifies right-of-way impacts and acquisition needs, identifies potential natural and cultural resource impacts, and includes an implementation plan.

The study is being conducted for the Northwest Regional Planning Commission, the City of Saint Albans, and the Town of Saint Albans by Resource Systems Group with assistance from Cross Consulting Engineers.



PART I: PLANNING CONTEXT AND TRAFFIC ANALYSIS

This section of the report describes the study area, summarizes the key findings and recommendations of the 1995 Study and the studies that have been completed since 1995; describes the Federal Street Connector in the context of existing and future land use, the state and national transportation systems, and the Western Vermont Freight Gateway Program; describes the characteristic of the roadway, transit, and pedestrian-bicycle facilities in the study area; describes travel patterns; and presents a traffic analysis for existing and 2025 no-build and build alternatives. This information is used as a basis for defining the overall purpose of the project and lays the groundwork for the design work presented in Part II of the study.

The information presented in Part I also provides the planning context and purpose and need for a multi-modal center proposed along Federal Street. This information will be used to apply for state and federal funding for continued planning, design, and construction of that facility.

1.0 STUDY AREA

Figure 1 on the following page shows the study area and the approximate location of the multimodal center. For the purpose of this study, The Federal Street Connector refers to the actual roadway which includes the following segments:

- A proposed new southern section between the US 7-Saint Albans State Highway intersection and Nason Street;
- Modifications to Lenmah Drive – which was extended since 1995 to connect Nason Street to Lower Weldon Street;
- Modifications to Allen Street, Catherine Street, and Federal Street;
- A new northern road section between the Federal Street-Newton Street intersection and the US 7-VT 105 intersection on the following two alternative alignments (as indicated in Figure 1):
 - Northern Alternative 1 is similar to the alignment proposed in the 1995 study. It follows the existing railroad right-of-way which passes between two buildings at the Fonda Plant, to Rewes Drive. It follows Rewes Drive to US 7.
 - Northern Alternative 2 follows Lower Newton Street and Sunset Meadows Road and continues on a new alignment to Rewes Drive. It follows Rewes Drive to US 7.

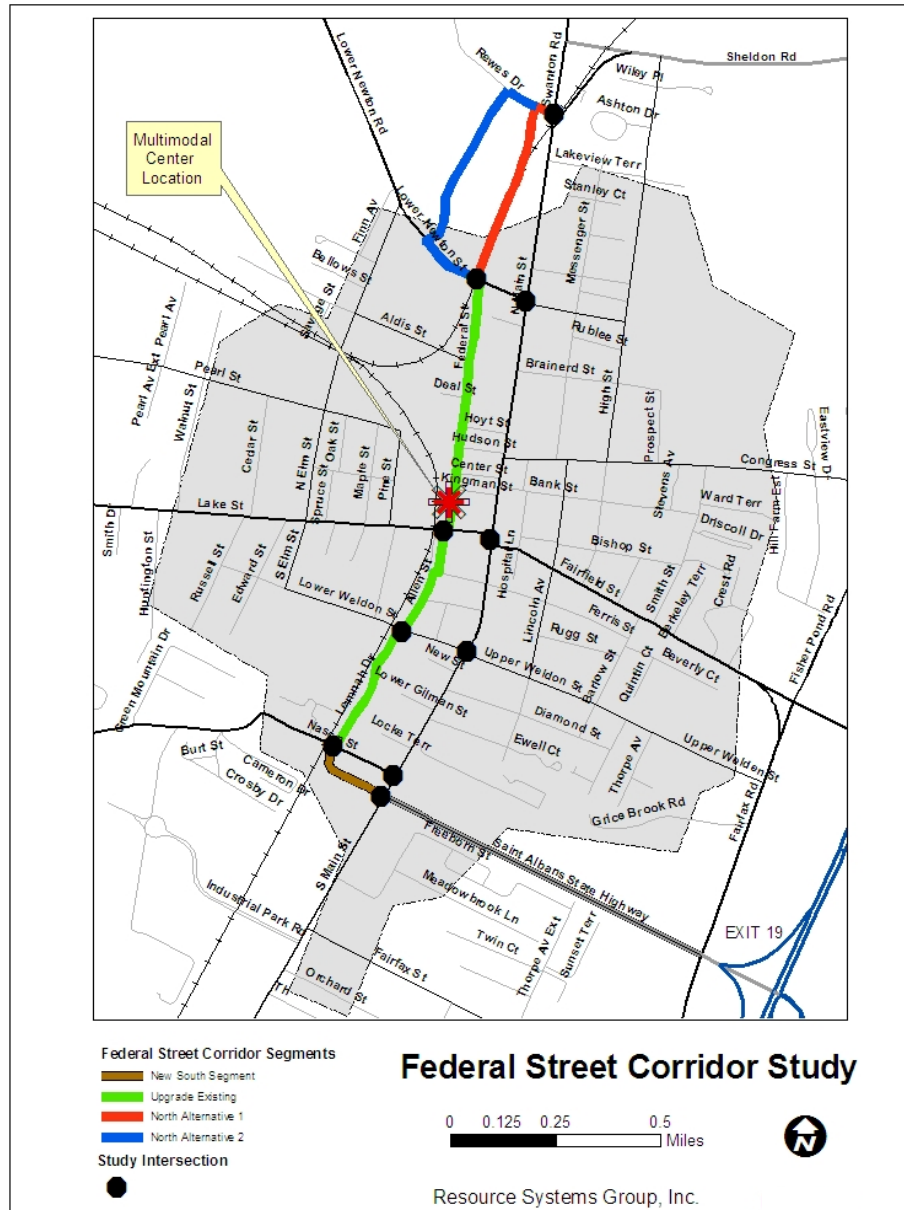
The Federal Street Corridor, as used in this study, refers to the general area adjacent to these segments.

The study area south of Newton Street is located within the City of Saint Albans. Most of the study area between Newton Street and the US 7-VT 105 intersection is located within the Town of Saint Albans.



The traffic analysis presented in Section 6.0 of this project memorandum evaluates congestion at the twelve study intersections identified in Figure 1. These intersections are located along the Federal Street Corridor or along Main Street and will all be affected by this project.

Figure 1: Study Area



2.0 SUMMARY OF PREVIOUS STUDIES

2.1 1995 FEDERAL STREET CORRIDOR STUDY

This section provides a brief overview of the 1995 study and its major recommendations. For additional information, refer to the complete report: *Federal Street Corridor Study; City of St. Albans, VT* (Prepared for the Northwest Regional Planning Commission by Cross Consulting Engineers, P.E.; and Resource Systems Group, Inc.; August 1995).

The 1995 Federal Street Corridor Study evaluates the feasibility of constructing an “arterial bypass” parallel to Main Street in the City of Saint Albans. The bypass route consists of: a new section of roadway between the US 7 intersection with the Saint Albans State Highway (SASH) and Nason Street; reconstruction of existing local roads along Lenmah Drive, Allen Street, Catherine Street, and Federal Street; and construction of a new section of roadway between the intersections of Federal Street with Lower Newton Street (VT Route 38) and US 7 with VT 105. The combination of these segments is referred to as the Federal Street Corridor.

The 1995 study summarizes key findings of previous studies, presents traffic projections and congestion analyses for 1995 and 2015 scenarios, presents concept designs and order of magnitude cost estimates for the Federal Street project, identifies right-of-way impacts and acquisition needs, discusses potential land use changes, identifies potential natural and cultural resource impacts, and includes an implementation plan.

2.1.1 Project History and Previous Studies

The 1995 Study summarizes relevant transportation plans and studies completed since 1974. These studies document the historical origins of the Federal Street project and its significance to the transportation system. The need and desire for a new north/south route to accommodate through traffic and to improve access to the City’s industrial area was first identified in a 1974 *Economic and Transportation Study* (Environmental Consulting Group, 1974). In 1976, a study completed by the Franklin-Grand Isle RPC, that defined the Federal Aid Transportation System in St. Albans, identified rebuilding and extending Federal Street as a number one priority. The need for the Federal Street project was emphasized again in the 1991 in the *St. Albans Traffic Circulation Study* which states that extending Federal Street as its most important recommendation.

2.1.2 Traffic Analysis

Traffic projections and congestion analyses were conducted for the following scenarios:

- 1995 – existing conditions;
- 2015 – Base Future Conditions: Assumes conversion of 131 acres along Federal Street from residential zoning to commercial zoning and no changes to the existing transportation system;



- 2015 with A One-Way Circulation Plan; and
- 2015 with construction of the Federal Street Bypass.

Poor intersection level of service (LOS E or F) is projected under the 2015 Base Case scenario at the following intersections: Main-Newton; Federal St-Lower Newton, Federal Street-Catherine Street; Main Street-Lake Street; Main Street-Fairfield St; Main St-Weldon St.; and Main-SASH. Both the One-way Circulation Plan and the Federal Street Bypass are effective at improving LOS at several of these intersections.

2.1.3 Federal Street Corridor Design

Following is a general description of the most important roadway and intersection design features recommended in the 1995 study. These designs will be evaluated in the traffic analysis presented in Section 6.0 the memorandum.

The recommended roadway cross-section consists of:

- One travel lane in each direction;
- 12 foot lanes with 4 foot shoulders and curbing. The Federal Street Study Committee considered but rejected 11ft wide lanes and 6 ft shoulders;
- Sidewalks constructed where appropriate; and
- Design speed varies from 35 miles per hour along the undeveloped sections and 25 miles per hour in built-up areas.

This cross section requires 80 feet of right-of-way through open areas and a minimum of 60 feet through built-up areas.

Table 1 summarizes the modifications recommended to the major intersections along Main Street and the Federal Street Corridor. All other local street intersections with Federal Street, not identified below, are stopped controlled on the local street.

2.1.4 Conclusions

Construction of the Federal Street Corridor project will complement the expansion of the City's business district to the west and will not noticeably impact the businesses along Main Street. The reduced congestion along Main Street resulting from the Federal Street project should improve accessibility to the existing businesses. The one-way circulation plan is a reasonable interim solution until the Federal Street Corridor project can be constructed.

Construction of the Federal Street Corridor will impact certain property owners, natural resources, and potentially historic buildings. There will be positive and negative impacts to property owners, some of which will likely occur as a result of the rezoning that was proposed in the City's comprehensive plan under consideration in 1995. The impacts to natural resources will be minor.



The impact to historic buildings requires further evaluation. The potential for hazardous wastes within the Federal Street Corridor also requires further investigation.

There were no overwhelming objections identified in two public meetings to the construction of the Federal Street project. However, residential property owners along Federal Street expressed concern over specific issues that would need to be addressed in final design. Business owners, especially those along the Federal Street Corridor, were in strong support of the project.

The recommended funding mechanism is the standard state and federal funding process. The study recognized that funds may not be available for the entire project and therefore recommends the following phases:

- First Phase: Newton Street to Stebbins Street;
- Second Phase: Stebbins Street to the Saint Albans State Highway; and
- Third Phase: Newton Street to the US 7-VT 105 intersection.

Table 1: Summary of Intersection Modifications Recommended in the 1995 Study

Intersection	Recommended Design	Notes
US 7-SASH	Install traffic signal and add various turn lanes.	
US 7-Lake-Fairfield	Minor traffic signal timing adjustments	
Lemnah Drive-Federal Street Southern Extension-Nason Street	Nason Street is stopped controlled. Left turn lanes provided on Lemnah Drive, Federal Street Extension, and Nason Street eastbound.	
Allen Street-Lemnah Drive- Weldon Street	Lemnah Drive and Allen Street are stopped controlled and Weldon Street is free. Left turn lanes on all four approaches.	This configuration is recommended to prevent queues from forming on Weldon Street across a nearby railroad grade crossing.
Catherine St-Allen St.- Stebbins St.	Stebbins Street is stopped controlled. A left turn lane is provided from Catherine Street to Stebbins	
Federal St-Lake-Catherine	Construct "small" roundabout	
Federal St-Lower Newton- Northern Federal Street Extension	Add traffic signal with exclusive right turn lanes on Federal St and left turn lanes on Newton Street	Flag men are required when trains access the spur rail to the Fonda Group building under existing conditions. It is not possible to install railroad grade crossing signals because of space constraints. Numerous impacts to Fonda's railroad line spurs result if the northern segment follows the alignment proposed in 1995.
US 7-VT 105 (Seymour Road) -Federal Street Northern Extension	Signalized intersection with left turn lanes on all four approaches.	The 2005 update will use the recommended alternative for the US 7-VT 105 intersection and Rewes Drive as the northern terminus (Described in Section 2.2.4)



2.2 RELEVANT FINDINGS OF STUDIES COMPLETED SINCE 1995

2.2.1 Final Report of the US 7 Corridor Study; Franklin County, Vermont – September 1996

(Prepared for Northwest Regional Planning Commission by Resource Systems Group with Land-Works; September 1996) The study describes existing and future deficiencies and opportunities along US 7 between the Milton-Georgia town line to Highgate. The study focuses much of its attention on the areas around I-89 Exit 20 and I-89 Exit 19. It identifies the following issues within the Federal Street Corridor study area:

- High Accident Location along US 7 near the Saint Albans State Highway;
- High Accident Location at the Main Street-Fairfield Street-Lake Street intersection;
- High Accident Location at the Main Street-Newton Street intersection;
- Poor intersection circulation and access management issues at the US 7-VT 105 intersection.

Although the study does not discuss the Federal Street Connector in any detail, the project is identified in the implementation section.

2.2.2 St. Albans Traffic Circulation Study – May 2002

(Prepared for Northwest Regional Planning Commission by Lamoureux & Dickinson Consulting Engineers; May 2002). This study evaluated existing and future transportation needs in the Town and City of Saint Albans and recommends a list of highway, bicycle and pedestrian facility, and multi-modal facility projects as well as land use and development suggestions.

Existing issues identified that are relevant to this study are:

- Cut through traffic and speeding on local city streets;
- Congestion problems at US 7 intersections with SASH, Nason Street, Upper-Lower Weldon Street, Fairfield Street, VT 105 and the intersection of Lake Street with Federal Street;
- A need to connect the Missisquoi Valley Rail Trail to downtown Saint Albans; and
- Limited access to the industrial zone north of Pearl Street;

Future issues identified that are relevant to this study are:

- If the Federal Street extension is built; traffic signals may be required at the US 7-SASH and the Federal Street-Lower Newton intersections;
- The Federal Street extension should be designed to accommodate bicycle, pedestrian, truck and vehicular traffic;



- Bus service should be provided to future industrial areas, the lakefront, sport fields, and bicycle route access points; and
- A multi-modal center should be provided that facilitates transfers between bus, rail, bicycle, and pedestrian facilities.

Recommendations to address these issues are:

- Constructing the Federal Street Extension and a West Side Connector (in the Exit 20 Area);
- Traffic signals or roundabouts at the intersections listed above;
- Completing a City master sidewalk plan and bicycle facilities master plan;
- Use High Street as the connection from the Missisquoi Valley Rail Trail to downtown; and
- Traffic calming along Main Street.

2.2.3 Northwest Regional Planning Commission Long Range Transportation Plan 2003-2008

The plan recommends general strategies to effectively plan for a functional and multimodal transportation system in the region. The following strategies are relevant to the Federal Street Connector and Multimodal center:

- Connect pedestrian routes when possible; consider pedestrian needs in the design of highway projects; improve the sidewalk network; and remove hazards to bicycle travel on highways – this project provides an opportunity to implement all of these strategies;
- Integrate transit routes – the multimodal center in combination with the Federal Street Connector will make transfers between different modes more efficient;
- Integrate transit and multimodal centers- the primary purpose of a multimodal center is to facilitate connections between different transit services; and
- Access Management – access will be improved along the Federal Street corridor as a result of this project.

The plan recognizes US 7 as the commercial and commuter nexus of the Region that serves through traffic and is also the Main Street for several communities. In addition, US 7 serves the industrial center of the Region located in St. Albans and is home to the New England Central Railroad (NECR). Because NECR provides the only rail link between Boston and Montreal, it is a major shipper of goods to markets in southern New England.

Safety issues identified in the study area include:



- The intersection of Stebbins Street with Allen Street is identified as a high crash location; and
- US 7 just north and south of the Saint Albans State Highway is listed as a high crash location.

Transportation improvement projects relevant to the study area are:

- Traffic volumes are too high for the stop-controlled intersection of US 7 with the Saint Albans State Highway

Specific strategies recommended in the long range plan for the US 7 Corridor that are relevant to this project are:

- Encourage use of rail for freight transportation;
- Implement the Federal Street Extension Project;
- Implement commuter rail to Chittenden County;
- Implement the recommendations of the St. Albans Circulation Study; and
- Implement the recommendations from the US 7-VT 105 intersection study.

2.2.4 US Route 7/VT Route 105 Intersection Alternative Alignment Study – January 2004

(Prepared for the Northwest Regional Planning Commission, Town of Saint Albans and City of Saint Albans by HTA Consulting Engineers; January 2004). This intersection has been identified in many of the previous plans and studies as having congestion issues. The 2004 study focuses on this location and evaluates different alternatives to address existing congestion problems at the Seymour Road and VT 105 intersections with US 7. The Town, City and the NRPC all endorsed Alternative C which includes:

- Making Seymour Road a dead end street;
- Aligning VT 105 with Rewes Drive to create a four-way intersection;
- Installing a traffic signal; and
- Adding a northbound right turn lane and southbound left turn lane to US 7.

The recommended alternative is an important feature for this update to the Federal Street Corridor Study because it will provide the northern connection of the Federal Street Connector with US 7 and VT 105.



3.0 LAND USE, HIGHWAY SYSTEM, AND INTERMODAL FRAMEWORK

This section describes the Federal Street Connector in the context of existing and future land use, the state and national transportation systems, and the Western Vermont Freight Gateway Program.

3.1 LAND USE CONTEXT

Figure 2 shows the existing land use along the Federal Street Corridor. The existing land use has been identified using the E911 site location dataset organized into the general categories of residential, commercial, industrial, public/institutional and other as shown in Table 2.

Table 2: Existing Land Use Categories

Generalized Land Use Category	E911 Specific Categories
Residential	Single Family Residential Multi-Family Residential Mobil Home Other Residential Seasonal Single Family
Commercial	Commercial - retail/service Other Commercial
Farm	Commercial - farm
Public / Institutional	Government/Town Health Care Church Educational Cultural Police Station Fire Station Gathering Place
Industrial	Industrial

There is a diverse mix of existing land uses along the Federal Street Corridor that can be grouped into the following distinct sections:

- Between Nason and Weldon Streets— predominantly industrial;
- Between Weldon and Stowell Streets – predominantly high density residential;
- Between Stowell and Hudson Streets – predominantly commercial with some public/institutional uses;
- Between Huston and Newton-predominantly high density residential with the notable exception of the Saint Albans Co-op Creamery and few small commercial uses;
- Near the Federal Street-Newton Street intersection-predominantly industrial;



- North of Newton Street to the US 7-VT 105 intersection – mostly open land for Northern Alternative 1; and a mix of residential and commercial uses for Northern Alternative 2.

As shown in Figure 3 on page 13, most of the Federal Street Corridor passes through either the Central Business District, Transitional Business District, or Industrial zoning districts. In 1995, high density residential zoning districts were in place along the northern end of Federal Street, but have since been revised. The only remaining section of High Density Residential zoning is located along the east side of Allen Street between Weldon and Stowell Streets.

The zoning districts provide an indication of how the land use along the Federal Street Corridor may change over time. The residential uses along the northern end of Federal Street are likely to convert to non-residential uses. The 1995 study assumed that 131 acres along the corridor would convert to non-residential uses. The traffic projections presented in Section 6.0 of this report are based on the same assumption.

The non-residential zoning along the Federal Street Corridor is logical from a land use-transportation perspective. The Federal Street Connector will make the area more accessible and will provide the capacity necessary to support redevelopment. The zoning will encourage the types of land uses that are consistent with and appropriate along a corridor that will eventually serve larger traffic volumes and a higher percentage of through traffic.



Figure 2: Existing Land Use

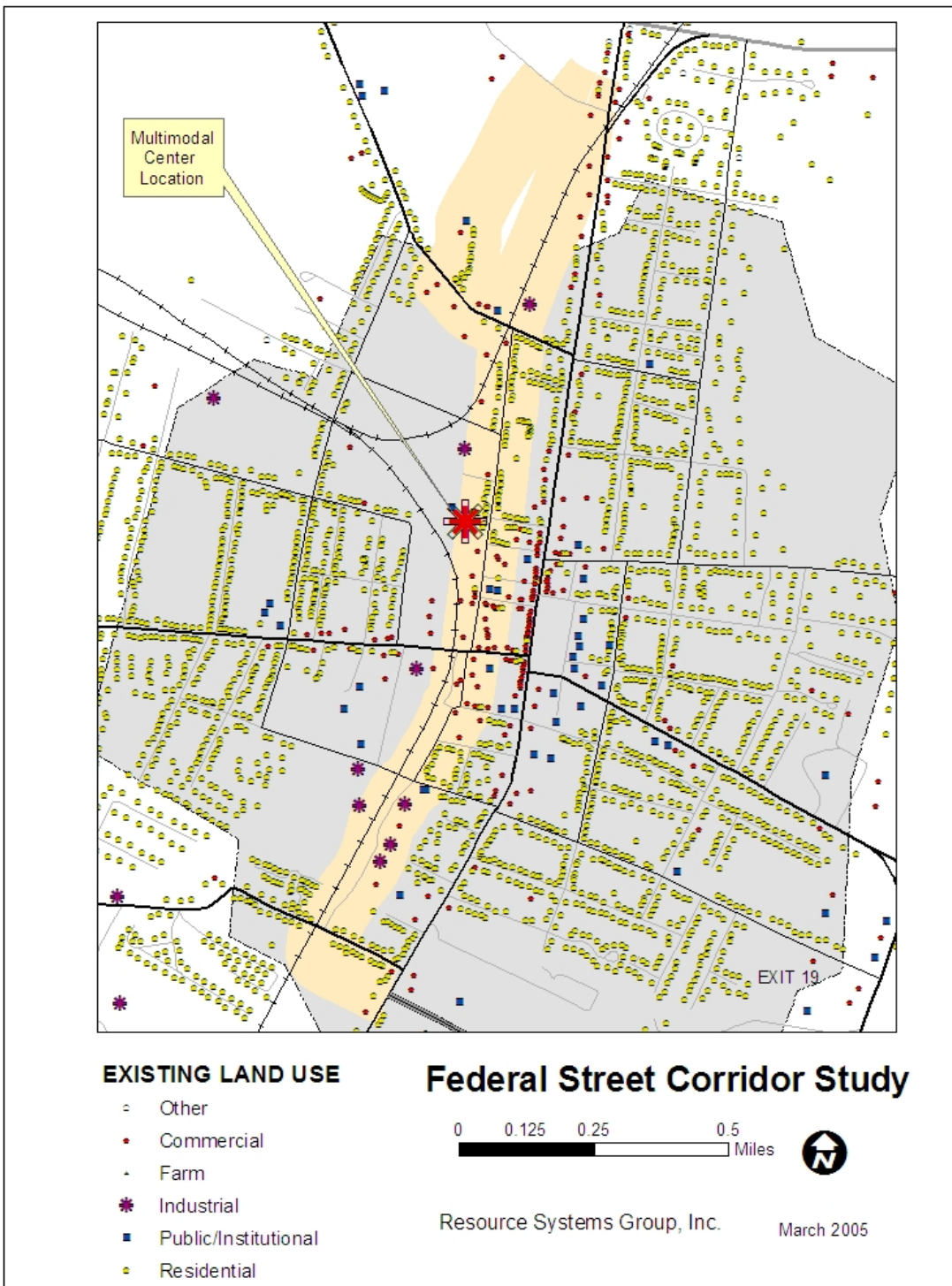
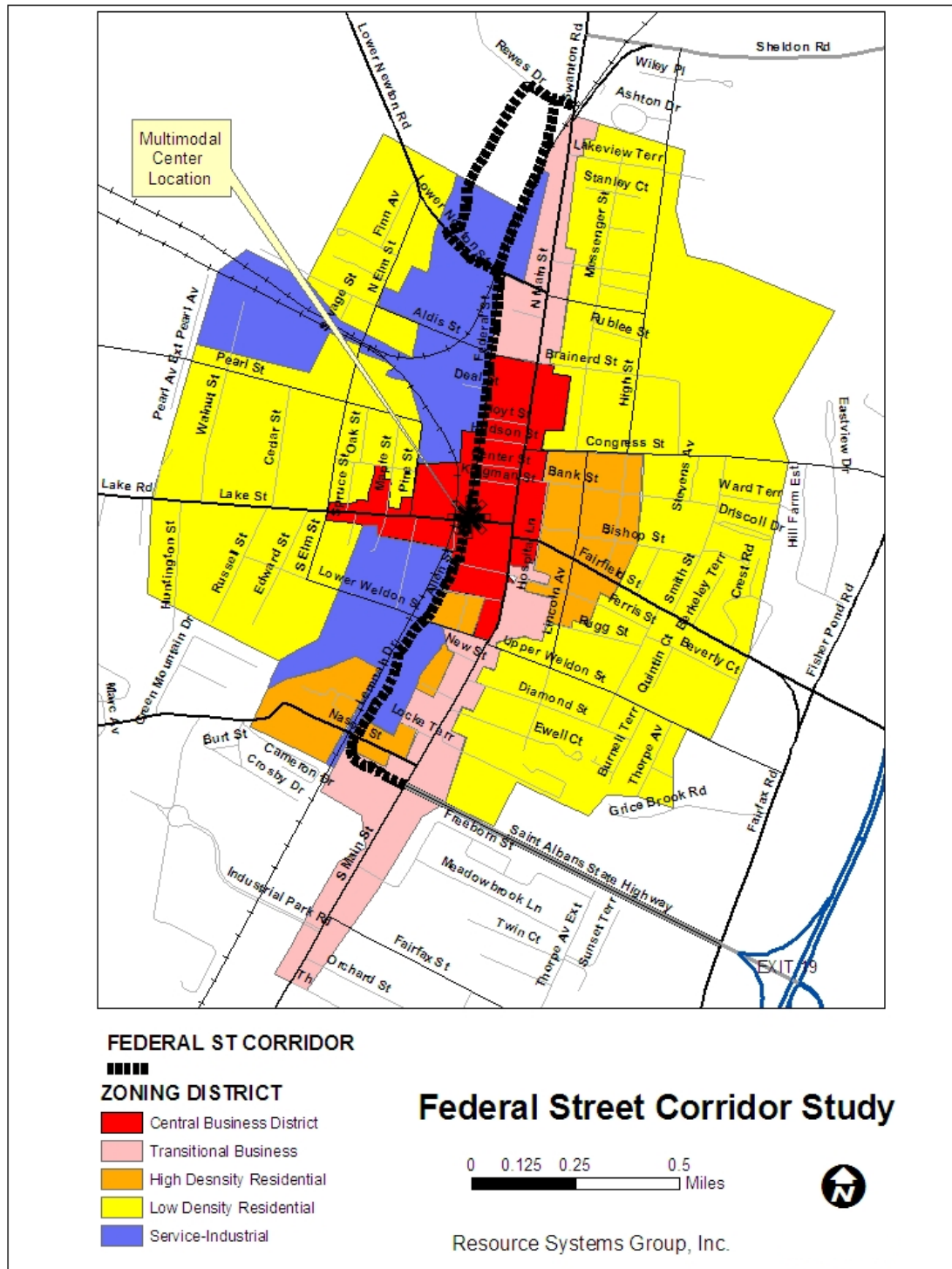


Figure 3: Saint Albans Zoning



3.2 HIGHWAY SYSTEM CONTEXT

Highway functional class, the National Highway System, the Vermont Truck Network and town highway classification are the foundation for a variety of policies that affect funding eligibility, project prioritization, design requirements, jurisdiction, and maintenance and operation responsibilities for a highway. These various classification systems also provide a big picture view that defines the function of a specific, local highway project within the context of the regional, state, and national transportation systems.

