

## Infrastructure & the Built Environment

### 4.1 Montpelier's Built Environment Overview

#### **The Evolution of Montpelier's Built Form**

Montpelier's urban form reflects the historical, social, and political evolution of the city. The many eras of post-revolutionary history is evident along the streets of Montpelier, and gives the city the strong historic character witnessed today. Many of the areas, or neighborhoods, reflect either distinct periods or purposes of development.

Downtown streets and property lines reflect the city's earliest gradual, informal, and increasingly dense settlement. Early streets--Elm, State and Main, for example--connected other post-revolutionary settlements and stayed close to the rivers or headed towards easy gaps in the surrounding hills. The earliest market was at the junction of Elm and State Streets. Early industry capitalized on the river's power and included grist mills, tanneries, and stone finishing shops. Only in this century has development turned away from the rivers.

#### **The State House, Capitol Complex, and Downtown**

Ever since the state capital has been Montpelier, state government has defined State Street. The State office buildings, several of which started out as insurance offices, have grown in a formal fashion around the State House. In 1966 a Master Plan was prepared to guide future development of the State facilities in Montpelier within the Capitol Complex. The Capitol Complex is an important and unique historical district and the maintenance of the architectural and aesthetic integrity of this district is of the utmost importance to all. The boundaries of the Capitol Complex are the Winooski, Taylor Street, Bailey Street, and the streets behind the State House. This area corresponds to the Civic District in the City's zoning ordinance.

The Capitol Complex Commission was established along with Rules and Regulations (1977) to preserve elements of its cultural, social, political, and architectural history and to promote the use and preservation of the Capitol Complex for the education, welfare, and pleasure of the residents of the State of Vermont. The regulations are further intended to complement the development plans and bylaws of the City of Montpelier as the capital city of Vermont and to facilitate the coordinated development of these areas adjacent to the Capitol Complex. (Title 29 VSA, Chapter 6, Section 181-185.)

The Capitol Complex Master Plan has yet to be updated and recent development pressures have brought to light the need to look back over the Plan to see what has changed and what may need to be updated. The activities within the Capitol Complex do affect and may have negative impacts on the city that can be measured in increased needs for municipal services, increased traffic and congestion, and visual impacts on scenic vistas and views. Discussion between the City and the State needs to continue and an atmosphere of mutual consideration and open communication will be needed.

While the Capitol Complex serves as the primary hub for state government, the rest of the downtown acts as the commercial center of the city. This area, which includes parts of State, Main, Langdon, and Elm Streets, boasts a diversity of restaurants, shops, and offices that draw visitors from the community as well as neighboring regions and contributes to the community's overall sense of liveliness. In addition to its variety of locally-owned restaurants and unique boutiques, Montpelier's downtown hosts a range of entertaining activities throughout the year, including the First Night Celebration on New Year's Eve, regular Art Walks, the Fourth of July Celebration, and trick-or-treating at local businesses. The Downtown buildings are further complemented by Montpelier's natural setting: the Winooski River meanders through the center of town, and the Green Mountains serve as a beautiful backdrop in all directions. At any time of the year, snow or sun, residents and visitors enjoy walking the sidewalks, embracing Montpelier's vibrant downtown.

## Architectural History and Design

The city has a wealth of handsome, historic buildings representing every major nineteenth and twentieth century architectural fashion. This dense and high quality collection of historic structures creates one of the state's richest historic environments. These buildings are of tremendous value to residents and visitors alike. About two-thirds of the city's residents live in historic structures. Living and working in historic buildings is a way of life for residents, and protecting that historic environment has long been a community priority.

**Earth Charter Principle III.12(d):** *Protect and restore outstanding places of cultural and spiritual significance.*

Montpelier's Historic District is the largest in the state. Over 650 Montpelier sites and structures (563 main properties and 90 accessory properties) are listed on the National Registry of Historic Places as the Montpelier Historic District (Figure 17). 88% of those properties are considered "contributing." Contributing properties date from within the period of significance (1800-1959) and have been relatively unaltered after 1959.

In 2009, a comprehensive update of the Historic District was completed. The update included:

- An evaluation of the overall historic character of the district;
- An update and expansion of the statement of significance;
- An update of the number of historic properties (to reflect demolition, new construction, and previously skipped properties);
- An update of building descriptions;
- An updated map in digital, GIS format;
- An update of National Register forms; and
- New photos of all buildings to create a complete set of archival prints.

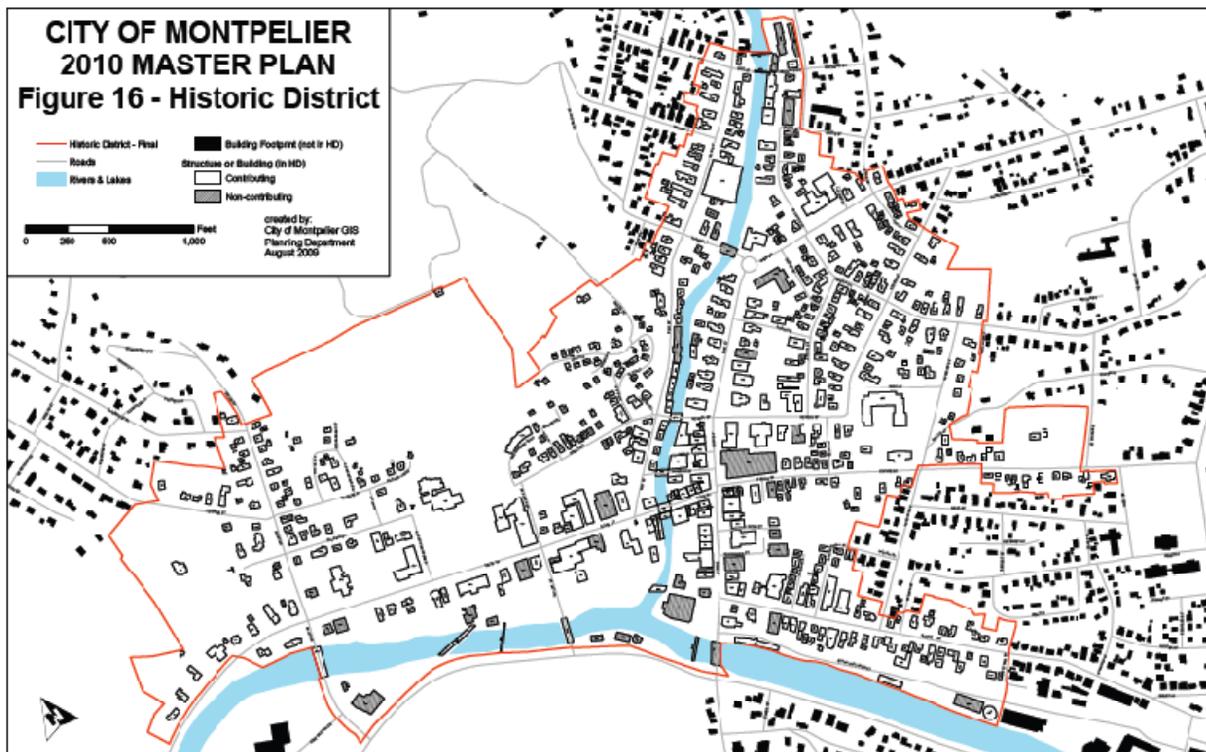
Areas such as the Meadow, the College Street neighborhood, and the Prospect Street neighborhood are listed on the State Register of Historic Places. One building, the Vermont State House, is a National Historic Landmark.

After the flood of 1992, many downtown buildings received electrical upgrades and structural foundation work. Several vacant lots downtown offer the possibility of additional development in the near future, and the challenge of continuing the city's tradition of architectural quality.

## Design Review

Montpelier established a Design Control District in the 1970s and produced two publications, *Cityscape* and *Cityscape II*, to explain objectives and criteria for the development. A Design Review Committee was established to inform the Planning Commission regarding those criteria for any development with the Design Control District. The review standards for new construction or exterior alterations are:

- Preservation or construction of the appropriate historic style if the proposed project is in the historic district or involves an historic structure;
- Harmony of exterior design with other properties in the district;
- Compatibility of proposed exterior materials with other properties in the district;
- Compatibility of the landscaping with the district;
- Prevention of the use of incompatible designs, buildings, color schemes, or exterior materials;
- Location and appearance of all utilities;
- Recognition of and respect for view corridors and significant vistas including gateway views of the city and State House.
- 



Additional standards apply to signs and demolition. The language of the review standards are based upon the enabling provisions in Title 24 V.S.A. § 4414 (1) (E).

The quality of Montpelier's civic, commercial, and residential architecture from past centuries is distinguished and contributes to a strong sense of place and character. In combination with the steep topography, the distinctive roof forms and the abundance of steeples, turrets, domes, and towers contribute to the visual quality of the city, and provide strong visual benchmarks from throughout the urban core, particularly when seen from high elevations.

## Neighborhoods

A neighborhood is a collection of people, buildings, and spaces that is identifiable as a certain geographic area. A neighborhood may have a clear center and will usually have defining physical elements or characteristics, though its physical boundaries may be vague and overlapping. A neighborhood may be linked to land or some cultural/institutional center and have a mixture of private and public places. For a sample of neighborhood building forms, see the appendix.

Montpelier has eclectic variety of neighborhoods, within a small, walkable distance. A sampling of neighborhoods is provided below, and a map of the Capital Area Neighborhoods (CAN!) is on the page 77 (Figure 18).

**Barre Street** (or the Barre-O, as the residents named it) has a vital mix of residential, institutional, commercial, and industrial uses. Increasingly, however, economic pressure is causing many houses to be converted to offices. This is eliminating affordable housing stock.



**College Hill** supports the Vermont College of Fine Arts, the New England Culinary Institute, the Union Institute and University, and many residences, as well as an increasing number of offices. Commercial activity is currently not permitted.

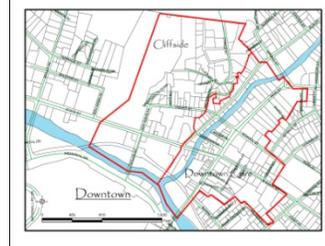
**Berlin/Hill Street** includes River Street/302 (from the intersection of Hill and River Streets, to the city limit), Moonlight Terrace, Sherwood Drive, Forest Drive, Hill Street, Berlin Street and all roads adjacent to Berlin Street.



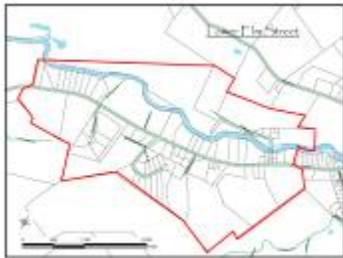
**PleasantHood** is a sub-area of the Berlin/Hill Street neighborhood that consists of Pleasantview, Roberts, and Phelps streets.

**Stonewall Meadows**, also located within the Berlin Hill Street area, consists of Herbert Road, Judson Drive, and Isabel Circle. In addition to about sixty homes on these streets, the area also includes the Herbert Farms apartments and the Stonewall Meadows condominiums.

**Downtown** encompasses City Hall and includes Main Street, State Street, Langdon Street, Elm Street, and adjacent areas. The neighborhood is primarily commercial but supports civic, institutional, and residential activity. Downtown is under pressure to develop its remaining open space.



**Cliffside** is adjacent to Downtown and is characterized by its hilly geography and primarily residential nature. The Cliffside group includes the homes and apartment buildings to the west of Main Street, extending up Court and Cliff streets and back to the Capitol Building.



**Lower and Upper Elm** are examples of suburban neighborhoods situated on a major arterial road. These neighborhoods are primarily residential and do not contain many of the elements of other city neighborhoods such as public buildings and mixed use activity.

**The Meadow** is a turn of the century residential neighborhood bordering Hubbard Park in what was once Montpelier's primary grazing area. It has a park, a range of housing types, offices, and some commercial use.



**Murray Hill** is primarily composed of 84 homes in the Murray Hill development. The Homeowners group has recently established connections with some of the homes on Main Street.

**Wild Wood** is a sub-area of Murray Hill and is comprised of Towne Street, North College Street, and Sunset.

**North Street** is a residential neighborhood across the North Branch River from the Meadow. The neighborhood is partly defined by the Lane Shops, a renovated mill complex that is now a large elderly and family housing project with a small park, and partly by the more rural area that extends up the ridgeline north of the city.



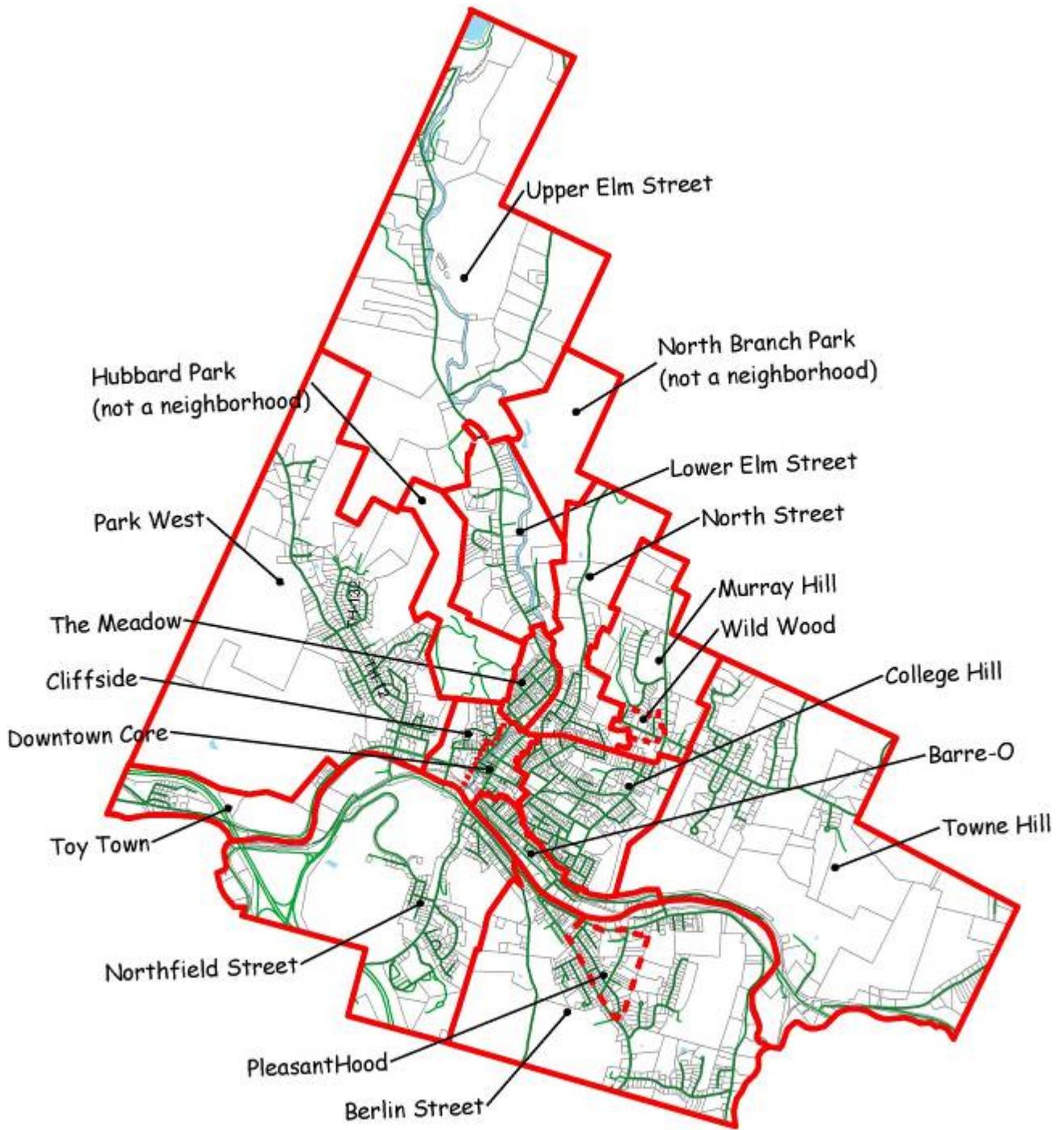


Figure 18 – Capital Area Neighborhoods (CAN!)

**Northfield Street** has the makings of a community; many of the residents work at National Life. The open fields belonging to National Life are a key element of this neighborhood's identity.



**Park West** includes the streets and areas to the west of the Capitol building, such as Bailey Avenue, Terrace Street, Clarendon Street, Deerfield Drive, Pembroke Heights, and State Street.

**Toy Town** is a small neighborhood consisting of the portion of State Street west of Bailey Avenue, to Lague Drive.



**Towne Hill** neighborhood, encompassing much of Gallison Hill Road and Towne Hill Road, is a large suburban neighborhood situated on a major arterial road.

**Upper Towne Hill Road** neighborhood includes Greenock, Westwood Drive, Dire, Murray Road, and the portion of Towne Hill Road between Woodcrest and Murray Road,

## City Gateways and Entrance Corridors

The significant entrances to the city should be given priority consideration for urban design. "Gateways" have been defined as those points on the major arterial roadways leading into the city where the first glimpse of the State House and City Hall tower appear. Entrance corridors through these gateways lead the traveler to the urban core. The City's principal gateway is Memorial Drive/River Street as it leads from the interstate and Barre City. Significant gateways leading into the City are Northfield Street/Route 12 and County Road/Main Street.

### Western Entrance and Gateway

The western entrance corridor and gateway extends from the I-89 interchange along Memorial Drive as it proceeds into the city. The quality of this entrance corridor is composed of natural vegetation and steep rock embankments on the north and south sides, as far as Dog River Road, and continuing on the south side to National Life Drive. This entrance from the interstate offers a unique introduction of Memorial Drive with National Life Drive, and the entrance corridor extends to Northfield Street.

### **Eastern Entrance and Gateway**

The eastern entrance corridor and gateway extends along Berlin and River Street from the Berlin line. The entrance corridor is composed of a variety of conditions including strip commercial development, housing, and natural areas. Portions of the Washington County Railroad closely follow this route. The eastern gateway to the urban core appears approximately at the intersection of the Berlin and River Streets with views from both streets through the Granite Street bridge and beyond to the City Hall towers and State House.

The Memorial Drive/River Street Gateway has evolved in an unplanned fashion over time and does not act as a monumental entrance that the Capital City deserves.

### **Other Entrances**

The main artery to the City from the South is Route 12. Other streets have evolved as entrances over time and some carry significant amounts of traffic through neighborhoods. Berlin Street, once a narrow residential street has evolved to carry significant amounts of traffic to and from Berlin's commercial area on the hill, changing the residential character of the neighborhood. Terrace, North, Towne Hill, Elm, and College Streets are seeing increasing amounts of traffic as surrounding communities grow and funnel traffic into Montpelier. Traffic from other communities may have a significant effect on the quality of life in Montpelier neighborhoods.

## **4.2 Transportation and Circulation**

Montpelier is a community that has been built at a human scale, and its transportation facilities have evolved to meet the requirements of the various modes of travel and transport, including walking, rail, cars, trucks, buses and bicycles (Figure 19). The city's location in a river valley both defines and limits the transportation routes available. Meanwhile, real or perceived issues concerning traffic congestion and lack of parking threaten Montpelier's economy and quality of life.

