



Transit Development Plan

OCTOBER 2012

Executive Summary

“The past several years have been a period of incredible growth and change for CCTA and GMTA. We are now one organization serving both urban and rural areas. Moving forward we will be working collaboratively with our State and local partners to achieve the goals outlined in this Transit Development Plan.”

*–Steve Magowan,
CCTA Board Chair*

The Transit Development Plan (TDP) for the Green Mountain Transit Agency provides a program for the expansion and enhancement of public transportation service in central and northwestern Vermont over a 10-year period and beyond. It is the foundational planning document for GMTA, as it establishes the framework within which all other short term service planning and capital planning occurs. As of July 1, 2011, GMTA and the Chittenden County Transportation Authority formally became one unified organization. CCTA adopted a TDP for services in Chittenden County in 2010; this TDP document is complementary to that urban-focused plan. As the rural arm of CCTA, GMTA’s TDP necessarily mirrors CCTA’s in some areas, but differs greatly in others. A primary goal of the GMTA TDP is to work towards a unified public transportation system within the rural service area along with meaningful connections to the urban system in Chittenden County. In the future, a single TDP will be produced for the entire CCTA/GMTA service area.





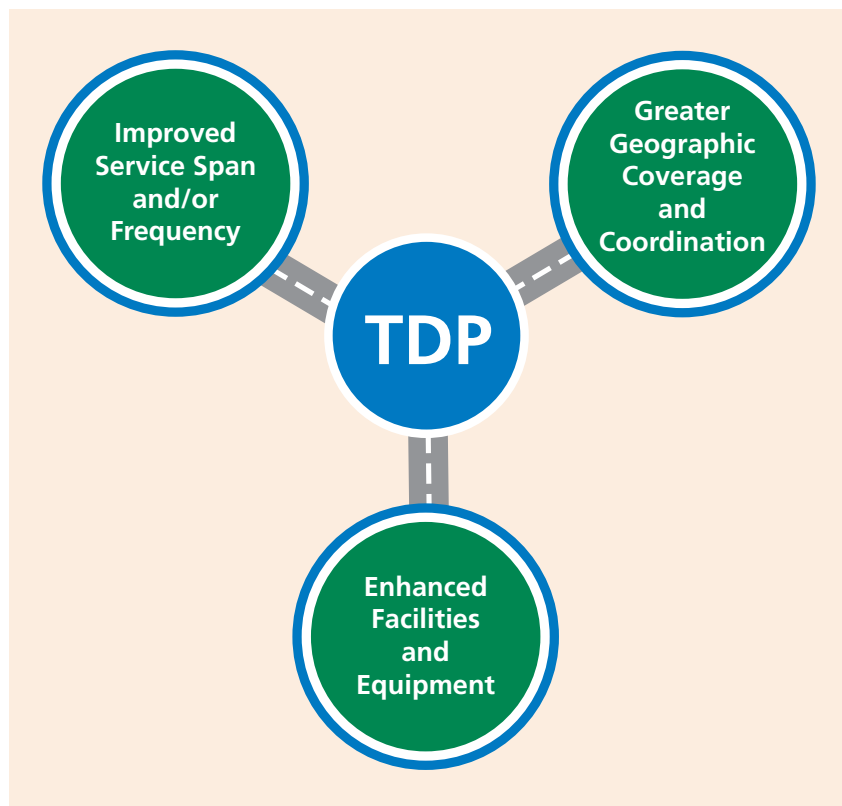
The CCTA Board of Commissioners developed a vision statement to describe the future role of CCTA/GMTA in the regions it serves:

As Vermont's only regional public transportation authority, the Chittenden County Transportation Authority will continue to serve a diverse five county region ranging from CCTA's services in urban areas to GMTA's services in rural communities. CCTA/GMTA will play an important role in central and northwest Vermont's transportation system and will carry an increasing number of passengers each year. With growing ridership, CCTA/GMTA will provide the region with economic development, environmental benefits and a cost effective means of transportation. The public transportation options offered by CCTA/GMTA will serve a wide range of passengers, including those who are transit dependent and those who have other transportation choices. Services and facilities will use technology in order to be convenient and attractive enough to entice individuals to use their cars less.

In order to maximize access to public transportation services, communities will focus development along existing transit routes, considering the presence of transit when contemplating future development and will work to improve the pedestrian environment in all areas served by CCTA/GMTA buses. Communities will work in partnership with CCTA/GMTA to maintain and develop sustainable and diverse funding streams necessary to continue operating affordable and attractive public transportation options throughout the State. By combining efforts with bicycle, pedestrian, carpool, and carshare entities, public transportation and alternative modes will rival the primacy of the single occupancy vehicle and will surpass it in terms of affordability.

In order to make this vision a reality, investments must be made on many fronts: by CCTA/GMTA, by the State of Vermont, and by GMTA's municipal partners.

Primary TDP Elements



Service Summary

The GMTA system currently serves three regions:

- Central Vermont includes all of Washington County plus three towns in Orange County – Orange, Washington, and Williamstown;
- Lamoille County;
- Northwest Vermont covers Franklin and Grand Isle counties. This region is often referred to as FGI.

Across its service area, GMTA operates a range of services to meet the diverse needs of the traveling public. These include year-round local routes that serve trips for all purposes, commuter routes that operate primarily

GMTA operates a range of services to meet the diverse needs of the traveling public.

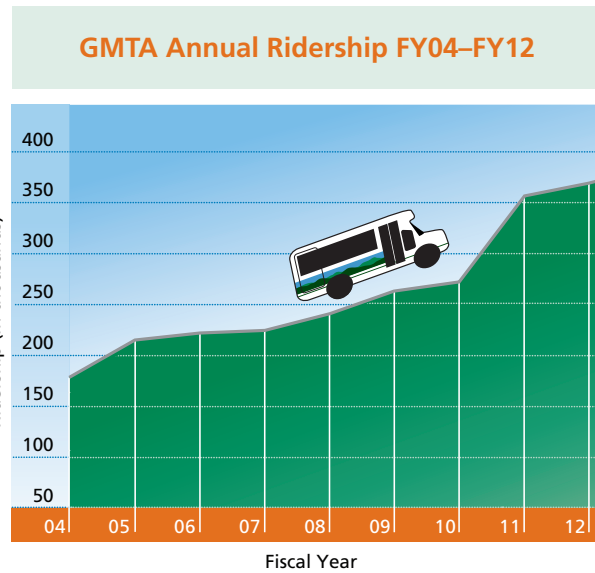


during peak periods, seasonal routes that mainly serve skiers and riders in the Mad River Valley and in Stowe, and shuttle routes and other demand response services oriented toward seniors, people with disabilities, and others who have limited transportation alternatives. Regular scheduled bus services are summarized in Table ES-1 below; infrequent shuttle services that run less than once per day are not included in the table.

Table ES-1 GMTA Service Summary

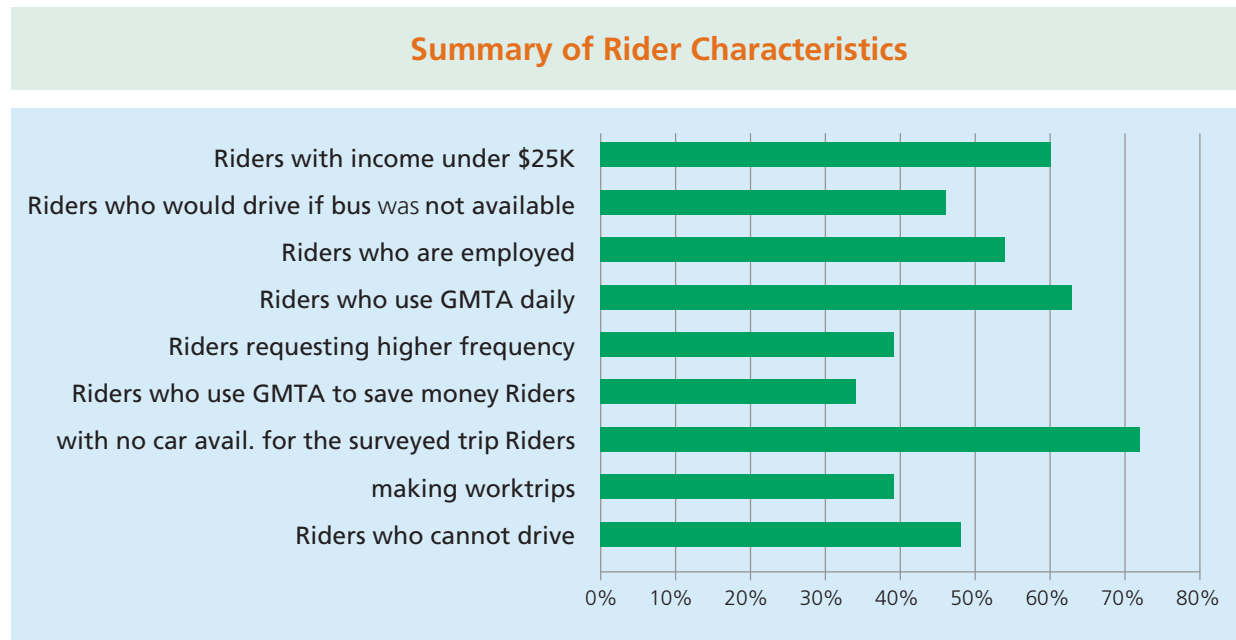
Region/Service	Towns/Corridors Served	Span of Service	Level of Service
Central VT — Local	Montpelier, Bare City, Berlin	Monday-Saturday; 6:00 am to 6:00 pm with longer hours on City Commuter and a later start on Saturday	Mostly hourly, with 30-minute peak service on City Commuter
Central VT — Commuter	US 2 corridors to Waterbury and St. J.; I-89 to Burlington	Monday-Friday; peak periods only, with one midday LINK trip	3 round-trips per peak period
Central VT — Seasonal	Mad River Valley	Daily during ski season; 7:00 or 8:00 a.m. to 5:00 p.m.	Every 30 minutes or better for most routes
Lamoille — Local	Morrisville and Stowe	Monday-Friday; 8:00 a.m. to 3:00 p.m.	Hourly for Morrisville; one trip/day for Stowe
Lamoille — Commuter	Route 100 Morrisville to Waterbury	Monday-Friday peak periods only	Four round-trips per day
Lamoille — Seasonal	Stowe Mountain Road	Daily during ski season; 6:40 a.m. to 10:00 p.m.	20-minute peak service, 30-minute off-peak
FGI — Local	St. Albans	Monday-Saturday; 5:45 a.m. to 6:30 p.m. (less on Saturday)	Hourly
FGI — Commuter	Alburgh-Georgia; Richford-St. Albans	Monday-Friday	One trip in the peak direction, a.m. and p.m.

Since 2003, GMTA has grown substantially, incorporating services in Stowe and Lamoille County in 2004, and in Franklin and Grand Isle counties in 2004, and in Franklin and Grand Isle counties in 2009. Several new routes have been initiated as well, including the US 2 Commuter, Montpelier Circulator, Northfield Community Shuttle, and several other shopping and demand response shuttles.



Profile of Riders

GMTA periodically conducts surveys of the riders on its year-round routes. The chart below shows a summary of some of the most relevant findings of these surveys. More detailed information from the surveys is presented in chapter 2, including a breakdown of the results by the three service regions.





Market Assessment

The GMTA service area is large and varied. The great majority of it is rural and sparsely populated, but there are significant concentrations of population and jobs in the economic centers of Barre-Montpelier, Morrisville, and St. Albans. Some of the rural towns have village centers that can support transit services oriented toward commuters or for occasional local travel, but the extent of regular full-day local service will probably not extend far beyond the corridors that are already served by local routes and some shopping routes that could be converted to full-day service. Much of GMTA's future growth will therefore likely be in the area of targeted peak hour commuter services linking communities to employment centers.

Much of GMTA's future growth will likely be in the area of targeted peak hour commuter services linking communities to employment centers.

Table ES-2 below presents a quick summary of key demographic characteristics in the four counties that make up the GMTA service area. It can be seen that the Central Vermont region has the highest population and greatest population density, and has relatively fewer low-income households. However, Lamoille County has the highest percentage of low-income households and those without a vehicle available.

Table ES-2 GMTA Demographics Summary

	Total population	% of pop. within 3/4 mile of GMTA Route	Persons per sq. mile	% of pop. age 65 and over	% of low-income households	% of zero-vehicle households
Central Vermont	65,034	53%	80	14%	16%	5%
Lamoille County	24,475	39%	53	13%	25%	6%
Franklin County	47,746	43%	75	12%	21%	5%
Grand Isle County	6,970	12%	85	14%	16%	3%
Totals for GMTA Service Area	144,225	46%	73	13%	20%	5%

Because of the greater concentration of population in Central Vermont, and the higher level of service provided, more than half of the population is within 3/4 of a mile of a GMTA route. Lamoille and Franklin counties have close to 40% of their population served. In Grand Isle County, only 12% of the population is served by a bus route, but Champlain Islanders Developing Essential Resources (CIDER) provides demand response service through vans and volunteers in an effort to serve all island residents.



Needs Analysis

Service Needs

As mentioned, many of GMTA's riders belong to the market segment made up of people who depend on public transit for most or all of their mobility needs. As GMTA has introduced new commuter services such as the US 2 Commuter between Montpelier and St. Johnsbury (jointly operated with RCT), GMTA has been tapping into the commuter market, attracting riders who are able to drive, known as choice riders.

GMTA's services are designed to appeal to and meet the needs of both markets, though some routes are more oriented toward one or the other. The "commuter" routes and shuttles are obviously aimed at commuters, as are the LINK expresses, which offer fast and inexpensive service from Montpelier and St. Albans to downtown Burlington and the "Hill" area east of downtown, containing large medical and educational institutions. Most of GMTA's local routes are more oriented to transit-dependent riders in the Barre-Berlin-Montpelier area, Morrisville and St. Albans City-St. Albans Town. These routes are slower and less direct, but offer wide coverage to densely developed neighborhoods.

GMTA periodically surveys its riders and the general public through telephone and on-board surveys. These surveys and public outreach efforts identified a number of areas where GMTA service could be expanded to better meet the needs of the riders. These include longer service hours in the evening and more service on weekends, improved frequency, and service to more areas. Specific areas and corridors that were mentioned include the following:

- South Barre and other parts of Barre Town
- Route 12 corridor from Montpelier south (to Northfield) and north (to Worcester)
- Route 14 corridor between Hardwick and Montpelier
- Year-round connection between Montpelier and the Mad River Valley
- Commuter service into Barre on Route 14 and US 302
- Service on Route 15 in Lamoille County linking Morrisville to Johnson and Cambridge
- Year-round service on Mountain Road Shuttle in Stowe
- Increased level of service on commuter routes in Franklin and Grand Isle counties

GMTA's services are designed to appeal to and meet the needs of both commuters and people who depend on public transit for most or all of their mobility needs.

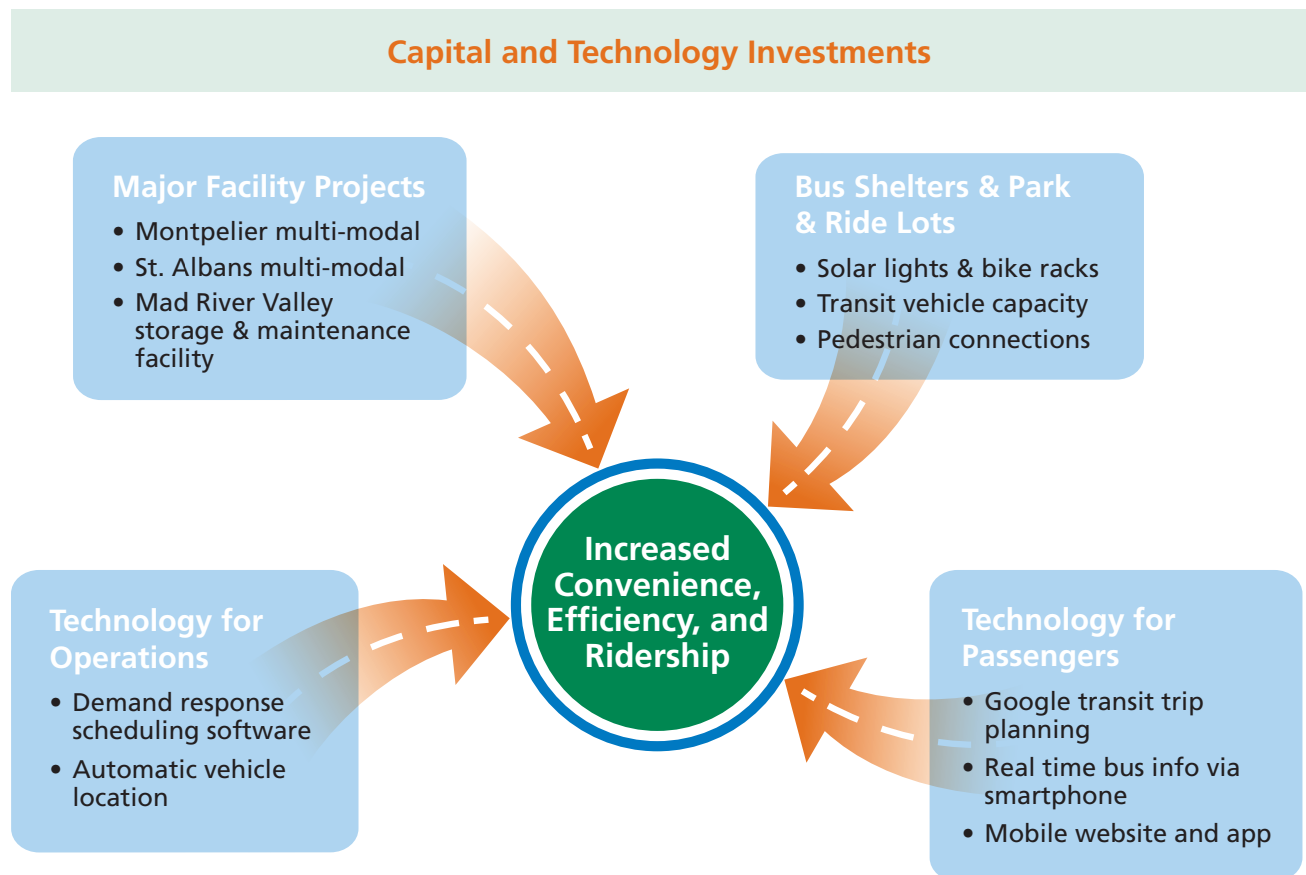
Riders have requested longer service hours, more service on weekends, improved frequency, and service to more areas.

Infrastructure and Facility Needs

Beyond service expansion, respondents to surveys and participants in public outreach requested further investment in shelters, benches, bike racks and other passenger facilities, as well as new technology such as real-time passenger information, Wi-Fi on buses, and trip planning software. Such investments in physical infrastructure and technology would make the system more appealing to existing riders and future choice riders.

The pedestrian environment in bus service corridors is an essential element of the overall system. All passengers are pedestrians (either on foot or in a wheelchair) before they board the bus and after they exit. If the pedestrian environment is not safe, comfortable, and attractive, then neither is the bus system, no matter how good the service is.

The pedestrian environment in bus service corridors is an essential element of the overall system.



Service Strategies

With the needs identified above, the TDP includes a wide range of service recommendations to be implemented as funding becomes available. These include the following:

- **Commuter routes based in Central Vermont**
 - Route 12 corridor from Montpelier south (to Northfield) and north (to Worcester)
 - Route 14 corridor north and south of Montpelier and into Barre City
 - US 302 corridor into Barre City, Berlin, and Montpelier
 - Warren/Waitsfield to Montpelier and Waterbury
- **Commuter routes based in Lamoille County**
 - Jeffersonville to Morrisville via VT 15
 - Jeffersonville to Smugglers Notch via VT 108
 - Jeffersonville to Newport via Jay Peak (joint route with RCT)
 - Morrisville to St. Johnsbury via Hardwick (joint route with RCT)
- **Commuter routes based in Franklin and Grand Isle Counties**
 - Extension of Richford/St. Albans Shuttle to Jay Peak Resort
 - St. Albans to Jeffersonville via Georgia and Fairfax
 - Grand Isle to Burlington (included in CCTA TDP)
 - Additional service on the Richford/St. Albans Shuttle
 - Additional service on the Alburgh/Georgia Shuttle
 - Extension of the St. Albans LINK to Swanton via US 7
- **Year-round local services**
 - Circulator service in Barre City
 - Extension of City Route and City Mid-day to South Barre
 - Service to East Barre/Websterville
 - Upgrades on existing local routes in Central Vermont
 - Local route between Johnson and Morrisville via Hyde Park on VT 15
 - Year-round service on Mountain Road Shuttle and extension to Shaw's
 - Conversion of Morrisville Shopping Shuttle to full day local route
 - Extension of St. Albans Downtown Shuttle to Walmart and 30-minute peak service
 - Extension of St. Albans Downtown Shuttle to St. Albans Bay (Lake Champlain)
 - Conversion of St. Albans Tuesday Shopping Shuttle to regular local route
- **Seasonal service**
 - Extended service period for Mad Bus and Stowe Mountain Road Shuttle
 - Connections to LINK Express for resort employees

- **Demand response service**

- Increased service levels on existing shuttles
- New shuttles from rural areas in Washington, Lamoille, Franklin and Grand Isle to employment centers in Lamoille, Orleans and Caledonia counties
- New shopping shuttles in Swanton/Highgate, Enosburg Falls and Richford

Criteria for Service Development and Implementation

An essential factor in moving any of the service concepts listed above toward implementation is support from the community. This support can take the form of petitions from potential riders expressing a desire to ride the bus in a given corridor, but more importantly, it consists of financial commitments from town governments to provide the local share of the net operating cost of the route.

A second critical factor is ridership potential. In evaluating possible services, GMTA examines available travel data to determine the likelihood that a new bus route would attract a sustainable level of ridership. For commuter routes, GMTA looks at the most recent commuting patterns information from the US Census and worktrip flow information from the Census' Longitudinal Employer-Household Dynamics program (through its OnTheMap product). For local services, GMTA analyzes existing ridership patterns to determine whether there is unmet ridership demand. If current bus trips are crowded during certain times of day, if there are frequent customer requests for later service, or if a service increase would bump the route over an important service threshold (from hourly service to 30-minute service), the ridership response to increased service could be substantial.

Cooperation and support from other external parties can also play a critical role in the development and implementation of a new service. For example, financial contributions towards operating and/or capital costs from private entities such as major employers and institutions can make one service more feasible than another. Other types of external cooperation that can influence route development are decisions by a particular entity to fully or partially subsidize rides taken by its employees or customers, or to limit parking at a particular facility.

A final, but critical consideration is cost. Other things being equal, a new or expanded service with a lower cost will be favored over one with a higher cost. This fact reflects the reality that funding is scarce and that existing dollars need to be as stretched as far as possible. Of course, it is rarely the case that all other things are equal, so community support and ridership potential are often the decisive factors.

Key factors in moving service concepts toward implementation are support from the community, ridership potential, cooperation from external parties and cost effectiveness.



Regional Coordination and Sustainability

GMTA plays an essential role in providing mobility in central and northwest Vermont. Its services help sustain and expand the economy in its service areas, allowing for continued economic growth in a way that is consistent with reduced energy use, environmental protection, and sustainable land use. In order to achieve this, GMTA coordinates closely with local, regional, and state governments and works with the non-profit and private sectors to leverage public investment in transportation.

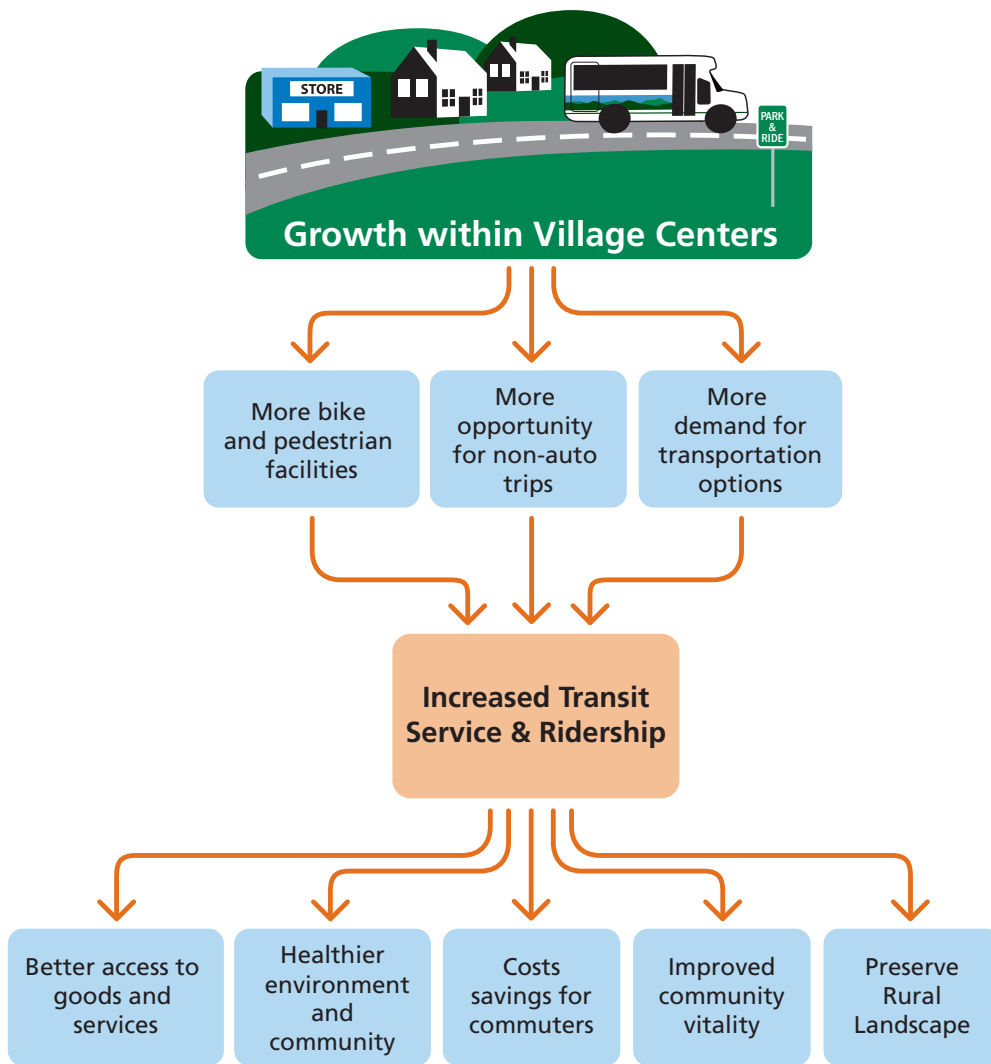
GMTA cooperates with the three regional planning commissions and one planning district in its service area to promote sound land use and development decisions, and investments in transportation infrastructure so that public transportation can maintain and improve its viability and attractiveness in the future. One area of cooperation is Park & Ride lots. Park & Ride lots are an integral part of successful commuter transit service, as they can increase access to transit services without incurring significant new operating costs. GMTA relies mainly on VTrans and municipalities to provide the space and infrastructure for these facilities.

In addition to its public sector partners, GMTA reaches out to the private sector to build mutually beneficial relationships with employers and institutions. GMTA benefits from financial support and increased ridership while the private partners benefit from access to a broader employee/customer base, reduced parking demands, and an image as a socially responsible entity.

A cooperative effort of GMTA, member municipalities, the state of Vermont, the regional planning commissions, and the development community is needed to guide future development in the area into a form that is more conducive to efficient and sustainable transportation. The future expanded GMTA system that is recommended in this TDP can only be viable if it is planned in concert with future land use decisions that support public transportation. Whether this land use is called “smart growth,” “transit oriented design,” “pedestrian oriented design,” or some other term, it is essential that future development (especially the type that generates demand for public transportation) be focused in a geographical area that is compact and conducive to efficient operations. If public transportation is instead spread too thinly by being asked to serve larger and larger geographic areas infrequently, it will never be able to operate at a level of service that can be attractive to choice riders.

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Land Use Decisions and Transit



Costs and Funding

There are few, if any, recommendations in this Transit Development Plan that can move forward to implementation without additional funding. The net operating costs and ridership associated with future implementation of the TDP are shown below in Table ES-3.

Two levels of expenditure are shown in the table for 2020 system costs. Both of these are net of fare revenue, which is assumed at 10% of operating cost. The first pair of columns represents the cost to operate the system



as it exists at the end of FY2012. The second pair of columns represents the cost to operate the full expanded system as presented in the TDP. This includes more service on existing services and all of the new proposed bus routes. Routes that are included in the CCTA TDP are not included here for cost estimation or ridership purposes.

Future ridership is also shown on the table. Estimates for FY13-FY14 are based on an average growth rate of 5% per year—exclusive of major service increases or new routes—that GMTA has experienced in the recent past. Flat ridership and a small drop in net costs is forecast for FY13 due to the fare increase that took effect on July 1, 2012. FY12 figures are pre-audit and subject to adjustment.

Table ES-3 Forecast of System Costs and Ridership

Year	Maintain Current System		Expanded System	
	Net Cost	Riders	Net Cost	Riders
FY2012	\$2,716,781	369,857	NA	NA
FY2013	\$2,626,000	370,000	—	—
FY2014	\$2,642,000	389,000	—	—
FY2020	\$3,169,000	522,000	\$8,658,000	1,070,000

While both cost and ridership increase significantly for the Expanded System, it can be seen that the cost increases by a greater amount than the ridership (with costs nearly tripling compared to the current system in 2020, while ridership “only” doubles). It is common for system expansion plans to show costs rising faster than ridership because, in general, it is unlikely that new services will be more productive than the agency’s current services, which have a long history and mature ridership base. Most agencies try to serve their best potential markets first—the ones with the highest residential and employment density and the links with the highest demonstrated travel demand—and so system growth into the more distant future tends to address markets that are not quite as promising as those on which the system was built.

It has been clear for many years that the current funding mechanism for public transportation is insufficient to support the expanded transit system that residents of the GMTA area believe is needed. Through expanded use of federal funds and diligent work at the local level to increase local contributions, GMTA has managed to pursue its mission to the extent possible. However, the ambitious agenda in this TDP is impossible without a significant change in the funding structure. The imperatives of supporting economic vitality, improving air quality, mitigating the severity of climate change, and enhancing mobility for all citizens argue strongly for a much more robust public transportation system.

While GMTA has had some success in recent years raising local funds, the lack of a consistent and reliable mechanism to raise required local match remains a significant obstacle to public transportation growth in its service area. Soon after the CCTA/GMTA transition to a single entity in 2011, the CCTA Board of Commissioners had a series of discussions about the differences between the urban and rural local funding processes. To further explore this issue and begin to identify potential solutions, the CCTA Board established the Assessment Study Group. This group will continue to explore this issue and other regional funding sources.



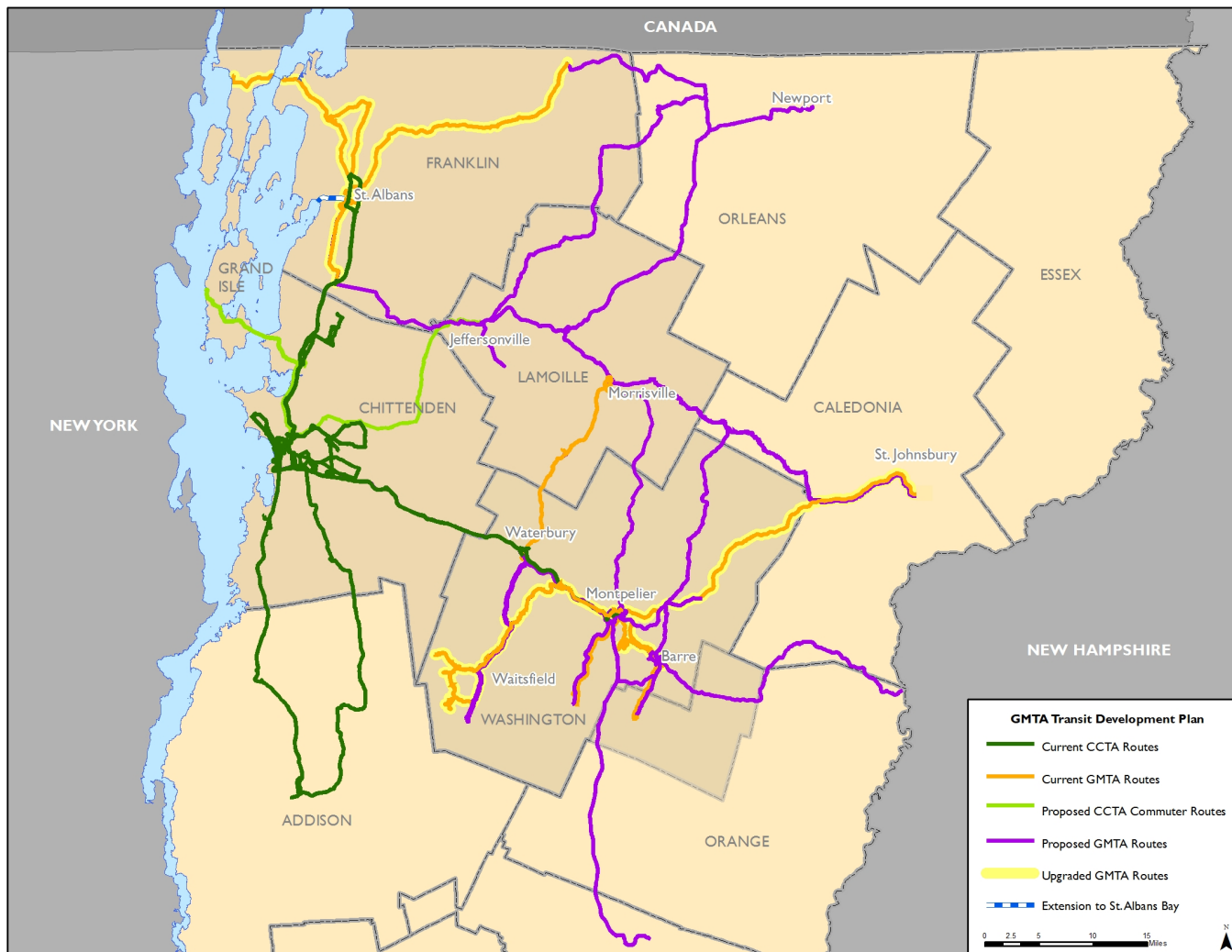
Conclusion

GMTA's TDP should be viewed as a comprehensive plan, building toward an integrated transit system which will provide essential mobility and convenient and affordable travel alternatives for all people in the region. The completion of every project in this TDP over the next ten years might not be feasible. However, the growth of the public transit system—when coordinated with local transportation and development plans that include compact and linear growth in village centers and consideration of pedestrian, bicycle, and park and ride access points—has the capacity to offer rural communities numerous benefits. Indeed, the growth of the GMTA system is inherently tied to the growth of its service area communities: GMTA and the communities working together can make public transit work in a rural setting.

At the state and regional level, it is clear that the unsustainability of the current funding structure must be addressed with bold action. The State's Comprehensive Energy Plan (CEP) identifies the current gas tax construct as insufficient for all types of transportation funding in the future. Rather, the CEP suggests a move toward vehicle miles traveled fees, other demand-based fees, or fees based upon the alternative fuels utilized will be necessary. While there is no means of raising revenue that will be completely painless for all parties, to achieve our transportation and environmental goals, funding innovation must occur. Perhaps the multiple objectives of lessening the burden on local property taxes, supporting public transportation and reducing carbon emissions will result in changes at the state and federal level.

The ambitious agenda in this TDP is impossible without a significant change in the funding structure.

Existing and Proposed Transit Services



For more information about the projects and services described in the GMTA Transit Development Plan, please feel free to contact GMTA by phone, **(802) 223-7287**, or email info@gmtaride.org, or refer to the back of this document for our mailing address.



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Chapter 1

Introduction

Key Issues in Chapter 1:

- *What is a TDP and what happened since the last plan?*
- *What is GMTA's vision for the future?*
- *How are GMTA and CCTA related?*

Purpose of this Plan

The Transit Development Plan (TDP) for the Green Mountain Transit Agency provides a program for the expansion and enhancement of public transportation service in its four-county service region. In many ways, it is the foundational planning document for the agency, as it establishes the framework within which all other short term service planning and operations planning occurs. GMTA is not required to have a current TDP, but it is good planning practice and helps the agency compete for funding for new services in that it can demonstrate that a proposed new route is part of an integrated plan. The purpose of this TDP is to set out plans that will lead to greater integration of GMTA services throughout its area, as well as with Chittenden County Transportation Authority (CCTA) services. Such integration makes sense not only from a management perspective, but more importantly to provide greater mobility and more convenient service to the riding public. The TDP also helps to inform the transit component of the regional plans for CVRPC, LCPC, and NRPC, the three regional planning commissions that cover the GMTA service area in Central Vermont, Lamoille County, and northwest Vermont, respectively.¹

This TDP is not restricted to the short-term period (five years from the present) as previous transit plans have been, but rather covers at least a 10-year time frame. Projects included here for the long-term future are intended more as guideposts and reference points than detailed plans. The goal is to have a coherent plan with short-term actions that make sense on their own merits, as well as building toward a future enhanced system.

This chapter serves as the introduction to the TDP, including various background materials that offer a context for the chapters that follow. It begins with a brief overview of the history of

¹ As discussed in more detail in later chapters, the GMTA system currently serves three regions. Central Vermont includes all of Washington County plus three towns in Orange County: Orange, Washington, and Williamstown. Lamoille County is self explanatory. The third region, in northwest Vermont covers Franklin and Grand Isle counties. This region is sometimes referred to as FGI, for short.

GMTA and discussion of the relationship to CCTA, followed by an overview of the TDP document and a discussion of GMTA's mission and vision of the future. After a listing of the accomplishments since the last comprehensive plan, the key partners in the process of creating and implementing the TDP are identified and discussed. The chapter closes with a hierarchy of public transportation services to set a context for the existing and proposed services discussed in later chapters.

Historical Background and Relationship to CCTA

In 2003, Wheels Transportation, a private, non-profit agency that had operated public transportation service in Washington County, went bankrupt, and CCTA was asked by the Vermont Agency of Transportation (VTrans) to restore and manage service. After a brief period of operating as a d.b.a. of CCTA, a new non-profit known as the Green Mountain Transit Agency was formed. Following GMTA's creation in Central Vermont in 2003, VTrans asked GMTA to also assume operation of Mad Bus services in the Mad River Valley in 2004, Stowe and Lamoille County in 2004, and Franklin and Grand Isle Counties in 2009.

Until July 2011, GMTA had its own Board of Directors, but the Executive Director and several senior managers were CCTA employees. GMTA's overall operation was supervised by CCTA through a management contract and all planning work for GMTA was also done by CCTA staff. The shared resources between the two agencies led to a high degree of coordination of services. System connectivity was established through joint operation of the Montpelier LINK Express commuter route between Montpelier and Burlington. Additionally, coordinated schedules and fare policies allowed for improved regional accessibility for residents and employees of Washington, Chittenden, Lamoille, Franklin, and Grand Isle Counties.

Due to Act 71 of the 2010 legislative session, as of July 1, 2011, CCTA and GMTA became one legal entity. As of that date, CCTA officially assumed operation of all services in the GMTA service area, while still doing business as GMTA. The GMTA service area became the rural portion of CCTA's system. Rural public transportation funds that formerly flowed from VTrans to GMTA now instead flow to CCTA to fund its operations in the rural area. The CCTA Board of Commissioners was expanded to include a representative from each of the four counties served by GMTA. (Note that Williamstown, Orange and Washington in Orange County are part of the GMTA service area, but Orange County is not directly represented on the Board.)

It is important to note that while CCTA and GMTA are officially one entity, this document presents plans for only the rural (GMTA) portion of the five-county CCTA/GMTA region. CCTA produced its own TDP in 2010 covering Chittenden County local service and commuter services connecting Chittenden to surrounding counties. These inter-county commuter routes are a point of overlap between the two TDPs, and will be referred to later in this document, since connectivity to Chittenden County is an important mobility issue for all of the GMTA regions. Many of the service improvement themes discussed in chapters 4 and 5 of this TDP are also

shared with the CCTA TDP, such as higher frequency of service, longer hours of service, supporting infrastructure, transit oriented development, and so forth.

Overview of TDP

Following this introductory chapter, Chapter 2 is a review of existing transit services in the GMTA service region, including all GMTA routes and demand response service, plus service provided by other agencies (such as Rural Community Transportation and Stagecoach Transportation Services), and other private-sector transportation providers. Chapter 3 is a demographic and economic profile of the GMTA service region divided into three parts: Central Vermont, Lamoille County, and the Franklin/Grand Isle area. The analysis has special emphasis on target populations: older adults, low income households, and auto-less households. Important destinations, such as senior housing, accessible housing, social service agencies, and major employers are also discussed. Chapter 4 is a needs assessment, based on findings from Chapter 3 as well as recent surveys and public outreach. The service and facility recommendations of the TDP are listed in Chapter 5, while Chapter 6 discusses regional coordination and sustainability. Chapter 7 discusses costs, funding and implementation considerations.

CCTA/GMTA Vision Statement

As Vermont's only regional public transportation authority, the Chittenden County Transportation Authority (CCTA) will continue to serve a diverse five county region ranging from CCTA's services in urban areas to GMTA's services in rural communities. CCTA/GMTA will play an important role in central and northwest Vermont's transportation system and will carry an increasing number of passengers each year. With growing ridership, CCTA/GMTA will provide the region with economic development, environmental benefits and a cost effective means of transportation. The public transportation options offered by CCTA/GMTA will serve a wide range of passengers, including those who are transit dependent and those who have other transportation choices. Services and facilities will use technology in order to be convenient and attractive enough to entice individuals to use their cars less.

In order to maximize access to public transportation services, communities will focus development along existing transit routes, considering the presence of transit when contemplating future development and will work to improve the pedestrian environment in all areas served by CCTA/GMTA buses. Communities will work in partnership with CCTA/GMTA to maintain and develop sustainable and diverse funding streams necessary to continue operating affordable and attractive public transportation options throughout the State. By combining efforts with bicycle, pedestrian, carpool, and carshare entities, public transportation and alternative modes will rival the primacy of the single occupancy vehicle and will surpass it in terms of affordability.

Review of Accomplishments

Since the last Short Range Transit Plan in 2003, GMTA has been working to implement new routes and service expansions. The following lists the improvements made since 2003:

- Commuter routes
 - Montpelier LINK Express, Montpelier to Burlington, 2003 (jointly operated with CCTA)
 - St. Albans LINK Express, St. Albans to Burlington, 2005 (operated by CCTA)
 - US 2 Commuter, Montpelier to St. Johnsbury, 2010 (jointly operated with RCT)
 - Route 100 Commuter, Morrisville to Waterbury, 2004
- Shuttles
 - Morrisville Loop, 2004
 - Northfield Community Shuttle, 2010
 - Plainfield Health Center Community Shuttle, 2010
 - Hospital Hill Demand Response Service, 2010
 - St. Albans Price Chopper Shopping Shuttle, 2010
 - Expanded hours on the St. Albans Downtown Shuttle, 2011
- Facilities
 - Upgrade and expansion of GMTA offices and maintenance facility, including recovery from flooding in August 2011
 - Installation of bus stop signs, bus shelters and schedule boxes
- Vehicles
 - Replacement of entire bus fleet
 - Transition to electronic fareboxes in Washington County

In response to these improvements, marketing efforts, capital upgrades, and institutional relationships, GMTA has enjoyed substantial ridership increases since the last SRPTP.

Key Partners

Public Sector

In the process of planning, implementing, and operating public transportation service in central and northwestern Vermont, GMTA has many partners. GMTA interacts with governmental bodies on four levels: federal, state, regional, and local. GMTA, as the rural portion of CCTA's service area, is not a direct recipient of federal funds like the CCTA urban system, but rather receives its federal funds as a subrecipient of the Vermont Agency of Transportation. It nonetheless has to comply with federal regulations regarding funding, operations, procurement, testing, safety, and a range of other areas.

VTrans is the designated recipient of Federal Transit Administration funds for the State of Vermont and has responsibility for overseeing the non-urban public transportation program in the state. VTrans also provides state funding to CCTA/GMTA for capital and operating expenses. These funds also serve as "local match" for the federal funds and make up some 10%

of the capital budget. In the past, VTrans had paid for Short Range Transit Plans to be developed for all of the transit providers in the state, following a legislative mandate, but in 2009, VTrans decided to halt the process of producing new short range plans and reallocate the funds to other priorities. This TDP is being conducted by GMTA and is funded by multiple sources including a Planning Grant awarded through VTrans, funds from the Central Vermont Regional Planning Commission, and funds from GMTA's FY12 and FY13 budgets.

At the regional level, GMTA's main partners are the regional planning commissions within its service area: Central Vermont Regional Planning Commission (CVRPC) in Washington County, Lamoille County Planning Commission (LCPC) in Lamoille County, and Northwest Regional Planning Commission (NRPC) covering Franklin and Grand Isle counties. The RPCs have planning responsibilities beyond transportation, including housing, water, sewer, land use, etc.

The service area for GMTA is all of the cities and towns in Washington County, Lamoille County, Franklin County, and Grand Isle County, plus the aforementioned towns in Orange County. Many of these communities make direct contributions to GMTA through their town budgets. Because GMTA no longer has its own board, policy-making power from the local governments is carried through four county representatives on the CCTA Board of Commissioners.

Private Sector

GMTA cooperates very closely with two non-profits to provide demand-response service within its region. Rural Community Transportation operates demand-response service in Lamoille County funded through the Elders and Persons with Disabilities Program, Medicaid, and other human service agency programs. RCT also jointly operates the US 2 Commuter with GMTA. CIDER (Champlain Islanders Developing Essential Resources) operates vans and an extensive volunteer driver network in Grand Isle County to provide demand response service. CIDER serves local trips on the islands, as well as trips into Chittenden and Franklin counties, mostly for medical purposes.

GMTA also maintains close working relationships with a variety of major employers and institutions in its service areas. In some cases, these private entities offer programs to encourage public transportation use while in other cases the institutions turn to GMTA for solutions to particular problems such as parking shortages or improved access for customers and clients.

The final partner is the population of GMTA riders, including daily users and infrequent users. For some, GMTA is an absolute necessity and for others it is a convenient choice. Service changes and expansions in the TDP are generally geared toward serving as many riders as possible, in as convenient a way as possible, given scarce resources. There are also service improvements proposed for specific populations to meet essential mobility needs.

Hierarchy of Public Transportation Services

Public transportation in its broadest conception includes a wide array of services from a taxi ride or carpool with two passengers, up to a high-volume, high-performance transit such as bus rapid transit or rail that can carry hundreds of passengers in the peak hour.² The following list describes the various levels in this array in ascending order and provides some indication of the type of market and the level of demand for which the levels are appropriate. In many cases, a service offered in one level of the array can be seen as building a market for higher level services that follow it. While not all of the services in the hierarchy are likely to be applicable to the GMTA service area during the time horizon of this plan, it is important to understand how growing services might progress one day.

1. **Volunteer Driver** – Many areas in Vermont, Maine, and other states have established volunteer driver programs, by which individuals use their own cars to transport other people who have requested a ride. Often, these trips are for medical appointments, such as kidney dialysis. Some drivers request reimbursement for mileage at the standard federal rate (currently 55.5 cents per mile). These trips are usually arranged through a non-profit or government brokerage, and are the most cost-effective means of providing these essential transportation services.
2. **Taxicab** – Available to all at a fee, typically used infrequently for a given trip because of the high cost per mile. GMTA could be involved with taxi transportation as a broker of trips, as has occurred in the past with some rides for people with disabilities.
3. **Carpools** – The simplest form of shared-ride transportation. Often occurs within a household or between acquaintances, but can be organized through a ridematching pool or website. Typically includes up to three passengers all headed to a single destination (such as a workplace) from a common area. The Go Vermont program currently coordinates carpooling through its statewide database.
4. **Vanpools** – When larger groups of people (up to 15) are headed to a single destination, they can meet up in a neighborhood or at a park-and-ride lot to form a vanpool. Vanpools are currently facilitated by the State of Vermont through the GoVermont program. See www.connectingcommuters.org. Vanpools are almost exclusively associated with commuting trips.
5. **Demand response service** – Low-volume general purpose transportation is best served by “demand response” service, which, as the name implies, responds to a particular demand for a trip. Most of the current demand response transportation in the GMTA region is oriented toward seniors and people with disabilities, but general public “dial-a-ride” service is available on a limited basis. This type of service is appropriate for lower-density areas where there is not enough passenger demand to warrant a regularly

² For the purposes of this discussion, water transportation and intercity modes of travel—such as air, intercity rail, and intercity bus—are not included.

scheduled service. Service can be provided by a non-profit agency using vans or sedans or a taxi company, working through a dispatch/brokerage office that takes in requests for trips from the public and assigns them to particular drivers and vehicles. The drivers could also be volunteers who use their own vehicles (see number 1 above). The broker attempts to use the lowest cost option to meet the need of the rider.

6. **Commuter bus peak only** – The minimal level of bus service that would typically be provided is two trips inbound in the morning and two trips outbound in the afternoon, possibly with a small bus (30 feet or less). Such a route could serve a town center or two and park-and-ride lots along the way. Total ridership would need to number at least 50 daily to make the service viable (roughly 12 passengers per bus trip). With a typical market penetration of about 5%, there would need to be at least 500 commuters in the service area of the route (accessible to the origin end and having a destination within walking distance of places served by the route in the urban core).
7. **Commuter bus expanded service** – Additional trips for a commuter service would be warranted to the extent that demand exceeds the market of 500 commuters, or if there is demand in both directions (so that buses would be carrying passengers outbound in the morning as well as inbound). A third and fourth peak period round-trip would be added first, followed by midday service.
8. **Full day service** – Regular full day service (6:00 a.m. to 7:00 p.m.) on weekdays is warranted when there are enough generators along the route to create demand for non-work trips as well as commuting trips. The minimum level of service would be 30 minutes during the peak periods and 60 minutes in the midday. Total corridor ridership would need to exceed 250 on a weekday to make this service viable.
9. **Extended weekday service** – Extension of service into the evening hours (until 9:00 or 10:00 p.m.) is warranted depending on the type of generators along the route and the level of demand. Daily ridership of at least 400 would be needed to make extended service viable. This would typically be coupled with a higher level of service during the midday period (every 30 minutes instead of every 60).
10. **Saturday service** – If a route serves retail generators or employers that are open on Saturdays, then Saturday service on the route would be justified. Saturday ridership is typically about 50% of weekday ridership, thus a demand of at least 200 passengers would be needed to make the service viable.
11. **Frequent peak service** – Major commuting corridors can support service at a higher level during peak periods. Service every 15 minutes is considered to be the minimum needed to draw people out of cars and onto public transportation. Corridor ridership would exceed 1,000 per weekday for such a route.
12. **Sunday service** – Once Saturday service has been established and is successful, Sunday service can be considered. Sunday ridership is typically half of Saturday ridership, or only about 25% of weekday ridership. Thus, weekday demand of 1,000 would translate into enough Sunday demand to make the service viable.