3.2.1 Functional class

The highway functional classification system, depicted in Figure 4, is organized as a hierarchy of facilities, based on the degree to which the roadway facility serves mobility (through traffic) and access to adjacent land uses. Interstate highways, at the top of the hierarchy, are devoted exclusively to mobility, with no direct access to adjacent land. Arterials and Collectors provide both mobility and access. The local road system is devoted exclusively to providing local access, with limited capacity and relatively slow speeds.

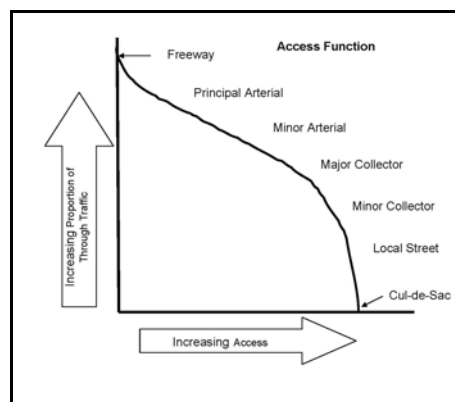
Figure 5 shows the functional classification for the roadways in the study area. The street network consists of minor arterials, major collectors, minor collectors, and local streets.

With the exception of Lemnah Drive, all of the existing streets along the Federal Street Corridor are classified as urban collectors. The function of an urban collector is to distribute trips between the arterial system to local streets, industrial/commercial areas, and neighborhoods. This function is consistent with the purpose of the Federal Street Connector which will link an existing industrial and commercial area to US 7, the Saint Albans State Highway, and I-89.

Since Lemnah Drive now connects Nason Street with Weldon Street and the rest of the Federal Street Corridor, it should be reclassified as an urban collector to reflect its current function in the street system. Until the southern section of the Federal Street Connector is constructed, the section of Nason Street, between US 7 and Lemnah Drive, should also be reclassified as an urban collector for the same reason.

Highway functional class is also used to determine which roadways are eligible for federal funding assistance. In urban areas, all collectors and arterials are eligible for federal funds. In rural area, a road must be classified as a major collector or arterial.

Figure 4: Conceptual Roadway Functional Hierarchy



Functional classification is also used as the basis for roadway design guidelines in the *Vermont State Standards*¹. The following features are recommended for urban collectors:

- Design speeds range from 25-50 miles per hour;
- Lane widths may range from 9 to 11 feet. Nine foot lanes are acceptable when there is little truck traffic. Eleven foot lane widths are used for higher speed, free flowing collectors;
- Shoulders are desirable and should be provided for safe accommodation of bicycles, speed change lanes, and break down lanes;
- If on-street parking is desired, eight feet is recommended for commercial and industrial areas; and
- When shoulders are not possible due to space constraints, a two-foot offset between the travel lane and a vertical curb is recommended.

3.2.2 National Highway System and VT Truck Network

The National Highway System (NHS) consists of Interstate and Defense Highways and principal arterial roads essential for interstate and regional commerce, travel, national defense, intermodal transfer facilities, international commerce, and border crossings. NHS routes were designated in the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA). Non interstate roads in Vermont designated as part of the NHS consist of VT 9 from Brattleboro to Bennington; VT 103 from I-89 in Rockingham to US 7 in Clarendon; US 4 from I-89 in Hartford to Fair Haven at the NY state border; US 7 from Pownal to Burlington; VT 78 from Swanton to Alburg; US 2 from Alburg to New York State; and US 2 from Montpelier to Guildhall.

I-89 is the one NHS route located near the study area. An important purpose of the Federal Street Connector is to link the rail-highway intermodal facilities located in the NECR railyard to the NHS.

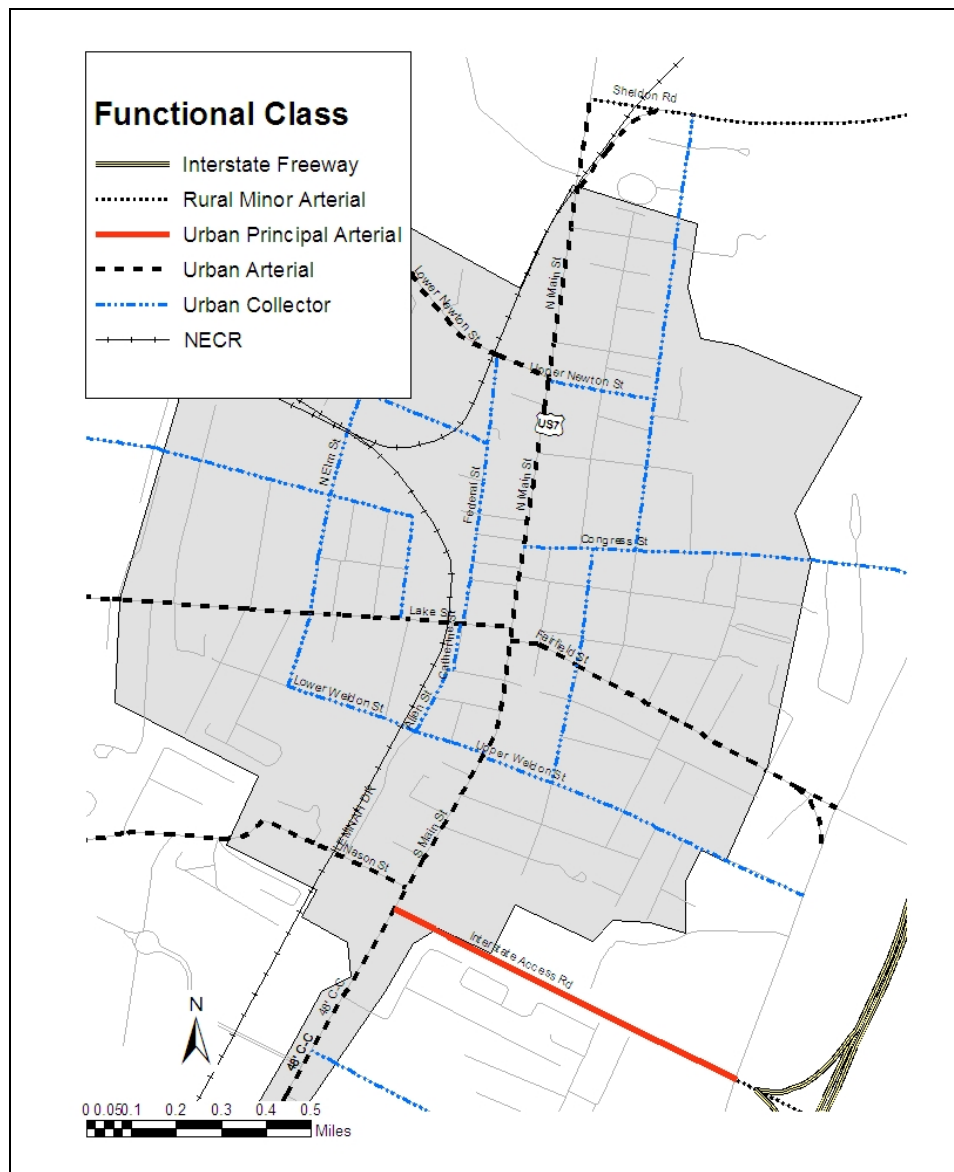
Title 23 V.S.A. Section 1432 as amended by the 2000 Vermont Legislature, establishes the Vermont Truck Network where trucks with overall lengths less than 72 feet (including 53-foot tractor-trailer combinations) may travel without permits. The Truck Network is defined as all of the NHS routes, plus VT 22A between its intersections with US 7 and US 4, VT 105 in its entirety, and VT 104 from I-89 Exit 19 to VT 105. The roads that are not part of the NHS were added to the truck network based on the volume of truck traffic and/or through the legislative decision making process. Inclusion on the truck network does not affect design standards which are governed by functional class, AADT, and truck traffic.

¹ "Vermont State Standards for the Design of Transportation Construction Reconstruction and Rehabilitation on Freeways, Roads, and Streets"; State of Vermont, Agency of Transportation; October 22, 1997.



The Federal Street Connector, when complete and the Saint Albans State Highway should be included on the VT Truck Network. This designation will remove a potential bureaucratic obstacle for businesses that need to ship or receive supplies and products on trucks with 53 foot trailers.

Figure 5: Highway Functional Class



3.2.3 Jurisdiction

Figure 6 shows the jurisdiction of the highways in Saint Albans. VTrans has established a roadway classification system to identify the levels of jurisdiction over each section of road across the state. These classifications identify whether, for example, VTrans or the Town is responsible for pot hole patching on a particular section of road. The following categories are used by VTrans¹:

- State Route: Forms the primary transportation network through the State. State routes include all state numbered highway routes not designated as Class 1 town highways. The State routes are the responsibility of VTrans.
- Class 1 Town Highway: Forms the extension of state numbered highway routes through a town, and which carry a state highway route number. Class 1 town highways are subject to concurrent responsibility and jurisdiction between the Municipality and VTrans on several matters. VTrans is responsible for scheduled surface maintenance or resurfacing while municipalities are responsible for pot hole patching, crack filling, etc; VTrans is responsible for center line pavement markings, while *municipalities are responsible for sidewalks, crosswalks and parking*. VTrans has exclusive authority to designate Class 1 highways.
- Class 2 Town Highway: Those town highways selected as the most important highways in each town. As far as practicable they shall be selected with the purposes of securing trunk lines of improved highways connecting two towns and to places which by their nature have more than a normal amount of traffic. The selectmen, with the approval of the Vermont Agency of Transportation, shall determine which highways are to be class 2 highways. Class 2 highways are primarily the responsibility of municipalities. VTrans is responsible for center line pavement markings if municipalities notify VTrans of the need to replace them, while *municipalities are responsible for sidewalks, crosswalks and parking*. Class 2 mileage normally may not exceed 25 percent of the total Class 2 and Class 3 mileage in the municipality.
- Class 3 Town Highway: All other town highways that are "negotiable under normal conditions all seasons of the year by a standard pleasure car." *Class 3 town highways, including sidewalks, crosswalks, and parking, are the responsibility of municipalities.*
- Class 4 Town Highway: All other town highways are considered Class 4 town highways. The majority of these receive limited or no maintenance. They are negotiable at your own risk, usually impassable in Winter, and referred to as "jeep trails" at other times of the year. *Class 4 town highways, including sidewalks, crosswalks, and parking, are the responsibility of municipalities.*

Except for a small section of the Saint Albans State Highway, all of the roadways within the City of Saint Albans are owned by the municipality. As shown in Figure 6, there are several class 1 town

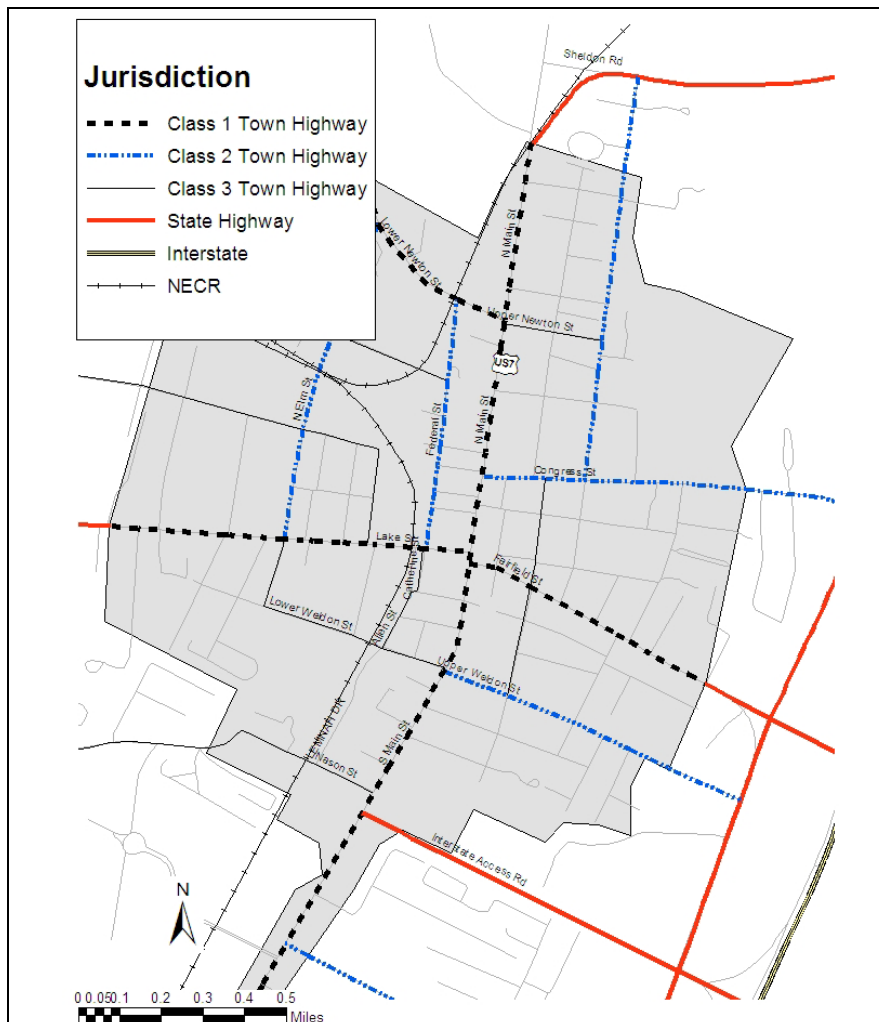
¹ Road classification description sources: VTrans "Handbook for Local Officials" (2004) and NVDA Online Transportation Glossary.



highways in the City of Saint Albans. Class 1 town highways include Main Street (US 7); Lake Street (VT 36); and Lower Newton Street (VT 38). Federal Street is designated as a class 2 town highway. The other streets in the Federal Street Corridor (Catherine, Allen, and Lemnah) are designated as class 3 town highways.

The Federal Street Connector will be a locally owned and maintained roadway. The City and Town will have jurisdiction over the segments located within their municipal boundaries. When complete, all segments should be designated as class 2 town highways. This designation is appropriate because the connector will be a “...trunk line of improved highways connecting...places which by their nature have more than a normal amount of traffic.”

Figure 6: Highway Jurisdiction



3.3 WESTERN VERMONT FREIGHT GATEWAY PROGRAM

The section of the Federal Street Connector between the Saint Albans State Highway and Newton Street is identified as a component of the Western Vermont Freight Transportation Gateway and is referred to as the St. Albans Intermodal Connector.

The program involves improvements to an intermodal system of existing and planned railroad and highway projects along the US 7 corridor between Bennington and the Canadian border. The four major components that define the Western Vermont Freight Gateway are:

- Rutland Railyard Relocation – Relocate the railyard from the City's central business district to a new site that will provide room for anticipated growth, improved operations, and improved highway access. The relocation will create multiple redevelopment sites in the traditional City center;
- Middlebury Spur – Construct a rail connection and intermodal facility between a quarry and processing plant to help support economic development while reducing truck trips on US 7 through Brandon;
- Albany-Bennington-Rutland-Burlington (ABRB) passenger line – Upgrade the main rail line to facilitate freight and passenger service along the entire length of the Western Corridor; and
- St. Albans Intermodal Connector – Provide a highway connection between I-89 and downtown St. Albans; create the infrastructure for an intermodal facility in an existing industrial zone; and enhance facilities for international transshipments to Canada. With these improvements, St. Albans could also house a container security facility serving all of New England.

In 1995, the Federal Street project was seen as a stand alone highway improvement with the purpose of reducing congestion on Main Street while improving access to an industrial area. The project's benefits were described relative to the City of Saint Albans. As a component of the Western Vermont Freight Gateway Program, the Federal Street Connector is an important component of a much larger transportation corridor that is significant for Vermont and New England.

As a component of a gateway that connects Western Vermont to Canadian and regional US intermodal facilities, the Federal Street Connector may become eligible for a broader range of federal funds under legislation currently being debated by the US Congress.

TEA-21 (Transportation Equity Act for the 21st Century) is the current national surface transportation law authorizing highway, highway safety, transit and other surface transportation programs. It was signed into law in 1998 and is a multi-year authorization bill extending to 2004. Congress extended TEA-21 five times in 2004, and has delayed action on a new multi-year authorization bill into 2005.



Both the Senate and House bills, currently under consideration, include comparable sections related to freight gateways and intermodal connectors that are relevant to the Western Vermont Freight Gateway and the Federal Street project. The stated purpose of these programs is to facilitate and support intermodal freight transportation initiatives at the state and local levels in order to improve freight intermodal connectors (defined as a roadway that connects to an intermodal freight facility) and mitigate the impact of congestion in the area of such connectors; and to provide capital funding to address infrastructure and freight operational needs at freight intermodal connectors (a port, airport, truck-rail terminal, or pipeline-truck terminal). This new legislation, when adopted, could create additional funding opportunities for the Federal Street project that did not exist when the 1995 study was completed.¹²³¹

¹ “Transportation Gateways for Rural Development”; Matthew T. Sternberg; Economic Development Journal.

² Title 23, Section 325 of the United States Code.

³ S1072 Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA), Section 1205: Freight Transportation Gateways; Freight Intermodal Connectors; and H.R.-3 Transportation Equity Act: A Legacy for Users (Introduced in House); Section 1303. Freight Intermodal Connectors



4.0 TRANSPORTATION SYSTEM CHARACTERISTICS

4.1 ROADWAY CHARACTERISTICS

Table 3 summarizes the major geometric features of the roadways in the study area. In general, the study area roadways have one travel lane in each direction; the speed limit is 25 miles per hour in the core and 35 miles per hour on US 7 and the SASH as they approach the core; sidewalks are provided in most locations; and on-street parking is common.

Table 3: Study Area Roadway Characteristics

Roadway	Posted Speed	Lanes	Sidewalks
St. Albans State Highway (SASH)	35 MPH	One lane in each direction. Limited access only at the termini with no parking.	No sidewalks exist
Nason Street	25 MPH	One lane in each direction. On-street parking on both sides of the road.	Sidewalk exists on the north side of Nason Street.
Lower Weldon Street	25 MPH	One lane in each direction. On-street parking on both sides of the road.	Sidewalk exists on both sides of the road east of Allen Street.
VT 36: Lake Street	25 MPH	One lane in each direction. On-street parking on both sides of the road.	Sidewalk exists on both sides of the street.
VT 36: Fairfield Street	25 MPH	One lane in each direction. On-street parking on both sides of the road.	Sidewalk exists on both sides of the street.
VT 38: Lower Newton Street	25 MPH	One lane in each direction. On-street parking on both sides of the road.	Sidewalk exists on the south side of the street.
Federal Street	25 MPH	One lane in each direction. On-street parking on both sides of the road.	Sidewalk exists the entire length along the east side of the street.
Catherine Street/Allen Street/Lemnah Drive	25 MPH	One lane in each direction. No on-street parking	Sidewalk exists on the east side of Allen Street and Catherine Street.
Main Street -US Route 7	35 MPH from SASH to Lower Weldon. 25 MPH north of Lower Weldon.	One lane in each direction for most of its length, with additional turn lanes at some intersections. On-street parking	Sidewalks on both sides of the road exist along the entire length of US 7 within the City of St. Albans.

Table 4 summarizes lane configurations and control type (traffic signal or stop-controlled) for each study intersection. Provisions for pedestrian crossings are also described. The streets that comprise the Federal Street Corridor are often the minor approach. As a result, vehicles traveling northbound or southbound along the Federal Street Corridor must stop at the intersections with east-west streets at Nason, Weldon, Stebbins, Lake, and Newton. This control arrangement gives priority to east-west over north-south travel.

¹ Surface Transportation Policy Web-site: <http://www.transact.org/>; and AASHTO web-site <http://transportation1.org/aashtonev/>



Table 4: Study Intersection Characteristics

Lane Configuration	Control Type	Pedestrian Facilities	General Information
US 7 - SASH SASA WB - Left turn lane & Right turn lane US 7 NB - Two lane approach US 7 SB - Two lane approach	Minor Stop	None	Flashing beacon on Stop sign for the SASH approach
US 7 - Nason Street Nason St. EB - One lane approach US 7 NB - Two lane approach US 7 SB - Two lane approach	Minor Stop	Crosswalk across Nason	Stop sign for Nason Street approach
US 7 - Lower/Upper Welden Lower Welden EB - One lane approach Upper Welden WB - One lane approach US 7 NB - Left turn lane & Right/Thru lane US 7 SB - Left turn lane & Right/Thru lane	Signalized	Actuated Exclusive Pedestrian Phase	Econolite controller with vehicle detectors on the minor approaches and left-turn lanes.
US 7 - VT 36 (Fairfield Street) Fairfield WB - Left and Right turn lanes US 7 NB - Left turn lane which turns into Lake further north & Right/Thru lane US 7 SB - Left turn lane & Thru lane	Signalized	Crosswalks - with Exclusive Pedestrian Phase	Pretimed signal operation working with the Lake Street intersection.
US 7 - VT 36 (Lake Street) Lake St EB - Left turn lane & Right turn lane US 7 NB - Left turn lane & Thru lane US 7 SB - Right turn lane & Thru lane which turns into Left turn lane at Fairfield	Signalized	Crosswalks - with Exclusive Pedestrian Phase	Pretimed signal operation working with the Fairfield Street intersection.
US 7 - Lower/Upper Newton Lower Newton EB - One lane approach Upper Newton WB - Left turn lane & Right/Thru lane US 7 NB - Left turn lane & Right/Thru lane US 7 SB - Right turn lane & Left/Thru lane	Signalized	None	Eagle electro-mechanical pretimed signal with no detector loops. No crosswalks exist.
US 7 - VT 105 (Seymour Rd) VT 105 WB - One lane approach US 7 NB - One lane approach US 7 SB - One lane approach	Minor Stop	None	Minor stop for VT 105. This intersection is in close proximity to the entrance for the Missisquoi Valley Rail Trail.
US 7 - VT 105 Approach VT 105 WB - One lane approach US 7 NB - One lane approach US 7 SB - One lane approach	Minor Stop	None	Stop for VT 105 Approach. This intersection is in close proximity to the entrance for the Missisquoi Valley Rail Trail.
Nason Street - Lemnah Street Nason EB - One lane approach Nason WB - One lane approach Lemnah SB - Left turn lane & Right turn lane	Minor Stop	None	Stop sign southbound along Lemnah Drive. Intersection is in close proximity to the at-grade rail crossing across Nason Street
Welden Street - Lemnah/Allen Street Welden EB - One lane approach Welden WB - One lane approach Lemnah NB - One lane approach Allen SB - One lane approach	2-Way Stop	None	Stop controlled along Allen Street and Lemnah Drive. The close proximity to rail crossings across Lower Welden just west of the intersection justify the East-West free movement.
Stebbin Street - Market St - Allen Street Market EB - One lane approach Stebbin WB - One lane approach Allen St NB - One lane approach	Minor Stop	None	Stop controlled along Allen Street. East-West movement between Market Street and Stebbin Street is free.
Stebbin Street - Catherine Street Stebbin EB - One lane approach Stebbin WB - One lane approach Catherine SB - One lane approach	Minor Stop	None	Stop controlled along Catherine Street. East-West movement along Stebben Street is free.
VT 36 (Lake Street) - Federal/Catherine Street Lake EB - One lane approach Lake WB - Right turn lane & Thru lane Catherine NB - One lane approach Federal SB - Left turn lane & Right/Thru lane	Minor Stop	None	Stop controlled along Catherine Street and Federal Street. Free east-west movement along Lake Street.
Lower Newton Street - Federal Street Newton EB - One lane approach Newton WB - One lane approach Federal NB - One lane approach	Minor Stop	None	Stop controlled along Federal Street. Free east-west movement along Lower Newton Street. Rarely used spur rail running across Lower Newton through intersection.



4.2 RAIL

New England Central Railroad (NECR) maintains extensive rail facilities within the City of St. Albans. The rail facilities are located along the west side of the Federal Street Corridor. An existing Amtrak station, located on Federal Street just north of Lake Street, serves as the northern terminus for the Amtrak "Vermont" line that makes daily trips to Washington, D.C.

The NECR freight facility includes a switching yard, maintenance shops and several rail-to-highway transfer areas. Several rail sidings exist within St. Albans located near Lower Weldon and Lower Newton.

Table 5 summarizes the type of control and use of the three rail-highway grade crossings located within close proximity to important intersections along the Federal Street Corridor. The safety of the existing rail facilities in the study area has been evaluated by the Federal Rail Administration. A review of the Highway-Rail Crossing Inventory & Accidents Database indicates that no crashes have been reported at any of the rail crossings within the study area¹.

Table 5: Rail Crossings within the Study Area

Location	Crossing Control	Number and Type of Trains	Avg. Speed of Trains
Nason Street	Mounted flashers and gates	6 Freight/2 AMTRAK	15mph to 30mph
Lower Weldon Street	Mounted flashers and gates	6 Freight/2 AMTRAK	15mph to 30mph
Lake Street	Mast mounted flashing lights	6 Freight/2 AMTRAK	15mph to 30mph

4.3 BICYCLE AND PEDESTRIAN FACILITIES

4.3.1 Pedestrian Facilities

The general area proposed for the multimodal center is served by a well connected and extensive sidewalk system as shown in Figure 9. As noted in a previous study, many of the sidewalk surfaces and curb ramps don't meet the Americans with Disabilities Act (ADA) standards for public sidewalks². Figure 9 also shows sidewalks recommended in the Town of St. Albans Sidewalk Master Plan³. The sidewalk master plan recommends projects that connect the Town with the City's existing network.

The following intersections include exclusive pedestrian phasing while all other intersection locations provide no pedestrians facilities aside from marked crosswalks: the signalized intersection of US 7 -

¹ Federal Rail Administration: Highway-Rail Crossing Inventory & Accidents Database.

² Lamoureux & Dickinson, St. Albans Traffic Circulation Study, May 2002.

³ Sidewalk Master Plan, St. Albans Town. April 2003.



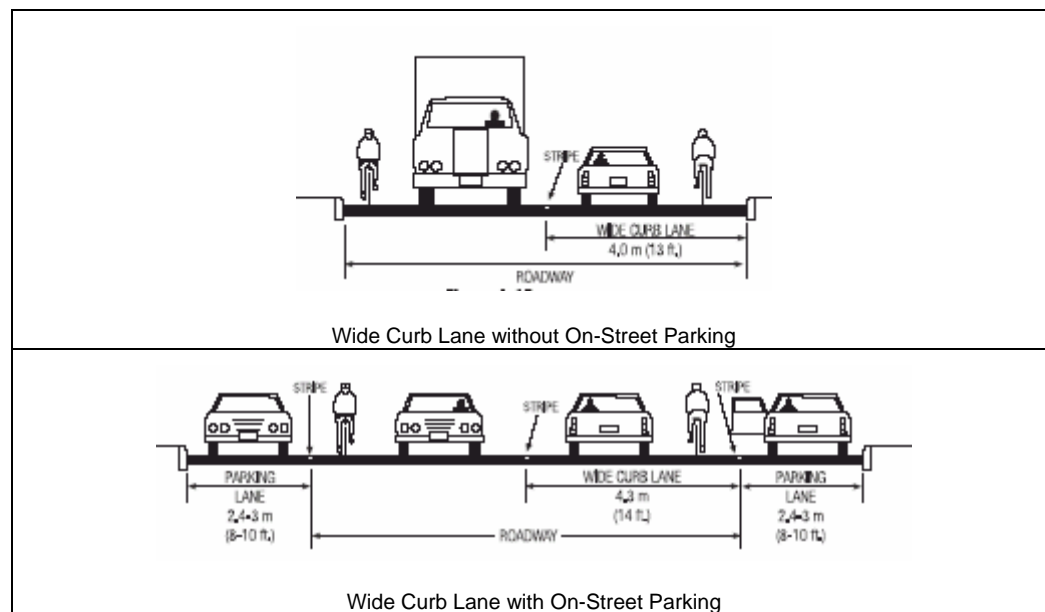
Upper/Lower Weldon includes an actuated exclusive pedestrian phase; and the signalized intersection of US 7- Fairfield Street -Lake Street includes an exclusive pedestrian phase that is called every cycle.