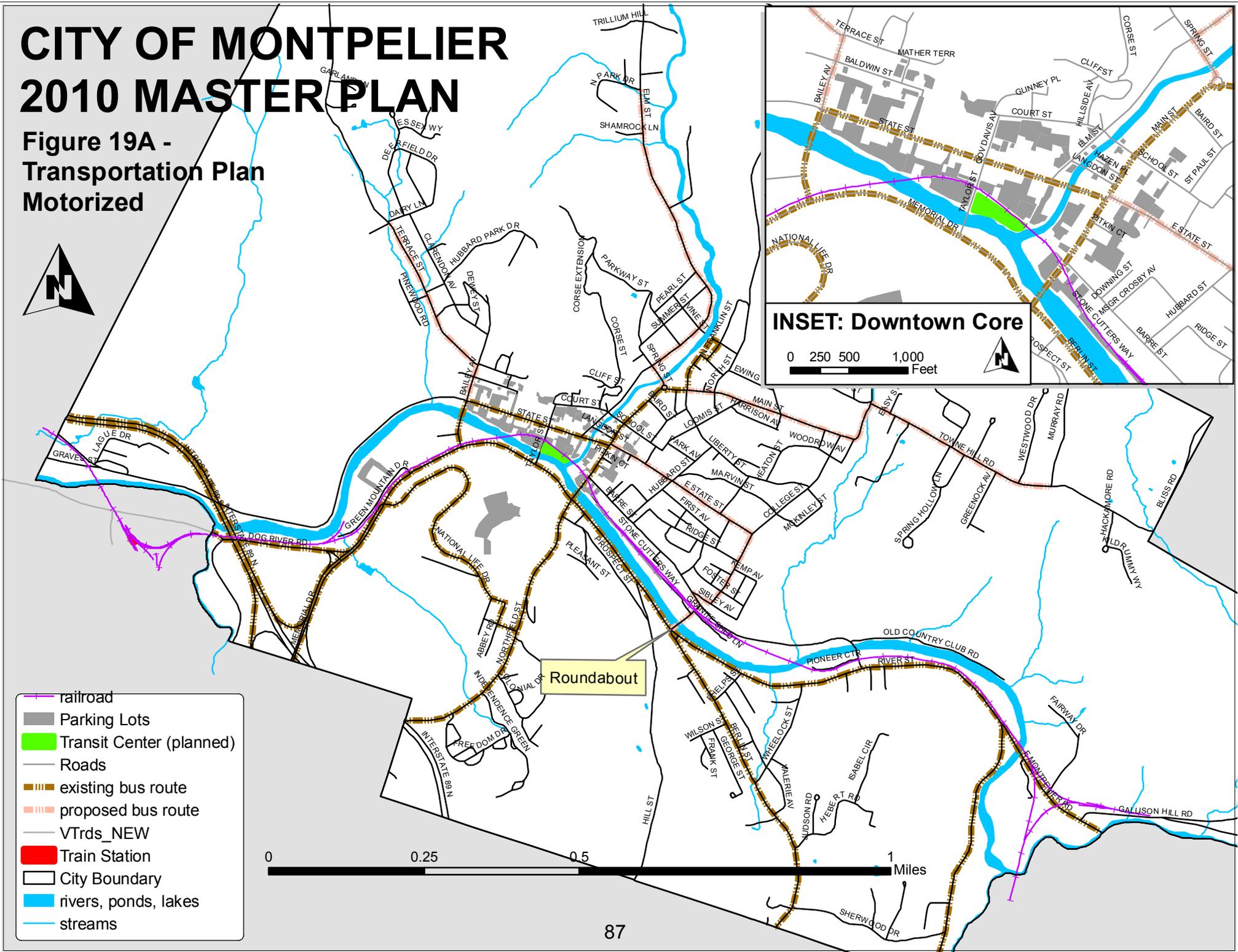
A comprehensive view of Montpelier's mobility needs must include several types of transportation in and through the city:

- 1) Residents or visitors of any age who walk and bicycle to and around town for work, recreation, school, and/or shopping.
- 2) Residents, employees, or visitors of any age with disabilities.
- 3) Residents and visitors who use busses or trains for local, inter-city, and long distance travel.
- 4) Residents and regular commuters who start or end their automobile trips in the city and are familiar with its roadways, parking, public transportation and traffic signals.
- 5) Through-traffic, including regular commuters and freight vehicles especially US 2 and VT 12.

- 6) Visitors to Montpelier and the region who wish to take advantage of the city's historic, cultural, shopping, and hospitality facilities and may be unfamiliar with the city's roadways, parking, public transportation, and traffic signals.
- 7) The movement of goods into, out of, and through the city, whether by tractor trailer, bus, truck, or train.

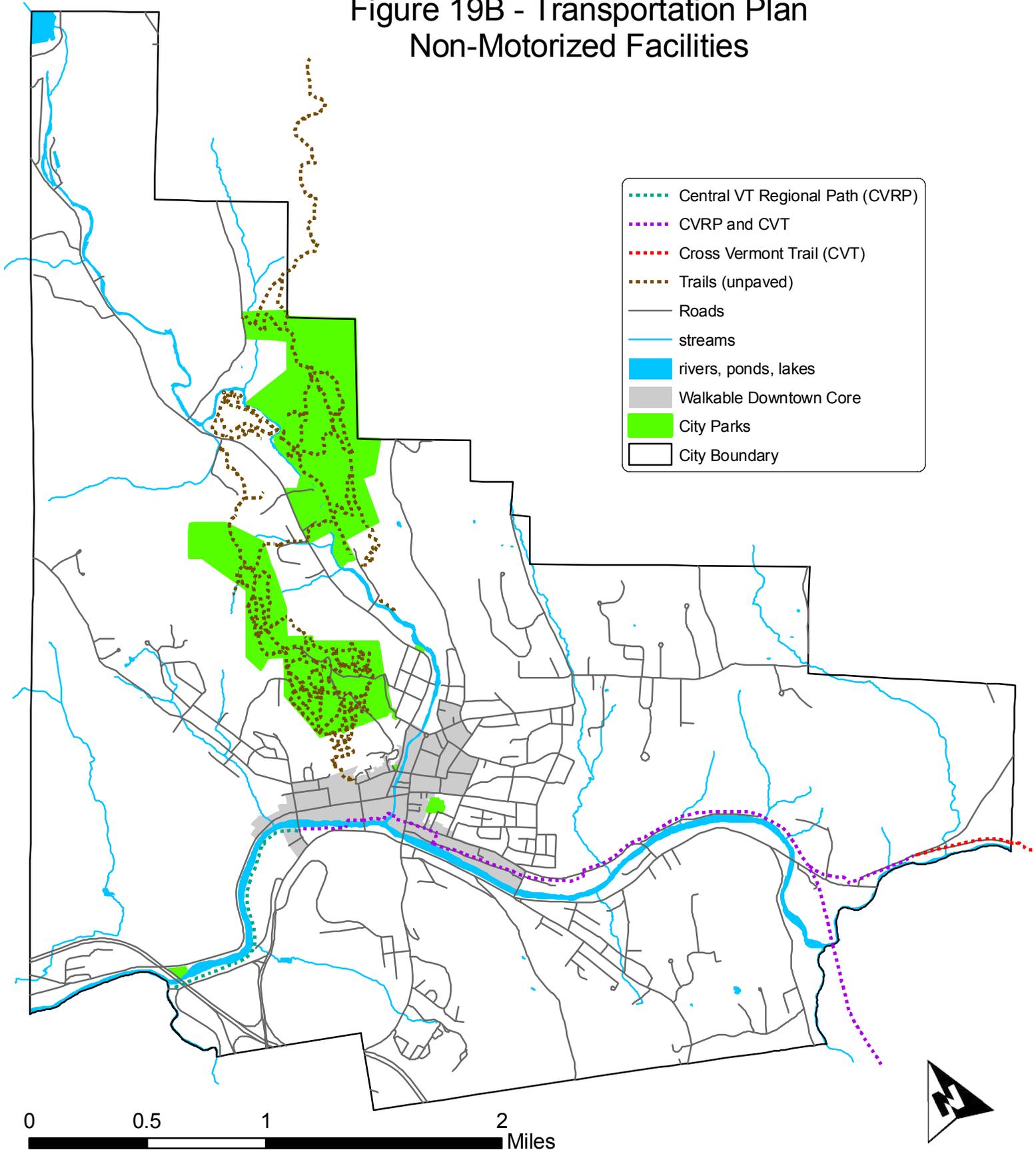
# CITY OF MONTPELIER 2010 MASTER PLAN

Figure 19A -  
Transportation Plan  
Motorized



# CITY OF MONTPELIER 2010 MASTER PLAN

## Figure 19B - Transportation Plan Non-Motorized Facilities



## ***Pedestrian Network***

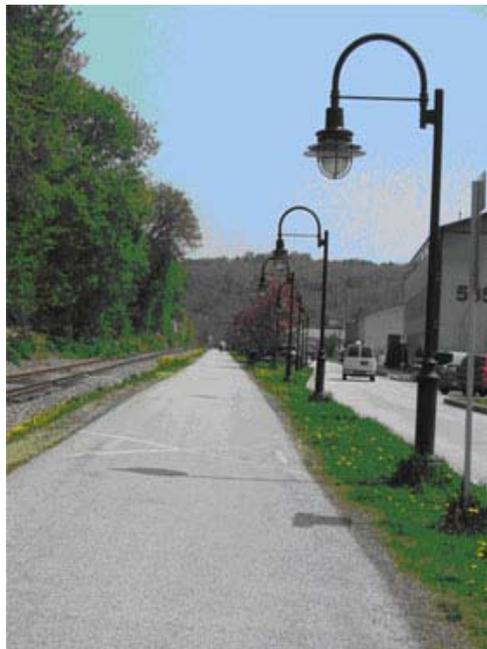
The City of Montpelier has 25.3 miles of sidewalks, 1.75 miles of bike paths, and 55.76 miles of streets (which includes 4.13 miles of interstate). There are therefore many areas where it is safer and easier to travel in a car than it is on foot. It is important to recognize that many factors that contribute to a safe and attractive pedestrian environment inherently can also restrict automobile traffic. In the last 50 years, transportation engineering for street design has focused on the needs of automobiles. This has been to the detriment of other modes of transportation, most notably the pedestrian.

More specifically, narrower streets, tighter curb radii that minimize expanses of pavement and require cars to make slower turns, direct and efficient pedestrian connections (small block sizes, mid-block crossings), on-street parking in commercial districts, parking areas tucked behind buildings, limitations on curb cuts and driveways across sidewalks, are all physical design features that serve the pedestrian well, but may inconvenience the motorist. In the “walking core” of Montpelier, precedence should be given to the pedestrian when considering street improvements. The walking core is loosely defined as the area running from the intersection of State Street and Bailey Avenue to the intersection of Barre and Hubbard Streets, and from the intersection of 302 and Main Street to the Main Street roundabout.

Safe and convenient pedestrian (and bicycle) access to schools is of particular importance. Montpelier’s schools are located within the City fabric and connected within the street system. Improvements to the pedestrian access routes to the schools should receive a high priority. A “Safe Routes to School” grant for building bulb-outs and a radar feedback sign at the middle school was awarded in 2008. The grant will also improve crosswalk signage at the elementary school and in adjacent neighborhoods.

As seniors, people with disabilities, and people of low-income use sidewalk proportionately more than the average person, it is of particular importance that safe and convenient pedestrian access to/from shopping and public services is provided for areas with greater proportions of senior and/or affordable housing units.

There is an existing bicycle and pedestrian path from the southwestern corner of the City to the downtown, and another path from the downtown to Granite Street on the southeastern side of the City. Currently, there are plans to connect the paths, and an



*An Element of Montpelier's riverside bicycle and pedestrian network: The Central Vermont Regional Path along Stonecutters Way.*

extension to the southeast is under design.

Montpelier’s natural setting within a river valley ensconced by steep hillsides presents challenges to pedestrian accessibility. Where new development is proposed in hillside areas, streets must often be curvilinear to meet grade requirements and to be passable in slippery conditions. In these areas, more direct pedestrian paths or stairways should be included in proposed designs, as well as sidewalks on streets.

Montpelier’s walkable network of streets and paths is highly valued by residents and downtown businesses. Over the last ten years, the City has invested in key improvements to the network, including improvements to Stonecutters Way, streetscape improvements along State Street, and ADA improvements throughout the downtown. In addition, the Central Vermont Regional Bike Path along the Winooski River allows for pedestrian traffic and will, when completed, provide linkage from downtown to Gallison Hill and the East Montpelier Road as well as be part of a cross state trail system — the Cross Vermont Trail.

Areas within the ‘walking core’ of the city where the sidewalks are discontinuous, in need of repair or improvements should be identified and upgraded. In the downtown, the City has employed curb extensions – bulb-outs – that calm traffic and make it safer for pedestrians. Crosswalks are painted annually and crossing guards provide access for students of the elementary and middle school.

**Sidewalk Tanka Haiku #3**

Sidewalks when maintained and used  
improve neighborhoods, downtowns  
cholesterol counts  
parking space, air quality  
And our pure pleasure/joy quotient)

- Harris Webster, 2010  
*Montpelier resident*

**Bicycle Network**

The City created a plan in 2002 for a new bike path connecting two shared use paths that enter the downtown area from the east and west along the Winooski River. The path from the east ended about 700 feet east of Main Street, while the path from the west ended at Taylor Street, about 1000 feet west and on the other side of the North Branch from Main Street. The question of how to bridge the North Branch of the Winooski River and to cross Main Street is an issue that remains to be solved.

With the completion of the Central Vermont Bike Path from Montpelier Junction to the hamlet of Graniteville in Barre Town, Montpelier will be at the center of an attractive bicycling network with both commuting and recreational value. Montpelier has also identified the North Branch Trail to connect Cummings Street to the Elm Street Recreation Area and the North Branch Nature Center just south of Gould Hill Road. The North Branch Trail is intended to be a Class 1 path along the North Branch of the Winooski River, and then transition to bike lanes or a marked bike route along Elm Street.

Like pedestrians, many of the issues surrounding the achievement of a more bike friendly transportation network revolve around calming traffic and reclaiming street space for bicycles. The next step in developing Montpelier’s bicycle network is to establish bicycle connections

between the Central Vermont Bike Path and significant destinations in the City. Presently, the State Capitol, downtown, and most schools, parks and neighborhoods are without clearly defined bike facilities.

Creating a network of identified paths, lanes and shared route ‘bicycle streets’ or ‘bicycle boulevards’ which are designated and designed to enhance bicycle safety and convenience should be implemented in Montpelier. However, recognizing that Montpelier’s street system is largely developed and existing rights of way are constrained, building an effective bicycle network will require a creative and thoughtful process. The essence of the task is to identify the bike routes and determine how to reallocate street space that is currently used for automobile lanes and parking to make space for bikes. In many cases, this is a matter of restriping the road to make appropriately narrower travel lanes of 10’ and giving the space over to appropriate width bike lanes of 4-5’. Another option is a wider “share-the road” lane for both bikes and cars. Developing a truly successful bicycle transportation system will require a concerted effort that includes input by bicyclists to identify a logical network for recreational and commuter use, and careful consideration of how to best accommodate bicycles.

The City has been and continues to be committed to improving its non-motorized transportation network. Montpelier applied for and received a Safe Route to School Grant to increase safety for school children at crosswalks. Montpelier’s current 6-year Capital Improvement Plan allocates the following to pedestrian, multi-purpose paths, intersection safety improvements, and bridge work:

- Sidewalk extension - \$379,000
- Sidewalk reconstruction - \$496,000
- Bridge rehabilitation - \$2.6 million
- Central Vermont Bike Path - \$2.1 million
- Intersection safety improvements - \$173,000

**Sidewalk Tanka Haiku #4**

Sidewalks when poorly maintained  
Like fallen angels  
Don't help but harm us.  
Tripping more than our bodies  
They foil our good intentions.

- Harris Webster, 2010  
*Montpelier resident*

**Sidewalk Tanka Haiku #5**

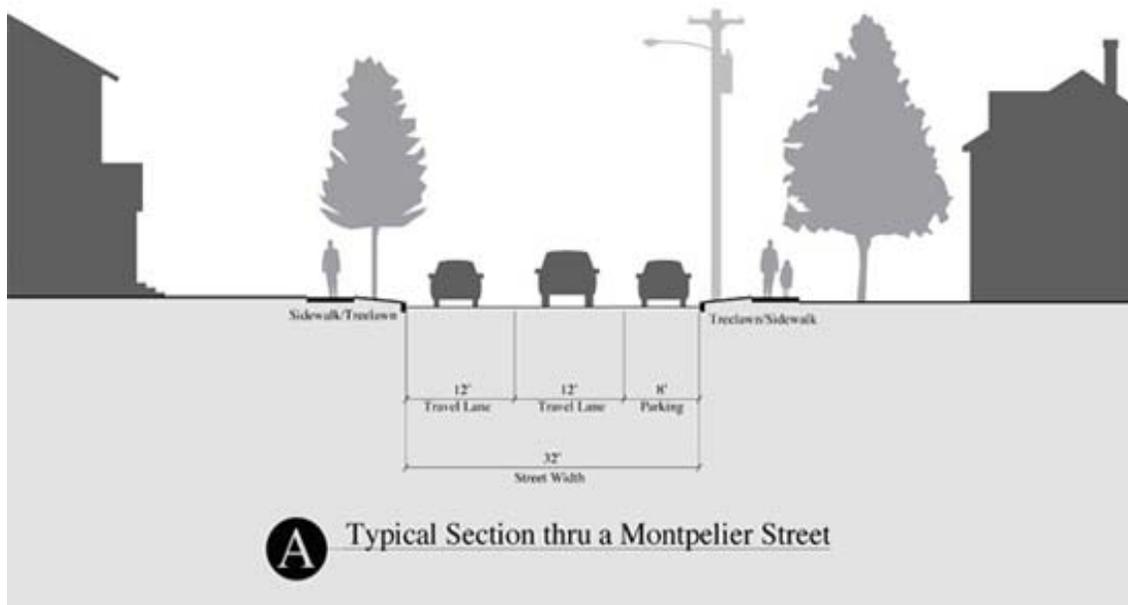
Sidewalks are made of minerals  
These non living chemicals  
Make city/urban life livable.  
Though not beautiful  
They are still jewels

- Harris Webster, 2010  
*Montpelier resident*

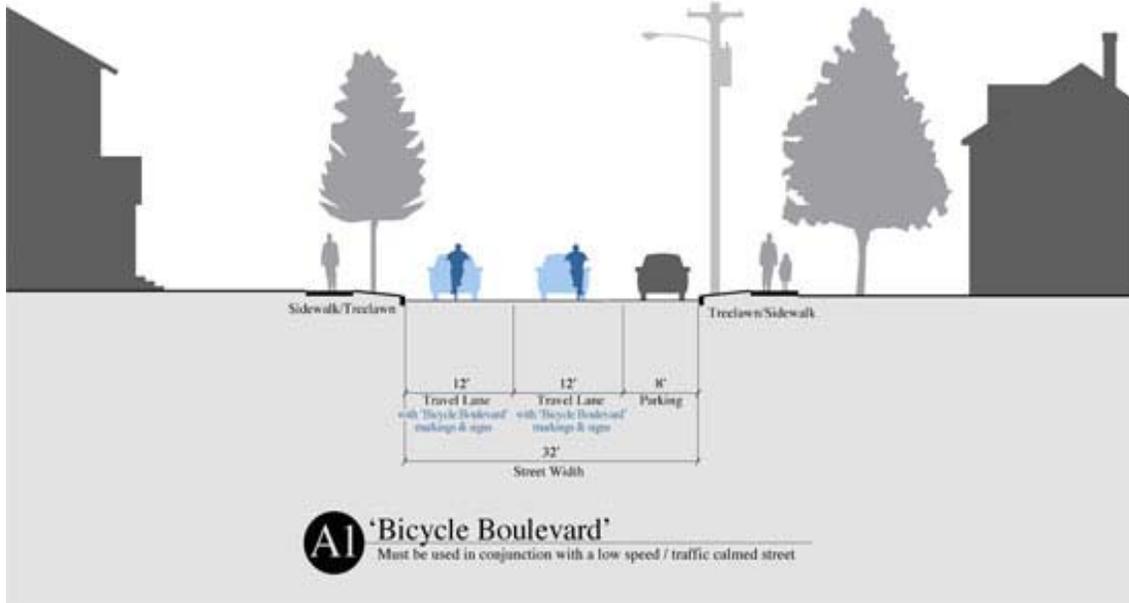
## Accommodating Bicycles in the Street System

The street sections shown here illustrate different approaches to accommodate bicycles in the street network. The approach taken requires an analysis of street dimensions, traffic speeds and traffic volumes. The first section (Figure 20A below) illustrates a typical 32 foot street right of way with parking on one side. The first alternative (Figure 20 A1) shows a shared route 'bicycle boulevard' which is signed and marked to indicate bicycles have equal status with cars on these routes. This approach is best on slow speed and/or traffic calmed streets.

**Figure 20 A –Section through a 32'-wide Montpelier Street**



**Figure 20 A1 – Bicycle Boulevard**



The second and third diagrams (Figures 20 A2 and 20 A3 below) illustrate roadways reconfigured to accommodate one or two bicycle lanes. One bike lane on the street with reconfigured lanes can retain parking, and must be part of a ‘couplet’ system on two generally parallel streets. Two bike lanes (one in either direction) accommodated on the street would require removal of parking.