13. **Upgraded corridor service** – After improvements in peak and midday frequency have been implemented, elements of bus rapid transit can be applied to a corridor. These can include further improvements in frequency (to 10-minute headways), improved passenger facilities (enhanced shelters), technology applications (such as real-time passenger information), and roadway priority treatments such as transit signal priority and queue jump lanes (to allow buses to bypass congestion at intersections). Corridor ridership approaching 2,000 passengers on a weekday would justify these investments.
14. **Bus rapid transit** – A full application of bus rapid transit, including those elements listed above plus branding, articulated vehicles, further upgrades in the service level, some exclusive right of way, and enhanced passenger stations, would be warranted as ridership in a corridor approaches 5,000 passengers on a typical weekday. This could also involve a limited-stop overlay on regular local service to allow passengers a faster trip.
15. **Rail** – Rail transit can take several forms, including commuter rail with traditional locomotive-drawn trains, commuter rail with self-propelled cars (known as diesel multiple units, or DMUs), streetcars or light rail powered by overhead catenary, and heavy rail rapid transit. Each of these forms of rail requires a substantial investment in right of way, track, facilities and equipment, and they have much higher operating costs than bus transportation. Full day ridership in a corridor needed to justify this investment ranges from 7,000 and higher, depending on the form of rail service. Commuter rail, which is typically operated only during peak periods, is appropriate for corridors with very large worktrip demand and a high degree of road congestion so that the travel time advantage of rail is maximized. It also works best when the worktrip destinations are concentrated at the end of the rail corridor within easy walking distance of the terminal. Peak hour, peak direction trips would need to exceed 1,000 to make the service viable, though even at this level it would not be as cost effective on a per passenger basis as bus transportation. Light rail typically operates more like a bus, with lower speeds and more frequent stops, and is appropriate for a corridor with a high level of demand all day and with multiple generators along the corridor. Most light rail systems in the US have weekday ridership of at least 7,000 passengers, with the exception of some very short trolley and streetcar routes which tend to be oriented toward tourists. Heavy rail rapid transit is only seen in major metropolitan areas, usually operating in a subway or on elevated tracks.

As GMTA's current services are described in chapter 2 and new services recommended in chapter 5, their relationship to this hierarchy will be identified.

Chapter 2

Existing Transit Services

Key Issues in Chapter 2:

- *What services does GMTA currently operate?*
- *Who are GMTA's riders?*
- *How well do GMTA's services perform?*

Across its service area, GMTA operates a range of services to meet the diverse needs of the traveling public. These include year-round local routes that serve trips for all purposes, commuter routes that operate primarily during peak periods, seasonal routes that mainly serve skiers and riders in the Mad River Valley and in Stowe, and shuttle routes and other demand response services oriented toward seniors, people with disabilities, and others who have limited transportation alternatives.

Service Summary

Central Vermont

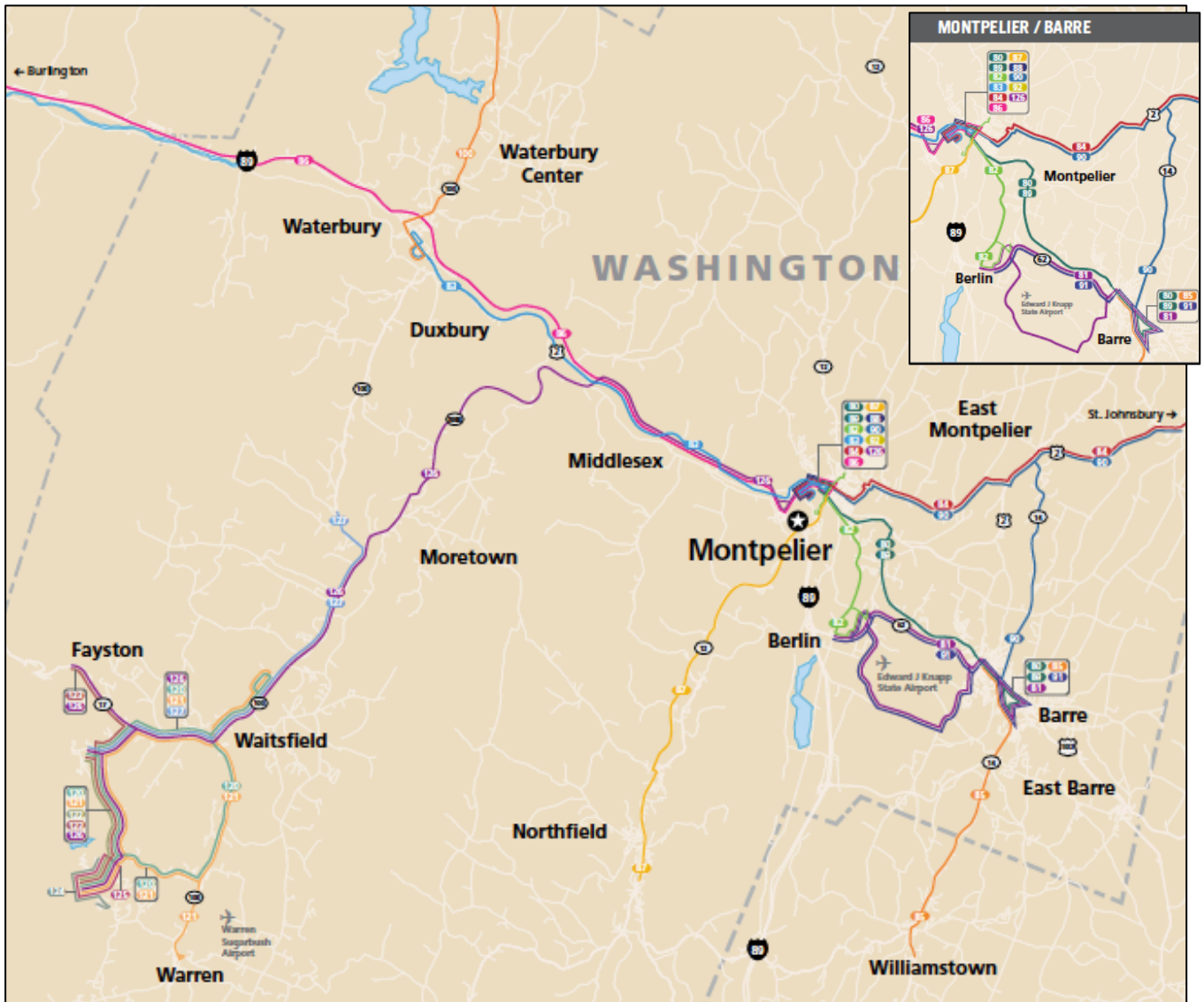
Local and Commuter Routes

Coverage

Within Central Vermont, GMTA local routes serve Montpelier, Barre City, and Berlin. Commuter routes extend into several more communities and cross into neighboring counties. Figure 2.1 displays the local, commuter and shuttle services in Central Vermont. The US 2 corridor is served to the east and the west, connecting Waterbury, Middlesex, East Montpelier, Plainfield, Marshfield, Cabot, Danville and St. Johnsbury to Montpelier. Taken together, these cities/towns (excluding Danville and St. Johnsbury) had a population of 33,429 in 2010, making up 56% of the county's total population and 52% of the population of the Central Vermont study area.

U.S. Census population figures for the year 2010 at the block level were used to determine the approximate number of persons within easy walking distance of GMTA local and commuter route service (not including the LINK Express). Assuming an even population distribution within individual Census blocks, about 20,000 persons live within a ¼ mile radius of GMTA local and commuter route services (equivalent to a 5-minute walk). Another 14,700 people live within ¾ of a mile from a GMTA route (equivalent to a 15-minute walk).

Figure 2.1 Central Vermont GMTA Routes



- | | |
|------------------------------------|----------------------------------|
| 80 City Route Mid Day | 91 Hospital Hill Demand Response |
| 81 Barre Hospital Hill | 92 Montpelier Circulator |
| 82 Montpelier Hospital Hill | 100 Route 100 Commuter |
| 83 Waterbury Commuter | 120 Valley Floor |
| 84 US 2 Commuter | 121 Valley Evening Service |
| 85 Hannaford Shopping Special | 122 Mount Ellen |
| 86 Montpelier LINK Express | 123 Mad River Glen |
| 87 Northfield Community Shuttle | 124 Mountain Condos |
| 88 Capital Shuttle | 125 Access Road |
| 89 City Commuter | 126 SnowCap Commuter |
| 90 Health Center Community Shuttle | 127 Harwood Freerider |

Level of Service

The four local routes in the GMTA system operate six days per week (Monday-Saturday). The Barre Hospital Hill and Montpelier Hospital Hill routes operate from roughly 7:00 a.m. to 6:00 p.m. with trips once per hour. Saturday service begins an hour later. The City Route offers a higher level of service, running from 5:25 a.m. to 8:30 p.m. on weekdays and 7:55 a.m. to 7:25 p.m. on Saturdays. During commuting hours, the City Commuter runs every 30 minutes, and during the midday period, the City Midday operates every 75 minutes. Like the two Hospital Hill routes from Barre and Montpelier, the City Midday will deviate from its alignment for up to $\frac{3}{4}$ of a mile to pick up or drop off passengers. Finally, the Montpelier Circulator operates weekdays from 6:50 a.m. to 5:50 p.m. with hourly service, except for two 80-minute breaks in service at 9:30 a.m. and 1:30 p.m. The route operates hourly on Saturdays from 8:50 a.m. to 1:50 p.m. on a more limited alignment.

GMTA operates four commuter routes, one of them jointly with a neighboring agency. The Waterbury Commuter runs six round-trips on weekdays between Montpelier and Waterbury via US 2. The Route 100 Commuter operates four round-trips on weekdays between Morrisville and Waterbury (via Stowe and Moscow), and two additional trips between Morrisville and Moscow. One of the trips in each direction between Morrisville and Moscow take place during the midday period; otherwise, the rest of the trips are during peak periods. The US 2 Commuter is jointly operated with Rural Community Transportation and connects Montpelier to St. Johnsbury. There are four full-route round-trips per weekday (split between the two agencies) and one additional round-trip just between Montpelier and Marshfield, operated by GMTA. Passengers can connect to other service in St. Johnsbury to reach Lyndonville and other destinations in between. Finally, the LINK Express to Burlington, jointly operated with CCTA drivers and vehicles, runs eight round trips between Montpelier and Burlington and one additional trip between Waterbury and Burlington. This route includes one round-trip during the midday period. In Burlington, connections can be made to LINK routes to Addison County and services in Middlebury operated by ACTR, as well as more GMTA services in Franklin County.

Stagecoach Transportation Services operates a commuter route between Montpelier and Randolph/Royalton, but this is oriented toward commuting to jobs in Orange County. It is not possible at this time to use this route to commute to jobs in Montpelier.

Seasonal Routes

Coverage

The great majority of the seasonal service in Central Vermont operates in the Mad River Valley, primarily in Waitsfield and Warren. (See Figure 2.1.) There are eight separate Mad Bus services, though one of them, the SnowCap Commuter—the only one that charges a fare—is also considered to be part of the Capital District service. That route connects Montpelier to the Valley via Middlesex and Moretown. These eight routes operate only during the ski season, roughly from the beginning of December through the end of March, with some routes operating into the

first week of April. The other seasonal route operated by GMTA is the Capital Shuttle, which runs during the legislative session, from January through the first week of May. This route is wholly contained in the city of Montpelier. The Capital Shuttle is intended to relieve parking pressure in downtown Montpelier (by connecting to the Dept. of Labor park-and-ride lot), and offer a convenient way for State workers to move between the State offices at National Life and the State House.

Level of Service

There is a wide range in the level of service operated on the seasonal routes. Valley Evening Service, operates on a demand response basis hourly between 6:00 p.m. and 2:00 a.m. on Saturdays only. The Harwood Freerider operates a single one-way trip from Harwood Union School to Mt. Ellen on most Mondays and Thursdays through the ski season. The SnowCap Commuter, which connects Montpelier, Middlesex, and Moretown to the Mad River Valley, offers one round-trip, but only on 52 days through the season (mostly weekends and holiday weeks). The other five ski-oriented routes offer daily service during the whole ski season, with extra service provided on weekends and holidays. The Valley Floor route operates hourly, while the Mt. Ellen route operates every 30 minutes. The Mountain Condos and Access Road routes operate every 40 minutes on weekdays and every 20 minutes on weekends and holidays, but only until noon. In the afternoon, these routes offer “dial-a-ride” service. The Mad River Glen route operates a 9:00 a.m., 12:00 p.m. and 4:00 p.m. trip on Saturdays and Sundays and certain holiday weekdays between the Lincoln Peak area condos and lodgings and the Mad River Glen ski area.

The other seasonal route, the Capital Shuttle, operates every 20 minutes from 7:20 a.m. to 5:20 p.m., Tuesday through Friday from early January to early March, and then Monday through Friday from mid March through the first week of May. It does not operate during Town Meeting week. More detailed information on the level of service of all of the seasonal routes is provided in the route profiles in Appendix B.

Demand Response/Shuttle Services

Much of GMTA’s Central Vermont operations consists of demand response service. Some of this is scheduled service that serves specific areas and facilities, but most of it is “pure” demand response that takes individuals from their homes to requested destinations and back. The coverage area for the demand response service is all of Washington County plus Orange, Williamstown, and Washington in Orange County. Trips originating in these places can have destinations in a much wider area, including surrounding counties and even other states (most frequently the Upper Valley of New Hampshire). There are four scheduled shuttle services currently operated (see Figure 2.1):

1. Plainfield Health Center Community Shuttle – This service operates between 10:00 a.m. and 2:00 p.m. three days per week. On Mondays and Thursdays it serves trips originating anywhere in Washington County; on Tuesdays, it serves trips originating in Barre.

2. Northfield Community Shuttle – This service operates on Wednesdays between 8:30 a.m. and noon. It links several residential complexes with grocery stores, the Northfield senior center, the Community Emergency Relief Volunteers (CERV) Food Shelf, and other destinations (such as pharmacies and medical practices) upon request.
3. Hospital Hill Demand Response – This service operates on Tuesdays, Wednesdays and Thursdays between 9:00 a.m. and 2:00 p.m. to supplement the service provided by the Barre Hospital Hill local route. This service allows the regular local route to operate more efficiently while providing greater flexibility and more service to Barre City residents who need to get to appointments at various medical facilities on the Hill. The service area is a ¾ mile buffer around the regular local route.
4. Hannaford Shopping Special – This service, sponsored in part by Hannaford Supermarket, operates on Tuesdays between 9:45 a.m. and 1:15 p.m., linking Barre City and Williamstown to the Hannaford in South Barre. Several apartment complexes in Barre are served directly at specific times.

Advance reservations are not needed for the Northfield and Hannaford shuttles, unless a passenger needs to be picked up at a non-scheduled location. The Health Center and Hospital Hill shuttles do require reservations.

The rest of GMTA’s demand response service is provided through several programs:

- **Medicaid** – This state and federally funded program provides transportation to medical appointments and prescription pick-up services for eligible individuals. There are many rules, requirements, and restrictions involved with this program, but it accounts for nearly a third of the total funding for GMTA.
- **Elders and Persons with Disabilities** – This federal program, significantly enlarged by the State’s reallocation of federal highway funds, is a joint effort with human service agency partners in Washington County. The money in this program pays for critical care transportation (to obtain dialysis, chemotherapy and radiation treatment), meal site, shopping, non-Medicaid medical, adult day, and basic transportation needs for seniors and people with disabilities. Overall, it represents about 15% of GMTA’s service. Partner agencies include the Central Vermont Council on Aging (CVCOA), the Vermont Center for Independent Living, and Barre Project Independence (which also operates its own van). The CVCOA oversees all meal site and senior center locations, including the Greater Northfield Senior Center, the Waterbury Senior Center, Evergreen Place in Waitsfield, and the Twin Valley Senior Center in Marshfield. Other agencies that purchase service through this program include:
 - Washington County Mental Health
 - Washington County Diversion Program

- Vocational Rehabilitation
- Vermont Association for the Blind and Visually Impaired
- Montpelier Housing Authority
- Plainfield Community Health Center
- Vermont Kidney Association
- Department of Children and Family Services
- Disability Determination Services

A final element of this program is Ticket to Ride, a collaboration between Vermont's disability community, CVCOA and GMTA. It provides an annual travel allowance to E&D eligible riders in Central Vermont (\$225 for rural areas and \$75 for the more urban locations) for trips for any purpose desired by the rider. While providing additional opportunities for medical and shopping trips, the program is often used for social trips which are essential to the well-being of seniors and people with disabilities but are not funded by the regular programs.

- **General Public** – When GMTA operates its demand response service for meal site transportation under the E&D program, it maximizes the use of those resources by opening the doors of the vehicle to general public riders. In its Bus Map & Guide, GMTA advertises the availability of transportation among the following locations:
 - Montpelier, Moretown and Waitsfield on Tuesdays and Thursdays
 - Montpelier, Plainfield and Marshfield on Mondays, Wednesdays, and Fridays
 - Montpelier, Riverton and Northfield on Wednesdays

To the extent that GMTA can accommodate general public riders on other already-scheduled trips, it does so.

Service is provided for these programs by both GMTA-operated vans and private automobiles driven by volunteers. The total amount expended on van service in FY2010 was about 2.5 times larger than the amount expended on mileage reimbursements for volunteer driver service. However, the number of riders carried by volunteer drivers (30,000 in FY2010) was only 19% less than that carried by the vans (37,000 in FY2010). These figures demonstrate the high degree of cost-effectiveness achieved by the volunteer driver program.

GMTA currently has a pool of 35 volunteer drivers, though more typically there are up to 50 drivers available. The number fluctuates in response to gasoline prices and the mileage reimbursement rate. Some drive more frequently than others, but the average number of trips provided per volunteer in FY2010 was about 600, or 50 per month. These volunteers are an absolutely essential part of GMTA's service, and without them, rides would be unavailable to many of GMTA's customers. Volunteer drivers are especially useful for long-distance medical appointments for which a patient may need to be driven to a hospital an hour away and then be brought back two hours later. If a professional driver were to provide this trip, it would cost GMTA about 5 hours of driver time plus all of the mileage expenses for the van, resulting in a

charge of upwards of \$300. For a volunteer driver, the cost would be much less since it only involves the mileage reimbursement cost of 56.5 cents per mile. The same trip, assuming a distance of 60 miles to the hospital, would be about \$60, or only one fifth as much. (Note that there is a cost to schedule and dispatch the trip, but this would apply to both the van and the volunteer driver.)

Lamoille County

Local and Commuter Routes

Coverage

Within Lamoille County, GMTA operates one year-round local route, serving Morrisville, and one commuter route linking Morrisville and Stowe to Waterbury. (See Figure 2.2.) Taken together, these two towns (Morristown and Stowe) had a population of 9,541 in 2010, making up 39% of the county's total population.

U.S. Census population figures for the year 2010 at the block level were used to determine the approximate number of persons within easy walking distance of GMTA local and commuter route service. Assuming an even population distribution within individual Census blocks, about 5,700 persons live within a $\frac{1}{4}$ mile radius of GMTA local and commuter route services (equivalent to a 5-minute walk). Another 3,900 people live within $\frac{3}{4}$ of a mile from a GMTA route (equivalent to a 15-minute walk).

Level of Service

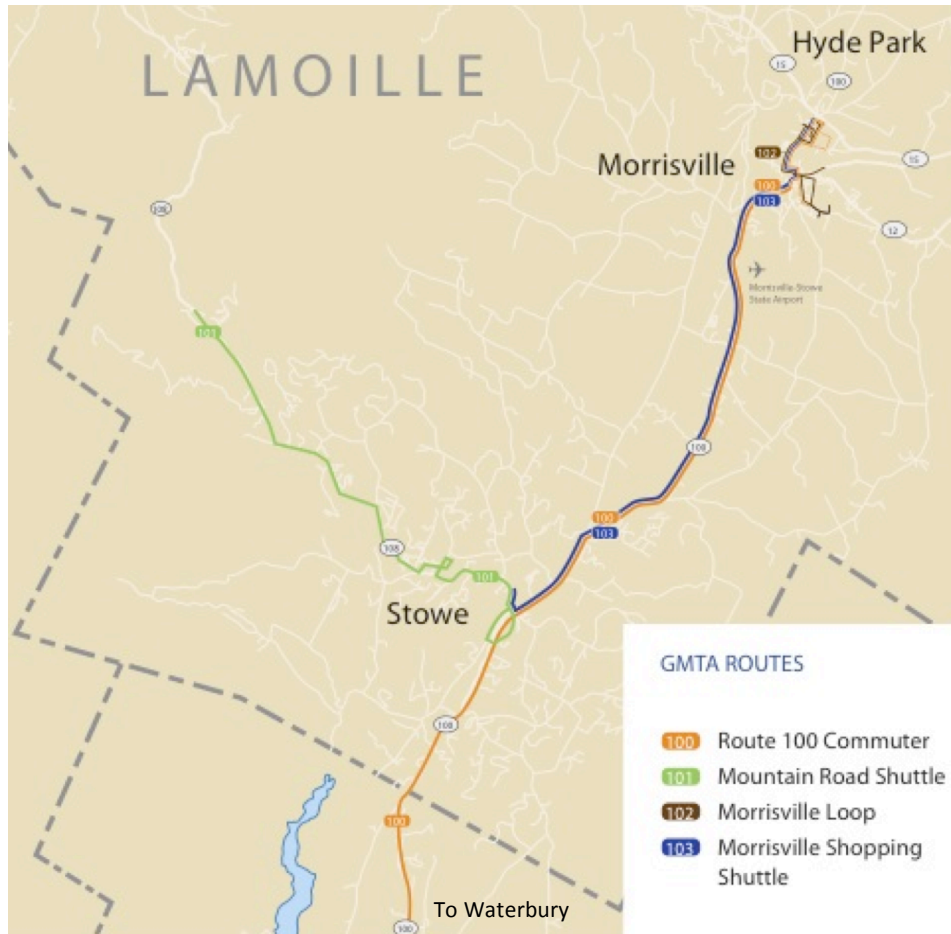
The Morrisville Loop operates seven round trips within Morrisville Monday through Friday. Each trip takes 35 minutes and circulates through the important trip generators in town. The first trip begins at 8:00 a.m. and the last trip ends at 2:55 p.m., reflecting the purpose of the route to serve non-work trips for shopping, errands and medical appointments. The Route 100 Commuter operates four round-trips on weekdays between Morrisville and Waterbury (via Stowe and Moscow), and two additional trips between Morrisville and Moscow. One of the trips in each direction between Morrisville and Moscow take place during the midday period; otherwise, the rest of the trips are during peak periods.

Seasonal Route

Coverage

Seasonal service in Lamoille County consists of the well-patronized Mountain Road Shuttle connecting Stowe village to the ski resort on Mount Mansfield and other destinations in between (see Figure 2.2). Locations served include Commodores Inn, Green Mountain Inn, Town & Country Resort, Stoweflake, and Topnotch, in addition to the Spruce Peak Base/Performing Arts Center and the Mansfield Base and Gondola.

Figure 2.2 Lamoille County GMTA Routes



Level of Service

This Mountain Road Shuttle operates during the ski season seven days per week. During the early and late parts of the season (Thanksgiving to mid December and end of March into early April), the route operates hourly, but during the peak ski season, it runs with headways of between 15 and 30 minutes throughout the day.

Demand Response/Shuttle Services

GMTA operates a daily shopping shuttle in Lamoille County connecting Stowe Village to shopping opportunities in Morrisville (see Figure 2.2). The route runs one trip southbound at 10:20 a.m., one northbound at 12:40 p.m., and a final southbound trip from Morrisville at 3:03 p.m.

Other demand response service in Lamoille County is operated by Rural Community Transportation. This includes two other shopping shuttles, van service, and volunteer driver trips under the Medicaid program, the Elders & Persons with Disabilities program, and contracts with

human service agencies such as Lamoille County Mental Health, Disabled American Veterans, Out and About adult day, and Central Vermont Community Action Council. The two shopping shuttles connect Johnson to Morrisville with weekly service, and Craftsbury, Greensboro, and Hardwick to Morrisville with trips on the first and third Tuesdays of every month.

Franklin and Grand Isle Counties

Local and Commuter Routes

Coverage

In Franklin and Grand Isle counties, GMTA operates one year-round local route, serving St. Albans City, and two commuter routes: one links Alburgh to St. Albans and Georgia via Highgate and Swanton and the other links Richford to St. Albans via Berkshire, Enosburg Falls and Sheldon. (See Figure 2.3.) Taken together, these eight towns and one city had a population of 38,363 in 2010, making up 70% of the total population of the two counties. Of course, CCTA also operates service in Franklin County: the St. Albans LINK Express to Burlington. This route offers connections in Burlington to Central Vermont and Addison County (with further connections to ACTR services in Middlebury).

U.S. Census population figures for the year 2010 at the block level were used to determine the approximate number of persons within easy walking distance of GMTA local and commuter route service. Assuming an even population distribution within individual Census blocks, about 13,000 persons live within a $\frac{1}{4}$ mile radius of GMTA local and commuter route services (equivalent to a 5-minute walk). Another 8,900 people live within $\frac{3}{4}$ of a mile from a GMTA route (equivalent to a 15-minute walk).

Level of Service

The St. Albans Downtown Shuttle connects important commercial, institutional and residential areas in St. Albans City. It operates from 5:45 a.m. to 6:34 p.m. Monday through Friday, and 9:45 a.m. to 3:20 p.m. on Saturdays. All service operates hourly. The two commuter shuttles from Alburgh and Richford operate just one round-trip per day with early morning (5:30 a.m.) departures from the outer points and arrival times at St. Albans Industrial Park at around 6:25 to match a shift start time at important employers. The Alburgh/Georgia Shuttle continues south to the Arrowhead Industrial Park at 6:45 a.m. and other destinations in Georgia. The afternoon trips leave from the St. Albans Industrial Park at 4:10 p.m. and arrive at the outer terminals at about 5:15 p.m. CCTA's St. Albans LINK Express operates four round-trips per day, two each in the morning and afternoon peak periods.

Figure 2.3 Franklin and Grand Isle GMTA Routes



Demand Response/Shuttle Services

GMATA operates a weekly shopping shuttle on Tuesdays connecting St. Albans City and Swanton to the Price Chopper across from Highgate Plaza in St. Albans Town. It picks up passengers in St. Albans City starting at 9:50 a.m. and drops them at the Price Chopper at 10:35. It then continues north into Swanton and picks up passengers starting at 10:50 a.m. returning to the Price Chopper to drop them off at 11:35. At that time it picks up the St. Albans passengers and distributes them back home, returning to the Price Chopper at 12:45 p.m. to pick up the Swanton passengers to return them home by 1:35 p.m.

In Franklin County, GMATA operates van and volunteer driver service under the Medicaid program, the Elders & Persons with Disabilities program, and contracts with human service agencies. In Grand Isle County, this demand response service is provided by CIDER (Champlain Islanders Developing Essential Resources). CIDER has a small number of vans and an extensive volunteer driver network. These volunteers serve local trips within the islands and frequently carry passengers into Burlington for medical services.

Summary of GMATA Services

GMATA’s services as described above range from volunteer driver trips that carry one passenger at a time to large bus commuter routes that can carry more than 40 passengers per trip. The

frequency of service ranges from one trip per week for shopping shuttles to trips every 15 minutes for the most highly-patronized tourism routes. Most regular local service runs every half hour or every hour depending on the density of development in the service area. The span of service also varies depending on the target market for the route: most routes offer service appropriate for commuters running from early in the morning through the afternoon peak period, but some are oriented to non-work trips and run only in the midday.

Table 2.1 lists all of GMTA’s offerings by service category (only categories that have currently-operated services are shown). These categories are described in the Toolbox included in Chapter 1 of the TDP.

Table 2.1: Summary of Current GMTA Services

Level in Toolbox	Span	Frequency	Routes/Services
1. Volunteer driver	N/A	N/A	Critical care, other E&D, Medicaid
4. Demand response	N/A	N/A	Medicaid, E&D, General public
5. DR/Shopping shuttles	4-5 hours, midday. One or two days per week up to daily	N/A	85 Hannaford Shopping Special 87 Northfield Community Shuttle 90 Health Center Comm. Shuttle 91 Hospital Hill Demand Response 103 Morrisville Shopping Shuttle 109 Price Chopper Shopping Shuttle
6. Tourism service	Daily 8:00 a.m. to 6:00 p.m. with extra service on weekends and holidays. Some routes more targeted.	1-4 trips per hour, with the higher level of service on weekends and holidays. Some routes have one trip per day.	101 Mountain Road Shuttle 120 Valley Floor 121 Valley Evening Service 122 Mt. Ellen 123 Mad River Glen 124 Mountain Condos 125 Access Road 126 SnowCap Commuter 127 Harwood Freerider
7. Commuter bus peak only	Weekday peak periods	1 or more trips per peak period	83 Waterbury Commuter 84 US 2 Commuter (with RCT) 96 St. Albans LINK Express 100 Route 100 Commuter 115 Alburgh/Georgia Shuttle 116 Richford/St. Albans Shuttle
8. Commuter bus expanded service	Weekday peak plus some midday	4 trips per peak plus midday	86 Montpelier LINK Express (with CCTA)
9. Full day service	Weekdays 6:00 a.m. to 7:00 p.m.	At least hourly	88 Capital Shuttle (part year) 102 Morrisville Loop (no PM peak service)
11. Saturday service	Weekday full day plus Saturday	1 or 2 trips per hour on Saturday	80/89 City Route 81 Barre Hospital Hill 82 Montpelier Hospital Hill 92 Montpelier Circulator 110 St. Albans Downtown Shuttle

Profile of Riders

GMTA periodically conducts surveys of the riders on its year-round local routes. Franklin/Grand Isle (FGI) customers were most recently surveyed in January 2010, Stowe/Morrisville (Lamoille) customers were most recently surveyed in October and November 2011, and Barre/Montpelier (Capital District) customers were most recently surveyed in June 2012. Representative statistics from these surveys are shown on the next two pages.

Commuting is the most common trip purpose for GMTA riders overall, though this purpose is somewhat more common among FGI riders and somewhat less common among Capital District riders. Overall, 48% of trips surveyed were going to or coming from work, but 55% of these riders used GMTA to commute to work, even if that particular trip was not a work trip.

About 40% of GMTA riders overall are “transit dependent” in that they cannot drive. Another 28% reported that they had no car available for that particular trip. Saving money was an important reason to use GMTA.

If the bus was not available, about 28% of riders would not have another means available to make their trip. Among the 72% who would be able to make the trip, nearly half said they would drive instead and another 28% said they would carpool. Driving was a much more common alternative cited among Lamoille passengers than among FGI or Capital District passengers, in line with the small percentage (5%) of Lamoille passengers who said they did not have a car available for the trip.

There was some diversity of opinion about the most needed improvements among the three survey pools. Overall, 39% stated that higher frequency service was important, and this figure was relatively consistent. Among FGI passengers, significant numbers voted for all of the other types of improvements, but among Capital District passengers, later evening service on weekdays was clearly important. Lamoille passengers also requested more weekend service very often, but were less concerned about later evening service.

The demographic characteristics shown on the second page of survey results indicates a relatively transit-dependent ridership pool overall. About half of passengers lived in households that had no cars, and 72% of riders had no car available for this trip. As noted above, Lamoille passengers were much more likely to have a car available than passengers in the other regions.

Different age groups are represented relatively equally overall, though the Lamoille ridership tends to skew older and the FGI ridership tends to skew younger. Most riders are employed, especially in FGI. Significant percentages of riders receive some form of government assistance with Social Security, Food Stamps, and Medicaid being the most common.

	FGI	Cap Dist	Lamoille	Overall
Number of Surveys	37	105	20	162
Purpose of Trip				
Work	71%	40%	45%	48%
Shopping	14%	13%	35%	16%
Personal Business	11%	29%	5%	22%
Medical	6%	7%	10%	7%
Social/visiting	3%	4%	10%	5%
Use GMTA Buses to Commute	74%	50%	50%	55%
Reasons for Using GMTA				
Cannot Drive	49%	33%	50%	39%
No Car Available	29%	32%	5%	28%
Avoid Traffic/Parking	3%	21%	25%	17%
Save Money	11%	39%	50%	34%
Environmental	11%	7%	20%	10%
Other	11%	7%	15%	9%
Frequency of Use				
Daily	74%	59%	65%	63%
2-3 Times per Week	9%	33%	25%	27%
Once per Week	3%	3%	0%	3%
2-3 Times per Month	14%	6%	10%	8%
Rarely	0%	1%	0%	1%
If Bus Was Not Available				
Would not make trip	26%	28%	30%	28%
Would still make trip	74%	72%	70%	72%
by Walking	20%	14%	22%	16%
by Biking	0%	7%	0%	5%
by Taxi	14%	3%	0%	5%
by Driving	40%	43%	72%	46%
by Carpooling	37%	28%	14%	28%
by Other means	0%	6%	7%	5%
Requested Improvements				
Higher frequency	46%	36%	40%	39%
Earlier AM service	23%	11%	20%	15%
Later PM service	37%	34%	15%	32%
More Saturday service	37%	21%	55%	29%
More Sunday service	37%	24%	55%	31%
Faster, more direct service	17%	15%	0%	14%
Routes to more locations	20%	23%	15%	21%

	FGI	Cap Dist	Lamoille	Overall
Average Number of Cars per HH	0.71	0.78	1.25	0.82
Households with Zero Cars	47%	50%	35%	47%
Riders with No Car for this Trip	86%	71%	50%	72%

Age of Riders

19 to 25	3%	13%	5%	10%
26 to 35	26%	20%	10%	20%
36 to 45	23%	19%	5%	18%
46 to 55	15%	17%	20%	17%
56 to 65	15%	21%	25%	20%
65 and over	5%	7%	35%	10%

Employment Status

Employed	71%	48%	55%	54%
Homemaker	6%	3%	0%	3%
Disabled	3%	16%	5%	12%
Retired	6%	9%	35%	12%
Student	0%	2%	0%	1%
Unemployed	9%	13%	5%	11%
Other	5%	8%	0%	6%

Receiving Govt. Assistance

Food Stamps	26%	21%	70%	28%
Social Security	20%	14%	70%	22%
Medicaid	11%	24%	60%	25%
TANF	0%	2%	0%	1%
VHAP	17%	8%	10%	10%
WIC	3%	2%	0%	2%
Medicare	3%	5%	50%	10%
Other	14%	0%	0%	3%

Average Household Income

Under \$20,000	55%	43%	38%	45%
\$20,000 to \$25,000	42%	5%	15%	15%
\$25,000 to \$30,000	0%	4%	8%	4%
\$30,000 to \$50,000	3%	37%	15%	27%
Over \$50,000	0%	19%	24%	15%

Finally, most GMTA riders have low incomes, with 60% of riders overall being in households with annual incomes of less than \$25,000. This is especially true of FGI where 97% of riders are in this category. The Capital District and Lamoille have greater representation of passengers from higher income categories, with nearly a quarter of Lamoille passengers earning more than \$50,000 annually and the bulk of Capital District passengers more solidly in the middle class, with 56% of riders earning over \$30,000 annually.

Fares

GMTA's fare structure as of July 1, 2012 is summarized in Table 2.2 below. Prior to that date, Central Vermont fares were generally half as high, and all service in Franklin and Grand Isle counties had been operated fare free. A listing of routes by fare type is provided in Table 2.3.

Youth between the ages of 6 and 17, adults over 60 years of age, and Medicaid card holders ride at discounted rates. Fare free routes are listed in Table 2.4.

Table 2.2 Summary of GMTA Fares

Region	Service Type	Fare Type	Regular	Discount*
Central Vermont and Lamoille County	Local routes and within-town commuter trips	Cash (one-way trip)	\$1.00	\$0.50
		10-ride Ticket	\$9.00	\$4.50
		Monthly Pass	\$33.00	\$15.00
	Commuter routes (crossing town lines)	Cash (one-way trip)	\$2.00	N/A
		10-ride Ticket	\$16.00	N/A
		Monthly Pass	\$67.00	N/A
	LINK Express	Cash (one-way trip)	\$4.00	N/A
		10-ride Ticket	\$40.00	N/A
		Monthly Pass	\$150.00	N/A
	Intra-county	\$2.00	N/A	
Franklin and Grand Isle Counties	Local routes and within-town commuter trips	Cash (one-way trip)	\$0.50	\$0.25
		10-ride Ticket	\$4.50	\$2.25
		Monthly Pass	\$16.50	\$8.25
	Commuter routes (crossing town lines)	Cash (one-way trip)	\$1.00	N/A
		10-ride Ticket	\$8.00	N/A
		Monthly Pass	\$33.50	N/A
	LINK Express	Cash (one-way trip)	\$4.00	N/A
		10-ride Ticket	\$40.00	N/A
		Monthly Pass	\$150.00	N/A
	Intra-county	\$2.00	N/A	

* Discount fares apply to people age 6 to 17, seniors age 60 and over, and people with disabilities. Children under 6 ride free with paying adult.

Table 2.3 GMTA Routes by Fare Type

Fare Type	Routes/Services
Central Vermont and Lamoille Local Routes	80/89 City Route
	81 Barre Hospital Hill
	82 Montpelier Hospital Hill
	102 Morrisville Loop
	103 Morrisville Shopping Shuttle
Central Vermont and Lamoille Commuter Routes	83 Waterbury Commuter
	84 US 2 Commuter (with RCT)
	100 Route 100 Commuter
	126 SnowCap Commuter
FGI Local Routes	110 St. Albans Downtown Shuttle
FGI Commuter Routes	115 Alburgh/Georgia Shuttle
	116 Richford/St. Albans Shuttle
LINK Express	86 Montpelier LINK Express
	96 St. Albans LINK Express

Table 2.4 GMTA Fare Free Routes

85 Hannaford Shopping Special
87 Northfield Community Shuttle
88 Capital Shuttle (part year)
90 Health Center Comm. Shuttle
91 Hospital Hill Demand Response
92 Montpelier Circulator
101 Mountain Road Shuttle
109 Price Chopper Shopping Shuttle
120 Valley Floor
121 Saturday Evening Service
122 Mt. Ellen
123 Mad River Glen
124 Mountain Condos
125 Access Road
127 Harwood Freerider

Fleet and Facility

As of May 2012, GMTA’s bus fleet consisted of 46 active vehicles, as listed in Table 2.5. The majority of these are cutaway vans of about 24 feet in length and with 18 or 19 seats based on a

Ford E450 chassis. Many GMTA vans were destroyed in the flood in 2011 and 16 new Chevrolet Express G3500 cutaway vans were purchased to replace them. GMTA has five large Gillig buses, three with a length of 35 feet and two 40-footers. The 40-foot buses are used for LINK Express service to Burlington, while the others are used for either Sugarbush or Stowe (Mountain Road Shuttle) service.

All buses are equipped with bicycle racks that can accommodate two bicycles. CCTA is in the midst of a study to upgrade its radio system, which can lead to further upgrades in technology to track the location of buses in real time. This technology would eventually be expanded to include GMTA's fleet.

Table 2.5 Vehicle Inventory

Bus ID	Year	Model	Length (Feet)	Seats	Bus ID	Year	Model	Length (Feet)	Seats
CAPITAL DISTRICT FLEET					FRANKLIN/GRAND ISLE FLEET				
260	2009	Ford E450	24	18	329	2005	Ford E450	25	19
261	2009	Ford E450	24	18	341	2009	Ford E450	24	18
263	2009	Ford E450	24	18	F14	2008	Ford E450	24	20
265	2009	Ford E450	24	18	F16	2010	Ford E450	24	18
268	2010	Ford E450	24	18	F17	2010	Ford E450	24	18
271	2010	Ford E450	24	18	F18	2010	Ford E450	24	18
272	2011	Chevrolet G3500	24	18	F19	2011	Ford E450	22	14
273	2011	Chevrolet G3500	24	18	F2	2007	Ford E450	22	15
274	2011	Chevrolet G3500	24	18	F20	2012	Chevrolet G3500	24	18
275	2011	Chevrolet G3500	24	18	F3	2007	Ford E450	25	15
276	2011	Chevrolet G3500	24	18	F331	2007	Ford E450	25	18
277	2011	Chevrolet G3500	24	18	F4	2008	Ford E450	25	19
278	2012	Chevrolet G3500	24	18	F9	2008	Ford E450	25	21
279	2012	Chevrolet G3500	24	18	MAD BUS FLEET				
925	2007	Gillig	40	39	350	2010	GILLIG	35	31
928	2009	Gillig	40	39	360	2012	Chevrolet G3500	24	18
STOWE FLEET					361	2012	Chevrolet G3500	24	18
266	2009	Ford E450	24	18	362	2012	Chevrolet G3500	24	18
470	2007	Gillig	35	31	363	2012	Chevrolet G3500	24	18
471	2008	Gillig	35	31	364	2012	Chevrolet G3500	24	18
480	2010	Ford E450	24	18	365	2012	Chevrolet G3500	24	18
481	2010	Ford E450	24	18	366	2012	Chevrolet G3500	24	18
482	2010	Ford E450	24	18	367	2012	Chevrolet G3500	24	18
483	2010	Ford E450	24	18					
484	2012	Chevrolet G3500	24	18					

GMTA has three year-round facilities from which its routes are operated, plus a winter facility at Sugarbush. In Central Vermont, routes are operated out of the GMTA facility located on VT Route 12 in Berlin. This facility houses GMTA's Capital District administrative offices, maintenance facilities, and a fueling station. The seasonal tourism-related services are operated

out of a small auxiliary dispatch office at Sugarbush Resort, and the buses are parked at Lincoln Peak, but there are no maintenance facilities at that location. Outside of the ski season, these Mad Bus vehicles are stored in Berlin at the main garage.

In Stowe, GMATA has a facility at 1905 Moscow Road. This building is just a garage and does not house any administrative, maintenance or dispatch staff.

GMATA's Franklin and Grand Isle service is operated out of a facility at 375 Lake Road in St. Albans. This facility also serves as an office for administrative staff and two dispatchers, but there are no maintenance staff. Maintenance activities for Stowe and FGI vehicles is carried out either in Berlin or in Burlington at CCTA's facility.

Service Statistics and Performance

Ridership and Productivity

Ridership, vehicle miles, and revenue hours of service, by route, for fiscal year 2012 are presented in Table 2.6. As shown, GMATA's local, commuter, seasonal and demand-response shuttle route services provided nearly 370,000 passenger trips during over 37,500 revenue hours of service, or an average of 9.9 boardings per hour per bus. During these hours, buses traveled over 585,000 miles. The City Commuter and the Mountain Road Shuttle were GMATA's highest ridership routes during fiscal year 2012 at nearly 60,000 trips each, followed by the City Route Midday at 37,000 riders, and the St. Albans Downtown Shuttle and the two Hospital Hill routes all around 26,000 riders. Several routes carried between 12,000 and 16,000 riders. The most productive regular service routes, in terms of boardings per vehicle revenue hour are the City Route Midday and the Alburgh-Georgia Commuter, each with over 19 boardings per hour. The Harwood Freerider has extremely high productivity, due to the very limited amount of service operated. The Mount Ellen route, the Mountain Road Shuttle, the Hannaford Shuttle, and the Richford Commuter perform well in terms of productivity with about 15 boardings per hour. In general, the tourist-oriented services performed relatively poorly in FY12 compared to prior years because of the poor ski conditions and resulting depressed attendance at ski resorts.

Table 2.6 GMTA Schedule Route Ridership and Cost Statistics for Fiscal Year 2012

Rt. No.	Route	Rev. Hours	Ridership	Riders/ Hr	Total Cost	Fare Rev.	Net Cost per Pass.
80	City Route Middy	1,938	37,414	19.3	\$117,568	\$11,485	\$2.84
81	Barre Hospital Hill	3,382	28,144	8.3	\$250,351	\$8,592	\$8.59
82	Mont.Hospital Hill	3,357	25,722	7.7	\$248,300	\$7,900	\$9.35
83	Waterbury Commuter	1,563	15,378	9.8	\$116,181	\$12,683	\$6.73
84	US 2 Commuter (GMTA)	1,606	9,004	5.6	\$133,335	\$7,604	\$13.96
85	Hannaford Shopper	179	2,914	16.3	\$14,412	\$0	\$4.95
87	Northfield Shuttle	182	766	4.2	\$11,525	\$0	\$15.05
88	Capital Shuttle	771	4,601	6.0	\$51,881	\$0	\$11.28
89	City Commuter	4,642	58,080	12.5	\$338,516	\$17,851	\$5.52
90	Plainfield Shuttle	536	1,038	1.9	\$39,795	\$0	\$38.34
91	Hospital Hill DR	755	2,542	3.4	\$56,419	\$0	\$22.19
92	Montpelier Circulator	2,408	12,966	5.4	\$189,334	\$0	\$14.60
100	Route 100 Commuter	1,619	12,215	7.5	\$193,687	\$5,079	\$15.44
101	Mountain Road Shuttle	3,950	59,048	14.9	\$265,005	\$0	\$4.49
102	Morrisville Loop	1,049	3,776	3.6	\$63,627	\$1,532	\$16.44
103	Morrisville Shopping	257	3,245	12.6	\$27,603	\$1,315	\$8.10
109	Price Chopper Shuttle	191	1,118	5.9	\$10,917	\$0	\$9.76
110	St. Albans DT Shuttle	3,621	26,202	7.2	\$235,074	\$0	\$8.97
115	Alburgh-Georgia Comm.	727	14,266	19.6	\$93,975	\$0	\$6.59
116	Richford Commuter	506	7,172	14.2	\$75,476	\$0	\$10.52
120	Valley Floor	1,267	5,087	4.0	\$88,519	\$0	\$17.40
121	Valley Evening Svc.	227	2,257	9.9	\$15,257	\$0	\$6.76
122	Mount Ellen	900	13,798	15.3	\$58,896	\$0	\$4.27
124	Mountain Condos	850	9,433	11.1	\$54,324	\$0	\$5.76
125	Access Road	850	9,392	11.0	\$54,324	\$0	\$5.78
126	Snowcap Commuter	83	768	9.3	\$8,344	\$486	\$10.23
127	Harwood Freerider	5	200	40.0	\$320	\$0	\$1.60
	Special Services*	110	3,311	30.1	\$6,468	\$0	\$1.95
	Total	37,531	369,857	9.9	\$2,819,430	\$74,527	\$7.42

*Special Services includes bus service to events with annual regional significance, such as Warren’s Fourth of July celebration, Stowe’s Weekend of Hope and St. Albans’ Maple Fest.

Factors and Design Principles that Make Routes Successful

It is clear from Table 2.6 that there is quite a bit of variation in the performance of GMTA routes. As will be discussed more in later chapters, there are a number of factors and design principles that affect route performance. The factors include the following:

- **Density of Development and Pedestrian Infrastructure** – In order for transit to be attractive to riders, they need to be able to reach a bus stop conveniently and safely. Because all transit trips start and end as a pedestrian trip, the closer the trip origin or destination is to the bus stop and the better the pedestrian access, the more convenient transit becomes. Dense development means that many people will be in close proximity

to any given stop, and high density areas often have excellent pedestrian amenities because many people walk for all sorts of trips.

- **Direct Access to Important Destinations** – All trips involve an origin and a destination. For routes to attract riders, they must carry them to the places they want to go, such as workplaces, shopping destinations, personal business locations, medical facilities, and recreational opportunities. The quicker and more direct the trip to the destination, the more attractive the transit service will be.
- **Extent of Service Span** – For the “typical” commuter, the workday runs from 9 to 5, or perhaps 8 to 4. However, many people have work schedules that begin earlier than 8:00 a.m. or end later than 5:00 p.m., and many use the bus for other purposes that may require evening and weekend travel. A bus service that runs long hours will be attractive to a greater number of potential riders. However, some of the hours may be relatively unproductive, thus hurting the overall performance of the route.
- **Frequency of Service** – In order for a bus service to be considered convenient to a broad swath of riders, it must run frequently so that many different travel purposes can be accomplished without long waits, and also so that if someone misses a bus, they do not have to wait a long time for the next one to arrive. A commuter service can be designed to serve a specific work shift and therefore be convenient to that set of riders even with only one or two trips operated, but it would not be considered convenient to other potential riders. As with the span of service, frequency is critical to attracting riders, but if there is not sufficient density of demand in the corridor to fill the seats on all of the buses running on a route, higher frequency could result in lower overall performance.
- **Capital Investments and Information** – A final important factor is the physical and technological infrastructure supporting a bus route. It is critical that passengers feel comfortable and secure when riding the bus and while waiting for it to arrive. Additionally, passengers need to be aware of the services offered and feel confident that the route will reliably meet their travel needs. These goals can be accomplished through physical infrastructure and technology, including the vehicle used, passenger facilities such as benches and shelters, and information about the service such as signage, schedule data, and real-time information on reliability.

Referring back to the data in Table 2.6, the City Route (Commuter and Midday) is one of the best performers in the GMTA system because it connects two densely populated areas which also have major employment bases (Montpelier and Barre City) through a linear corridor with many work and shopping destinations. During peak periods, it runs every 30 minutes and follows a direct path. It starts early in the morning and runs into the early evening. All of these factors contribute toward its success.

The results in Table 2.6 combined with the discussion of factors that make routes successful suggest the following service design principles. These principles were applied in developing the route proposals presented in Chapter 5.

- **Design services appropriate to the level of residential and employment density and the travel market** – Local bus routes with all-day service and frequent stops should be used in more urbanized areas with continuous development along the route corridor. Commuter routes may be more appropriate for connecting rural villages to employment centers.
- **Make bus routes as direct as possible to minimize travel time, but do not bypass major generators** – In an ideal world, all significant traffic generators in an area would be clustered in one compact zone or organized in a straight linear corridor. Because the real world is less than ideal, a bus route has to balance the conflicting goals of trying to serve major generators in the most direct way possible, though some may require backtracking or deviations from the main travel corridor.
- **Keep services as simple and consistent as possible** – Bus routes are easier to understand and remember if they follow a clear and intuitive path, and do not change during the course of the day. Complexity and change can be a hindrance to new riders trying to use the system.
- **Routes should be conceived as part of a coordinated, integrated system** – While any given route should be designed to serve a specific travel market, it must also provide connections to other services to maximize regional mobility. Some of this coordination resides in detailed scheduling considerations, but the route structure should provide an efficient means of traveling longer distances.