4.3.2 Bicycle Facilities

Bicycle travel is accommodated on existing roadways along the Federal Street Corridor and throughout the rest of the City. There are no designated bike paths or bike lanes in the City or the Town of St. Albans. The City of St. Albans allows bicycle riders to use the sidewalks for travel except in the Central Business District (See Figure 3 on page 13).

In urban areas, bicycle travel is often accommodated by “wide-curb” lanes as shown in Figure 7. The minimum widths for construction of new wide-curb lanes are: 13 feet lane with no on-street parking; and 14 feet lane plus 8-10 feet for on-street parking¹. Table 6 compares the existing curb-to-curb width for the streets along the Federal Street Corridor to the new construction guidelines. The curb-to-curb width is adequate between Stowell Street and Lower Newton Street, and inadequate between Nason Street and Stowell Street. This analysis suggests that reasonable bicycle access to the general area of the multimodal center currently exists.

Figure 7: Wide Curb Lanes



¹ *Pedestrian and Bicycle Facility Planning and Design Manual*; Vermont Agency of Transportation; December 2002.



Table 6: Suitability of Existing Streets for Wide-Curb Lanes Along the Federal Street Corridor

Street	From/To	Curb-Curb Width (Feet)	On-Street Parking	Recommended Width for Wide Curb Lane	Adequate for Wide-Curb Lane
Lemnah	Nason/Welden	24	No	26	No
Allen	Welden/Stowell	23	No	26	No
Allen	Stowell/Stebbin	26	No	26	Yes
Catherine	Stebbin/Lake	27-28	No	26	Yes
Federal	Lake/Kingman	46.5	Yes	44	Yes
Federal	Kingman/Center	41	Yes	44	No
Federal	Center/Hudson	32	No	26	Yes
Federal	Hudson/Hoyt	35	No	26	Yes
Federal	Hoyt/Lower Newton	28	No	26	Yes

Because the Federal Street Connector will provide access to the multimodal center, it should continue to accommodate bicycle travel, as well as trucks and passenger cars. The new roadway could be designed using wide-curb lanes, shoulders, or with dedicated bicycle lanes. Dedicated bicycle lanes, like the one shown in Figure 8, are intended for the exclusive use of bicyclists and are appropriate for experienced and intermediate bicyclists. Paved shoulders are also an acceptable on-road bicycle facility that could be considered as an alternative.

Figure 8: Bicycle Lane

4.3.3 Shared-Use Facilities

Figure 9 shows the western terminus of the Missisquoi Valley Rail-Trail, a 26.5-mile shared-use path along an old rail bed north of the City extending to Richford. The trail starts just north of the City limits at the intersection of US Route 7 and VT Route 105 and continues northeast connecting several communities. The entrance for the parking area of the rail-trail is just north of the US 7-VT 105 intersection.

Previous studies have noted the need to connect the Missisquoi Valley Rail-Trail to downtown Saint Albans. One study suggested High Street as a possible route. Bicycle lanes along the Federal Street



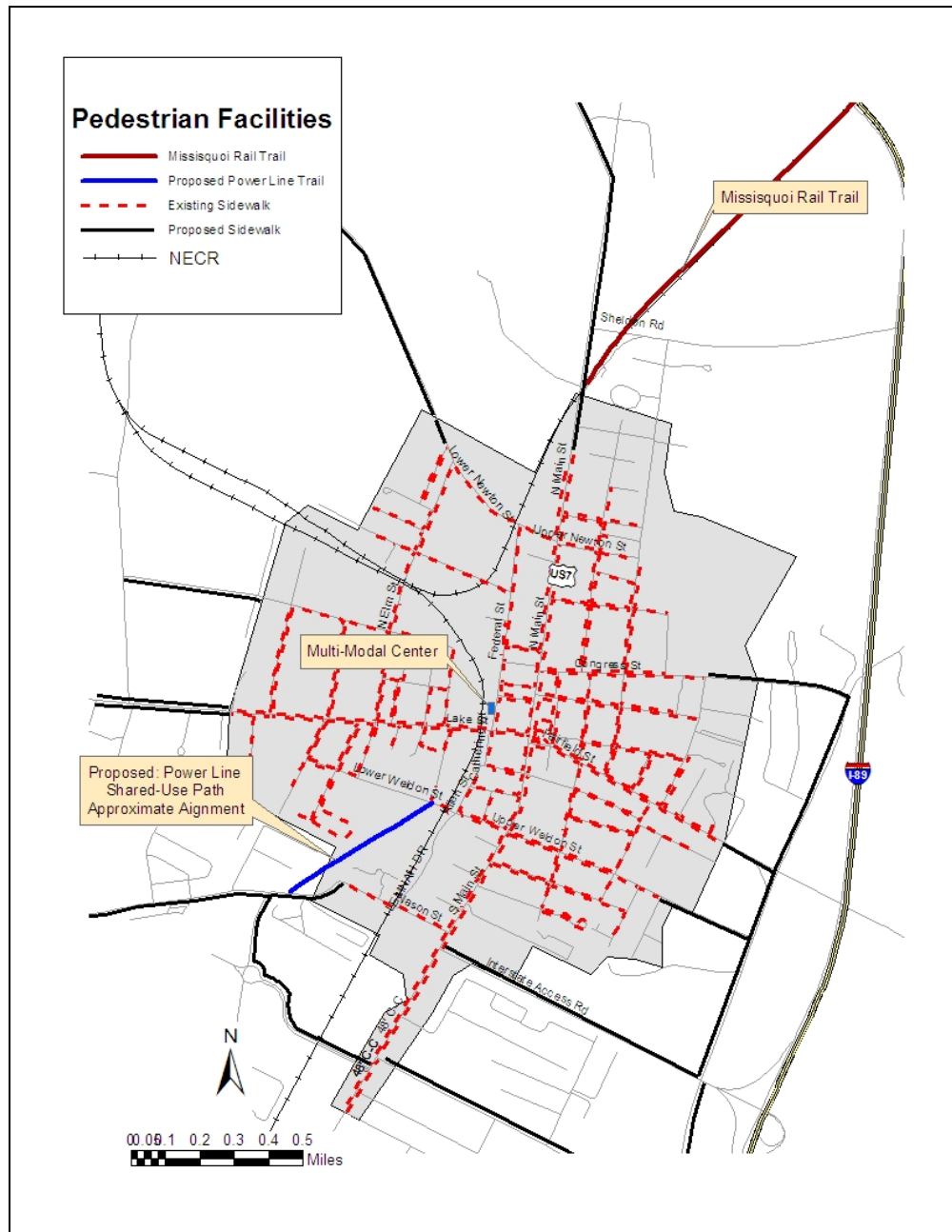
Connector, if the northern extension is constructed, could also link the rail-trail with downtown and the multimodal center.

The multimodal center is a logical place to anchor the Missisquoi Valley Rail-Trail. It could include parking for rail-trail users and would provide efficient transfers between the rail-trail, Amtrak, Vermonter, and other future transit services. Parking and amenities (such as showers, information kiosks, and communication services) could also be available at the multimodal center for use by the rail-trail users.

The Power Line shared-use path is a proposed facility mentioned in the Town of St. Albans Sidewalk Master Plan. The path would follow a power line utility right of way from Nason Street to downtown in the vicinity of Lower Weldon and Houghton Street. This path was listed in the 8-20 year planning horizon and could link with on-road bicycle facilities along the Federal Street Connector.



Figure 9: Pedestrian Facilities



4.4 TRANSIT

The Northwest Public Transit Network operates and manages all public transit in Franklin and Grand Isle counties. The Network was founded in 1991 as a not-for-profit organization and recognized by VTrans as a public transit agency eligible for state operating assistance. In addition to providing bus service, The Network provides the following services²:

- Medicaid Transportation: Designed to provide transportation to Medicaid eligible individuals for medical appointments. The NETWORK utilizes a fleet of volunteer drivers, local cabs, and bus services to transport qualified individuals.
- Service for Elderly and Disabled: Under contract with the Vermont Agency on Aging, the NETWORK provides transportation to elderly and disabled people. Access is provided to medical facilities, senior meal sites, shopping, and an adult day program (Club Respite).
- Vermont Rideshare: A free program dedicated to promoting car and vanpooling. As acting Vermont Rideshare broker, the NETWORK employs a commuter database to match people with similar commuting patterns. In addition, NVPTN posts individual listings in Buyer's Digest, a publication delivered to every residence in Franklin and Grand Isle Counties. Vermont Rideshare promotes van pooling by offering interest free loans for van purchases or by facilitating the leasing of a van.
- Ridematch Services: A program available to the general public where trips are provided using volunteer drivers. The passenger or a sponsoring agency is responsible for the cost of the service.

Recently, The Network switched from a fixed route service to a variable route bus service. There is no data available at the time of this report on ridership.

As mentioned in the Short-Range Public Transportation Plan for the Chittenden County Transportation Authority (CCTA), an inter-regional commuter route connecting Chittenden County with St. Albans is being planned. Similar service is now in operation between Chittenden County and Montpelier and Middlebury. This type of connection could be useful to some of the many residents of St. Albans City who work in Chittenden County.

Table 3 summarizes the three intercity transit services available in the City and Town of Saint Albans. Intercity bus service is provided by Vermont Transit and Greyhound, which each pick-up passengers at Sandy's Quick Stop located near the intersection of Fairfield and Fairfax Road. The distance between the Amtrak Station and the bus stops for Vermont Transit and Greyhound intercity is one mile. Amtrak provides the name of a taxi service for patrons that wish to transfer from the train to a

² Information taken from the Northwest Regional Long-Range Transportation Plan 2003-2008.



bus. The Federal Street Connector would improve accessibility for a bus from the interstate to the Amtrak Station and may make the center city location more attractive for the private intercity transit operators.

Table 7: Intercity Transit Service

Service	Frequency	Major Destinations	Station Location
Amtrak Vermonter	One in-bound, one out-bound train per day.	St. Albans to Washington D.C. with stops in Essex Junction	40 Federal Street
Vermont Transit	Five trips per day in each direction between Montreal and Boston. Stops once per day per direction in St. Albans	Montreal, major VT cities, Boston	Sandy's Quick Stop 5 Valley Cross-Roads (near the Fairfield Road-Fairfax Road Intersection)
Greyhound		Montreal, major VT cities, and extensive national destinations	Sandy's Quick Stop 5 Valley Cross-Roads (near the Fairfield Road-Fairfax Road Intersection)

5.0 TRAVEL DEMAND

This section describes travel demand in the City and along the Federal Street Corridor based on daily traffic volumes, variations in traffic volumes throughout a typical day, journey to work data, and truck traffic.

5.1 TRAFFIC VOLUMES

Figure 10 shows the range of 2005 Average Annual Daily Traffic (AADT) volumes in the study area¹. Table 8 on page 22 provides the specific AADT estimates for each road segment. A review of these data leads to the following observations:

- US 7 carries the largest traffic volumes in the City. The largest traffic volumes occur on US 7 between VT 105 and Newton Street. There are no parallel routes along this section of US 7 to disperse the traffic demand;
- Lake Street also carries some of the highest traffic volumes in the City. The traffic is distributed to the Federal Street Corridor before it reaches Main Street;
- The data suggest that Federal Street, between Lake Street and Lower Newton, already plays a role in reducing through traffic on Main Street; and

¹ Based on count data collected by VTrans. Counts were adjusted from the year data were collected to 2005 using a local growth rate of 2.11% per year based on recent trends.



- The southern end of the Federal Street Corridor between Nason Street and Lake Street does not currently carry large volumes of traffic. The level of traffic along the existing Streets suggests that Main Street is the preferred route, even though Lemnah Drive now connects through from Nason to Weldon.

Figure 10: Year 2005 AADT Volumes

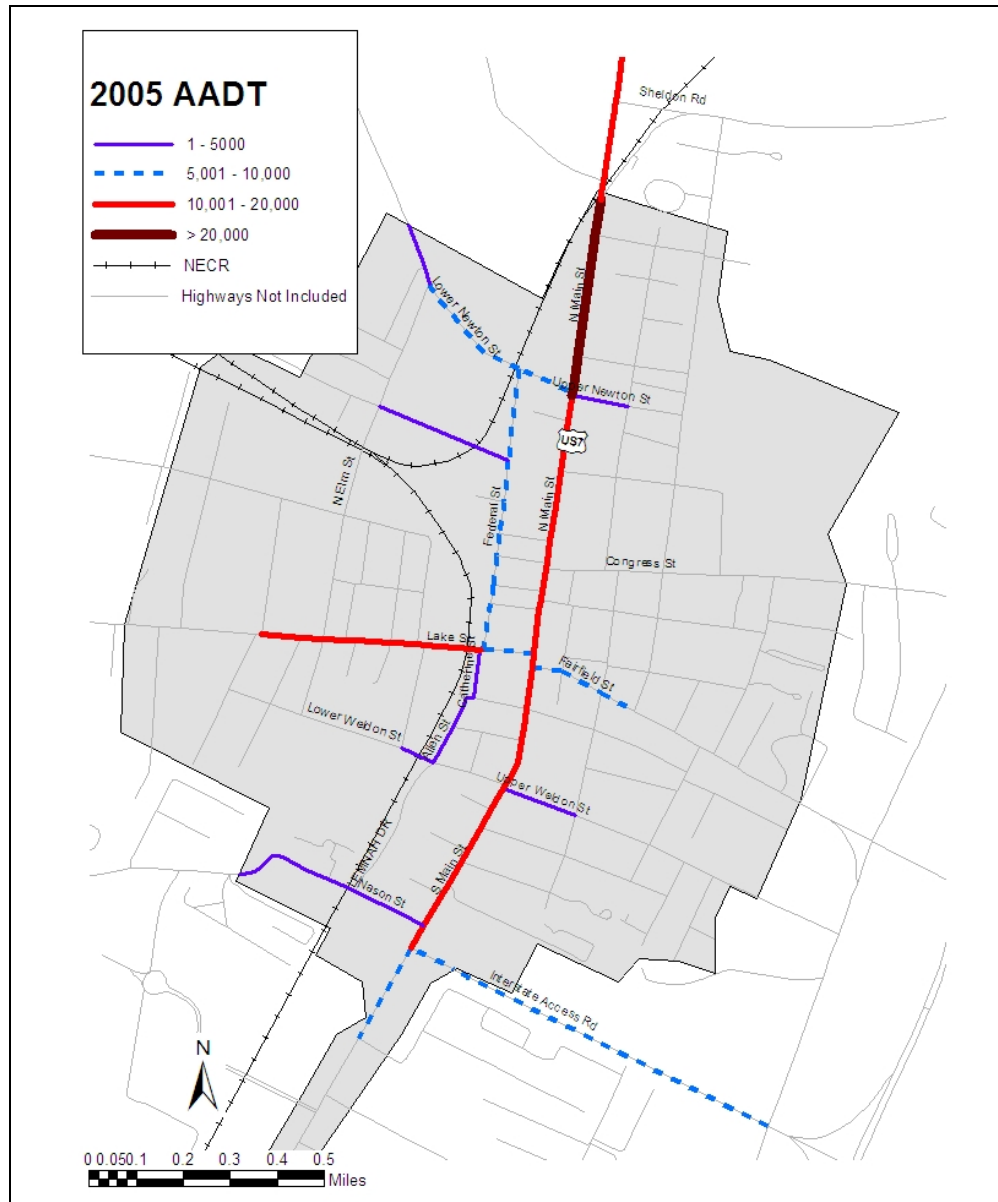


Table 8: Year 2005 AADT Volumes

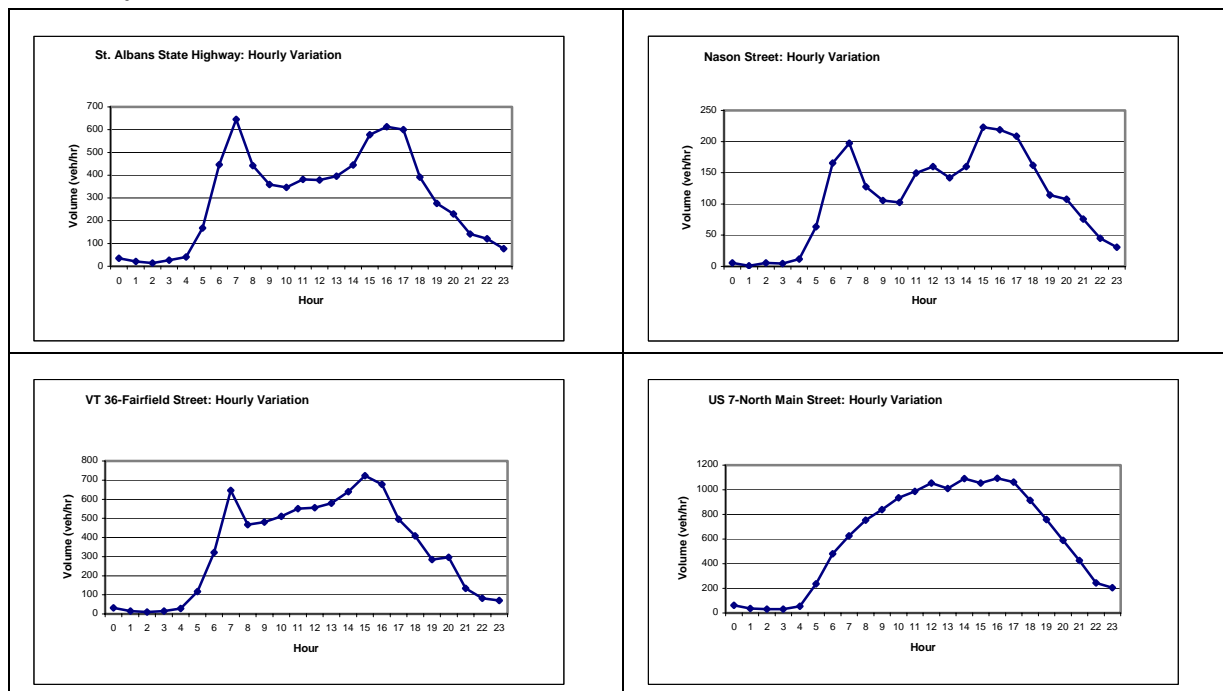
Roadway Segment		2005 AADT
VT 36 - Lake Street		
	Walnut Street to N. Elm Street	10,125
	N. Elm Street to Federal Street	10,650
	Federal Street to Main Street	8,100
VT 36 - Fairfield Street		
	Main Street to Lincoln Avenue	7,550
	Lincoln Avenue to High Street	7,250
US 7 - S MAIN ST		
	Fairfax Street to St. Albans State Highway	10,000
	St. Albans State Highway to Upper Weldon Street	14,375
	Upper Weldon Street to Fairfield Street	12,350
US 7 - Main Street		
	Fairfield Road to Lake Street	15,450
US 7 - N. Main Street		
	Lake Street to Congress Street	15,550
	Congress Street to Lower/Upper Newton Streets	16,200
	Lower/Upper Newton Streets to VT 105	20,125
	VT 105 to St. Albans City Line	16,300
US Route 7		
	St. Albans City Line to VT 105 Approach	16,300
	VT 105 Approach to Highgate Road	17,900
VT 38 - LOWER NEWTON ST		
	Main Street to Federal Street	8,850
	Federal Street to Elm Street	5,450
	Elm Street to St. Albans City Line	3,850
Lower Weldon Street		3,650
Nason Street		2,550
Allen Street		1,500
Catherine Street		2,550
Upper Weldon Street		1,400
Federal Street		
	Lake Street to Hoyt Street	8,200
	Hoyt Street to Aldis Street	6,700
	Aldis Street to Lower Newton Street	6,300
Upper Newton Street		700
Aldis Street		1,200
St Albans State Hwy		
	US Route 7 to VT 104	6,700

Figure 11 shows how traffic volumes vary throughout a typical weekday at four different locations. Traffic volumes along the Saint Albans State Highway, Nason Street, and Fairfield Street have distinctive peaks during the morning and afternoon. This type of variation is typical for many



locations. Main Street's variation is common for retail areas where businesses open later in the morning, and demand increases through noon to the afternoon.

Figure 11: Hourly Variations



5.2 JOURNEY TO WORK

Journey to work data were collected by the US Census Bureau as part of the 2000 Census. These data include place of work and residence for employees and help describe commuting patterns. Table 9 and Table 10 show where residents of Saint Albans City, Saint Albans Town, and other nearby Towns work. These tables demonstrate that:

- 70% of residents in these towns work in Franklin County and 30% in Chittenden County;
- The City of Saint Albans, and to a lesser extent the Town of Saint Albans, provide employment for the surrounding communities; and
- The most common Chittenden County work destinations are located in Burlington, Essex, South Burlington, and Colchester. A multimodal center in the City of Saint Albans would be well situated to serve these commuters.



Table 9: Employment Destinations by County for Residents of St. Albans and Nearby Franklin County Towns

Place of Employment	Place of Residence								Total	Percent of Total
	St. Albans City	St. Albans Town	Enosburg Town	Fairfield Town	Franklin Town	Highgate Town	Sheldon Town	Swanton Town		
Addison County	12		22	4	4	5	1	3	51	0%
Caledonia County	7			6	2				15	0%
Chittenden County	1,173	889	237	260	110	463	203	725	4,060	27%
Franklin County	2,517	1,610	979	603	544	1,123	754	2,335	10,465	70%
Grand Isle County		13		3	2	4	4	5	31	0%
Lamoille County	5		41	13	3		2	10	74	0%
Orange County							2		2	0%
Rutland County		10	4	2					16	0%
Washington County	29	12	12	10	14	14	5	14	110	1%
Windsor County				2					2	0%
New York	25	17	14	9		19	3	27	114	1%
Canada	7		2				2		11	0%
Other		5		3		4	5	17	34	0%
Total:	3,775	2,556	1,311	915	679	1,632	981	3,136	14,985	100%

Table 10: Employment Destinations by Municipality for Residents of St. Albans and Nearby Franklin County Towns

Place of Employment	Place of Residence								Total	Percent of Total
	St. Albans City	St. Albans Town	Enosburg Town	Fairfield Town	Franklin Town	Highgate Town	Sheldon Town	Swanton Town		
St. Albans City	1,604	687	230	232	100	365	227	708	4,153	28%
St. Albans Town	496	684	87	70	85	162	104	469	2,157	14%
Burlington City	292	249	33	77	33	83	29	108	904	6%
Essex Town	264	238	79	68	32	127	52	217	1,077	7%
South Burlington City	210	147	34	26	17	61	40	113	648	4%
Colchester Town	151	82	37	20	7	37	12	96	442	3%
Swanton Town	129	62	55	24	54	247	69	894	1,534	10%
Williston Town	93	87	20	29	6	102	15	84	436	3%
Milton Town	90	66	26	20	4	15	45	89	355	2%
Georgia Town	66	53	14	4	2	10	6	47	202	1%
All other remaining areas	380	200	696	345	332	423	382	311	3,069	20%
Total Persons Employed	3,775	2,555	1,311	915	672	1,632	981	3,136	14,977	100%

5.3 TRUCK TRAFFIC

Figure 12 shows the number of large trucks over the course of a day and during the peak hour for specific locations in Saint Albans. Large Trucks are defined as having a separate cab and either a single or multi-unit trailer. Large trucks are important for two reasons. First, they are necessary to support the businesses in the City. Providing safe and efficient routes for trucks with minimal obstructions supports the local economy and will help off-set the conflicts between large vehicles and activities within an urban area. Second, because trucks are slower and take up more space, they can cause operational problems that create additional congestion.

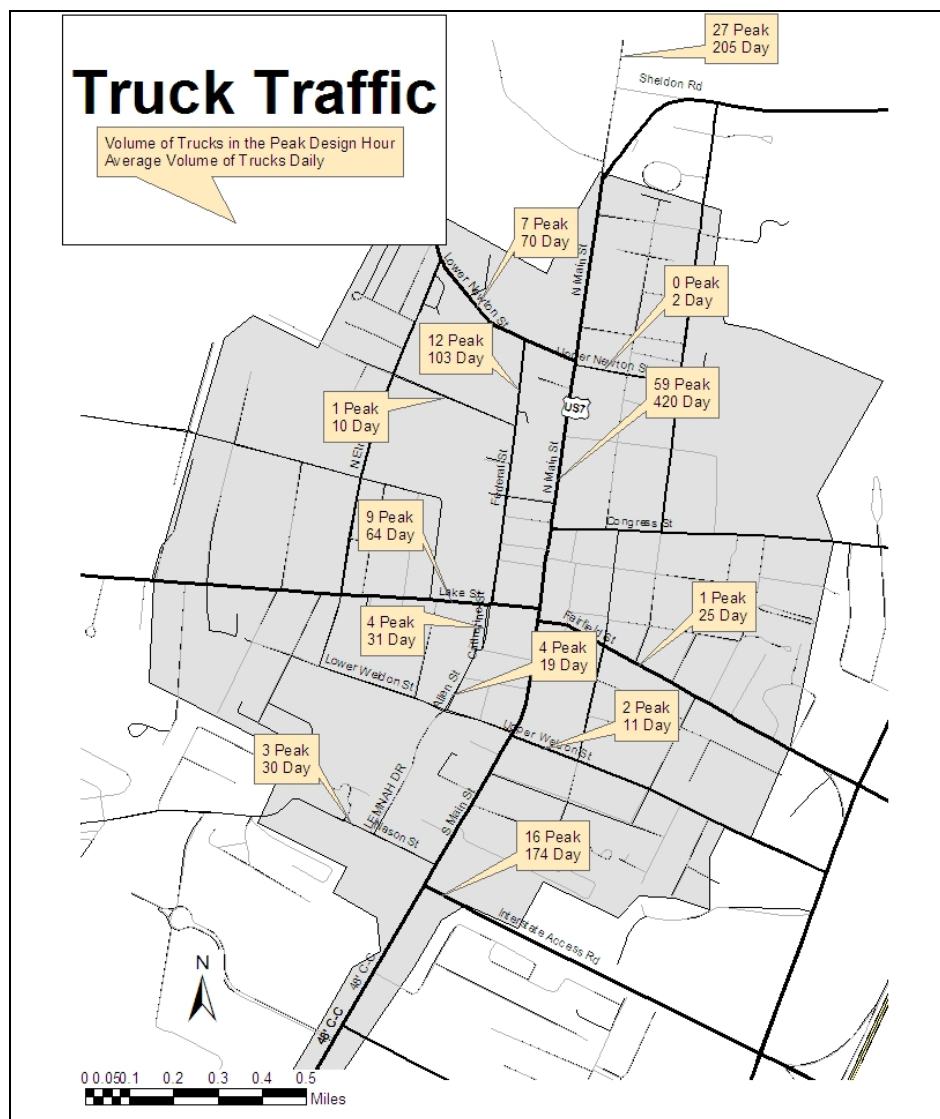
The data presented in Figure 12 indicate several tiers of truck traffic as follows:

- **First Tier:** The highest truck volumes by far occur on Main Street. The data suggests that many of the truck trips, regardless of their origins and destinations, appear to pass through Main Street;
- **Second Tier:** US 7 north and south of downtown and the SASH. About the same number of truck trips approach the City from US 7 in the north and from US 7 and the Saint Albans State Highway in the South;



- **Third Tier:** Excluding Main Street, Federal Street has the highest amount of truck trips in the study area. Federal Street is an obvious destination/origin of truck trips because of the existing industrial uses located along the Corridor. Providing better truck access to Federal Street can help reduce truck trips along Main Street;
- **Fourth Tier:** Lake Street and Lower Newton Street each carry about the same amount of truck trips; and
- **Fifth Tier:** All other streets.