**Figure 20 A2 –Section through a 32'-wide Montpelier Street**

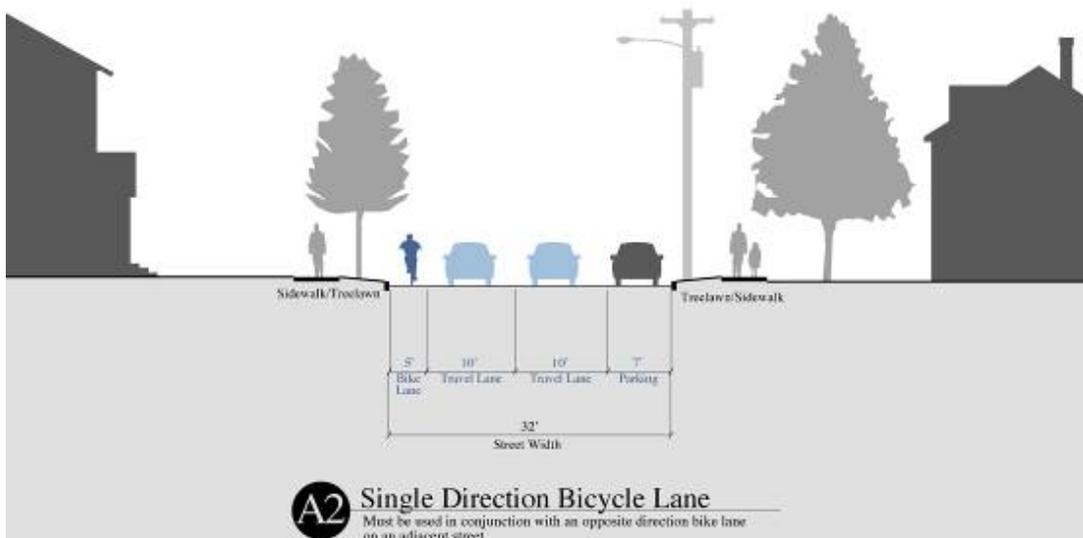
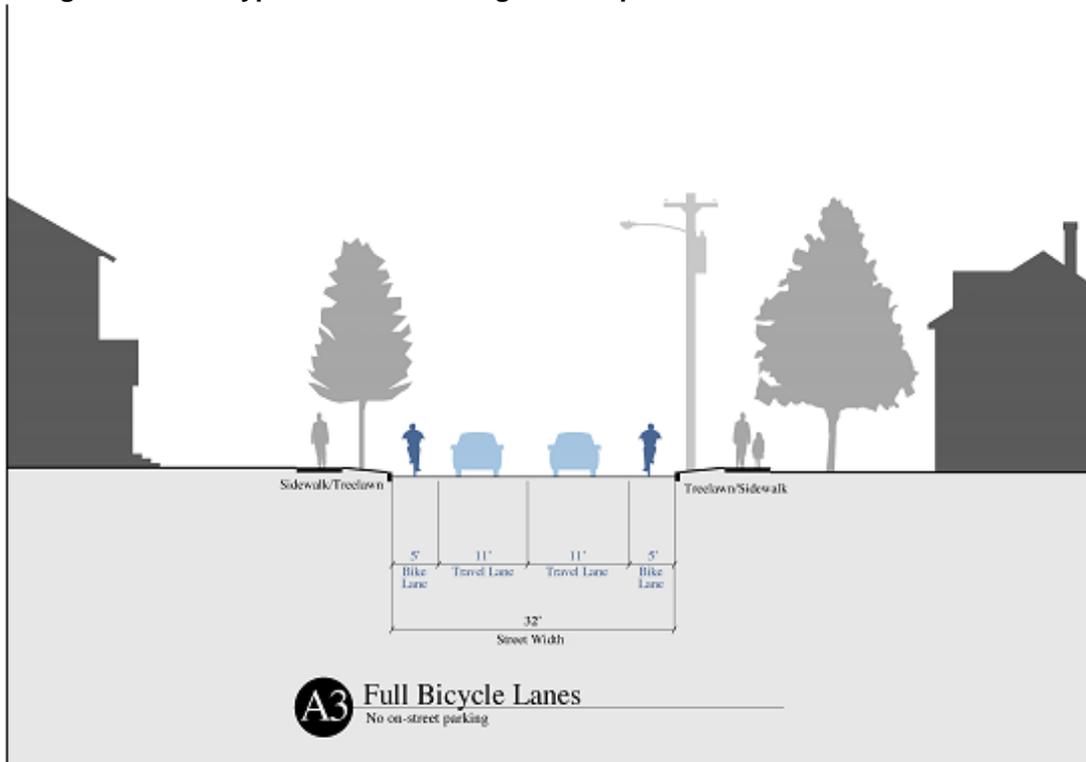


Figure 20 A3 – Typical Section through a Montpelier Street



## Montpelier's Bridges

The combination of Montpelier's location at the confluence of two branches of the Winooski River and its dense network of streets and activity result in a large number of bridges in the City. Many of these bridges are aging, and may require costly rehabilitation or replacement in the coming years. The table on the following page lists the bridges in Montpelier that are the responsibility of the City.



Sufficiency ratings, which rank the structural and functional condition of the bridge on a scale of 0 to 100 (worst to best), are also provided for the recently rated bridges. These ratings are based on a breakdown of 50 points for the bridge's structural condition, 25 points for its traffic safety (i.e. the width of the bridge, whether or not there are sharp curves on its approaches), and finally 25 points for the bridge's importance in terms of the local transportation network, which considers nearest crossing or detour distance if the bridge was to be closed. Sufficiency ratings are not conducted for short bridges of less than 20 feet in length, nor for pedestrian bridges.

**Table 4-1: Inventory of Montpelier's City Owned Bridges**

Data from Montpelier Department of Public Works and VTrans

| #  | Location                             | Year Built | Type                                   | Length in Ft +/- | Crosses      | Rating | Status | Historic Status   |
|----|--------------------------------------|------------|--|------------------|--------------|--------|--------|-------------------|
| 1  | Rialto Bridge, State Street          | 1915       | concrete encased steel beam            | 70               | North Branch | 76.0   | ND     |                   |
| 2  | Main Street                          | 1976       | steel beam, concrete                   | 147              | Winooski     | 73.2   | ND     |                   |
| 4  | Montpelier Junction Road             | 2002       | steel beam, concrete                   | 90               | Dog River    |        |        |                   |
| 5  | Taylor Street                        | 1929       | Parker through-truss                   | 165              | Winooski     | 42.2   | RP     | On Nat'l Reg      |
| 6  | Pioneer Street                       | 2002       | steel beam, concrete                   | 167              | Winooski     | 100.0  | ND     |                   |
| 10 | School Street                        | 1991       | steel beam, concrete, rehab truss      | 77               | North Branch | 80.3   | ND     | Possibly Eligible |
| 11 | Langdon Street                       | 2007       | Warren pony truss                      | 68               | North Branch | new    | ND     | On Nat'l Reg      |
| 12 | Vine Street Foot Bridge              | 1974       | steel beam, wood deck                  | 70               | North Branch |        |        |                   |
| 13 | Cummings Street                      | 1928       | steel beam, concrete                   | 64               | North Branch | 48.5   | RP     |                   |
| 14 | Gould Hill Road                      | 1983       | steel beam, concrete                   | 105              | North Branch | 90.1   | ND     |                   |
| 15 | Grout Road                           | 1977       | concrete, wood deck                    | 69               | North Branch | 55.3   | ND     |                   |
| 16 | Haggett Road                         | 1984       | concrete, wood deck                    | 87               | North Branch | 68.3   | FD     |                   |
| 17 | Granite Street                       | 1902       | Baltimore through-truss, wood deck     | 205              | Winooski     | 53.2   | FD     | Eligible          |
| 60 | Bailey Avenue                        | 1994       | steel beam, concrete                   | 255              | Winooski     | 87.5   | ND     |                   |
| 62 | East Mont. Road near Route 302       | 1971       | steel beam, concrete                   | 236              | Winooski     | 85.5   | ND     |                   |
| 64 | East Mont. Road at City Line         | 1962       | steel beam, concrete                   | 106              | Winooski     | 67.7   | FD     |                   |
| 73 | Spring Street                        | 1972       | steel beam, concrete                   | 83               | North Branch | 91.2   | ND     |                   |
| 74 | Elm Street (City Dump Road)          | 1983       | concrete box                           | 12               | Dump Brook   |        |        |                   |
| *  | Poolside Drive Rec Field Foot Bridge | 1975       | Steel prefabricated, wood deck         | 80               | North Branch |        |        |                   |
| *  | Winooski West Bike Path Bridge       | 1998       | Steadfast prefabricated, wood deck     | 178              | Winooski     |        |        |                   |
| *  | North Branch Foot Bridge             | 2001       | Pratt prefabricated half through-truss | 120              | North Branch |        |        |                   |

Notes: ND= No Deficiency; FD= Functionally Deficient; SD= Structurally Deficient; RP=Restoration in Progress

Bridge sufficiency ratings (“Rating” column in the above table) are used as a starting point in identifying bridge replacement and rehabilitation priorities by VTrans. Table 4-1 above also indicates “deficiency status” (“Status” column in the above table), depending on whether the bridge’s structural rating is low, or its combined service/safety rating is low. Several years ago, VTrans developed a preservation plan for all the historic steel truss bridges in the state, in order

to get an overview of which bridges should remain in place for limited use, and which should be replaced. This study concluded that the Taylor and Granite Street bridges should be preserved for limited vehicular use, and that the School and Langdon Street bridges should be modified for either limited or unlimited vehicular use. The old Pioneer Street bridge trusses are in storage for adaptive re-use on the Central Vermont Bike Path.

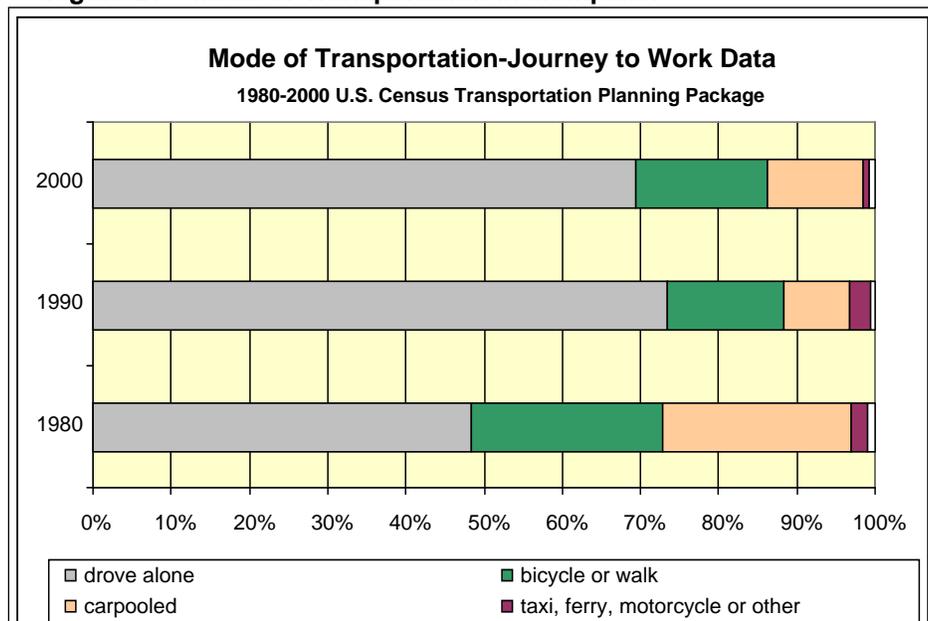
Given the number of bridges in Montpelier, and their age, condition, and importance to City’s transportation network, a plan for the cost effective, preventative maintenance should be developed and carried out by the City.

### Journey to Work Data

The 2000 U.S. Census Journey to Work Data provides a picture of the current commuting patterns in Montpelier, and how they have changed in the past few decades. The US Census collects data on their long form on residents’ work commuting trip, including mode and average length of trip.

Figure 21 and Table 4-2 below compare the mode shares (% using each major mode of transportation) for residents of Montpelier’s trips to work for 1980, 1990 and 2000.

**Figure 21 – Mode of Transportation in Montpelier**



**Table 4-2: Mode of Transportation in Montpelier - Journey to Work Data**

| Mode of Transportation                              | 1980  | 1990  | 2000  |
|---|-------|-------|-------|
| drove alone   | 1,737 | 2,916 | 2,865 |
| bicycle or walk                                     | 877   | 591   | 695   |
| carpooled   | 863   | 335   | 505   |
| taxi, ferry, motorcycle or other                    | 78    | 110   | 30    |
| public transportation (not taxi, ferry, motorcycle) | 33    | 22    | 30    |

Between 1980 and 1990, a pronounced growth in “drive alone” trips to work, and decreases of commuters using other modes occurred in much of Vermont and across the country. However, from 1990 to 2000, this trend was reversed among Montpelier residents, with a decline in “drive alone” and growth in carpooling and walking. This trend of reduced driving alone appears to be unique to Montpelier among Vermont communities. Very few other Vermont towns or cities have seen declines in “drive alone” trips.

## **Public Transit Services and Facilities**

Providing effective public transit is a challenge in virtually any small community in the US, due to the prevalence, relatively low cost and greater convenience of automobile use. Public transit is highly vulnerable to virtuous/vicious cycles of use, support, funding, and success. This cycle goes as follows: high quality, frequent, convenient public transit is available, and attracts use. Increased transit ridership leads to increases in funding and support, allowing for further improvements to services, such as more frequent buses or extended routes. These improvements attract even more riders, allowing the system to continuously grow and improve. Unfortunately, these same dynamics can work against transit, as funding cuts result in lower service, which in turn leads to lower ridership, etc.

A number of intra-regional, deviated fixed-route and commuter-route bus services are currently operated by the Green Mountain Transit Agency in the Capital District portion of the Central Vermont Region. The following is a summary of the current services:

The **City Commuter and the City Route Mid-Day** serve the downtowns of Montpelier, Barre City, and commercial and residential areas along Route 302 in Berlin. The services operate Monday through Saturday.

- The City Commuter route operates during the morning and evening peak periods with two buses, with a frequency of every half hour.
- The City Route Mid-day operates during the midday period with one bus, with a frequency of every 75 minutes. The route will deviate upon request.

The **Capital Shuttle** is a seasonal service that operates in downtown Montpelier during the State Legislative Session (Jan – May). The shuttle provides a convenient connection between the State House and State offices at the National Life complex, and encourages workers from National Life and the State offices to patronize the downtown retail area during the midday. The shuttle operates using two loops, one traveling in the clockwise direction and the other in the counter-clockwise direction (Loop A and Loop B, respectively), and will deviate upon request. One bus operates on each loop from 7:30 a.m. to 6:30 p.m., on a frequency of every 23 minutes. Service is provided Tuesday through Friday from January through mid-April, and Monday through Friday from mid-April through mid-May. The shuttle does not operate on holidays or during Town Meeting Week. One of the primary purposes of the shuttle is to encourage the use of remote parking by long-term parkers to free up some short-term spaces in the downtown retail area. The route is free and open to the public.

The **Montpelier Hospital Hill** route provides deviated fixed-route service from Montpelier to the Central Vermont Medical Center, the Berlin Mall, and other medical and professional offices. The schedule allows time during each run for previously-scheduled door-to-door pick-ups or drop-offs. The service operates Monday through Saturday with one cutaway bus on an hourly frequency.

The **US 2 Commuter** provides deviated fixed-route service between Montpelier and St. Johnsbury weekdays, with available connections to other regional routes. Stops include National Life, the Department of Labor, State Street, the Vermont College Green, Goddard College, Plainfield Park & Ride, Twinfield School, Danville Park & Ride, St. Johnsbury Park & Ride, and the St. Johnsbury Welcome Center.

The **Waterbury Commuter** route provides commuter-route service between Waterbury and Montpelier operating Monday through Friday in the morning and evening peak periods. The service is provided by one cutaway van on an hourly frequency. There is room in the schedule for some additional stops in Waterbury Village after stopping at the State Office Complex in Waterbury (such as Green Mountain Coffee Roasters), and the route will serve the National Life building in Montpelier on request.

The **Montpelier LINK Express** is jointly operated by GMTA and CCTA and provides commuter-route service between downtown Montpelier and downtown Burlington operating Monday through Friday in the morning and evening peak periods. The service is provided by three buses on a 45-55 minute frequency.

The **Snow Cap Commuter** route provides commuter-route service between Montpelier, Middlesex, Mad River Glen and Sugarbush on weekends and holiday weeks during the ski season. Two round trips per day are provided by one bus.

Other Capital District GMTA routes include:

- **Barre Hospital Hill**, providing service in Barre, with stops at the Central Vermont Medical Center and Berlin Mall.
- **Hannaford Shopping Special**, with stops at Hannaford in South Barre and several apartment complexes.
- **Route 100 Commuter**, with stops in Morrisville, Stowe, and Waterbury; transfers available for the LINK Express and Waterbury Commuter.
- **Route 103 Shopping Shuttle**, with stops at shopping areas in Stowe and Morrisville.
- **Northfield Community Shuttle**, operating on Wednesdays with stops throughout the community.

**Greyhound Lines, Inc.** provides intercity bus service scheduling for round-trips between Montreal and Boston with stops in Burlington, White River Junction, and Randolph.

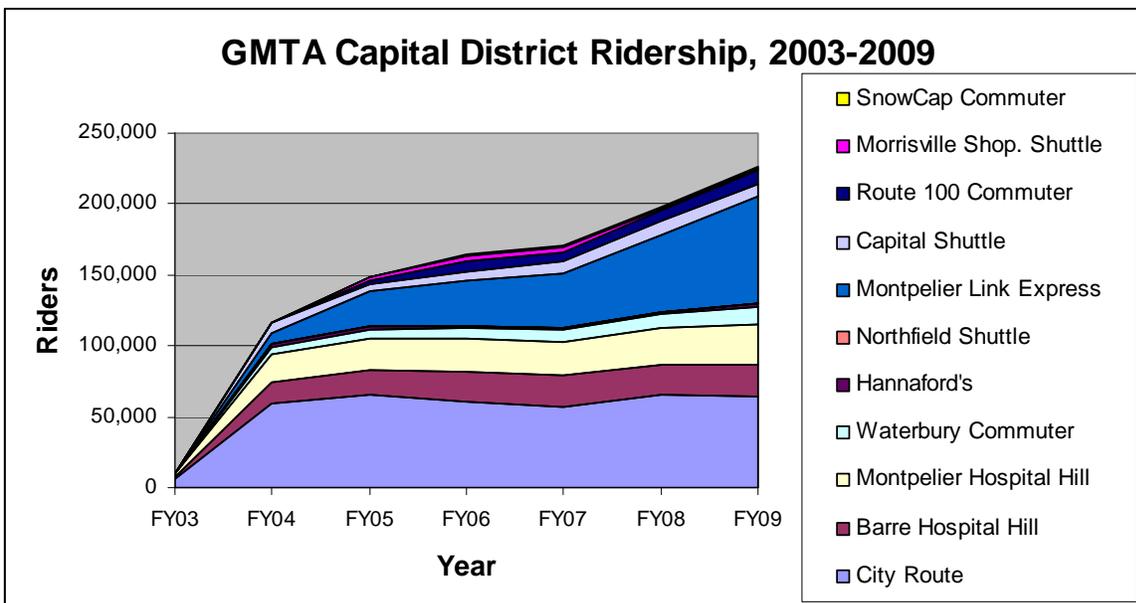
The data in Table 4-3 shows the ridership of the GMTA Capital District routes. Noteworthy from this historic data is that ridership has increased nearly every year on most routes.

**Table 4-3: GMTA Capital District Ridership, 2003-2009**

| Route #      | Route Name                   | FY03          | FY04           | FY05           | FY06           | FY07           | FY08           | FY09           |
|--------------|------------------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 80/89        | City Mid-Day/City Commuter   | 6,515         | 59,714         | 65,864         | 60,776         | 57,344         | 65,572         | 64,525         |
| 81           | Barre Hospital Hill          | 1,435         | 14,235         | 17,313         | 20,770         | 22,417         | 20,781         | 22,604         |
| 82           | Montpelier Hospital Hill     | 1,723         | 20,384         | 22,293         | 23,256         | 22,791         | 25,782         | 28,495         |
| 83           | Waterbury Commuter           | 411           | 5,088          | 6,465          | 7,301          | 8,480          | 10,522         | 12,233         |
| 85           | Hannaford's                  | 192           | 2,312          | 2,069          | 2,182          | 1,881          | 1,717          | 1,600          |
| 86           | Montpelier LINK Express      | 0             | 7,664          | 24,288         | 31,873         | 37,512         | 54,211         | 75,244         |
| 88           | Capital Shuttle              | 0             | 6,913          | 5,067          | 6,126          | 9,620          | 9,516          | 9,194          |
| 100          | Route 100 Commuter           | 0             | 0              | 3,000          | 7,166          | 6,151          | 6,996          | 9,191          |
| 103          | Morrisville Shop. Shuttle    | 0             | 0              | 1,822          | 3,519          | 2,862          | 2,225          | 2,307          |
| 90/126       | SnowCap Commuter             | 0             | 347            | 542            | 1,128          | 1,194          | 1,004          | 856            |
|              | Northfield Community Shuttle | 0             | 0              | 0              | 0              | 0              | 0              | 380            |
| <b>TOTAL</b> |                              | <b>10,276</b> | <b>116,657</b> | <b>148,723</b> | <b>164,097</b> | <b>170,252</b> | <b>198,326</b> | <b>226,629</b> |

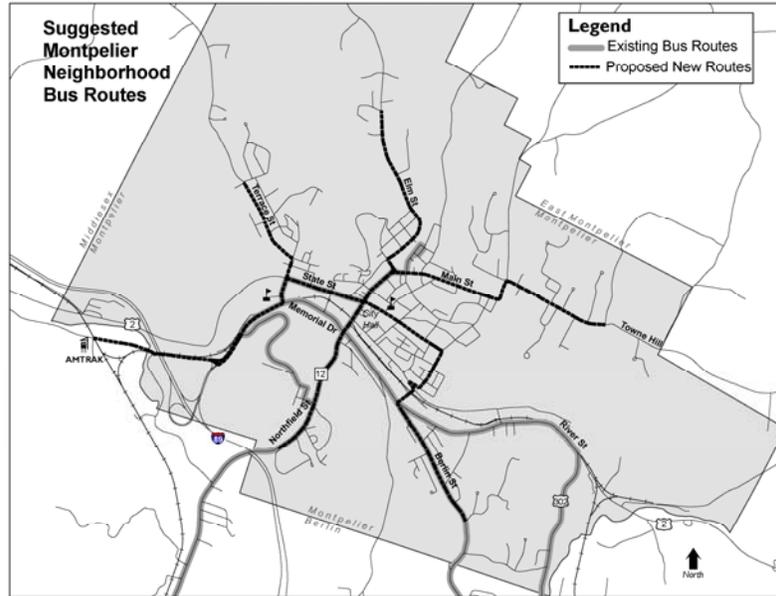
Note: "0" indicates that the route was not yet in service.