Costs and Revenues

As shown above in Table 2.6, in fiscal year 2012, the total operating cost (including maintenance and administration) for local, commuter, seasonal and demand-response shuttle routes buses was just over \$2.8 million. Farebox revenue covers roughly 3% of the cost of operating the GMTA bus routes, but about 5% of the cost of those routes that charge a fare. These figures should rise substantially in FY13 due to the fare increases that took effect on July 1, 2012. The net cost per passenger trip (accounting for fare revenue) was \$7.42 in FY12. In addition to farebox revenue, services are funded through federal and state grants, contracts with human service agency partners, contributions from local municipalities, private sector partners (such as Sugarbush, Stowe, and Hannaford), advertising revenue, and other sources.

Intercity Operators

There are two options for surface intercity transportation in GMTA’s service area. Service is limited to only a few trips per day on these providers.

Amtrak

- Vermonter line from Washington, DC to St. Albans
 - One daily stop in each direction at St. Albans, Waterbury and Montpelier Junction

Greyhound Lines (formerly Vermont Transit)

- Montreal- Burlington- Boston route
 - Three daily southbound trips and four daily northbound trips stopping at City Hall in Montpelier

In July of 2011, Megabus, which operates city-to-city express service, introduced express trips between Burlington and Boston. While not in the GMTA service area, LINK Express routes from St. Albans and Montpelier and other connections give residents of the GMTA area access to this service. In February 2012, Megabus connected Burlington to Amherst, MA and Hartford, CT on the way to New York City (via I-91) and Saratoga Springs on the way to New York City (via I-87). Megabus is currently running one round-trip per day on each of the New York routes, and one round-trip per day on the Boston route, except on weekend days when two trips are operated.

Chapter 3

Market Analysis

Key Issues in Chapter 3:

- *What are the best markets for GMTA services?*
- *Where do the people who most need the service reside?*
- *Where do people need to get to for jobs and services?*

GMTA covers a four county area, plus three towns in Orange County. This area is served by four operational units which connect to each other, but still operate mostly as stand-alone districts. It thus makes sense in this edition of the TDP to examine the travel markets of these units separately rather than as a single large service area. In the future, as more services that cross jurisdictional boundaries are operated and riders take advantage of increased mobility to travel among the four counties, it will be more appropriate to consider the market as a whole.

This chapter of the TDP examines the market for transit in the GMTA service area in three segments: Central Vermont (Washington County plus three Orange County towns), Lamoille County, and Franklin and Grand Isle counties. While the Central Vermont region comprises two separate operations—Capital District and Mad Bus—it is reasonable to discuss Washington County as a whole, especially as Mad Bus is a seasonal service. Franklin and Grand Isle service is already integrated, so these two counties will be discussed together.

The analysis includes a close look at the development patterns and the characteristics of the population in each of the three geographic areas. Special focus is put on traditional indicators of a need for transit service—age, income, auto ownership—but the locations of employers and commuting patterns are also considered. GMTA serves both “transit-dependent” and “choice” riders; this chapter analyzes these two markets, while following chapters consider how services can be enhanced to meet their needs.

Central Vermont

Demographic Profile

Located in the heart of Vermont, Washington County and the three towns of Orange County that together make up the Central Vermont study area cover approximately 807 square miles. It includes two cities, Montpelier and Barre, and 21 towns (see Table 3.1 for full list). The area is home to the state capital and many state government offices, as well as large employers such as National Life, Rock of Ages, Cabot Creamery, and Central Vermont Medical Center.

Table 3.1 Central Vermont Demographics

Town	2010 Pop.	2000 Pop.	Pct. Change	Persons per Sq.Mi.	Pop. 65+	Disability Status	Median HH Income	Total Housing Units	0-Veh. HU
Barre city	9,052	9,291	-3%	2,252	1,394	2,061	\$36,778	4,504	533
Barre town	7,924	7,602	4%	258	1,341	1,312	\$63,078	3,402	97
Berlin	2,887	2,864	1%	78	681	560	\$57,328	1,236	29
Cabot	1,433	1,213	18%	37	203	242	\$47,167	771	12
Calais	1,607	1,529	5%	42	197	260	\$65,667	842	18
Duxbury	1,337	1,289	4%	31	137	216	\$64,375	639	17
East Montpelier	2,576	2,578	0%	80	414	256	\$61,402	1,129	20
Fayston	1,353	1,141	19%	37	177	119	\$66,944	1,201	3
Marshfield	1,588	1,496	6%	37	216	209	\$58,092	729	14
Middlesex	1,731	1,729	0%	43	175	272	\$62,000	764	11
Montpelier	7,855	8,035	-2%	766	1,202	1,438	\$52,089	4,034	438
Moretown	1,658	1,653	0%	41	205	242	\$62,875	797	13
Northfield	6,207	5,791	7%	142	688	933	\$57,191	2,101	170
Orange	1,072	965	11%	27	139	157	\$57,222	489	28
Plainfield	1,243	1,286	-3%	59	148	243	\$51,094	565	26
Roxbury	691	576	20%	17	82	116	\$38,594	441	4
Waitsfield	1,719	1,659	4%	64	262	203	\$60,250	1,011	39
Warren	1,705	1,681	1%	43	251	189	\$64,514	2,232	0
Washington	1,039	1,047	-1%	27	126	189	\$56,982	570	0
Waterbury	5,064	4,915	3%	102	613	730	\$60,452	2,385	94
Williamstown	3,389	3,225	5%	84	484	599	\$50,475	1,479	123
Woodbury	906	809	12%	23	105	144	\$48,750	713	3
Worcester	998	902	11%	26	126	180	\$61,667	445	13
<i>Central Vermont Service Area</i>	<i>65,034</i>	<i>63,276</i>	<i>3%</i>	<i>80</i>	<i>9,366</i>	<i>10,870</i>		<i>32,479</i>	<i>1,705</i>
<i>Total GMTA Service Area</i>	<i>144,225</i>	<i>138,827</i>	<i>4%</i>	<i>73</i>	<i>21,620</i>	<i>21,284</i>		<i>64,383</i>	<i>3,335</i>
Vermont	625,741	608,827	3%	66	91,078	97,167	\$51,841	250,375	15,138

The study area, with 65,034 residents in the year 2010, has a population density of about 80 persons per square mile, a bit higher than the statewide average of 66 persons per square mile. In comparison to other parts of Vermont, it is slightly more populated than Rutland County, but has only about 42% of the population of Chittenden County.

GMTA year-round routes in the Capital District serve a limited part of Central Vermont: Barre City, Berlin and Montpelier have full day service while Middlesex, Waterbury, Cabot, East Montpelier, Plainfield and Marshfield have commuter service. The three municipalities with full-day service had an estimated 19,794 persons in 2010, making up 30% of the area's total population, but only about 6% of the area's land mass. The population density of these two cities and one town is 387 persons per square mile. Population density outside of GMTA's year-round route service area is much lower, about 59 persons per square mile.

Residential Density

As previously indicated, Central Vermont is a bit more densely populated than the state of Vermont as a whole. Nevertheless, some 99.6% of the land area in the county has a rural density of less than one household per acre. As shown in Figure 3.1, outside of the cities of Barre and Montpelier, there are only a few isolated census blocks (the smallest unit of census geography) in Northfield, Barre Town and Waterbury where density rises above one household per acre.

The *Transit Capacity and Quality of Service Manual* identifies a threshold density of 3 households per acre as necessary to support fixed route transit service that operates hourly for up to 12 hours per day (such as 6:00 a.m. to 6:00 p.m.). Densities of 6 households per acre or more can support bus routes with higher frequencies, such as buses running every 20 minutes or better. Of course, residential density is just one of many factors that affect demand for transit service.¹

Figure 3.2 zooms in on the “core area” of Central Vermont—the cities of Barre and Montpelier and surrounding towns—with an overlay of GMTA's current year-round routes. The map shows that virtually all of the census blocks with more than 6 households per acre are within close proximity to a bus route, and that the great majority of blocks with more than 3 households per acre are also close to current routes. Some exceptions are some isolated blocks in Berlin along VT 12 (very near to the GMTA garage²) and a development along Prospect Street in Barre City (Highgate Drive)³. Unfortunately, these isolated blocks are difficult to reach with traditional bus

¹ See TCRP Report 100, *Transit Capacity and Quality of Service Manual*, page 3-33. Employment density of 4 jobs

² In theory, GMTA could serve this area at little or no extra cost using “deadhead” trips between the garage and the beginning of the route (mostly in downtown Montpelier). These deadhead trips are at odd times, however, and there are only a few of them spread over the course of the day, with many of them coming at the very beginning or the very end of the service day.

³ In June 2012, the Barre Hospital Hill route was restructured to serve Prospect Street on its way to the hospital.

Figure 3.1 Central Vermont Household Density

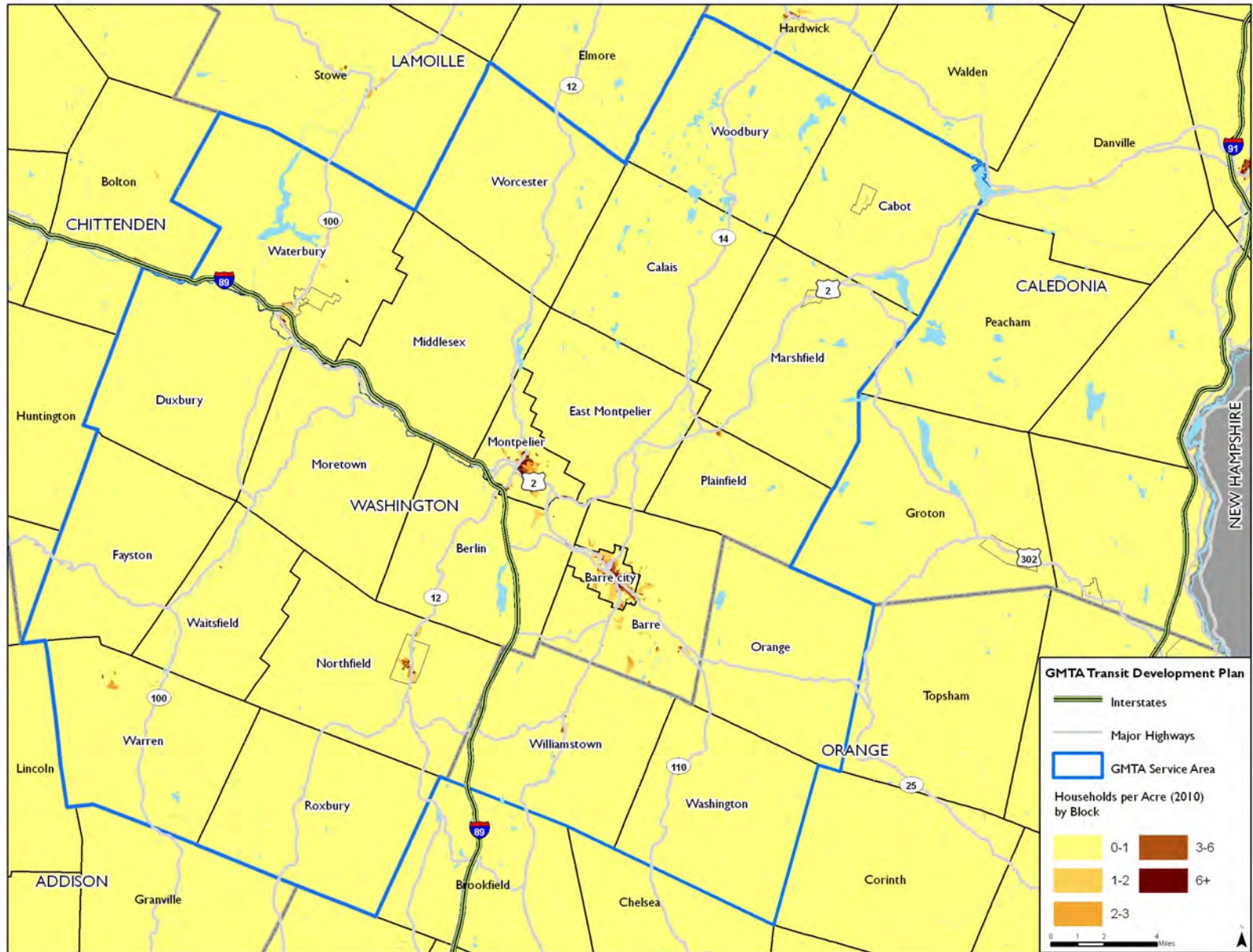
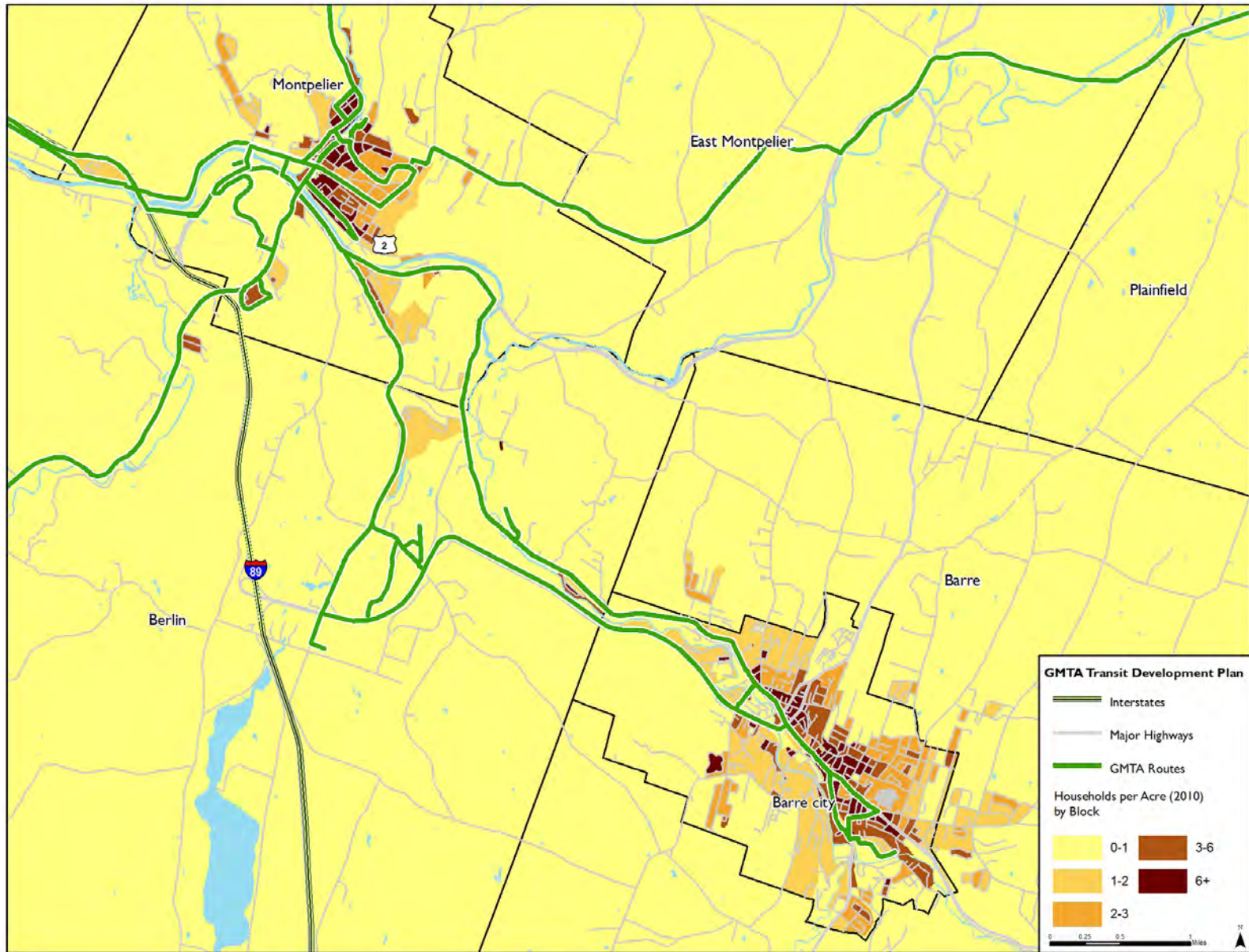


Figure 3.2 Core Area Household Density



routes, as GMTA would incur significant operating costs to reach them and would see only a marginal increase in ridership.

Certain characteristics of the population can make people more or less likely to use transit service. The following section provides maps and a brief analysis on certain target populations more likely to utilize public transit: older adults (persons 65 and older), low income households (household earning less than \$30,000 per year), and zero-vehicle households. All data included in this analysis was obtained from the U.S. Census Bureau's American Community Survey. This data represents an average over a five-year span of time.

Older Adults

Figure 3.3 shows the percentage of persons age 65 and older. It shows high percentages of older adults in the eastern part of Berlin and sections of Barre City, with a very high concentration in Northfield Falls. Moderate percentages of seniors are spread through many towns in Central Vermont. The apparent clustering of older adults near the core of the area may be due to the desire of older adults to have easier access to municipal services, senior centers, shopping, and medical facilities. The fact that the rural towns have relatively few seniors indicates that remote housing in hilly areas, accessible only by dirt road, may be less attractive to people as they age. Most of the areas with high percentages of older adults are served by the current bus route network (Barre and Berlin) or by community shuttle services (Northfield). Demand response service, as described in chapter 2, covers the entire Central Vermont region.

Low Income Households

A sizable portion of the Central Vermont area exhibits a moderate to high percentage of low-income residents, as shown in Figure 3.4. Other than the concentration of government jobs in Montpelier, the lack of a major employment center in the vicinity means that there are relatively few well-paying jobs in the region, in contrast to Chittenden County. Many households (25% to 35%) in the largely rural sections of Central Vermont earn less than \$30,000, which was used as the definition of "low income" for the purpose of this analysis.

The highest concentrations of low income households are located in Barre City, portions of Montpelier, Northfield Falls, eastern Berlin and southeastern Barre Town. Western Barre and downtown neighborhoods along South Main Street and just north of Washington Street have over 50% of their households earning less than \$30,000, while the other areas have between 35% and 50% of households below that threshold. The availability of full-day GMTA service in most of these areas provides needed mobility for people who cannot afford an automobile.

Zero Vehicle Households

Figure 3.5 shows the percentage of households that do not own any vehicles by Census block group. Note that Census data regarding automobile ownership is provided in terms of housing units and not households. Because the difference between the two is generally insignificant, the terms are used interchangeably to indicate a "household" with no access to an automobile.

Figure 3.3 Percentage of Population Ages 65 and Older

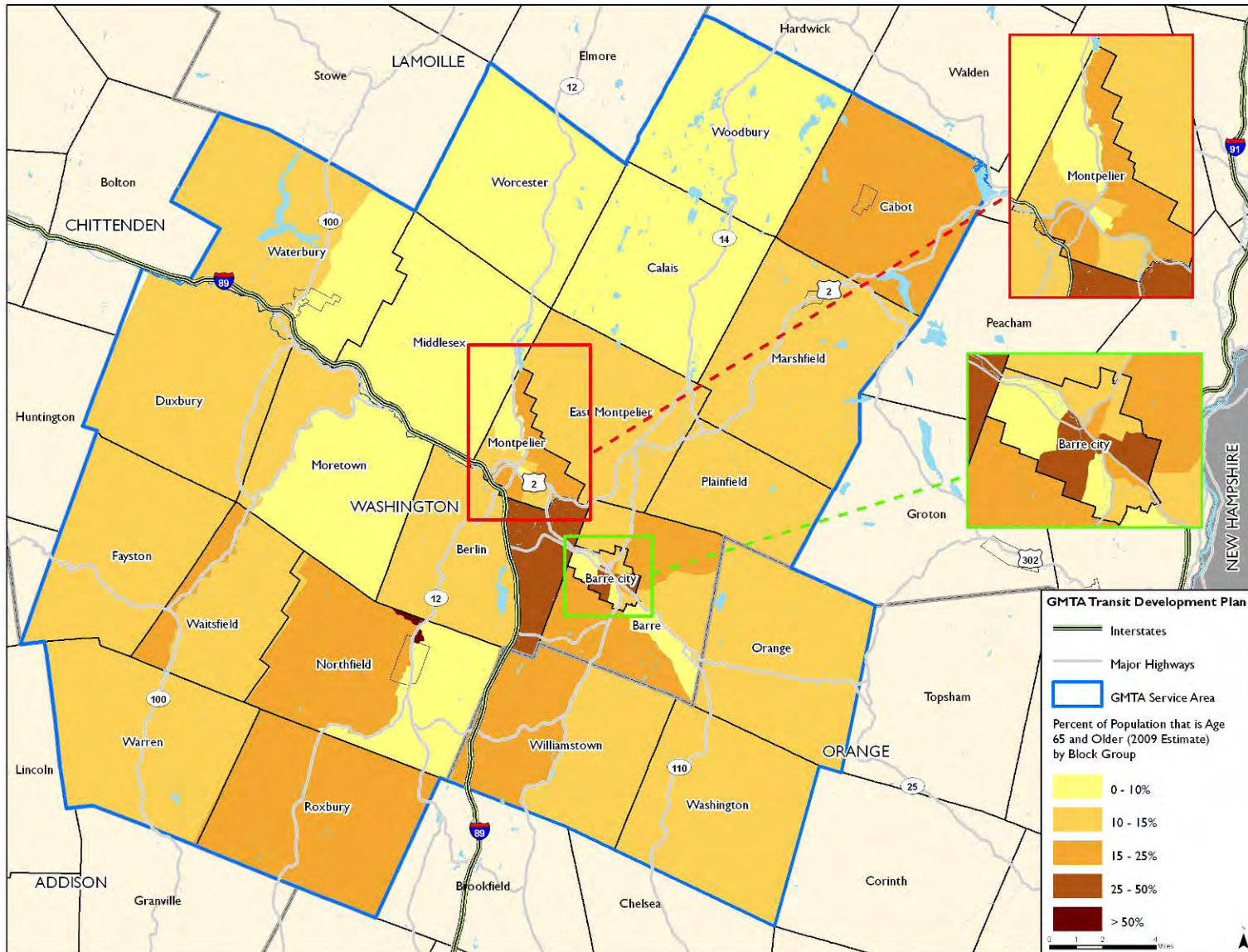


Figure 3.4 Percentage of Low Income Households

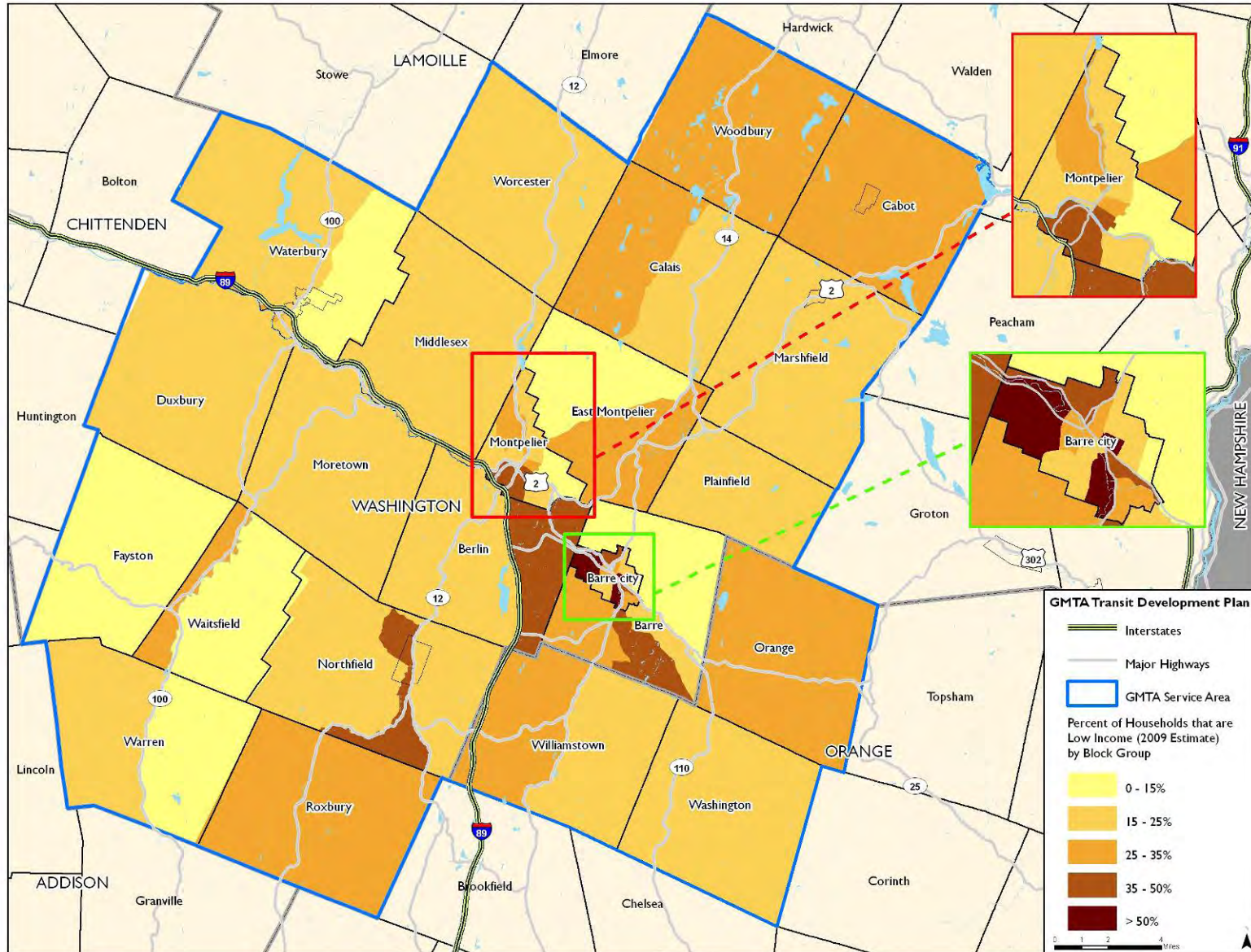
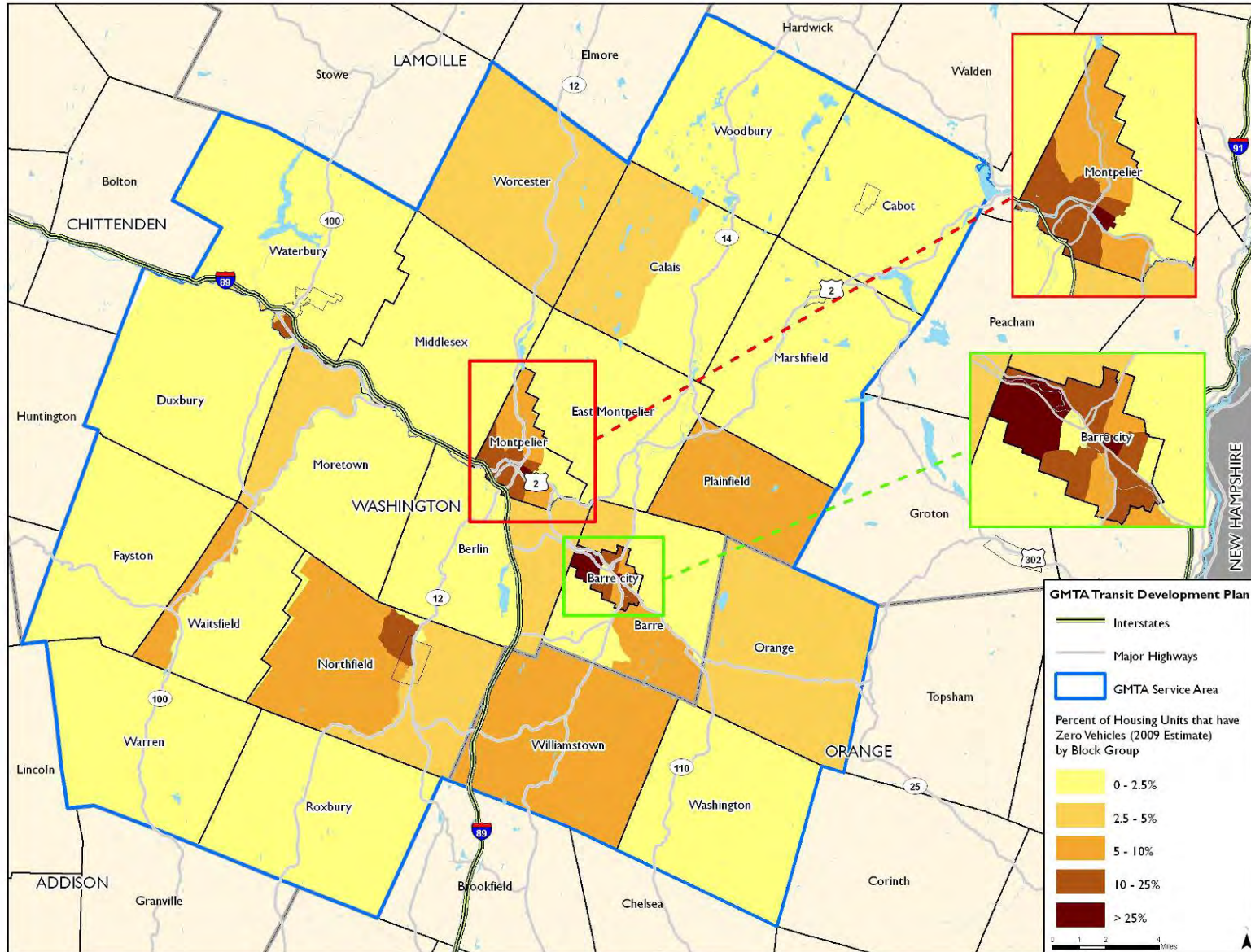


Figure 3.5 Percentage of Zero Vehicle Housing Units



For the great majority of the county, less than 10% of households lack access to an automobile. The only areas where more than 10% of households lack an automobile are located in Montpelier, Barre City and Northfield. Indeed, the parts of Barre and Montpelier that showed high percentages of low-income residents have more than 25% of households without a car, including the Barre Street section of Montpelier, western Barre and the section of downtown Barre just north of US 302. These areas exhibit two factors which depress auto ownership: low income residents and close proximity to city centers and transit. That is to say, many residents in these areas cannot afford a car, but there are also residents here who choose not to own a car because walking and transit provide all of the mobility they need. It is here, where transit access is best, that it is most feasible to live without a car.

Trip Generators for Transit-Dependent Populations

The previous section used data from the U.S. Census to identify areas within Central Vermont that have concentrations of people who are more likely to need access to public transportation services. This section considers data from local sources which provide more detailed information on the location of specific trip generators. Data on these trip generators was obtained from a variety of sources, including the previous SRPTP and the Vermont Human Service Transportation Coordination Plan.

Human Service Related Generators

Figure 3.6 shows some of the trip generators within Central Vermont, including:

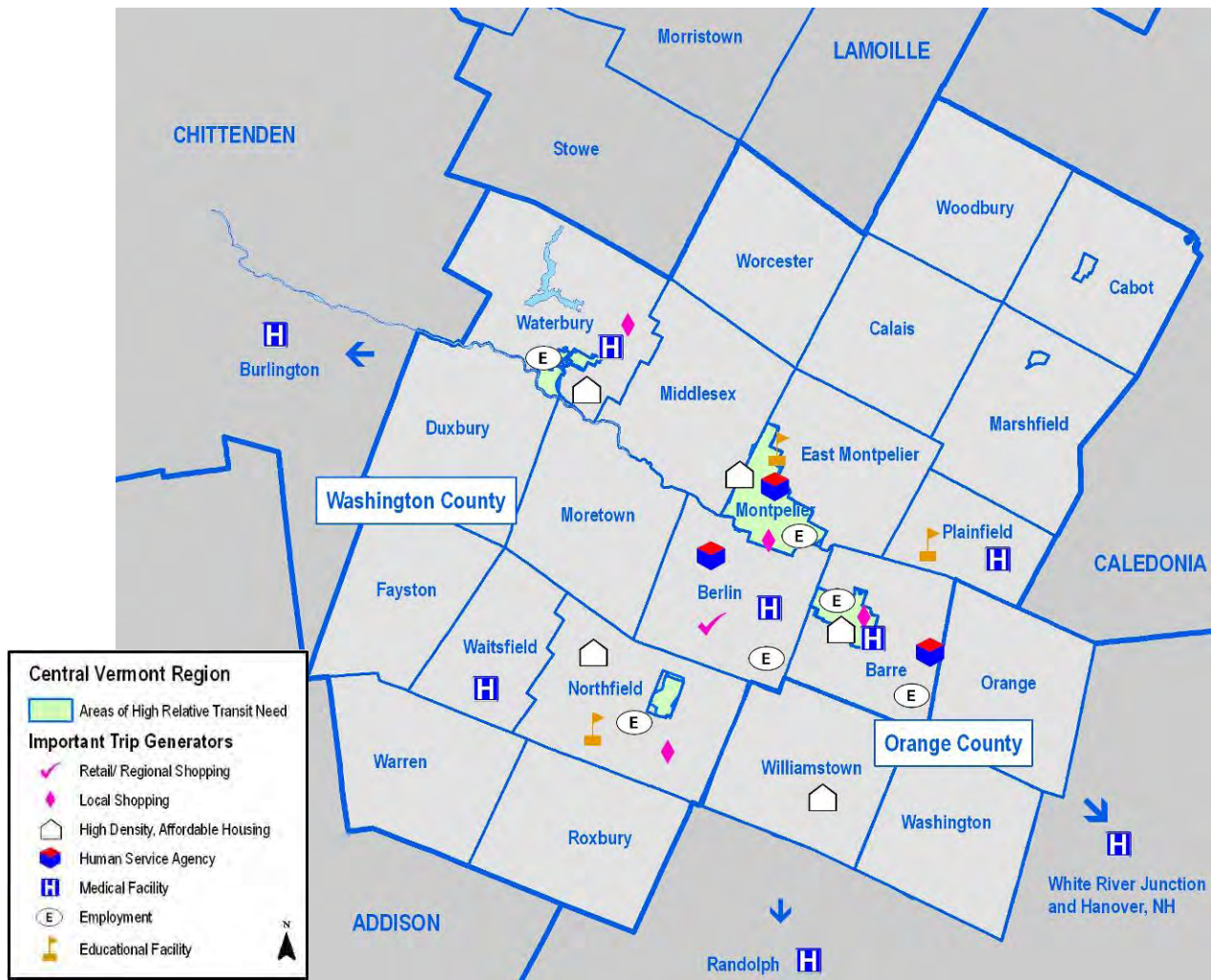
- Accessible housing
- Affordable/income-restricted housing
- Human service agencies
- Medical facilities
- Senior centers and housing

It is important to note that the icons on the map are not intended to denote precise locations within a town, but rather the presence of the facility somewhere within the town boundaries.

Many trip generators serve multiple purposes. For example, many senior housing complexes could also be categorized as accessible housing and a few senior centers also serve as senior nutrition sites, which would generally be categorized as human service agencies.

Not surprisingly, many generators are concentrated in more densely-populated areas: Barre, Berlin and Montpelier. Northfield, Waterbury and Plainfield also have several important trip generators. GMTA's current routes provide connections to the great majority of these generators, though not necessarily at a high level of service. As discussed in chapter 2, while Barre, Berlin and Montpelier have full day routes with year-round service, Waterbury has only peak period service and Northfield and Plainfield have very limited service of a few hours per week.

Figure 3.6 Trip Generators



Employers

Data on Central Vermont employers were purchased from Dun & Bradstreet and are shown on Figures 3.7 and 3.8.⁴ The employers shown are worksites with 10 or more employees. As expected, these employers are clustered in Montpelier, Berlin and Barre and along roadway corridors such as VT 100 (Waterbury and Waitsfield), VT 12 in Northfield, and VT 14 in Barre and Williamstown. Some of the largest area employers include:

- State of Vermont (various agencies in Montpelier) – >1,000 Employees
- Central Vermont Medical Center (Berlin) – >1,000 Employees
- National Life (Montpelier) – 900 Employees
- Vermont Agency of Human Services (Waterbury) – 750 Employees
- Rock of Ages (Graniteville) – 400 Employees
- Vermont College of Fine Arts (Montpelier) – 370 Employees

⁴ Data were purchased in 2005, and thus the number of employees should be treated as estimates.

- Autumn Rose Quarry (Barre) – 320 Employees
- Blue Cross/Blue Shield (Montpelier) – 310 Employees
- Cabot Creamery (Montpelier) – 300 Employees

It can be seen that the GMTA routes serve many of these employment clusters, with the notable exceptions of Waitsfield, Northfield and South Barre. There is a limited amount of service in the Mad River Valley (not shown on the map), which operates only during ski season: the SnowCap Commuter runs along VT 100B and 100 through Moretown and Waitsfield but runs one round trip on weekends and holidays only.

Figure 3.8 provides a detailed view of employers in Montpelier, Berlin, and Barre, again with GMTA’s local and commuter routes overlaid. It is clear from this map why commuter routes in the region are focused on downtown Montpelier, as it has the greatest concentration of large employers in a relatively focused area. A number of employers in Berlin appear to not be served by GMTA routes, but they are, in fact, within the deviation zone of the routes (3/4 of a mile from the route) so that riders can be (and are frequently) dropped off and picked up at these locations.

Commuting Patterns

Data from the Journey-to-Work portion of the 2000 Census provide direct information connecting residences to workplaces. Figures 3.9 and 3.10 illustrate some of the commuting patterns related to Central Vermont.

In Figure 3.9, prepared by CCMPO, the share of commuters traveling to various places is shown for all Vermont counties. The bright green slice in each county graph shows the percentage of commuters headed to Chittenden County. While Washington County contributes about 9% of its workers to Chittenden County, about 82% of Washington County employed residents work within Washington County. A few Washington County residents work out of state, but most of the other 9% work in surrounding counties, especially Lamoille (Stowe and Morrisville) and Orange (Randolph and Royalton/Vermont Law School).

Besides Washington County itself, the largest contributors of workers to Washington County are Orange County (nearly 2,800 workers or 19% of its employed residents), Chittenden County (1,850 workers or 2.3% of its employed residents), Lamoille County (930 workers or 7.7% of its employed residents) and Caledonia County (800 workers or 5.6% of its employed residents). GMTA operates three commuter routes to tap these markets: the LINK Express between Montpelier and Burlington (jointly operated with CCTA), the Route 100 Commuter between Waterbury and Morrisville, and the US 2 Commuter between Montpelier and St. Johnsbury (jointly operated with RCT). Stagecoach Transportation Services, Inc. operates a commuter service between Montpelier and Randolph/Royalton, but it currently serves only the market of people commuting to Orange County, not people commuting from Orange County to jobs in Washington County.

Figure 3.7 Central Vermont Employers

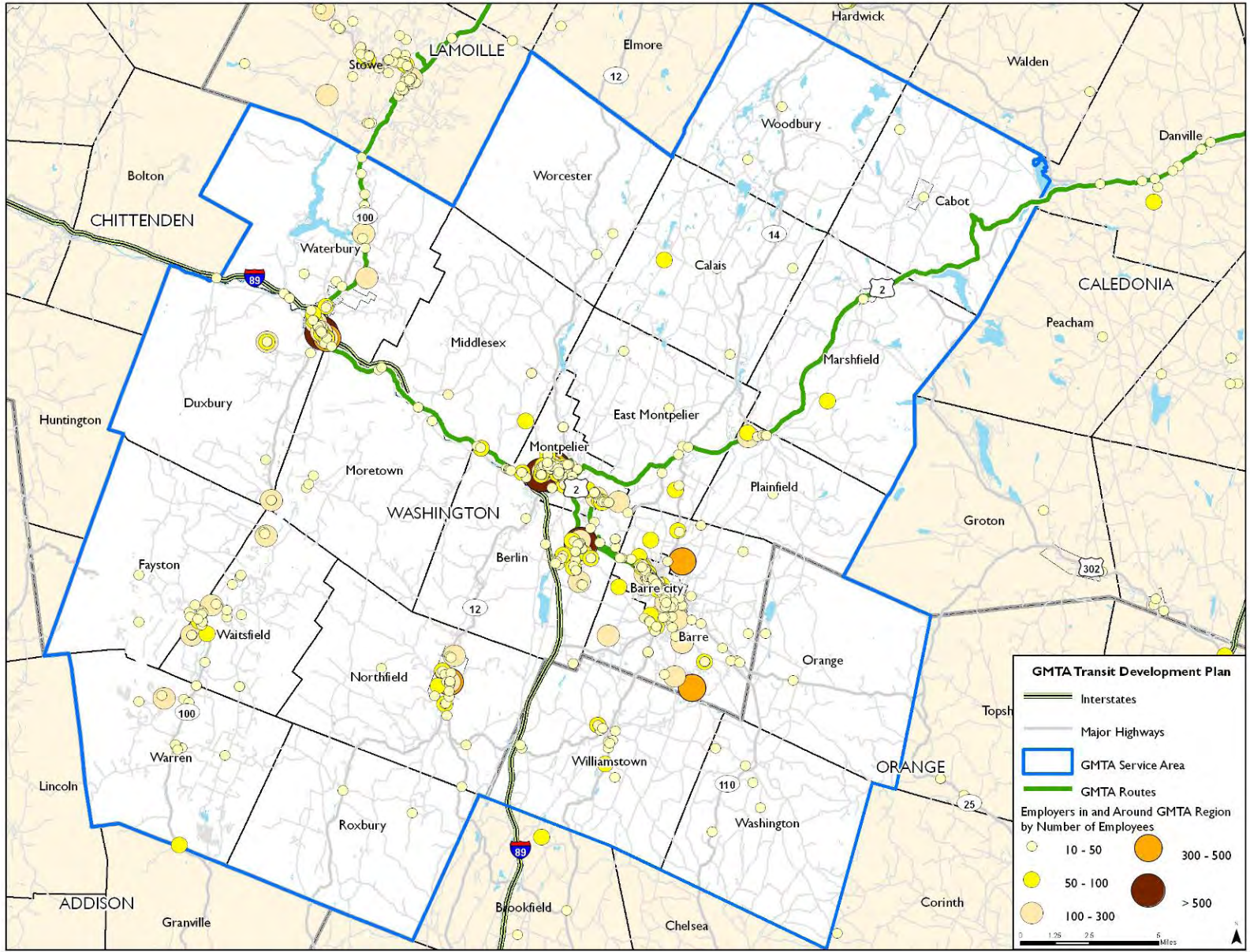


Figure 3.8 Core Area Employers

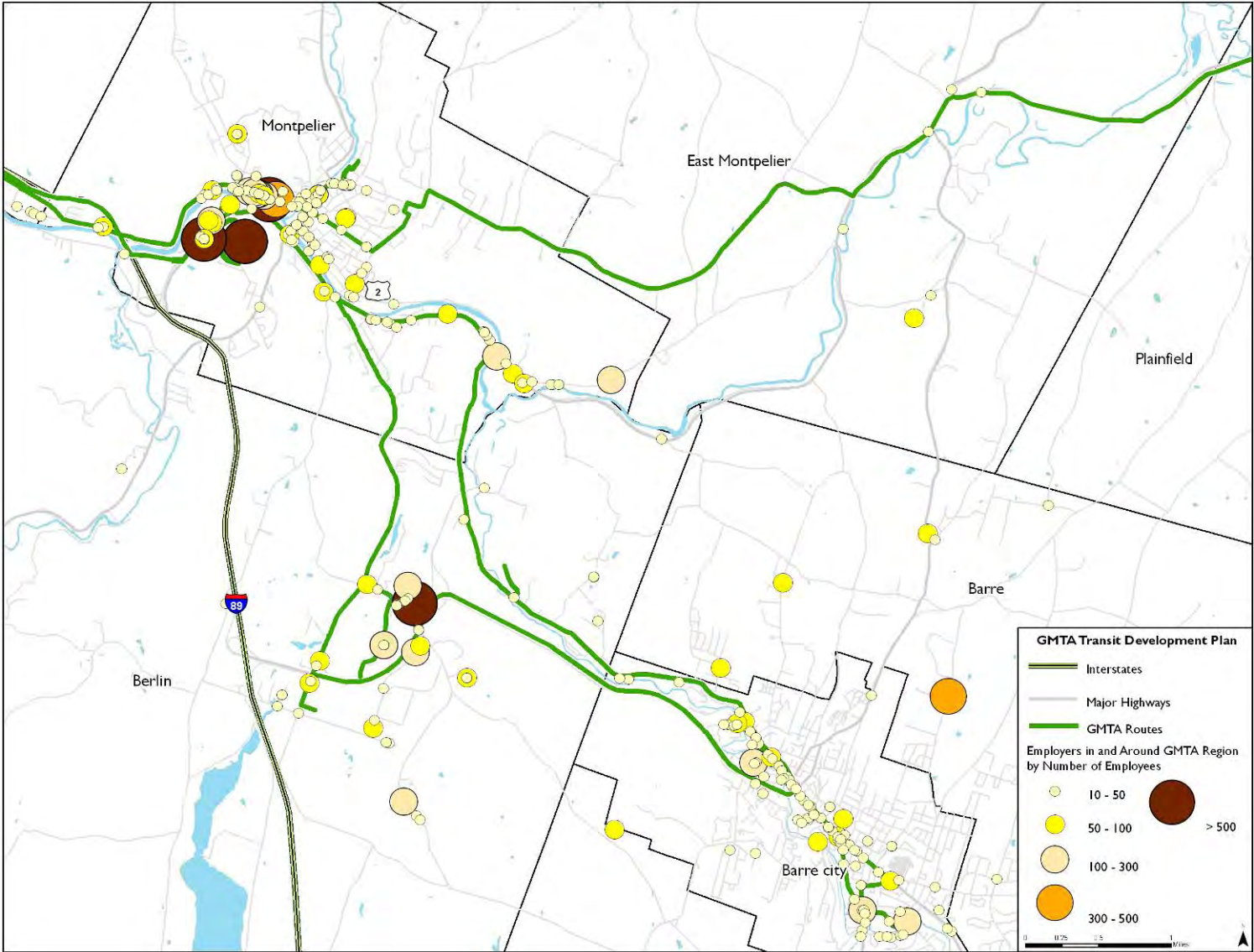
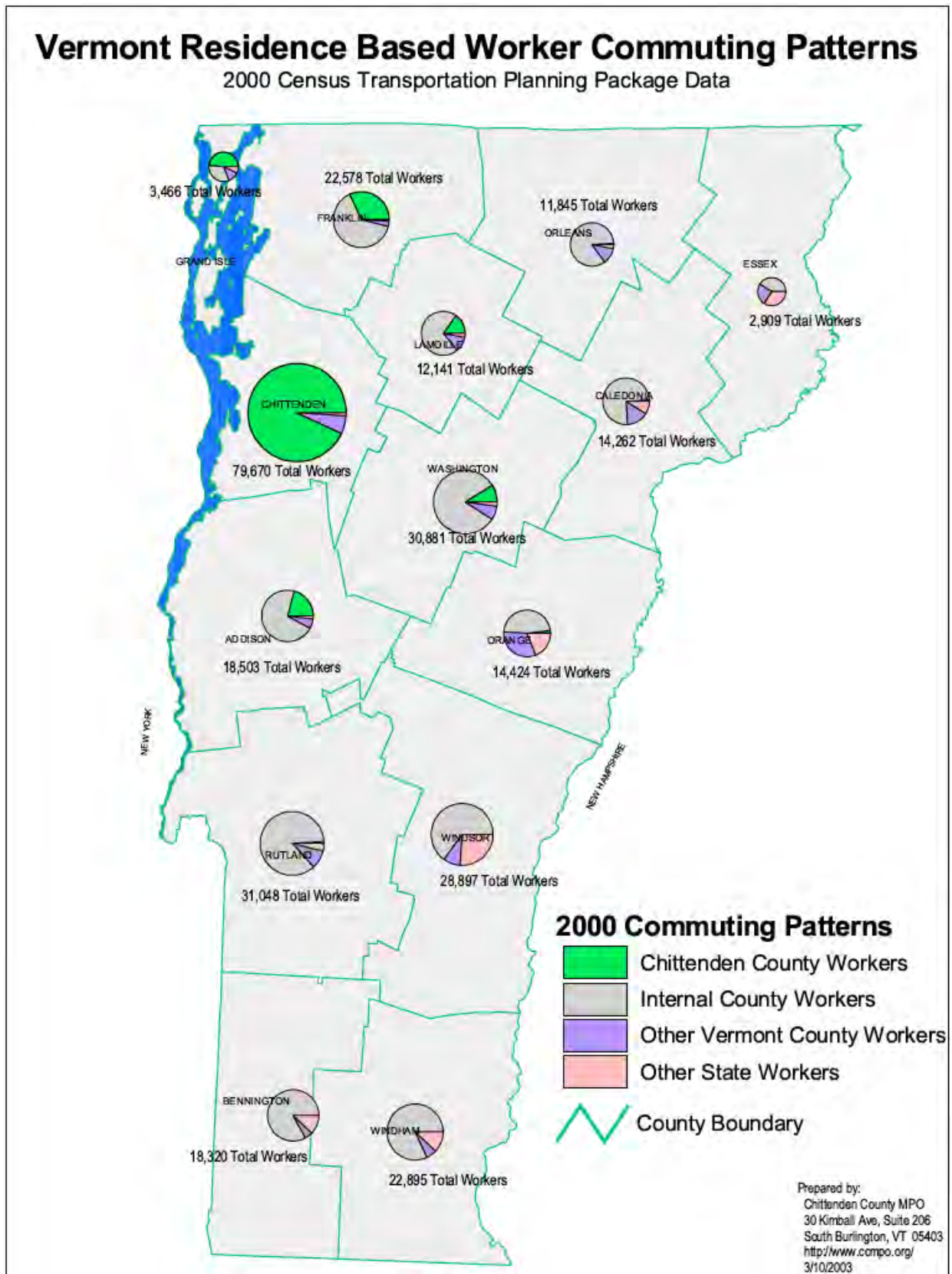


Figure 3.9 Vermont County Commuting Patterns



Finally, Figure 3.10 provides a more detailed look at the origin locations of people who work in Montpelier. Based on the 2000 Census data, all towns within a 10-mile radius of downtown Montpelier send at least 100 workers to the capital city. Barre City and Barre Town each send more than 700 workers. Waterbury and Williamstown, both a bit over 10 miles from Montpelier, each send more than 260 workers. The pattern of moderate-to-high-volume commuter source towns (at least 50 commuters) extends somewhat further to the north and west than in other directions. Access provided by VT 14, 12, and 100 and US 2 allow commuters to reach Montpelier relatively easily. Though Chittenden County dwarfs Central Vermont in terms of the number of jobs available, the high concentration of residents there results in substantial numbers of commuters to Montpelier. South and east of the capital, there is relatively less commuting into Central Vermont, as those areas are more oriented to the Upper Valley job center in Hanover and Lebanon, NH.