Figure 12: Large Truck Traffic on a Weekday



6.0 TRAFFIC ANALYSIS

This section presents traffic volume projections for 2005 AM and PM peak hour conditions and 2025 no-build and build scenarios. The effect of the build scenarios on traffic volumes is summarized and level of service results are presented for all of the study intersections. Level of service for the 2025 build scenarios assume the same lane configurations and intersection control that were recommended in the 1995 study (See Table 1 on page 6). This approach is used to determine whether or not the original recommendations will provide adequate levels of service based on the new land use assumptions and a planning year that now extends to 2025. The following scenarios are analyzed:

- 2005 existing conditions;
- 2025 No-Build: assumes no changes to the existing roadway system;
- 2025 North Alternative 1: Includes the Federal Extension between the Saint Albans State Highway and Nason Street, upgrades to existing streets, and a new road segment that follows the existing railroad right-of-way to Rewes Drive, and follows Rewes Drive to its new proposed intersection with US 7 and VT 105 (See Figure 1 on page 3); and
- 2025 North Alternative 2: The same as above except the northern section follows Lower Newton Street and Sunset Meadows Road, and continues on a new alignment to Rewes Drive; and follows Rewes Drive to its new intersection with US 7 and VT 105 (See Figure 1 on page 3).

6.1 YEAR 2005 TRAFFIC VOLUMES

Intersection counts were obtained for the AM and PM peak hours on the dates shown in Table 11.

Table 11: Intersection Turning Movement Counts

Intersection	Count Date	Source
US 7 - SASH	10-Jun-04	VTrans
US 7 - Nason Street	12-Jan-05	RSG Count
US 7 - Lower/Upper Welden	25-Jan-05	RSG Count
US 7 - VT 36 (Fairfield Street)	10-Jun-04	VTrans
US 7 - VT 36 (Lake Street)	10-Jun-04	VTrans
US 7 - Lower/Upper Newton	10-Jun-04	VTrans
US 7 - VT 105	10-Jun-04	VTrans
US 7 - VT 105 Approach	9-Jun-04	VTrans
Nason Street - Lemnah Street	12-Jan-05	RSG Count
Weldon Street - Lemnah/Allen Street	12-Jan-05	RSG Count
VT 36 (Lake Street) - Federal/Catherine Street	12-Jan-05	RSG Count
Lower Newton Street - Federal Street	12-Jan-05	RSG Count



These ground counts have been adjusted in two ways. First, the ground counts were adjusted to reflect the design hour of traffic. The design hour is the 30th highest hour of traffic for the year and is used as the design standard in Vermont. All design hour adjustments employ data from Continuous Traffic Counter (CTC) F029 located on US 7 in Georgia¹. This counter collects traffic volumes 365 days per year, 24 hours per day. These data describe the daily fluctuation in traffic volumes and are used to adjust a ground count conducted on a specific date to the design hour.

The second adjustment accounts for growth in background traffic stemming from general regional growth. An annual growth rate of 2.11% is used to grow all traffic counts from the year they were collected to 2005. The 2.11% annual growth rate is based on average traffic growth rates on the St. Albans City highway network from 1997 to 2002.

Figure 13 and Figure 14 on the following pages present the resulting turning movements for the AM and PM peak hours respectively. Appendix A contains the actual ground count data and DHV and annual adjustments for each study intersection.

¹ This station was selected after consultation with VTrans.



Figure 13: 2005 AM Peak Intersection Tuming Movements

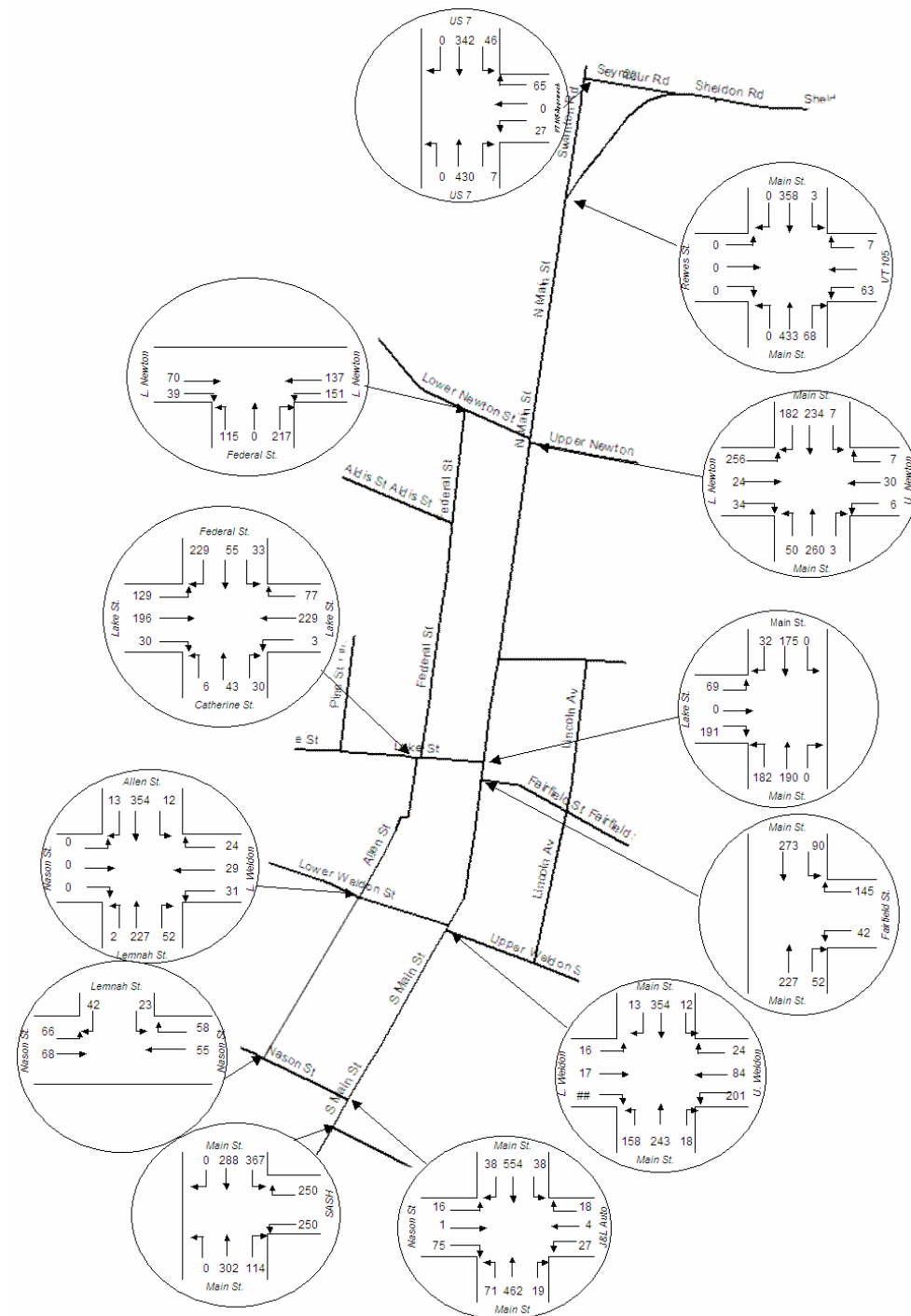
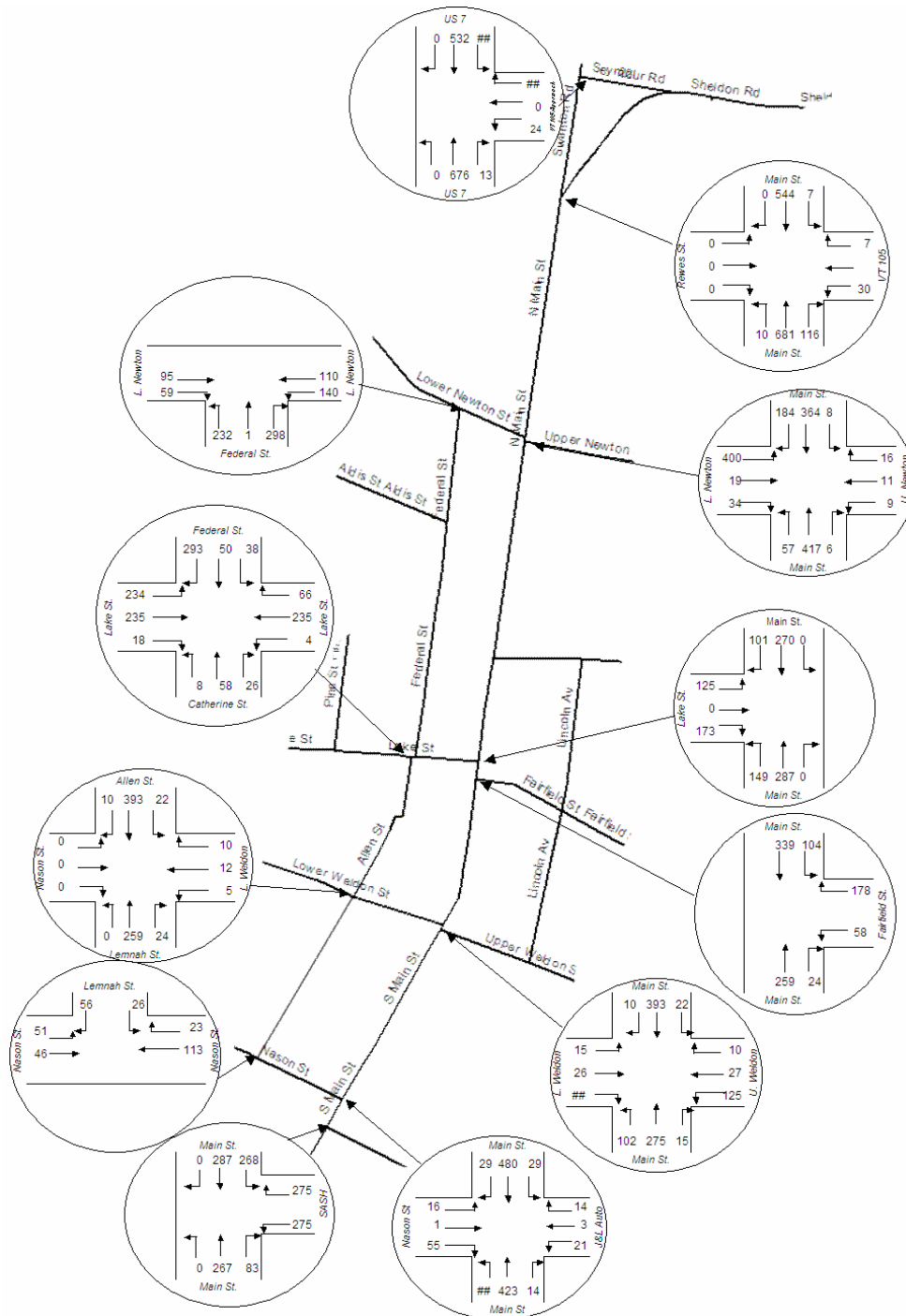


Figure 14: 2005 PM Peak Intersection Turing Movements



6.2 2025 BUILD AND NO-BUILD TRAFFIC VOLUMES

Future traffic volumes were developed using a travel demand model. The model utilizes the Paramics software program. Paramics is a microscopic transportation modeling program that simulates the behavior of individual vehicles traveling on the transportation network. Microscopic simulation models have been used for many years to evaluate transportation networks and are a well accepted method of analysis in the transportation, planning, and engineering professions.

The first step was to develop a base year model. This step ensures that the model reflects existing conditions and is therefore a reasonable tool for predicating future conditions.

Figure 15 presents a schematic that shows the basic structure of the model. The model consists of the highway network and transportation analysis zones (TAZs). The Main Street and Federal Street corridors are the primary features of the St. Albans's transportation network included in the model. Cross streets such as Newton, Lake, Stebbin, Weldon, and Nason Streets are also included in the network. Key roadway features such number of travel lanes, speed limits, turn lanes at intersections, and the type of intersection control are included in the model.

A TAZ is designated to represent a residential neighborhood, shopping center, industrial park, office building, or many other types of development. An origin/destination (O/D) matrix is created that defines the number of vehicle trips traveling between all TAZs. The 2005 year O/D table is generated through an iterative process that utilizes the 2005 turning movement volumes presented in Figure 13 and Figure 14. The O/D table also utilized the license plate survey data collected for the 1995 study which indicates how much traffic is passing through the study area. Appendix B contains the O/D table.

The Paramics model selects a route along the highway network for each vehicle trip traveling between two TAZs based on travel time. As a highway network becomes more congested, travel times increase and drivers will seek alternate routes. Paramics accounts for this dynamic by estimating travel times between TAZs in 5 minute intervals. Vehicles are assigned to different routes as conditions changed.

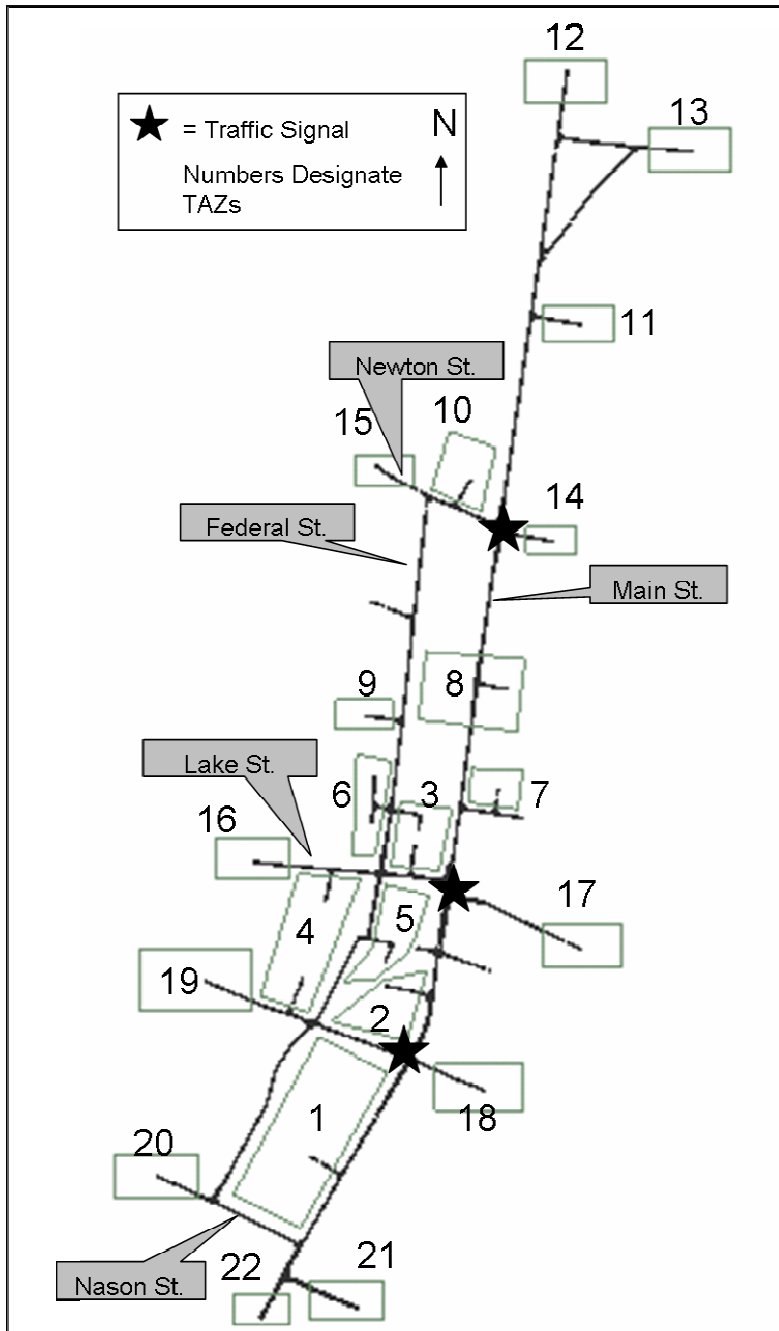
The validity of a travel demand model is tested by comparing its projected to actual traffic volumes. A model is well calibrated when the difference between its projections and actual traffic volumes falls within certain statistical measures as recommended by the Federal Highway Administration. Table 12 shows results for the Saint Albans model which exceeds all of the calibration guidelines.

Table 12: Calibration Results

Calibration Measure	Model		Federal Highway Administration Guideline
	AM Peak	PM Peak	
RMSE	0.194	0.187	Less than 0.40
r^2	0.943	0.939	Greater than 0.88
Percent error	-1.0%	2.2%	With-in $\pm 5.0\%$



Figure 15: Traffic Model Network and Transportation Analysis Zones Schematic



After the 2005 model was developed and calibrated, O/D tables for the 2025 AM and PM peak hour were created by accounting for background traffic growth and traffic from specific development that are anticipated within the planning horizon. The O/D table was first increased by 12% to account for background growth between 2005 and 2025. This growth rate is based on the statewide average for urban areas developed by VTrans¹;

Traffic from anticipated development projects was added to the background growth to create the final 2025 O/D trip table. The anticipated developments were identified by the steering committee and include:

- An additional 130 employees at Mylan Industries located between Lake, Weldon, and Allen Streets;
- The conversion of the existing municipal parking lot located in the block bound by Federal Street, Main Street, Kingman Street, and Lake Street to 100,000 square feet of office space and 30,000 square feet of retail;
- The conversion of Leader Evaporator on Stowell Street to 60 residential units;
- The conversion of various parcels along the Federal Street Corridor totaling 131 acres from residential to light industrial; and
- An additional 280 employees at the Homeland Securities offices located at the corner of Lower Weldon and Houghton Streets.

Traffic from these developments was estimated using national data published by the Institute of Transportation Engineers in *Trip Generation 7th Edition* and added to the O/D table. Table 13 presents the estimated trip generation for each development.

Table 13: Trip Generation of Anticipated Development

Development	Mylan		Municipal Lot				Leader Evaporator		Re-Zoning				Homeland Security	
			Retail		Office				Residential		Commercial			
ITE LU #	130		814		710		230		210		130		710	
Size	150 employees		100,000 ft^2		30,000 ft^2		60 units		-62 units		131 acres		280 employees	
Trip Generation	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
	Rate	0.47 0.46	6.84 2.71	1.55 1.49	0.75 1.01	0.75 1.01	8.55 8.84	0.48 0.46						
	In	0.86 0.2	0.48 0.44	0.88 0.17	0.17 0.63	0.25 0.63	0.83 0.21	0.88 0.17						
	Out	0.14 0.8	0.52 0.56	0.12 0.83	0.83 0.37	0.75 0.37	0.17 0.79	0.12 0.83						
Origin	10	55	107	46	19	124	37	22	-35	-23	930	243	16	107
Destination	61	14	98	36	136	25	8	38	-12	-39	190	915	118	22
Total Trips	71	69	205	81	155	149	45	61	-47	-63	1120	1158	134	129

¹ Continuous Traffic Counter Grouping Study and Regression Analysis Based on 2003 Traffic Data; Vermont Agency of Transportation.



The PM peak hour volumes also include traffic from the JLD Properties Planned Unit Development proposed for a site on US 7 just north of VT 207 in Saint Albans Town. The PUD will contain a Walmart and other development. The additional traffic is based on the estimates as submitted in the “Traffic Impact Assessment JLD Properties of St. Albans PUD” by Lamoureux and Dickinson, October 2004.

Once the 2025 origin/destination table was created, the model was run for the AM and PM peak hours, for the no-build and the two build scenarios. The model produces turning movement volumes for each study intersection. The final 2025 intersection volumes were developed through a pivoting process as follows (2025 Volumes = 2005 Ground Counts + (2025 Model Volumes – 2005 Model Volumes). Figure 16 through Figure 21 present the resulting turning movement projections for each scenario.

Table 14 shows the projected effect of the Federal Street Connector on Main Street traffic volumes. Northern Alternative 1 is more effective at reducing traffic volumes along Main Street.

Table 14. Effect of Federal Street Connector on Main Street Traffic Volumes – 2025 PM

Main Street Section	No-Build	North Alt 1		North Alt 2	
	Veh/Hr	Veh/Hr	% Change Relative to No-Build	Veh/Hr	% Change Relative to No-Build
VT 105 to Newton	1785	938	-47%	1510	-15%
Newton to Lake/Fairfield	1567	1460	-7%	1460	-7%
Lake/Fairfield to Welden	1656	1345	-19%	1352	-18%
Weldon to Nason	1867	1603	-14%	1583	-15%
Vehicle Miles Travelled VT 105 - Nason	2859	2229	-22%	2487	-13%

Table 15 demonstrates Northern Alternative #2 will serve approximately 64% less traffic than Northern Alignment #1. The highest projected traffic volumes along the Federal Street corridor are located between Newton and Lake Streets. The lowest traffic volumes are projected for the southern extension between the US 7-Saint Albans State Highway and Nason Street.

Table 15: Projected Traffic Volumes Along Major Sections of the Federal Street Corridor – 2025 PM

Federal Street Section	No-Build Veh/Hr	North Alt 1 Veh/Hr	North Alt 2 Veh/Hr	% Change Alt 2 vs Alt 1
Northern Federal St Extension	NA	857	309	-64%
Newton to Lake	820	1300	1175	-10%
Lake to Welden	163	723	706	-2%
Weldon to Nason	233	521	548	5%
Southern Section	NA	535	536	0%
Federal St. Vehicle Miles Travel (Newton to Nason)	540	1177	1117	-5%