Figure 22 below depicts the data presented in Table 4-3. As the chart indicates, ridership has gone up as the as the number of routes has increased. Routes getting the most use include the City Route (Mid-Day and Commuter), the LINK Express, and Montpelier Hospital Hill.



**Figure 22 – GMTA Capital District Ridership, 2003-2009**

There are some unique opportunities in Montpelier to develop combined high school/middle school transportation with a local public transit service, oriented to connect residential areas outside the walking core with the schools and city center. This would serve to greatly alleviate peak congestion at the schools, provide more mobility to both students and other residents without automobiles, and perhaps even alleviate the parking shortages in town. Figure 23 to the right shows possible routes for a neighborhood connector service, based on input from a public forum held in 2004.



**Figure 23 – Suggested Montpelier Neighborhood Bus Routes**

The City of Montpelier continues to plan the development of a Multi-Modal Transit and Visitors Center in downtown Montpelier. This facility would provide a destination to integrate the Greyhound, GMATA, bicycle path users, a Welcome Center for tourists

and tour buses, and potential retail and commercial tenants. The center would be the major transfer hub for regional coach buses, inter-regional commuter transit, and satellite parking lot shuttles for downtown employees and visitors as part of the larger parking policy.

### Passenger Rail and Freight

Amtrak's *Vermont* Service operates a daily south and north bound train from St. Albans to Washington D.C. with service from Montpelier Junction. Other stops include Randolph, VT, Springfield, MA, and New York, NY.

The passenger boarding and departing data for the Montpelier Junction AMTRAK station, in addition to overall ridership data from 2009 to 2010, is below:

**Table 4-4: Passenger Data for the *Vermont* AMTRAK Line**

| <i>The Vermonter</i>                       | March 2009 | March 2010 | Ridership Increase 2009-2010 (%) |
|--|------------|------------|----------------------------------|
| Montpelier Junction (Boarding & Departing) | 430        | 461        | 7.2                              |
| Total <i>Vermont</i> Ridership             | --         | --         | 10                               |

Source: VTrans Rail Program

While the use of rail has always been central to transportation access to Montpelier, the active presence of a rail economy and public transportation mode is virtually invisible. Part of the result is directly related to reductions in rail use nationally. However, it is promising to see that the ridership on the AMTRAK *Vermont* line increased by 10% in March 2010, compared to the total ridership in March 2009.

Currently, in early 2010, the city is coping with the imminent increase in rail traffic on the Washington County line that runs through the downtown. The increased traffic is due to granite tailing shipments out of State. This might involve bridge upgrades, new track across Sabin's Pasture, new track upgrades, and the cancellation of long-held leases along the rail line. It is not clear what all the impacts will be at this point. The Washington County line does not meet the standards for passenger rail, although it remains to be seen if the upgrades that are planned will improve it to this standard.

## **Montpelier's Street Network**

### **Street Network Planning and Design**

Historically, cities laid out street networks in patterns where most streets had several connections to the network as a whole, and therefore most of the streets could serve a 'through traffic' function as well as providing access to land. However, in the past 50 years, this practice has changed considerably. Most new streets are planned strictly for providing access to land, with dead-end driveways or cul-de-sacs being common. These types of streets are useful only for providing access to land, and do not offer a "transportation function" to the community. New transportation facilities are generally built by governments, and often at a higher scale and design speed than our older streets were designed for.

Streets however, can play a greater role in community life beyond simply serving as thoroughfares for motor vehicles. With their lively interchange of activities, downtown streets are often the outdoor "living room" of the community—a place where people congregate and socialize, as well as shop, dine, work and recreate. Some are quiet residential streets where children play and neighbors can gather and converse. Still others are scenic country lanes that offer exhilarating bicycle rides. There are also major commuter arteries that carry us to places we need to go. These streets are open to all modes of transportation, but the relative balance and degree of service should vary with the context and function of the street.

Montpelier's street network also offers a lesson in the history of transportation and land use planning. The older portions of the city display a connected grid-like pattern of small scale streets. Each street provides access to land, but also provides a route to or through the city. The pattern promotes connectivity and accessibility, although in a few cases the steep hillsides restrict some directions. By contrast, portions of the city that have been developed more recently typically have driveways on major routes, or dead-end access roads, which serve a single purpose of access to land.

Many communities have seen the scale and feel of their streets sacrificed for the goal of more "efficient" traffic movement. This has really not happened to any significant degree in

Montpelier, and the small scale, slow speed streets are clearly treasured assets, despite their potential inefficiencies for vehicular traffic. While the need for efficient traffic flow is certainly present on some streets, there are many possible approaches to achieve this, and many considerations that should be made as changes are contemplated.

The figure below presents a potential scheme for classifying Montpelier's streets into broad categories based on both function and context. Each type of street, and considerations and performance goals, is described on the following page.



Figure 24: Streets, Connectors, and Commuter Routes

## **Streets that are Public Spaces**

Main Street as a corridor has the most congested conditions, but is also the primary center of commerce and forms an important public space of Montpelier. State Street is a landmark corridor of historic and aesthetic significance. Each corridor forms a unique public space. Historic buildings, on-street parking, amenable sidewalks, street tree plantings, a vital day and night business environment, access for vehicles and pedestrians, street furniture, and slow moving traffic are all components that contribute to the vitality of these unique corridors.

## **Commuter Routes**

High volumes of commuter traffic use these streets every day, from within and outside of Montpelier. There are bicycle/pedestrian paths parallel to Memorial Drive, US 2 and US 302, so minimal facilities for pedestrian and bicycle access along these routes may be appropriate. Efficient movement of traffic has relatively higher priority than on other streets. However, it is important to define “efficiency”. Typically, these “mobility” corridors have been designed to provide higher speed travel. However, it may be more appropriate to design them for higher capacity, rather than higher speeds.

## **Historic Bridges**

Montpelier’s street network is constrained by rivers, and bridges are often choke points in the traffic network. At the same time, many of these are historic structures, which are valued for their design, function, and connection to the past. Maintaining these bridges as part of the street network will likely include the acceptance of



less-than-ideal traffic conditions. Additional bridge crossings, such as that proposed with the Barre Street Extension, can have a significant role in enhancing the street network, as well as relieving the traffic burden from some of the existing historic bridges.

## **Neighborhood Connectors**

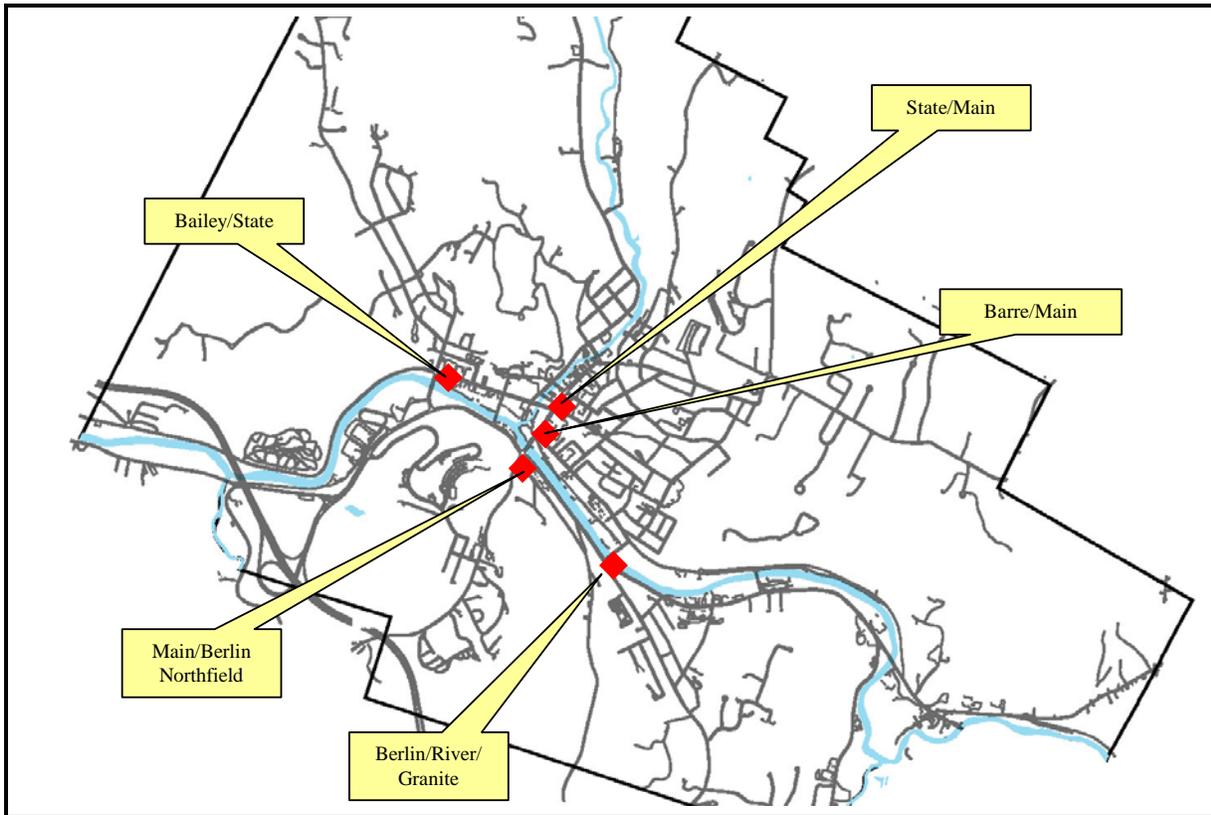
Several major routes connect outlying neighborhoods, as well as adjacent communities, into Montpelier’s center. These routes serve higher volumes of commuter traffic than ever designed for, and can be uncomfortable for pedestrians or bicyclists due to the combination of narrow road or shoulder widths, steep grades, and high speed traffic. These routes should become more multimodal. Given that most trips on these roads are relatively short, efforts to slow down traffic speeds could help significantly with this goal.

## **Local Streets**

The character of Montpelier’s local streets varies tremendously with the context, but most are somewhat more oriented to providing access to residential, commercial, or industrial land uses. In areas where bicycle traffic is desired, mixed traffic on traffic calmed streets may be the best way to achieve the desired balance. Pedestrian facilities may range from sidewalks to walking in the street or on the shoulder, with traffic calming as a tool to maintain safe speeds.

## Intersections

In any road or street network, the critical points are the intersections, where the capacity must be shared between the two traffic flows. Montpelier's street network has its primary bottlenecks at several key intersections, which limit the overall street network capacity. Figure 25 below shows the most congested intersections in the city.



**Figure 25 – Five Most Congested Intersections in Montpelier**

Tools that Montpelier can consider for improving intersection efficiency include the following:

- Roundabouts can provide more efficient operations than traffic signals in many cases. They require more space immediately at the intersection corner, but significantly less space along the length of the approaches to the intersection. A roundabout has now been completed for the intersection of US 2/US 302.
- Turning lanes-Addition of turning lanes to intersections can improve operations, but consideration should be given to the relative benefits compared to possible effects in pedestrian safety. The traffic improvements are often only needed during the relatively brief period of peak hour traffic, yet their implementation may create less safe pedestrian conditions for the entire day.
- Left Turn Prohibitions during peak hour-while this creates inconvenience for those desiring to turn left at an intersection, left turning traffic does have a strong impact on an intersection's capacity. Prohibiting left turns during peak hours can benefit the vast majority of users of a bottleneck intersection. Alternate locations to turn left and reconnect to their

desired route must of course be available. For example, if the Barre Street Extension project is completed, it may be possible to establish left turn prohibition at Main/Berlin/Northfield/Memorial, encouraging left turns onto Taylor Street instead.

Transportation Systems Management (TSM)-Intersections should be frequently reviewed for simple changes in signal timing and lane striping, as shifting traffic patterns may result in changes in signal operation.

Tables 4-5 and 4-6 below indicate the level-of-service (LOS) of Montpelier’s intersections. Level-of-service is determined by the average vehicle delay at signalized and un-signalized intersections. The LOS system rates intersections with letters A through F, with A being best and F being worst.

**Table 4-5: Signalized Intersection Performance Measures  
Existing (2003) Weekday P.M. Design Hour**

| Study Intersection                            | LOS | Delay (in seconds) | Volume/Capacity |
|---|-----|--------------------|-----------------|
| Memorial Drive/ National Life Drive           | C   | 21                 | 66%             |
| Memorial Drive/Bailey Avenue                  | B   | 17                 | 66%             |
| Memorial Drive/Taylor Street                  | C   | 23                 | 64%             |
| Memorial Drive/Main Street/ Northfield Street | F   | 82                 | 74%             |
| Main Street/State Street/E. State Street      | F   | 90                 | 126%            |
| State Street/Bailey Avenue                    | D   | 55                 | 100%            |
| River Street/Granite Street/Berlin Street     | D   | 36                 | 85%             |
| River Street/Pioneer Street                   | A   | 8                  | 62%             |

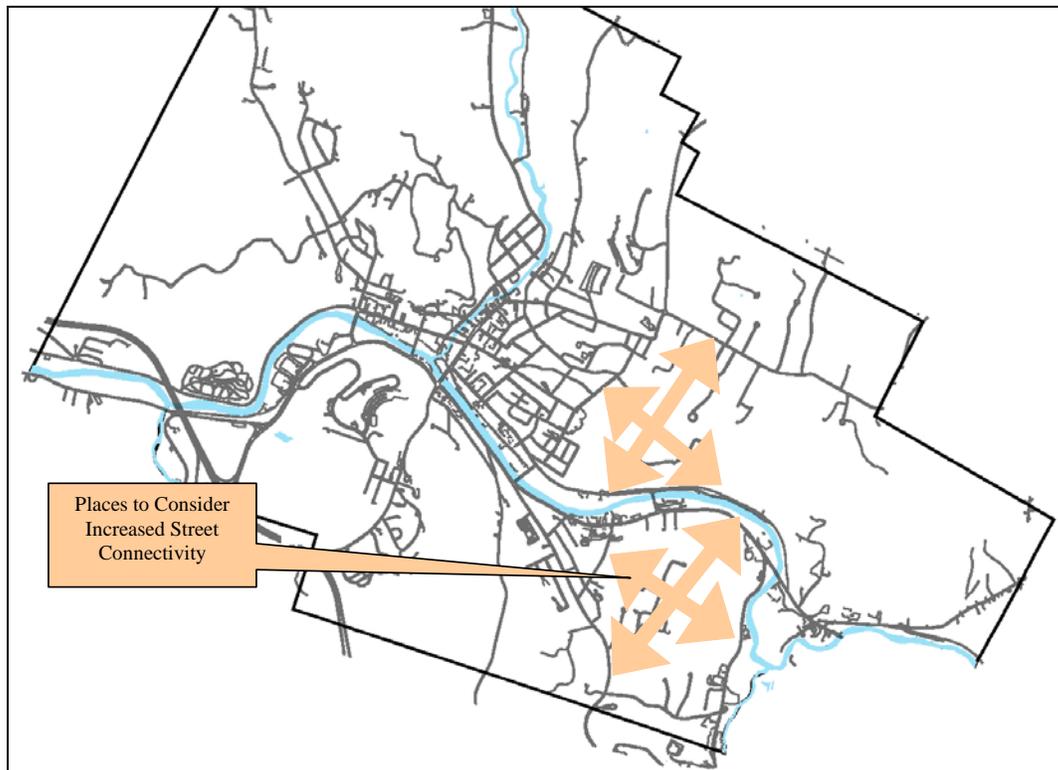
**Table 4-6: Un-signalized Intersection Performance Measures  
Existing (2003) Weekday P.M. Design Hour**

| Study Intersection                               | LOS | Delay (seconds per vehicle) |
|--|-----|-----------------------------|
| Bailey Avenue/Bladwin Street                     | C   | 18                          |
| State Street/Governance Aiken Avenue             | F   | 72                          |
| State Street/Governor Davis Avenue/Taylor Street | F   | 1020                        |
| State Street/Elm Street                          | D   | 28                          |
| Elm Street/Langdon Street                        | B   | 12                          |
| Elm Street/School Street                         | B   | 11                          |
| Elm Street/Spring Street                         | F   | 289                         |
| Main Street/Spring Street roundabout             | A   | 4                           |
| Main Street/School Street                        | F   | 55                          |
| Main Street/Pitkin Court/Jacobs Drive            | F   | 77                          |
| Main Street/Blanchard Court                      | F   | 64                          |
| Main Street/Barre Street                         | F   | 265                         |
| Main Street/Stone Cutters Way                    | F   | 76                          |
| Main Street/Towne Street/Town Hill Road          | D   | 32                          |
| Main Street/Emmons Street                        | C   | 21                          |
| Woodrow Avenue/College Street                    | A   | 8                           |
| Barre Street/Sibley Avenue                       | D   | 32                          |
| College Street/Sibley Avenue                     | A   | 9                           |
| Barre Street/Granite Street                      | D   | 30                          |
| Granite Street/Stone Cutters Way                 | B   | 12                          |

## Street Connectivity

The connectivity and ‘density’ of a street network is an important factor in its overall capacity to handle peak flows of traffic. Expanded intersections and widened roads represent one possible approach to providing high capacity for peak hour traffic. Another approach is to provide numerous possible routes of various scales and travel speeds through an urbanized area. A highly connected street grid, with redundant, parallel routes and frequent intersections, is actually among the most efficient ways to move traffic with less pavement. Large roads and intersections

**Figure 26 – Areas to Consider Increased Street Connectivity**



tend to move traffic at higher speeds, but don't necessarily move more traffic. Street networks can be measured for their “connectivity” in terms such as intersection density, or average “link length” (sections of streets between two intersections). Street networks that are highly connected have many positive transportation and community characteristics, including greater capacity, ability to use more efficient, direct routes; calmer traffic (as vehicles will frequently have to slow down at intersections), and smaller intersections (safer for pedestrians).

Few alternate routes available for traffic to circumvent Main Street traffic congestion during the afternoon peak hours. By establishing a more “robust” street network with other route options during peak hours, some of the peak hour congestion will be alleviated. This is most achievable at the time that development is planned, and new streets are laid out. Figure 26 above shows two areas of town that should be considered for improved connectivity, that will result in shorter, more direct trips, and reduced peak hour volumes through the City's worst bottleneck intersections.

## Parking

Montpelier’s parking shortage should be viewed as a sign of a successful city center, in addition to a challenge and constraint. In cities that have been built in the pre-automobile era, and have a vibrant, diverse economy, parking shortages are virtually a certainty, and a downtown without a parking shortage is typically not a vibrant place. One of Montpelier’s goals should be to keep the downtown healthy and attractive enough to attract businesses, customers, and visitors despite the sometimes challenging parking situation. However, there is also a need for a comprehensive parking strategy that considers the numerous implications, impacts and benefits of the various types of parking that can be provided.

The following table summarizes some general considerations for different ways to provide additional parking.

**Table 4-7: Considerations for Additional Parking**

| <i><b>Parking Facility Type</b></i>                                      | <i><b>Advantages</b></i>  | <i><b>Disadvantages</b></i>  |
|--|---|--|
| Satellite Parking in Remote Lots   | Relatively inexpensive to construct; allows parking to be present on less valuable real estate                    | High cost of shuttle if frequent service is desired.<br>Less convenient for casual visitors. |
| Parking garages within the central business district or State House area | Provides convenient, close in parking with much less land consumption; allows for pricing/incentive opportunities | Costly to construct and to use.<br>Brings traffic into city center.                          |
| Surface parking near downtown of the State House                         | Less expensive to construct and operate than garages, although land cost may be prohibitive to expand parking     | Consumptive of land that may have higher value for infill development or open space          |

In considering parking developed for employees, it should also be recognized that parking which is plentiful and inexpensive provides little incentive for commuters to utilize alternative modes of transportation. In addition, providing free parking to employees in a downtown area amounts to a significant subsidy for automobile use, after considering the costs associated with land, physical improvements, and loss of space for other uses (i.e., open space, retail or housing). In looking to the future, the City should encourage employers, particularly in areas served by transit, to provide incentives for their employees to leave their car behind as discussed below in the Travel Demand Management section.

A comprehensive study of downtown and Capitol Complex parking found adequate long and short-term parking, with a possible need for long-term parking if the entire downtown area is built out under the current zoning provisions. There is a plan in place to pursue intermodal facilities within the Capitol Complex.

The 1993 study, “Montpelier Parking and Shuttle Study,” by Ecosometrics Inc., identified 3,088 parking spaces. The State, the City, and private concerns each manage about a third of the spaces. About two-thirds of parking is long-term (mostly all day employees) and one-third is short term spaces, designed to be used by shoppers, visitors, and those on business. The study found that 40% of Montpelier’s two-hour spaces are used by employees for all-day parking.

Long-term parking is adequate, except during the legislative session. Private parking spaces are generally underutilized in the downtown area.