More distant communities such as St. Albans and Newport send between 10 and 20 commuters to Montpelier, and Hartford contributes nearly 40. To a large extent, the double-digit figures from these places result from their more substantial population bases, rather than any special connection to Montpelier. It does speak to the mobility in the region (and the low gasoline prices in 2000) that a city with just under 9,000 jobs in total draws workers from a radius of 60 miles and more.

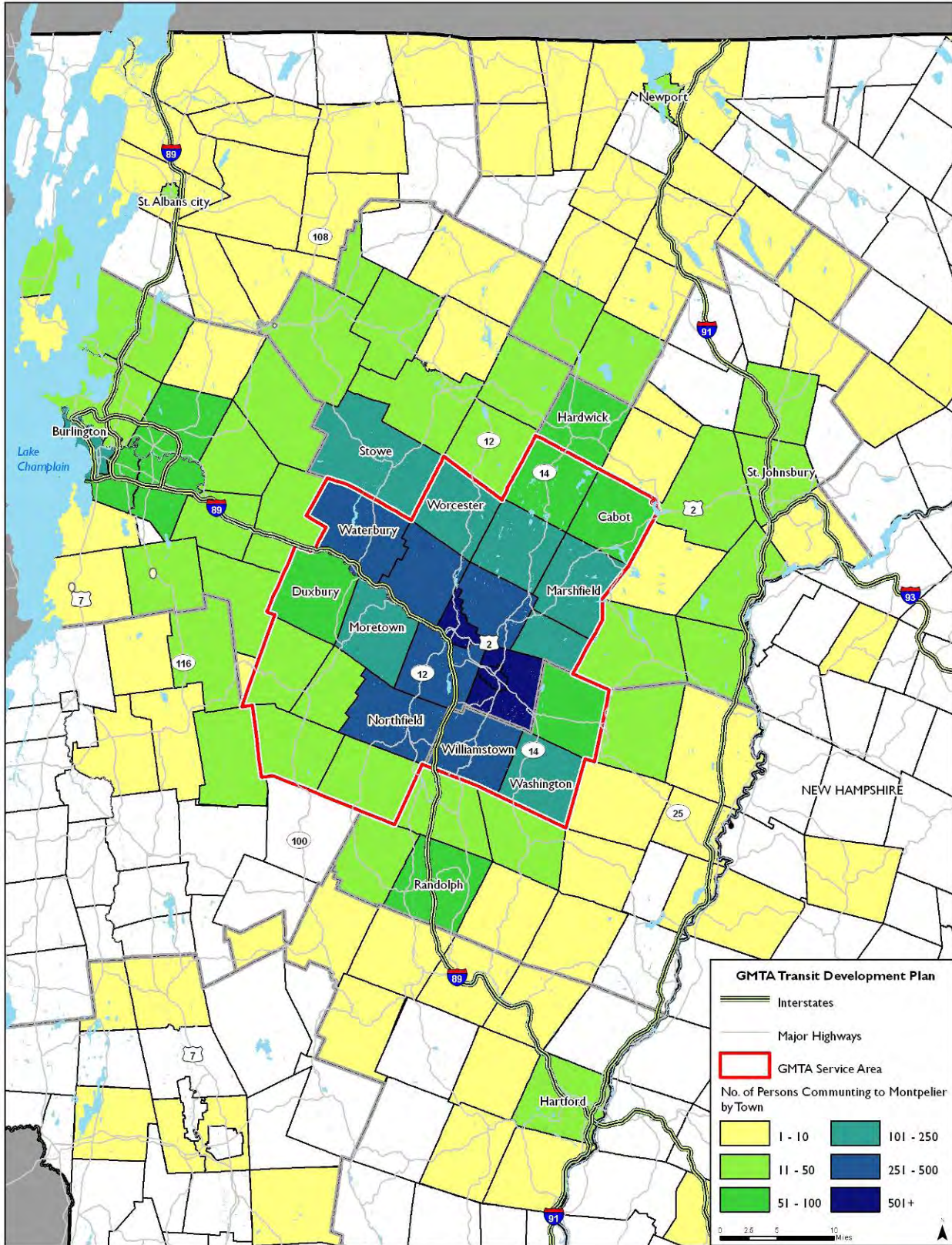
Concentrations of workers along corridors offer opportunities for express transit services oriented toward commuters. Indeed, as discussed elsewhere in this TDP, GMTA is operating services to tap into these markets, with the LINK Express route operating to and from Burlington via I-89, and commuter routes on US 2 to the east and west. Of these, the most successful is the Burlington LINK because of the high volume of commuters traveling in both directions in both peak periods.

Summary of Central Vermont Analysis

This analysis has found that GMTA provides some level of transit access to high-density residential areas and important trip generators. A few areas were identified that have transit-supportive densities but are outside of the current service area. The further removed these areas are from current routes, the greater the cost will be to tie them into the system.

Overall, the town of Northfield has the greatest potential for supporting regular transit service both in terms of needy populations and employment. Barre City, though it currently has bus service, has the highest concentration of low-income and zero-vehicle households in the region and could likely support a higher level of transit access. The same is true for Montpelier (to a somewhat lesser extent), but the high level of employment offers opportunities for more commuter services.

Figure 3.10 Commuters to Montpelier (year 2000)



Lamoille County

Demographic Profile

Surrounded by the Northeast Kingdom to the east, the Capital region to the south, Chittenden County to the west and rural northwestern Vermont, Lamoille County covers approximately 459 square miles. It includes no cities and 10 towns (see Table 3.2 for full list). The economic center of Lamoille County is Morrisville (part of Morristown), but Stowe is an important economic engine for tourism, especially during the ski season, but to an ever greater extent on a year-round basis.

The county had a population of 24,475 in the 2010 Census, translating into a population density of 53 persons per square mile, a bit lower than the statewide average of 66 persons per square mile and lower than the figure seen for the Central Vermont region and the GMTA service area as a whole. Because of its small size and lack of any cities, Lamoille County ranks third to last in county population, surpassing only Grand Isle County and Essex County.

GMTA year-round routes in Lamoille County serve a limited part of the county: only Morrisville has full day service while the Route 100 corridor from Morrisville through Stowe to Waterbury has commuter service. Morrisville had a population of 1,958 in 2010, residing in an area of 1.9 square miles. This density of 1,030 persons per square mile is some 20 times the average for the county as a whole, and explains why the only year-round local service in the county is located in this village.

Residential Density

As previously indicated, Lamoille County is less densely populated than the state of Vermont as a whole. Indeed, some 99.8% of the residential development in the county has a rural density of less than one household per acre. As shown in Figure 3.11, outside of Morrisville, there are only a few census blocks (the smallest unit of census geography) in Stowe, Johnson village, and Jeffersonville where density rises above one household per acre.

Older Adults

Figure 3.12 shows the percentage of persons age 65 and older. There are no Census block groups with high percentages of older adults, with various portions of town in the 15%-25% range. Eden and the southern portion of Cambridge have low percentages of seniors, but the population in these areas is very low.

Low Income Households

Much of Lamoille County has a low to moderate percentage of low-income residents, as shown in Figure 3.13. There is a clear concentration of low income households in the town of Johnson and in the Morrisville section of Morristown. In the southern part of Johnson, including the village, the percentage of low income households is 36%.

Table 3.2 Lamoille County Demographics

Town	2010 Pop.	2000 Pop.	Pct. Change	Persons per Sq. Mi.	Pop. 65+	Disability Status	Median HH Income	Total Housing Units	0-Veh. HU
Belvidere	348	294	18%	11	48	35	\$52,386	159	5
Cambridge	3,659	3,186	15%	58	347	321	\$61,741	1,466	28
Eden	1,323	1,152	15%	21	123	187	\$49,167	482	26
Elmore	855	849	1%	22	111	146	\$60,972	364	0
Hyde Park	2,954	2,847	4%	78	450	401	\$54,813	1,212	34
Johnson	3,446	3,274	5%	77	313	520	\$27,808	1,298	113
Morristown	5,227	5,139	2%	102	876	930	\$55,954	2,427	269
Stowe	4,314	4,339	-1%	59	738	487	\$56,250	1,872	105
Waterville	673	697	-3%	42	85	86	\$44,038	348	4
Wolcott	1,676	1,456	15%	43	173	251	\$44,292	717	11
<i>Lamoille County</i>	<i>24,475</i>	<i>23,233</i>	<i>5%</i>	<i>53</i>	<i>3,264</i>	<i>3,364</i>	<i>52,232</i>	<i>10,345</i>	<i>595</i>
<i>Total GMTA Service Area</i>	<i>144,225</i>	<i>138,827</i>	<i>4%</i>	<i>73</i>	<i>21,620</i>	<i>21,284</i>		<i>64,383</i>	<i>3,335</i>
Vermont	625,741	608,827	3%	66	85,467	97,167	\$63,482	250,375	15,138

Figure 3.11 Lamoille County Household Density

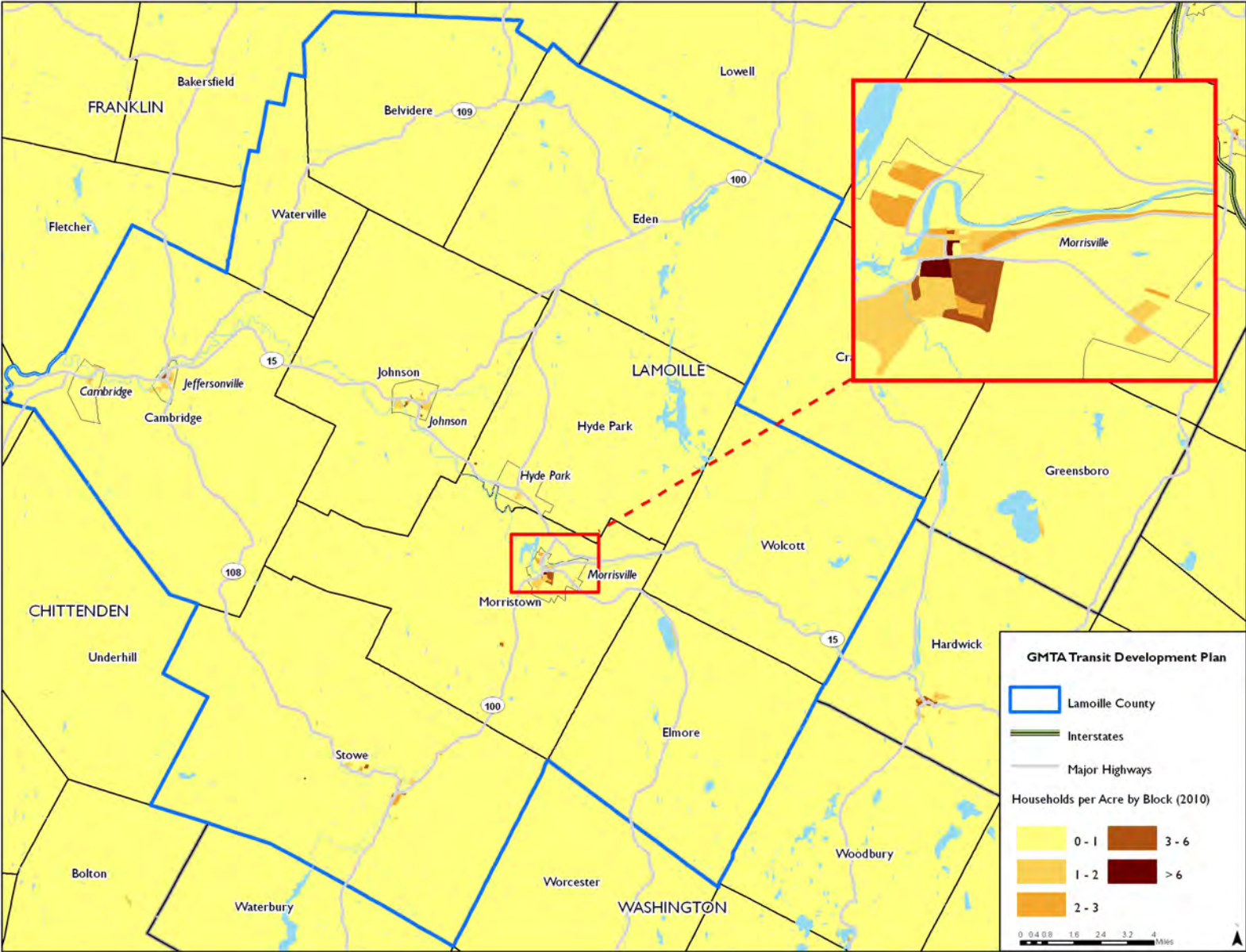


Figure 3.12 Percentage of Population Ages 65 and Older

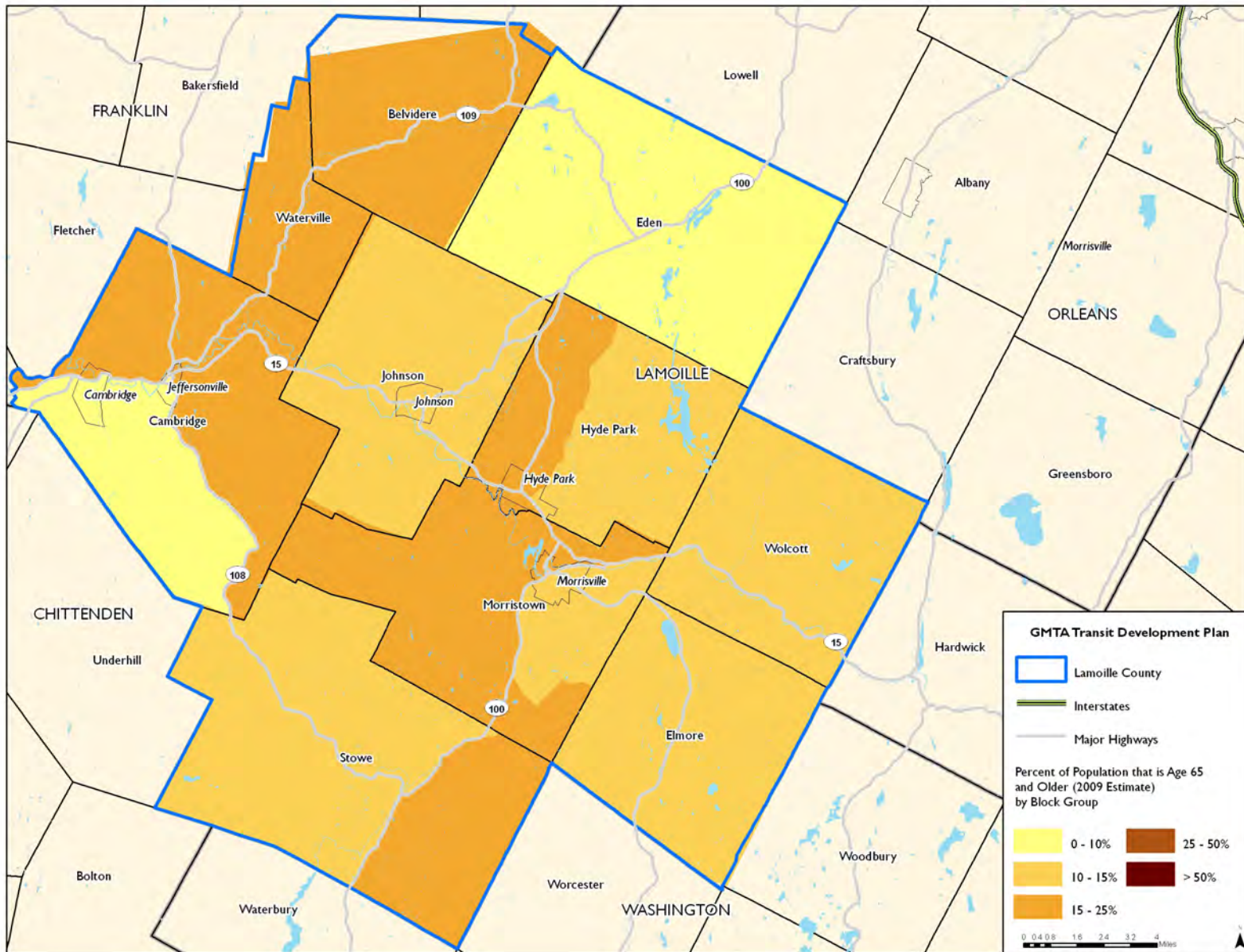


Figure 3.13 Percentage of Low Income Households

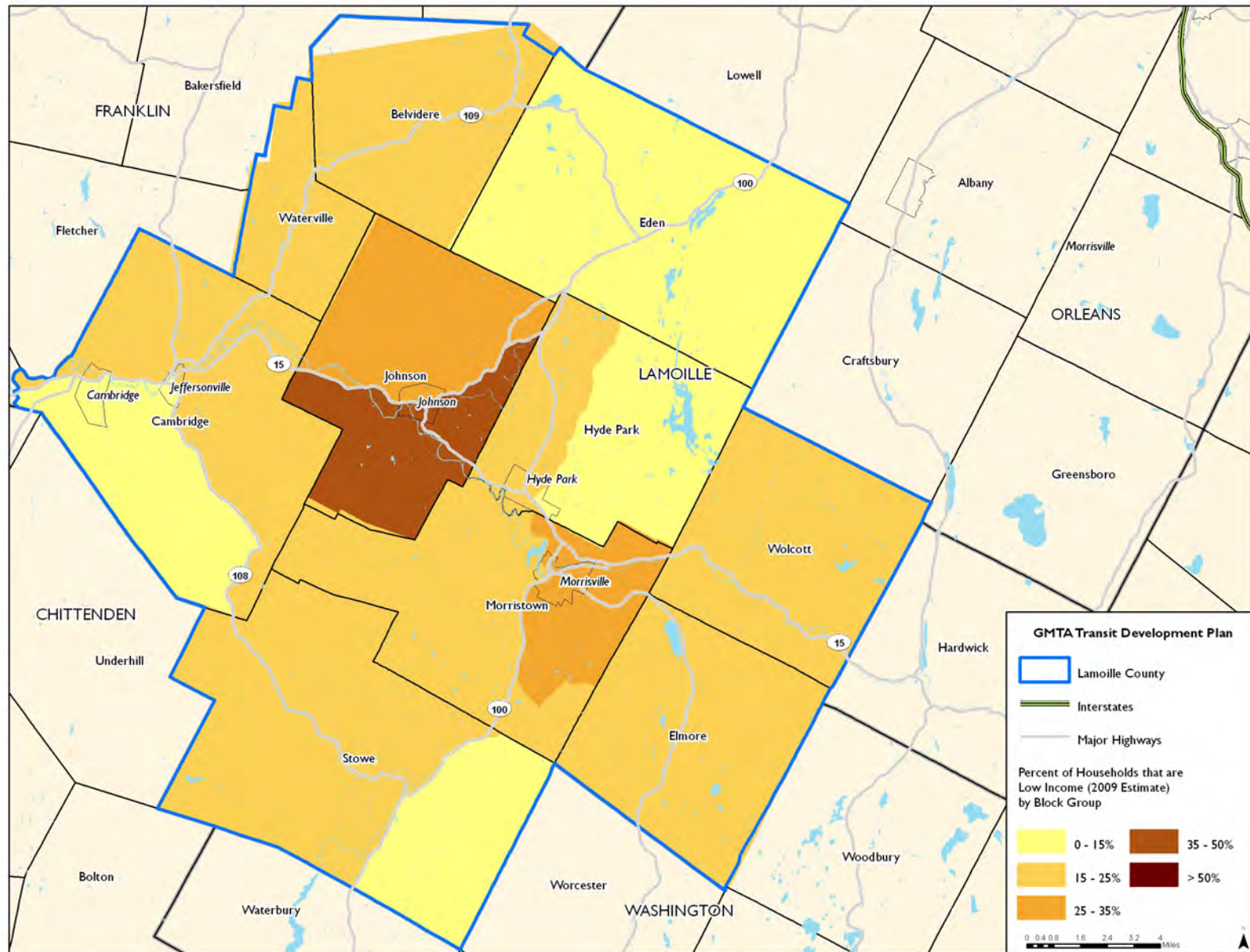
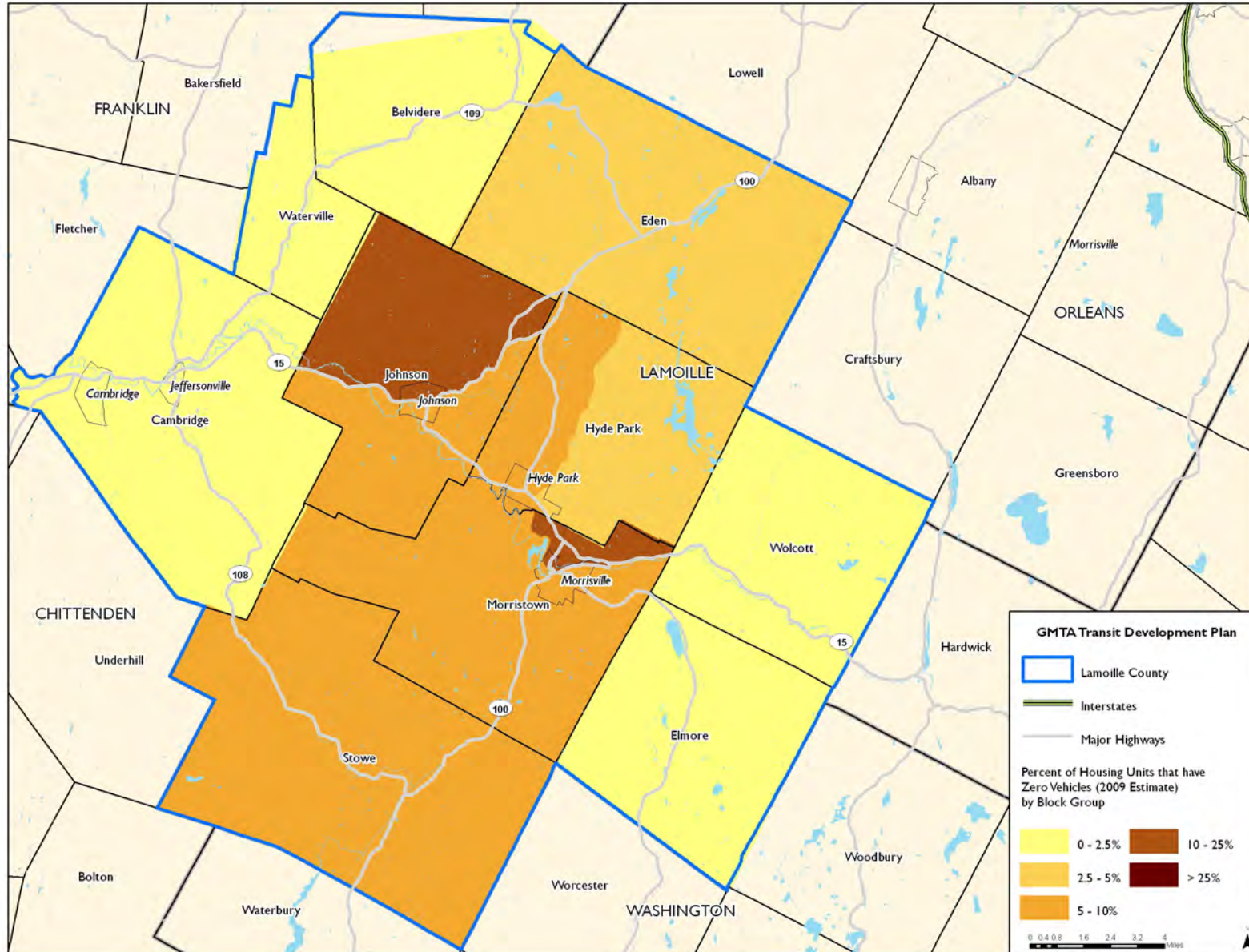


Figure 3.14 Percentage of Zero-Vehicle Housing Units



Zero Vehicle Households

Figure 3.14 shows the percentage of households that do not own any vehicles by Census block group. Note that Census data regarding automobile ownership is provided in terms of housing units and not households. Because the difference between the two is generally insignificant, the terms are used interchangeably here to symbolize a “household” with no access to an automobile.

Overall, most of Lamoille County has a high rate of automobile ownership, with most towns having less than 10% of its households without a car. The northern part of Johnson and the northern part of Morristown have higher percentages, however. The figure in Johnson likely reflects the presence of students at Johnson State College. In Morristown, the presence of regular bus service within the village of Morrisville allow residents to have mobility without owning a car.

Trip Generators for Transit-Dependent Populations

The previous section used data from the U.S. Census to identify areas within Lamoille County that have concentrations of people who are more likely to need access to public transportation services. This section considers data from local sources which provide more detailed information on the location of specific trip generators. Data on these trip generators was obtained from a variety of sources, including the previous SRPTP and the Vermont Human Service Transportation Coordination Plan.

Human Service Related Generators

Figure 3.15 shows some of the trip generators within Lamoille County, including:

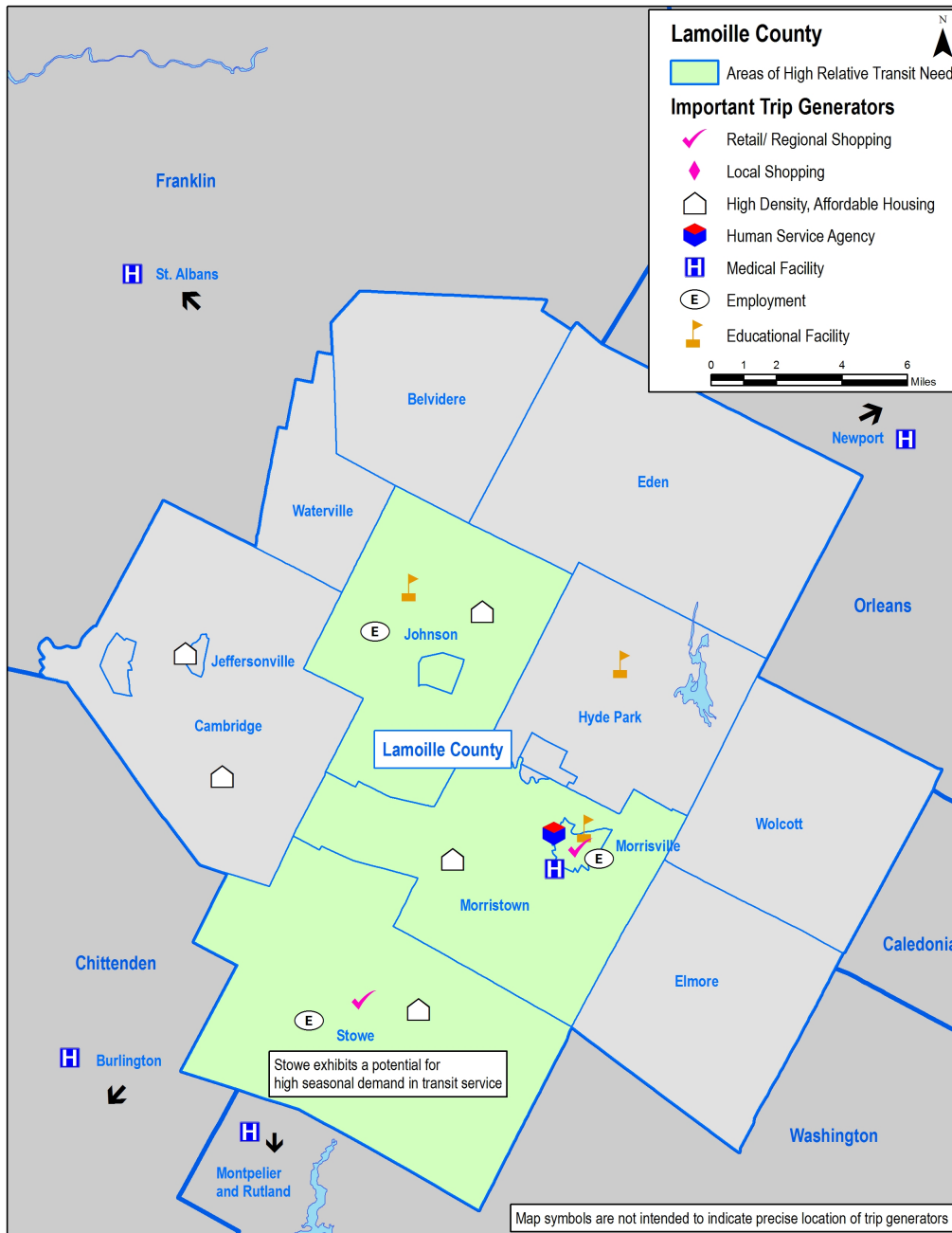
- Accessible housing
- Affordable/ income restricted housing
- Apartment complexes
- Human service agencies
- Medical facilities
- Senior centers and housing

It is important to note that the icons on the map are not intended to denote precise locations within a town, but rather the presence of the facility somewhere within the town boundaries.

Many trip generators serve multiple purposes. For example, many senior housing complexes could also be categorized as accessible housing and a few senior centers also serve as senior nutrition sites, which would generally be categorized as human service agencies.

Not surprisingly, many generators are concentrated in Morrisville and to a lesser extent in Johnson and Stowe. These three towns are indicated as areas of “high relative transit need” because of these generators and the demographic factors discussed above.

Figure 3.15 Trip Generators

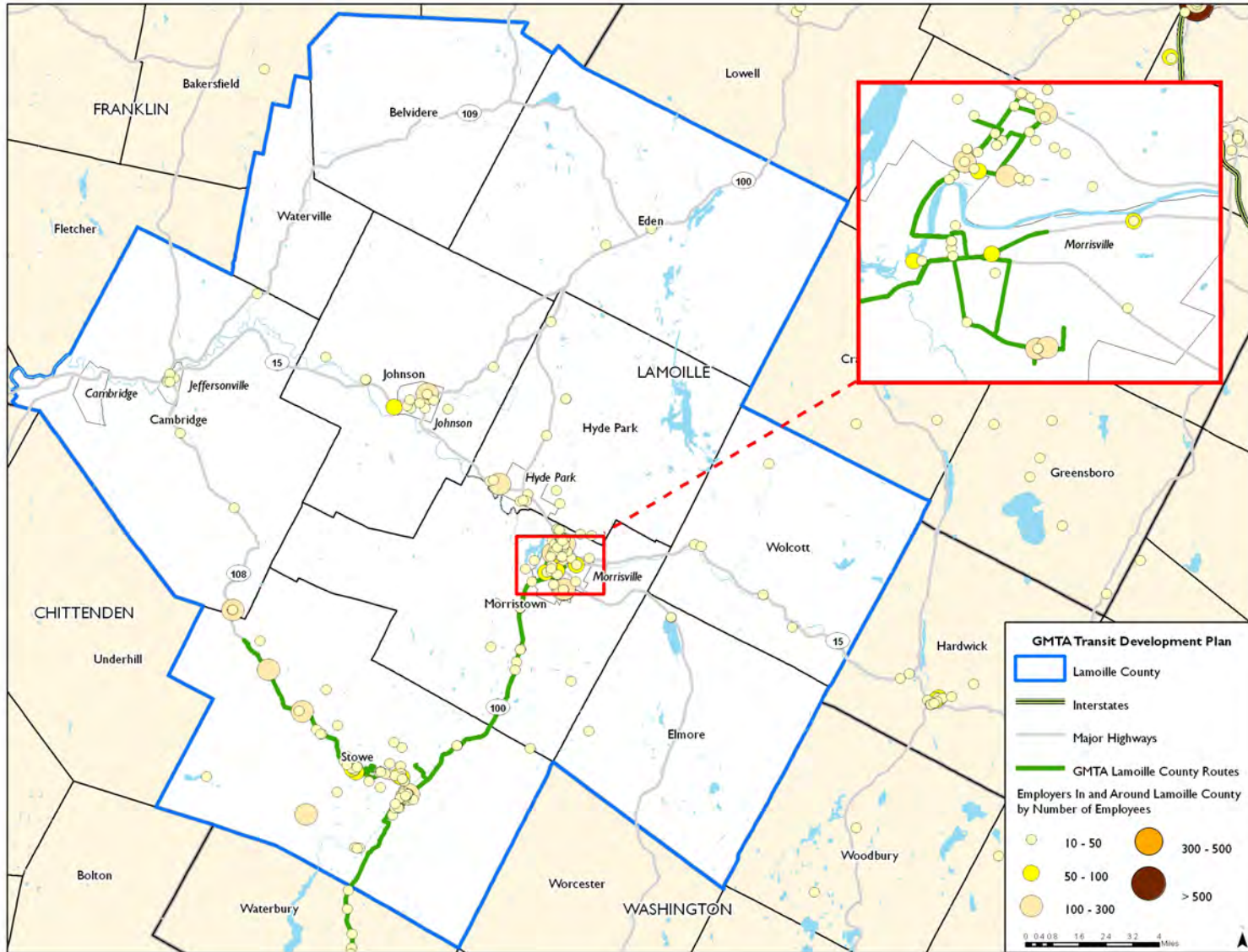


Employers

Data on Lamoille County employers were purchased from Dun & Bradstreet and are shown on Figure 3.16.⁵ The employers shown are worksites with 10 or more employees.

⁵ Data were purchased in 2005, and thus the number of employees should be treated as estimates.

Figure 3.16 Lamoille County Employers



The ten largest employers (as of 2005) in Lamoille County were as follows:

- Copley Hospital – 260 Employees
- Price Chopper – 200 Employees
- Trapp Family Lodge – 200 Employees
- Johnson State College – 200 Employees
- Smugglers Notch – 200 Employees
- Pyrofax Energy – 150 Employees
- Stowe Mountain Resort – 150 Employees
- Top Notch Resort Spa – 140 Employees
- Lamoille Union High School – 133 Employees
- Lamoille County Mental Health – 130 Employees

It can be seen that the GMTA routes serve these employment clusters, with the notable exception of Johnson and Hyde Park. Indeed, the Morrisville Loop, though somewhat circuitous, serves the front door of almost all of the large employers in Morrisville.

Commuting Patterns

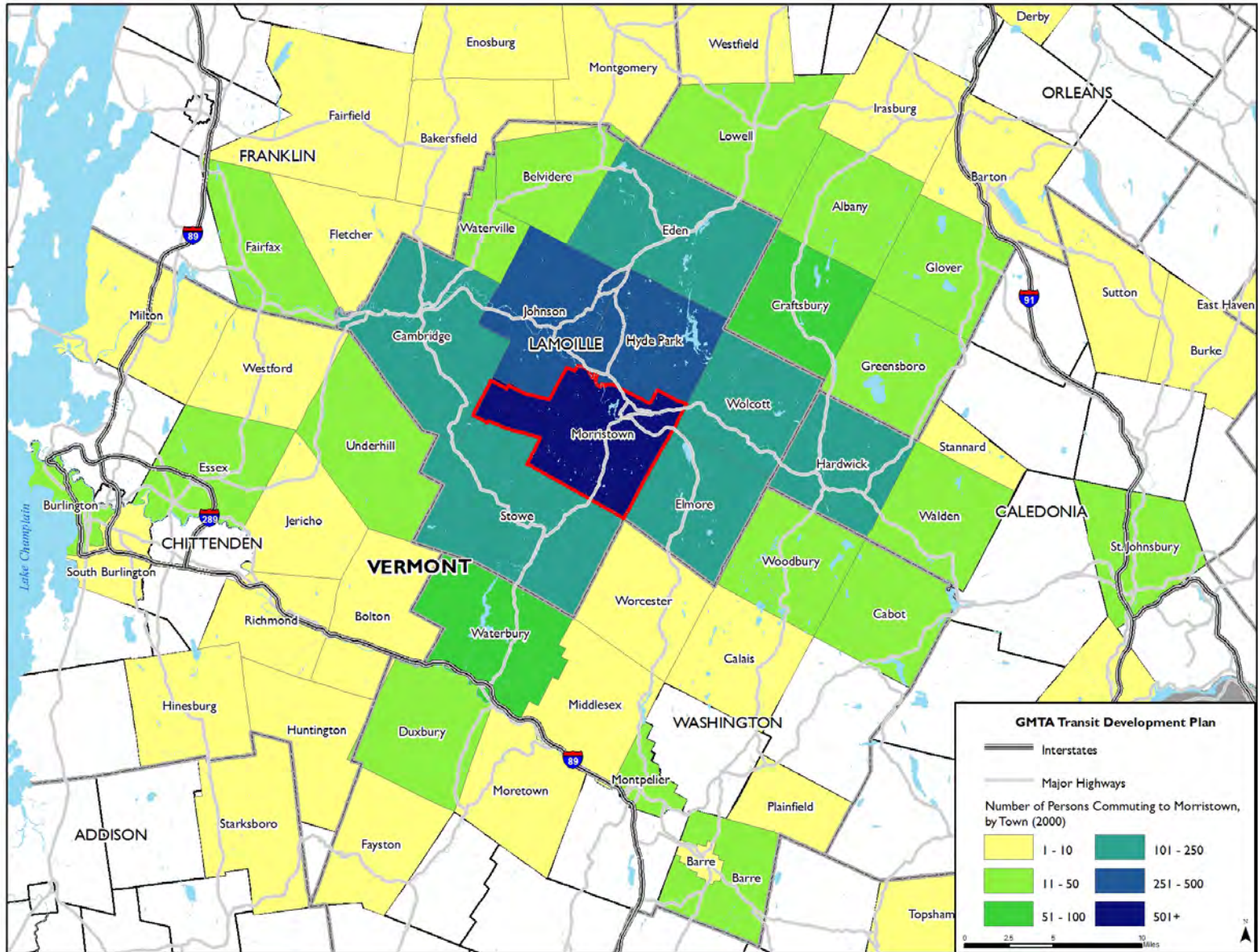
Data from the Journey-to-Work portion of the 2000 Census provide direct information connecting residences to workplaces. See the Central Vermont section of this chapter for an overview of county-to-county flows.

Figure 3.17 illustrates the detailed commuting pattern for Morrystown, the economic center of Lamoille County. The highest numbers of commuters to Morrystown come from Morrystown itself, as would be expected, followed by Hyde Park and Johnson, which each send more than 250 commuters into Morrystown. A ring of towns, covering most of the rest of Lamoille County send between 100 and 250 commuters to Morrystown, while sparsely populated Waterville and Belvidere send fewer than 50 commuters to the job center.

The pattern of commuting is somewhat more stretched out to the east and west than it is to the north and south. To some extent, this reflects the population (or lack thereof) in the surrounding towns, and also the access provided by the road network. Route 100 and Route 15 are the primary access routes into Morrisville, and thus towns along these roads are more likely to house Morrisville workers. To the immediate south, Worcester and Calais send fewer commuters to Morrisville than might be expected given the straight-line distances. Calais has poor road access to Morrisville, and both of these towns would be much more likely to send workers to the much large job centers in the Central Vermont region: Montpelier and Barre.

Given the concentration of residences in Hyde Park and Johnson along the Route 15 corridor and the strong orientation of these towns to employment in Morrisville, a commuter bus service could well be successful in this corridor.

Figure 3.17 Commuters to Morrystown (year 2000)



Summary of Lamoille County Analysis

This analysis has found that GMTA provides transit access to the high-density residential areas and important trip generators in Morrisville. A few areas were identified that have small pockets transit-supportive densities but are outside of the current service area, namely Johnson and Jeffersonville.

Overall, the town of Johnson has the greatest potential for supporting regular transit service both in terms of needy populations and employment. Given the findings of transit need and commuting patterns, a service on Route 15 between Johnson and Morrisville would appear to have potential.

Franklin and Grand Isle Counties

Demographic Profile

Franklin and Grand Isle counties cover some 715 square miles in the northwestern corner of Vermont, though Franklin County accounts for 89% of that land area. The two-county region includes one city—St. Albans—and 19 towns (see Table 3.3 for full list). The economic center of this region is St. Albans, but being immediately adjacent to Chittenden County, many residents of Franklin and Grand Isle commute to the much more populous Chittenden for work and other activities.

The two counties had a combined population of 54,716 in the 2010 Census, translating into a population density of 76 persons per square mile, a bit higher than the statewide average of 66 persons per square mile and the figure seen for the GMTA service area as a whole. Franklin County accounts for 87% of the combined total, as Grand Isle, with only five towns and 82 square miles of territory is by far the smallest county in the state in terms of land area, and barely edges out Essex County to be the second least populous. The summer population of Grand Isle County is notably larger than the full year population.

GMTA year-round routes in Franklin and Grand Isle serve a limited part of the county: only St. Albans City has full day service while two commuter routes from Alburgh to Georgia and Richford to St. Albans offer very limited service. St. Albans City has an urban-like population density of 3,408 persons per square mile. This value is some 45 times higher than the density of the region as a whole and explains why the only full day local service is located within the city. The rest of the two-county region outside of St. Albans has a density of 67 persons per square mile, very close to the state average.

Grand Isle County has no fixed route service except for the beginning of the Alburgh/Georgia route; most of the transit service on the Islands is provided by CIDER through demand response vans and volunteer drivers.

Table 3.3 Franklin and Grand Isle County Demographics

Town	2010 Pop.	2000 Pop.	Pct. Change	Persons per Sq.Mi.	Pop. 65+	Disability Status	Median HH Income	Total Housing Units	0-Veh. HU
Bakersfield	1,322	1,215	9%	30	129	159	\$59,688	473	3
Berkshire	1,692	1,388	22%	40	165	201	\$56,964	508	28
Enosburg	2,781	2,788	0%	58	421	377	\$45,227	1,136	93
Fairfax	4,285	3,765	14%	108	367	504	\$70,348	1,521	27
Fairfield	1,891	1,800	5%	28	212	233	\$51,875	779	32
Fletcher	1,277	1,179	8%	34	93	144	\$64,276	455	10
Franklin	1,405	1,268	11%	37	195	187	\$49,489	587	17
Georgia	4,515	4,375	3%	115	369	517	\$72,554	1,665	0
Highgate	3,535	3,397	4%	70	371	426	\$49,033	1,248	13
Montgomery	1,201	992	21%	21	151	152	\$42,212	431	16
Richford	2,308	2,321	-1%	54	383	333	\$36,890	969	75
St. Albans city	6,918	7,650	-10%	3,408	831	904	\$42,841	3,038	445
St. Albans town	5,999	5,086	18%	162	1,023	881	\$66,106	2,154	33
Sheldon	2,190	1,990	10%	56	236	267	\$57,569	767	10
Swanton	6,427	6,203	4%	134	862	847	\$52,250	2,751	147
Franklin County	47,746	45,417	5%	75	5,808	6,130	\$53,623	18,482	949
Alburgh	1,998	1,952	2%	69	276	262	\$40,855	779	29
Grand Isle	2,067	1,955	6%	126	271	262	\$65,000	926	18
Isle La Motte	471	488	-3%	60	66	64	\$55,625	184	4
North Hero	803	810	-1%	60	128	110	\$63,295	469	15
South Hero	1,631	1,696	-4%	109	238	224	\$64,663	719	20
Grand Isle County	6,970	6,901	1%	85	979	921	\$57,436	3,077	86
<i>Franklin/Grand Isle Service Area</i>	<i>54,716</i>	<i>52,318</i>	<i>5%</i>	<i>76</i>	<i>6,787</i>	<i>7,050</i>		<i>21,559</i>	<i>1,035</i>
<i>Total GMTA Service Area</i>	<i>144,225</i>	<i>138,827</i>	<i>4%</i>	<i>73</i>	<i>21,620</i>	<i>21,284</i>		<i>64,383</i>	<i>3,335</i>
Vermont	625,741	608,827	3%	66	91,078	97,167	\$51,841	250,375	15,138

Residential Density

As previously indicated, the Franklin/Grand Isle region is slightly more densely populated than the state of Vermont and the GMTA service area as a whole. However, some 99.6% of the area in the county has a rural density of less than one household per acre. As shown in Figure 3.18, outside of St. Albans City and Swanton, there are only a few census blocks (the smallest unit of census geography) in St. Albans Town, Alburgh, Enosburg Falls and Richford where density rises above one household per acre.

Older Adults

Figure 3.19 shows the percentage of persons age 65 and older. Most towns in the region have some blocks with relatively high percentages of seniors (25% or more) but the highest percentages (50% or more) are in Richford, St. Albans Town, and Highgate, with a few other isolated blocks elsewhere. Many census blocks have percentages of older adults of between 25% and 50%, but these are very sparsely populated overall, and thus represent very small numbers of persons.

Low Income Households

Figure 3.20 shows the percentage of households with incomes below \$25,000 by town. St. Albans City, Richford and Montgomery have the highest percentages of low income households, followed by Enosburg and Alburgh. The southernmost towns of the region in both counties show the lowest prevalence of low income households, very likely due to their proximity to Chittenden County and the large number of better paying jobs there.

Zero Vehicle Households

The final demographics map illustrates the percentage of housing units which own no vehicles. Figure 3.21 show that the only municipality with more than 10% of households not having a vehicle is St. Albans City, though four communities had between 5% and 10%. The northeastern corner of the region also exhibited the lowest incomes, and thus many families may not be able to afford an automobile in these towns. Given the current lack of travel options in much of the county, a car is necessary for most or all mobility needs.

Trip Generators for Transit-Dependent Populations

The previous section used data from the U.S. Census to identify areas within the Franklin/Grand Isle region that have concentrations of people who are more likely to need access to public transportation services. This section considers data from local sources which provide more detailed information on the location of specific trip generators. Data on these trip generators was obtained from a variety of sources, including the previous SRPTP and the Vermont Human Service Transportation Coordination Plan.