Figure 16: 2025 AM Peak Intersection Turing Movements – No Build

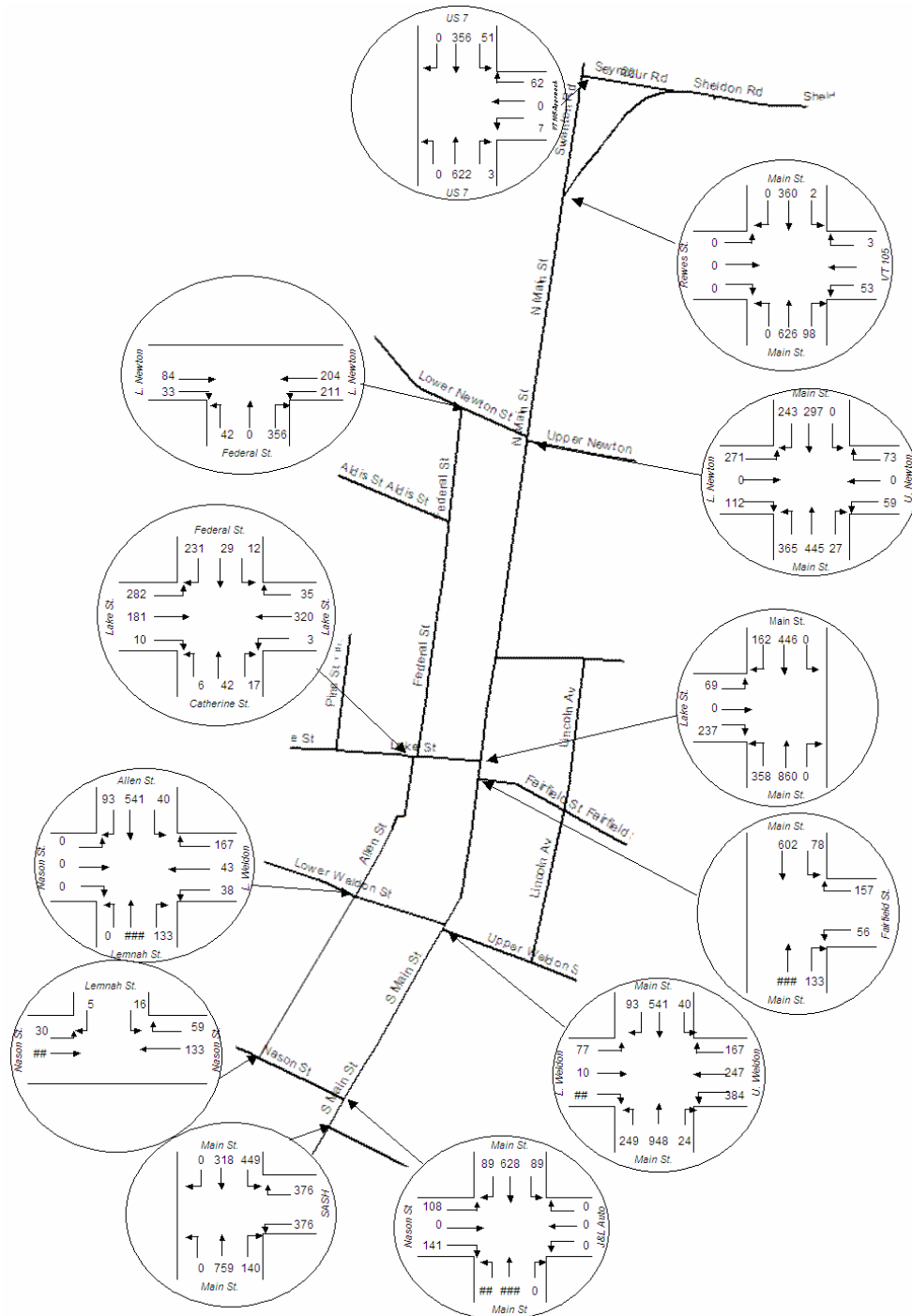


Figure 17: 2025 AM Peak Intersection Turing Movements –Northern Alternative 1

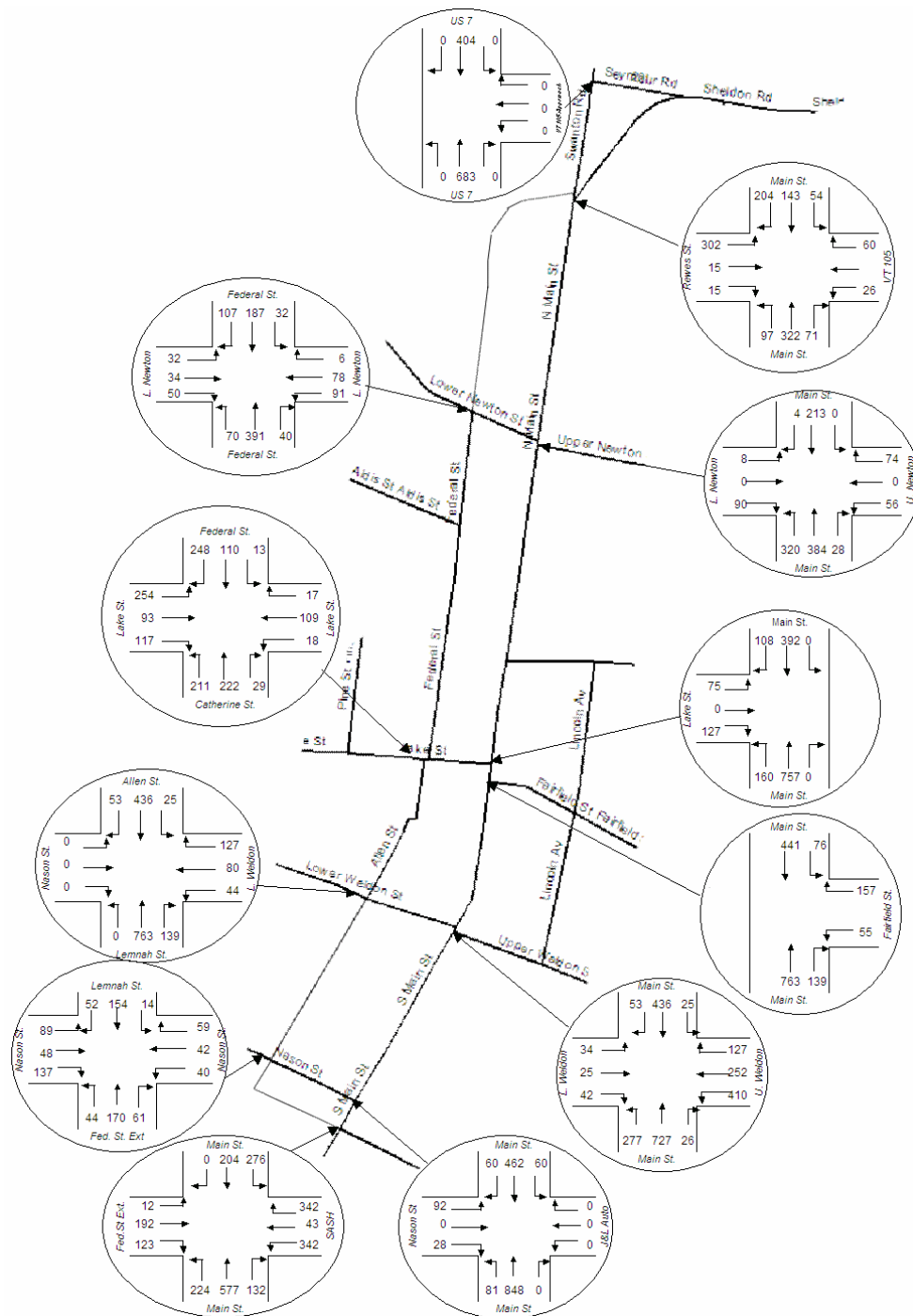


Figure 18: 2025 AM Peak Intersection Turning Movements –Northern Alternative 2

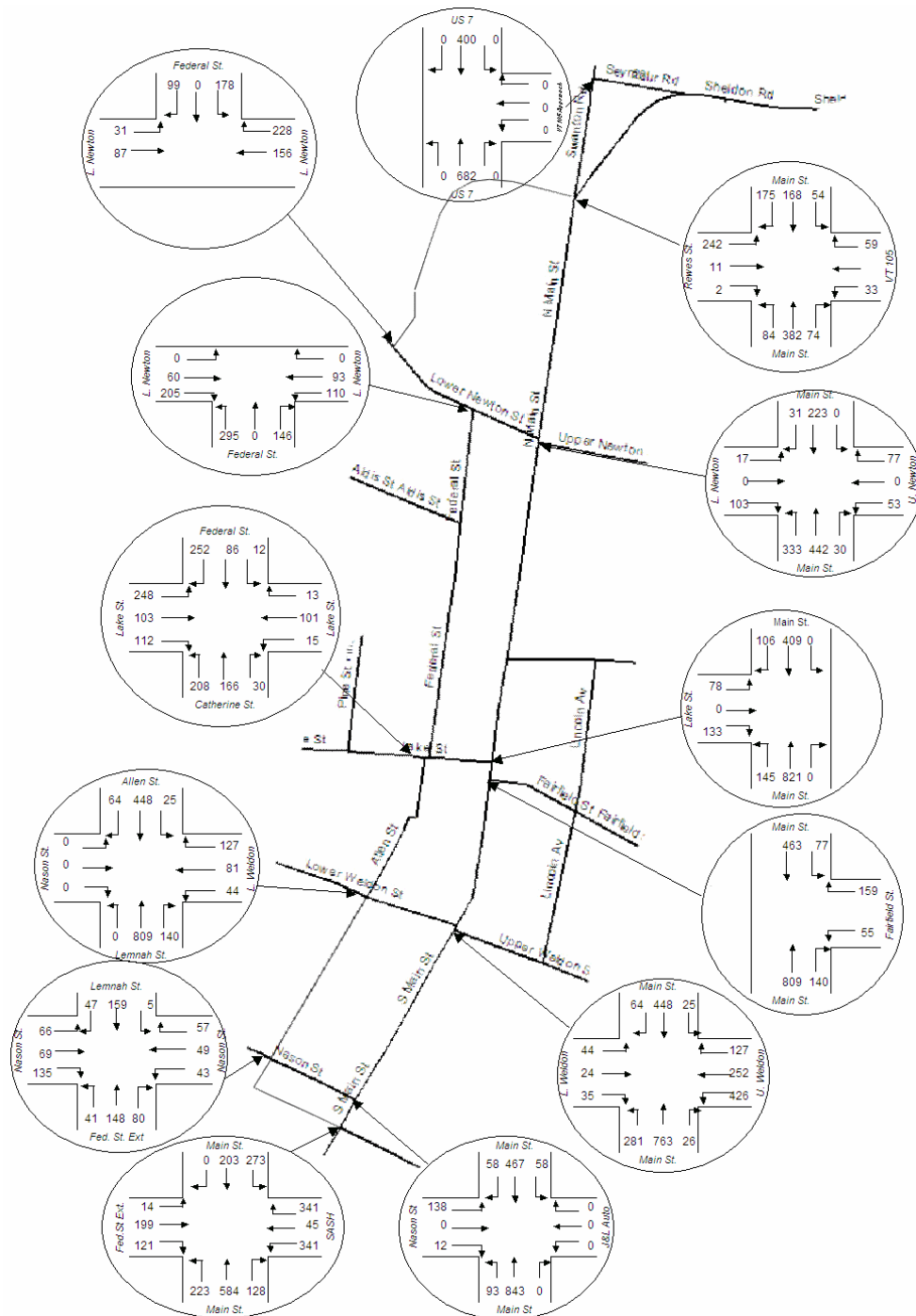


Figure 19: 2025 PM Peak Intersection Turning Movements – No Build

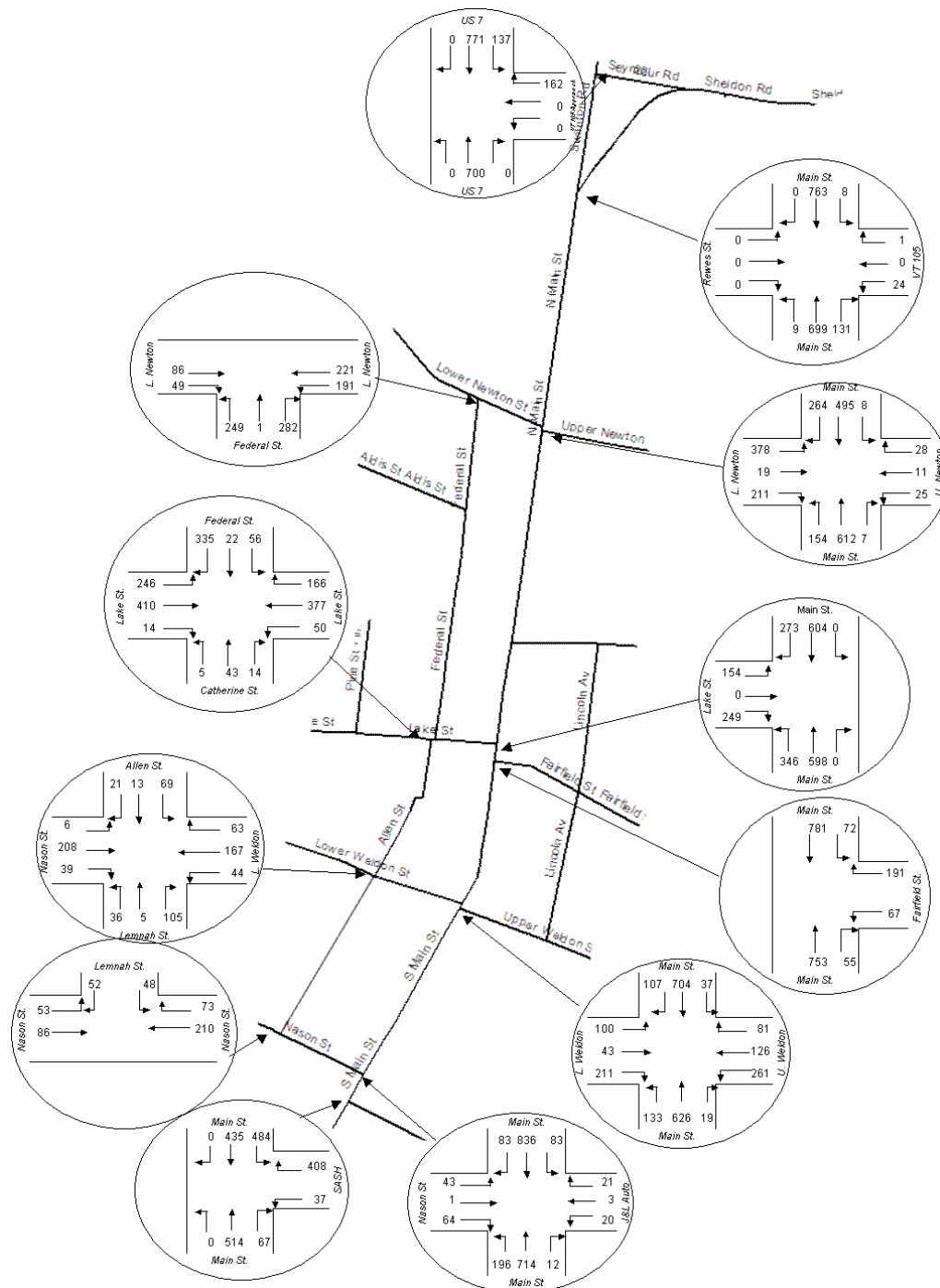


Figure 20: 2025 PM Peak Intersection Turing Movements –Northern Alternative 1

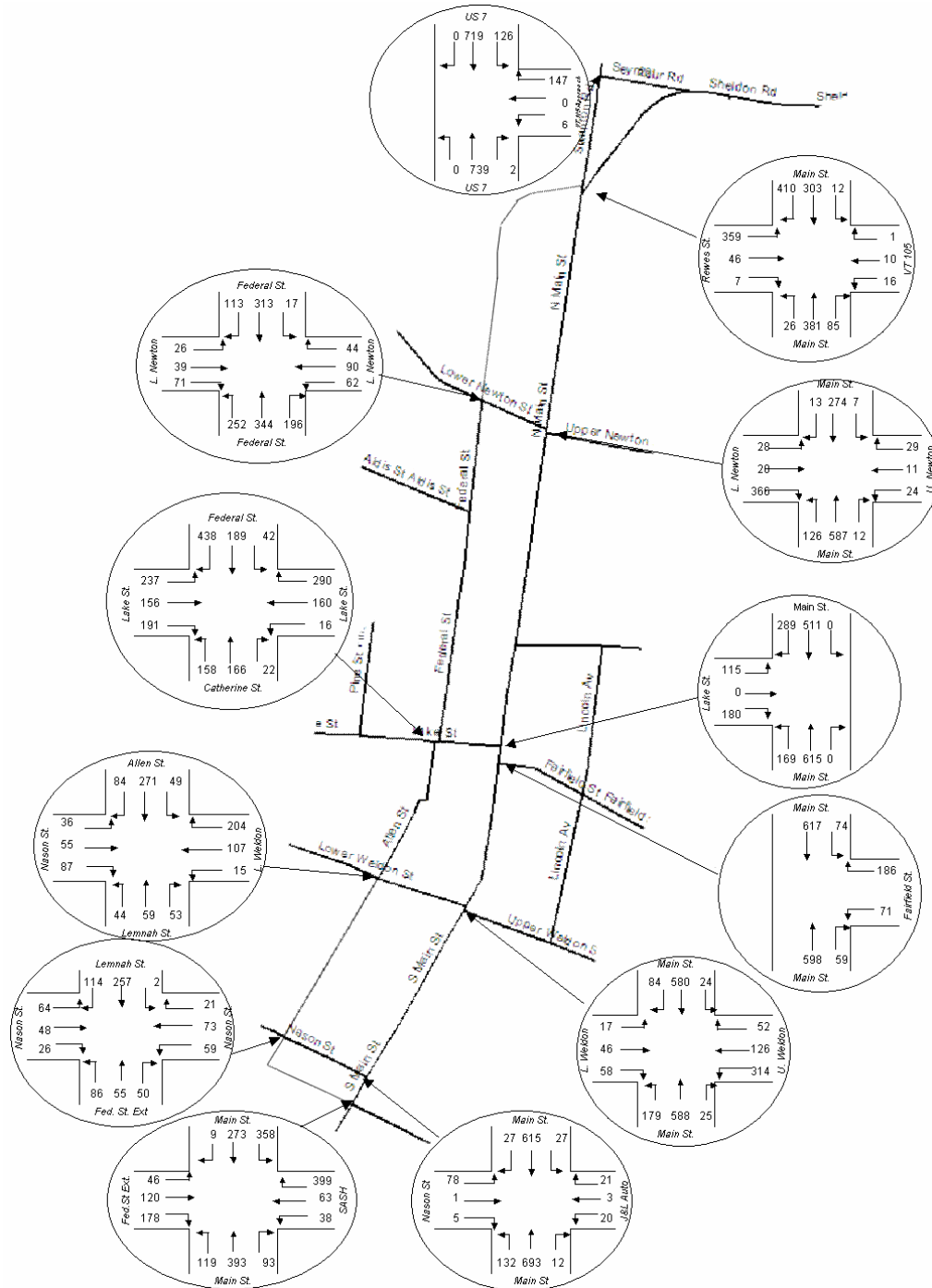
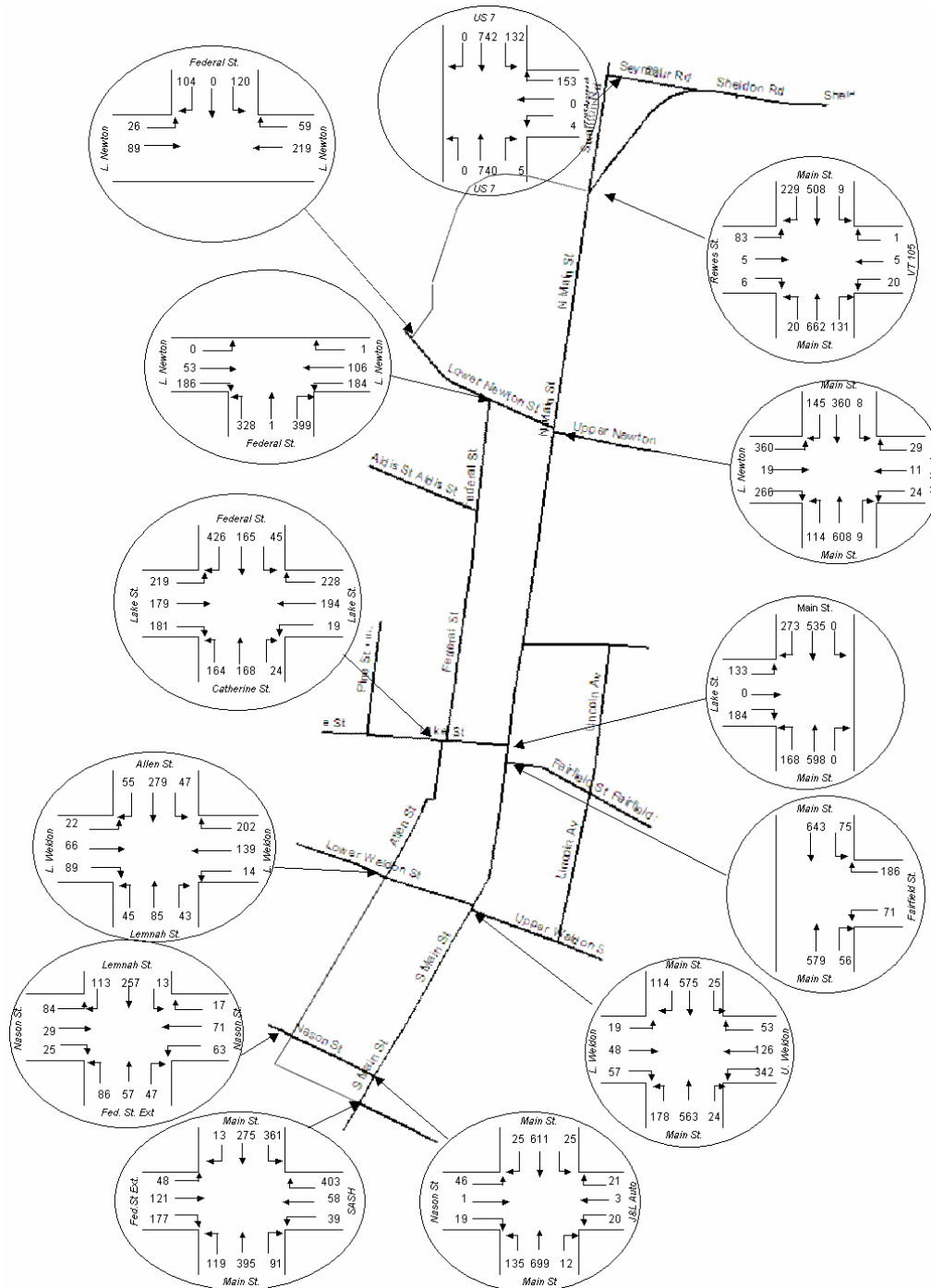


Figure 21: 2025 PM Peak Intersection Turing Movements –Northern Alternative 2



6.3 CONGESTION ANALYSIS

Level-of-service (LOS) is a qualitative measure describing levels of congestion as perceived by motorists driving in a traffic stream. The 2000 Highway Capacity Manual defines six qualitative grades to describe the level-of-service at an intersection. Level-of-Service is based on the average control delay per vehicle. Table 16 shows the various LOS grades and descriptions for signalized and unsignalized intersections.

Table 16: Level-of-Service Criteria for Signalized and Unsignalized Intersections

LOS	CHARACTERISTICS	SIGNALIZED DELAY (sec)	UNSIGNALIZED DELAY (sec)
A	Little or no delay	< 10.0	< 10.0
B	Short delays	10.1-20.0	10.1-15.0
C	Average delays	20.1-35.0	15.1-25.0
D	Long delays	35.1-55.0	25.1-35.0
E	Very long delays	55.1-80.0	35.1-50.0
F	Extreme delays	80.0<	50.1<

The VTrans policy on LOS states that, “Collectors in urban or village areas will generally be designed for a level of service D or better. However, in heavily developed village or urban areas, level of service E may be appropriate as judged on a case by case basis. Minor Arterials in urban or village areas will generally be designed for a level of service C or better. However, in heavily developed urban areas, reduced level of service criteria such as D or E may be appropriate as judged on a case by case basis.”

This policy suggests that the intersections and road segments along the Federal Street Connector, which will function as an urban collector, should be designed to maintain LOS D in the planning year of 2025. LOS E may be acceptable for specific movements along the Federal Street Corridor if the impacts of modifications, such as constructing additional turn lanes, are significant.

6.3.1 LOS Results

Table 18 presents LOS results for the intersections along Main Street and Table 19 present the LOS results for the study intersections along the Federal Street Corridor for the following scenarios:

- 2005 AM & PM Peak Hour – using the existing lane geometry, stop sign locations, and traffic signal locations;
- 2025 AM & PM Peak Hour No-Build-assuming the existing lane geometry, stop sign locations, and traffic signal locations. Traffic signal timing plans have been optimized for future conditions;
- 2025 AM & PM Peak Hour with North Alternative 1 – Assumes the lane geometry, stop sign locations, traffic signal locations, and roundabout (at Federal-Lake-Catherine) as



recommended in the 1995 study along the Federal Street Connector. Assumes existing lane geometry, stop signs, and traffic signals for intersections along Main Street.

- 2025 AM & PM Peak Hour with North Alternative 2-Assumes the lane geometry, stop sign locations, traffic signal locations, and roundabout (at Federal-Lake-Catherine) as recommended in the 1995 study along the Federal Street Connector. Assumes existing lane geometry, stop signs, and traffic signals for intersections along Main Street.

Year 2005 Observations:

All study intersections operate at acceptable levels of service except for the following:

- US 7-Lake Street
 - AM Peak: Overall intersection LOS F and northbound Main St approach LOS F
 - PM Peak: northbound Main Street approach LOS E
- Lake Street-Federal Street – Catherine Street
 - PM Peak: Catherine Street northbound approach LOS E

2025 No-Build Observations

All study intersections are projected to operate at acceptable levels of service except for the following:

- US 7 – St. Albans State Highway (unsignalized)
 - AM Peak: SASH westbound approach LOS F
 - PM Peak: SASH westbound approach LOS F
- US 7 – Nason Street (unsignalized)
 - AM Peak: Nason St. eastbound approach LOS F
 - PM Peak: Nason St. eastbound approach LOS F
- US 7 – Weldon Street (signalized)
 - AM Peak: Lower Weldon eastbound approach LOS F, Upper Weldon westbound approach LOS E
- US 7-Fairfield Street (signalized)
 - AM Peak: Fairfield westbound approach LOS F
- Lake Street-Federal Street (unsignalized)
 - AM Peak: Catherine Street northbound approach LOS E
 - PM Peak: Catherine and Federal Street approaches LOS F
- Federal Street-Lower Newton



- PM Peak: Federal Street northbound LOS F

2025 North Alternative 1 Observations

All study intersections are projected to operate at acceptable levels of service except for the following:

- US 7 – Nason Street (unsignalized)
 - AM Peak: Nason Street eastbound approach is LOS E. This LOS represents an improvement relative the 2025 no-build scenario of LOS F.
 - PM Peak: Nason Street eastbound approach is LOS F. Delay decreases significantly from 349 to 57 seconds.
- US 7-Fairfield Street (signalized)
 - AM Peak: Fairfield Street westbound approach LOS E with an average delay of 63 seconds per vehicle. This represents a slight improvement relative to the 2025 no-build with LOS of E and an average delay of 85 seconds per vehicle.
- US 7-Lake Street (signalized)
 - PM Peak: Overall intersection LOS improves from F to D. Lake Street northbound approach LOS E and average delay of 61 seconds per vehicle. This LOS represents an improvement over the no-build condition with LOS F and average delay of 265 seconds per vehicle

2025 North Alternative 2 Observations

All study intersections are projected to operate at acceptable levels of service except for the following:

- US 7 – Nason Street (unsignalized)
 - AM Peak: Nason Street eastbound approach LOS F with an average delay of 73 seconds per vehicle. This LOS represents an improvement relative to the 2025 no-build scenario of LOS F and average delay of 378 seconds per vehicle.
- US 7-Fairfield Street (signalized)
 - AM Peak: Fairfield Street westbound approach LOS F and average delay of 142 seconds per vehicle. This LOS and delay are worse than the no-build condition with LOS F and average delay of 85 seconds per vehicle.
- US 7-Lake Street



- PM Peak: Overall intersection LOS improves from F to D. Lake Street northbound approach LOS F and average delay of 81 seconds per vehicle. This LOS represents an improvement over the no-build condition with LOS F and average delay of 265 seconds per vehicle

Overall Observations

The intersection designs recommended in the 1995 study are projected to operate at acceptable levels of service through the 2025 planning horizon for North Alternatives 1 and 2.

The Federal Street Connector helps reduce or eliminate congestion along the Main Street Corridor. It helps reduce delay on several approaches of major streets to Main Street where high levels of delay are projected including Lower Weldon, Upper Weldon, Nason, and Fairfield Streets.

Table 18 shows the average delay projected for all vehicles passing through the Main Street intersections with Nason Street, Upper/Lower Weldon, Fairfield Street, Lake Street, and Newton Street. These intersections represent the core downtown area. Table 18 demonstrates that the Federal Street Connector reduces overall delay significantly throughout the Main Street Corridor and will therefore help to improve accessibility to Downtown Saint Albans.

Table 18 also demonstrates that North Alternative 1 is more effective at reducing delay along Main Street than North Alternative 2.

Table 17: 2025 Average Delay per Vehicle at Main Street Intersections (Seconds per Vehicle)

Time of Day	2025 No-Build	2025 North Alt 1		2025 North Alt 2	
	Delay/Vehicle (Seconds)	Delay/Vehicle (Seconds)	% Change Relative to No-Build	Delay/Vehicle (Seconds)	% Change Relative to No-Build
AM	42	17	-60%	20	-53%
PM	48	20	-58%	24	-50%

Includes US 7 intersections with Nason, Weldon, Fairfield, Lake, and Newton.



Table 18: US 7(Main Street) Intersection LOS Results

	2005 - No Build				2025 PM No Build				2025 Build 1				2025 Build 2			
	AM		PM		AM		PM		AM		PM		AM		PM	
	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
US 7 - St. Albans State Highway																
Unsignalized																
WB-SASH	17.1	C	13.9	B	181.8	F	66.1	F								
NB-US 7	0.0	0	0.0		0	0	0.0									
SB-US 7	5.4	A	4.3	A	9.8	C	6.4	B								
Signalized Overall																
EB-New Federal St.									8.7	A	8	A	8.7	A	8.1	A
WB-SASH									12.8	B	10.6	B	12.2	B	10.7	B
NB-US 7									12.3	B	10.6	B	11.8	B	10.7	B
SB-US 7									7.4	A	5.6	A	7.7	A	5.6	A
									5.5	A	6.8	A	5.6	A	6.9	A
US 7 - Nason St																
Unsignalized																
EB-Nason St.	16.6	C	15.7	C	378.3	F	348.8	F	35.4	E	56.8	F	73	F	34.8	D
NB-US 7	2.0	A	2.7	A	1.3	A	6.6	A	1	A	1.9	A	1.2	A	2.0	A
US 7 - Weldon Street																
Signalized Overall																
EB-Lower Weldon	21.4	C	24.3	C	253	F	51.3	D	20	C	23.7	C	23	C	23.7	C
WB-Upper Weldon	22.8	C	23.2	C	63.6	E	22.5	C	23.5	C	24.1	C	27.5	C	23.9	C
NB-US 7	4.7	A	4.4	A	18.1	B	12.3	B	11.8	B	7	A	11.7	B	6.8	A
SB-US 7	8.5	A	6.9	A	20.4	C	18.1	B	14.1	B	12.5	B	13.4	B	11.9	B
US 7 - VT 36: Fairfield Street																
Signalized Overall																
WB-Fairfield St.	35.7	D	36.3	D	85	F	51.7	D	62.8	E	38.8	D	141.9	F	35.9	D
NB-US 7	29.5	C	31.6	C	35.5	D	7.5	A	17.3	B	15.6	B	15.2	B	7.3	A
SB-US 7	17.9	B	23.9	C	9.3	A	12.0	B	14.2	B	5.8	A	15.2	B	12.8	B
US 7 - VT 36: Lake Street																
Signalized Overall																
EB-Lake St.	36.3	D	39.1	D	36.7	D	153	F	40.7	D	39.1	D	36.8	D	44.7	D
NB-US 7	208.7	F	70.0	E	50.8	D	265	F	24.9	C	61.4	E	36.8	D	81.3	F
SB-US 7	25.4	C	26.7	C	39.2	D	23.2	C	47.5	D	14	B	25.2	C	12.6	B
US 7 - VT 38: Lower Newton																
Signalized Overall																
EB-Lower Newton	25.3	C	35.4	D	19.1	B	14.8	B	24.8	C	15.6	B	25.2	C	27.8	C
NB-US 7	6.8	A	7.9	A	8.1	A	10.9	B	3.2	A	5.7	A	3.3	A	9.6	A
SB-US 7	6.6	A	7.2	A	5.1	A	8.1	A	2.3	A	4.1	A	2.2	A	7.2	A
US 7 - VT 105																
Unsignalized																
WB-VT 105	17.7	C	27.2	D	22.6	C	39.7	E								
NB-US 7	0.1	A	0.2	A	0.1	A	0.3	A								
SB-US 7	0.0	0	0.0	0	0	0	0.0	0								
Signalized Overall																
EB-New Federal St.									10.2	B	10.7	B	9.4	A	4.8	A
WB-VT 105									16.4	B	14.6	B	22	C	30.1	C
NB-US 7									8.2	A	7.1	A	10.9	B	25.9	C
SB-US 7									9.1	A	10.3	B	6.4	A	3.2	A
									7	A	9.0	A	5.1	A	2.7	A
US 7 - Seymour Road																
Unsignalized																
WB-Seymour Road	13.3	B	19.7	C	14.3	B	18.0	C	0	A	23.8	C	0	A	25.3	D
NB-US 7	1.4	A	3.0	A	1.7	A	3.8	A	0	0	3.8	A	0	0	4.3	A
SB-US 7	0.0	0	0.0	0	0	0	0.0	0	0	0	0	0	0	0	0	0



Table 19: Federal Street Corridor Intersection LOS Results

	2005 - No Build				2025 PM No Build				2025 Build 1				2025 Build 2			
	AM		PM		AM		PM		AM		PM		AM		PM	
	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
Lemnah Street - Nason ST																
Unsignalized																
EB-Nason St.	3.9	A	4.1		1	A	3.2	A	18.4	C	15.3	C	17	C	21	C
WB-Nason St.	0.0	0	0.0		0	0	0.0		16	C	19.4	C	16.2	C	20.1	C
NB-New Federal St.	-	-	-	-	-	-	-	-	1.2	A	3.7	A	1.2	A	3.7	A
SB-Lemnah St.	9.4	A	9.5	A	11.2	B	11.0	B	0.5	A	0	A	0.2	A	0.3	A
Lemnah Street - Weldon Street																
Unsignalized																
EB-Lower Weldon St.	0.4	A	0.0	A	0.7	A	0.2	A	2.3	A	1.6	A	1.8	A	1	A
WB-Lower Weldon St.	0.9	A	0.8	A	0.5	A	1.5	A	0	A	0.4	A	0	A	0.3	A
NB-Lemnah St.	13.7	B	11.5	B	14.7	B	12.3	B	24	C	15.2	C	20.8	C	16.5	C
SB-Allen St.	11.8	B	11.7	B	14.3	B	17.6	C	18.4	C	18.2	C	17.2	C	23.6	C
VT 36: Lake Street - Federal St																
Unsignalized																
EB-Lake St.	3.6	A	5.1	A	6.3	A	5.5	A								
WB-Lake St.	0.1	A	0.1	A	0.1	A	1.2	A								
NB-Catherine St.	18.7	C	39.6	E	38.7	E	210.5	F								
SB-Federal St.	17.2	C	24.9	C	20	C	134.2	F								
Roundabout Overall									4.9	A	5.3	A	4.8	A	5.3	A
EB-Lake St.									4.8	A	4.8	A	4.6	A	4.4	A
WB-Lake St.									5.9	A	7	A	5.1	A	6.2	A
NB-Catherine St.									5.8	A	6.3	A	6.1	A	6.4	A
SB-Federal St.									3.6	A	4	A	3.5	A	4.9	A
VT 38: Lower Newton Street - Federal Street																
EB-Lower Newton	0.0	0	0.0		0	0	0.0						0	0	0	
WB-Lower Newton	4.4	A	4.7	A	4.6	A	4.3	A					4.4	A	5.2	A
NB-Federal St.	14.8	B	33.6	D	14	B	143.3	F					18.2	C	32.6	D
Signalized Overall									7.6	A	8.3	A				
EB-Lower Newton St.									15.9	B	22.2	C				
WB-Lower Newton St.									16.7	B	23.2	C				
NB-Federal St.									4.9	A	5.1	A				
SB-New Federal St.									4	A	3.1	A				
VT 38: Lower Newton Street - Sunset Meadows																
Unsignalized																
EB-Lower Newton St.													2.3	A	1.9	A
WB-Lower Newton St.													0	0	0.0	
SB-Sunset Meadows													15.1	C	12.9	B

7.0 PUBLIC COMMENTS

A public meeting was held on July 13, 2005 in the City of Saint Albans City Hall to gather initial feedback on the concept plans for the Federal Street Connector and the multimodal center. The meeting included two parts. Part I focused on the Federal Street Connector. RSG made a presentation that summarized the purpose of the project, its context in the highway system, the traffic impacts, and its key design features.