Parking spaces are expensive. A typical surface parking space takes up land worth \$5,000 and

| <b>Location</b>     | <b>Number of Spaces</b> |
|---------------------|-------------------------|
| Blanchard Lot       | 93                      |
| Capital Plaza Lot   | 62                      |
| North Branch        | 62                      |
| Pitkin Lot          | 42                      |
| 60 State Street Lot | 63                      |
| City Hall Lot       | 107                     |
| Jacobs Lot          | 74                      |
| VLCT Lot            | 11                      |
| City Center Garage  | 108                     |
| Stonecutter's Way   | 79                      |
| <b>Total</b>        | <b>701</b>              |

*Source: Montpelier Police Department December, 2006.*

the annual economic cost of that space is about \$55 per month, not including the cost of metering and policing the space. A new parking garage costs about \$12,000-\$15,000 per space or \$110 per month. A cheaper solution for the City, for developers, the State, taxpayers, and employees is to encourage people to use alternative transportation, carpool and/or park at peripheral lots. Currently the only facilities in Montpelier are the recently improved park-and-ride lots near the Interstate on Dog River Road and behind the Department of Employment Training.

### **Travel Demand Management**

A multi-faceted approach to reduce the rate of traffic growth will allow Montpelier to maintain its attractive scale while still providing for the transportation needs of its residents and workers. In addition to the themes of a balanced transportation design, and innovative approaches to addressing traffic congestion, an important component includes

consideration of the travel behavior of employees commuting into the city. Many cities and regions, including those of similar size to Montpelier, have developed travel demand management programs that provide incentives to reduce single-occupant commuting. Commuter fringe benefits are one of the most successful tools, which provide direct cash to employees who chose to carpool, use public transit, or walk to work. Establishing Transportation Management Association, or TMA, that includes major employers, municipal and regional officials, can provide a forum to coordinate efforts to manage commuting traffic.

As transit, pedestrian, and bicycle transportation is improved throughout the city, there will be benefits for households that may be able to lower their automobile ownership rates. Innovative practices such as location efficient mortgages can help families realize the benefits of living in a walkable area, served by transit, with increased mortgage loan limits.

### **Air Service**

Montpelier's closest airports are the E.F. Knapp State Airport in Berlin and the Burlington International Airport. Knapp Airport provides service to private and corporate aircraft. There is currently no scheduled service. Burlington Airport, 35 miles to the West, is the state's largest airport with a number of scheduled commercial carriers.

## Land Use and Transportation

The choices that individuals make regarding travel are influenced by surrounding land use patterns that make up the community and the region. Dimensions of the built environment, including mixed land uses, greater development density, availability of parking, and urban design factors all influence, to a degree, the choice an individual makes to walk, bicycle, drive or take transit.

The traditional, compact structure of Montpelier's downtown district naturally lends itself to pedestrian travel, with a mixture of homes, shops, offices, schools, parks and cultural attractions all located within a reasonable walking distance. Outside the downtown, residential neighborhoods organized around a church, parks, or even a neighborhood store can help to reduce automobile trips.

A variety of alternative approaches to mitigating growing traffic volumes, including developing more walkable communities, have gained considerable interest in recent years, as communities across the country have come to the realization that it is not possible to build their way out of traffic congestion by expanding roads, as well as a growing desire to walk more and drive less.

In looking to the future in Montpelier, there are opportunities to reinforce and expand the City's traditional pattern of development, incorporating a mix of land uses, higher density housing, and an interconnected system of streets that can promote walking, bicycling and riding transit.

The design and arrangement of land uses, and connectivity of streets linking them, is also critical in determining traffic and travel characteristics. The drawings below illustrate these two types of land use and street network patterns, and their implications for traffic.



Figure 27a– Land Use Patterns

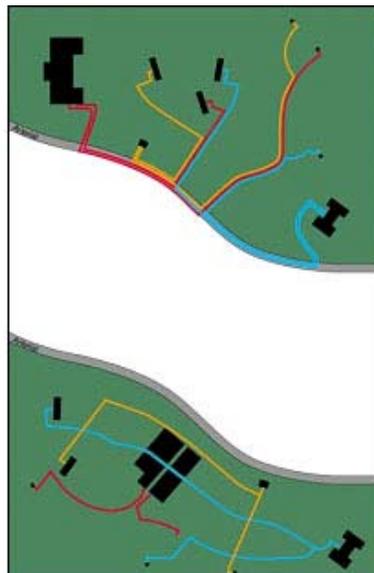


Figure 27b– Street Network Patterns

The left drawing (**Figure 27a**) represents two land use patterns and street arrangements; the top half is a typical newer suburban area with disconnected streets and land uses, while the lower half shows a traditional downtown with mixed uses in closer proximity and a highly connected street system.

The drawing on the right (**Figure 27b**) demonstrates the representative trip generation for the land use patterns.

In the modern suburban location, every vehicular trip must enter the arterial road. In the traditional town or city, all trips can be made relying on the local streets.

The result is that the arterial road (center) must serve both the existing through traffic and the local access traffic in the suburban setting, while its capacity is reserved for through trips in the traditional urban setting.

## Communications

In today's society, efficient information exchange is critical to staying current and connecting with one's community. An increasing amount of the Montpelier community has begun using the internet as a primary communication tool. Many local businesses offer free, wireless internet (wi-fi) to their customers. Additionally, the Kellogg-Hubbard Library has several computers that are available to the public and are quite popular with those who do not have internet access in their homes.

The City, along with 21 other Vermont municipalities (see <http://www.ecfiber.net>), is participating in a project to build a municipally-owned communications network over a state of the art fiber optic network. This network will provide internet, phone, and television to every home in each town, including many places that currently only have dial-up internet options. In Montpelier this network will compete with Fairpoint, Comcast, and the satellite television providers, by offering a local option at competitive rates.

The fiber optic network will be owned and governed by the cities and towns involved in the project, which have created a unifying entity – ECFiber, ILC – through an Inter-Local Contract entered into in 2008. The network will be financed either with government loans or through a private bond sale, depending on market conditions and financing terms. Subscription revenues will be used to make the lease payments, and excess revenues will be returned to the cities and towns. Organizers for the network are currently working on securing funding for the project and aim to begin connecting subscribers within one year from the time that funding is secured.

This past year the City's web-site was overhauled and made more user-friendly. Residents can find minutes, agendas, and podcasts of all the City Board and

**Earth Charter Principle IV.14(c):** *Enhance the role of the mass media in raising awareness of ecological and social challenges.*

Commission meetings on the site. The Onion River Community Access (ORCA) television channel also broadcasts many of the City's Board and Commission meetings. Additionally, ORCA supports the Kellogg-Hubbard Library and the Wood Art Gallery with media production. With their programming focus on social and economic issues, ORCA provides a world perspective to the Montpelier community.

The Montpelier community supports a number of other communications media. The *Times Argus*, a daily morning newspaper, serves over 8,000 people in the capital region of Vermont. The *Times Argus* also operates an online version of their paper. *The Bridge* is Montpelier's free community paper, published twice monthly with local interest stories and a calendar of

community events. Local radio stations, including WDEV-FM 96.1 and WGDR-FM 91.1, also play an important role in keeping Montpelier residents informed about local issues.

### 4.3 Population and Housing

Like many urban areas in Vermont, Montpelier’s population declined between 1960 and 2000. From its historical high of 8,782 people (1960), it steadily dropped to an estimated total of 8,035 in 2000. Meanwhile, housing unit numbers climbed slowly, but steadily. This narrative will attempt to suggest what the next 20+ year period may hold for the City with respect to population and housing.

**Table 4-9: Montpelier Population, Housing Units 1940---2000 (US Census)**

| Year          | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 |
|---------------|------|------|------|------|------|------|------|
| Population    | 8006 | 8599 | 8782 | 8604 | 8241 | 8247 | 8035 |
| Housing Units | 2249 | 2648 | 2958 | 2974 | 3437 | 3769 | 3899 |

In 2003, the Central Vermont Regional Planning Commission (CVRPC) contracted with Economic Policy Resources (EPR) to do town-level projections out to 2020 for communities within its jurisdiction. These are the only “official” projections for the region to date, and as such are an appropriate starting point for an exploration of this topic.

**Table 4-10: CVRPC/EPR Population Projections for Montpelier**

| Year       | 2000<br>(Census) | 2010 | 2015 | 2020  | Net<br>change |
|------------|------------------|------|------|-------|---------------|
| Population | 8035             | 7982 | 7899 | 7,780 | -255          |

**Table 4-11: CVRPC/EPR Housing Projections for Montpelier**

|                        | 2000              | 2010 | 2015 | 2020 | Net Change |
|------------------------|-------------------|------|------|------|------------|
| Housing Units          | 3739*             | 3904 | 3979 | 4153 | +414       |
| Average Household Size | 2.15 <sup>1</sup> | 2.02 | 1.97 | 1.87 | -.28       |

These projections appear to make the case that Montpelier’s downward population trend, and low level housing unit growth (due primarily to decreasing household sizes) will continue into the future. Our research indicates that this is not the case, however. New facts, emerging trends, as well as State, Regional and Local planning goals and initiatives make a clear case that Montpelier will reclaim its role as a regional housing, employment, and cultural center, in cooperation with neighboring communities.

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\* Census data.

Four main arguments compel revisiting existing projections. First, data suggests that a housing shortage, coupled with declining household sizes, may have been largely responsible for stifling population growth in Montpelier in recent years. Next, new data appears to demonstrate that this situation is witnessing a dramatic reversal - by virtue of both market forces and public policy shifts. Finally, relevant information reveals that Montpelier has the infrastructure capacity and available land to accommodate substantial new growth.

## A. Housing Shortage

It is our assertion that Montpelier's recent stagnant growth has had nothing to do with its lack of desirability as a place to live. In fact, the evidence suggests the opposite is true – more people would like to live in Montpelier but have not been able to find housing at an affordable cost for much of the past decade. Consider the following:

**Earth Charter Principle III. 9(a):**

*Guarantee the right to potable water, clean air, food security, uncontaminated soil, shelter, and safe sanitation allocating the national and international resources required.*

**Escalating housing prices:** In 2008, the average selling price of a single family home in the capital was \$223,051, with a median price of \$220,675. According to the 2000 Census, the median value of an owner occupied home in 2000 was \$108,000, representing a doubling in value in less than 10 years. Since residents' income and wages have not doubled since the 2000 Census (reported at \$51,818 for median family income), it is now difficult for the average family to afford the average home in Montpelier. But even with high prices, there are still homes selling above the asking price because of the competition for housing in the city.

**Extremely low vacancy rates for rental properties:** The US Census reported a vacancy rate for Montpelier of 1.8% in 2000. According to the Montpelier Housing Task Force a vacancy rate of about 5% is necessary to balance supply and demand.

**Conversion of rental units to office or commercial space:** A net loss of 46 apartments has occurred since 1980 because of the demand for office space and commercial space, and the proximity of some residential neighborhoods to the state capitol building, which is a highly desirable location for law firms, lobbyists, and other support services.

**Dwindling Household Size:** Montpelier's average household size of 2.15 persons/unit is now the smallest in the Region. To support the population and housing projections, CVRPC estimates show the average household size declining to a remarkable (if somewhat implausible) 1.87 persons per unit by 2020. This is a key element of the existing assumptions built into the official projections that we are questioning – it is unlikely that the average household size would be reduced to this level. Given higher fuel prices and the number of homes in Montpelier designed for larger families, even with changing demographics, we believe that 1.87 persons per unit is not a realistic assumption.

**Reduced construction of residential units in the 90’s and early 2000’s.** Between 1980 and 1990, 508 residential units (over 50/year) were added in the City. Between 1991 and 2003 only 36 new units (about 3/year) were created, according to City data.

**B. Changing Market Forces**

Over the past four or five years there has been a dramatic change in the pace of new development in Montpelier. Between 2003 and 2007 about 119 net new residential units were created – a rate of approximately 30 per year. A recent market study conducted by John Ryan of Development Cycles in Amherst MA concluded that over a four year period, “Montpelier as a whole could realistically expect to absorb 80-100 new, age-appropriate units for older residents and 40-60 new single family homes on small, individual lots primarily for moderate and median income families.”

Because of this recent boom, EPR’s Housing Unit Projections for Montpelier (and some of its surrounding communities) are not tracking accurately so far, as illustrated by Table 4. This is particularly true for Montpelier where housing unit growth for the period 2000-2005 appears to be *underestimated* by 456%.

**Table 4-12: EPR Projections vs. Net New Units 2000-2005**

| Municipality      | EPR Projected Housing Unit Growth 2000-2005 | Actual Constructed Units* 2000-2005 | % Error EPR Projection |
|-------------------|---|-------------------------------------|------------------------|
| Barre Town        | 75  | 236                                 | - 215%                 |
| Berlin            | 112   | 50                                  | + 53%                  |
| East Montpelier   | 67  | 74                                  | + 11%                  |
| Middlesex         | 76  | 73                                  | + 4%                   |
| Northfield        | 39  | 103                                 | - 164%                 |
| <b>Montpelier</b> | <b>18</b>                                   | <b>99</b>                           | <b>- 456%</b>          |
| Total             | 387   | 636                                 | -64%                   |

So, it is clear that the pace and prevalence of new residential development in Montpelier has been accelerating. Not only have the last five years quadrupled the output of the previous decade, but numerous new, mostly high density, residential projects have been proposed - particularly within recommended Growth Center boundary. The following Table presents an accounting of pending proposals where the developer has indicated that they will be built in the near future.

---

\* Derived from city permit data with field verification.

**Table 4-13: Residential Projects Pending as of April 2008 (AKA “Pipeline Units”)**

| <b>Project Name</b> | <b>Status</b>                    | <b>Potential Units</b>  | <b>% Multifamily high density</b> | <b>Zone/location</b>    |
|---------------------|----------------------------------|-------------------------|-----------------------------------|-------------------------|
| Bianchi Building    | Completed                        | 8                       | 100%                              | GB/Barre St.            |
| Capital Heights     | Conditional Review               | 219                     | 74%                               | MDR, GB /Off Berlin St. |
| Crestview Estates   | Act 250 Permit Issued (inactive) | 98 - 301                | 23%                               | LDR/Terrace St.         |
| Sabin’s Pasture     | Act 250 Master Permit Issued     | 145                     | 65%                               | HDR,MDR, LDR/Barre St.  |
| <b>TOTAL UNITS</b>  |                                  | <b>486 to 673 units</b> | NA                                |                         |

In a promising development for these “pipeline projects” there appears to be an upsurge in demand for urban/village living in Vermont. A recent survey by the Vermont Forum on Sprawl indicates a growing interest among Vermonters in living in such locations for the convenience and sense of community such areas afford.

Soaring energy costs are likely to be another factor that will encourage people to live closer to jobs, schools, and shopping. The Vermont ideal of a big home on a big lot on a back road is fading for many, being replaced by convenience and community.

### **C. Public Policy**

Accompanying (or perhaps, in part, responsible for) the change in market activity are some notable changes/developments in public policy on housing related issues. Taken together, these can be expected to foster additional development in the City. These policy initiatives include:

- Policies in the 2005 Master Plan discouraging the conversion of apartments to office space.
- Recent statutory changes to Vermont’s Planning and Development Act (Chapter 117) liberalizing rules for accessory apartments and the City’s full compliance with the same. In response to these changes Montpelier has amended its zoning to allow accessory units “by right” and has established the “*One More Home Program*” which provides small grants to individuals for the development of accessory units.
- The establishment of the Montpelier Housing Trust Fund. This account (established in 2006 with an annual appropriation of approximately \$52,000) is used by the City to award grants to non-profit organizations to preserve, construct, or rehabilitate affordable housing.
- Montpelier’s efforts to achieve Growth Center Designation and the subsequent establishment of a TIF District.



## Consistency with Regional Planning

The Central Vermont Regional Planning Commission's (CVRPC) recently adopted Housing Distribution Plan allocates 476 units to the City over the next ten years, which are higher than the city's existing percentage of Regional totals. CVRPC has done this in response to both a perceived Region-wide housing crises and a desire to locate residents in close proximity to jobs and in locations that have adequate infrastructure capacity to assimilate higher densities of development.

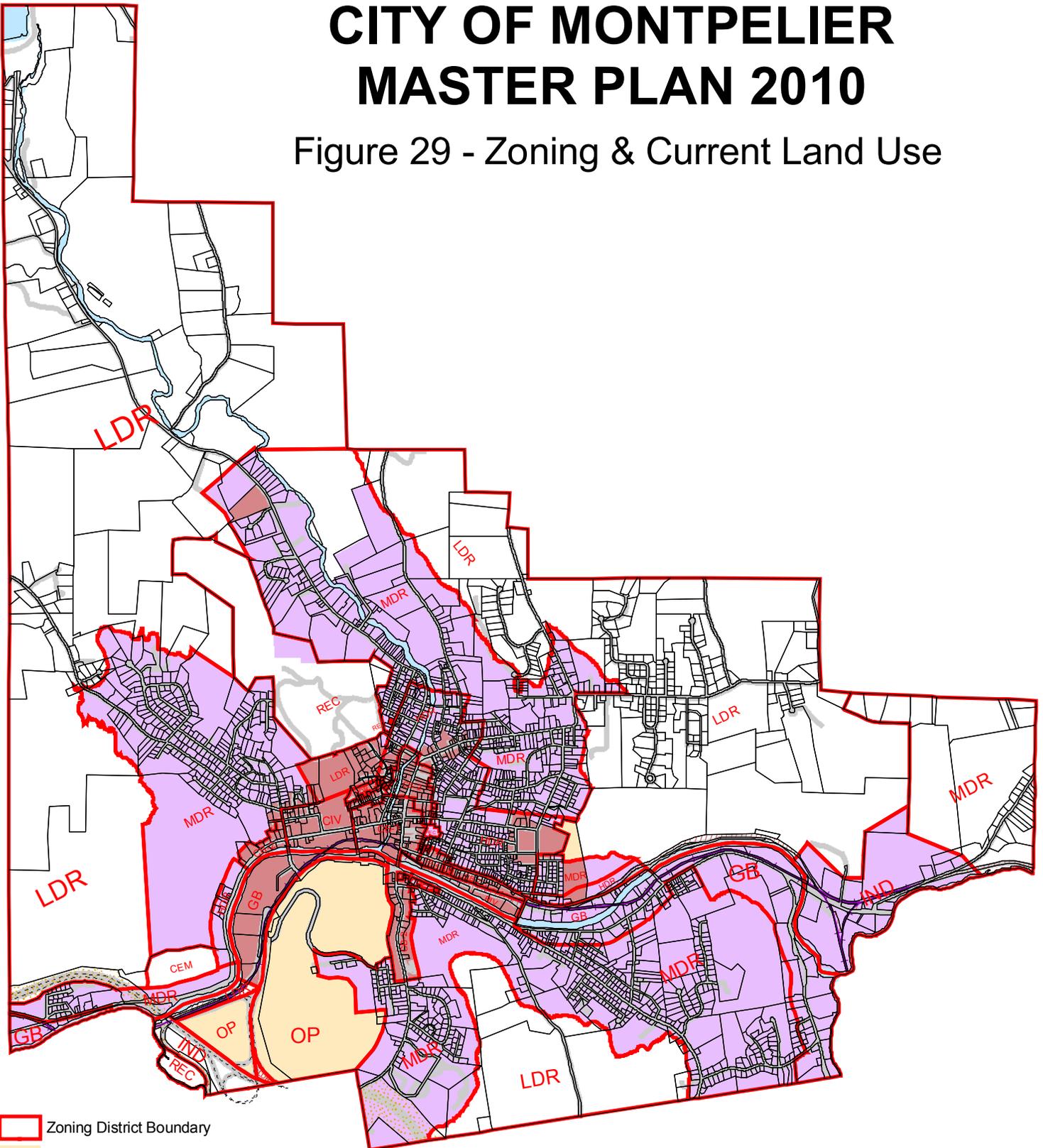
Furthermore, the Commission has recognized that if Montpelier's population (and percentage of Regional total) continues to shrink, the flip side of this trend is that the rapid growth is being experienced in many of Central Vermont's more rural communities. CVRPC believes that such a future would threaten to undermine Vermont's primary statutory planning goal: *"To plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside."* Both the Growth Center application and this Master Plan are consistent with the Regional Housing Distribution Plan by setting housing targets at 40 per year for the next twenty years and by identifying the designated Growth Center districts as the places in town where the majority of this development will occur.

In fact, they were a driving force behind the City's successful effort to earn designation under the State Growth Center Program. Accordingly, the goals of both the Growth Center application and this Master Plan are consistent with the Regional Housing Distribution Plan by setting housing targets at 40 – 50 per year for the next twenty years. Furthermore, the designated Growth Center is statutorily required to accommodate at least 50% of projected demand (344 units according to the application, or 72% of CVRPC's allocation). Moreover, the buildout *potential* of the Growth Center is over 700 units, (or 148% of CVRPC's allocation). Therefore, in accordance with the Commission's Housing Distribution Plan, this Plan designates the Growth Center as the "preferred receiving area" for up to 80% of CVRPC's allocation figure (about 380 units). The boundaries of the Growth Center are depicted in light purple on Figure 29. Figure 29 also displays the locations of housing units built over the five years preceding this Plan (2004-2009).