Figure 3.18 Franklin/Grand Isle Household Density

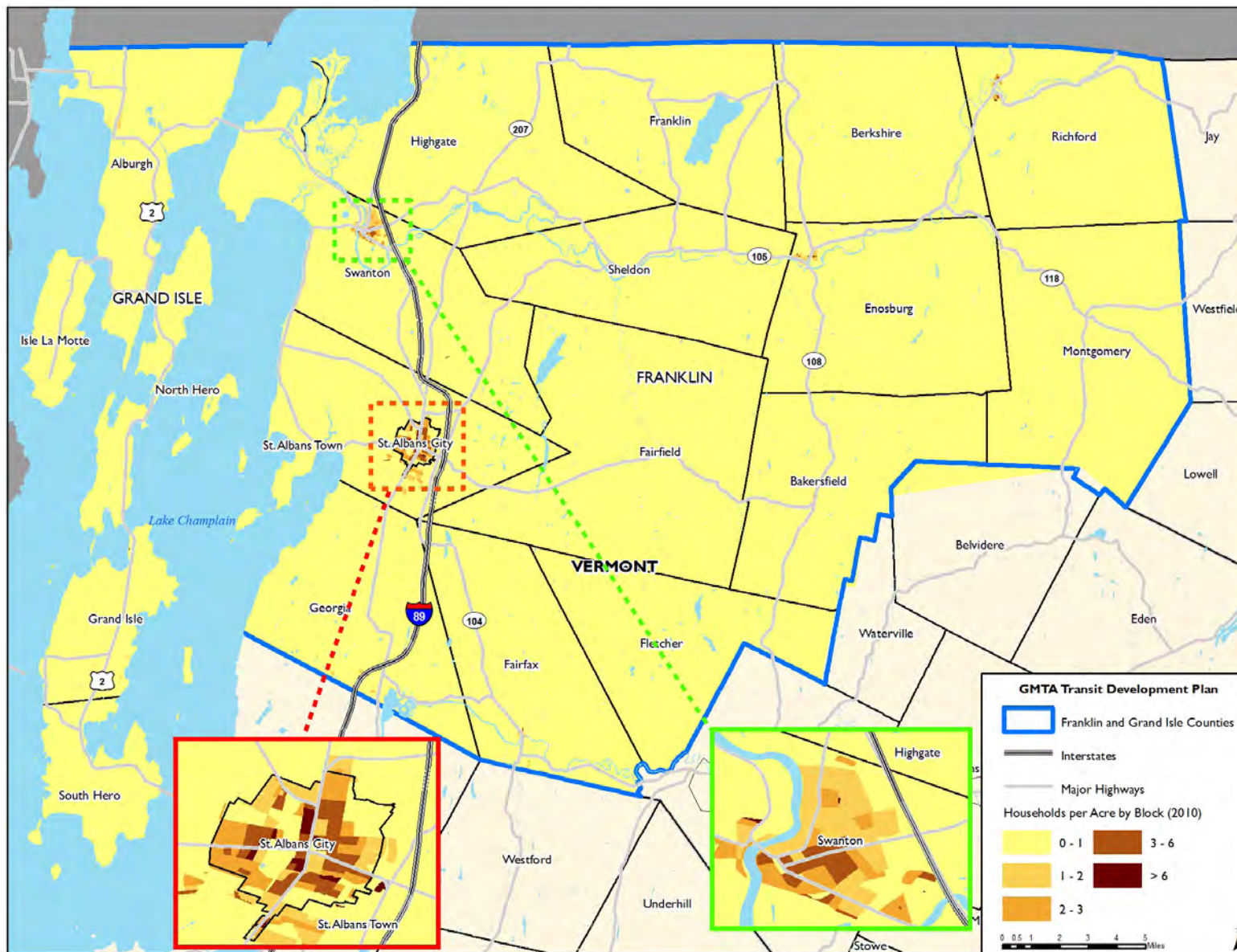


Figure 3.19 Percentage of Population Ages 65 and Older

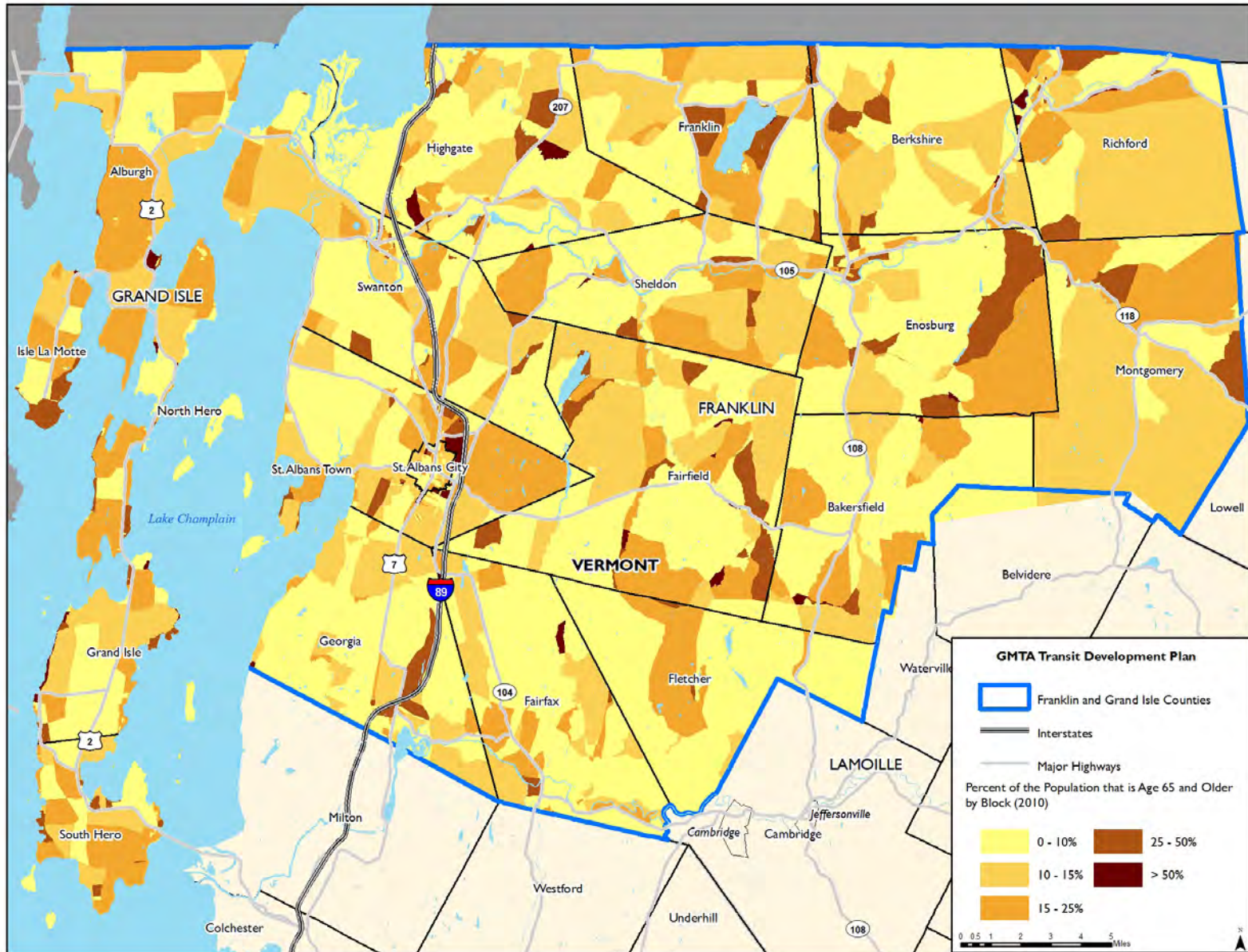


Figure 3.20 Percentage of Low Income Households

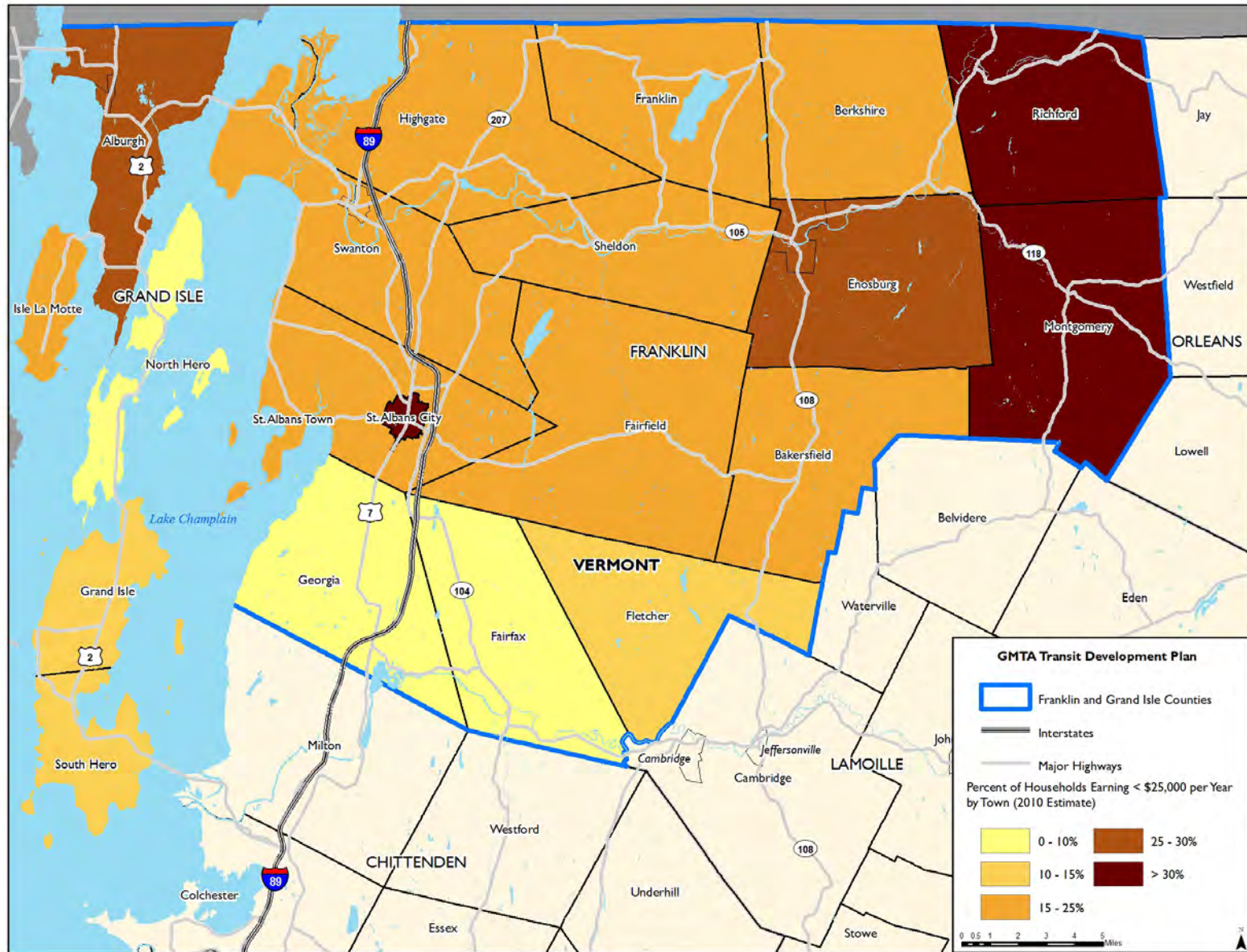
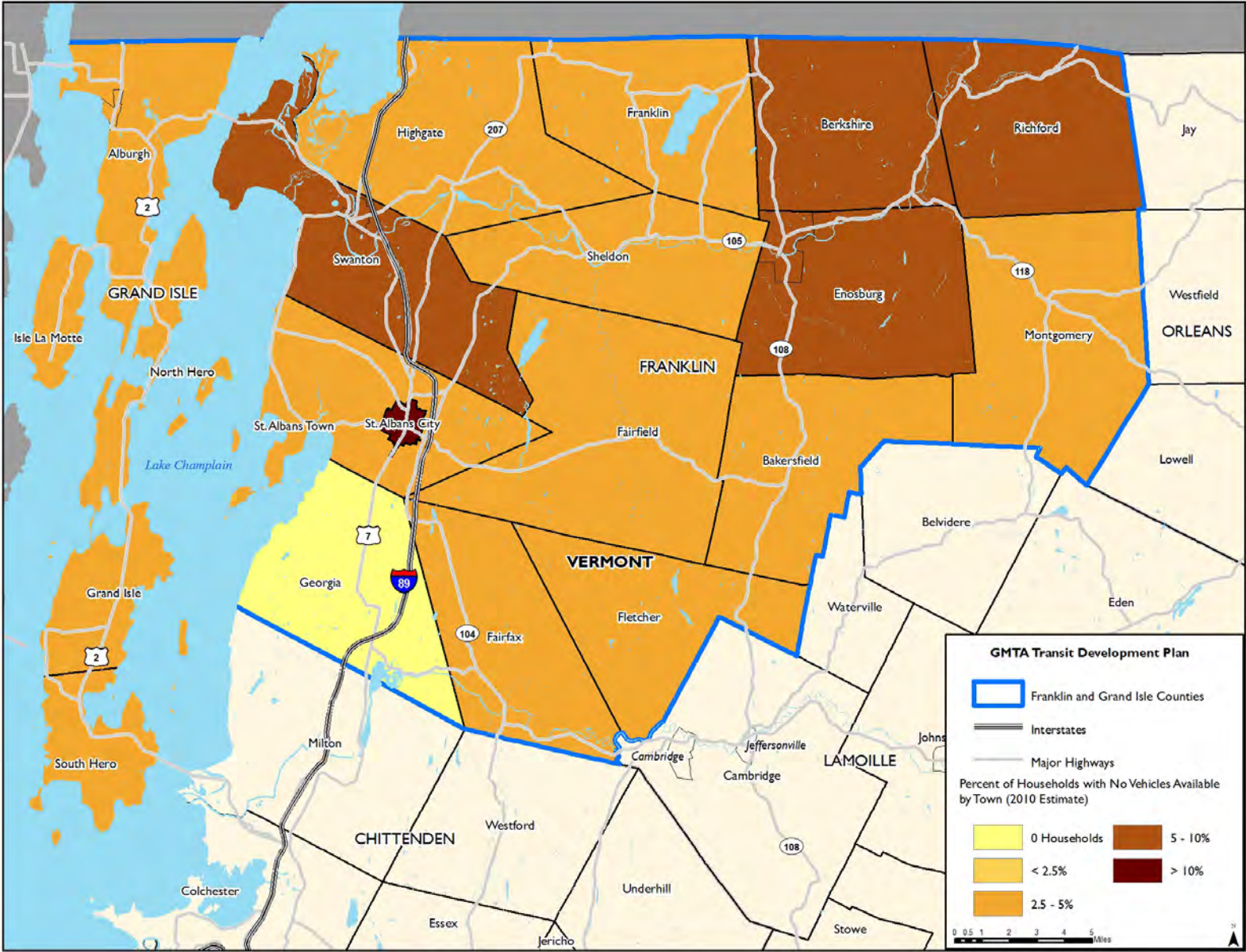


Figure 3.21 Percentage of Zero-Vehicle Housing Units



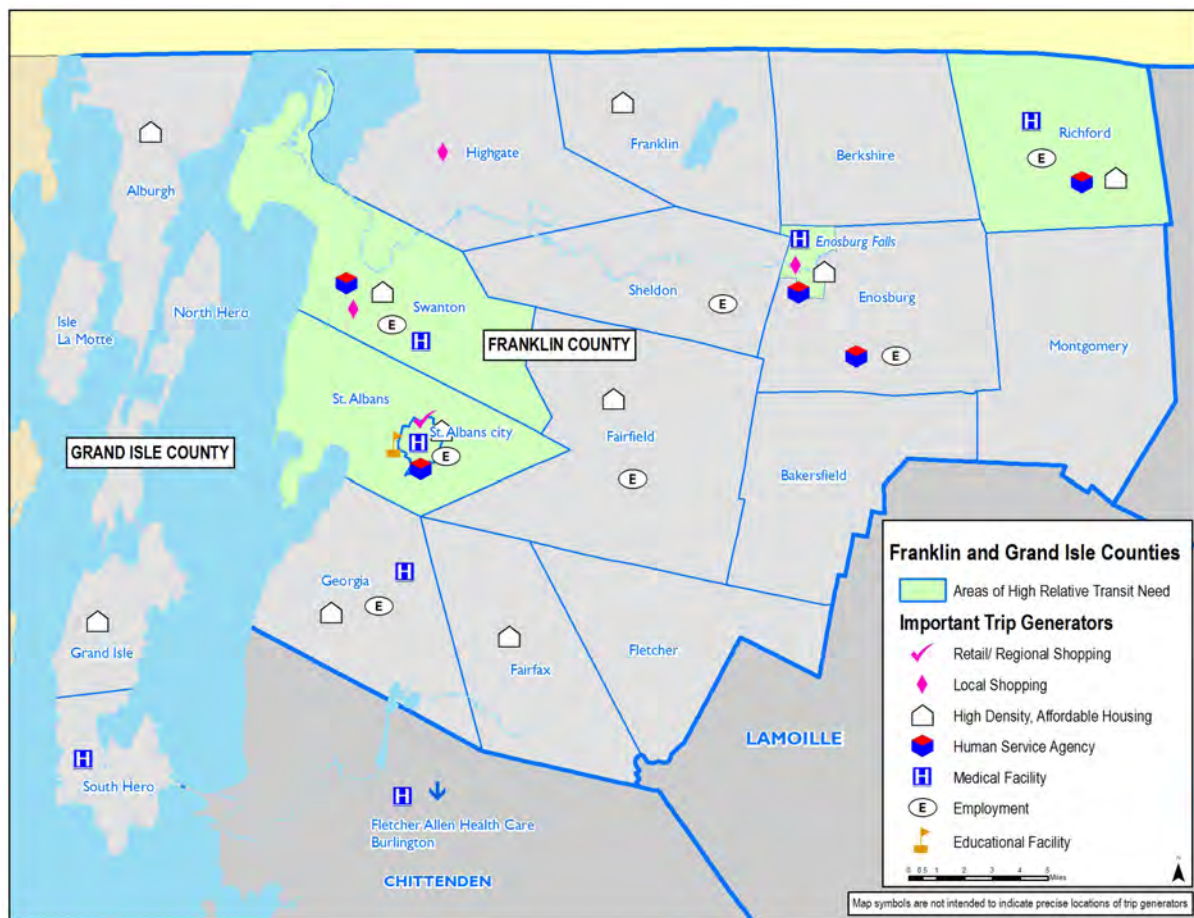
Human Service Related Generators

Figure 3.22 shows some of the trip generators within the Franklin/Grand Isle region, including:

- Accessible housing
- Affordable/ income restricted housing
- Apartment complexes
- Human service agencies
- Medical facilities
- Senior centers and housing

It is important to note that the icons on the map are not intended to denote precise locations within a town, but rather the presence of the facility somewhere within the town boundaries.

Figure 3.22 Trip Generators



Many trip generators serve multiple purposes. For example, many senior housing complexes could also be categorized as accessible housing and a few senior centers also serve as senior nutrition sites, which would generally be categorized as human service agencies.

Not surprisingly, many generators are concentrated in St. Albans and to a lesser extent in Swanton, Enosburg Falls and Richford. These municipalities are indicated as areas of “high relative transit need” because of these generators and the demographic factors discussed above.

Employers

Data on Franklin and Grand Isle County employers were purchased from Dun & Bradstreet and are shown on Figure 3.23.⁶ The employers shown are worksites with 10 or more employees. The ten largest employers (as of 2005) in Franklin and Grand Isle counties were as follows:

- Immigration Service Center – 900 Employees
- Northwestern Medical Center – 360 Employees
- Mylan Technologies – 250 Employees
- Solo Cup Company – 200 Employees
- Barry Callebaut USA – 200 Employees
- Eveready Batteries – 180 Employees
- Bellows Free Academy – 165 Employees
- Ben & Jerry's – 150 Employees
- St. Albans Elementary School – 150 Employees
- Missisquoi Union High School – 150 Employees

There are no employers in Grand Isle County with more than 65 employees. The largest employers in the data were summer camps with seasonal employment.

By far the biggest cluster of employment is in St. Albans City, as highlighted on the inset map. Besides that, the Route 105 corridor from Richford through Enosburg and Sheldon has several large employers with over 100 workers. The current GMTA routes are shown on this map and it can be seen that even with the limited amount of service provided, the great majority of large employers in the region are served by a bus route. While the longer commuter routes serve mainly employment at the St. Albans Industrial Park and in Georgia, with a higher level of service they may be able to serve many other employers along the VT 105 corridor as well as in Swanton and Highgate.

An important employer and trip attractor not included in the above analysis, but very relevant for Franklin County and, to a lesser extent, Lamoille County, is the Jay Peak resort. The town of Jay is immediately to the east of Richford in Orleans County. The resort has been significantly expanded since 2009, with over \$100 million in investment and over 500 new year-round jobs created. The resort has become a major employment destination for Franklin and Lamoille County residents. Of course, the resort also attracts many visitors for the recreational opportunities there.

Commuting Patterns

Data from the Journey-to-Work portion of the 2000 Census provide direct information linking residences to workplaces. See the Central Vermont section of this chapter for an overview of county-to-county flows. Figure 3.24 illustrates the detailed commuting pattern for St. Albans, the economic center of Franklin County. The highest numbers of commuters to St. Albans come

⁶ Data were purchased in 2005, and thus the number of employees should be treated as estimates.

Figure 3.23 Franklin and Grand Isle County Employers

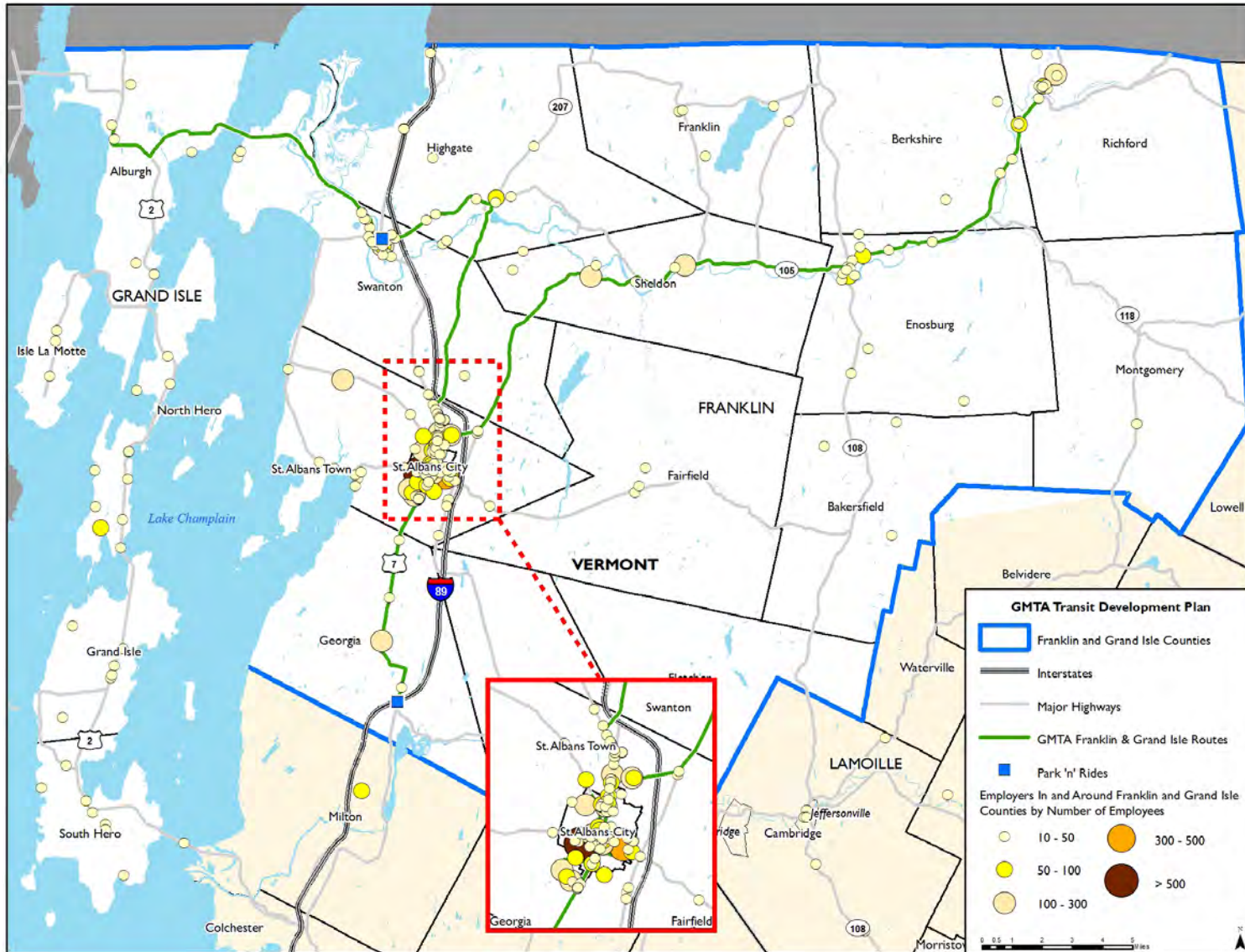
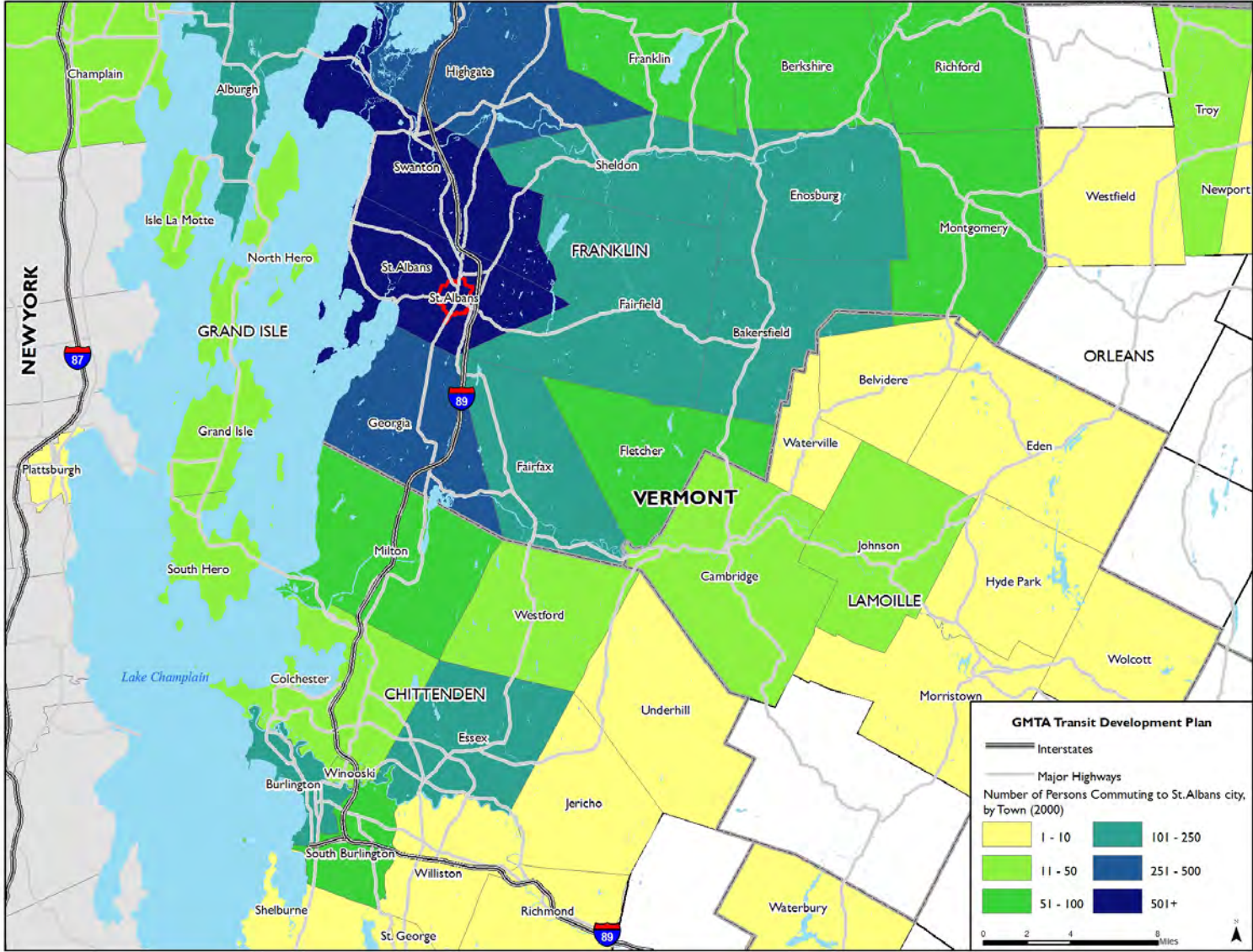


Figure 3.24 Commuters to St. Albans City (year 2000)



from the city and the surrounding town, plus the Town of Swanton. Highgate and Georgia each send more than 250 commuters into St. Albans. The municipalities sending between 100 and 250 commuters to St. Albans are more dispersed, including five Franklin County towns to the east of St. Albans and Alburgh, but also Burlington and Essex in Chittenden County. These reverse commuters can take advantage of free flow conditions heading north out of Chittenden County in the morning and returning south in the evening.

The rest of the towns in Franklin County send at least 50 daily commuters to St. Albans, as do Milton and South Burlington in Chittenden County. Towns with between 11 and 50 St. Albans workers are as far flung as Johnson, Troy, and Champlain, NY.

St. Albans has good roadway access from all directions, allowing commuters relatively direct trips into the city. Other than the core of Chittenden County, there are no other major employment zones to compete with St. Albans for workers in the vicinity.

Summary of Franklin/Grand Isle Analysis

This analysis has found that GMTA provides transit access to the high-density residential areas and important trip generators in St. Albans. A few areas were identified that have small pockets transit-supportive densities and are served only by a limited commuter route.

The corridors currently served by the Alburgh/Georgia and Richford/St. Albans shuttles could likely support a higher level of service, allowing commuters to job sites along the way to have a real alternative to driving. After St. Albans, Swanton is the town with the next highest density and could support some local service. A commuter route along US 7 may be feasible, as could upgrading the current one-day-per-week shopping shuttle between St. Albans and Swanton into more of a regular local service.

Conclusion

The GMTA service area is large and varied. The great majority of it is rural and sparsely populated, but there are significant concentrations of population and jobs in the economic centers of Barre-Montpelier, Morrisville, and St. Albans. Some of the rural towns have village centers that can support transit services oriented toward commuters or for occasional local travel, but the extent of regular full-day local service will probably not extend far beyond the corridors that are already served by local routes and some shopping routes that could be converted to full-day service.

Table 3.4 below presents a quick summary of key demographic characteristics in the four counties that make up the GMTA service area. It can be seen that the Central Vermont region has the highest population and greatest population density, and a slightly higher percentage of older adults. It has relatively fewer low-income households, however. Lamoille County, with the fewest people, has the highest percentage of low-income households and those without a vehicle available.

Table 3.4 GMTA Demographics Summary

	Total Population	% of Pop. within 3/4 mile of GMTA Route	Persons per Sq. Mi	% of Population Age 65 and Over	% of Low-Income Households	% of Zero-Vehicle Households
Central VT/ Washington County	65,034	53%	80	14%	16%	5%
Lamoille County	24,475	39%	53	13%	25%	6%
Franklin County	47,746	43%	75	12%	21%	5%
Grand Isle County	6,970	12%	85	14%	16%	3%
Totals for GMTA Service Area	144,225	46%	73	13%	20%	5%

Because of the greater concentration of population in Central Vermont, and the higher level of service provided, more than half of the population is within 3/4 of a mile of a GMTA route. Lamoille and Franklin counties have close to 40% of their population served. In Grand Isle County, only 12% of the population is served by a bus route, but CIDER provides demand response service through vans and volunteers to cover all island residents.

The market analysis has illustrated the characteristics of the three parts of the GMTA service area and highlighted some portions of the area that would benefit from new and expanded services. The next chapter synthesizes this information with other sources to identify the needs and gaps in service in the region.

Chapter 4

Needs Analysis

Key Issues in Chapter 4:

- *What are the needs of GMTA's current and potential riders?*
- *What are the major gaps in the existing system?*
- *How are new services developed and advanced?*

Before identifying specific service strategies, it is important to discuss the needs for improved public transportation. The market analysis in the previous chapter highlighted the geographic areas that have sufficient population density to support local transit service, demographic characteristics to indicate a need for service, and commuting patterns that could be served by new commuter bus routes. This chapter considers the needs of GMTA's current and potential future riders. GMTA serves two distinct markets of riders, and these markets have somewhat different needs. These needs were illuminated through input from GMTA riders and the general public, which was solicited through a series of surveys about the most important improvements GMTA could make to its service.

Needs of GMTA's Primary Markets

Many of GMTA's riders belong to the market segment made up of people who depend on public transit for most or all of their mobility needs. These "transit-dependent" riders either do not have a car available or cannot drive for any number of reasons, but must make trips that are too long for walking. More recently, as GMTA has introduced new commuter services such as the US 2 Commuter between Montpelier and St. Johnsbury (jointly operated with RCT), GMTA has been tapping into the commuter market, attracting riders who are able to drive. These riders choose to take transit rather than drive, and are thus known as "choice" riders. Serving the needs of transit-dependent riders fulfills part of GMTA's mission: to meet the mobility needs of people in its four-county region. Attracting choice riders fulfills the other part of the mission: to deliver convenient and environmentally efficient transportation solutions.

The main needs of the transit-dependent market segment are longer service hours and wider service coverage. Longer hours means both extended hours on weekdays (early in the morning and late in the evening) and full service on weekend days. Many people work on Saturday and Sunday and need transportation to and from their jobs. They also work shifts on weekdays that do not necessarily coincide with the traditional 9-5 job; their jobs may start very early in the morning, or let out late in the evening. It is also the case that many transit-dependent riders are

not employed; they might be retired or disabled. This group of riders may need service in the middle of the day, in the evenings or on weekends to meet their needs for shopping, access to social service agencies, or just getting out to visit family and friends.

Wider service coverage means bus routes going to more places. As was seen in chapter 3, the current system serves most places with high residential density, concentrations of people with transit-dependent characteristics, social service agencies, and clusters of employment, but by no means all of them. In some cases, transit-dependent riders are faced with long walks to get from the bus to their final destinations.

The single most important service characteristic to choice riders is frequency of service. Underlying this claim is the assumption that the span and coverage of service is already largely sufficient for the majority of regular commuters, who mostly work in traditional 9-5 jobs. In Franklin and Grand Isle counties, this is not currently the case, but in the Route 100 and US 2 corridors, there is substantial coverage of regular commuting hours. Frequency, on the other hand, is a key determinant of how long someone is likely to be waiting for a bus and how flexible someone can be about their departure times. For someone who has a car available, and therefore has an option with no waiting time and complete flexibility of departure time, a bus route will only be attractive if waiting time is minimized and flexibility is maximized.

This is not to say that frequency is unimportant to transit-dependent riders, and that nothing else matters to choice riders. Indeed, improved frequency is a large benefit to all riders, and many factors are important to choice riders, including travel time and directness of the route, comfort and cleanliness of the buses, and passenger amenities at bus stops (shelters, benches, lighting, etc.). However, since transit-dependent riders do not have a choice (by definition), the critical thing is being able to get to their destination, even if it involves some waiting and inconvenience.

GMTA's services are designed to appeal to and meet the needs of both markets, though some routes are more oriented toward one or the other. The "commuter" routes and shuttles are obviously aimed at commuters, as are the LINK expresses, which offer fast and inexpensive service from Montpelier and St. Albans to downtown Burlington and the "Hill" area east of downtown, containing large medical and educational institutions.

Most of GMTA's local routes are more oriented to transit-dependent riders in the Barre-Berlin-Montpelier zone, Morrisville and St. Albans City-St. Albans Town. These routes are slower and more indirect, but offer wide coverage to densely developed neighborhoods. For the most part, these routes operate hourly, with some 30-minute service on the City Commuter between Montpelier and Barre. This route straddles the difference between commuter and local services; it is a direct corridor service, but does not yet have the high frequency to make it attractive to choice riders. The demand-response shuttles and shopping routes more obviously cater to the transit-dependent market, seeking to address basic mobility needs.

Needs Identified in Recent Data Collection

GMTA periodically surveys its riders and the general public through telephone and on-board surveys. This section presents the results of the most recent data collection efforts.

Central Vermont

In June of 2012, GMTA conducted an on-board passenger survey on its Central Vermont service, covering the City Commuter, City Midday, Barre Hospital Hill, Montpelier Hospital Hill, Montpelier Circulator, US 2 Commuter, Route 100 Commuter and Waterbury Commuter. Among other things, this survey asked riders about potential service improvements. In May of 2010, GMTA conducted a telephone survey of Central Vermont residents. Needs identified by survey respondents are summarized below.

In the 2012 on-board survey, riders were asked to mark up to three choices (from a list of 11) for ways to improve service. The top six choices are shown below in rank order, along with the percentage of riders who chose that option. In prior surveys, span of service issues—mainly the lack of Sunday service and limited Saturday service—were the ones cited most frequently by riders. In this survey, frequency and weekday evening hours received the most mentions. One explanation is that the 2012 survey included more surveys from riders on commuter routes which carry more “choice” riders than local routes. Frequency of service tends to be the most important issue for choice riders.

1. More frequency	36%
2. Later hours in PM	34%
3. Routes to more locations	23%
4. Service on Sunday	24%
5. More service on Saturday	21%
6. Faster, more direct service	15%

Among the requests for routes to more locations, the following communities were cited:

Town	Number of Requests
1. South Barre/Barre Town	2
2. Saturday Burlington service	2
3. Northfield	1
4. Johnson/Hyde Park	1
5. Hardwick	1
6. Wolcott	1
7. Barnet	1
8. Express to St. Johnsbury	1

The telephone survey also asked about desired locations for new routes. The following were the top ten responses:

Town	Number of Requests	Percent of Respondents
Connect to Chittenden County	160	13.1%
Montpelier	100	8.2%
Connect to Orange County	65	5.3%
Barre City	58	4.7%
Connect to Lamoille County	58	4.7%
Waterbury	54	4.4%
Connect to Caledonia County	52	4.2%
Barre Town	50	4.1%
Berlin	49	4.0%
Northfield	49	4.0%

It can be seen that connections to surrounding counties garnered a high number of responses. Indeed, the most common answer overall was service to Chittenden County. This could reflect a lack of knowledge of the existing LINK Express route, a desire for more service on that route, or better access to that route from other Central Vermont communities. It could also reflect a desire to connect to other locations in Chittenden County besides Burlington. GMTA has received requests for Saturday service on the Montpelier LINK to provide access to Burlington from Montpelier, Waterbury and Stowe for tourists and seasonal employees.

In fact, all of the top seven responses are locations that already have a transit connection from Montpelier. Many of these requests for new routes may have come from residents of towns other than Montpelier.

The top unserved location, Barre Town, was also the one most cited by on-board survey respondents. The market analysis also identified sections of Barre Town, specifically South Barre, that had sufficient density to support local bus service. Northfield, having been served by a commuter route as recently as 2004 and now supporting a local one-day-per-week service, also appears to be a good potential market.

Extending the reach of GMTA services to more communities was the primary interest of telephone survey respondents, likely because a higher percentage of them (compared to the on-board survey) were non-riders and lived outside of the central cities of the Central Vermont region. When asked what factors would make them seriously consider using GMTA services, the most prominent ones were factors exogenous to GMTA, such as if they did not have a car available or if gas prices rose to more than \$4 per gallon. The characteristics of GMTA service that were most important to them were:

- If the bus was just as fast as driving 51%
- If buses ran more frequently 47%
- If buses ran later in the evening and more on weekends 39%

Travel speed and frequency of service are important concerns among both telephone survey and on-board survey respondents.

Lamoille County

GMTA surveyed riders on its Lamoille County routes (Route 100 Commuter, Morrisville Shopping Shuttle, and Morrisville Loop) during October and November 2011. In the survey, riders were asked to mark up to three choices (from a list of 11) for ways to improve service. The top seven choices are shown below in rank order, along with the percentage of riders who chose that option.

- | | |
|-----------------------------|-----|
| 1. More service on weekends | 55% |
| 2. More midday service | 55% |
| 3. More frequency | 40% |
| 4. Earlier hours in AM | 20% |
| 5. More commuter trips | 20% |
| 6. Later hours in PM | 15% |
| 7. Routes to more locations | 15% |

Almost all of the requests revolve around the issue of the level of service on existing routes. As described in chapter 2, Lamoille routes do not currently have a high level of service, and current riders would like to be able to use the routes for more of their mobility needs.

Among the requests for routes to more locations, the following linkages were mentioned: service to St. Johnsbury from Morrisville via Route 15, a route between Johnson and Morrisville, a route from Waterbury to Waitsfield (for displaced workers, due to Tropical Storm Irene), midday service on the Waterbury and Route 100 Commuters, and more LINK trips to Burlington.

GMTA has not done a telephone survey of Lamoille County, but the Lamoille County Planning Commission conducted a survey in Fall 2011 which included some questions about public transportation. The most relevant question involved the potential value of various changes to the transit system in encouraging people to use it more often. The top ten responses were as follows:

- | | |
|-----------------------------------|-----|
| 1. Nothing could encourage me | 33% |
| 2. Adding a stop near my home | 21% |
| 3. More frequent service | 9% |
| 4. Increased availability | 7% |
| 5. If I had no vehicle | 6% |
| 6. More information about service | 5% |
| 7. Personal issues | 5% |
| 8. Adding a stop near employer | 5% |
| 9. Lower or free fares | 2% |
| 10. Evening service | 2% |

These results are not particularly encouraging, as the most common response was a disavowal to be willing to try public transportation, and the second most common response implies a large

expansion of the coverage area to lower density areas, since many of the densely-populated sections of Lamoille County (in Morrisville) already have nearby bus stops.

Franklin and Grand Isle Counties

GMTA surveyed riders on its FGI routes (Alburgh/Georgia Shuttle, Richford/St. Albans Shuttle, St. Albans Downtown Shuttle) during January 2010. In the survey, riders were asked to mark up to three choices (from a list of 11) for ways to improve service. The top nine choices are shown below in rank order, along with the percentage of riders who chose that option.

1. More frequency	46%
2. Later hours in PM	37%
3. More service on Sunday	37%
4. Midday St. Albans LINK	37%
5. More door-to-door service	26%
6. Earlier hours in AM	23%
7. Routes to more locations	20%
8. Faster, more direct service	17%
9. More service to healthcare locations	11%

Respondents asked for service to Walmart, which could either have been referring to the existing Walmart in Williston or the planned new Walmart in St. Albans Town. There were also requests for more service to Chittenden County and midday service to Richford.

There have been no recent telephone surveys of residents of Franklin and Grand Isle counties.

Needs Identified in Public Outreach

Two separate public outreach efforts helped to inform the process of needs analysis in the TDP. In July 2008, a contractor working with VTrans hosted public and stakeholder meetings in the various regions of the state to solicit input for a short-range planning effort. While that effort never came to fruition, the results of those meetings were used as an input to this TDP process. The second outreach effort consisted of stakeholder and public meetings held during the development of this document. Some of these meetings were held with the Transportation Advisory Committees in the regions.

Central Vermont and Lamoille County

In the July 2008 outreach, one set of meetings was held to cover both the Central Vermont and Lamoille regions. Comments received from the general public and from invited stakeholders at these meetings largely echo the findings from the data collection efforts. Routes, especially commuter routes, were requested from the following communities:

- Northfield service for commuters and shoppers
- Midday service on Waterbury commuter

- Service to North Montpelier and Hardwick (VT 14 corridor)
- Year-round service in Mad River Valley and on Stowe Mountain Road

There were other comments at these meetings with route requests that have since been addressed with new service: connections on US 2 to East Montpelier, Plainfield and St. Johnsbury; midday service to Burlington on the LINK; and circulator service in Montpelier. In addition, improved weekend and weekday night service was requested to assist people who work at those times.

TDP meetings were held in Montpelier, Barre and Morrisville periodically in 2011. The following summarizes comments and suggestions for new service received at these meetings:

- Expand Northfield, VT bus service to Monday – Friday, all day service, thereby providing transportation alternatives for commuters, transit dependent, students and healthcare needs.
- Expand US 2 Commuter into Cabot, and/or provide some other “regular” service to the area.
- Work with local developers and municipalities to conduct “health impact assessments” for newly developed and/or developing areas, to identify transit and walking needs and how they are or could be accommodated.
- Commuter and local routes serving Johnson
 - Park & Ride facilities in/around Johnson (closest is at Hyde Park)
 - Service between Johnson (Town and College) and Smugglers Notch Ski Area
- Demand Response
 - Health provider access too limited by 24 hour notice requirement
 - People sometimes need immediate service to medical facilities
- Bus stop visibility
 - Better identification of, and amenities at, bus stops
 - Benches, lights, schedules, shelters
- Public awareness - additional outreach, marketing, advertising
- Offer trip planning software
- Route 12 north commuter route
 - Stakeholders felt better service to Waterbury via Route 100 (connecting to Waterbury Commuter and Burlington Link) would serve commuters better than Route 12 route from Morrisville to Montpelier
- Year-round service along Stowe Mountain Road (Rt. 108)
 - Large increase in summer traffic due to tourism over the last several years
 - Year-round service to Shaw’s, just north of Stowe (Rt. 100)
- GMTA should revisit involvement in Stagecoach’s 89-ER Route (Montpelier to Randolph) in order to offer more round trips each weekday
- Service to CCV on Route 12
- Washington County Mental Health in Montpelier has unmet demand for service
- Service to East Montpelier
- Service to Graniteville/Barre Town
- Midday US 2 Commuter service
- More bike rack availability on all buses

- Covered, secure bike racks at all park-and-ride locations
- Bus service that connects the more popular bicycle routes
- Bus stops at locations that are at convenient locations with regard to walking routes

Franklin and Grand Isle Counties

In the July 2008 outreach, a public meeting and a stakeholder meeting were held in St. Albans to solicit feedback about needs in Franklin and Grand Isle counties. Among requests for more service generally, there were specific requests for the following:

- Midday trip on St. Albans LINK and more options to commute from Georgia
- Shopper services from outlying areas
- More service on Richford shuttle to accommodate non-work trips
- Commuter service on Route 2 to serve Islands and Grand Isle Ferry
- Better feeder service to St. Albans LINK trips; need afternoon connection back to Richford
- Service to a 48-unit elderly housing complex in Fairfax is needed
- Service to St. Albans Bay in St. Albans Town

GMTA met with the Franklin/Grand Isle Transportation Advisory Committee in early 2012 to discuss needs and strategies for the TDP. Many of the comments received echo the ones made in 2008, with requests for more service in existing routes, including midday trips, expanded demand response service, and better connections to the St. Albans LINK. Saturday service on the St. Albans LINK was also requested.

Major Gaps in Existing System

The analysis in chapters 2 and 3 and the information contained in this chapter point to a number of gaps in the GMTA system. Among current riders and a majority of the general public, there is a consensus that more service is needed overall—that the current level of service on the routes operated today is too low to be convenient and attractive for a broad swath of the traveling public. Beyond that general finding, there are specific areas and service periods that warrant new service in the near term.

Central Vermont

In several studies and public comments, South Barre is identified as an area that could support regular local service but currently has none. Other sections of Barre Town also have needs for transit access, but do not have sufficient density for regular local service; other transit solutions would be appropriate for these areas.

A number of commuter corridors were identified as needing service. These include the Route 12 corridor between Northfield and Montpelier, the Route 14 corridor between Hardwick and Montpelier, the Route 12 corridor between Worcester (and possibly Morrisville) and Montpelier, and full-year commuter service between the Mad River Valley and Montpelier. Commuter

services into Barre City, including Route 14 from East Montpelier and Williamstown, and US 302 from Orange and points east, would help support economic development in Barre.

Lamoille County

The clearest gaps in service in Lamoille County include the Route 15 corridor between Johnson and Morrisville, and the Mountain Road corridor in the non-winter months. Both of these corridors have had some service in the past, but it was abandoned due to lack of funding and poor patronage.

The key unserved commuter corridor in Lamoille County is Route 15. A linkage from Morrisville through Johnson to Jeffersonville and Cambridge, in conjunction with the proposed LINK Express between Cambridge and Burlington, already included in the CCTA TDP, would offer a major connectivity upgrade for all of the most densely-developed parts of Lamoille County. People who live in Stowe, Morrisville, Hyde Park, Johnson, and Cambridge/Jeffersonville would be able to travel to Burlington, Waterbury, and Barre-Montpelier with only one transfer. The Cambridge LINK Express is an outgrowth of the Route 15 Corridor Study undertaken by the CCMPO in 2007-2008. It is a priority for Lamoille County residents and would also provide much improved transit access for the Chittenden County communities of Underhill and Jericho, as well as parts of Essex Town. Better connections to Chittenden County would also serve the reverse-commuting market of Burlington area residents who work in Stowe, Morrisville and other locations along the Route 15 corridor. Finally, a connection between Morrisville and Hardwick via Route 15 to the east was also identified as a service gap.

Franklin and Grand Isle Counties

Though the two most important commuter corridors in Franklin County have some service, the one bus trip operated in each direction is not sufficient to serve many employers in these corridors, not to mention non-work trips. The lack of service meeting the afternoon LINK Express trips also limits the ability of Franklin County residents to commute into Chittenden County on the bus. Other than the one trip from Alburgh to St. Albans and Georgia, Grand Isle County currently has no commuter service in spite of a significant commuting market into Burlington. (A commuter route to serve this market is included in the CCTA TDP. See Chapter 5 for more details.)

Service Needs for the GMTA Region as a Whole

Frequency

In the transit industry, 30-minute service is considered to be unattractive to choice riders, while 15-minute service in the peak periods is considered a significant threshold to making transit competitive with driving. This threshold mainly relates to the amount of time people are willing to wait if they just miss a bus. With a 30-minute wait until the next bus, most people with a car available will not risk having to wait for that long, and thus will not attempt to take the bus at all.

Other than the City Commuter, most GMTA local service runs hourly. Given the population densities in the GMTA region, there are few corridors other than that served by the City Commuter that could support 15-minute peak service in the foreseeable future. Upgrading local routes to 30-minute peak service, though, would be a substantial step toward building ridership, making service more convenient for current passengers, and attracting some choice riders.

Service Hours

Expanding the hours of service on GMTA routes is a frequently-heard request. Sunday service, weekday evening service and more Saturday service are needed to help people get to and from their jobs and other activities.

Service Coverage

Extending service to new places is critical to GMTA's mission as a regional public transportation service provider, but is somewhat less likely to be as cost-effective (in terms of cost per new rider) than boosting service on existing routes. The sections above mentioned specific towns and corridors that are not currently served but could support new or restored service. Many rural towns in the four-county GMTA area currently have only demand-response service, and that is likely to remain the case due to very low density development.

Vanpools can be a very cost-effective means of serving a commuting market which does not have enough demand density to support a commuter bus route. The State of Vermont sponsors the Go Vermont program which provides vans to groups of commuters, as well as ridematching services for carpools and vanpools. The program can be reached at www.vermont.org or www.connectingcommuters.org. This website demonstrates the substantial cost savings to commuters who choose to join a vanpool rather than driving and has information on the Guaranteed Ride Home program to address emergencies and unexpected schedule changes.

Amenities and Facilities

Beyond service expansion, respondents to surveys and participants in public outreach requested further investment in shelters, benches, bike racks, park and ride lots, and other passenger facilities, as well as new technology such as real-time passenger information, WiFi on buses, and trip planning software. Such investments in physical infrastructure and technology make the system more accessible and appealing to existing riders and future choice riders.

It is also critical to note that the pedestrian environment in bus service corridors is an essential element of the overall system. All passengers are pedestrians (either on foot or in a wheelchair) before they board the bus and after they exit. If the pedestrian environment is not safe, comfortable, and attractive, then neither is the bus system, no matter how good the service is. GMTA member communities and the regional planning commissions must continue to work with GMTA to improve pedestrian facilities along, and extending from, bus routes to provide better access to transit service from neighborhoods.

In addition to passenger facilities along routes, such as benches and shelters, some areas warrant a larger passenger facility that offers additional amenities and a designated transfer location. Two formal transit centers have been proposed for GMTA's service area; one in downtown Montpelier and the other in St. Albans City. These two locations represent the largest population and activity centers in GMTA's service area and are locations where multiple public transportation routes converge. Federal funding has been allocated to the Montpelier facility through a Congressional earmark and is envisioned to be a multi-modal center. CCTA has worked directly with the City of Montpelier on developing a detailed outline of GMTA's operating needs at the facility. The St. Albans facility is planned for Federal Street and would serve GMTA, along with intercity bus and rail service. Both facilities offer GMTA the opportunity to provide an enhanced experience for our passengers and to have a central location for transfers and passenger information.

GMTA is also in need of a bus storage and operations facility in the Mad River Valley. An area where buses can be stored and washed and where minor maintenance work can be performed would make operations of the Mad Bus seasonal service more efficient. A larger break room for drivers in the Lincoln Peak area of Sugarbush would also aid in attracting and retaining seasonal drivers.

Criteria for Service Development and Implementation

This chapter has listed many unmet needs and service gaps in the GMTA region. Some are specific, while others are more general, such as “more service on existing routes.” Before proceeding to Chapter 5 and the descriptions of proposed investments to address these needs, it is important to discuss the factors that affect which needs get addressed first, because it is not possible for GMTA to address them all at once. This is due to funding limitations from the federal and state governments, as well as the constraints on staff time to perform all of the work that is necessary to plan and implement new and expanded services.

Community Support

An essential factor in moving a service concept toward implementation is support from the community. This support can take the form of petitions from potential riders expressing a desire to ride the bus in a given corridor, but more importantly, it consists of financial commitments from town governments to provide the local share of the net operating cost of the route. Over the past decade, this has amounted to 20% of the net cost of service (after accounting for fare revenue) to complement the 80% of funding that comes from the federal government, passed through the Vermont Agency of Transportation. It is widely recognized that local budgets funded by property taxes are severely constrained. Thus a vote by a town to allocate funds to a new or expanded route over a period of at least three years is a major indicator of community support. When several towns along a corridor act in concert to support a longer-distance commuter route with local funding, it is a powerful statement that the route will be sustainable.

Ridership Potential

In evaluating possible services, GMTA looks at available commuting and travel data to determine the likelihood that a new bus route would attract a sustainable level of ridership. The threshold to define what is sustainable is determined by VTrans annually in its performance report to the legislature. Data sources to determine ridership potential include the most recent commuting patterns information from the US Census (2000) and worktrip flow information from the Census' Longitudinal Employer-Household Dynamics program (accessible through its OnTheMap product). These data sources provide estimates of the numbers of people who live in one town and work in another. For example, the home towns of all people who worked in Montpelier in 2000 can be sorted to determine which roadway corridors generate the most commuting traffic. When a route is supported by a group of communities is also one that serves a well-traveled commuter market, it is more likely that it will be moved ahead in the planning process toward implementation.