Part II of the meeting focused on the multimodal center. RSG made a presentation that defined multimodal centers, outlined the issues and opportunities for multimodal travel in Saint Albans, and described the purpose of the multimodal center. A concept site plan and floor plan were presented and reviewed.

Comments and responses when provided are listed below. Appendix D contains the list of meeting participants, the meeting notice, and an article printed in the Saint Albans Messenger.



7.1 PART I: COMMENTS ON FEDERAL STREET CONNECTOR

1. **Comment:** Traffic may back-up along US 7 from its intersection with the SASH and the proposed Federal Street Connector if a traffic signal is installed at that intersection. The traffic could extend as far back or beyond the Nason Street intersection. It is already difficult for vehicles to exit from Nason Street to US 7. The problem is worse when school is in session. Consider making Nason Street one-way westbound only.
2. **Comment:** Businesses along Catherine Street (and the other streets one block west of Main Street) are part of the downtown. Maintaining pedestrian access to these businesses is critical to their integration with Main Street businesses. The roundabout at Lake-Federal, if installed, should include sidewalks and pedestrian crossings to help preserve or enhance the pedestrian connection with Main Street.
3. **Comment:** The future traffic projections appear to be conservative (meaning lower than one might expect). The traffic is bad now. Hot spots include left turns from Nason Street – particularly when school is in session.
4. **Comment:** Congestion is not that bad under existing conditions.

Response: The purpose of the Federal Street Connector goes beyond trying to eliminate congestion on Main Street. Its purpose includes providing an alternate truck route, supporting economic development in the industrial and commercial areas west of Main Street, and improving and expanding the bicycle and pedestrian network.

5. **Comment:** The alignment follows Market Street, rather than Catherine Street. Does the railroad support that concept?

Response: Charlie Moore from NECR stated that the railroad supports the project.

6. **Comment:** How would a roundabout at Lake and Federal St operate when the gates are closed while trains are crossing Lake Street just west of the intersection? Currently, some vehicles change direction when the railroad crossing is activated. It seems to work OK – people find their way around, or let vehicles that are not heading west on Lake Street continue through the intersection.

Response: Vehicles in the circular travel-way of the roundabout could keep moving beyond the gated exit and leave through one of the other approaches. It is possible that vehicles with destinations to the west on Lake Street will stop within the roundabout resulting in a back-up on all the other approaches. Proper signs and education, and the eventual experience of local drivers with the roundabout, will be needed to avoid potential blocking problems while the railroad gates are closed. VTrans is installing a roundabout at the intersection of US 2-US 302 on the outside edge of Montpelier that will have a similar railroad gate. This roundabout will provide experience on how well the arrangement works.



7. **Comment:** Has there been any consideration given to the impact of the Federal Street Connector on the homes and residents that live along the corridor? It does not seem that study has considered how the increased traffic will affect these residents. It is already difficult to exit a driveway. There are numerous old homes along the corridor and people have been living there for a long time. They have a strong connection to their homes.

Response: The proposed design will include sidewalks, green strips and bike lanes. The posted speed limit between Nason Street and Lower Newton Street is proposed to be 25 miles per hour. However, there will be a significant increase in traffic volumes along the Federal Street corridor if the new sections connecting to the SASH and the US 7-VT 105 intersection are completed. The resulting level of traffic is not ideal for residential uses. The City has zoned most of the land in the corridor as either Central Business District or Service Industrial. In the long-term, it is anticipated that many of the existing home will convert to non-residential uses.

8. **Comment:** The project is a bypass and will hurt businesses along Main Street.

Response: By reducing the volume of through traffic and large trucks on Main Street, the Federal Street connector should help make Main Street more accessible.

9. **Comment:** How does the Federal Street Connector affect parking? Can additional parking be provided?

Response: The current plan maintains about the same amount of on-street parking as currently exist. The on-street parking shown in the current concept is located along both sides of Federal Street between Lake Street and Kingman Street. The on-street parking could be extended further north if necessary.

10. **Comment:** The concept plan shows the new alignment following Market Street. What is the plan for Catherine Street? Will it remain open?

Response: There has not been a decision made yet on how to reconfigure Catherine Street. Using Market Street as part of the new alignment depends on the removal of the Giroux Furniture Store building. If that occurs, there will be some additional room between the new alignment and Catherine Street. That space could be used for parking, green space, or even a new infill building designed to fit in that location.

11. **Comment:** Are the various segments of the Federal Street Connector going to be prioritized.

Response: Yes.

12. **Comment:** Will the study identify funding sources.

Response: A detailed financing plan is not part of the scope of work for this particular project. However, RSG is currently conducting studies for the Town of Saint Albans to develop a financing plan for the transportation projects around Exit 20 and along the VT



104 corridor. That information may be used to inform the next steps for the Federal Street project. Some of the techniques include municipal bonds funded through special assessment tax districts or utilizing tax increment financing districts.

7.2 PART II: COMMENTS ON MULTIMODAL CENTER

1. **Comment:** The concept for a multimodal center is dynamic and could help make the City more livable for residents and friendly to visitors.

2. **Comment:** What is the latest on passenger rail service?

Response: Charlie Moore stated that there is a possibility that commuter rail service could be provided between Swanton, Saint Albans, to the IBM plant in Essex Junction. The rail line passes directly adjacent to the IBM plant and a simple station would be possible at that location. Once that service is provided, additional extensions to Burlington with stops at Saint Michael's College, Camp Johnson, and downtown Winooski are not inconceivable.

3. **Comment:** The concept plan assumes that some of the parking located in the municipal lot on the east side of Federal Street will be available. However, that parking lot is typically well utilized and there is not a significant number of parking spaces available.

4. **Comment:** Are there data available or other studies that quantify the number of people commuting between Saint Albans and Chittenden County? Is there some estimate of how many people may use a commuter rail service?

Response: The US Census provides journey to work data that quantify the number of commuters between different cities and towns. The application that will be prepared for the multimodal center will include some preliminary estimates of how many people may use the facility – this will require a general assessment of potential commuter rail ridership.

5. **Comment:** For commuter rail to be used, it has to be cost competitive with driving a car and reasonably convenient. If it cost more to take a train, no one will take it. If it takes too long, no one will take it. The location of the stations relative to final destinations has a big impact on convenience. If the final destination is not within walking distance, a reliable local transit service is necessary.
6. **Comment:** The concept floor plan for the multimodal center appears to be ostentatious for Vermont. Is it really necessary to have a café and office space? Can the multimodal center be simpler with fewer amenities?
7. **Comment:** The architecture and final site plan for the multimodal center should build upon and incorporate some of the characteristics of the historic buildings including those that no longer exist (The Shed).
8. **Comment:** Although not necessarily part of the multimodal center, a museum (maybe rail museum) should be constructed on the west side of the tracks. The tracks tend to divide



the City. A museum or other type of public building could help bridge the gap and would become a destination that could be served by the multimodal center.

9. **Comment:** The circulation shown on the concept site plan should be revised to eliminate conflicts between buses, passenger cars, and pedestrians. Consider re-orienting the bus slips to face the NECR building.

8.0 PART I SUMMARY

8.1 FINDINGS RELATED TO THE FEDERAL STREET CONNECTOR

The need and desire for a new north/south route to accommodate through traffic and to improve access to the City's industrial area was first identified in 1974. Various studies completed since 1974 continued to identify the importance of the Federal Street Connector. The 1995 Study presented the first in-depth evaluation of the Federal Street Connector. It presents traffic projections and congestion analyses for 1995 and 2015 scenarios, presents concept designs and order of magnitude cost estimates for the Federal Street Connector, identifies right-of-way impacts and acquisition needs, discusses potential land use changes, identifies potential natural and cultural resource impacts, and includes an implementation plan.

The 1995 study concludes that the Federal Street Connector will complement the expansion of the City's business district to the west and will not noticeably impact the businesses along Main Street. The reduced congestion along Main Street resulting from the Federal Street project should improve accessibility to the existing businesses. Construction of the Federal Street Connector will impact certain property owners, natural resources, and potentially historic buildings. There will be positive and negative impacts to property owners, some of which will likely occur as a result of the rezoning that was proposed in the City's comprehensive plan under consideration in 1995. The impacts to natural resources will be minor.

The most significant changes that have occurred since the 1995 Study was completed are:

- Identification of the Federal Street Connector, between the Saint Albans State Highway and Newton Street, as an intermodal connector in the Western Vermont Freight Corridor Program. As a component of this program, the Federal Street project may become eligible for a broader range of federal funds;
- Adoption of the 2003-2008 Regional Transportation Plan, that emphasizes the inclusion of pedestrian and bicycle facilities as part of highway projects;
- Adoption of the VT State Standards for the Design of Roads and Streets, that allows for greater design flexibility;



- Extension of Lemnah Drive between Nason Street and Lower Weldon Street that provides an important link between the Federal Street Corridor and US 7 via Nason Street;
- Changes to zoning along the Federal Street Corridor to predominantly non-residential. The non-residential zoning along the Federal Street Corridor is logical from a land use-transportation perspective. The Federal Street Connector will make the area more accessible and will provide the capacity necessary to support redevelopment. The zoning will encourage the types of land uses that are consistent with and appropriate along a corridor that will eventually serve larger traffic volumes and a higher percentage of through traffic; and
- Selection of a preferred alternative design for the US 7-VT 105 intersection by the City, Town, and NRPC. The preferred design will realign the US 7-VT 105 intersection with Rewes Drive and provides the northern terminus for the Federal Street Connector.

Based on a review of previous studies, discussion with steering committee members, and the goals of the Western Vermont Freight Gateway Program, the purpose of the Federal Street Connector is to:

- Improve access to downtown Saint Albans;
- Reduce the impact of vehicular and truck traffic passing through Main Street;
- Improve access to the existing industrial area located along the Federal Street Corridor;
- Provide capacity to support redevelopment of industrial and commercial areas within the core of the City of Saint Albans;
- Provide an efficient intermodal connection between the National Highway System and the rail-truck transfer facility at the NECR railyard;
- Improve pedestrian and bicycle travel; and
- Facilitate connections between different modes.

The various highway classification systems are the foundation for policies that affect funding eligibility, project prioritization, design requirements, jurisdiction, and maintenance and operation responsibilities for a highway. The following changes and clarifications are recommended for the Federal Street Connector and are consistent with the project's purpose:

- The Federal Street Connector should be classified as an Urban Collector. The function of an Urban Collector is to distribute trips between the arterial system and local streets, industrial/commercial areas, and neighborhoods. This function is consistent with the purpose of the Federal Street Connector. This classification will also make the Federal Street Connector eligible for federal funds.
- With the exception of Lemnah Drive, all of the existing streets along the Federal Street Corridor are currently classified as urban collectors. Since Lemnah Drive now connects the



Federal Street Corridor via Nason Street to US 7, it should be reclassified as an urban collector to reflect its current function in the street system.

- The Federal Street Connector will be a locally owned and maintained roadway. When completed, all segments should be designated as class 2 town highways.
- The Federal Street Connector, when complete and the Saint Albans State Highway should be included on the VT Truck Network. This designation will remove a potential bureaucratic obstacle for businesses that need to ship or receive supplies and products on trucks with 53 foot trailers (trucks with trailers greater than 53 feet require a permit to travel on roadways that are not part of the VT Truck Network).

The traffic analysis evaluates whether or not the intersection designs recommended in the 1995 Study will provide adequate levels of service based on new land use assumptions and a planning year that extends to 2025. The following scenarios are analyzed:

- 2005 existing conditions;
- 2025 No-Build: assumes no changes to the existing roadway system;
- 2025 North Alternative 1: Includes the Federal Extension between the Saint Albans State Highway and Nason Street, upgrades to existing streets, and a new road segment that follows the existing railroad right-of-way to Rewes Drive, and follows Rewes Drive to its new proposed intersection with US 7 and VT 105 (See Figure 1 on page 3); and
- 2025 North Alternative 2: The same as above except the northern section follows Lower Newton Street and Sunset Meadows Road, and continues on a new alignment to Rewes Drive; and follows Rewes Drive to its new intersection with US 7 and VT 105 (See Figure 1 on page 3).

The key findings of the traffic analysis are:

- The intersection designs recommended in the 1995 study are projected to operate at acceptable levels of service through the 2025 planning horizon for North Alternatives 1 and 2;
- The Federal Street Connector helps reduce or eliminate congestion along the Main Street Corridor and improves accessibility to Main Street; and
- North Alternative 1 is more effective at satisfying the project's purpose than North Alternative 2 because it serves more traffic. As a result, North Alternative 1 is more successful at reducing delay along Main Street and improving accessibility to Downtown Saint Albans.

8.2 FINDINGS RELATIVE TO THE MULTIMODAL CENTER

The City of Saint Albans is served by highway, intercity rail and bus service, an extensive sidewalk system, and is the western terminus of the Missisquoi Valley Rail-Trail. However, efficient



connections between these different modes are missing. Existing passenger intermodal facilities are dispersed and there is a lack of easily accessible information about how and where a traveler can transfer from one mode to another.

The two most significant issues are:

- The Amtrak Station and the bus stops for Vermont Transit and Greyhound intercity service are separated by approximately one mile. Amtrak provides the name of a taxi service for patrons that wish to transfer from the train to a bus, but the information is not readily available; and
- The Missisquoi Valley Rail-Trail lacks a connection to Downtown, the Amtrak Station, and intercity bus service.

A multimodal center, in combination with the Federal Street Connector, has the following opportunities:

- The general area proposed for the multimodal center is served by a well connected and extensive sidewalk system;
- A multimodal center in the City of Saint Albans would be well situated to serve commuters from Franklin County to Chittenden County. The Chittenden County Transportation Authority has identified an inter-regional commuter route connecting Chittenden County to St. Albans. In the long-term, a commuter rail service between St. Albans and Chittenden County could be provided. The multimodal center could serve both services.
- The multimodal center would create an opportunity to co-locate the intercity bus service and Amtrak. The Federal Street Connector would improve accessibility for a bus from the interstate to the Amtrak Station and may make the center city location more attractive for the private intercity transit operators.
- The multimodal center is a logical place to anchor the Missisquoi Valley Rail-Trail. It could include parking for rail-trail users and would provide efficient transfers between the rail-trail, Amtrak Vermonter, and other future transit services. Parking and amenities (such a showers, information kiosks, and communication services) could also be available at the multimodal center for rail-trail users. The Federal Street Connector could provide the missing link between the Missisquoi Valley Rail-Trail and Downtown Saint Albans.



PART II: FEDERAL STREET CONNECTOR CONCEPT DESIGN

This part of the report updates the 1995 design concepts for the Federal Street connector based on the traffic volumes and policy changes that are discussed in Part I. It presents concept designs and order of magnitude cost estimates for the Federal Street Connector, identifies right-of-way impacts and acquisition needs, identifies potential natural and cultural resource impacts, and includes an implementation plan.

1.0 ROADWAY SECTION

The typical roadway section for the proposed Federal Street Connector consists of two 11 foot lanes with 4 foot wide bike lanes in each direction. Curbing would be installed on both sides of the highway and 5 foot sidewalks would be constructed where appropriate. The recommended right-of-way width in undeveloped areas is 80 feet, to allow adequate room for side slopes and future utilities. The minimum recommended right-of-way width is 60 feet. Within the urban environment, the existing minimum 60 foot right-of-way will be sufficient to maintain adequate level of service.

2.0 POSTED SPEED

The recommended posted speed for the Federal Street Connector is 35 mph between the US 7-SASH intersection and Nason Street; 25 mph between Nason Street and Lower Newton Street; and 35 mph along the northern portion between Lower Newton Street and the US 7-VT 105 intersection. These posted speed limits are consistent with posted speed limits within the City of St. Albans and the Town of St. Albans.

3.0 FEDERAL STREET DESIGN SEGMENTS

This section of the report describes the designs proposed for the intersections and roadway cross-sections along the following five segments of the Federal Street Connector:

- US Route 7/VT Route 105 – Lower Newton Street;
- Lower Newton Street – Kingman Street;
- Kingman Street – Lower Weldon Street;
- Lower Weldon Street – Nason Street; and
- Nason Street – St. Albans State Highway.

Alternatives designs are presented for the Federal Street-Lake Street intersection which is located within the segment between Kingman Street and Lower Weldon Street. Concept plans are presented in the body of the report where necessary to assist the discussion. Complete concept plans are contained in Appendix G.

Preliminary cost estimates are presented for each segment and summarized at the end of in Section 4.0. Estimated costs include per unit costs for construction items, property acquisition, contractors overhead and profit, engineering design and permitting, and a twenty percent contingency. Appendix



E contains the detailed cost estimates. Additional engineering design needs to occur to refine the construction cost estimates presented in this report. This refinement will occur in future phases of this project.

3.1 FEDERAL STREET CONNECTOR: US7-VT105 TO LOWER NEWTON STREET

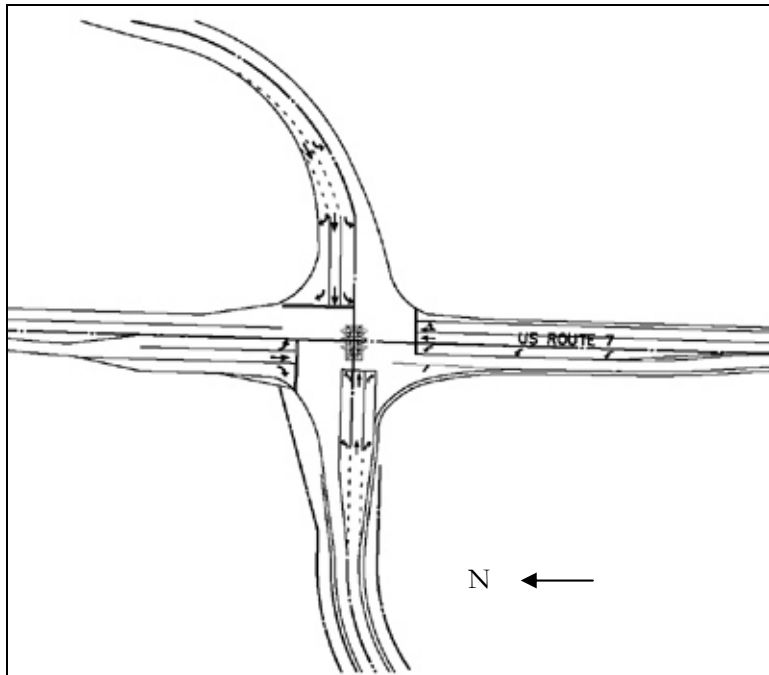
There are two seemingly logical locations for the connection of the proposed Federal Street Connector to US 7 North Main Street: (1) Connect at the US 7-VT 105 intersection; or (2) Connect at the US 7-Seymour Road intersection.

The US 7-VT 105 intersection was analyzed in the 2004 Hoyle, Tanner & Associates Study¹ that selected a preferred alignment based on traffic improvement, cost, and feasibility. The preferred alternative in the study re-aligned VT 105 with Rewes Drive creating a 4-legged intersection and terminated Seymour Drive at a cul-de-sac. Given the proposed realignment of VT 105 with Rewes Drive, this location was deemed to be the most logical intersection for the northern terminus Federal Street Connector.

Based on the projected traffic volumes, a traffic signal and the lane configuration shown in Figure 33 are recommended for the US 7-Federal Street Connector-VT 105 intersection. Additional lanes beyond those recommended in the Hoyle Tanner study are necessary to accommodate the additional turning movements that would occur at this intersection if the section of the Federal Street Connector north of Lower Newton Street is constructed.

¹ HTA: US Route 7/VT Route 105 Intersection Alternative Alignment Study. January 2004.



Figure 22: US 7-VT 105-Federal Street Connector Intersection

The roadway cross-section between US 7 and Newton Street should consist of two 12-foot travel lanes and two 4-foot bike lanes. The segment has a design speed of 35 mph consistent with the portion of US 7 north of the City limits.

Rewes Drive should be realigned so that it westbound intersects the Federal Street Connector at a “T”. The Rewes Drive approach should be controlled by a stop sign.

The proposed Connector will extend from the Rewes Drive intersection south, adjacent to the New England Central Railroad right-of-way. This section of the alignment has limited available space and joint use of the New England Central Railroad right-of-way will be required. Additional land will also need to be acquired from The Fonda Group. Due to the topography in this area, and proximity of The Fonda Group's warehouse, it will be necessary to construct a retaining wall along the westerly side of the proposed Federal Street Connector right-of-way. This retaining wall is necessary to support the embankments and fill required for the proposed Federal Street Connector. An existing power transmission line must also be relocated, and modifications will be required to the overhead conveyor owned by The Fonda Group. Construction of the Connector through The Fonda Group property is feasible without significant disruption to the New England Central Railroad or The Fonda Group operations. Due to the closure of the Fonda Group's facilities some of the constraints could be eliminated as the plant is updated for future occupants.



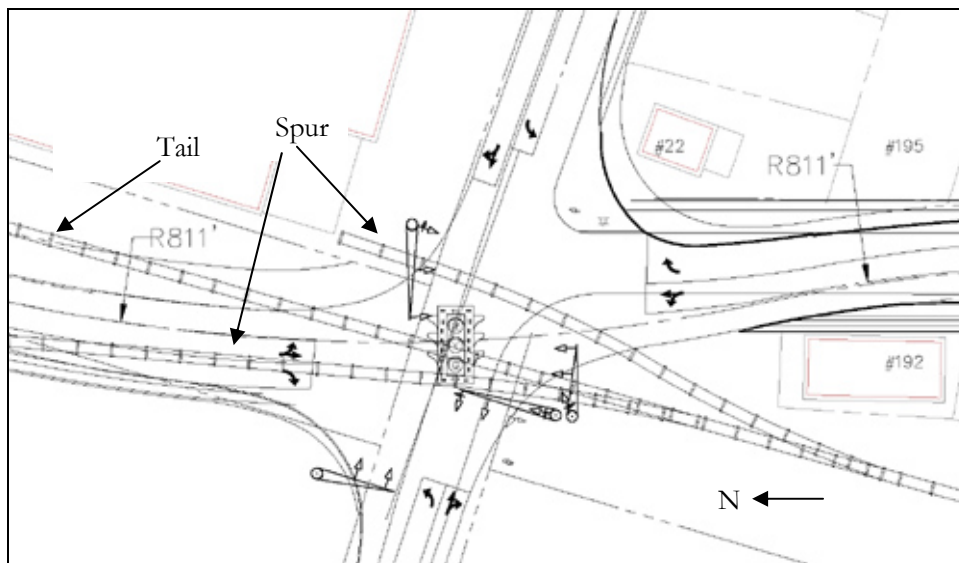
US 7-Lower Newton Cost Estimate: \$4,676,350 (Includes reconstruction of the US 7-VT 105 intersection)

3.2 FEDERAL STREET CONNECTOR: LOWER NEWTON STREET TO KINGMAN STREET

The intersection of the proposed Federal Street Connector with Lower Newton Street will be skewed in order to improve the alignment with the existing Federal Street. Exclusive right-turn lanes on the proposed Federal Street Connector are required. Exclusive left-turn lanes on Lower Newton Street are also recommended.

This intersection includes three existing railroad tracks that serve The Fonda Group and the New England Central Railroad tail track. These tracks see very low usage, however. The two spur tracks to The Fonda Group buildings are used about once per week. Because of the configuration of the intersection and the location of the tracks, it will be impossible to provide effective railroad crossing signals. Presently, when these tracks are used, flagmen from the railroad are present. This practice would need to be continued and will be even more important once the proposed Federal Street Connector is constructed. To minimize maintenance for the New England Central Railroad, the length of railroad track located within the paved areas should be minimized. The tail track, which extends just past the Fonda Facility, is needed by the New England Central Railroad for switching maneuvers and cannot be removed though they have mentioned that the spurs could be realigned slightly to better accommodate the proposed roadway design. The exact alignment may change as the Fonda Facility is redeveloped.

Figure 23: Federal Street Connector-Lower Newton Street Intersection



The location of the loading docks at the Fonda Facility causes tractor-trailers to block the Lower Newton-Federal Street intersection when accessing the plant. In order to maneuver back to the docks, trucks must utilize Federal Street and back across the intersection of Lower Newton Street. When the Fonda Facility is redeveloped it is recommended that the loading facilities be relocated.

The traffic circulation at The Fonda Group's warehouse on the westerly side of the railroad tracks should also be modified. Currently, traffic circulation is one-way in a clockwise manner, which causes traffic to exit from The Fonda Group very near the intersection with Federal Street. Once additional turning lanes and signals are installed any queuing on the eastbound approach of the Lower Newton Street intersection will block traffic exiting the Fonda property. The traffic circulation for Fonda's warehouse should be reversed and move in a counter-clockwise direction. This will allow traffic to exit their property further from the intersection and reduce the impact of queuing.