**Earth Charter Principle I.3(b):** *Promote social and economic justice, enabling all to achieve a secure and meaningful livelihood that is ecologically responsible.*

# CITY OF MONTPELIER MASTER PLAN 2010

## Figure 29 - Zoning & Current Land Use



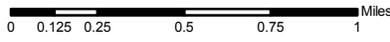
- Zoning District Boundary
- Design Control District only
- DCD and Growth District
- Growth District only
- Parcel Boundary
- railroad
- Railroad Right-of-Way
- State Road ROW
- I-89 Interchange
- Rivers-Lakes

|                                | ADDITIONS                                     | ADOPTION DATE | EFFECTIVE DATE |
|--------------------------------|---|---------------|----------------|
| CB-I Central Business I        | Boundary Change (Greenwood Ter.)              | 6-14-1995     | 7-05-1995      |
| CB-II Central Business II      | Boundary Change (Berlin and Northfield Sts.)  | 6-12-1996     | 7-03-1996      |
| CIV Civic                      | Boundary Change (46 East State Street)        | 11-12-1997    | 12-03-1997     |
| OP Office Park                 | Boundary Mapping Correction (Putnam St.)      |               | 2-10-1998      |
| RIV Riverfront                 | District Creation (Riverfront District)       | 1-10-2001     | 1-31-2001      |
| GB General Business            | Interim Restricted Development District       | 8-06-2003     | 8-06-2003      |
| IND Industrial                 | Boundary Change (GB to CBII & Design Control) | 9-24-2003     | 10-15-2003     |
| LDR Low Density Residential    |   |               |                |
| MDR Medium Density Residential |   |               |                |
| HDR High Density Residential   |   |               |                |
| REC Recreation                 |   |               |                |
| CEM Cemetery                   |   |               |                |



Prepared by:  
City of Montpelier GIS  
Dept. of Planning & Community Development  
March 2010

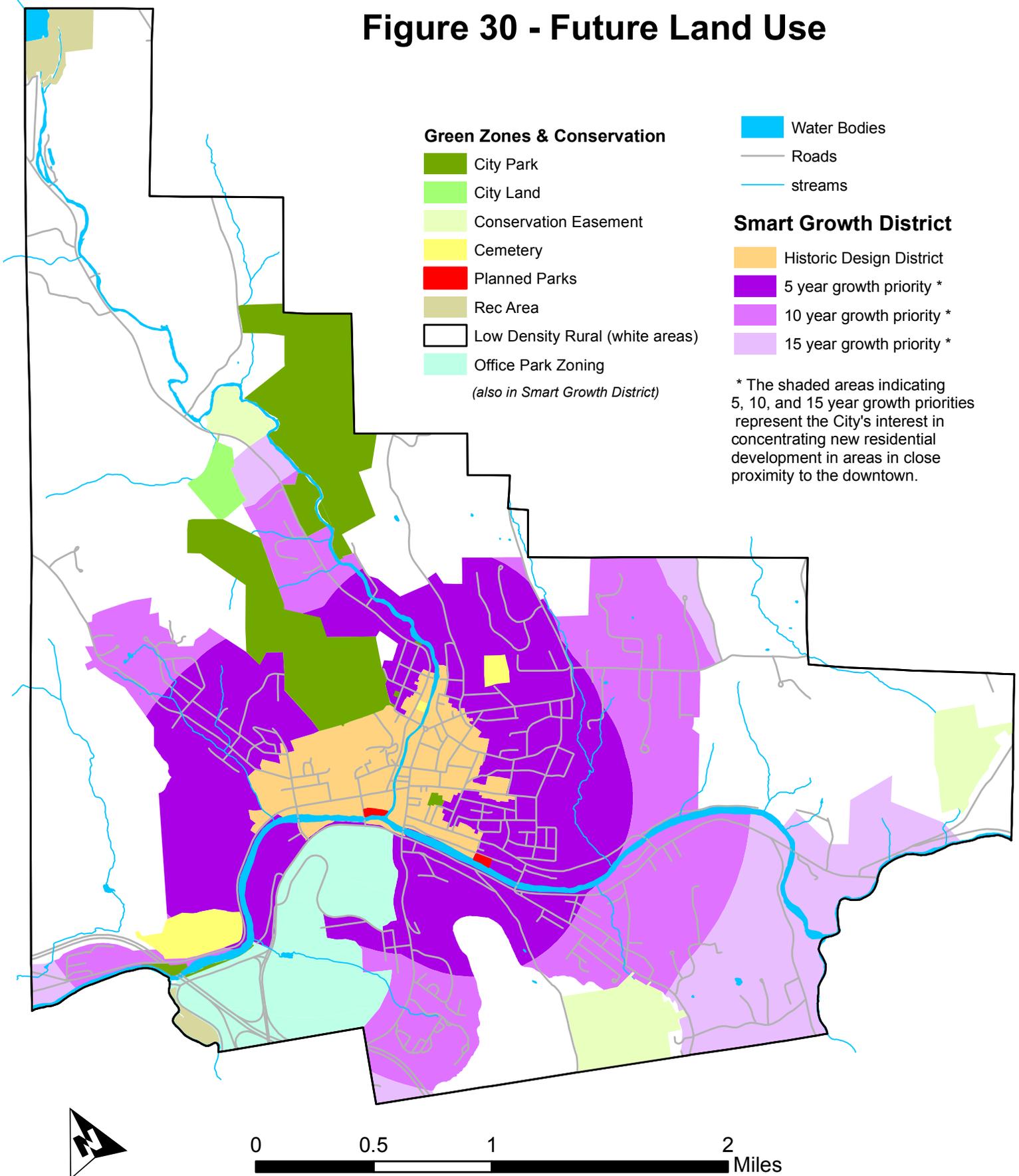
THIS MAP IS FOR PLANNING PURPOSES ONLY.  
IT IS NOT TO BE USED  
FOR DESCRIPTION, CONVEYANCE, OR  
DETERMINATION OF LEGAL TITLE  
OR AS A CONSTRUCTION DRAWING



# CITY OF MONTPELIER

## 2010 MASTER PLAN

### Figure 30 - Future Land Use



## Future Land Use Map Description

This Master Plan calls for a new approach to zoning in the City of Montpelier, one that represents a significant departure from the Euclidian zoning we currently use. The existing zoning ordinance is based on 20<sup>th</sup> Century assumptions and constraints, having grown organically over the years into a complex, highly prescriptive set of rules and regulations that often work against the goals the city has established. A lot of the current ordinance, for example, is designed around what we don't want – high impact industrial development near residential areas, housing developments that have a negative impact on the existing neighborhoods, and commercial outlets that would undermine the health of our historic downtown.

The approach to zoning we recommend for the future is an ordinance focused on what we want, rather than what we don't want. The new ordinance will set clear goals for the different neighborhoods in the city. While the Capital Area Neighborhoods! (CAN!) will be a good starting point for developing neighborhood goals, neighborhood boundaries will be reworked and defined throughout the rezoning process. Rather than being overly prescriptive, the new ordinance will enable developers to make proposals that demonstrate how the goals are met within clear parameters describing each neighborhood with sufficient detail so that the degree of ambiguity and discretion is minimized.

In addition to the neighborhood level descriptions and goals, there will be three main areas where additional criteria will be in effect: The Smart Growth District, the Historic Design District, the Office Park, and the Low Density Rural District. The Historic Design District is entirely within the Smart Growth District, and so in this area, both sets of criteria will apply. These three districts are identified on the Future Land Use Map – the neighborhoods are described on an earlier map.

The first step in this process of rezoning and realignment will be a review of the boundaries for each of these larger areas, to insure that they accurately reflect the constraints and infrastructure available to meet the goals. For this reason, the boundaries presented here are temporary placeholders – it is likely that the boundary study will reveal changes that are needed.

**Smart Growth District:** Within the Smart Growth District, the goal will be to promote housing development that reflects Smart Growth principles. Minimum density standards will apply, and infill and cluster development will be encouraged. New projects will need to consider transit, pedestrian and bicycle transportation, energy efficiency and renewable energy, the integration of mixed use to promote economic viability, and affordable housing needs.

**Historic Design District:** Within the Historic Design District, the goal will be to maintain and enhance the historic character of the area with high quality design. A revision of the Cityscape guidelines will be completed to update the design recommendations with some of the newer technologies, particularly those related to energy efficiency and renewable energy improvements. New projects will need to consider compatibility with historic standards, infill development that matches neighboring properties, and creative adaptation and reuse of historic buildings.

**Low Density Rural District:** The goal of the low density rural district will be to encourage traditional rural uses and to maintain the natural resource base of the city. Agricultural activities, forestry, and low density settlement patterns, including rural economic activities, will be encouraged. New housing developments that have an impact on target resources will need to consider minimizing the land impact through clustering and transfer of development rights, maintaining biodiversity and wildlife habitat, and protecting valuable agricultural and forest resources

## **D. Infrastructure Capacity/Land Capability**

It would be difficult to argue that infrastructure constraints will inhibit Montpelier's growth. In fact, there appears to be ample capacity in its water, sewer, and school infrastructure for the foreseeable future. The wastewater system has approximately 1.5 MGD of excess capacity (enough to accommodate over 7,000 new single family 3 bedroom residences, according to standard formulas) The water system has over 2.7 MGD excess capacity, assuming ongoing efforts to reduce leakage in the system. The total rated capacity of the City's public schools stands at 1,311 students. Current enrollment is between 1000 and 1,100 students, while the projected enrollment for 2009/2010 is 898, or 68% of capacity, based on recent trends.

In further illustrating the City's *potential* for growth it is instructive to look at the results of a build-out analysis conducted for Montpelier by CVRPC (as part of the "*Northwest Vermont Project*") in 2006. Taking into account zoning densities, road frontages, property boundaries, and land capability (based on the occurrence of various natural development constraints) it was calculated that the City could absorb almost 3,500 residential units.

The CVRPC estimates that a terminal average household size of 2.0 persons per household by 2019 is a more realistic estimate. Using this figure, the population estimate for the City in 2029 would be 9,808 people. This represents the addition of 1,265 additional residents during the planning period (2009-2029).

We conclude that conventional population and/or housing projections, using only historic data, are likely to be inaccurate for Montpelier. Conversely, we believe that the previous section presents reasonable estimates for Montpelier's future housing unit and population growth, respectively, through the relevant planning period.

While it is difficult to quantify market adjustments, energy futures and evolving land use policy, applying knowledge of recent permit activity, pending projects, and a Regional "Fair share" housing formula allows for more accurate, if still conservative assessment. These adjusted estimates predict that over 1,200 new people may be housed in almost 700 new housing units in Montpelier by 2029.

## **Health and Safety of Montpelier's Infrastructure**

The Building and Health Code support and enforcement functions play an important role in enhancing the safety and well being of the community. The Building and Health functions both overlap and complement each other. These functions are governed by State Statute and actions done are accomplished in cooperation with the appropriate State agencies.

The Montpelier Fire Department is responsible for the Building Inspector and Health Officer functions. This allows for a coordinated effort to ensure that city residents and visitors have safe and healthy conditions where they live, work, and visit. One full time employee with training and qualifications in both areas performs this work. The Building Inspector has two primary tasks: 1) Reviewing and providing support for construction jobs in the City, and 2) inspecting

current buildings. Reviewing and inspecting construction done in the City ensures that work is done according to code.

Existing buildings, especially residential rental units, are inspected to ensure proper maintenance and operation. Buildings are inspected primarily on receipt of a complaint. There are limited inspections on a scheduled basis. Complaints are given a high priority while scheduled inspections are done as resources are available. The emphasis here is to ensure safe and healthy conditions.

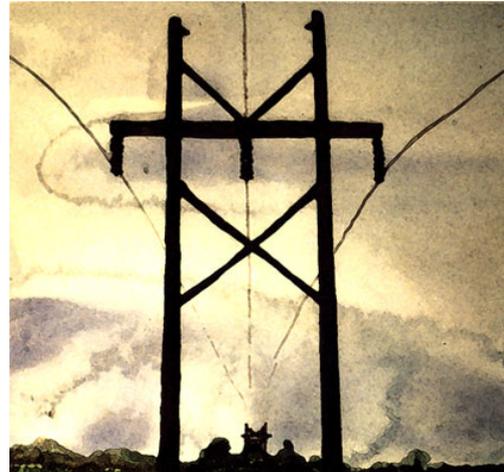
As Health Officer, there is the need to respond to complaints and proactively act to protect the community from public health threats. Areas of regular activities are rental housing, rabies and animal bites, garbage control and rats, mold complaints, lead abatement issues, carbon monoxide and smoke complaints, water supplies, septic tanks, and restaurant inspections. Special situations also involve the Health Officer when they occur. The Health Officer works under the authority of the Vermont Department of Health.

## Energy

In March of 2007, over 150 community members attended Montpelier's Energy Town Meeting, the first in a series of "Town Meetings" taking place in early March. The community members split into 12 Action Teams, under the overarching Montpelier Energy Team title, that work to improve energy options, expand availability of alternative energy supplies, and reduce the overall use of fossil fuels in the City.

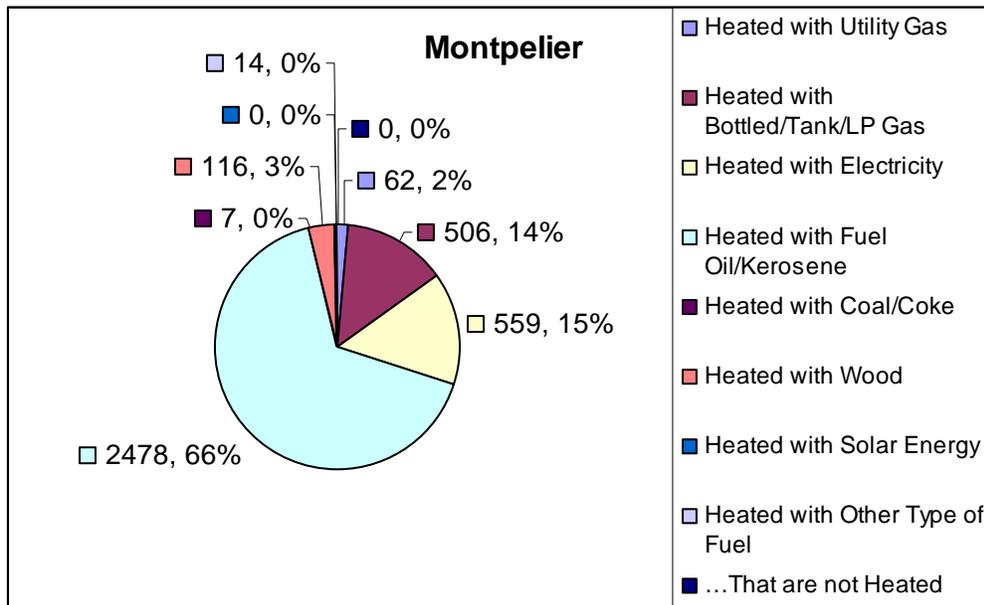
The Action Teams that have been most active include the Bikes Team, the District Energy Team, the Energy Cooperative Team, and the Weatherization and Energy Efficiency Team. Projects taken up by the various committees range from improved downtown bike parking plans to home energy assessment initiatives. The Montpelier Energy Team has played an integral role in evaluating and planning for the City's energy future and will undoubtedly continue to have a large part in upcoming developments.

The increasing price of fuel oil, the growing need to address climate change and an additional need to consider a post-petroleum future are all factors important for reducing the use of heating oil as the primary source of heat for Vermont homes and small businesses. As seen in Figures 31, 32, and 33, the majority of homes in Vermont, Washington County, and Montpelier are heated with fuel oil/kerosene. 66% of homes in Montpelier, 63% in Washington County, and 60% in Vermont are heated with fuel oil/kerosene. Therefore, by embracing carbon neutral fuel sources in the coming years, Montpelier has the opportunity to set an example for the rest of the State.



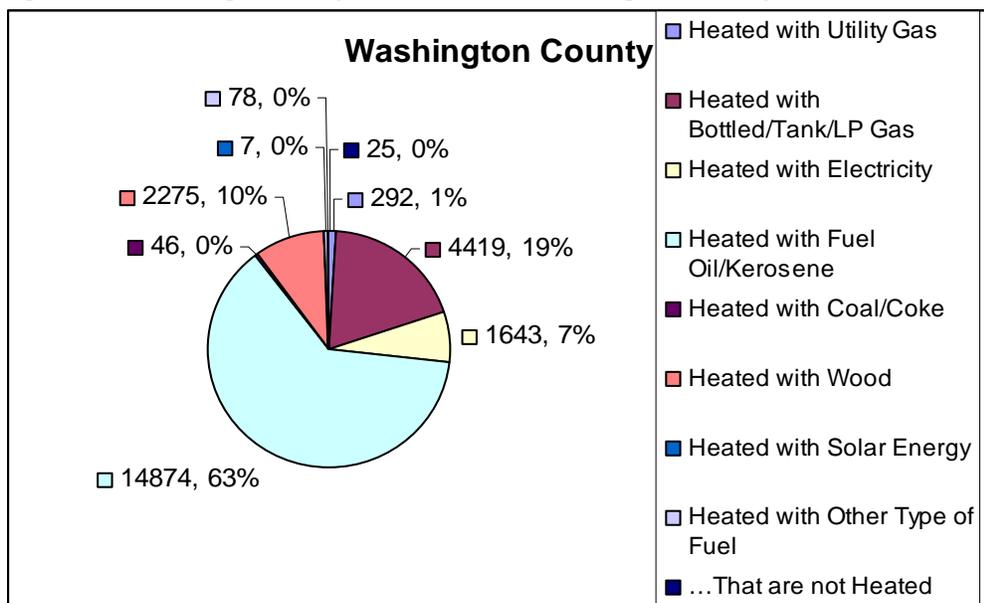
*Alexandria Heather, Montpelier resident*

**Figure 31: Housing Units by Heat Source, Montpelier, 2000**



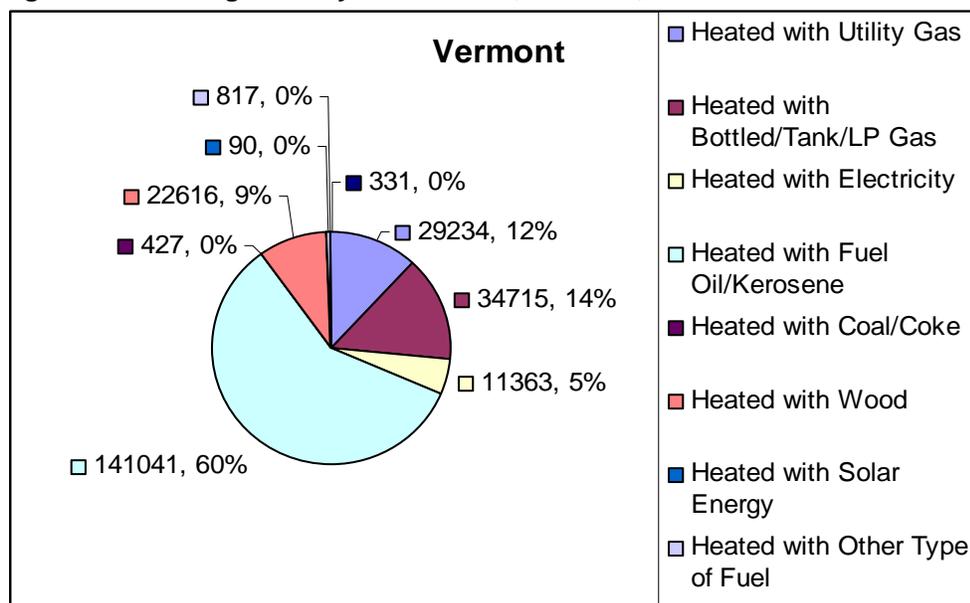
Source: Vermont Indicators, Center for Rural Studies at the University of Vermont

**Figure 32: Housing Units by Heat Source, Washington County, 2000**



Source: Vermont Indicators, Center for Rural Studies at the University of Vermont

**Figure 33: Housing Units by Heat Source, Vermont, 2000**



Source: Vermont Indicators, Center for Rural Studies at the University of Vermont

One proposal, by the Montpelier Energy Team, is to work towards a more carbon neutral energy system by implementing home weatherization strategies and switching to a carbon neutral fuel. According to the Energy Team, this effort would combine two successful programs – weatherization as promoted by Efficiency Vermont and the Efficiency Performance Institute and the use of renewable wood and other solid biofuels in newly designed and efficient wood burning appliances. Efficiency Vermont is recognized as the most effective efficiency utility in the United States. While its focus is on electricity use, it has established a financing program to help homeowners invest in weatherization. Weatherization has a proven record of reducing home heating loads 30% on average in Vermont homes.

**Earth Charter Principle II.7(b):** *Act with restraint and efficiency when using energy, and rely increasingly on renewable energy sources such as solar and wind.*

Wood pellets (as an energy source) are expanding in use through improved market availability and new advances in pellet burning appliances. Northern

European nations have implemented furnace retrofits to convert oil-fired burners to wood pellets with several years of successful operation. Such retrofits are just becoming available in the United States and thus, Montpelier is in a position to lead the way into the future of this efficient technology.