Another factor that affects ridership potential is whether a bus route can be designed to serve trips in both directions. A traditional "suburb-to-city" commuter route carries passengers into the city in the morning and away from the city in the afternoon. If the bus garage is in the city, it travels empty out to the end of the route in the morning, and returns empty at the end of the afternoon run. If, however, the route runs between two employment centers, similar to the Montpelier-Burlington, Montpelier-Waterbury, and Montpelier-St. Johnsbury routes all do, then it would carry passengers in both directions in both peak periods and make more productive use of the miles traveled by the bus. Compared to a single-direction commuter route, it would carry up to twice as many passengers, making it much more sustainable and cost-effective.

The above discussion focuses mainly on commuter services, but GMTA considers ridership potential on local all-purpose routes as well. When deciding whether to expand service on an existing local route—by extending weekday hours, introducing new weekend service, or improving the frequency of service—GMTA looks at existing ridership patterns to determine whether there is unmet ridership demand. When service is increased, ridership normally rises, though not necessarily in direct proportion to the increase in service. (That is, a doubling of service would not necessarily double the ridership.) If current bus trips are crowded during certain times of day, if there are frequent customer requests for later service, or if a service increase would bump the route over an important service threshold (from hourly service to 30-minute service), then the ridership response to increased service could be substantial.

Cooperation and Coordination

GMTA currently operates two commuter routes jointly with other systems: the Montpelier LINK Express (with urban CCTA system) and the US 2 Commuter to St. Johnsbury (with Rural Community Transportation). Joint operations such as these can greatly increase the operating efficiency of the route, and are typically associated with the bidirectional travel patterns discussed in the previous subsection. For many years, VTrans has promoted long-distance

mobility around Vermont, and these jointly-operated commuter routes are one of the best means of meeting that goal.

Cooperation and support from other external parties can also play a critical role in the development and implementation of a new service. For example, financial contributions towards operating and/or capital costs from private entities such as major employers and institutions can make one service more feasible than another. Other types of external cooperation that can influence route development are decisions by a particular entity to fully or partially subsidize rides taken by its employees or customers, or to limit parking at a particular facility. These sorts of decisions will directly impact potential ridership which, as described above, is a major factor in determining which services will move forward.

Cost

A final, but critical consideration is cost. Other things being equal, a new or expanded service with a lower cost will be favored over one with a higher cost. This fact reflects the reality that funding is scarce and that existing dollars need to be as stretched as far as possible. Of course, it is rarely the case that all other things are equal, so community support and ridership potential are much more important factors in determining priority than cost alone.

Conclusion

This chapter summarized the needs identified in various public input and data collection efforts, as well as those deriving from the market analysis in chapter 3. Gaps in service were listed by county, and service needs for GMTA as a whole were discussed. The table on the next page provides a quick visual summary of the service levels that would address the needs associated with the various parts of the GMTA region.

Summary of Needs by GMTA Subregion

Region	Subregion	Weekday Span	Weekend Span	Peak Frequency	New Commuter Corridors	Commuter Trips	Facilities
Central Vermont	Barre-Berlin-Montpelier	6:00 a.m. to 10:00 p.m.	8:00 a.m. to 8:00 p.m.	15 or 30 minutes	n/a	n/a	Shelters, lighting, real-time info
	US 2 Corridor	6:00 a.m. to 8:00 p.m.	8:00 a.m. to 5:00 p.m.	30 minutes	n/a	n/a	Shelters, lighting, real-time info
	Rural Central VT/ Washington County	n/a	n/a	n/a	VT 12, VT 14, VT 100B, I-89 south	4-6 round trips per weekday	Shelters, real-time info
Lamoille County	Stowe-Morrisville-Johnson	6:00 a.m. to 8:00 p.m.	8:00 a.m. to 5:00 p.m.	30 minutes	n/a	n/a	Shelters, lighting, real-time info
	Route 15 Corridor	n/a	n/a	n/a	Mville to Cambridge, Mville to St. J via Hardwick	4-6 round trips per weekday	Shelters, real-time info
	Rural Lamoille County	n/a	n/a	n/a	Connect to Morrisville, Jay Peak, Jeffersonville	4-6 round trips per weekday	Shelters
Franklin/Grand Isle Counties	St. Albans	6:00 a.m. to 8:00 p.m.	8:00 a.m. to 5:00 p.m.	30 minutes	n/a	n/a	Shelters, lighting, real-time info
	Rural Franklin County	n/a	n/a	n/a	Upgrade US 7 and VT 105	4-6 round trips per weekday	Shelters
	Grand Isle County	n/a	n/a	n/a	LINK to Burlington (CCTA TDP)	4-6 round trips per weekday	Shelters, real-time info

Chapter 5

Service Strategies

Key Issues in Chapter 5:

- *What are the proposed routes to serve commuters?*
- *What upgrades to local routes are recommended?*
- *How will seasonal and demand-response service expand?*

The purpose of the Transit Development Plan is to identify a series of service, facility, and technology investments to guide GMTA's growth over the coming years. The following pages present the types of services that could potentially be implemented in the four-county GMTA region and its surrounding areas in response to the unmet transit needs and the system vision identified earlier in the plan. It is recognized that this document proposes an ambitious agenda for transit in the region, and that implementation is dependent on the availability of federal, state, and local funding. Nonetheless, it is important to set forth an outline of the steps needed to achieve it. This section does not include detailed service plans for improved services; these will be developed by the GMTA planners as funds/resources become available for implementation.

Service Strategies

Service strategies are grouped into the following categories:

1. Commuter Routes
 - Central Vermont based
 - Lamoille County based
 - Franklin/Grand Isle County based
2. Year-Round Local Routes
 - Central Vermont
 - Lamoille County
 - Franklin and Grand Isle Counties
3. Seasonal Routes
4. Demand Response Services
 - Local shuttles
 - Medicaid
 - Elders and Persons with Disabilities Program

COMMUTER ROUTES BASED IN CENTRAL VERMONT (Figure 5.1)

Service Statistics

Span: Monday through Friday
Peak commute hours

Frequency: 4-6 round trips each weekday
Vehicle: Depends on demand

Primary Market

Daily commuters to the core of Washington County

Service Concept

- Express services with limited stops from outlying communities into Montpelier and Barre
- Would serve park and ride lots along the routes
- Would be implemented at the request of local communities
- Some routes would be jointly operated with neighboring agencies (RCT and Stagecoach)

Existing Routes

- Waterbury to Montpelier via US 2
- St. Johnsbury to Montpelier via US 2 (joint operation with RCT)
- Montpelier to Burlington LINK Express
- Montpelier to Randolph/Royalton (operated by Stagecoach)
- Morrisville to Waterbury via VT 100

Potential Commuter Routes

- Randolph/Royalton to Montpelier (complementary to existing residents) *Expected to begin July 2013*
- Hardwick to Montpelier via VT 14
- Northfield to Montpelier via VT 12 *Expected to begin July 2013*
- Wells River to Barre City, Berlin, and Montpelier via US 302 and VT 62
- Worcester to Montpelier via VT 12 (possible extension to Morrisville)
- Warren/Waitsfield to Montpelier via VT 100B
- Warren/Waitsfield to Waterbury (connection to LINK)
- Williamstown and South Barre to Montpelier via VT 14, VT 63 and I-89
- Williamstown to Barre City via VT 14
- East Montpelier to Barre City via VT 14 (transfers to/from Hardwick-Montpelier route)

Upgrades and Related Routes

- Midday service on US 2 Commuter to St. Johnsbury
- New LINK Service between Waterbury and Burlington (separate from Montpelier LINK)
- Saturday trips on Montpelier-Burlington LINK

COMMUTER ROUTES BASED IN LAMOILLE COUNTY (Figure 5.2)

Service Statistics

Span: Monday through Friday
Peak commute hours

Frequency: 4-6 round trips each weekday
Vehicle: Depends on demand

Primary Market

Daily commuters to Morrisville and Stowe

Service Concept

- Express services with limited stops from outlying communities to job centers
- Would serve park and ride lots along the routes
- Would be implemented at the request of local communities
- Some routes would be jointly operated with neighboring agencies (RCT)

Existing Routes

- Morrisville to Waterbury via VT 100 (Route 100 Commuter)

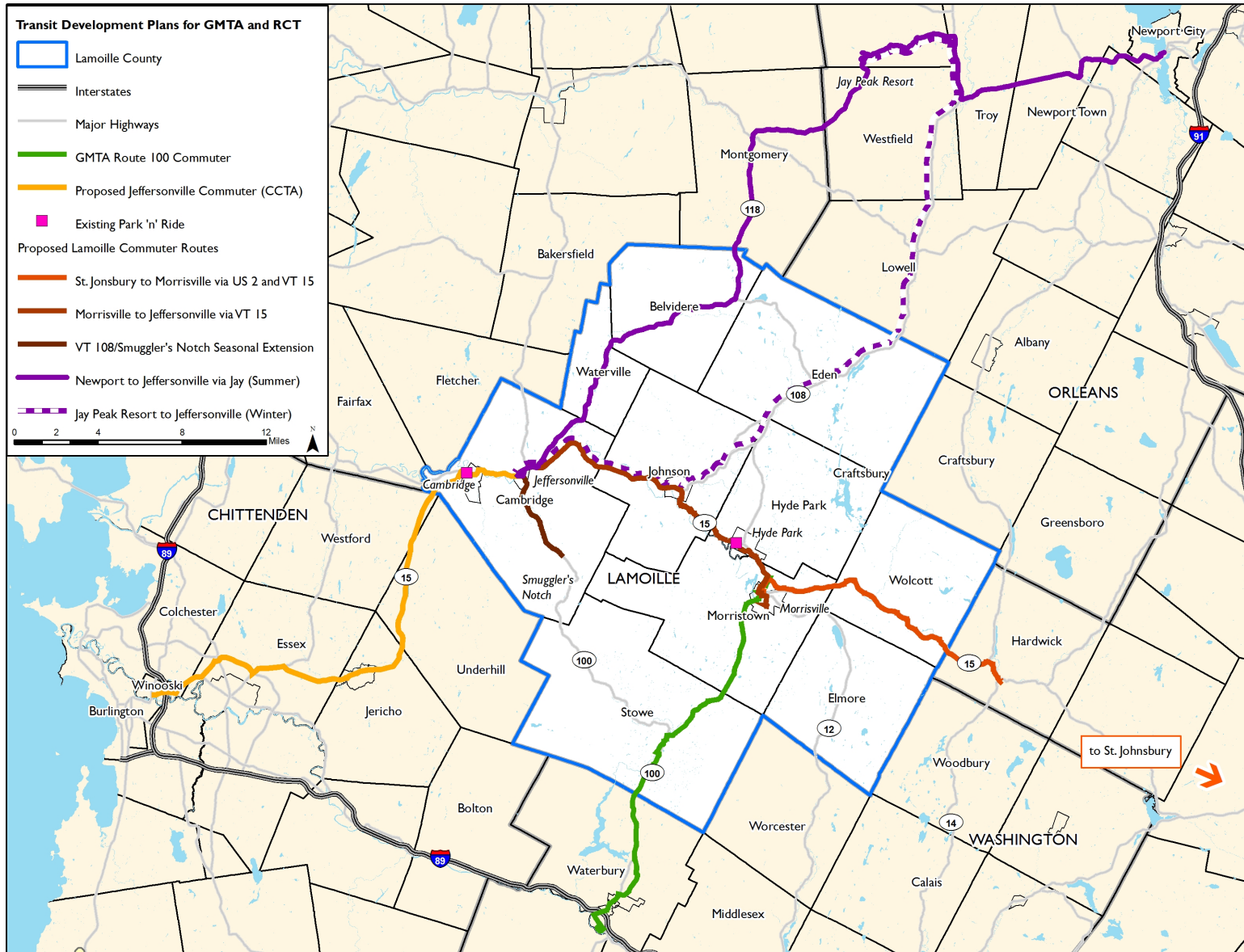
Potential Commuter Routes

- Jeffersonville to Morrisville via VT 15
- Jeffersonville to Smugglers Notch via VT 108
- Jeffersonville to Newport via Jay Peak (joint route with RCT)
- Morrisville to St. Johnsbury via Hardwick (joint route with RCT)

Upgrades and Related Routes

- Additional service on Route 100 Commuter
- New Commuter from Jeffersonville to Burlington (in CCTA TDP)
Expected to begin in October 2013
- Saturday access to Burlington via Route 100 and Montpelier LINK

Figure 5.2 Lamoille County Based Commuter Routes



COMMUTER ROUTES BASED IN FRANKLIN AND GRAND ISLE COUNTIES (Figure 5.3)

Service Statistics

Span: Monday through Friday
Peak commute hours

Frequency: 4-6 round trips each weekday
Vehicle: Depends on demand

Primary Market

Daily commuters to St. Albans

Service Concept

- Express services with limited stops from outlying communities to job centers
- Would serve park and ride lots along the routes
- Would be implemented at the request of local communities

Existing Routes

- Alburgh/Georgia Shuttle
- Richford/St. Albans Shuttle
- St. Albans LINK Express

Potential Commuter Routes

- Extension of Richford/St. Albans Shuttle to Jay Peak Resort
- St. Albans to Jeffersonville via Georgia and Fairfax
- Grand Isle to Burlington (included in CCTA TDP)

Upgrades and Related Routes

- Additional service on the Richford/St. Albans Shuttle, starting with an afternoon trip to meet the St. Albans LINK
- Additional service on the Alburgh/Georgia Shuttle, starting with an afternoon trip to meet the St. Albans LINK
- Extension of the St. Albans LINK to Swanton via US 7
- Saturday trips on the St. Albans LINK

Figure 5.3 Franklin and Grand Isle County Based Commuter Routes

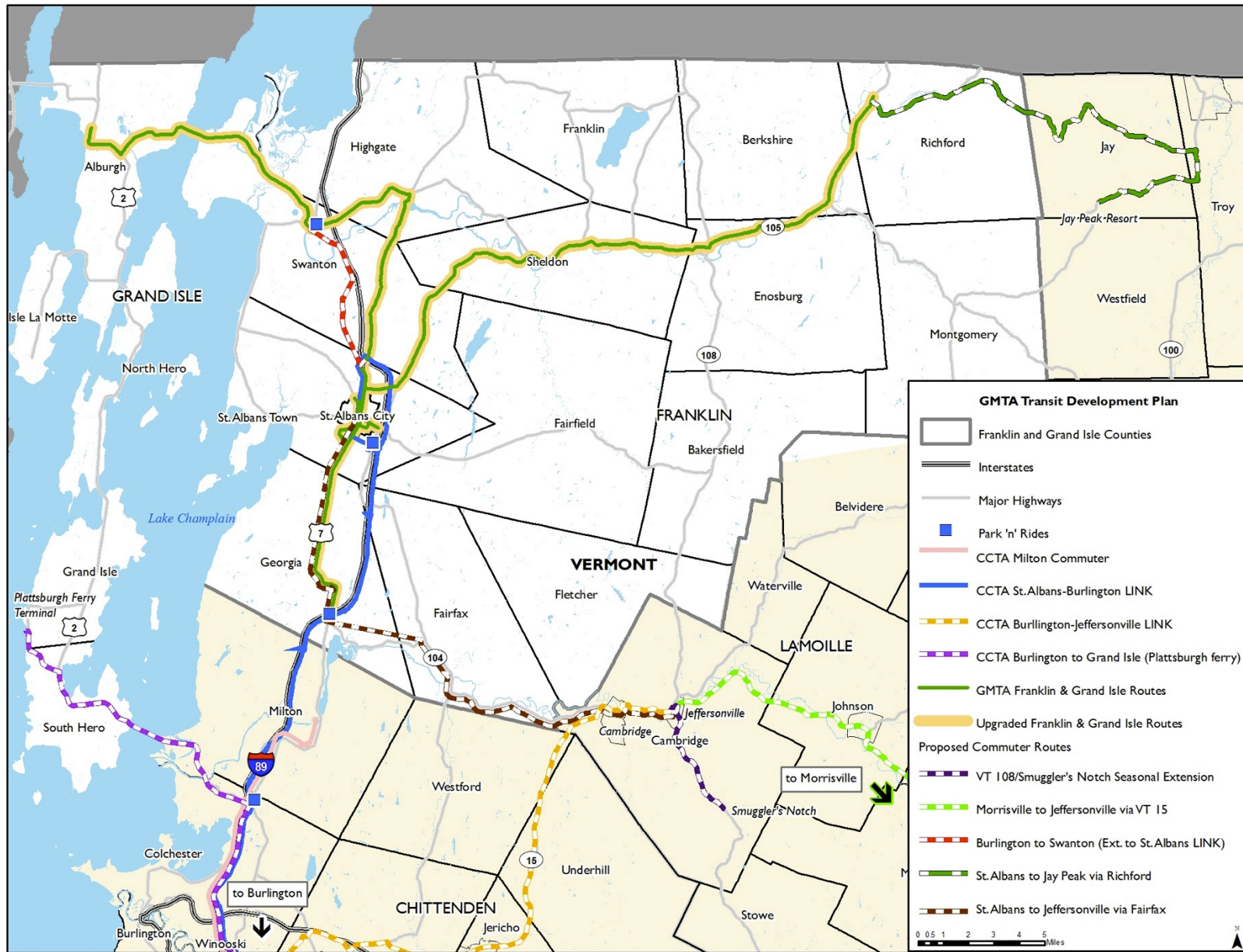
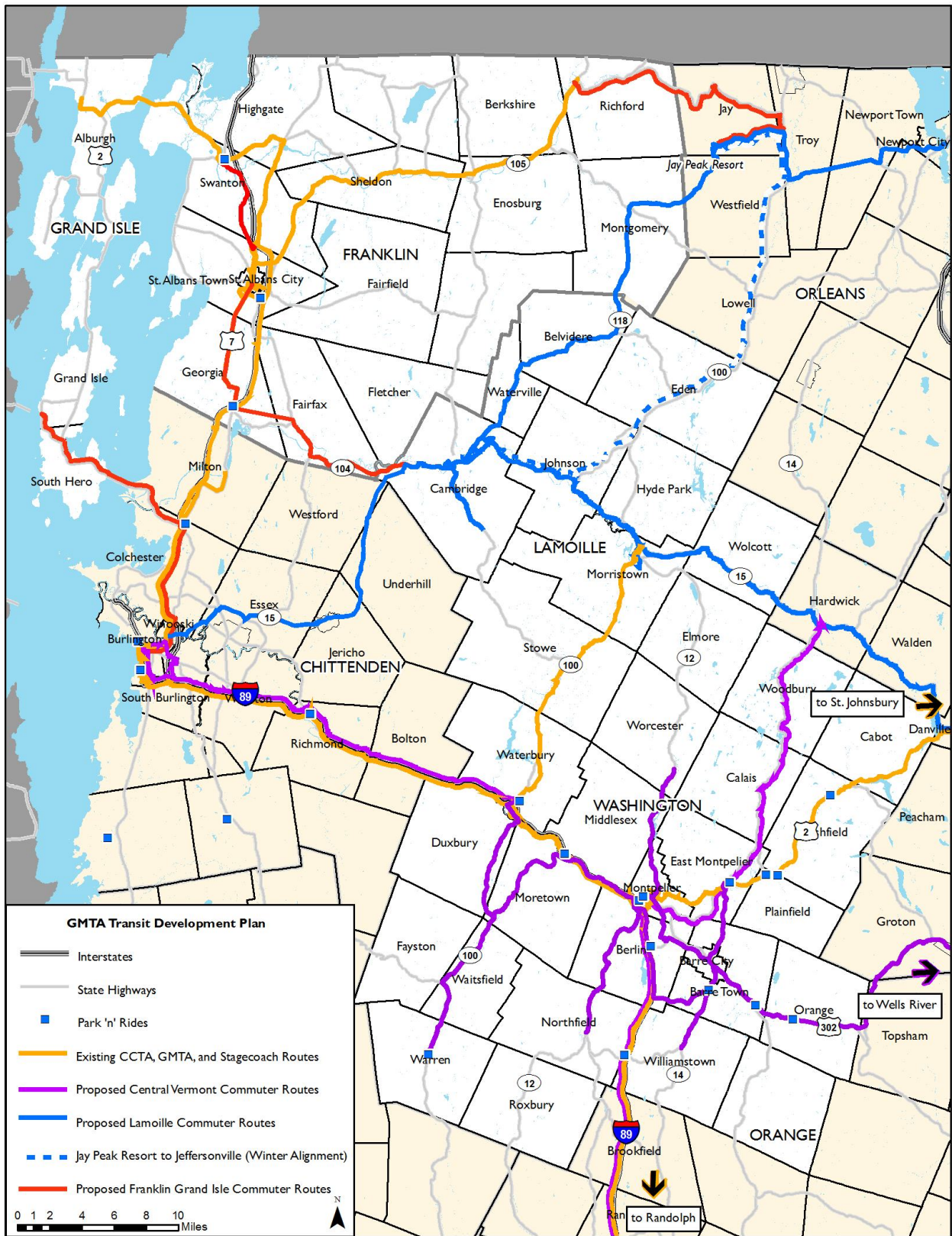


Figure 5.4 Commuter Routes for Entire GMTA Region



YEAR-ROUND LOCAL ROUTES BASED IN CENTRAL VERMONT (Figure 5.5)

Service Statistics

Span: Monday through Sunday
All day

Frequency: 30-60 minute headways
Vehicle: Small to medium size buses

Primary Market

Commuters and other travelers on main arterial corridors in the core of Central Vermont

Service Concept

- Connect high density areas to downtowns of Barre and Montpelier

Existing Routes

- City Commuter
- City Midday
- Barre Hospital Hill
- Montpelier Hospital Hill
- Montpelier Circulator

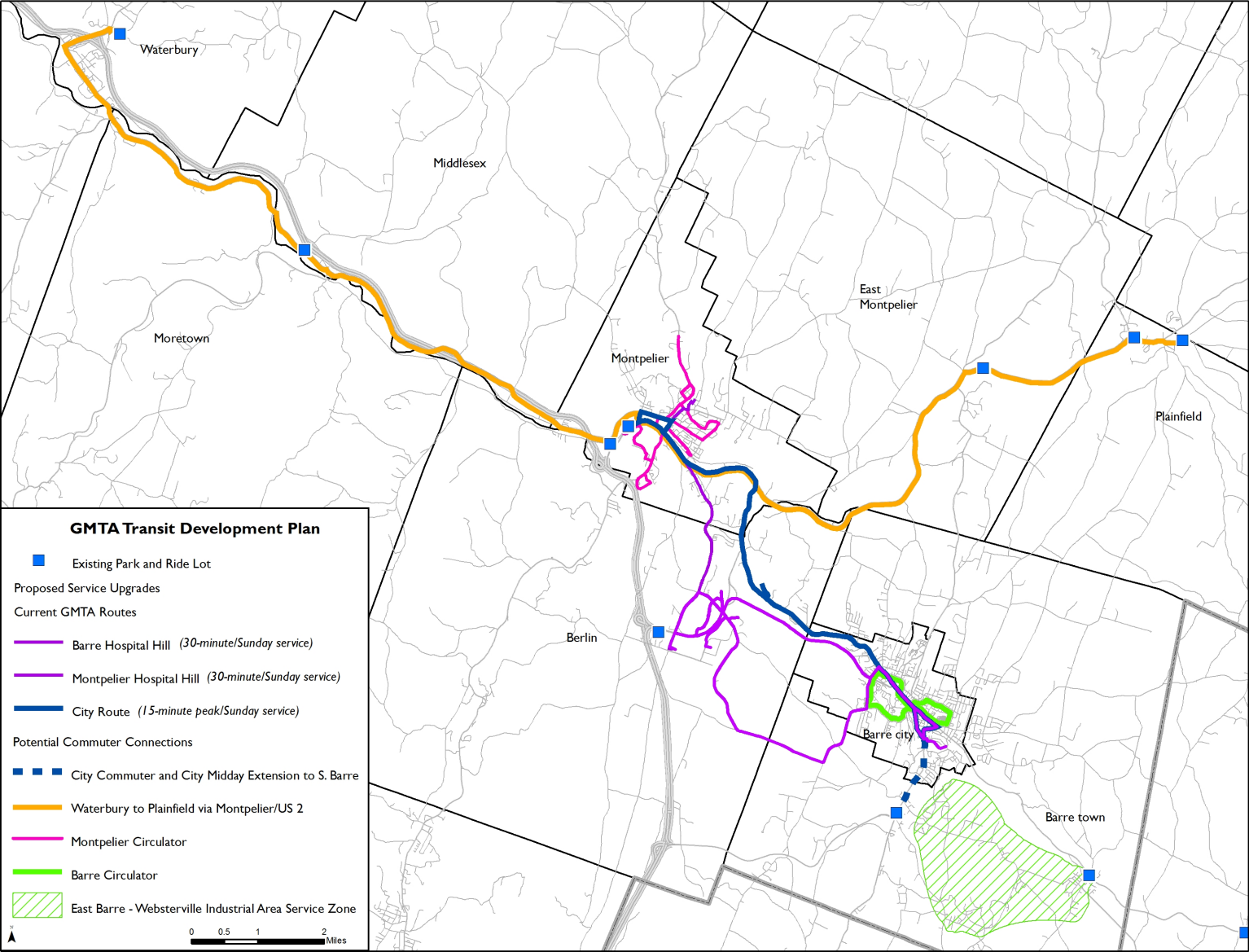
Proposed New Services

- Circulator service in Barre
- Extension of City Route and City Mid-day to South Barre
- Service to East Barre/Websterville

Proposed Service Upgrades

- Introduce Sunday service on City Route, City Mid-day and Hospital Hill routes from 8:00 a.m. to 8:00 p.m.
- Full day local service on US 2 from Waterbury through Montpelier to Plainfield
- 30-minute service all day on Hospital Hill routes
- 15-minute peak service on City Commuter
- Future extension of service to 10:00 p.m. on weekdays and until midnight on Friday and Saturday.

Figure 5.5 Year-Round Local Routes in Central Vermont



YEAR-ROUND LOCAL ROUTES IN LAMOILLE COUNTY (Figure 5.6)

Service Statistics

Span: Monday through Sunday
All day

Frequency: 30-60 minute headways
Vehicle: Small to medium size buses

Primary Market

Commuters and other travelers on main arterial corridors in the core of Lamoille County

Service Concept

- Connect high density areas to Morrisville

Existing Route

- Morrisville Loop

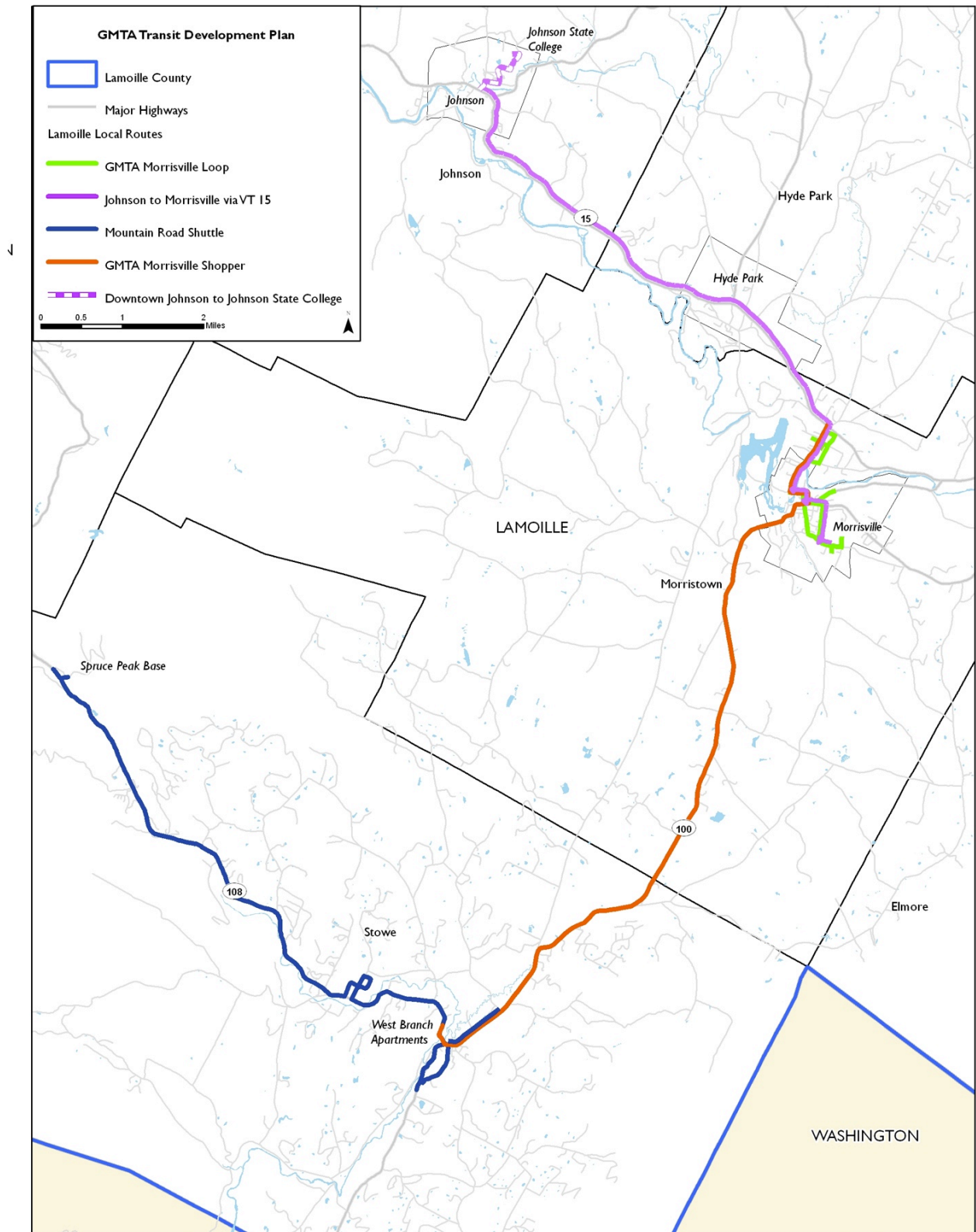
Proposed New Service

- Local route between Johnson and Morrisville via Hyde Park on VT 15 with part-time service to Johnson State College

Proposed Service Upgrades

- Year-round service on Mountain Road Shuttle and extension to Shaw's
- Conversion of Morrisville Shopping Shuttle to full day local route
- Additional service on Morrisville Loop

Figure 5.6 Year-Round Local Routes in Lamoille County



**YEAR-ROUND LOCAL ROUTES
IN FRANKLIN AND GRAND ISLE COUNTIES
(Figure 5.7)**

Service Statistics

Span: Monday through Sunday
All day

Frequency: 30-60 minute headways
Vehicle: Small to medium size buses

Primary Market

Commuters and other travelers on main arterial corridors in the core of Franklin County

Existing Routes

- St. Albans Downtown Shuttle

Service Concept

- Connect high density areas to downtown of St. Albans

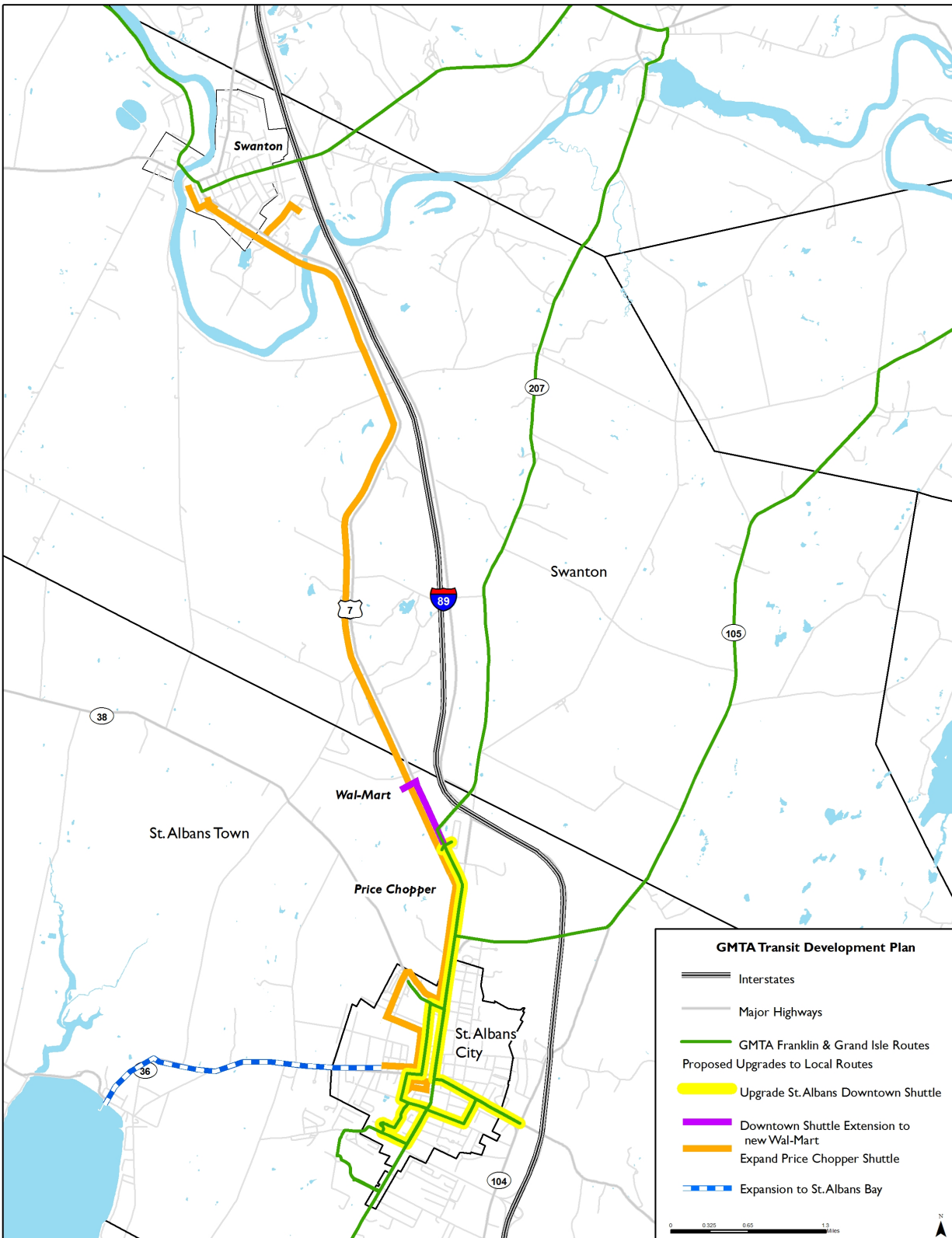
Proposed New Service

- Extension of St. Albans Downtown Shuttle to Walmart

Proposed Service Upgrades

- Additional service on St. Albans Downtown Shuttle (30-minute peak service)
- Conversion of Tuesday Shopping Shuttle to regular local route
- Extension of St. Albans Downtown Shuttle to St. Albans Bay

Figure 5.7 Year-Round Local Routes in Franklin and Grand Isle Counties



SEASONAL ROUTES (Figure 5.8)

Service Statistics

Span: Varies

Frequency:

Varies

Vehicle:

Small to mid-sized buses

Primary Market

Tourists and tourism-related employees

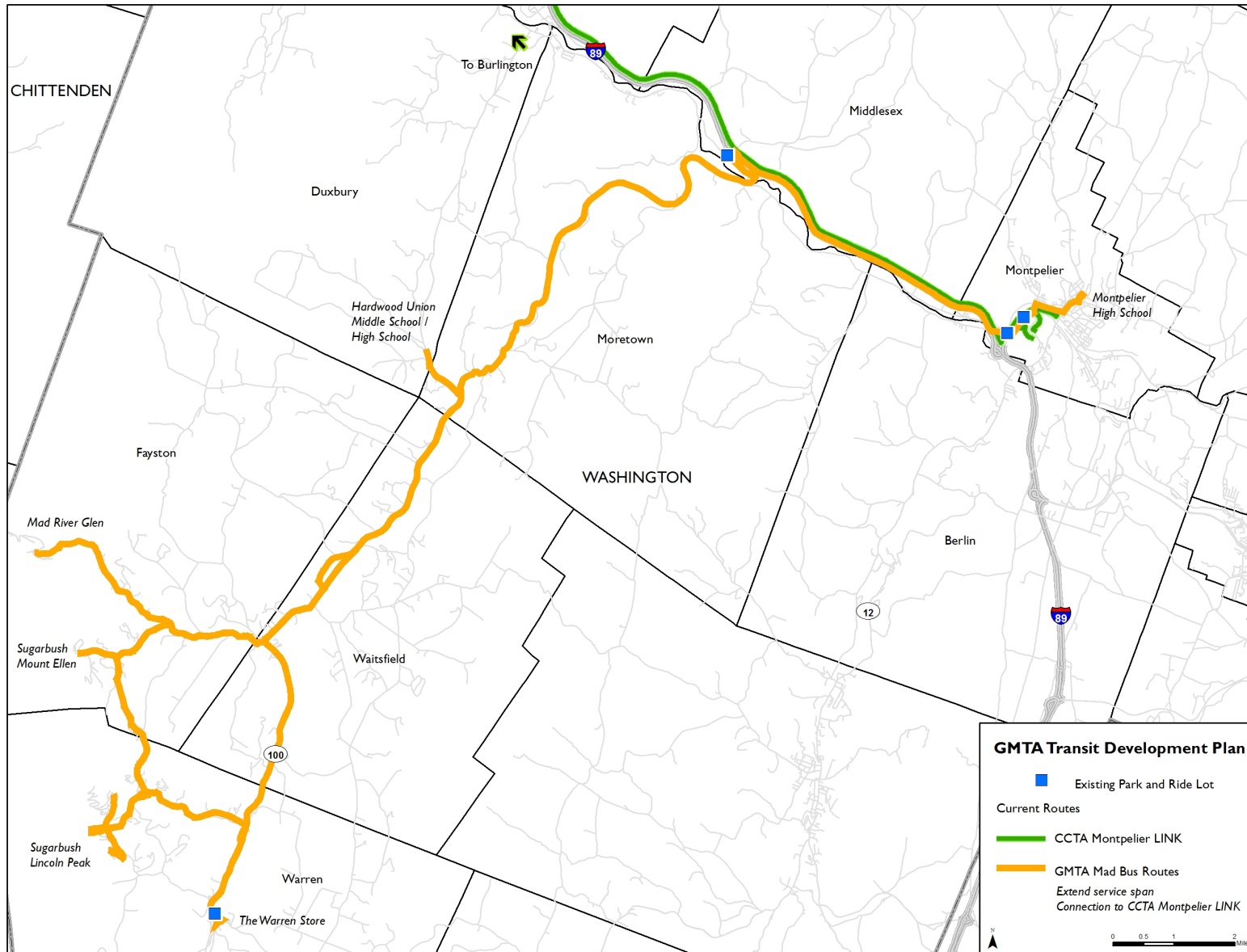
Existing Routes

- Mad Bus Routes
 - Access Road
 - Harwood Freerider
 - Mount Ellen
 - Mountain Condos
 - Mad River Glen
 - SnowCap Commuter
 - Valley Evening Service
 - Valley Floor
- Stowe Route
 - Mountain Road Shuttle
- Capital Shuttle

Potential Service Expansions

- Extend service period and area for Mad Bus routes, including summer service
- Convert Mountain Road route to year-round (see Local Service)
- Better service for employees (extended span to ensure access for work start and end times)
- Connection to LINK route for seasonal employees

Figure 5.8 Central Vermont Seasonal Routes



DEMAND RESPONSE SERVICE/SHUTTLES

Service Statistics

Span:	Varies by level of demand	Frequency:	Varies
		Vehicle:	Cutaway vans

Primary Market

Non-work travel in cities and towns of the GMTA region

Service Concept

- Serves medium density areas and specific trip generators

Existing Routes

- Hospital Hill Demand Response
- Northfield Community Shuttle
- Plainfield Health Center Community Shuttle
- Hannaford Shopping Shuttle (Barre)
- Price Chopper Shopping Shuttle (St. Albans)
- Morrisville Shopping Shuttle

Potential New/Expanded Shuttle Services – Central Vermont

- Increase service on Northfield community shuttle (more days per week, longer hours)
- Expand demand response service in Hospital Hill area to relieve pressure on Barre and Montpelier routes
- More service on Plainfield Health Center shuttle route in advance of regular local service to Plainfield
- Demand response shuttle service from rural towns to Montpelier, Berlin and Barre

Potential New/Expanded Shuttle Services – Lamoille County

- Demand response shuttle service from rural towns to Morrisville
 - Waterville, Belvidere, Eden, Wolcott, Elmore
- Demand response connections to Caledonia and Orleans destinations

Potential New/Expanded Shuttle Services – Franklin and Grand Isle Counties

- Demand response service from outlying towns into St. Albans
 - Franklin, Highgate, Sheldon, Berkshire, Fairfield,
- Demand response connections to Lamoille
 - Fletcher, Bakersfield, Montgomery
- New shopping shuttles (one or two days/week)
 - Swanton/Highgate – connections to Hannaford
 - Enosburg Falls – connections to Dollar General and Hannaford
 - Richford – serve Mac’s Market and Dollar General and link to Hannaford in Enosburg Falls

OTHER SPECIALIZED SERVICES

Service Concepts – GMTA would continue the following specialized services

- **Senior Shuttles** - GMTA will continue to operate several specialized services to provide shopping opportunities for seniors and the general public.
- **Medicaid** - GMTA is the Medicaid broker for all of Washington County (including the three towns in Orange County) and Franklin County. In Lamoille County, Rural Community Transportation handles demand response service and in Grand Isle County, the service is provided by CIDER. For Medicaid clients unable to use regular bus routes, GMTA uses volunteers, taxi operators, and its own vehicles.
- **Elders and Persons with Disabilities (E&D)** –This program funds demand response and volunteer driver trips for various purposes including medical trips, shopping trips, trips to meal sites, trips to adult day centers, and vocational trips. The total pool of funding is divided among thirteen agencies and communities, each of which decides how to spend the money with respect to the types of trips served and limits on the number of trips per month for any individual client. The overall goal of the program is to try to meet essential mobility needs for seniors and people with disabilities.

Chapter 6

Regional Coordination and Sustainability

Key Issues in Chapter 6:

- *How does GMTA coordinate with regional planning activities?*
- *What are the plans for expanded Park & Ride access?*
- *How does GMTA work with the private sector?*
- *How does development in rural areas affect GMTA and vice versa?*

GMTA plays an essential role in providing mobility in central and northwest Vermont. Its services help sustain and expand the economy in its service areas, allowing for continued economic growth in a way that is consistent with reduced energy use, environmental protection, and sustainable land use. In order to achieve this, GMTA coordinates closely with local, regional, and state governments and works with the non-profit and private sectors to leverage public investment in transportation. This chapter discusses this coordination and the region's pursuit of a sustainable transportation system.

Regional and Multi-modal Coordination

As mentioned in chapter 1 of this TDP, GMTA is joined by many partners at all levels of government. GMTA cooperates with the three regional planning commissions and one planning district in its service area to promote sound land use and development decisions, and investments in transportation infrastructure so that public transportation can maintain and improve its viability and attractiveness in the future. GMTA staff attends Transportation Advisory Committee (TAC) meetings in all of the regions and works with planners at each of the agencies on any issues related to public transportation. In addition to these committees, GMTA staff is engaged in the review process of local and regional plans and offers comments on proposed zoning changes, Act 250 permit applications, and other local plans. As the public transportation provider in central and northwest Vermont, GMTA serves as a resource to other agencies and municipal bodies when questions arise about service options and facility needs.

In the process of developing this TDP, GMTA formed Stakeholder Committees in each of the three regions with broad representation from local municipalities, advocacy groups, and regional organizations. As the TDP was developed in phases, the groups met over the span of about 16 months. GMTA staff also attended standing meetings of regional transportation committees as part of the stakeholder outreach process. These meetings provided valuable input about the transportation markets served by GMTA and the vision of the future system.

Park & Ride and Automobile Intercept Opportunities

Park & Ride lots are an integral part of successful commuter transit service and regional connectivity, as they can increase access to transit services without incurring significant new operating costs. Given the low density of much of the GMTA region, it is important to have collection points for riders so that the bus routes themselves can operate efficiently and directly. However, as important as they are, GMTA will, for the foreseeable future, rely mainly on VTrans and municipalities to provide the space and infrastructure for these facilities.

Figure 1 on the next page shows the approximate locations of existing and proposed park & ride lots throughout northern Vermont. Lots that have no relevance to GMTA service are not shown on the map.

As indicated on the map, there are several park & ride lots served by GMTA routes that are in need of expansion in the short term. Most notable are the Waterbury Park & Ride and the Richmond Park & Ride. The Waterbury Park & Ride is served by the Montpelier LINK Express and the Route 100 Commuter and serves as a transfer point between these two routes. While the Waterbury Park & Ride underwent a small expansion and rehabilitation in 2010, including the construction of a new passenger shelter, it is still near capacity and additional ridership growth on the Route 100 Commuter and Montpelier LINK Express has the potential to result in overcrowding.

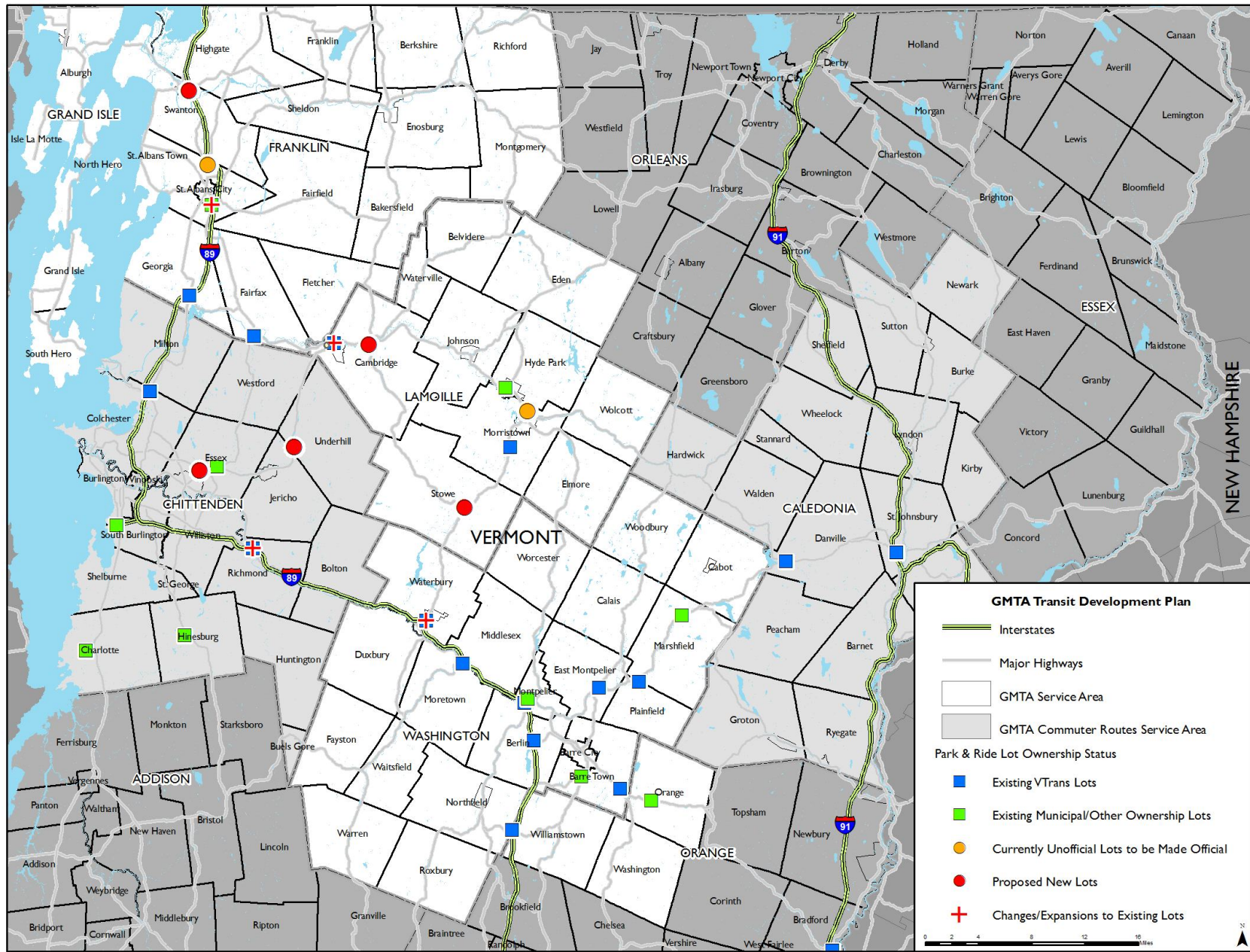
The Richmond Park & Ride, which is currently served by the Montpelier LINK Express, is the most dramatic example of excess demand at any park & ride in GMTA's service area. While the lot officially offers 105 spaces, VTrans reports that the number of cars in the lot often surpasses this by several dozen. An expansion and redesign of the Richmond Park & Ride is planned for spring 2013 and is projected to include an increase to 157 parking spaces, a new bus turn-around, a passenger shelter, bike racks, and a traffic signal at the park & ride entrance (shared with the I-89 southbound off-ramp). These improvements are vital to the ongoing success and growth of the Montpelier LINK Express and other regional services.

The need for several new park & ride lots has been identified. Specific parcels of land for these lots have not been selected or finalized. Rather, the locations on the map are meant to indicate the desired location from a service perspective. These new lots would serve the following routes or areas:

- Proposed Cambridge LINK Express route on VT 15 between Cambridge and Burlington
- Route 100 Commuter
- Commuters on various services in northern Franklin County.

An increase in the number of publicly owned park & ride lots is crucial to the development of future transit services and GMTA will strongly advocate for such an expansion. The use of private land, through lease agreements or shared-use agreements, is an option to support existing

Figure 6.1 Park & Ride Locations in GMTA Service Area



routes due to a lack of capacity at state- and municipality-owned lots. However, when possible, it is preferable for park & ride lots to be part of the state and municipal park & ride system so that they are widely regarded as open to the general public.