The proposed Federal Street Connector will extend south from Lower Newton Street along the existing Federal Street alignment. Improvements to the street will be required, including widening and constructing new bike lanes, curbs, and sidewalks. Presently, there is no curbing or sidewalks on the west side of the street. Many of the existing driveways are extremely wide and often extend the entire length of the individual properties. These driveways should be reduced to the minimum width necessary and consolidated where practical to improve access management along the Connector. Driveway modifications are especially significant for the St. Albans Cooperative Creamery and the Clarence Brown, Inc. properties. These properties will require special evaluation to design the minimum curb cuts necessary, while maintaining the ability of these businesses to function. The intersections of Federal Street with Aldis Street and Deal Street will require improvements to facilitate tractor trailer traffic. These streets see significant amounts of tractor trailer traffic entering and leaving the St. Albans Cooperative Creamery. The intersections with Hoyt Street, Hudson Street, Center Street and Kingman Street will require minor improvements.

Additional right-of-way acquisition may need to occur on the westerly side of Federal Street between Hoyt Street and Kingman Street. According to the St. Albans City Tax Maps, the existing right-of-way width in this vicinity is 49.5 feet. The right-of-way width for the proposed Federal Street Connector is 60 feet. Acquisition of an additional 10.5 feet of right-of-way on the westerly side of Federal Street will conflict with an existing gas pump island at the Clarence Brown property. Also, an existing underground fuel storage tank is located within the land that would be acquired. In order to minimize safety concerns, the easterly gas pump island at the Clarence Brown facility should be relocated elsewhere on the property.

Significant improvements are required to Federal Street between Kingman Street and Lake Street. For the convenience of businesses on the easterly side of Federal Street, limited on street parking should remain where practical. Parking in front of the New England Central Railroad headquarters would be eliminated.



Lower Newton to Kingman Street Cost Estimate: \$2,025,365 (Includes the Federal Street-Lower Newton Street intersection)

3.3 FEDERAL STREET CONNECTOR: KINGMAN STREET TO LOWER WELDON STREET

The following four design alternatives are evaluated for the segment between Kingman Street and Lower Weldon Street:

- Alternative 1: Traffic Signal Aligned with Catherine Street – WB 50;
- Alternative 2: Traffic Signal Aligned with Market Street – WB 67;
- Alternative 3: Roundabout Aligned with Market Street – WB 67; and
- Alternative 4: Roundabout with Alignment between Catherine and Market Streets – WB 67.

The 1995 study suggests a roundabout for the intersection of Lake Street and Federal Street. These alternatives have been considered because the Northwest Regional Planning Commission and the City of Saint Albans asked that the roundabout be evaluate based on revised traffic projections and on the wealth of knowledge that ha been gained with roundabouts since 1995. Because one purpose of the Federal Street Connector is to provide truck access to the industrial area along the corridor, the roundabout and traffic signal alternatives have been developed based on their ability to accommodate 50 foot tractor trailers or 67 foot tractor trailers (which are allowed to travel without a permit on state highways that have been designated part of the VT Truck Network). The alternatives also vary depending on whether or not the northbound approach of the Federal Street Connector will follow Catherine Street, Market Street, or between Catherine and Market Street.

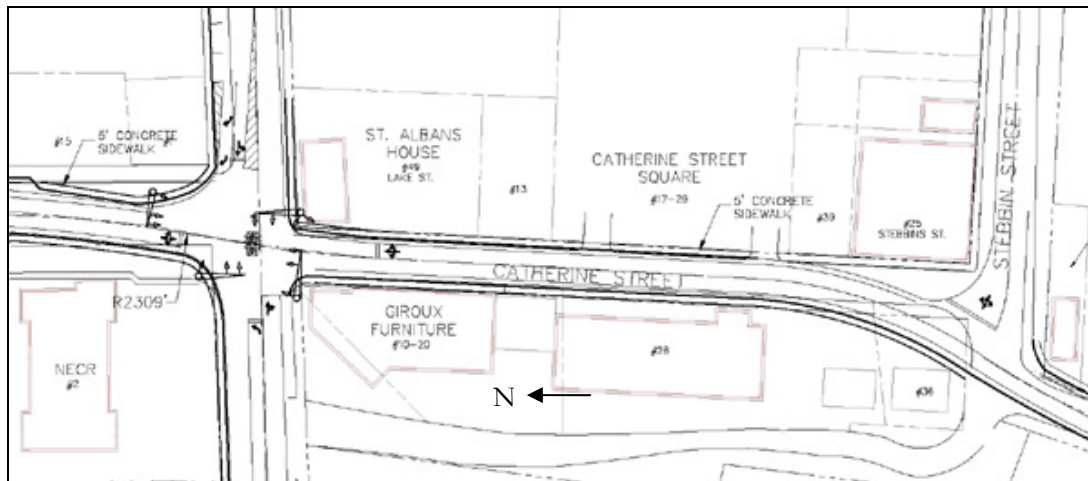
3.3.1 Alternative 1: Traffic Signal Aligned with Catherine Street

The intersection design has the smallest land area impacted. The proposed Federal Street Connector follows the existing alignment, and uses an upgraded Catherine Street to continue south. Market Street to the west would be closed, and possibly support a parking lot to replace displaced on-street parking on Catherine Street. The alternative accommodates the WB-50 design vehicle turning into and out of Lake Street from the proposed Federal Street Connector.

The traffic signal for Alternative 1 and 2 should be coordinated with the at-grade railroad crossing on Lake Street to allow vehicles queues across the tracks to clear. The operation and coordination of traffic signals and the railroad crossing should be addressed in final design.

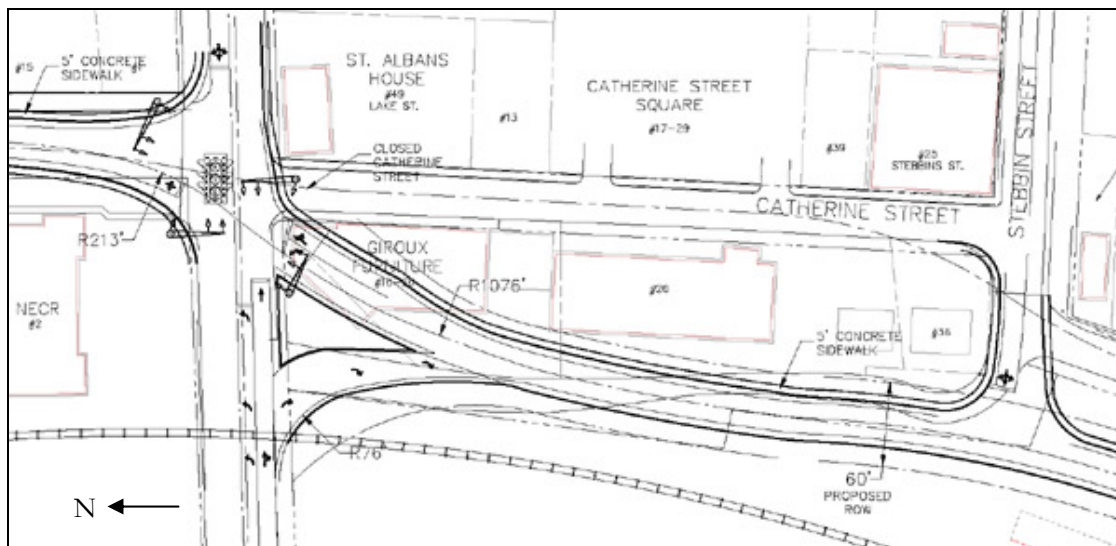
Kingman to Lower Weldon Alternative 1 Cost Estimate: \$1,385,000.



Figure 24: Lake St.-Federal St. Intersection Alternative 1**3.3.2 Alternative 2: Traffic Signal Aligned with Market Street**

The intersection design utilizes the Market Street alignment. The acute angle of the Market Street approach requires a slip-lane to allow tractor trailers to turn from eastbound Lake Street onto Market Street. This design accommodates WB-67 trucks along the proposed Federal Street Connector and Lake Street, west of Federal Street. The alignment requires the demolition of the Giroux Furniture Store.

Kingman to Lower Weldon Alternative 2 Cost Estimate: \$2,301,920

Figure 25: Lake St.-Federal St. Intersection Alternative 2

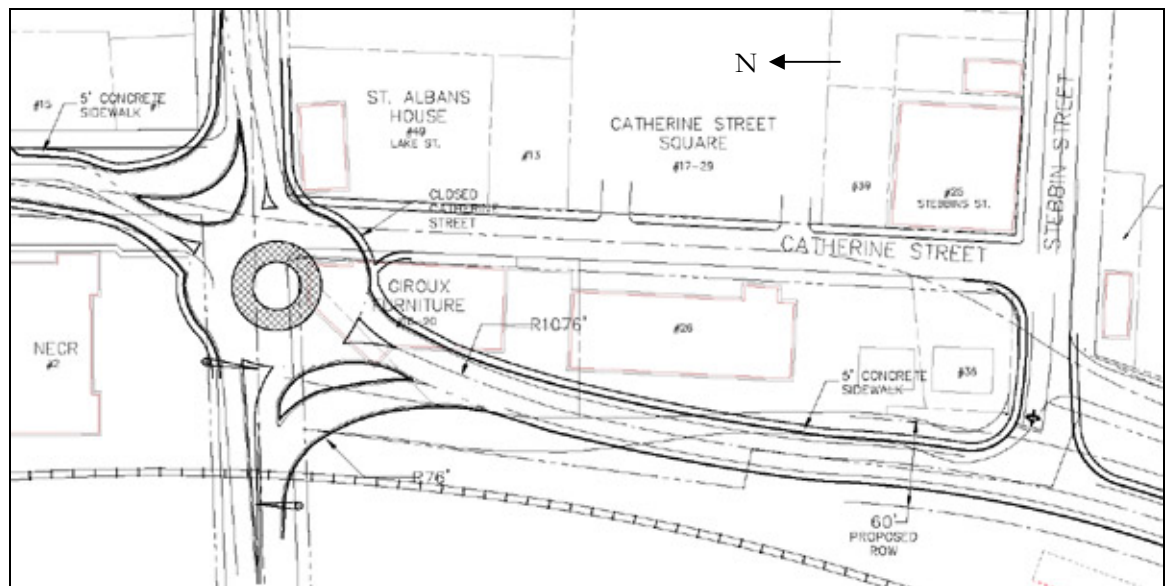
3.3.3 Alternative 3: Roundabout Aligned with Market Street

The intersection design utilizes the Market Street alignment requiring the demolition of the Giroux Furniture Store. The acute angle of the northbound approach requires a slip-lane to allow tractor trailers to turn from eastbound Lake Street onto Market Street. This design accommodates WB-67 trucks along the proposed Federal Street Connector and Lake Street, west of Federal Street.

Both roundabout alternatives will require that gates be installed on the Lake Street approach that would operate in conjunction with the at-grade railroad crossing. Signs notifying motorists that the westbound Lake Street exit from the roundabout will be closed while trains are crossing Lake Street. A similar design, that includes gates on approaches to a roundabout in conjunction with a railroad crossing, are proposed for a roundabout that VTrans plans to construct at the US 2-US 302 intersection in Montpelier. The final design for this location should utilize the experience gained at the US 2-US 302 intersection and modify if necessary.

Kingman to Lower Weldon Alternative 3 Cost Estimate: \$2,371,580.

Figure 26: Lake St.-Federal St. Intersection Alternative 3

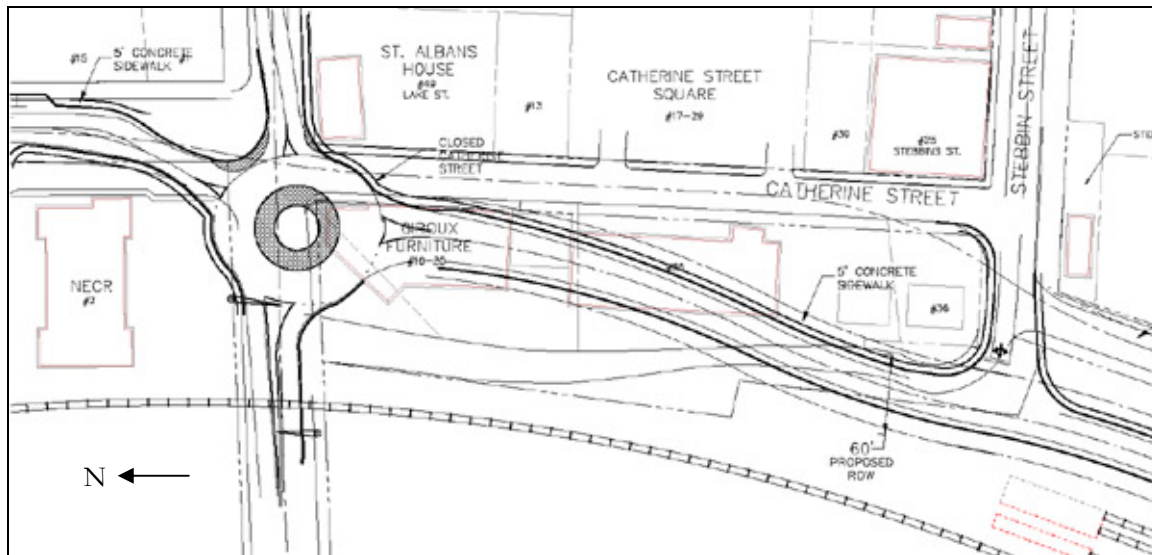


3.3.4 Alternative 4: Roundabout with Alignment between Catherine and Market Streets

The intersection design utilizes a new alignment requiring the demolition of the block of buildings between Market Street and Catherine Street. The roundabout design can accommodate WB-67 trucks along the proposed Federal Street Connector and Lake Street, west of Federal Street.

Kingman to Lower Weldon Alternative 3 Cost Estimate: \$2,848,810

Figure 27: Lake St.-Federal St. Intersection Alternative 4



3.3.5 Alignment of Federal Street Connector along Catherine and Allen Streets

Catherine and Allen Streets would be significantly re-aligned, reconstructed, or not used depending on the design alternative at the Federal Street-Lake Street intersection. In design Alternative 1, the Federal Street Connector would continue to follow Catherine and Allen Streets as shown in Figure 28. These existing streets would be improved and widened to the typical Federal Street Connector cross-section to accommodate two 11-foot travel lanes, two 4-foot bike lanes, and new sidewalk and curb on the west side.

If Alternatives 2, 3, or 4 of Lake Street-Federal Street intersection is constructed, the Federal Street Connector will follow the alignment shown in Figure 29. This new alignment would allow the conversion of Catherine Street into a restricted access street serving the existing businesses.

Currently vehicles park facing businesses and back out into Catherine Street at The Showroom property (26 Catherine Street). Curb cuts need to be closed along the westerly side of Catherine Street. This will require the relocation of parking spaces for The Showroom. In addition, in order to

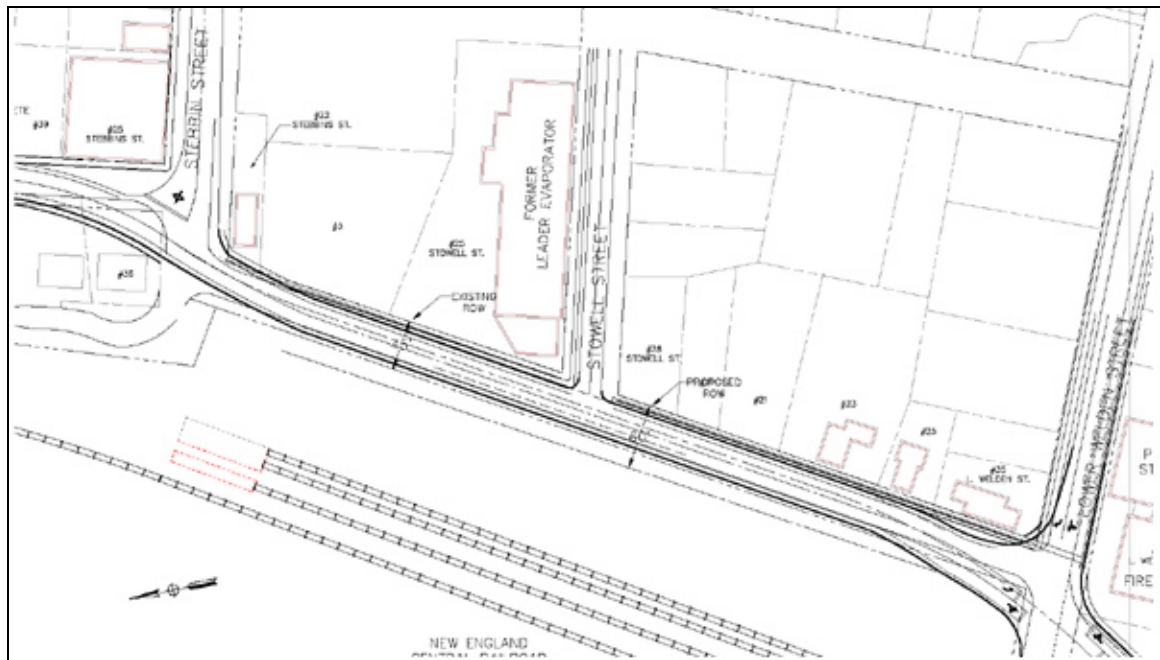


align Catherine Street with Allen Street, it will be necessary to acquire the land and building at 36 Stebbins Street, and to acquire a small portion of the parking lot south of The Showroom.

Market Street is owned by the New England Central Railroad, but was once owned by the City of St. Albans. Under the four design alternatives, Market Street should be re-acquired to either provide land for a new road alignment or provide parking spaces for the displaced Catherine Street parking.

Alternative 1 realigns Stebbins Street to intersect the proposed Federal Street Connector. The intersection would be “Stop” controlled along Stebbins Street. Alternative 1 upgrades Allen Street by widening along the western side. This will require the acquisition of additional right-of-way from the New England Central Railroad.

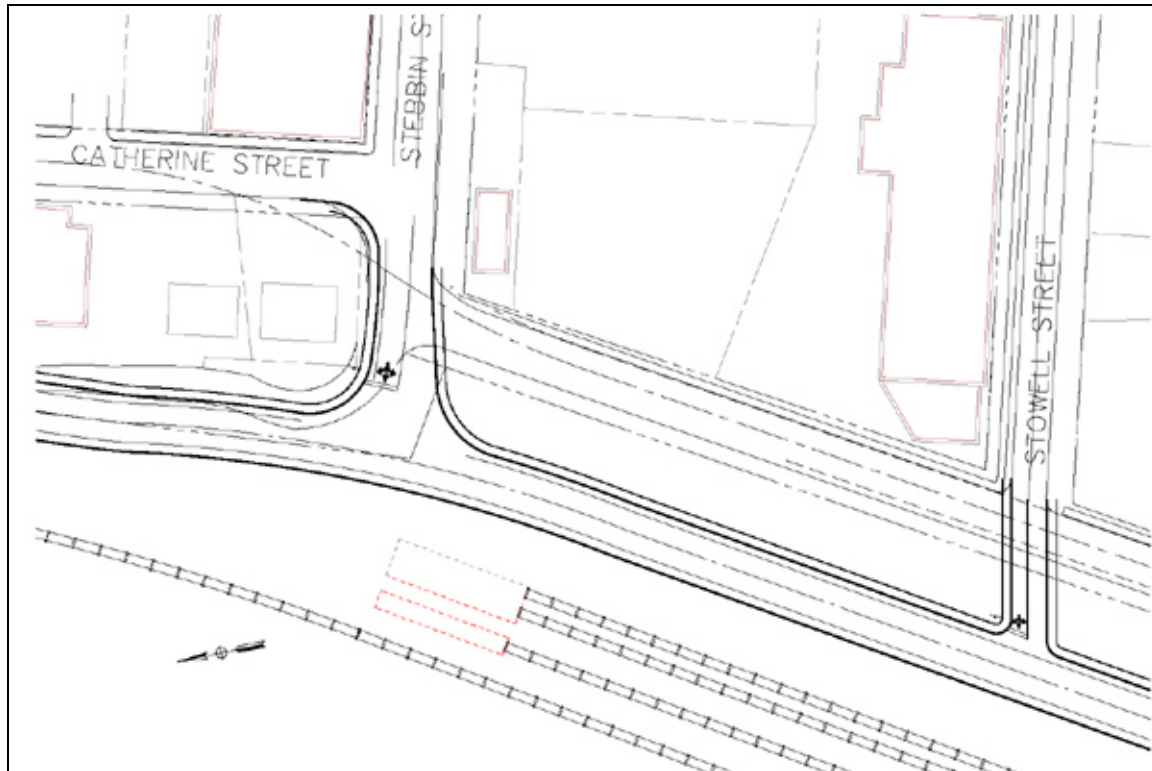
Figure 28: Alignment of Federal St. Connector between Stebbins to Weldon for Alternative 1



Alternatives 2, 3, and 4 include a new alignment, just west, but parallel to the existing Allen Street. The existing Allen Street would be demolished. The new alignment straightens the highway creating square angles at the intersections at Stebbins Street and Lower Weldon. This will require the acquisition of additional right-of-way from the New England Central Railroad.



Figure 29: Alignment of Federal St. Connector between Stebbin to Weldon for Alternatives 2-4



3.3.6 Kingman Street to Lower Weldon Street Alternatives Evaluation Matrix

Table 20 compares Alternatives 1-4 relative to access and mobility for vehicles, pedestrians, trucks and trucks using the following qualitative terms:

- **Not Addressed** – The alternative has no effect and does not address the specific issue;
- **Improved** – The alternative improves conditions related to the specific issue;
- **Neutral** – The alternative does not have a positive or negative consequence; and
- **Made Worse** – The alternative makes conditions worse.

Table 20 also compares the area impacted, and the costs associated with the alternative. The amount of land area impacted is a rough estimate of the total size of the Federal Street – Lake Street intersection.

The following observations can be made based on the information presented in Table 20:

- All four alternatives are effective at providing acceptable level of service for the intersection;
- All four alternatives improve operation relative to the railroad grade crossing because they all provide some level of control where none currently exists. The roundabout offers an



advantage over the traffic signal because it allows vehicles to change direction and to exit from the other three approaches that would not be closed with the gate. A traffic signal could be designed to allow movements through the intersection that are not destined to Lake Street west of the railroad crossing. However, this operation would require additional turn lanes on the Federal Street, Catherine Street, and Lake Street westbound approaches and would therefore have additional costs and impacts.

- The traffic signal and roundabout alternatives will each improve access for pedestrians. The traffic signal would include pedestrian crossing signals with audible crossing indicators that serve pedestrians that have a visual disability. The roundabout offers shorter crossing distances, pedestrians only need to cross one direction of travel at a time, and the slower operating speeds of roundabouts are safer for pedestrians, but does not typically include audible pedestrian crossing signals.
- Relative to truck access, Alternative 1 does not offer any improvement because turning radii are restricted by the existing buildings. Since the Federal Street Connector is intended to improve truck access, Alternative 1 is the least desirable alternative. Alternatives 2-3 all improve access for large trucks along Federal Street and those that will turn to and from Lake Street west of the intersection.
- Alternatives 2 and 3 each require the construction of a slip lane from Lake Street westbound to the southbound Federal Street Connector to accommodate WB-67 trucks. Slip lanes are not desirable in an urban environment because they can increase speeds and create an additional conflict points with pedestrians and between vehicles where the slip lane merges with the main roadway.
- Overall, Alternative 4 – Roundabout with Federal Street realigned between Catherine and Market Streets provides the most benefits relative to vehicle mobility, truck access, and pedestrian access. However, this alternative is the most expensive of the four and also requires removing the entire block of buildings between Catherine and Market Streets. Alternatives 2, 3, and 4 should all be considered further in the final design.



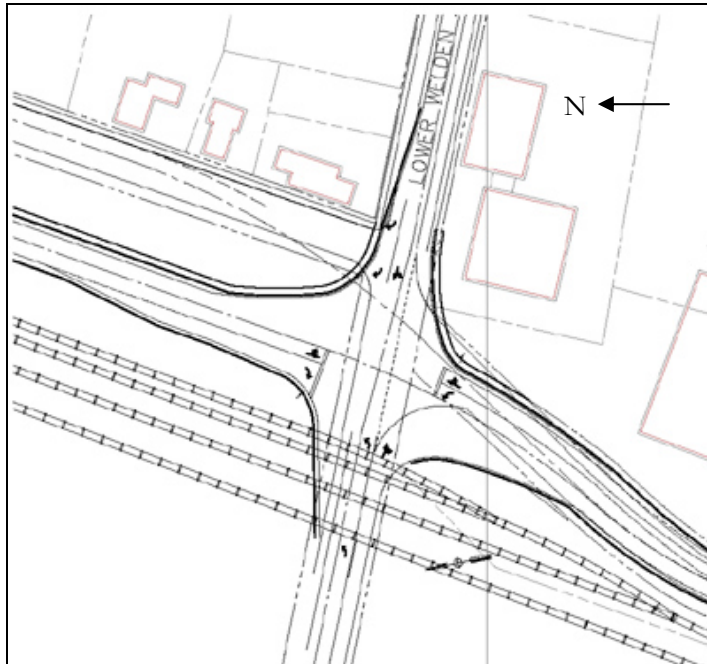
Table 20: Lake Street-Federal Street Intersection Alternatives Comparison

Roadway Alternatives		Stop Controlled	Traffic Signal		Roundabout	
Objective	Measure	No-Action	Alt 1	Alt 2	Alt 3	Alt 4
Pedestrian Mobility	Accommodations for travel	Not Addressed - No Existing Facilities	Improved - Bike Lanes & Crosswalks	Neutral - Bike Lanes & Crosswalks, but additional slip lane crossing	Neutral - Slower speeds, peds cross one lane at a time, additional slip lane crossing	Improved - Slower speeds, peds cross one lane at a time
Minimize Affect of Railroad Crossing	Impact of Frequent Crossings	Not Addressed - No signage	Improved - Coordinate Signal with RR-Xing	Improved - Coordinate Signal with RR-Xing	Improved - Coordinate Gates with RR-Xing	Improved - Coordinate Signal with RR-Xing
Access for Disabled Pedestrians	Facilities to accommodate Disabled	Not Addressed - No Existing Facilities	Improved - Controlled Marked Ped Crossings	Neutral - Controlled Marked Ped Crossings, but adds slip lane crossing	Neutral - Uncontrolled Marked Ped Crossings	Neutral - Uncontrolled Marked Ped Crossings
Minimize Congestion	Delay (secs) and LOS	41.9 LOS E	Improved - 18.1 LOS B	Improved - 25.2 LOS C	Improved - 5.3 LOS A	Improved - 5.3 LOS A
Accommodate Large Trucks	Size of Design Vehicle Accommodated on corners	Not Addressed - EB - Lake Street toward Main Street - WB 50 Not Addressed - WB - Lake Street toward the Lake - WB 50 Not Addressed - NB - Catherine Street - WB 50 Not Addressed - SB - Federal Street - WB 50	Neutral - EB - Lake Street toward Main Street - WB 50 Neutral - WB - Lake Street toward the Lake - WB 50 Neutral - NB - Catherine Street - WB 50 Neutral - SB - Federal Street - WB 50	Improved - EB - Lake Street toward Main Street - WB 67 Neutral - WB - Lake Street toward the Lake - WB 50 Improved - NB - Catherine Street - WB 67 Improved - SB - Federal Street - WB 67	Improved - EB - Lake Street toward Main Street - WB 67 Neutral - WB - Lake Street toward the Lake - WB 50 Improved - NB - Catherine Street - WB 67 Improved - SB - Federal Street - WB 67	Improved - EB - Lake Street toward Main Street - WB 67 Neutral - WB - Lake Street toward the Lake - WB 50 Improved - NB - Catherine Street - WB 67 Improved - SB - Federal Street - WB 67
Impacts						
Impervious Area of Alternative	Size in 1,000 Sq. Feet	8.5	10.5	22.3	21.8	19.8
Estimated Property Taking Reimbursement	Cost of Acquisition	N/A	\$200,000	\$425,000	\$425,000	\$775,000
	% of Total Cost is Land Reimbursement	N/A	14.4%	18.5%	17.9%	27.2%
Total Cost of Alternative		\$0	\$1,385,000	\$2,301,920	\$2,371,580	\$2,848,810

3.3.7 Federal Street Connector: Lower Weldon Street to Nason Street

The intersection of Allen Street, Lower Weldon Street and Lemnah Drive would need to be aligned to accommodate through traffic. Exclusive left-turn lanes are required on all four legs of the intersection. This would require construction of an additional lane on Lower Weldon Street. The proximity of this intersection to the New England Central Railroad tracks creates concerns with potential queuing of traffic across the tracks on the eastbound leg. As shown in Figure 30, there are four railroad tracks crossing Lower Weldon Street. Ideally, Lower Weldon Street would be controlled by stop signs, and through traffic would be free to flow on Allen Street and Lemnah Drive along the Federal Street Connector. However, because of the proximity to the railroad tracks, and the potential safety concerns with vehicles queuing across the tracks, Lower Weldon Street should maintain through traffic and Allen Street and Lemnah Drive should be controlled by "Stop" signs. In the future, it is possible that signalization could be installed at this location and the signals coordinated with the railroad crossing signals. Through the year 2025, it is anticipated that stop controls on Allen Street and Lemnah Drive will be adequate.