Forest resources are not infinite in Central Vermont and a large scale shift to wood as a fuel source can only be made if wood is used efficiently in combustion and the heated structures take advantage of weatherization strategies that minimize waste. For this reason, the system is based on the linkage of energy efficiency activities with the conversion of homes to wood fuel heat.

In January of 2010, the City received an eight million dollar grant from the Department of Energy to work with the State of Vermont on the construction of a district energy plant that would be fueled by sustainably harvested biomass, with oil as a backup fuel. The grant also

allowed the City to establish a Clean Energy Assessment District (CEAD- or PACE, for Property Assessed Clean Energy), where residents will be able to make energy efficiency and renewable energy improvements to their homes and businesses and repay the City over the life of the improvements.

**Table 4-14: Government Greenhouse Gas Emissions Detailed Report, 2004**

| Source                        | Equivalent CO2 (tons) | Equivalent CO2 (percentage) | Energy (MMBtu) | Cost (\$)      |
|-------------------------------|-----------------------|-----------------------------|----------------|----------------|
| City Hall Complex-Electricity | 121                   | 3                           | 1,058          | 34,101         |
| Public Works                  | 122                   | 3                           | 1,532          | 14,221         |
| State Buildings               | 2,779                 | 63                          | 56,494         | 0              |
| <i>Buildings Subtotal</i>     | <i>3,022</i>          | <i>69</i>                   | <i>59,085</i>  | <i>48,322</i>  |
| Streetlights                  | 362                   | 8                           | 3,174          | 102,293        |
| Traffic Lights                | 24                    | 1                           | 210            | 6,777          |
| <i>Lights Subtotal</i>        | <i>387</i>            | <i>9</i>                    | <i>3,384</i>   | <i>109,070</i> |
| Sewer System                  | 49                    | 1                           | 430            | 13,860         |
| Waste Water Treatment Plant   | 666                   | 15                          | 5,830          | 187, 898       |
| Water Distribution System     | 26                    | 1                           | 226            | 7,293          |
| Water Filtration Plant        | 232                   | 5                           | 2,029          | 65,406         |
| <i>Water/Sewage Subtotal</i>  | <i>973</i>            | <i>22</i>                   | <i>8,516</i>   | <i>274,457</i> |
| <b>Total</b>                  | <b>4,381</b>          | <b>100</b>                  | <b>70,984</b>  | <b>431,849</b> |

**Table 4-15: Buildings in Montpelier that have Undergone Efficiency Measures\***

| Funding of Efficiency Measure | Number of Buildings | Percent of Total (Buildings in Montpelier) |
|-------------------------------|---------------------|--|
| Public Assisted               | 151                 | 5.45                                       |
| Other                         | 320                 | 11.56                                      |
| <i>Total</i>                  | <i>471</i>          | <i>17.01</i>                               |

\*Some of the efficiency measures taken included the installation of electric-saving devices, such as light bulbs and thermostats and many buildings had insulation and air sealing work done.

Source: Montpelier Energy Team

**Table 4-16: Buildings in Montpelier that have Undergone Fuel-Switching**

| Type of Fuel-Switching     | Number of Buildings | Percent of Total (Buildings in Montpelier) |
|----------------------------|---------------------|--|
| Solar Photovoltaic (PV)    | 15                  | .54  |
| Solar Water                | 10                  | .36  |
| Wood Pellet Stove          | 84                  | 3.03                                       |
| Cordwood Stove             | 104                 | 3.76                                       |
| Wood Pellet Furnace/Boiler | 2                   | .07  |
| <i>Total</i>               | <i>215</i>          | <i>7.76</i>                                |

Source: Montpelier Energy Team

The data in Tables 4-15 and 4-16 has come from the Montpelier Energy Team’s record of Montpelier buildings that have implemented energy efficiency measures and have undergone some type of fuel-switching. In total, 17.01% of buildings in Montpelier have taken energy efficiency measures and 7.76% of buildings have embraced some type of fuel-switching.

**Table 4-17: Montpelier’s Total Electricity Consumption**

| <b>Type of Consumption</b>                                    | <b>2004</b>   | <b>2005</b>   | <b>2006</b>   | <b>2007</b>   | <b>2008</b>   |
|---|---------------|---------------|---------------|---------------|---------------|
| Total Residential Consumption (in Megawatt Hours)             | 30,794        | 31,016        | 30,316        | 30,277        | 29,445        |
| Total Commercial & Industrial Consumption (in Megawatt Hours) | 54,643        | 55,905        | 56,207        | 57,787        | 56,996        |
| <i>Total (in Megawatt Hours)</i>                              | <i>85,437</i> | <i>8,6921</i> | <i>86,523</i> | <i>86,441</i> | <i>86,441</i> |

*Source: Efficiency Vermont*

**Table 4-18: Montpelier’s Total Electricity Savings**

| <b>Type of Savings</b>                                    | <b>2004</b>  | <b>2005</b>  | <b>2006</b>  | <b>2007</b>  | <b>2008</b>  |
|---|--------------|--------------|--------------|--------------|--------------|
| Total Residential Savings (in Megawatt Hours)             | 1,591        | 473          | 542          | 1,548        | 2,916        |
| Total Commercial & Industrial Savings (in Megawatt Hours) | 740          | 1,173        | 1,181        | 505          | 1,757        |
| <i>Total (in Megawatt Hours)</i>                          | <i>2,331</i> | <i>1,646</i> | <i>1,723</i> | <i>2,053</i> | <i>4,673</i> |

*Source: Efficiency Vermont*

**Table 4-19: Average Residential Consumption & Savings, per Household**

|   | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> |
|---|-------------|-------------|-------------|-------------|-------------|
| Average Residential Consumption (in Kilowatt Hours) | 6,160       | 6,205       | 6,065       | 6,057       | 5,890       |
| Average Residential Savings (in Kilowatt Hours)     | 318         | 95          | 109         | 310         | 583         |

*Source: Efficiency Vermont*

Collected by Efficiency Vermont, the figures in Tables 4-17, 4-18, and 4-19 track the patterns of energy consumption and savings in Montpelier. It is encouraging to note that since 2005, residential consumption of electricity (in total and on average) has decreased and residential savings (in total and on average) have increased each year through 2008.

## 4.4 Goals for Montpelier's Built Environment

Citizens of Montpelier developed four long-range goals for Montpelier's infrastructure and built environment. The goals are meant to reflect the vision that the city has for the long-term satisfaction of basic human needs for housing, goods, and services, mobility, energy, and other important material support. People were asked what kind of city they wanted to leave to future generations.

### *Communications*

The citizens of Montpelier are connected to each other and the rest of the world. Our communication systems are reliable and support the engagement of all people, information dissemination, social relationships, entertainment, and economic activity.



### *Energy*

Energy efficiency in Montpelier is maximized. Montpelier's energy is generated by renewable resources of local origin. The delivery of energy is structured to encourage efficient use and affordability.

### *Housing & Buildings*

Montpelier has a mix of housing that is affordable, safe, healthy, accessible, eco-efficient, in diverse neighborhoods that enhances the experience of people who live here and fosters community. The housing adapts over time to reflect changes in demographics, climate, and technology while maintaining its historic character. Public and private buildings enhance the historic environment and cultural values which have shaped the city through time, and contribute to comfort, health, peace, and safety of our residents.

### *Transportation*

Montpelier is built at a human scale with a transportation system that serves the access and mobility needs of all people through a choice of convenient, comfortable, affordable, and efficient transportation modes. The transportation system connects people and goods locally, regionally, and globally. Transportation needs are met safely in a manner supportive of human and ecosystem health.



### Key to Recommendations (next page)

**Goals** are long-range visions for the community. Goals are identified by letters (A, B, C, etc.) at the top of each page.

**Targets** are measurable benchmarks toward the goals. Targets are identified by numbers (1, 2, 3, etc.) at the top of each table.

**Recommended Strategies** are action steps toward the targets. Recommended strategies are listed by number/letter (1a, 1b, 1b.1, etc.) within each table.

## 4.5 Infrastructure & Built Environment Recommendations

### Goal A: Communications

The citizens of Montpelier are connected to each other and the rest of the world. Our communication systems are reliable and support the engagement of all people, information dissemination, social relationships, entertainment, and economic activity.

| <b>1</b>                      |           | <b>By 2015, Montpelier utilizes the most current forms of communications technology, so that residents have easy access.</b>  | <b>Responsible Party</b>                          |
|-------------------------------|-----------|---|---|
| <b>Recommended Strategies</b> | <b>1a</b> | <b>Support extending affordable, state of the art telecommunications to all residents, businesses, and institutions within the community.</b>   | <b>City Council</b>                               |
|                               | <b>1b</b> | <b>Provide support for the provision of necessary communications technologies and resources.</b> <ul style="list-style-type: none"> <li>• Ensure new buildings and facilities are capable of supporting appropriate communications infrastructure and can adapt over time.</li> <li>• Improve public access to communications technologies to those who are unable to afford it.</li> <li>• Make full use of a variety of methods—online networking, local media, volunteer outreach, etc.—to ensure everyone is aware of the resources and opportunities available to them.</li> </ul> | <b>Stakeholders</b>                               |
|                               | <b>1c</b> | <b>Support and enhance programs that provide Montpelier residents with the skills necessary to access current communications technology.</b>  | <b>Public &amp; Private Schools, Stakeholders</b> |
|                               | <b>1d</b> | <b>Foster and promote opportunities for information technology to replace or reduce the need to physically move people or goods and services. Encourage telecommuting and teleconferencing.</b>   | <b>Stakeholders</b>                               |
|                               | <b>1e</b> | <b>Develop an advisory function to help local businesses and non-profits redefine their business models and adapt to internet technology.</b>   | <b>Small Business Development Center (SBDC)</b>   |

## Goal A: Communications

| 2                                |    | By 2015, Montpelier residents utilize communications technology to stay informed about local government matters.  | Responsible Party                              |
|----------------------------------|----|---|--|
| Recommended Strategies           | 2a | <p><b>Develop and maintain communications infrastructure to support informed decision-making. Decisions made by government are quickly and widely dispersed and inform us as to how decisions will impact us.</b></p> <ul style="list-style-type: none"> <li>Utilize the City of Montpelier website to post announcements about upcoming meetings, as well as decisions made by government and municipal boards.</li> <li>Increase the number and diversity of local public meetings that are broadcasted on public access television.</li> <li>Encourage interactive methods for engaging and informing citizens on issues.</li> </ul> | <b>CM,ORCA, City Departments, City Council</b> |
| 2009 Montpelier Citizens' Survey |    | <ul style="list-style-type: none"> <li>✓ 25 percent of residents report that they visited the <b>City of Montpelier website</b> at least 3-12 times per year.</li> <li>✓ 24 percent of Montpelier residents report that they <b>watched a meeting of local elected officials or other local public meeting on cable television</b> at least once or twice per year.</li> </ul>  |  |

## Goal B: Energy

Energy efficiency in Montpelier is maximized. Montpelier's energy is generated by renewable resources of local origin. The delivery of energy is structured to encourage efficient use and affordability.

|                               |           |   |                               |
|-------------------------------|-----------|---|-------------------------------|
| <b>1</b>                      |           | <b>The City of Montpelier pursues a biomass district energy CHP (combined heat and power) facility in downtown to serve downtown residents, municipal buildings, and the capitol complex.</b> | <b>Responsible Party</b>      |
| <i>Recommended Strategies</i> | <b>1a</b> | <b>Maximize the efficiency of the plant, so that it provides the city, state, and downtown with a stable, affordable, and locally sourced form of energy.</b>                                 | <b>City, State of Vermont</b> |

|                               |           |  |                               |
|-------------------------------|-----------|--|-------------------------------|
| <b>2</b>                      |           | <b>By 2015, 1,000 Montpelier homes will be weatherized and 1,000 Montpelier homes switch to a carbon neutral* fuel source.</b>   | <b>Responsible Party</b>      |
| <i>Recommended Strategies</i> | <b>2a</b> | <b>Encourage residents and businesses to investigate and take advantage of programs offered by Efficiency Vermont and other energy service providers to increase energy efficiency.</b>  | <b>Stakeholders</b>           |
|                               | <b>2b</b> | <b>Weatherization and energy efficiency programs connect with groups like Montpelier Senior Center, Vermont Center for Independent Living, Central Vermont Community Land Trust, land-lords, churches, VFW, Elks, Rotary, and schools.</b> | <b>Stakeholders</b>           |
|                               | <b>2c</b> | <b>Neighborhood groups share resources for small energy efficiency projects and weatherization.</b>  | <b>CAN!</b>                   |
|                               | <b>2d</b> | <b>Investigate the potential for neighborhood renewable energy, including geo-thermal, solar, hydro, biomass, and wind.</b>  | <b>Stakeholders</b>           |
|                               | <b>2e</b> | <b>Develop a set of household energy-saving tips here to help residents and businesses reduce energy.</b>  | <b>Stakeholders</b>           |
|                               | <b>2f</b> | <b>Eco-teams (e.g., Montpelier Energy Team) engage people in efficiency improvements.</b>  | <b>Montpelier Energy Team</b> |

\* Carbon neutral refers to achieving net zero [carbon emissions](#) by balancing a measured amount of carbon released with an equivalent amount sequestered or offset.

## Goal B: Energy

| <b>3</b>                      |           | <b>By 2030, total non-renewable energy consumption per capita is reduced 20 percent of 2004 use.</b>   | <b>Responsible Party</b>       |
|-------------------------------|-----------|--|--------------------------------|
| <b>Recommended Strategies</b> | <b>3a</b> | <b>Encourage residents to replace underutilized lawn space with xeriscaping*, permaculture†, and other natural landscaping techniques in order to reduce the high water use, fossil fuel use, and air pollution associated with lawn maintenance. Residents are encouraged to replace gas-powered landscaping equipment with electric or human-powered equipment.</b>  | <b>Conservation Commission</b> |
|                               | <b>3b</b> | <b>Reduce total fuel use and greenhouse gas emissions by increasing shared transport, public transit, walking, and biking and by decreasing the use of cars by single riders.</b>  | <b>Stakeholders, Residents</b> |
|                               | <b>3c</b> | <b>The City of Montpelier completes a feasibility study to establish a wood pellet/chip plant at the Stump Dump to create a local source for wood pellets. Invasive plant species removed from city properties are used in making wood chips or wood pellets. The plant would service the Washington County region. If the project is feasible, the City will develop a timeline for development.</b>  | <b>Parks Department</b>        |
| <b>Additional Indicators</b>  |           | <ul style="list-style-type: none"> <li>• By 2013, Montpelier achieves a 50,000 ton annual reduction in greenhouse gas emissions, the equivalent of \$15 million of fuel oil annually and with an investment in the local economy of approximately \$100 million.</li> <li>• By 2030, Montpelier achieves a city-wide 80% reduction in greenhouse gas emissions and fossil fuel use.</li> <li>• By 2040, the use of low-impact renewable energy increases by 30 percent as a percentage of total energy use.</li> </ul> |                                |

\* Xeriscaping refers to landscaping and gardening in ways that reduce or eliminate the need for irrigation. The use of native species is emphasized, and care is taken to avoid losing water to evaporation and run-off.

† Permaculture is an approach to designing human settlements and agricultural systems that mimic the relationships found in natural ecologies. Synergy between design elements is achieved while minimizing waste and the demand for human labor or energy.

## Goal B: Energy

| <b>4</b>                      |           | <b>By 2040, all new and retro-fitted developments, buildings, vehicles, and equipment are municipal within five percent of the highest energy-efficient design available out of all economically competitive products, as measured on a life cycle basis.</b> | <b>Responsible Party</b>   |
|-------------------------------|-----------|---|--|
| <i>Recommended Strategies</i> | <b>4a</b> | <b>In the purchase of equipment and appliances, the City selects, when the choice is available, those that are energy-star rated.</b>   | <b>CM</b>  |
|                               | <b>4b</b> | <b>When the City purchases new vehicles for its fleet, it considers the highest energy-efficient design options.</b>  | <b>City Council,<br/>Police Department,<br/>DPW,<br/>Fire Department</b> |

### Goal C: Housing & Buildings

Montpelier has a mix of housing that is affordable, safe, healthy, accessible, eco-efficient, in diverse neighborhoods that enhances the experience of people who live here and fosters community. The housing adapts over time to reflect changes in demographics, climate, and technology while maintaining its historic character and meeting the diverse needs of people in the city. Public and private buildings enhance the historic environment and cultural values which have shaped the city through time, and contribute to comfort, health, peace, and safety of our residents.

|                               |           |   |   |
|-------------------------------|-----------|---|---|
| <b>1</b>                      |           | <b>By 2015, all development undertaken in Montpelier preserves the integrity and character of the city’s respective neighborhoods. The character of Montpelier’s Historic District is enhanced and maintained.</b>  | <b>Responsible Party</b>                      |
| <i>Recommended Strategies</i> | <b>1a</b> | <p><b>Ensure that new development complements its surrounding neighborhoods where possible. Where development cannot tie into and reinforce existing neighborhoods, the scale and diversity of that development should follow Montpelier’s existing patterns.</b></p> <p><b>1a.1</b> Create incentives for development that:</p> <ul style="list-style-type: none"> <li>• May be less profitable but desirable, such as housing and the arts; these might be tied to profitable development; and</li> <li>• Reinforce or complement existing neighborhoods.</li> </ul> <p><b>1a.2</b> Create design standards for signs, neighborhoods, and architectural form for each of the zoning districts, to reduce the discrepancy between the areas where design control is in effect and other districts.</p> | <b>Planning Commission, City Council, DRC</b> |
|                               | <b>1b</b> | <p><b>Re-evaluate existing standards regarding parking, traffic flow, road design regulations, and street elements to ensure compatibility with neighborhoods and to reinforce neighborhood centers.</b></p>  | <b>Traffic Committee</b>                      |
|                               | <b>1c</b> | <p><b>Existing affordable housing and light industry along Barre Street should be protected. Additional housing and space for the arts might be incorporated into new development in the Barre Street neighborhood.</b></p>   | <b>Planning Commission</b>                    |

## Goal C: Housing & Buildings

|  |    |   |                     |
|--|----|---|---------------------|
|  | 1d | Development should reinforce existing neighborhoods, by increasing diversity of use and by increasing current densities within the Growth Center, and reducing them outside of the Growth Center. Where an entirely new neighborhood is created, the existing characteristics of adjacent neighborhoods shall be used as a model, to allow commercial uses are integrated with residential uses in ways that maintain neighborhood character while allowing more home and neighborhood based economic activities. | DRB                 |
|  | 1e | Update and revise Design Review guidelines to minimize conflict between historic preservation goals and energy efficiency, barrier-free design, and modern restoration techniques. Recognize that the functional adaptability of historic buildings is an asset that preserves resources and land and that historic preservation is, in and of itself, sustainable development.   | Planning Commission |
|  | 1f | Review Design Control recommendations for subdistricts, updated Cityscape templates, and lighting standards.  | City Council        |

|                        |    |   |                                   |
|------------------------|----|---|-----------------------------------|
| Recommended Strategies | 2  | By 2015, all of Montpelier’s development regulations – zoning, subdivision, and building codes – meet applicable national and state standards and incorporate smart growth principles <sup>3</sup> for sustainability.  | Responsible Party                 |
|                        | 2a | <p>Revise the Zoning Regulations, Zoning District Map, and Design Review Guidelines, taking into consideration zoning that incorporates performance and goal-oriented criteria that provide residents with a menu of compliance options and clear guidelines for the forms of development in particular areas.</p> <p>This new zoning would:</p> <ul style="list-style-type: none"> <li>• Permit compatible mixed uses that reinforce neighborhoods;</li> <li>• Allow for mixed uses within neighborhoods, particularly those uses that are mutually supportive and complement the fabric of the area in which they are located;</li> <li>• Expand the types of uses which would be permitted in all of the zones, particularly in office parks and residential zones; and</li> <li>• Increase density where appropriate to achieve compact, efficient, settlement patterns.</li> </ul> | Planning Commission, City Council |