The following are recommended guidelines for the development of new park & ride lots:

- Lots should be established to support both existing routes and new routes. They should be located as close as possible to the current/proposed route alignment to avoid lengthy diversions from the main route.
- Lots would be located outside or on the edge of village/town centers so as to not interrupt a walkable/bikable urban form. Land in town/village centers should be devoted to buildings and development to offer additional housing opportunities, goods, and services to residents rather than auto storage.
- New lots should be designed to accommodate full-size transit buses, to ease access and egress and minimize bus travel time.
- Existing lots that are too small to allow for efficient bus operations should be redesigned and expanded.
- All lots should include a passenger shelter and bicycle storage facilities.
- Maintenance responsibility would depend on lot ownership. State and municipal owned lots offer the advantage of being integrated with existing road and highway maintenance operations. However, CCTA/GMTA has been able to work out agreements with private lot owners to share in the responsibility for facility maintenance and snow removal.

Working with the Private Sector

In addition to its public sector partners, GMTA reaches out to the private sector to build mutually beneficial relationships with employers and institutions. GMTA benefits from financial support and increased ridership while the private partners benefit from access to a broader employee/customer base, reduced parking demands, and an image as a socially responsible entity. Examples of these important partnerships are the Hannaford and Price Chopper Shopping Shuttles, Stowe Mountain Resort and Sugarbush Resort support of seasonal services, the New England Culinary Institute (NECI) Unlimited Access Program, and the National Life bus pass purchase program.

The Hannaford and Price Chopper Shopping Shuttles and the Stowe Mountain Resort and Sugarbush Resort funded seasonal services are all examples of direct financial support of public transportation by private entities. While the dollar figures vary by service and partner, the premise that public transportation providers and private partners can help support each other's goals and objectives is consistent. The distinct rider markets served by the shopping shuttles and seasonal ski-oriented services demonstrates that private partners can contribute towards multiple public transportation goals, ranging from basic mobility for seniors to economic development in resort communities.

The NECI Unlimited Access Program and the National Life bus pass purchase program are both examples of private institutions directly subsidizing public transportation rides. In the case of NECI, students, faculty, and staff show their official school ID cards when they board a GMTA bus and that ride is separately coded as a NECI ride in the bus farebox. At month end, GMTA is able to send a bill to NECI for the exact number of rides taken. In the case of National Life, a large private employer in Montpelier, the company purchases bus passes directly from GMTA and distributes them to their employees free of charge. While the method for subsidizing rides is slightly different, the effect is the same; these private institutions are encouraging use of public transportation by removing any financial barrier and making access to fare media as convenient as possible.

As described above, private support of public transportation can take various forms. Whether a private partner pays for specific hours of service or chooses to subsidize the rides of its employees, the result is that support for public transportation is diversified. Having broad-based and varied support is critical to public transportation providers as it provides multiple ways to grow and improve both ridership and service levels. Tight municipal budgets and constraints on property tax-based funding make it imperative that GMTA continue to seek out and grow private partnerships in the future.

Development in Rural Areas

Chapter 3 discussed current development patterns and the ability of GMTA routes to serve residences, jobs, and other important destinations that are clustered around important roadways. The vast majority of the service area is rural, with residential densities of less than one household per acre. Compared to larger metropolitan areas, development occurs slowly in the counties served by GMTA, with a small number of new housing or commercial properties being constructed in various locations. Taken cumulatively over many years, though, the location choices and style of this development can have a significant impact on the ridership potential and cost-effectiveness of public transportation.

As municipalities and developers consider new construction of homes and commercial space within GMTA's region, communication and cooperation with GMTA and other regional organizations is essential to promote a sustainable economy. Public transportation works best when origins and destinations are focused in linear corridors and in city and town centers rather than being spread out in suburban-style subdivisions and office parks. And the regional economy and transportation system as a whole works best when public transportation service is effectively delivered to provide affordable and attractive alternatives to private automobile travel. Shaping the future GMTA service area in such a way as to promote efficient public transportation service will result in a more vibrant economy, less traffic, and a healthier environment.

The mechanism to make this happen is called “transit oriented design” (TOD) or “pedestrian oriented design” (POD). It is a departure from the prevailing automobile-centric development

pattern that has been in place since 1950. The idea is that future homes and commercial space would be built in compact, mixed-use developments and that the streetscape would be designed with the pedestrian in mind, not the automobile. Rather than seeking to maximize automobile speeds and throughput, the safety and comfort of pedestrians is the primary goal.

This concept is supported by recent legislation in Vermont known as the Complete Streets Bill (H.198, Act 34), which took effect July 1, 2011. The intent and focus of the bill is that local and state transportation agencies have to design roads to safely accommodate all users. The law amends current transportation statutes and covers state and municipal roads. The policy applies when new roads are being constructed and in the reconstruction, rehabilitation, and maintenance of paved roads, but does not mandate retrofit of existing roads. Examples of design changes to improve safety of all users would include:

- Adding/maintaining sidewalks that are connected to services
- Installing curb ramps, sidewalk seating and bus shelters with seating
- Improving lighting, signage with larger fonts, and reflective signs and pavement markings

In such a pedestrian friendly environment, public transportation has a much greater chance of attracting choice riders. There would be many more origins and destinations within easy walking distance of a bus route, and the actual walk between those locations and the bus stop would be much more pleasant and safe. Pedestrians and public transportation riders would be treated as “first-class” users of public space, rather than as an afterthought. Accommodations for bicyclists also are an essential feature of TOD and POD, as the slowing down of traffic and the reduction of public space devoted to automobiles allows for greater space devoted to all modes of non-motorized transportation.

Car-sharing arrangements are also supported by TOD/POD. When many trips can be accomplished on foot, by bike, or by transit, the need to own an automobile is greatly reduced. There are, of course, some types of trips for which it is necessary or much more convenient to have an auto available. Shared cars, offered by organizations such as Carshare Vermont in Chittenden County, can fulfill this need and allow many people to avoid the large expense of owning a car.

TOD/POD principles are typically applied to urban areas, of which there are few in the GMTA region. The same concepts apply to village centers, however. New housing appended to an existing village is preferable to houses out in the woods or along country roads when it comes to potential service by public transportation. Any sort of local shuttle or commuter route works best when it can pick up passengers who can easily walk to the bus stop, rather than the passenger having to drive to a pick up point, or the bus having to travel out into the country to reach the riders.

A cooperative effort of GMTA, member municipalities, the state of Vermont, the regional planning commissions, and the development community is needed to guide future development in the area into a form that is more conducive to efficient and sustainable transportation. Organizations such as AARP and other non-profits that have been promoting these concepts should also be involved. To the extent that the member municipalities can achieve TOD/POD in these corridors, their current and future investments in land development and public transportation become much more effective and valuable.

The future expanded GMTA system that is recommended in this TDP can only be viable if it is planned in concert with future land use decisions that support public transportation. Whether this land use is called “smart growth,” “transit oriented design,” “pedestrian oriented design,” or some other term, it is essential that future development (especially the type that generates demand for public transportation) be focused in a geographical area that is compact and conducive to efficient operations. If public transportation is instead spread too thinly by being asked to serve larger and larger geographic areas infrequently, it will never be able to operate at a level of service that can be attractive to choice riders.

Chapter 7

Costs and Funding

Key Issues in Chapter 7:

- *What will the GMTA system cost in the future, and how many people will ride?*
- *How will the system be funded?*
- *What are the benefits of expanding the system?*

There are few, if any, recommendations in this Transit Development Plan that can move forward to implementation without additional funding. This chapter attempts to estimate the costs associated with operating the GMTA system in the future. The costs for individual route recommendations are not provided here, as these would be calculated in the process of detailed implementation planning.

Table 7.1 below presents an analysis of future system costs and ridership. The table assumes that funding and costs will increase 3.5% annually through 2015, and then 3% annually through 2020.

Two levels of expenditure are shown in the table for 2020 system costs. Both of these are net of fare revenue, which is assumed at 10% of operating cost. The first pair of columns represents the cost to operate the system as it exists at the end of FY2012. The second pair of columns represents the cost to operate the full expanded system as presented in the TDP. This includes more service on existing services and all of the new proposed bus routes. Routes that are included in the CCTA TDP are not included here for cost estimation or ridership purposes.

Future ridership is also shown on the table. Estimates for FY13-FY14 are based on an average growth rate of 5% per year—exclusive of major service increases or new routes—that GMTA has experienced in the recent past. Flat ridership and a small drop in net costs is forecast for FY13 due to the fare increase that took effect on July 1, 2012. FY2012 figures are pre-audit and subject to adjustment.

Table 7.1 Forecast of System Costs and Ridership

Year	Maintain Current System		Expanded System	
	Net Cost	Riders	Net Cost	Riders
FY2012	\$2,716,781	369,857		
FY2013	\$2,626,000	370,000		
FY2014	\$2,642,000	389,000		
FY2020	\$3,169,000	522,000	\$8,658,000	1,070,000

While both cost and ridership increase significantly for the Expanded System, it can be seen that the cost increases by a greater amount than the ridership (with costs nearly tripling compared to the current system in 2020, while ridership “only” doubles). There are a few reasons for this divergence. First, it is common for system expansion plans to show costs rising faster than ridership because, in general, it is unlikely that new services will be *more* productive than the agency’s current services, which have a long history and mature ridership base. Most agencies try to serve their best potential markets first—the ones with the highest residential and employment density and the links with the highest demonstrated travel demand—and so system growth into the more distant future tends to address markets that are not quite as promising as those on which the system was built.

The second reason, related to the first, revolves around the nature of the proposed services in this TDP. The market analysis showed that most of the areas with sufficient development density in the GMTA region already have local services, and that there were few other areas that have sufficient density to support new local services. As a result, most of the new proposed services are commuter routes. These tend to travel longer distances and have less ridership turnover during a trip (because most riders are destined to the major employment center at the end of the route). Both of these factors drive down the productivity of the service (i.e., the ridership relative to the cost) compared to local routes.

Finally, while it is relatively straightforward to estimate the future cost of operating a service, a forecast of ridership eight or more years into the future is more akin to a guess than a forecast. Many factors that affect ridership may change significantly during the intervening years, such as the price of gasoline, the fare, the economy, and development patterns. The ridership figures presented above represent a conservative estimate of future ridership, assuming that conditions for transit are no better than they are today in terms of pricing and the economy.

Funding

GMTA has achieved system growth since the last short-range transit plan, but it has been limited by the available funding and there is general consensus within the community that the amount of service offered today is not meeting the transportation needs of the community. New funding from the state and federal governments has been limited, and local communities are hard-pressed to use their overstretched property tax dollars to fund the local share of service. Two recent successes include the US 2 Commuter and the Montpelier Circulator. For the former, the towns of East Montpelier, Plainfield and Marshfield all voted at Town Meeting to allocate the dollars needed for the 20% local share. In Montpelier, citizens organized a petition drive and the voters strongly supported a \$40,000 contribution for the local share of Circulator service in its second year of operation.

While GMTA has had some success in recent years raising local funds, as described above, the lack of a consistent and reliable mechanism to raise required local match remains a significant

obstacle to public transportation growth in its service area. Soon after the CCTA/GMTA transition to a single entity in 2011, the CCTA Board of Commissioners had a series of discussions about the differences between the urban and rural local funding processes. To further explore this issue and begin to identify potential solutions, the CCTA Board established the Assessment Study Group. Three CCTA Board members served on the study group, which met four times in early 2012. The Assessment Study Group identified some key issues, which will serve as a basis for further discussion of the rural local funding issue:

- CCTA member municipalities currently contribute approximately 20% of the operating revenue for the urban services while local funds from non-members only make up about 6% of the revenues for the rural services.
- The CCTA Charter includes multiple references to member assessments and specifically addresses a process to determine assessments for new members. However, the Charter is silent on the issue of assessments for non-members, including funding requirements for non-members who currently receive service (the GMTA communities).
- While CCTA can continue to make funding requests of non-members and to change the Fair Share Equation by which those amounts are derived, CCTA has no power to assess non-members. New legislation would be necessary to give CCTA the power to assess non-members.
- The rural local funds issue could be addressed through a variety of methods, including new legislation to allow CCTA to assess non-member communities that receive service or a regional funding mechanism that uses a revenue source other than the property tax.

Impacts on CMAQ Funding

New services in the GMTA service area are typically funded through a Congestion Mitigation/Air Quality (CMAQ) grant. Historically, these grants have been three-year demonstration grants that provide 80% federal funding and require a 20% local match. GMTA's experience has been that during the three-year demonstration period, GMTA is responsible for the 20% local match and VTrans (using Federal Transit Administration money) provides the 80% federal funds. At the conclusion of the three-year demonstration period, VTrans has picked up the 80% cost of the route if the route has proven to be successful, and GMTA remains responsible for the 20% local match. This places a burden on VTrans to identify a source of the 80% funding.

If a regional funding source was available to GMTA, the burden on VTrans after the three-year demonstration period ends could be significantly reduced. For example, after the conclusion of the three year demonstration project, VTrans share might be reduced to 40% of net cost rather than the current 80%. Additionally, GMTA would have a funding source that would be appropriate to support the 20% share of regional and inter-regional services, which might make more sense than attempting to create coalitions among very small municipalities along corridors.

Another important consideration with regard to CMAQ funding is the possibility that Vermont will fall out of attainment of air quality standards as defined in the Clean Air Act. Currently in Vermont, the transportation sector contributes 47% of all greenhouse gas emissions. As long as all parts of Vermont are “in attainment,” as they currently are, the State has full discretion on how to allocate its CMAQ grant from the federal government. Thus, a portion of CMAQ is used for paving and other projects not directly related to congestion mitigation or air quality. If a portion of Vermont was no longer in attainment of standards (most likely Chittenden County where the heaviest traffic volumes are), the State would be forced to spend all of the money in the non-attainment area on projects that would help the area get back into attainment. Rather than risk falling into non-attainment, investments in public transportation now, using CMAQ and other funding, as a hedge against non-attainment, will both enhance the sustainability of the transportation system in the CCTA/GMTA regions and preserve the freedom to use CMAQ funds statewide for the best available and most needed projects.

As of this writing, Congress has just passed MAP-21, the reauthorization for SAFETEA-LU. Initial reports indicate that the new law will be favorable to funding increased rural public transportation in Vermont, but the full impact of the law will not become clear for several months until new appropriations bills are drafted and new regulations are written.

Quantifiable Benefits of Public Transportation

The discussion of costs and benefits of public transportation usually focus on the financial costs of operation, the number of riders, fare revenue and other easily calculated values. The impacts of transit, however, go well beyond these types of figures. Several sections of this TDP have highlighted the role of public transportation in the economic vitality and future sustainability of the GMTA region. The mobility afforded to all residents and workers is also a critical benefit offered by GMTA and the connection between public transportation and community sustainability is also discussed in Chapter 6. While many benefits of public transportation are difficult to quantify, two areas where it is possible to place some numbers on the benefit are vehicle miles traveled (VMT) and emissions reductions.

By way of example, in FY2012, the Montpelier LINK Express and US 2 commuter routes operated by GMTA, CCTA and RCT carried over 120,000 passengers. With an average trip length of roughly 31 miles on the LINK and 22 miles on the US 2 Commuter, this bus ridership represents over 3.75 million miles not driven in cars. On a per person basis, assuming passengers ride daily, this equates to a VMT reduction of 16,100 miles per year for LINK passengers and 11,200 miles per year for US 2 Commuter passengers. With the average cost per mile for a personal vehicle of \$0.56 (according to AAA), this amounts to an annual savings of approximately \$7,300 per person for LINK riders and \$5,550 per person for the US 2 route, after accounting for the cost of bus fares. Transportation costs in Vermont represent a higher proportion of household expenses than the national average and these transportation costs place a

significant burden on many Vermonters, particularly in rural areas. The savings achieved through use of public transportation use can significantly help Vermonters' financial stability and enhance the affordability of the GMTA service areas.

The saved miles also translate into 195,000 pounds of carbon monoxide, and 2.9 million pounds of carbon dioxide not being emitted. Carbon monoxide is a poisonous gas that is one of the main air pollutants controlled by the Clean Air Act, and carbon dioxide is the primary gas causing global climate change. Of course, the buses operated on these routes create emissions of these gases as well, but the net savings in carbon dioxide is over 1.2 million pounds. (Diesel engines emit very little carbon monoxide.)

Conclusion

It has been clear for many years that the current funding mechanism for public transportation is insufficient to support the expanded transit system that residents of the GMTA area believe is needed. Through expanded use of federal funds and diligent work at the local level to increase local contributions, GMTA has managed to pursue its mission to the extent possible. However, the ambitious agenda in this TDP is impossible without a significant change in the funding structure. The imperatives of supporting economic vitality, improving air quality, mitigating the severity of climate change, and enhancing mobility for all citizens argue strongly for a much more robust public transportation system.

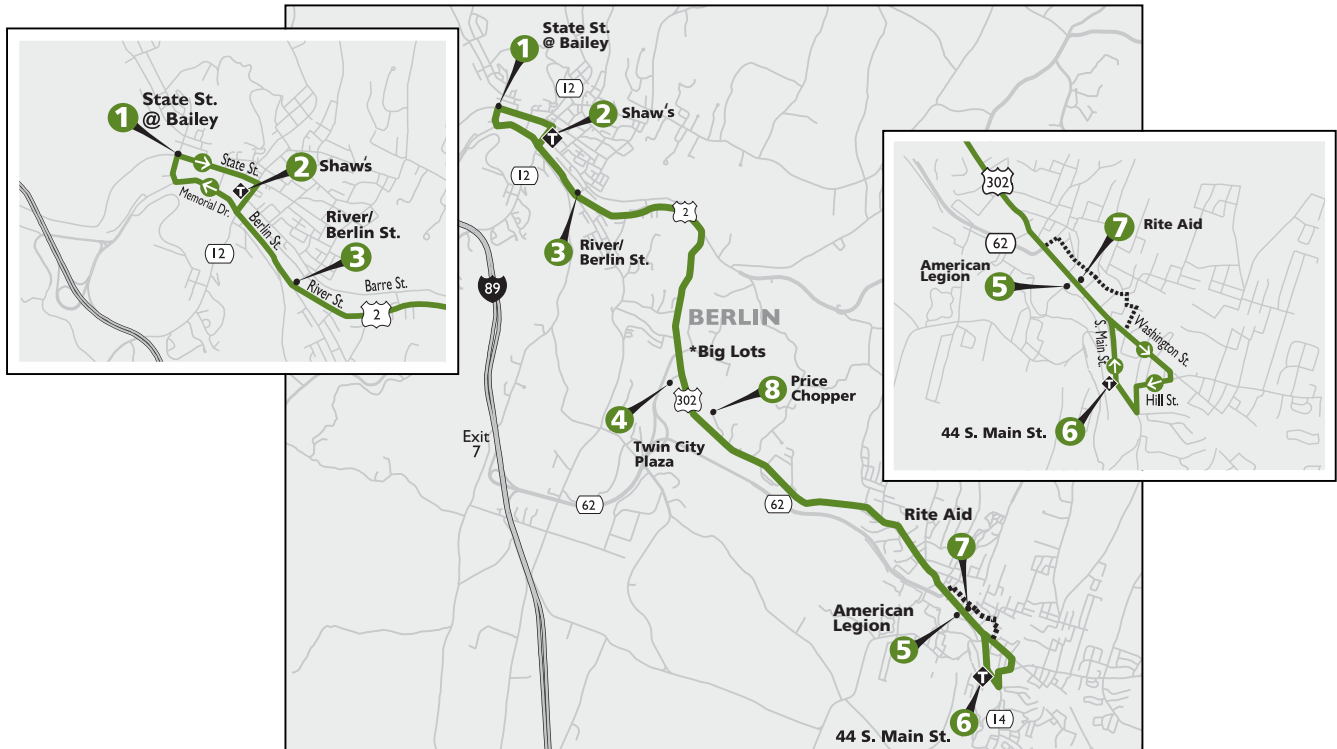
At the state and regional level, it is clear that the unsustainability of the current funding structure must be converted into action. The State's Comprehensive Energy Plan identifies the current gas tax construct as insufficient for all types of transportation funding in the future and suggests a move toward vehicle miles traveled fees, other demand-based fees, or fees based upon the alternative fuels utilized will be necessary. While there is no means of raising revenue that will be completely painless for all parties, to achieve our transportation and environmental goals, funding innovation must occur. Perhaps the multiple objectives of lessening the burden on local property taxes, supporting public transportation and reducing carbon emissions will result in changes at the state and federal level.

Appendix A – Route Profiles

On the following pages are route profiles of each bus service operated by GMATA. Each profile contains a description of the route, a map, and a summary of route statistics and performance. The daily average ridership represents the total annual ridership for fiscal year 2012 divided by the number of services days. If a route operates both on weekdays and weekends, this daily average represents a weighted average between the weekday and weekend figures.

ROUTE PROFILE: 80 City Route Middyay

Function: The City Middyay operates between Montpelier and Barre, and offers deviations up to .75 mi off the fixed route by request.



Span: Weekdays 9:25 a.m. to 3:40 p.m.
Saturdays 9:25 a.m. to 3:40 p.m.
No service on Sundays

Frequency: 75-minute headway at all times

Ridership: FY12 Daily Average – 122

Productivity: Boardings per revenue hour – 19.3

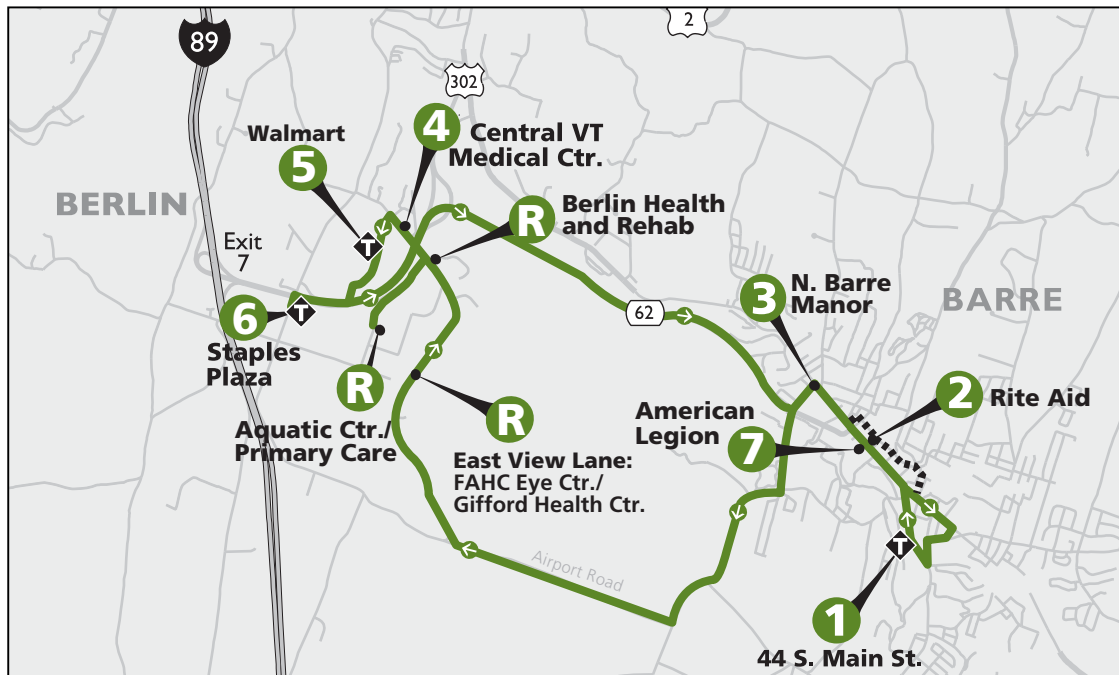
Top Stops: Main St. @ Shaw's (29 boardings)
Summer @ Seminary (12 boardings)
N. Main St. @ N. Barre Manor (10 boardings)
S. Main St. @ Tilden House (9 boardings)

Revenue: \$11,485

Gross Cost: \$117,568

Net Cost per Passenger: \$2.84

ROUTE PROFILE: 81 Barre Hospital Hill



Function: The Barre Hospital Hill operates between the Central Vermont Medical Center, Berlin Mall and Shaws in Berlin and downtown Barre and offers deviations up to .75 mi off the fixed route.

Span: Weekdays 6:55 a.m. to 5:55 p.m.
Saturdays 7:55 a.m. to 5:55 p.m.
No service on Sundays

Frequency: One hour headway at all times

Ridership: FY12 Daily Average – 92

Productivity: Boardings per revenue hour – 8.3

Top Stops: Staples Plaza @ Staples (10 boardings)
Fisher Rd. @ CVH Main Entrance (10 boardings)
Berlin Mall Rd. @ Jo-Ann Fabrics (9 boardings)

Revenue: \$8,592

Gross Cost: \$250,351

Net Cost per Passenger: \$8.59

ROUTE PROFILE: 82 Montpelier Hospital Hill

Function: The Montpelier Hospital Hill operates between the Central Vermont Medical Center, Berlin Mall and Shaws in Berlin and downtown Montpelier and offers deviations up to .75 mi off the fixed route.

Span: Weekdays 7:16 a.m. to 6:16 p.m.
Saturdays 8:16 a.m. to 6:16 p.m.
No service on Sundays

Frequency: One-hour headway at all times

Ridership: FY12 Average Daily Boardings – 84

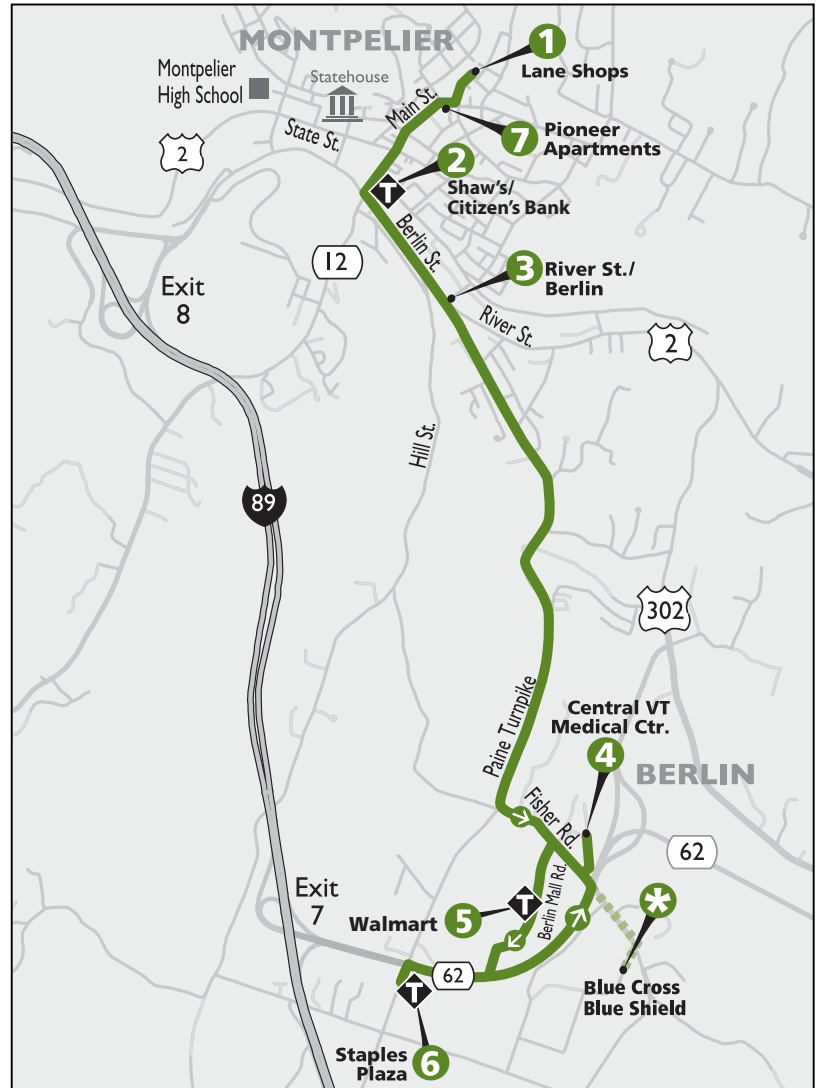
Productivity: Boardings per revenue hour – 7.7

Top Stops: Main St. @ Shaw's (26 boardings)
Berlin Mall Rd. @ Jo-Ann Fabrics (13 boardings)
Lane Shops Stop 1 (7 boardings)
Brown St. @ Pioneer Apts. (7 boardings)

Revenue: \$7,900

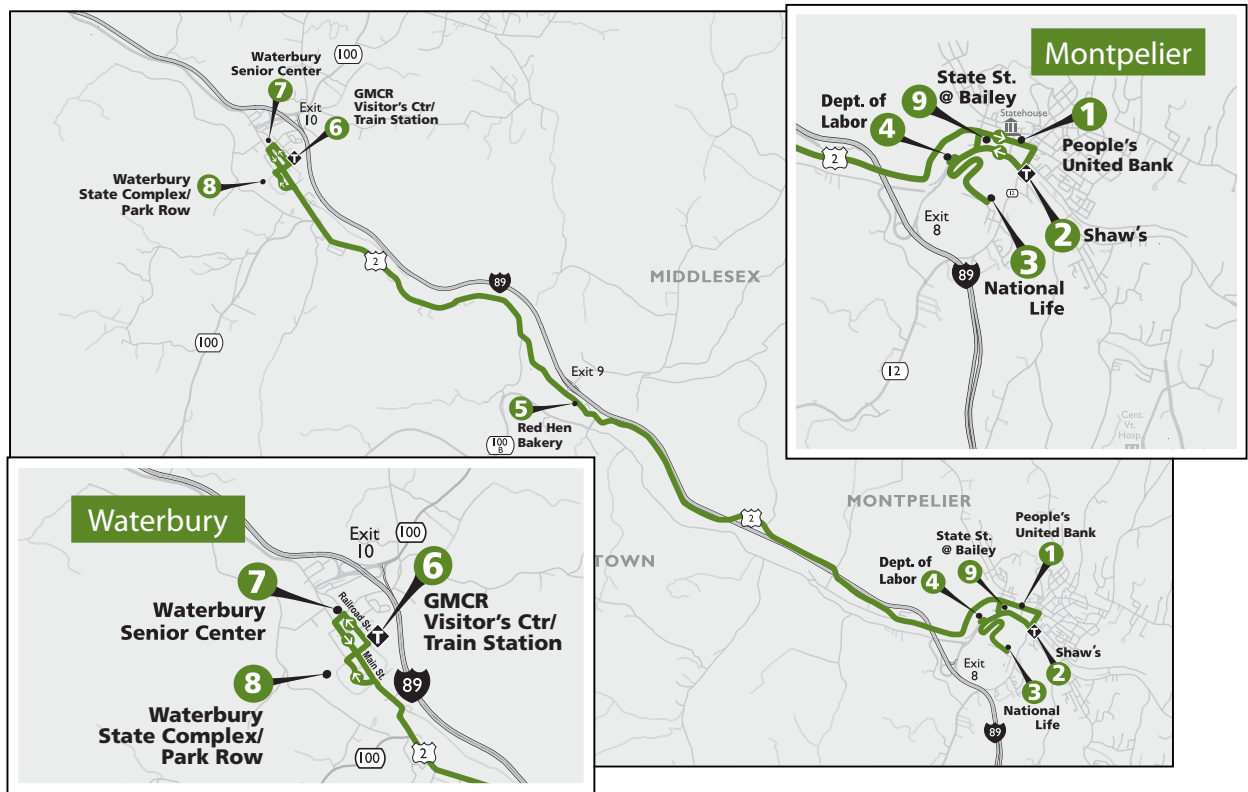
Gross Cost: \$248,300

Net Cost per Passenger: \$9.35



ROUTE PROFILE: 83 Waterbury Commuter

Function: The Waterbury Commuter operates between Montpelier and Waterbury.



Span: Weekdays 6:40 a.m. to 9:45 a.m.; 3:05 p.m. to 6:05 p.m.
No service on weekends

Frequency: Approx. one-hour headway at all times

Ridership: FY12 Average Daily Boardings – 60

Productivity: Boardings per revenue hour – 9.8

Top Stops: Main St. @ Shaw's (16 boardings)
Rt 2 @ Number 149 (6 boardings)
Waterbury State Complex @ Water Quality Building- Stop 3 (6 boardings)

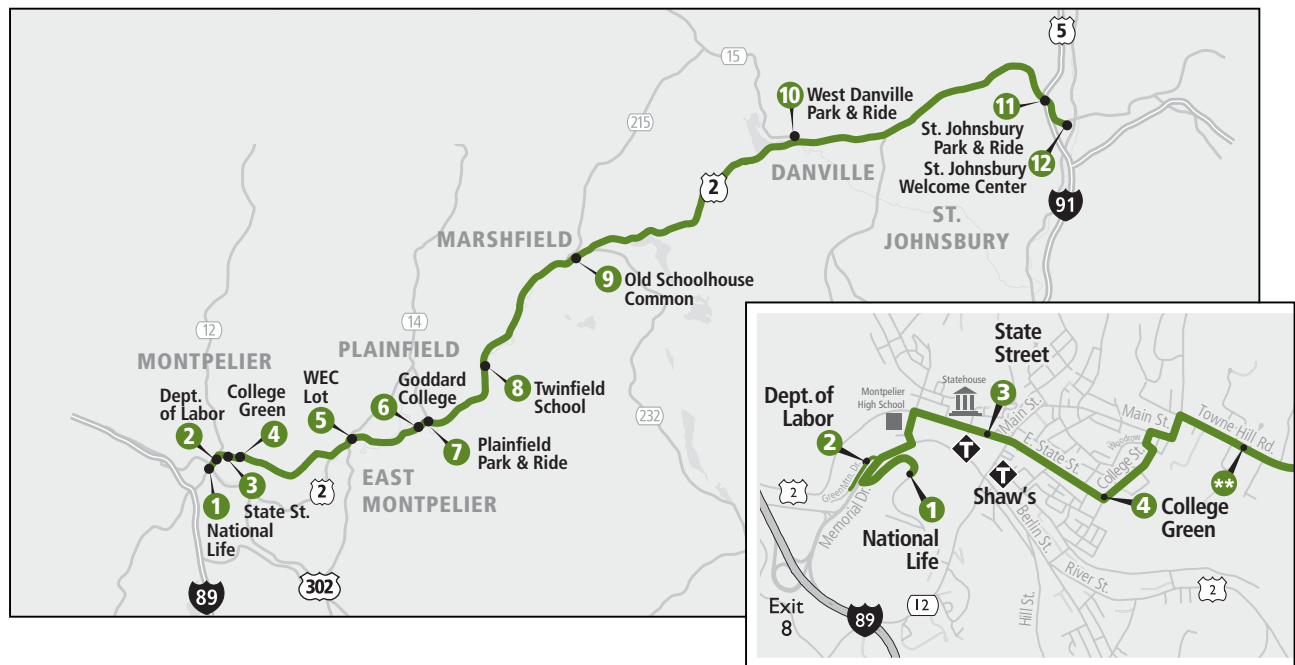
Revenue: \$12,683

Gross Cost: \$116,181

Net Cost per Passenger: \$6.73

ROUTE PROFILE: 84 US 2 Commuter

Function: The US 2 Commuter provides commuter service between Montpelier and St. Johnsbury.



Span: Weekdays 6 a.m. to 8:50 a.m.; 3:50 p.m. to 6:45 p.m.
No service on weekends

Frequency: Irregular, with two full corridor trips per peak period and additional trip between Marshfield and Montpelier

Ridership: FY12 Average Daily Boardings – 35

Productivity: Boardings per revenue hour – 5.6

Tops Stops: State St. Montpelier (18 boardings)
Plainfield Park & Ride (5 boardings)
Marshfield Old Schoolhouse Common (4 boardings)

Revenue: \$7,604

Gross Cost: \$133,335

Net Cost per Passenger: \$13.96

Notes: This route is jointly operated by GMTA and Rural Community Transportation, Inc. (RCT).
The statistics reported are for the GMTA portion of the route, only.

ROUTE PROFILE: 85 Hannaford Shopping Special

Function: The Hannaford Shopping Shuttle Special is a free shuttle operating on Tuesdays between Barre's Hannaford Supermarket and Barre area housing complexes, and will also deviate up to .75 mi upon request.



Span: Tuesdays, 9:45 a.m. to 1:15 p.m.

Frequency: Allows approx. 55 minutes of shopping time at Hannaford

Ridership: FY12 Average Tuesday Boardings – 56

Productivity: Boardings per revenue hour – 16.3

Stops:	Williamstown Square	Nelson's Hardware
	Garden Apartments	Tilden House
	Hannaford	Washington Apartments
	North Barre Manor	Jefferson Apartments

Revenue: None

Gross Cost: \$14,412

Net Cost per Passenger: \$4.95

ROUTE PROFILE: 87 Northfield Community Shuttle

Function: The Northfield Community Shuttle is a fare-free shuttle operating on Wednesdays between the Northfield Grand Union Supermarket, area housing complexes, the CERV Food Shelf and the Northfield Senior Center. Route deviations up to .75 mi off the route are also allowed.

Span: Wednesday, 8:30 a.m. to 12 p.m.

Frequency: N/A

Ridership: FY12 Average Wednesday Boardings – 15

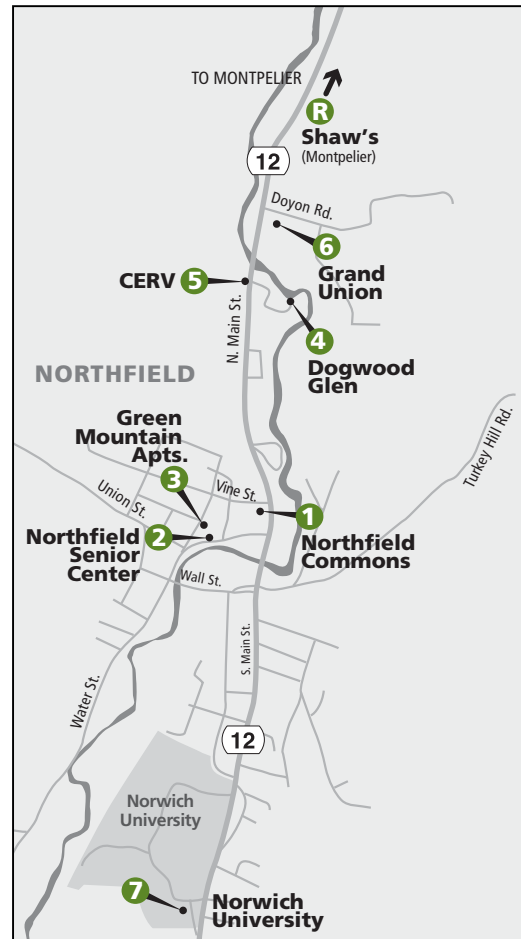
Productivity: Boardings per revenue hour – 4.2

Stops: Northfield Commons
Northfield Senior Center
Green Mountain Apartments
Dogwood Glen
CERV
Grand Union

Revenue: None

Gross Cost: \$11,525

Net Cost per Passenger: \$15.05



ROUTE PROFILE: 88 Capital Shuttle

Function: The Capital Shuttle is a free, seasonal shuttle operating between the Department of Labor, National Life, and the State House in downtown Montpelier. The shuttle runs Monday through Friday, from January to May, except during Town Meeting Week.

Span: Weekdays 7:20 a.m. to 5:29 p.m.
No service on weekends

Frequency: 20-minute headway at all times

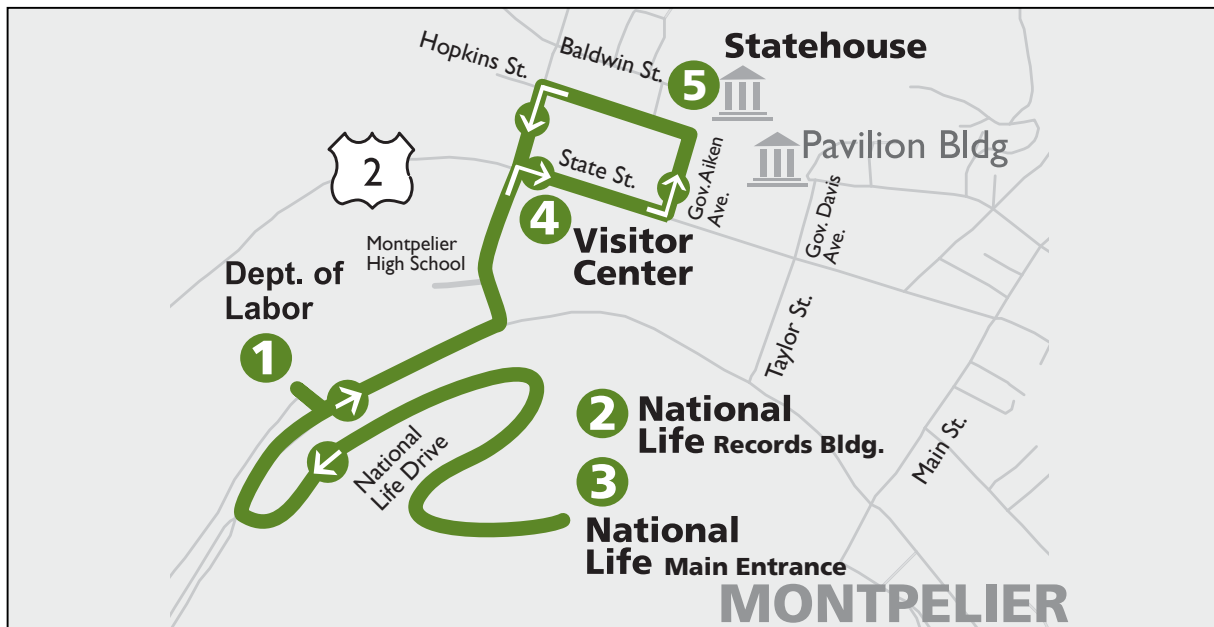
Ridership: FY12 Average Daily Boardings – 60.5

Productivity: Boardings per revenue hour – 6

Revenue: None

Gross Cost: \$51,881

Net Cost per Passenger: \$11.28



ROUTE PROFILE: 89 City Commuter

Function: The City Commuter operates between Montpelier and Barre along US 2 and US 302.

Span: Weekdays 5:25 a.m. to 9:55 a.m.; 3:25 p.m. to 8:25 p.m.
 Saturdays 7:55 a.m. to 9:55 a.m.; 3:25 p.m. to 7:20 p.m.
 No service on Sundays

Frequency: 30-minute headway during the AM and PM service periods
 Final weekday PM trip is one hour after previous trip

Ridership: FY12 Average Daily Boardings – 189

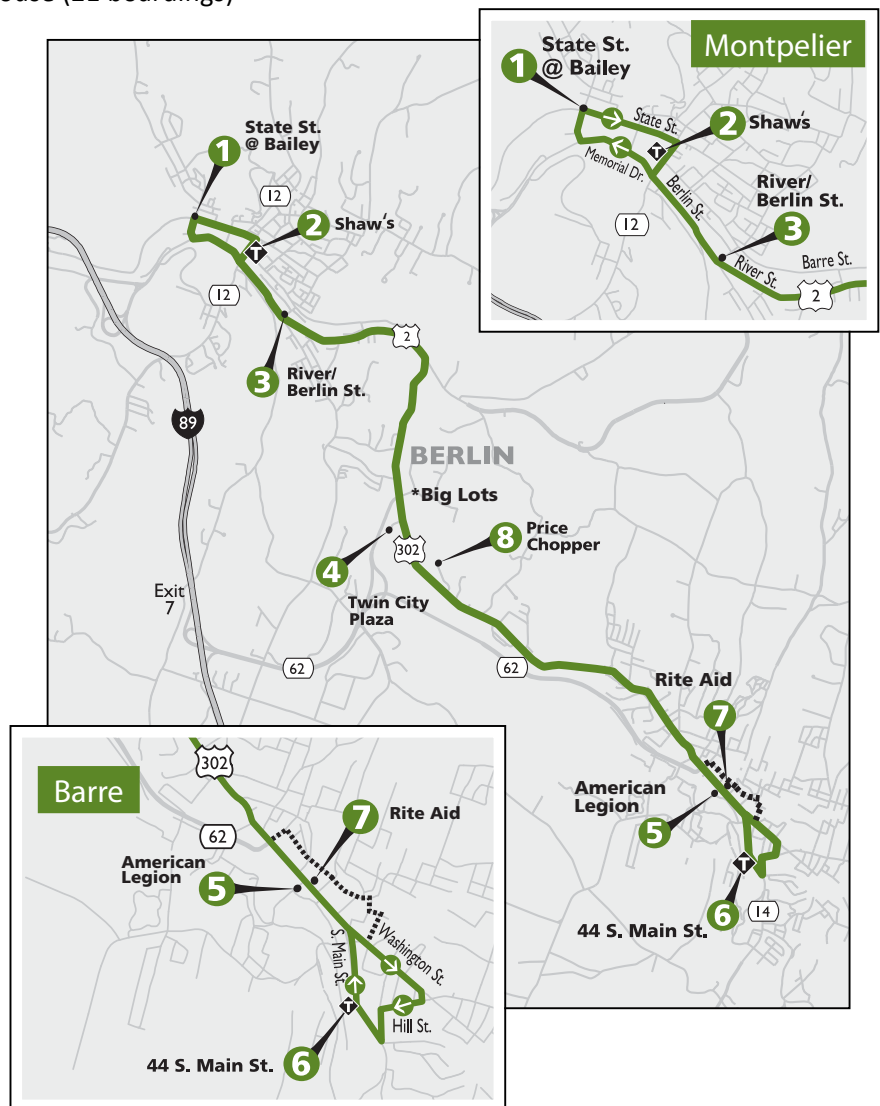
Productivity: Boardings per revenue hour – 12.5

Top Stops: Main St. @ Shaw's (58 boardings)
 S. Main St. @ Tilden House (21 boardings)
 N. Main St. @ Barre
 Manor (14 boardings)
 Summer @ Seminary
 (14 boardings)

Revenue: \$17,851

Gross Cost: \$338,516

Net Cost per Passenger: \$5.52



ROUTE PROFILE: 90 Health Center Community Shuttle

Function: The Health Center Community Shuttle is a free shuttle for doctor, dentist, and other essential medical services at the Plainfield Health Center. Service is provided from rural locations in Washington County on Mondays and Thursdays; and from Barre on Tuesdays. The shuttle may accommodate locations beyond the indicated service area as the schedule allows.

Span: Monday, Tuesday, Thursday, 10 a.m. to 2 p.m.

Frequency: N/A

Ridership: FY12 Average Daily Boardings – 7

Productivity: Boardings per revenue hour – 1.9

Stops: As Requested

Revenue: None

Gross Cost: \$39,975

Net Cost per Passenger: \$38.34

ROUTE PROFILE: 91 Hospital Hill Demand Response

Function: The Hospital Hill Demand Response service is a free service from Barre City to the Hospital Hill route deviation area, or $\frac{3}{4}$ of a mile off the regular fixed route.

Span: Tuesday, Wednesday, and Thursday, 9 a.m. to 2 p.m.

Frequency: Demand response service

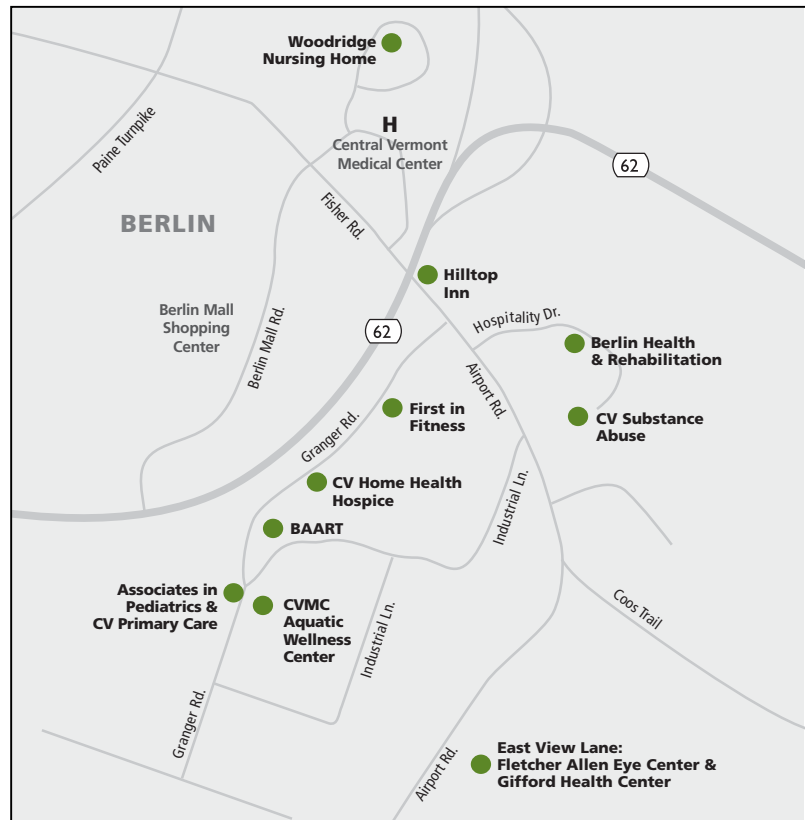
Ridership: FY12 Average Daily Boardings – 16

Productivity: Boardings per revenue hour – 3.4

Revenue: None

Gross Cost: \$56,419

Net Cost per Passenger: \$22.19



ROUTE PROFILE: 92 Montpelier Circulator

Function: The Montpelier Circulator is a fare-free shuttle operating two connecting loops around downtown Montpelier. Loops 1 and 2 converge at the downtown Shaw's.