Figure 30: Federal Street Connector - Lower Weldon Street Intersection



Roadway improvements along Lemnah Drive are required to meet the typical recommended cross-section. Lemnah Drive would be widened to the 32 foot pavement section within the existing 60 foot right-of-way and a sidewalk would be constructed along the easterly side. The bridge over Stevens Brook is not adequate in width and needs to be widened to at least 37 feet to accommodate the



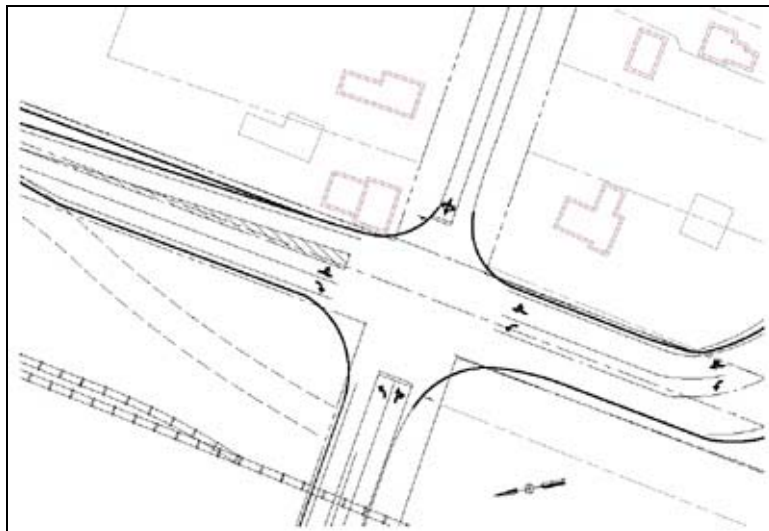
roadway and sidewalk. Existing industries in the City's Industrial Park on Lemnah Drive have parking lots in front of their buildings and vehicles back out onto Lemnah Drive. Modifications to the parking lots should remove on-street parking. All unnecessary curb cuts should be closed to maximize safety and minimize congestion.

Lower Weldon Street to Nason Street Cost Estimate: \$1,961,935 (Including the cost of the Lower Weldon-Federal Street Connector Intersection).

3.3.8 Federal Street Connector: Nason Street to St. Albans State Highway

The Nason Street-Federal Street Connector intersection is similar to the intersection of Lemnah Drive with Lower Weldon Street, but presents less concern for safety due to the proximity to the railroad. The intersection is located approximately 120 feet from the New England Central Railroad track; however, there is only one railroad track crossing Nason Street, and there is sufficient room for queuing of five vehicles between the intersection and the railroad track. The addition of an exclusive left-turn lane on Nason Street eastbound will provide queuing for up to ten vehicles in both lanes before conflicts with the railroad track occur. It is VTrans policy to upgrade any rail crossings with fully actuated signals and gates within the 'influence area' of highway work. The upgrade of the Nason Street rail crossings would be included in the overall Federal Street Connector project.

Figure 31: Nason Street-Federal Street Intersection



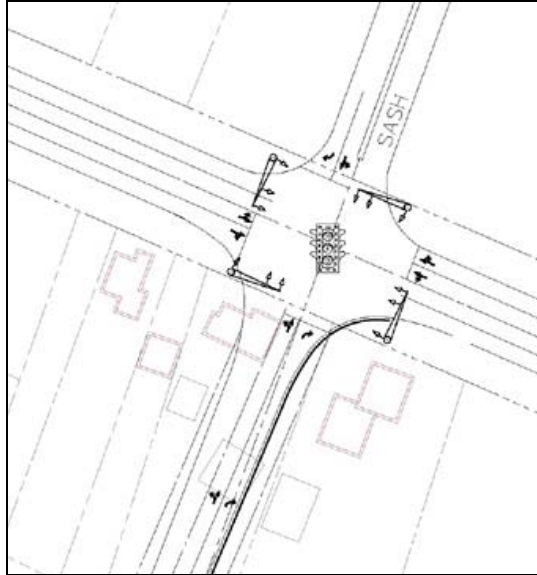
The proposed Federal Street Connector would continue south from Nason Street turning east terminating at a new four-way intersection at US 7 South Main Street and the St. Albans State Highway. Construction of the proposed Federal Street Connector easterly to South Main Street will



impact several properties along Nason Street. The City of St. Albans has acquired the required right-of-way for this segment of the project.

The new southern section of roadway would consist of three 11 foot travel lanes and two 4 foot shoulders. The long turn lanes provide storage for all turning vehicles out of the Federal Street Connector.

Figure 32: US 7-Federal Street Connector-Saint Albans State Highway



The four-way intersection at South Main Street would need to be signalized and two through lanes provided along US 7, each with appropriate permissive turn lanes. The Federal Street and Saint Albans State Highway approaches will each have exclusive right turn lanes.

Nason Street to US 7 Cost Estimate: \$1,502,210 (Includes the cost of the Federal Street Connector intersections with Nason Street and US 7/Saint Albans State Highway).



4.0 COSTS AND IMPACTS

This section summarizes the costs for the entire Federal Street Connector as described above and provides a preliminary assessment of the right-of-way needs, storm water issues, and natural and cultural resource impacts.

4.1 TOTAL FEDERAL STREET CONNECTOR COSTS

Table 21 summarizes the estimated cost for the by segment and for the entire Federal Street. The costs include The “alternatives” column refers to design options evaluated at the Lake and Federal Street intersection within the Kingman and Lower Weldon Street segment.

Estimated costs include per unit costs for construction items, property acquisition, contractors overhead and profit, engineering design and permitting, and a twenty percent contingency. Appendix E contains the detailed cost estimates. Additional engineering design needs to occur to refine the construction cost estimates presented in this report. This refinement will occur in future phases of this project.

By building the entire project at one time, rather than in segments, the overall cost may be less due to economies of scale.

Table 21: Total Federal Street Connector Highway Costs

Segment	Alternative 1	Alternative 2	Alternative 3	Alternative 4
US 7 to Lower Newton	\$ 4,676,350	\$ 4,676,350	\$ 4,676,350	\$ 4,676,350
Lower Newton to Kingman	\$ 2,025,365	\$ 2,025,365	\$ 2,025,365	\$ 2,025,365
Kingman to Lower Weldon	\$ 1,385,000	\$ 2,301,920	\$ 2,371,580	\$ 2,848,810
Lower Weldon to Nason	\$ 1,961,935	\$ 1,961,935	\$ 1,961,935	\$ 1,961,935
Nason to SASH	\$ 1,502,210	\$ 1,502,210	\$ 1,502,210	\$ 1,502,210
Totals	\$ 11,550,860	\$ 12,467,780	\$ 12,537,440	\$ 13,014,670

4.2 PROPERTY ACQUISITION

Many landowners adjacent to the Federal Street Connector will be affected by the proposed project. Several parcels of land will need to be acquired in order to construct the Federal Street Connector. In almost all the cases only a small portion of the property is needed.

Final surveys and engineering design are necessary before a final determine of property impacts and necessary property acquisition. This study has identified the parcels that are potentially impacted by the construction of this project. A preliminary list of properties that will be impacted is included in Table 22. This list will likely change as the project moves forward into further phases of design.



Table 22: Impacted Properties by the Proposed Federal Street Connector

Location	Property Owner	Description
10-18 Catherine Street	Giroux Furniture Store	Amount of impact varies with alternative in Section 3
26 Catherine Street	Giroux Furniture Store	Amount of impact varies with alternative in Section 3
36 Catherine Street	LaPierre, Marc E	Amount of impact varies with alternative in Section 3
2 Federal Street	CV Properties (NECR BUILDING)	Amount of impact varies with alternative in Section 3
44 Federal Street		10.5' Strip across east side of parcel
48 Federal Street		10.5' Strip across east side of parcel
56 Federal Street		10.5' Strip across east side of parcel
60-68 Federal Street	Maynard Auto Supply	10.5' Strip across east side of parcel
70 Federal Street	Clarence Brown Properties Inc.	10.5' Strip across east side of parcel
		10.5' Strip across east side of parcel. Work with Clarence Brown to provide better Access management from the properties on the west side of Federal Street.
90 Federal Street	Clarence Brown Properties Inc.	10.5' Strip across east side of parcel
112 Federal Street	Clarence Brown Properties Inc.	10.5' Strip across east side of parcel
118 Federal Street	Clarence Brown Properties Inc.	10.5' Strip across east side of parcel
120 Federal Street	Clarence Brown Properties Inc.	10.5' Strip across east side of parcel. Take land for expanded curb to Hoyt Street.
124 Federal Street	Clarence Brown Properties Inc.	Take land for expanded curb to Hoyt Street.
136 Federal Street	Dion, Patricia L	Take land for expanded curb to Deal Street.
154-156 Federal Street	ST Albans COOP Creamery	Work with the Creamery to improve Access Management. Also take a small piece of land for better access to Deal Street.
160 Federal Street	Carr, Richard H	additional take for expanded truck curb entering Aldis.
192 Federal Street	Massey, Thomas W.	If a sidewalk is to be added to the south side of Newton, Land will be taken from parcel.
22 Lower Newton Street	Brown, Gloria	Increased curb radii for turn
32 Lower Newton	Action Industries, LLC	10' Strip across north side of parcel
36 Lower Newton	Action Industries, LLC	10' Strip across north side of parcel
41-43 Hudson Street	Clarence Brown Properties Inc.	Take land for expanded curb to Hudson Street.
		Small take for the expansion of the curb radii. There could be substantial impact to home if sidewalk is to be made on the north side of Nason Street.
29 Nason Street	Martell, Robert A	
	Fonda Corporation	Small take on the south side of property. Additional impacts are along the existing conveyor system, and adjacent to the existing NECR railway ROW.

4.3 STORMWATER

The proposed Federal Street Connector triggers current State guidelines requiring stormwater mitigation by expanding the existing impervious surface by more than one acre. In addition to triggering storm water mitigation, the proposed project lies within an impaired waterway identified by the State of Vermont. This requires that runoff be in compliance with the Vermont Stormwater Management Manual.

As the proposed project moves forward into final design stages, a stormwater drainage system will need to be designed to meet State guidelines for runoff. This most likely will not prohibit the project from moving forward, but may add a significant unexpected cost to the project.

A letter from the Vermont Stormwater Program is included in Appendix F.



4.4 NATURAL RESOURCE IMPACTS

4.4.1 Wetlands

The proposed Federal Street Connector alignment will require a detailed wetlands delineation survey by the Vermont Agency of Natural Resources prior to final design. Wetlands currently exist at the two extremes of the project site; north of Lower Newton Street and south of Nason Street. According to documentation from the Vermont Agency of Natural Resources the exact classification is not confirmed, though assumed to consist of Class II and Class III wetlands.

Class II wetlands require a Conditional Use Determination (CUD) from the Vermont Agency of Natural Resources. A CUD is only issued if it is determined that the project will have no undue adverse impact on the protected functions, unless such impacts are mitigated. Mitigation measures include avoidance and minimization of wetland impacts. Class III wetlands are protected under Federal rules requiring an individual permit from the United States Army Corps of Engineers.

Letters from the Vermont Agency of Natural Resources and the US Army Corps of Engineers are included in Appendix F.

4.4.2 Nongame and Natural Heritage Program

According to the Vermont Agency of Natural Resources, Stevens Brook contains a rare fish species, the Brook Stickleback. The Stevens Brook will be impacted during construction by replacing the existing bridge along Lemnah Street. It is recommended that the Vermont Fish and Wildlife Zoologist be included on ways to avoid or minimize impacts to the rare species. No other rare, threatened or endangered species were found within the study area.

A letter from the Vermont Agency of Natural Resources Fish & Wildlife Department is included in Appendix F.

4.4.3 Hazardous Waste

The Vermont Agency of Natural Resources was contacted to provide data on hazardous waste sites within the project area. The agency referred to their online database of all hazardous waste sites in the State. The project area has a number of potential and identified hazardous waste sites that must be further investigated as the project moves into the next phase of study.

Table 23 and Figure 33 show the locations of hazardous waste sites in the project area.

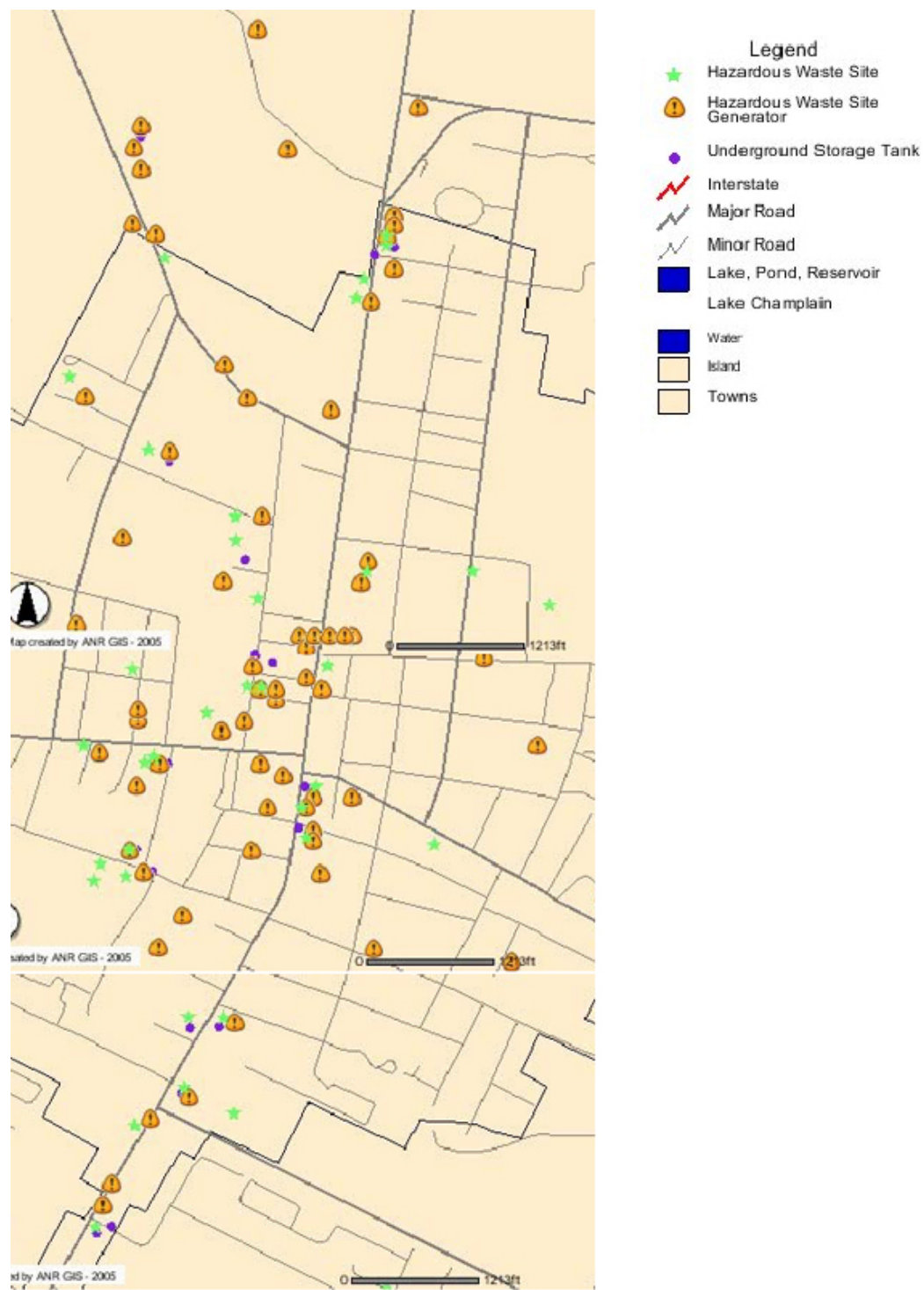


Table 23: St. Albans City Hazardous Waste Sites

770126 - - - CV Railway Inc - - - 2 Federal St. - - - St Albans City - - Cap Completed, New Track Pans installed in 1/98. Remediation system installed and operating. Semi annual ground water monitoring is ongoing.
880225 - - - Leblancs Citgo - - - Rt 105 - - - St Albans City - - Monitoring Ongoing. Old U S T's Removed
890353 - - - Joe Miller Gulf - - - 67 S. Main St - - - St Albans City - - Additional groundwater monitoring needed before site can be SMACed.
900605 - - - Superior Muffler/Mobil - - - Lake St - - - St Albans City - - Pet Contam On Site Invest Proceeding. PRPs arguing about who to perform work.
911075 - - - S. Main St Grocery - - - 139 S Main St - - - St Albans City - - Limited contamination in former UST areas. Annual groundwater monitoring. Next round April 2003.
911110 - - - St Albans Co-op Creamery - - - Deal St - - - St Albans City - - Ongoing Monitoring, Site in Natural Attenuation.
931470 - - - Handy Dodge Toyota - - - 39 S Main St - - - St Albans City - - Annual Groundwater Monitoring. Exceedances of several compounds in onsite wells. Next round Spring 2006.
931517 - - - Lake Street Texaco (Getty) - - - 224 Lake St - - - St Albans City - - Ongoing Monitoring
951906 - - - S B Collins Bulk Facility - - - 54 Lower Welden St - - - St Albans City - - Monitoring PCS and MWs annually in 2006. Dissolved phase gasoline UST contamination offsite, possibly along utility corridor. No significant GW solvent impact from waste oil UST. Monitoring well network extends to CVPS site.
962036 - - - D P W Garage - - - 67 Aldis St - - - St Albans City - - USTs removed, contam found, 4/18/03, 4/13/04 4 MWs above VGES, 1 MW below, 2 MWs ND, biennial monitoring
992646 - - - Clarence Brown Inc. - - - 96 Federal Street - - - St Albans City - - Four NOAVs sent due to hazardous waste handling practices. Investigation needed to determine degree and extent of contamination. Petroleum contamination also found from site ASTs.
20002745 - - - Pizzagalli (former CVPS) - St. - - - Lower Welden Street - - - St Albans City - - Additional SI indicated shallow MODF contamination is insignificant. Residual gasoline contamination from CVPS UST requires additional MWs. Report due 11/22/01.
20022953 - - - St Albans Exxon - - - Route 7 - - - St Albans City - - USTs removed. Contam found. Investigation completed. 8/8 & 11/13/02, 6/30 & 12/2/03 5 of 6 MWs above VGES. Annual monitoring required
20053424 - - - Dutkiewicz Residence - - - 128 Lower Weldon St - - - St Albans City - - Underground storage tank closed in place. Contamination found. Odors in residence. 3 drums soil removed from basement. Investigation needed.



Figure 33: St. Albans City Hazardous Waste Sites



4.4.4 Historic Resources

The Vermont Agency of Transportation Historic Preservation Officer was contacted regarding the impacts of the proposed Federal Street Connector. They responded saying that historic impacts are likely and recommended a qualified architectural historian and consulting archeologist be retained to study the possible impacts.

A letter for the VTrans Historic Preservation Officer is included in Appendix F.

5.0 IMPLEMENTATION

The recently approved Federal Transportation Bill, SAFETEA-LU includes the following earmarked funds for the Federal Street Connector:

- \$960,000 for a Saint Albans bypass to route milk truck traffic. Construction of the Saint Albans inter-modal connector with I-89 for the City of Saint Albans; and
- \$1,500,000 for improvements to Federal Street to allow large trucks to reach destinations without going through downtown. The improvements include three-tenths of a mile of new road construction, and two miles of reconstruction.

Any project that uses federal transportation funds must satisfy the requirements of the National Environmental Policy Act (NEPA). These requirements are evaluated through the Federal Highway Administration's NEPA project development process which is designed to balance the public's need for safe and efficient transportation while accounting for potential impacts on the human and natural environment.

The following three documentation methods are used to evaluate NEPA compliance:

- Categorical Exclusions (CEs) are issued for actions that do not individually or cumulatively have a significant effect on the environment. CE's are generally prepared for individual projects such as reconstruction of an intersection, roadway rehabilitation, or replacement of an existing bridge.
- An Environmental Assessment (EA) is prepared for projects in which the significance of the environmental impact is not clearly established. Should environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment, a Finding of No Significant Impact (FONSI) is issued and the project can move forward to design and construction. If the EA determines that there is a significant impact, than an EIS must be prepared.



- An Environmental Impact Statement (EIS) is prepared for projects where it is known that the action will have a significant effect on the environment. The EIS is a much more rigorous process than the EA.¹

Given that the potential impacts of the Federal Street Connector may be significant, but are not yet clearly established, an Environmental Assessment must be completed before the project can access Federal Funds. Therefore, the first step towards constructing the Federal Street Connector is preparation of an Environmental Assessment.

The cost of the EA could range between \$300,000-\$500,000. The federal earmarked funds would cover 80% of this cost, with the balance from non-federal sources. The non-federal match could be provided by the City, the state legislature, the private sector or any combination of the three.

Assuming an EA can be completed for \$400,000 (\$320,000 federal funds and \$80,000 non-federal funds), the remaining earmarked federal funds would be \$2,140,000 (\$960,000+\$1,500,000-\$320,000). Adding 20% non-federal match, the total funds available for final design, right-of-way acquisition, and construction would be \$2,675,000. These funds would cover the cost to construct the 0.30 mile section from the US 7-Saint Albans State Highway intersection to Nason Street and approximately 60% of the cost from Nason Street to Lower Weldon Street.

Table 24: Accumulative Cost of Federal Street Connector

Segment (South to North)	Segment Cost	Accumulative Cost
Nason to SASH	\$ 1,502,210	\$ 1,502,210
Lower Weldon to Nason	\$ 1,961,935	\$ 3,464,145
Kingman to Lower Weldon	\$ 2,848,810	\$ 6,312,955
Lower Newton to Kingman	\$ 2,025,365	\$ 8,338,320
US 7 to Lower Newton	\$ 4,676,350	\$ 13,014,670

Funding for the rest of the Federal Street Connector can come from a variety of sources as follows:

- **Additional federal earmarks.** The updated costs presented in this report could support requests for additional earmarked funds.
- **Surface Transportation Program/VTrans Capital Program (STP):** Projects on the federal aid highway system can be funded through the Surface Transportation Program (STP) which is administered by the Vermont Agency of Transportation. STP funds have the most flexible uses of any federal transportation funds. STP funds may be used for highway, transit, and non-motorized facility construction and improvements. The non-federal match is 20 percent. For projects that are completely on the state system, the state typically covers

¹ Federal Highway Administration Project Development Website <http://environment.fhwa.dot.gov/projdev/index.htm>



the 20% match. When local roads or bridges are involved, a local match of 10-20% may be required depending on the classification of the highways involved and other factors.

Projects utilizing STP funds are typically prioritized by a regional planning commission relative to other projects in a region and must pass through the VTrans scoping and project development process. In this case, completion of an Environmental Assessment would satisfy the scoping requirements. VTrans prepares a capital program each year and submits it to the legislature for approval. Therefore, legislature support for the project will be essential if this funding mechanism is selected.

- **Local Funds through the Municipal Capital Budget:** The municipal capital budget can be used to match federal or state funded projects, or to finance all of a project. The particular projects may be identified in advance through a municipal Capital Improvement Plan and should be included in the appropriate budget year(s) for approval at Town Meeting. Larger projects, such as the Federal Street Connector, are often funded through municipal bonds.

The Vermont Municipal Bond Bank (VMBB) is a quasi-state agency administered by a board of directors that includes four members appointed by the Governor and the State Treasurer. VMBB operates by purchasing a bond from a municipality such as the City of Saint Albans. The municipality must have approved the issue of the bond by vote of the legislative body. The VMBB bundles together several individual municipal bonds and sells them as a package to individual or institutional investors. In this way VMBB can secure preferential rates for its municipal Vermont clients.

Bond transaction costs are assumed by VMBB, which is an important advantage of this source of financing. The interest rate accompanying any bond issue is determined at the date of sale. Bond payback terms are typically 20 years for highway-related improvements and 30 years for water/sewer improvements. Payments are made on a monthly basis, and can be calculated for level or declining principal balance.

Local governments have several options available to raise revenue for paying back a bond. Options are briefly described below. Careful review of the advantages of each method, including reliable estimates on how these options affect local tax rates, is necessary before selecting an appropriate funding mechanism.

Special Assessment Tax District: A special assessment district can be created where property owners, which presumably benefit from the investment, pay a special tax to cover the cost of bond payments. Special assessment districts could be established for a designated area of the town or can be designated town-wide.

Tax Increment Financing District: A tax increment financing district (TIF) can be established that dedicates the non-school taxes generated by increased property value to paying off the bond. A TIF is most appropriate where property values are expected to increase significantly.



Transportation Impact Fees. Through impact fees, new developments pay a ‘fair-share’ of the costs related to updating and improving infrastructure based on the amount of ‘impact’ the development would have on that infrastructure.

- Local Option Sales Taxes: The State of Vermont allows the following taxes to be collected as part of the Local Option Sales Tax: A one percent sales tax; a one percent meals and alcoholic beverages tax; and a one percent rooms tax. LOST is permitted for VT municipalities that were affected a certain way by Act 60 and Act 68. The legislature is considering a bill that will make LOST available to all VT municipalities.

6.0 REPORT SUMMARY

The purpose of this study is to update the 1995 Federal Street Corridor Study in light of transportation system, land use, and transportation policy changes that have occurred since 1995. This 2005 study also includes information about the transportation system in Saint Albans that will be used to apply for state and federal funding for continued planning, design, and construction of a multi-modal transportation center on Federal Street.

Part I of this report summarizes the key findings and recommendations of the 1995 Study and the studies that have been completed since 1995 and describes the Federal Street Connector in the context of existing and future land use, the state and national transportation systems, and the Western Vermont Freight Gateway Program. The characteristic of the roadway, transit, and pedestrian-bicycle facilities in the study area are described and a traffic analysis is presented for existing conditions and three scenarios in 2025 that assume: (1) the Federal Street Connector is not built; (2) construction of the Federal Street Connector with the section between Lower Newton Street and US 7 following an alignment between the existing Fonda Plant, and (3) construction of the Federal Street Connector with the section between Lower Newton Street and US 7 following an alignment further west. The traffic analysis concludes that the alignment between the Fonda Plant is more effective at satisfying the purpose of the project.

Part II of this report updates the 1995 design concepts for the Federal Street connector based on the traffic volumes and policy changes that are discussed in Part I. It presents concept designs and order of magnitude cost estimates for the Federal Street Connector, identifies right-of-way impacts and acquisition needs, identifies potential natural and cultural resource impacts, and includes an implementation plan.