**Goal C: Housing & Buildings**

|  |  |   |
|--|--|---|
|  | <p><b>2b Undertake a comprehensive review of all city regulations affecting building with the goal of identifying and eliminating unnecessary regulatory obstacles to development. Such a review shall include, but not be limited to, a review of minimum lot size requirements, setbacks, lot coverage, and parking.</b></p> <p><b>2b.1</b> Identify areas of the city that could not be rebuilt under current zoning and revise restrictive zoning.</p> <p><b>2b.2</b> Encourage infill development by adopting prevailing setback and lot coverage requirements that would give developers the option of complying with the existing development patterns of adjacent properties.</p>  | <p><b>City Council,<br/>Planning<br/>Commission</b></p> |
|  | <p><b>2c Develop new regulations and incentives to improve the efficient use of buildings and land in areas where growth is concentrated, while protecting important natural resources and reducing development pressure outside of the central city area.</b></p> <p><b>2c.1</b> Promote appropriate high density development within the Growth Center by adopting zoning regulations and appropriate review criteria to require minimum densities in the Growth Center, and clustered development in the Low Density Residential District outside the Growth Center, allowing small (4 units or less) multi-family development as a permitted use.</p> <p><b>2c.2</b> In the Low Density Residential District and other areas outside of the Growth Center, consider revising off-lot water and sewer requirements, and limiting the expansion of the City’s maintained road network and other types of capital improvement projects.</p> <p><b>2c.3</b> Create and implement regulatory and other incentives to encourage residential and commercial use of vacant space where appropriate.</p> <p><b>2c.4</b> Encourage the adaptive reuse and full utilization of existing underutilized or vacant structures through various means including a regular building inspection program for vacant buildings.</p> <p><b>2c.5</b> Encourage accessory dwelling units and home sharing through various means including renovation loans to homeowners who need assistance modifying their homes to better accommodate additional occupants.</p> <p><b>2c.6</b> Utilize density bonuses and inclusionary zoning to encourage the development of affordable housing.</p> <p><b>2c.7</b> Reduce the land dedicated to automobiles by revising parking requirements in all districts and encouraging new developments to implement measures that increase pedestrian, bicycle, and transit use.</p> | <p><b>City Council,<br/>Planning<br/>Commission</b></p> |

## Goal C: Housing & Buildings

| <b>3</b>                      |           | <b>By 2015, all new buildings are designed to encourage the use of alternative forms of transportation (e.g. walking, cycling, and public or shared transit).</b>                       | <b>Responsible Party</b>                 |
|-------------------------------|-----------|---|--|
| <i>Recommended Strategies</i> | <b>3a</b> | <b>Establish building standards that foster multiple forms of transportation and reduce the impacts of the transportation system on the natural environment.</b>                        | <b>Planning Commission, City Council</b> |
|                               | <b>3b</b> | <b>Provide incentives to commercial builders that promote more environmentally friendly commuting choices (e.g. infrastructure for cyclists, walkers, car poolers, and bus riders).</b> | <b>Planning Commission, City Council</b> |

| <b>4</b>                      |           | <b>By 2015, greater than 20 percent of Montpelier residents report that the availability of affordable quality housing is “good” or “excellent.”</b>  | <b>Responsible Party</b>                 |
|-------------------------------|-----------|---|--|
| <i>Recommended Strategies</i> | <b>4a</b> | <b>Tabulate and review local and regional housing development and demographic trends to identify Montpelier’s housing needs, including special needs and transitional housing. Monitor affordability with the goal of promoting the development of housing that preserves economic diversity in the city.</b> | <b>CVRPC</b>                             |
|                               | <b>4b</b> | <b>Promote the development of housing in the city’s downtown. Consider adopting an ordinance to provide incentives for creating mixed uses in new or substantially renovated structures.</b>  | <b>Planning Commission, City Council</b> |

## Goal C: Housing & Buildings

|  |   |  |
|--|---|--|
|  | <p><b>4c Encourage the development of affordable housing through innovative standards and practices.</b></p> <p><b>4c.1</b> Continue working with non-profit housing developers to develop new rental and home-ownership opportunities affordable to low and moderate income households.</p> <p><b>4c.2</b> Adopt inclusionary zoning to ensure the development of housing affordable to lower income households.</p> <p><b>4c.3</b> Work with regional employment providers to develop employer assisted housing programs.</p> <p><b>4c.4</b> Maintain the City's Housing Trust Fund to fund affordable housing opportunities.</p> <p><b>4c.5</b> Integrate subsidized housing throughout the city, with a mix of rental, owned, and mixed-income tenures.</p> <p><b>4c.6</b> Support public/private partnerships to develop integrated affordable housing into existing and new neighborhoods.</p> <p><b>4c.7</b> Support programs to eliminate homelessness.</p> <p><b>4c.8</b> Reduce the water and sewer hook-up fees for accessory apartments, and seek grant funding to help offset the costs of the sprinkler systems required.</p> | <p><b>Planning Commission, Planning Department, City Council, MH Authority, CVCLT, Property Owners</b></p> |
|  | <p><b>4d Identify and eliminate impediments to fair housing choices.</b></p>  | <p><b>Stakeholders</b></p>   |
|  | <p><b>4e Support efforts of non-governmental organizations, including the Central Vermont Community Land Trust, Home Share Vermont, and Capital City Housing Foundation, to develop and steward healthy, energy efficient and affordable home for purchase or rent.</b></p>   | <p><b>City Council, Housing Task Force, Stakeholders</b></p>   |
| <p><b>2009 Montpelier Citizens' Survey</b></p> | <p>✓ 20 percent of Montpelier residents report that the <b>availability of affordable quality housing</b> is "good" or "excellent."</p>   |  |

\* Employer assisted housing (EAH) is a way for employers to help their employees buy or rent homes close to work.

## Goal C: Housing & Buildings

| <b>5</b>                      |           | <b>By 2015, Montpelier accommodates an average of 50 new housing units per year for the next twenty years to increase the tax and utility rate base, to provide opportunities for home-based businesses, and to continue to support our vibrant, historic downtown.</b> | <b>Responsible Party</b>                 |
|-------------------------------|-----------|---|--|
| <i>Recommended Strategies</i> | <b>5a</b> | <b>Pursue TIF District<sup>4</sup> designation to take advantage of state funding for infrastructure development.</b>   | <b>City Council, CM</b>                  |
|                               | <b>5b</b> | <b>Revise the zoning ordinance to make it less cumbersome for homeowners to add rental units.</b>   | <b>Planning Commission, City Council</b> |
|                               | <b>5c</b> | <b>Create financial incentives for property owners to add affordable units to their properties and to bring existing units up to code.</b>  | <b>City Council</b>                      |

| <b>6</b>                      |           | <b>By 2015, Montpelier's existing building and housing stock demonstrates ongoing improvements, so that it becomes safer, healthier, and more accessible.</b>     | <b>Responsible Party</b>                |
|-------------------------------|-----------|---|---|
| <i>Recommended Strategies</i> | <b>6a</b> | <b>Consider an apartment inspection, registration, and certificate of occupancy program.</b>  | <b>City Council, Building Inspector</b> |
|                               | <b>6b</b> | <b>Upgrade water system to accommodate sprinklers as financially feasible.</b>  | <b>City Council, DPW</b>                |
|                               | <b>6c</b> | <b>Seek out funding to assist multifamily property owners in installing sprinklers in their buildings.</b>  | <b>Planning Department</b>              |
|                               | <b>6d</b> | <b>Continue the City's Housing Preservation Loan Program, which provides renovation loans to low and moderate income homeowners.</b>                              | <b>Planning Department</b>              |
|                               | <b>6e</b> | <b>Consider a housing replacement and demolition by neglect ordinance to address the loss of housing units to commercial conversion or demolition or neglect.</b> | <b>City Council</b>                     |

|  |    |   |                                     |
|--|----|---|-------------------------------------|
|  | 6f | Support the identification and remediation of lead paint and asbestos within residential dwellings.   | Stakeholders                        |
|  | 6g | Encourage the incorporation of barrier-free design in new building construction or substantial renovation projects to ensure buildings are functional, safe, and convenient for all users, including those with any type of disability.   | Stakeholders, VCIL                  |
|  | 6h | Explore or find means to improve accessibility and affordability of space for small businesses and/or residential space on 2 <sup>nd</sup> or 3 <sup>rd</sup> floors.   | Stakeholders, VCIL                  |
|  | 6i | <p>The City of Montpelier will continue to develop and enforce building and health codes with the following list of priorities as guidance:</p> <ul style="list-style-type: none"> <li>To help make the City a safer and healthier place to live and work;</li> <li>To ensure that all development meets minimum health and safety standards;</li> <li>To make decisions at the local level whenever possible;</li> <li>To respond to City needs and objectives; and</li> <li>To accommodate the interests and needs of property owners.</li> </ul> | City Council, Health/Bldg Inspector |

|                               |    |  |                                   |
|-------------------------------|----|--|-----------------------------------|
| <b>7</b>                      |    | By 2015, all new and retrofitted, residential, and non-residential buildings are built to be within five percent of the highest energy- and water-efficient design available out of all economically competitive products, as measured on a life cycle basis. And by 2015, Montpelier's housing stock uses less energy and water than was reported in 2004.* | Responsible Party                 |
| <i>Recommended Strategies</i> | 7a | Promote and educate about eco-efficient building design and encourage all new construction to meet sustainability standards, such as LEED <sup>5</sup> .   | Stakeholders                      |
|                               | 7b | Streamline the development approval process for buildings and housing that demonstrate eco-efficient standards.  | Planning Commission, City Council |
|                               | 7c | Encourage residential energy retrofit programs and use of the Central Vermont Community Action Council's Weatherization Program in Montpelier.   | CVCAC                             |

\* In 2004, Montpelier's residential sector used 416,883 MMBtu energy.

## Goal C: Housing & Buildings

|  |   |  |
|--|---|--|
|  | <p><b>7d</b> Revise the design guidelines and CityScape* to provide clear guidance to building owners who are seeking to make their buildings more energy efficient and use renewable energy within the Design Control District so that energy efficiency and renewable energy are affordable and minimize conflict with historic preservation goals.</p>   | <p><b>Planning Commission, City Council</b></p>              |
|  | <p><b>7e</b> Explore and create incentives for adopting eco-efficient standards and climate adaptation in home and building site design.</p> <p><b>7e.1</b> Consider subsidies for eco-efficient home and building site design.</p> <p><b>7e.2</b> Provide financing incentives for homes and buildings that are more energy efficient and that incorporate climate adaptation measures.</p> <p><b>7e.3</b> Support local groups and businesses that offer green building products and technologies through information and awareness packages.</p> <p><b>7e.4</b> Review the building code and add requirements for energy-efficiency, climate adaptation, and building construction consistent with LEED and/or more stringent standards.</p> | <p><b>Stakeholders, City Council, Building Inspector</b></p> |

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\* Montpelier's guide for development in the Design Control District, adopted in 1976.

## Goal C: Housing & Buildings

| <b>8</b>                      |           | <b>By 2015, promote infill development, adaptive reuse and/or redevelopment of vacant or underutilized land with educational programs.</b>  | <b>Responsible Party</b>   |
|-------------------------------|-----------|---|----------------------------|
| <i>Recommended Strategies</i> | <b>8a</b> | <b>Identify priority areas for potential infill, redevelopment, and accompanying infrastructure improvements.</b>   | <b>Planning Commission</b> |
|                               | <b>8b</b> | <b>Consider revisions to parking requirements for infill development.</b>   | <b>Planning Commission</b> |
|                               | <b>8c</b> | <b>Provide tax or zoning incentives to encourage the redevelopment of vacant or underdeveloped lots within the city.</b>  | <b>City Council</b>        |
|                               | <b>8d</b> | <b>Encourage infill development through Montpelier’s Grant and Revolving Loan program.</b>  | <b>Planning Department</b> |
|                               | <b>8e</b> | <b>Redevelop vacant former industrial areas known as “brownfields” (e.g. Carr Lot; Stonecutters’ Way; Turntable Park) to absorb significant commercial and/or mixed-use growth.</b> | <b>Property Owners</b>     |

| <b>9</b>                      |           | <b>By 2015, all publicly owned buildings in Montpelier are optimized (in terms of use and energy), are models of energy and resource efficiency, and allow for a variety of public purposes within the existing space.</b> | <b>Responsible Party</b>  |
|-------------------------------|-----------|--|---------------------------|
| <i>Recommended Strategies</i> | <b>9a</b> | <b>Continue to explore the possibility of consolidating Montpelier’s public schools, in order to use the existing educational facilities efficiently.</b>  | <b>School Board</b>       |
|                               | <b>9b</b> | <b>Public buildings in Montpelier are designed, managed, and maintained for public benefit, with options such as affordable housing, recreation, senior activities, and non-profit incubator space.</b>                    | <b>City of Montpelier</b> |

### Goal D: Transportation

Montpelier is built at a human scale with a transportation system that serves the access and mobility needs of all people through a choice of convenient, comfortable, affordable, and efficient transportation modes. The transportation system connects people and goods locally, regionally, and globally. Transportation needs are met safely in a manner supportive of human and ecosystem health.

| 1                      | By 2015, increase the number of Montpelier residents who commute by walking or bicycling increasing by 40 percent by 2040.   | Responsible Party |
|------------------------|--|-------------------|
| Recommended Strategies | 1a Develop and extend a wagon-wheel network of trails throughout downtown Montpelier and to other neighboring communities.   | Parks Department  |
|                        | 1b Construct a paved bike path link between Taylor Street and Stonecutter’s Way, and extend the path so that it is tied into larger, regional transportation path plans. Seek alternatives to current plans that utilize the railroad rights of way. | DPW               |
|                        | 1c Develop and implement a wide range of material that promotes walking and bicycling as healthy forms of exercise and transportation.   | Stakeholders      |
|                        | 1d Increase awareness about bike and pedestrian organizations, such as Free Ride Montpelier, and the services offered (bike maintenance, classes, etc.).   | Stakeholders      |
|                        | 1e Provide secure bicycle storage areas and racks throughout the city.   | DPW               |
|                        | 1f Prioritize the sidewalk network for maintenance, ADA compliance, and snow removal.  | DPW               |
|                        | 1g Extend sidewalks along major arteries, including, but not limited to Terrace Street, Berlin Street, Northfield Street, Barre Street, Elm Street, Towne Hill Road, and Route 2.  | DPW               |
|                        | 1h Introduce traffic calming tactics as needed in areas such as Barre Street and Main Street Middle School.  | DPW               |
|                        | 1i Ensure that crosswalks are readily identifiable and safe.   | DPW               |

## Goal D: Transportation

|                                  |    |   |                   |
|----------------------------------|----|---|-------------------|
|                                  | 1j | Adopt a complete streets ordinance and implement bicycle parking requirements for new and reconstructed developments.   | City Council      |
|                                  | 1k | <p>Create a Complete Street Committee, consisting of the Director of Public Works; Director of Planning and Community Development; the Chief of Police; a member of the City Council; and a member of the City’s Safe Routes to School committee, Montpelier Bikes committee, or general member of the public.</p> <ul style="list-style-type: none"> <li>This committee would solicit public input and develop a comprehensive bicycle and pedestrian plan for Montpelier to include shared use paths and on-road bicycle facilities.</li> <li>A member of the Complete Streets Committee should serve on the Capital Improvement Budget Committee and have a voice in the budgeting process.</li> </ul> | City Council      |
|                                  | 1l | The City Council and the Department of Public Works should pursue funding sources to improve bicycle infrastructure and facilities in the city.   | City Council, DPW |
|                                  | 1m | The City uses standard design guidelines, such as the Manual on Uniform Traffic Control Devices or the American Association of State Highway Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities manual,* for the design of bicycle facilities.   | City Council, DPW |
|                                  | 1n | The City embraces the idea of uphill bike lanes/downhill shared lane markings (a concept recommended in AASHTO Guide for the Development of Bicycle Facilities), on appropriate streets throughout the city.  | City Council      |
| 2009 Montpelier Citizens’ Survey |    | <ul style="list-style-type: none"> <li>✓ 73 percent of Montpelier residents report that the <b>availability of paths and walking trails</b> is “good” or “excellent.”</li> <li>✓ 83 percent of Montpelier residents report that the <b>ease of walking</b> in Montpelier is “good” or “excellent.”</li> <li>✓ 53 percent of Montpelier residents report that the <b>ease of bicycle travel</b> in Montpelier is “good” or “excellent.”</li> </ul>   |                   |

\* The manual provides information on the development of new facilities to enhance and encourage safe bicycle travel. Planning considerations, design and construction guidelines, and operation and maintenance recommendations are also included.

## Goal D: Transportation

| 2                                |  | By 2015, Montpelier residents commuting by public transit increases by 15 percent.  | Responsible Party                                     |
|----------------------------------|--|---|---|
| Recommended Strategies           | 2a   | Ensure that buses are accessible and user-friendly for all riders.  | Local, regional, and interstate transit, City Council |
|                                  | 2b   | Expand public transportation services between and within the cities of Montpelier and Barre.  | Local, regional and interstate transit, City Council  |
|                                  | 2c   | Expand public transportation services to public green spaces, including Hubbard Park.   | Local, regional, and interstate transit, City Council |
|                                  | 2d   | Implement a new-year round, public intercity transit system that connects Montpelier neighborhoods to the downtown area and potential remote parking facilities.  | Local, regional, and interstate transit, City Council |
|                                  | 2e   | Secure a location for an intercity, multi-modal transit station. This facility provides a destination to integrate local, regional and interstate transit, rail, bicycle path users, a Welcome Center for tourists and tour buses, and potential retail and commercial tenants.           | City Council  |
|                                  | 2f   | Increase park-and-ride options that are connected to intracity public transit. A park-and-ride station is situated in Montpelier's Commercial/LDR zones.  | City Council  |
|                                  | 2g   | Provide incentives to businesses that promote employee reward programs supporting the use of public transportation, car pooling, walking, and biking.   | Stakeholders  |
|                                  | 2h   | The City of Montpelier investigates the potential of establishing a Smart Jitney system (use of cell phones and GPS technology to compile and disperse information about individual vehicles, their destinations, and their riders so vehicles can be shared) through the City's website. | Planning Department                                   |
| 2009 Montpelier Citizens' Survey | <ul style="list-style-type: none"> <li>✓ 52 percent of Montpelier residents report that <b>bus or transit services</b> are "good" or "excellent."</li> <li>✓ 33 percent of Montpelier residents report that <b>ease of bus travel</b> is "good" or "excellent."</li> <li>✓ 3 percent of Montpelier residents report that they have <b>ridden a local bus</b> within Montpelier 13 to 26 times in the past year.</li> </ul> |   |   |

## Goal D: Transportation

| 3                                |    | By 2020, the number of Montpelier residents commuting to work with others in a motorized vehicle increases by 20 percent.  | Responsible Party |
|----------------------------------|----|--|-------------------|
| Recommended Strategies           | 3a | The City and local non-profit groups better promote Vermont's ride-share program. ( <a href="http://www.connectingcommuters.org">www.connectingcommuters.org</a> ). Links to state and national ride-share websites are available on the City's website. | City Web Site     |
|                                  | 3b | The City of Montpelier cooperates with the City of Barre and other municipalities in joint parking conservation programs, including programs to encourage commuters to car pool, van pool, walk, and use public transit.                                 | Stakeholders      |
|                                  | 3c | Volunteers utilize the Senior Center vans to do loops throughout the City during community events.   | Senior Center     |
|                                  | 3d | Establish Zip-cars or other car-share opportunities.   | Stakeholders      |
|                                  | 3e | Increase co-ownership of vehicles among neighbors.   | Stakeholders      |
| 2009 Montpelier Citizens' Survey |    | <ul style="list-style-type: none"> <li>✓ Citizens report that 10 percent of the time during a typical week, they <b>travel in a motorized vehicle with other children or adults.</b></li> </ul>  |                   |

### Sidewalk Tanka Haiku #6

These paved paths expose us to  
people and culture  
on our way somewhere,  
plus keep us healthy.

Much more useful than duct tape

- Harris Webster, 2010  
*Montpelier resident*

### Sidewalk Tanka Haiku #7

Taken-for-granted sidewalks  
especially help out  
the poor, disabled,  
young and elderly.

Infra-structure saints.

- Harris Webster, 2010  
*Montpelier resident*

## Goal D: Transportation

| <b>4</b>                                |           | <b>By 2015, Montpelier maintains safe, quality roadways, sidewalks, and bike paths.</b>  | <b>Responsible Party</b> |
|---|-----------|--|--------------------------|
| <b>Recommended Strategies</b>           | <b>4a</b> | <b>Identify problem areas of roadways, sidewalks, and bike paths and provide maintenance when needed. Utilize reports, such as the Growth Center Designation, which identify problem roadways and provide suggestions for improvements.</b>  | <b>Stakeholders, DPW</b> |
|   | <b>4b</b> | <b>Effectively address the perception and the reality of problematic mobility by creating an effective transit management system which would be empowered to:</b> <ul style="list-style-type: none"> <li>• Better utilize existing parking;</li> <li>• Create a ZIP car, ride-share, and/or Smart Jitney* system;</li> <li>• Manage existing municipally-controlled parking systems;</li> <li>• Be accountable.</li> </ul> | <b>Stakeholders</b>      |
|   | <b>4c</b> | <b>Montpelier adopts a “Complete Streets” policy to insure that all new transportation infrastructure prioritizes pedestrian, bicycle, and transit uses.</b>   | <b>City Council</b>      |
| <b>2009 Montpelier Citizens’ Survey</b> |           | <ul style="list-style-type: none"> <li>✓ 31 percent of residents report that <b>street repair</b> is “good” or “excellent.”</li> <li>✓ 44 percent of Montpelier residents report that <b>sidewalk maintenance</b> is “good” or “excellent.”</li> </ul>   |                          |

\* The Smart Jitney is a system of efficient and convenient ride sharing that utilizes the existing infrastructure of private automobiles and roads. The goal of the system is to insure that each private car always carries more than one person per car trip, optimally 4-6. The Smart Jitney system uses GPS technology, cell phones and the Internet for ride reservations and coordination. (<http://www.communitysolution.org/transport.html>)