Span: Weekdays 6:50 a.m. to 5:50 p.m.
Saturdays 8:50 a.m. to 1:50 p.m.
No service on Sunday

Frequency: Weekdays – one hour headways between 6:50 a.m. and 8:50 a.m.; 10:50 a.m. and 12:50 p.m.; and 2:50 p.m. and 4:50 p.m.
Saturdays – one hour headways

Ridership: FY12 Average Daily Boardings – 42

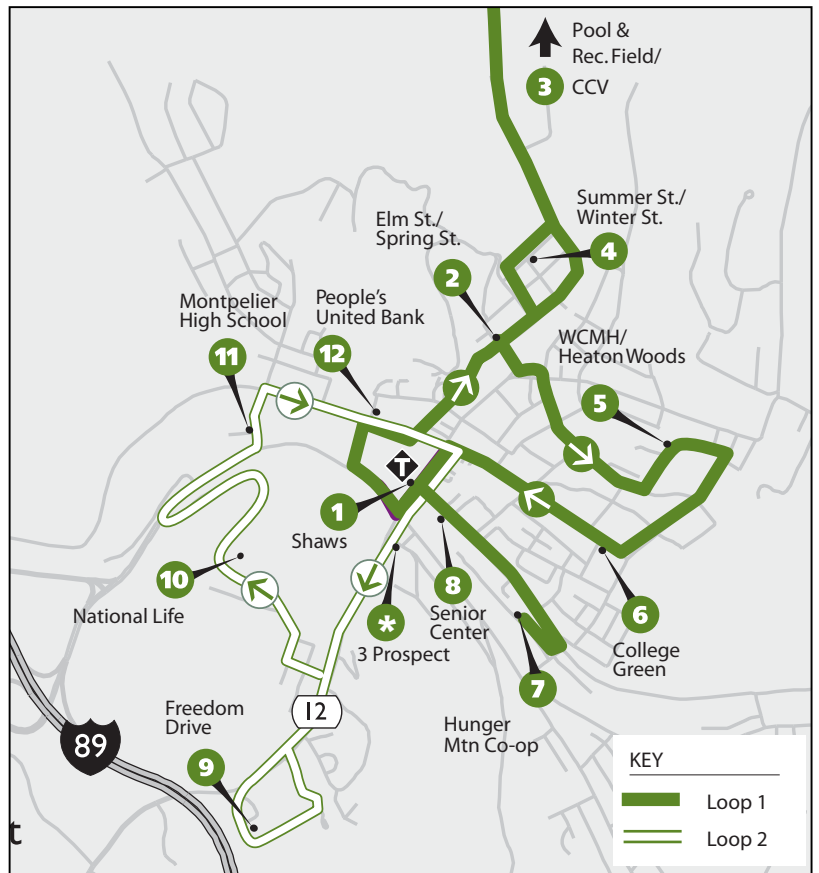
Productivity: Boardings per revenue hour – 5.4

Top Stops: Shaw's (15.3 boardings)
National Life (8.4 boardings)
Summer & Winter Sts. (3.9 boardings)

Revenue: None

Gross Cost: \$189,344

Net Cost per Passenger: \$14.60



ROUTE PROFILE: 100 Route 100 Commuter

Function: Commuter service between Morrisville and the Waterbury State Office complex, with service to Stowe Town Hall and the Morrisville-Stowe Airport.

Span: Weekdays 6:15 a.m. to 7:55 a.m.; 4:06 p.m. to 6:45 p.m.
No service on weekends

Frequency: Two AM Peak southbound trips plus three PM Peak northbound trips. One reverse peak trip in each period.

Ridership: FY12 Average Daily Boardings – 48

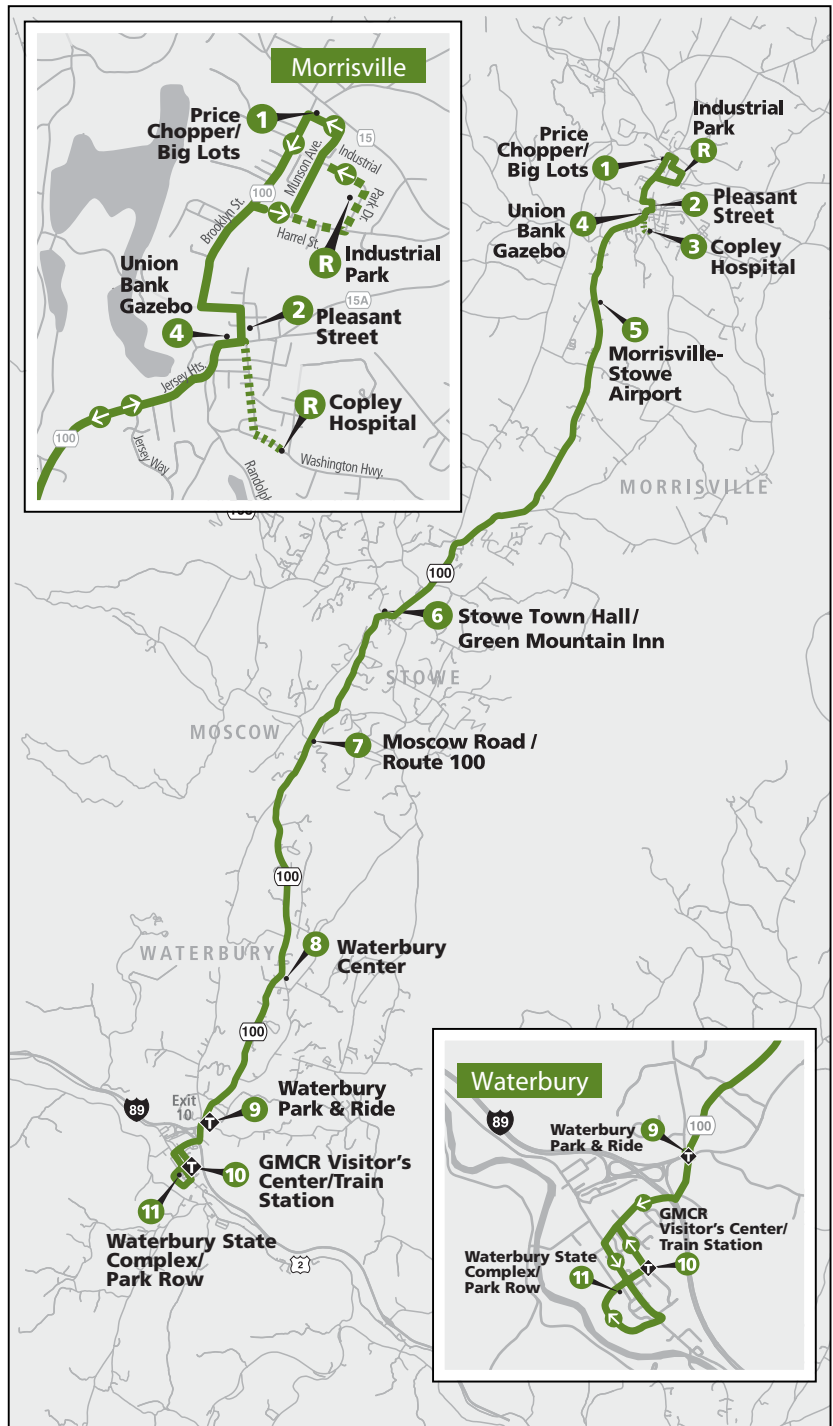
Productivity: Boardings per revenue hour – 7.5

Top Stops: Stowe Town Hall (11 boardings)
Waterbury Park & Ride (10 boardings)
Visitor’s Center (8 boardings)

Revenue: \$5,079

Gross Cost: \$193,687

Net Cost per Passenger: \$15.44



ROUTE PROFILE: 101 Mountain Road Shuttle

Function: The Mountain Road Shuttle provides fare free ski-season service between Stowe Mountain Resort and downtown Stowe.

Span: December 17 – March 25 : Seven days a week, from 7 a.m. to 10 p.m. Some additional spring service provided into early April.

Frequency: 20-minute headways during the AM peak; 30-minute headways during the midday; 15-minute headways in the afternoon; 30-minute headways into the evening.

Ridership: FY12 Average Daily Boardings – 164

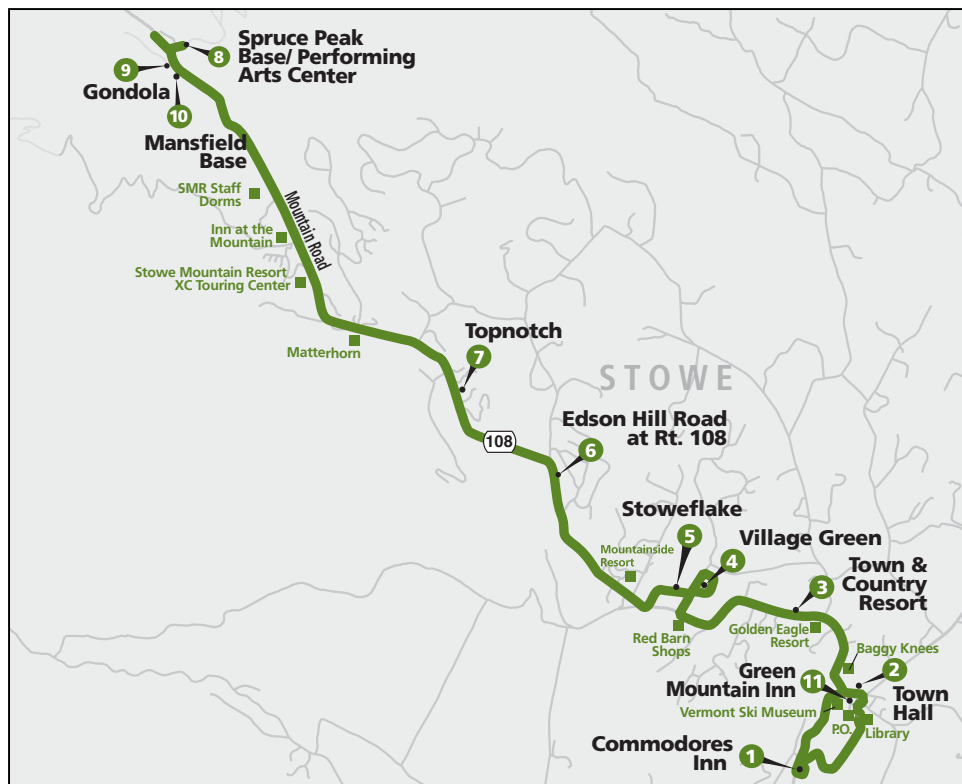
Productivity: Boardings per revenue hour – 14.9

Top Stops: Fosters (71 boardings)
Stowe Town Hall (66 boardings)
Spruce Peak (55 boardings)
Stowe Mountain Lodge (44 boardings)
Mansfield Base (35 boardings)

Revenue: None

Gross Cost: \$265,005

Net Cost per Passenger: \$4.49



ROUTE PROFILE: 102 Morrisville Loop

Function: The Morrisville Loop is a weekday circulator serving Morrisville's local shopping destinations, housing complexes, Post Office, and Copley Hospital. The bus will deviate up to .75 mi off the fixed route by request.

Span: Weekdays 8:00 a.m. to 2:55 p.m.
No service on weekends

Frequency: 35-minute headway between four AM runs and three PM runs

Ridership: FY12 Average Daily Boardings – 15

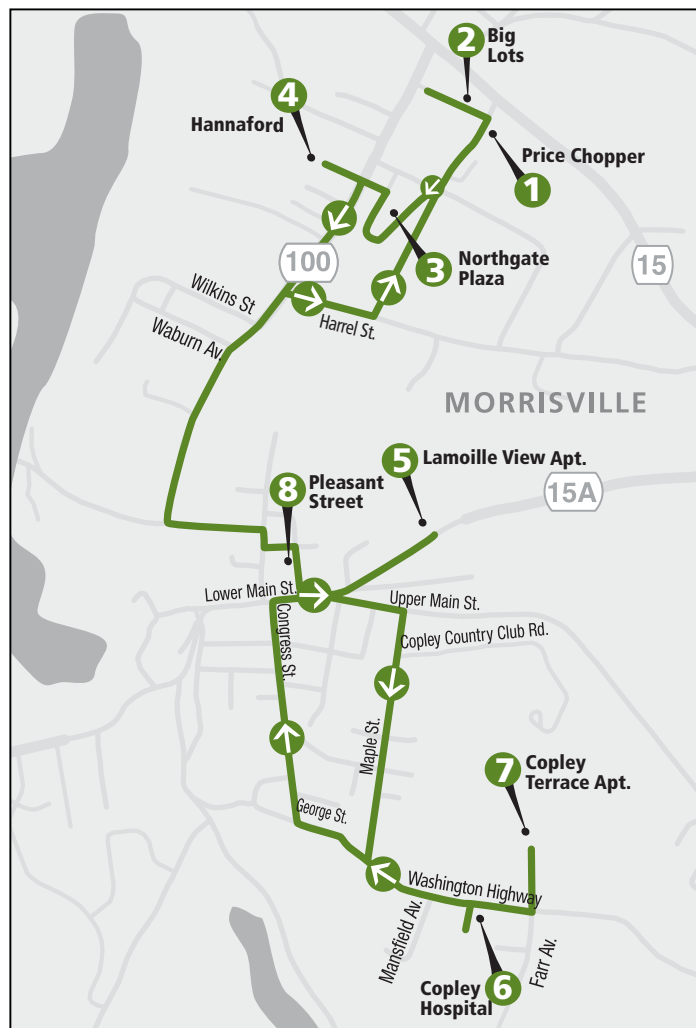
Productivity: Boardings per revenue hour – 3.6

Stops: Price Chopper
Kinney Drug
Northgate Plaza
Hannaford
Lamoille View Apartments
Copley Hospital
Copley Terrace Apartments
Post Office

Revenue: \$1,532

Gross Cost: \$63,627

Net Cost per Passenger: \$16.44



ROUTE PROFILE: 103 Morrisville Shopping Shuttle

Function: The Morrisville Shopping Shuttle provides three one way trips between Morrisville and Stowe. The bus will deviate upon request with 24-hour notice.

Span: Southbound trip at 10:20 a.m.; Northbound trip at 12:35 p.m.; Southbound trip at 3:03 p.m.
No service on weekends

Frequency: Three one way trips

Ridership: FY12 Average Daily Boardings – 13

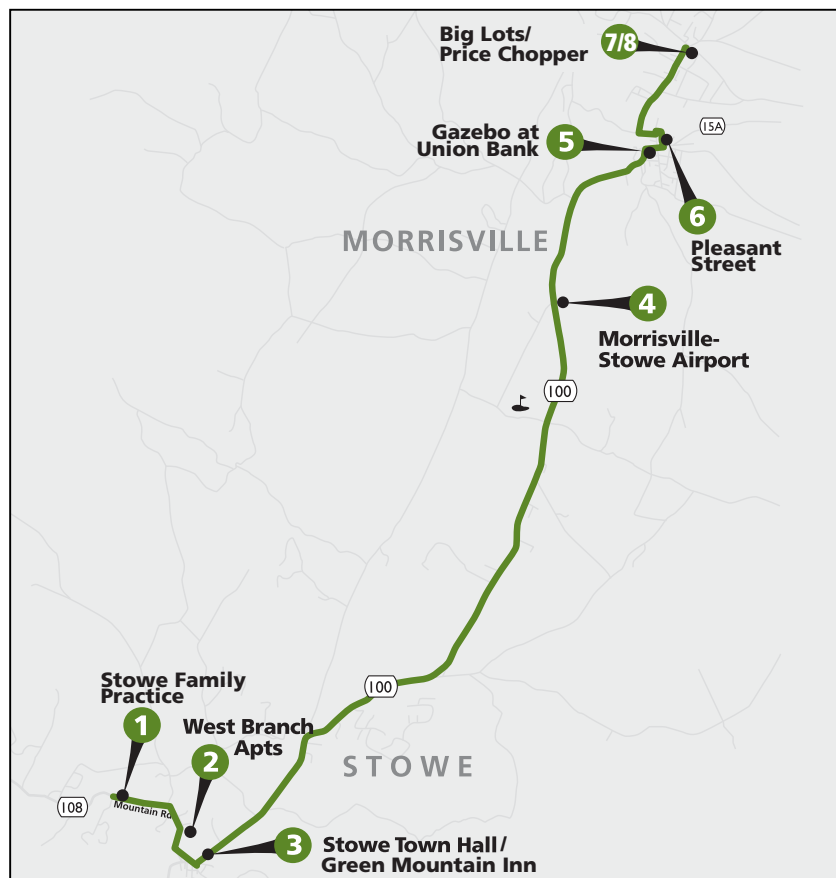
Productivity: Boardings per revenue hour – 12.6

Top stops: Big Lots (4 boardings)
West Branch Apts. (3 boardings)
Stowe Town Hall (3 boardings)

Revenue: \$1,315

Gross Cost: \$27,603

Net Cost per Passenger: \$8.10



ROUTE PROFILE: 109 Price Chopper Shopping Shuttle

Function: The Price Chopper Shopping Shuttle is a once-weekly fare-free shuttle offering rides from both St. Albans and Swanton area housing complexes to the St. Albans Price Chopper. The route will also deviate up to .75 mi. off the route by request.

Span: In St. Albans, Tuesdays, in-bound at 9:50 a.m. and out-bound at 11:35 a.m.
In Swanton, Tuesdays, in-bound at 10:50 a.m. and out-bound at 12:45 p.m.

Frequency: One run in each direction

Ridership: FY12 Average Daily Boardings – 22

Productivity: Boardings per revenue hour – 5.9

Stops:	<u>In St. Albans</u>	<u>In Swanton</u>
	Lake St. Housing	Swanton School Apts.
	Willard Mills Apts.	Village Green Apts.
	City Central Apts.	Village Apts.
	Beth-El Apts.	Abenaki Acres
	Four Winds	
	Price Chopper	

Revenue: None

Gross Cost: \$10,917

Net Cost per Passenger: \$9.76

ROUTE PROFILE: 110 St. Albans Downtown Shuttle

Function: The St. Albans Downtown Shuttle is a community bus service operating between the St. Albans Industrial Park, CCV, and Highgate Plaza. Deviations off the route of up to ¾ of a mile are available upon request.

Span: Weekdays 5:45 a.m. to 6:34 p.m.
 Saturdays 9:45 a.m. to 3:19 p.m.
 No service on Sunday

Frequency: One hour headway at all times

Ridership: FY12 Average Daily Boardings
 – 85

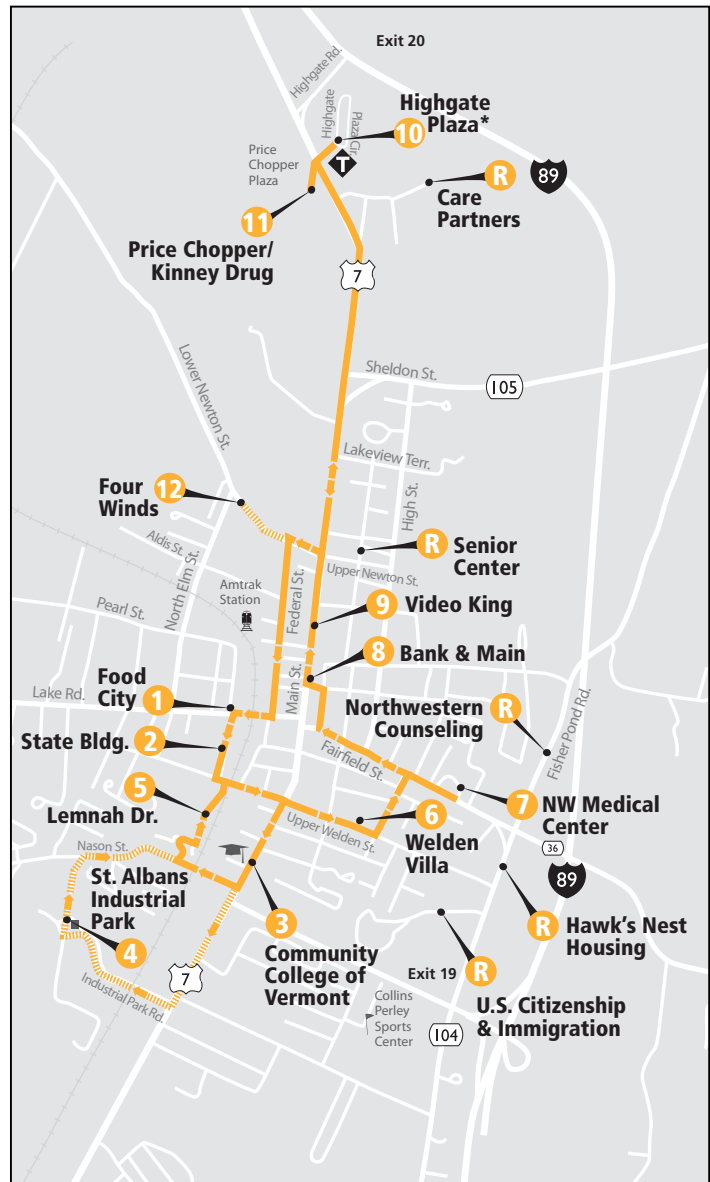
Productivity: Boardings per revenue hour –
 7.2

Top Stops: Food City (21 boardings)
 Highgate Plaza (12 boardings)
 Rite Aid (8 boardings)

Revenue: None (Fares were implemented in July, 2012.)

Gross Cost: \$235,074

Net Cost per Passenger: \$8.97



ROUTE PROFILE: 115 Alburgh/Georgia Shuttle

Function: The Alburgh/Georgia Shuttle is a commuter route running from Alburgh to Georgia once in the morning, and from Georgia to Alburgh once in the evening. The route stops at least once in each of the intermediate towns: Swanton, Highgate, and St. Albans.

Span: Weekdays southbound at 5:35 a.m., northbound at 3:10 p.m.
No service on weekends

Frequency: One trip in each direction

Ridership: FY12 Average Daily Boardings – 56

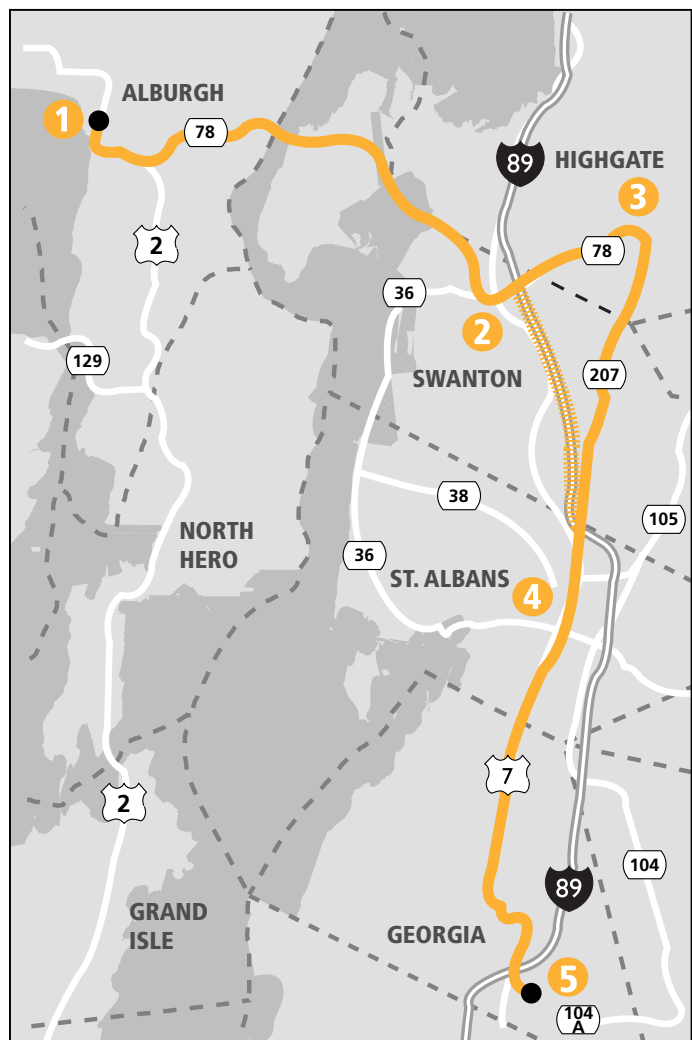
Productivity: Boardings per revenue hour – 19.6

Top Stops: St. Albans Industrial Park (12 boardings)
Bellows Falls Academy St Albans (9 boardings)
Georgia Park & Ride (6 boardings)

Revenue: None (Fares were implemented in July, 2012)

Gross Cost: \$93,975

Net Cost per Passenger: \$6.59



ROUTE PROFILE: 116 Richford Commuter

Function: The Richford/St. Albans Shuttle is a once-daily, peak direction commuter shuttle between Richford and St. Albans, with stops in Berkshire, Enosburg Falls, and Sheldon.

Span: Weekdays, westbound at 5:30 a.m. and eastbound at 4:15 p.m.
No service on weekends

Frequency: One run in the morning, and one in the afternoon

Ridership: FY12 Average Daily Boardings – 28

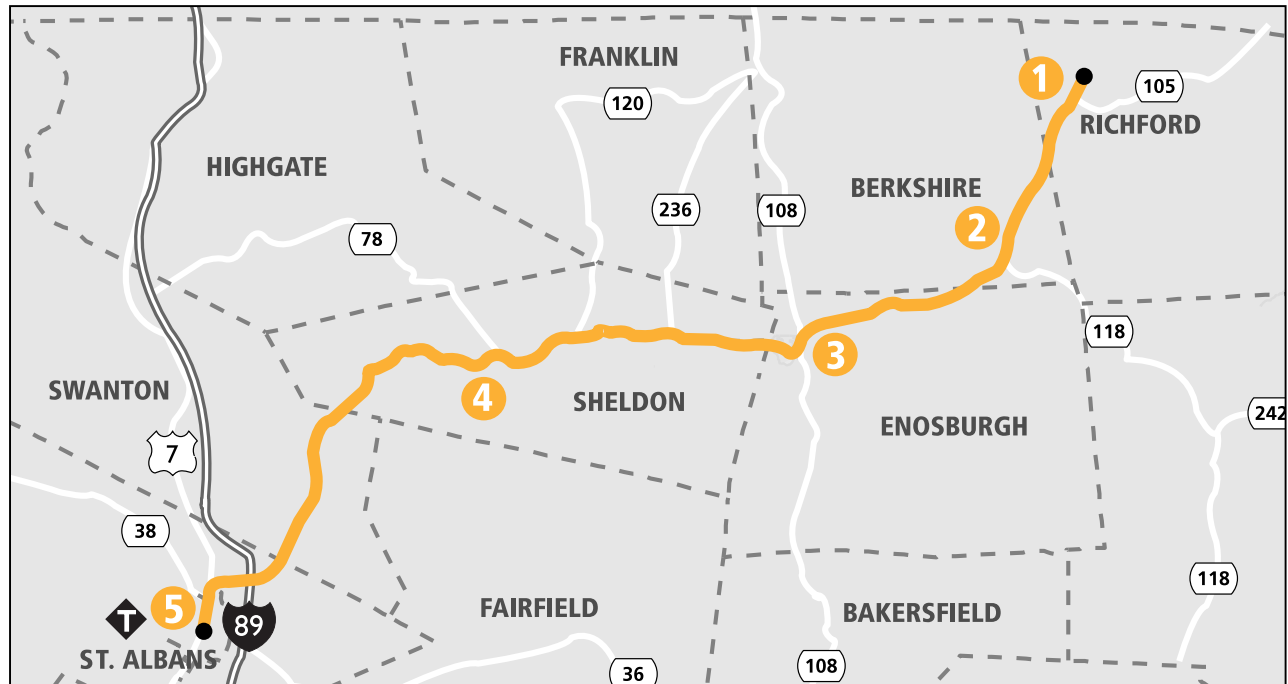
Productivity: Boardings per revenue hour – 14.2

Top Stops: St. Albans Industrial Park (9 boardings)
Weatherby's/Mac's (7 boardings)
Food City (3 boardings)

Revenue: None (Fares were implemented in July, 2012.)

Gross Cost: \$75,476

Net Cost per Passenger: \$10.52



ROUTE PROFILE: 120 Valley Floor

Function: The Valley Floor provides fare-free daily service connecting Waitsfield shopping opportunities and area Inns and Restaurants with Sugarbush Resort during the ski season. This route offers deviations up to .75 mi off the fixed route.

Span: Weekdays 7:00 a.m. to 5:50 p.m.
Weekends and Holidays 7:00 a.m. to 5:52 p.m.

Frequency: 60-minute headway at all times

Ridership: FY12 Daily Average – 46

Productivity: Boardings per revenue hour – 4

Top Stops: Mt. Ellen (9 boardings)
Lincoln Peak (8 boardings)
Slidebrook (7 boardings)

Revenue: None

Gross Cost: \$88,519

Net Cost per Passenger: \$17.40



ROUTE PROFILE: 121 Valley Evening Service

Function: The Valley Evening Service is a fare-free demand-response route operating between 6:00 p.m. and 2:00 a.m., during the ski season. The bus will also deviate up to .75 mi off the fixed route by request.

Span: Saturdays and vacation days from December to March, 6 p.m. until 2 a.m.

Frequency: Demand Response service, departing Lincoln Peak hourly

Ridership: FY12 Daily Average – 81

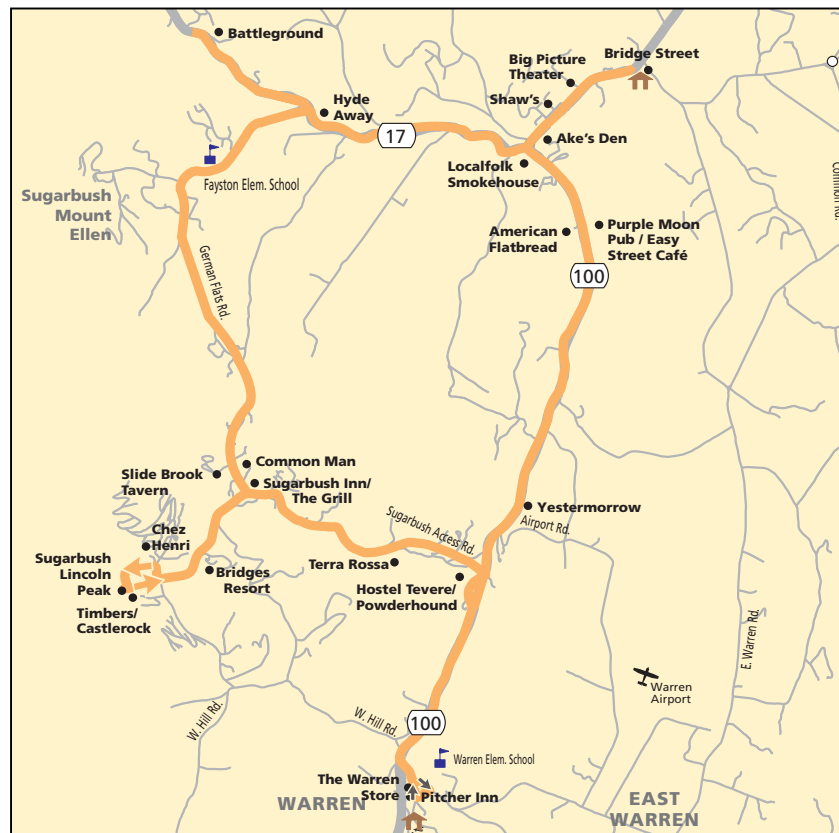
Productivity: Boardings per revenue hour – 9.9

Top Stops: Timbers/Castlerock (18 boardings)
Sugarbush Village/Chez Henry (10 boardings)
Egan's/Localfolk/Ake's (6 boardings)

Revenue: None

Gross Cost: \$15,257

Net Cost per Passenger: \$6.76



ROUTE PROFILE: 122 Mount Ellen

Function: The Mount Ellen offers fare-free daily service between Mount Ellen and Lincoln Peak during the ski season and will deviate up to .75 mi off the fixed route by request.

Span: Daily, 8:00 a.m. until 5:00 p.m.

Frequency: 30-minute headway at all times

Ridership: FY12 Daily Average – 139

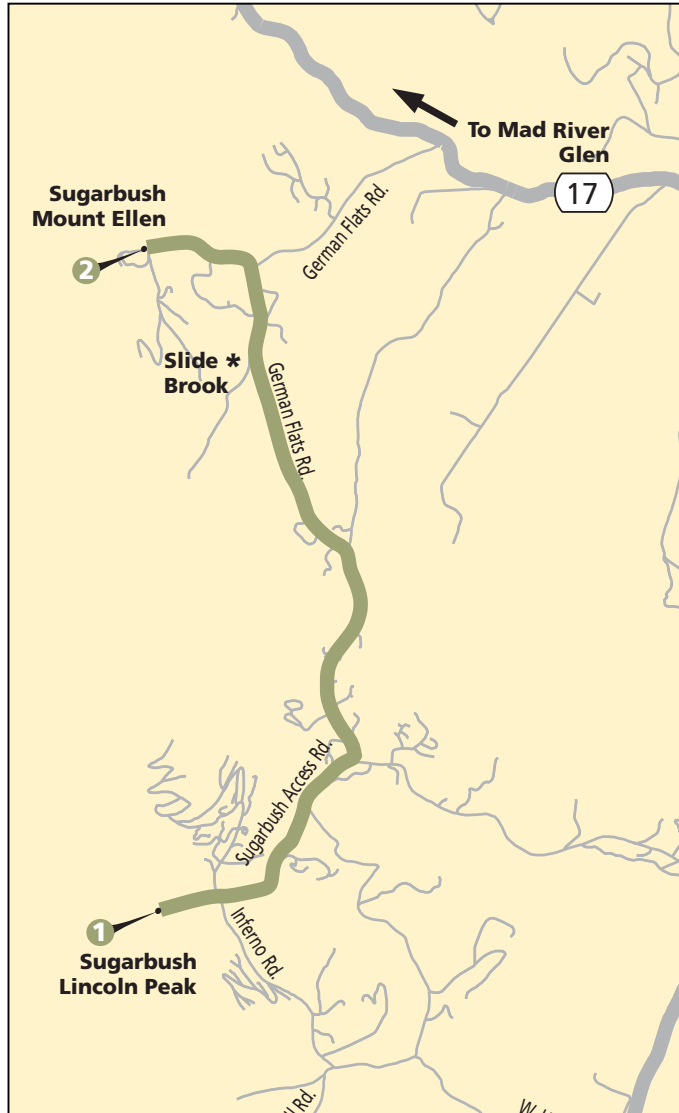
Productivity: Boardings per revenue hour – 15.3

Top Stops: Lincoln Peak (52 boardings)
Mt. Ellen (51 boardings)
Slidebrook (19 boardings)

Revenue: None

Gross Cost: \$58,896

Net Cost per passenger: \$4.27



ROUTE PROFILE: 123 Mad River Glen

- Function:** The Mad River Glen route is a seasonal shuttle serving area resorts on weekends and school vacation weeks, December through early April. It operates between Sugarbush Resort, local condos and inns, and the Mad River Glen Ski Area, and offers deviations up to .75 mi off the fixed route by request.
- Span:** 8:45 a.m. to 5:00 p.m.
- Frequency:** Three round-trips per service day, with Lincoln Peak departures at 8:45 a.m., 12:00 p.m. and 4:00 p.m. serving Mad River Glen 20 minutes later for each trip.
- Ridership:** New service for FY2013
- Revenue:** None (will be fare free)
- Est. Cost:** \$6,500

ROUTE PROFILE: 124 Mountain Condos

Function: The Mountain Condos route offers fare-free daily service linking Sugarbush-area condominiums to Sugarbush Resort, (Lincoln Peak), during the ski season, and will also deviate up to .75 mi off the fixed route by request.

Span: Weekdays 8:20 a.m. to 11:57 a.m., with dial-a-ride service from 12 p.m. until 5:50 p.m.
Weekends and holidays 8:00 a.m. to 11:37 a.m., with dial-a-ride service from 11:45 a.m. until 5:50 p.m.

Frequency: 40-minute headways on weekdays
20-minute headways on weekends and holidays

Ridership: FY12 Daily Average – 86

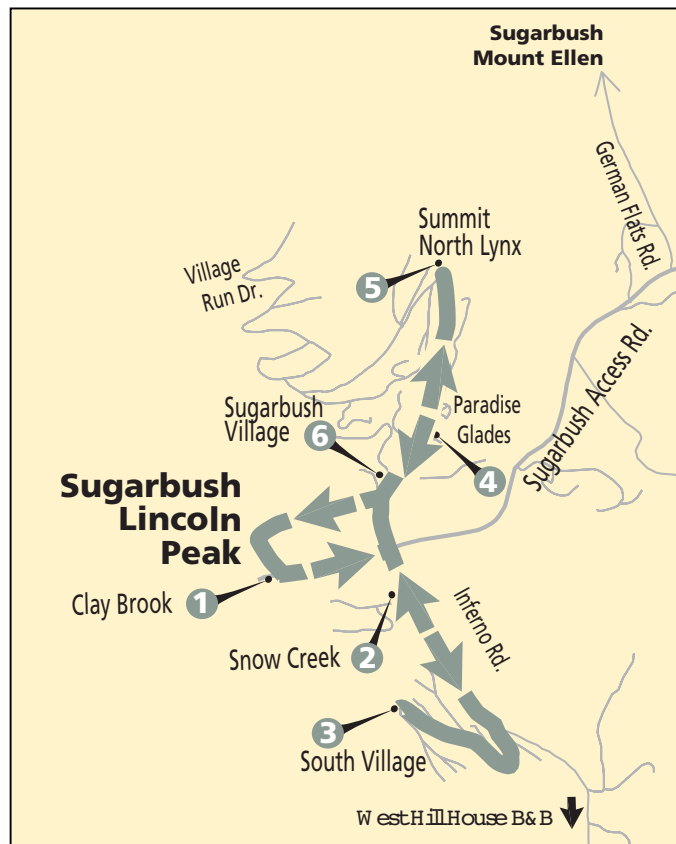
Productivity: Boardings per revenue hour – 11.1

Top Stops: Lincoln Peak (46 boardings)
Summit (13 boardings)
Paradise (6 boardings)

Revenue: None

Gross Cost: \$54,324

Net Cost per Passenger: \$5.76



ROUTE PROFILE: 125 Access Road

Function: The Access Road offers fare-free daily service between Sugarbush Access Road lodging establishments and Sugarbush Resort, (Lincoln Peak), during the ski season. The bus will also deviate up to .75 mi off the fixed route by request.

Span: Weekdays 8:00 a.m. to 11:37 a.m., with dial-a-ride service from 12:00 p.m. until 5:50 p.m.
Weekends and holidays 8:00 a.m. to 11:37 a.m., with dial-a-ride service from 11:45 a.m. until 5:50 p.m.

Frequency: 40-minute headways on weekdays
20-minute headways on weekends and holidays

Ridership: FY12 Daily Average – 85

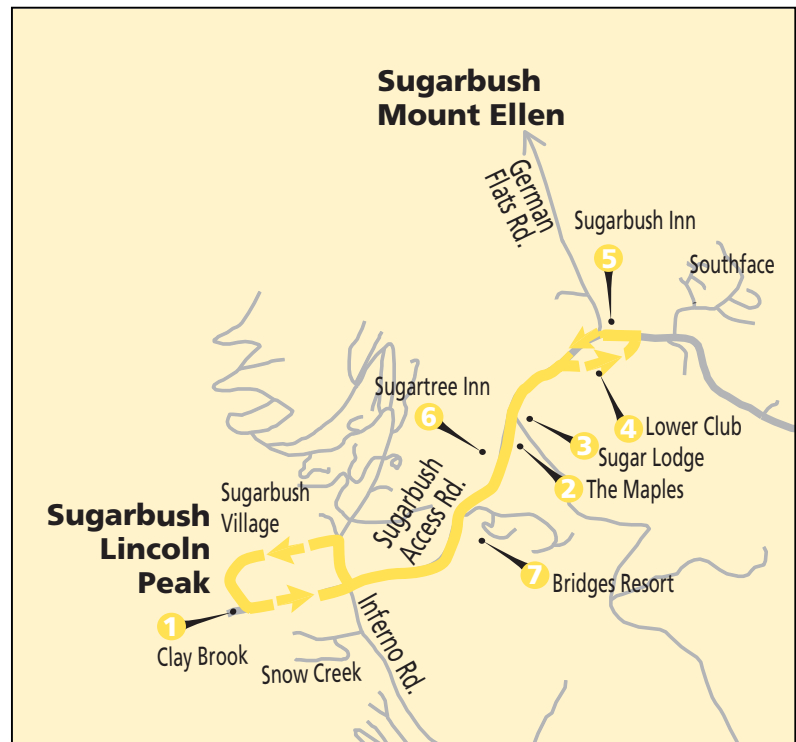
Productivity: Boardings per revenue hour – 11

Top Stops: Lincoln Peak (47 boardings)
Bridge Resort (21 boardings)
Sugarbush Inn (4 boardings)

Revenue: None

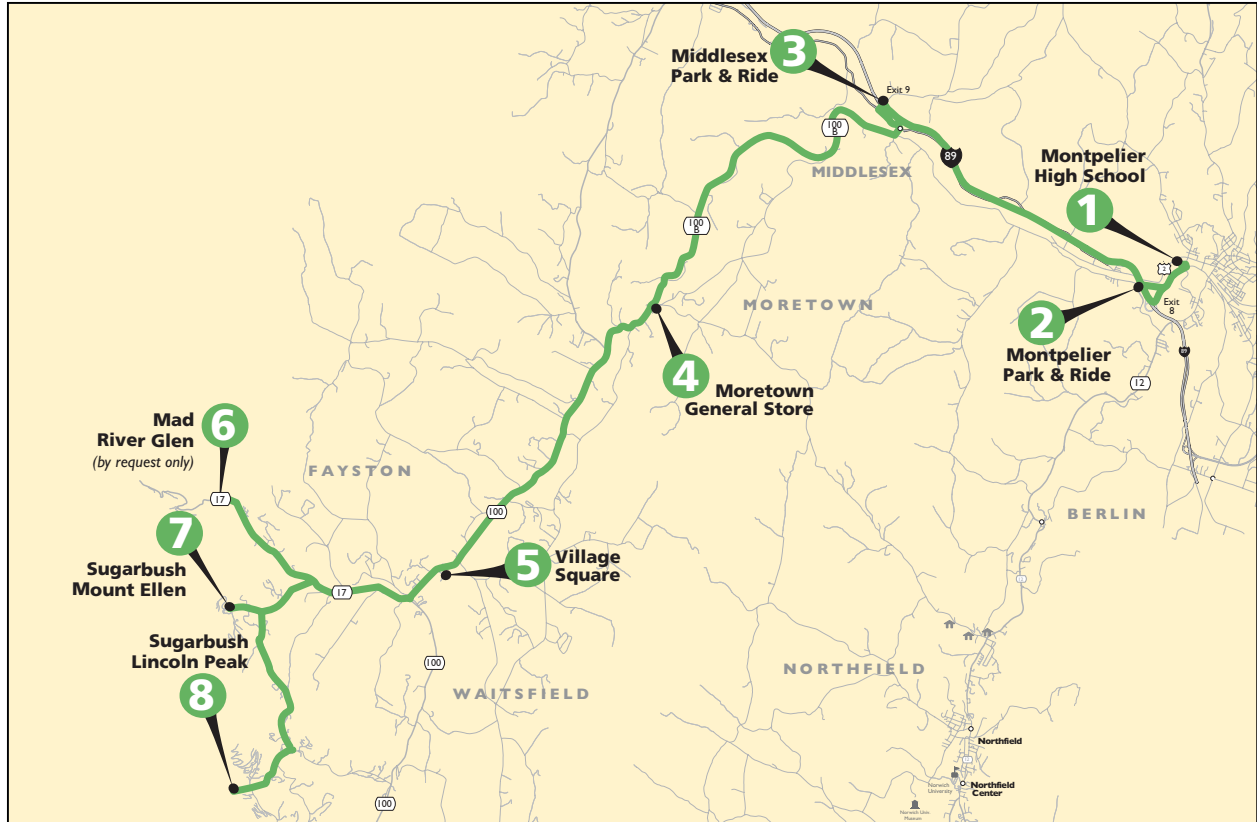
Gross Cost: \$54,324

Net Cost per Passenger: \$5.78



ROUTE PROFILE: 126 SnowCap Commuter

Function: The SnowCap commuter is a seasonal shuttle serving park and ride locations and area resorts on weekends and school vacation weeks, December through early April.



Span: Departing Montpelier at 8:00 a.m.; return trip departs Sugarbush at 4:15 p.m.

Frequency: One trip in one direction in the AM and PM

Ridership: FY12 Average Daily Boardings – 38

Productivity: Boardings per revenue hour – 9.3

Top Stops: Montpelier High School (7 boardings)
Lincoln Peak (5 boardings)
Mt. Ellen (3 boardings)

Revenue: \$486

Gross Cost: \$8,334

Net Cost per Passenger: \$10.23

ROUTE PROFILE: 127 Harwood Freerider

Function: The Harwood Freerider offers free Monday and Thursday service between Harwood Union Middle School/High School and Mount Ellen at Sugarbush Resort, during the winter ski season.

Span: Mondays and Thursdays at 2:50 p.m., December through March
No weekend service

Frequency: One run to Mount Ellen

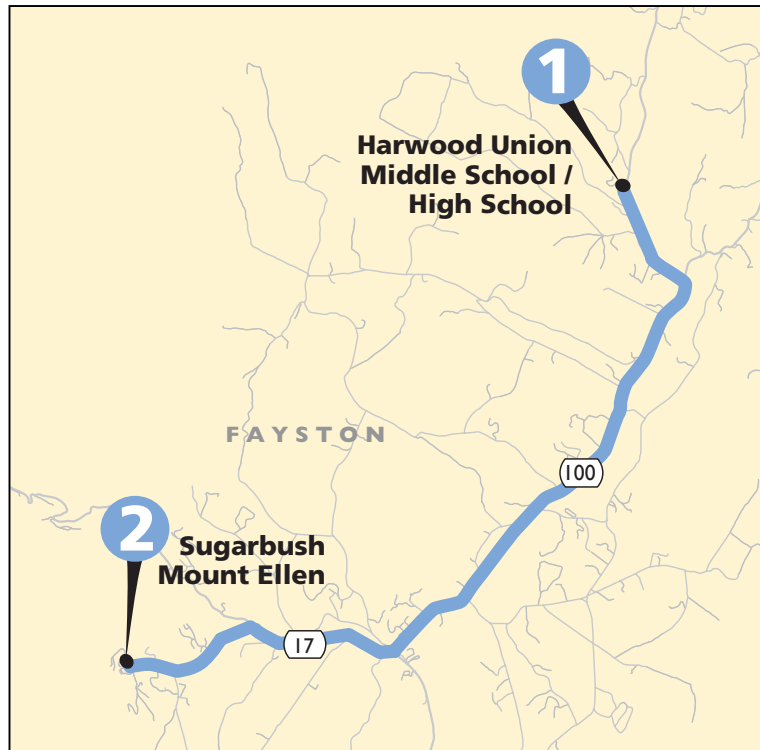
Ridership: FY12 Daily Average – 10

Productivity: Boardings per revenue hour – 40.0

Revenue: None

Gross Cost: \$320

Net Cost per Passenger: \$1.60



Appendix B – Public Support

During the course of the three phases of the TDP analysis—Central Vermont, Lamoille, and Franklin/Grand Isle—GMTA advertised the availability of online surveys for each region to record comments and opinions about the proposed services in the TDP. GMTA broadcast the link to the survey to stakeholder groups in each region and encouraged organizations to have their members register their comments and opinions. Over 50 completed surveys were recorded for the Central Vermont region, with some registered in the summer of 2011 and another batch in the spring of 2012, reflecting two separate outreach efforts. Response was much lower in Lamoille and Franklin/Grand Isle, with only a few completed surveys. The results for the Central Vermont survey are presented below, but the data for the other two regions are not presented as there are too few responses to provide meaningful feedback.

The survey had five main sections organized according to the types of service presented in chapter 5 of the TDP, and each of those sections had three questions. The results are presented below.

1. Long-distance Commuter Routes (called Inter-regional in the survey) – Figure 5.1

- **Are the proposed services worthwhile?** 88% said yes and of those who responded no, only three people expressed negative opinions. Some of the “no” responses offered alternative suggestions for routes or extensions.
- **Rankings of the proposed services from most to least popular:**
 - No preference (17 votes)
 - Waterbury to Burlington LINK Express (11 votes)
 - Montpelier to Hardwick (8 votes)
 - Weekend service on Montpelier LINK Express (7 votes)
 - Midday service on US 2 Commuter (4 votes)
 - Montpelier to Randolph/Royalton via I-89 (3 votes)
- **Other preferred commuter investments (with three or more votes)**
 - Year-round service from Mad River Valley to Montpelier and Waterbury
 - More service on the Montpelier-Waterbury route
 - Montpelier to Northfield

Comment: All of the alternative suggestions made by respondents are for services that were presented later in the survey. At this point, they had not yet seen these recommendations.

2. Regional Commuter Routes – Figure 5.1

- **Are the proposed services worthwhile?** 100% of those who responded (42 of 54) said yes
- **Rankings of the proposed services from most to least popular:**
 - Warren/Waitsfield to Montpelier (20 votes)
 - Warren/Waitsfield to Waterbury (8 votes)
 - No preference (6 votes)
 - Northfield to Montpelier (5 votes)
 - Worcester to Montpelier (3 votes)
 - East Montpelier to Barre City (2 votes)
 - Orange to Barre City (1 vote)
 - Williamstown and South Barre to Montpelier (1 vote)
 - Williamstown to Barre City (1 vote)
- **Other preferred commuter investments**
 - Enosburg Falls to St. Albans to Burlington
 - Morrisville to Montpelier
 - Montpelier to East Montpelier

Comment: The survey seems to have a high degree of representation from people who live or work in the Mad River Valley, and almost all of these responses occurred during a five-day period in May 2012

3. Year-round Local Routes – Figure 5.5

- **Are the proposed new and upgraded local services worthwhile?:** 92% said yes.
- **Rankings of the proposed year-round routes from most to least popular:**
 - Full-day local service on US 2 from Waterbury through Montpelier to Plainfield (18 votes)
 - No preference (12 votes)
 - East Barre-Websterville to Barre City (4 votes)
 - 15-minute peak service on City Commuter (2 votes)
 - Upgrades to Hospital Hill routes (2 votes)
 - Extend City Route to South Barre (2 votes)
 - Circulator service in Barre (1 vote)
- **Other preferred local service investments**

- Increase Montpelier Circulator service to every 15 or 30 minutes
- Staff or volunteers to ride buses and help seniors and people with disabilities with packages and groceries
- Barre Town/Graniteville to South Barre/Barre City

4. Shuttles – page 102

- **Are the proposed shuttles worthwhile?:** 89% said yes
- **Rankings of possible shuttles from most to least popular:**
 - Demand response service from rural towns to Montpelier, Barre, and Berlin (15 votes)
 - No preference (12 votes)
 - Barre and Montpelier Hospital Hill routes (5 votes)
 - More service on Northfield Community Shuttle (4 votes)
 - More service on Plainfield Health Center Shuttle (3 votes)

5. Seasonal Routes – Figure 5.8

- **Are the proposed seasonal services worthwhile?:** 85% said yes. Those who said no felt that resources should be focused on people without transportation options rather than tourists/skiers.
- **Rankings of possible shuttles from most to least popular:**
 - Possible year-round service on all Mad Bus routes (21 votes)
 - Connection to LINK Express route (12 votes)
 - No preference (9 votes)

Overall, respondents were very supportive of the proposed investments in the TDP, though a few expressed doubts that there would be enough riders to support some services and some thought some investments were more important than others.



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