

NOTE FOR TPUDC:

- This follows the “Getting Around Town” intro on pgs 60-61

Moving cars and trucks

Efficient and safe transportation of people and goods is one of the foundations of a vital downtown. Our transportation system serves a large array of people – residents, businesses, institutions, workers, shoppers and visitors. Our transportation infrastructure is a critical part of the city’s urban fabric and a contributor to how we experience daily life. It is essential to ensure a smooth flow of traffic in and out of the city and the downtown, for all modes of transportation.

Arriving downtown

While use of alternative transportation modes (walking, biking, and transit) has seen an increase in Burlington over the past decades reducing the amount of miles driven in single occupancy vehicles, it is important to recognize that the automobile continues to play a central role in moving people and goods in and out of the city. Today, 62% of Burlingtonians drive their cars alone for commuting to work, while 74% of county residents do the same, many of which work in our downtown. (See Phase 1 Transportation Study) Convenience is a key factor in transportation decision-making, and for many the car continues to be the most convenient option.

While cars and trucks are the dominate mode of transportation today, we will never be able to afford to build our way out of the growing mix of traffic congestion, air quality, parking, and urban development challenges that they bring. Instead we need to make improvements within the existing system to offer a wider range of choices that are safer, more cost effective, cleaner, convenient, and move more people more efficiently. As various alternatives become easier, cheaper and more convenient, more travelers can gradually make a shift over time based on what works best for them, rather than choosing the only option available.

The [2011 Burlington Transportation Plan](#) defines a system of “complete streets” throughout the city that will ensure a smooth flow of people and goods. This means that we need to create a more balanced transportation system that meets the needs of all users regardless of age or ability rather than one that heavily favors one mode at the exclusion of others. The City’s Transportation Plan includes classifications for all streets (e.g., Complete, Transit, Bicycle, Slow, State Truck Route, and Neighborhood), and provides guidelines for each type reflecting this approach. Given inherent physical limitations, priorities are expressed where there isn’t adequate room to accommodate every mode in addition to cars. The map below illustrates how, within the downtown, the majority of the streets are designated “Slow Streets” within a pedestrian-oriented core, Pearl, Main, and St. Paul Streets are “Transit Streets” prioritizing efficient transit movement along these primary corridors in and out of the city, and Battery St. and Winooski Ave are “Complete Streets” to include facilities to better support transit, bicycles, and pedestrians.

NOTE FOR TPUDC

Let’s redo this map showing

- the complete streets by types – Main, Pearl, Battery and Winooski Ave especially
- the pedestrian zone
- bike parking/storage locations

Figure 15: Burlington Transportation Plan Adopted Street System



Reducing Congestion

While we recognize the dominance of car travel in today's reality, it is essential that we strive for a continued increase in the use of other means of transportation for daily travel over time. Shoppers and visitors coming to downtown from afar will likely continue to get here by car. However, there is significant opportunity to encourage residents and commuters to travel differently. The Campus Area Transportation Management Association (CATMA) is an example of a **transportation demand management program** that has proven very valuable and effective for our institutions on the hill. Programs offered by CATMA provides employees incentives and information for them to commute to work differently, such as car/van pool programs, car sharing, emergency ride home programs, walk/bike reward programs, and free or

discounted transit passes. Knowing that success, there is tremendous potential to replicate a similar program for downtown employees reducing both traffic congestion and parking demand.

A strong focus on residential development could also greatly help to reduce traffic congestion and parking demand. Adding more housing downtown has a greater impact on congestion reduction than increasing transit and other modes alone (See Phase 1 Transportation Study). Additional residential opportunities would allow people to both live and work downtown, giving them the chance to walk, bike or use transit or car sharing more frequently. Many might even choose to go carless. As mentioned in the “**Housing Nut**”, there are a number of regulatory and non-regulatory strategies that the City should pursue in order to increase the supply of housing in and around the downtown area.

As noted in “What Works,” **street connectivity** is an important element of traffic management as well as creating a framework for urban development. An interconnected network of streets creates a variety of options for drivers, and disperses traffic across several streets rather than clogging one primary artery. Burlington is fortunate to have a well-defined urban street grid. Recommendations regarding ways to reconnect and expand Burlington’s street network can be found in the “Around the Plan” section.

Yield to Pedestrians

Every trip we make begins and ends as a pedestrian – whether we drive, ride our bike or take the bus. Urban places have always been built for and around the needs of people on foot. The “Timeless Principles” discussed earlier highlight the essential elements needed to make a place “walkable” – things like destinations and distance, density and design. While Burlington has a well-earned reputation as a place where pedestrians are celebrated, there are still a number of improvements needed to expand the vibrancy and walkability beyond the Church Street Marketplace and making connections to the waterfront.

Enjoy the journey:

While destinations are important to build connections between places, pedestrians need to enjoy the walk along the way. This means having interesting things to look at and experience. Otherwise the destination feels too remote and they may be more inclined to drive or worse...not go at all. Interesting architecture, display windows, shade trees, eclectic street furniture, proper lighting scaled for pedestrians, and infill buildings that provide outdoor cafés and active storefronts all contribute to engaging the pedestrian all along the journey.

Crossing to the Other Side:

Street crossings can be major obstacles for pedestrians: Can I make it in time? Do the drivers know I’m here? Raised intersections, painted or textured crosswalks, bump-outs, pedestrian phased signals, median refuges are all tools that help to make pedestrian crossings safer and more inviting to use. Within the downtown pedestrian zone (see map), and especially at major intersections (like Main St./S. Winooski Ave, Pearl St./N. Winooski Ave and all along Battery St) design elements and intersection treatments should be homogenous. Infrastructure such as button free automatic leading pedestrian phases should be standard to ensure a safe pedestrian experience. Median refuges should also be designed and integrated where possible.

A place to walk:

Narrow streets, and by extension narrow sidewalks, are characteristic of older New England downtowns. While we can't make more land to give everyone a little more elbow room, we can make better use and ensure improved maintenance of the space that we have. Keeping sidewalks and walkways free of obstructions and in good condition is a first essential step to ensuring a positive and worry-free pedestrian experience. This means free of weeds and litter, well lit at night, smooth and even for strollers and wheelchairs. With very few exceptions, space devoted to "green belt" (ok, so it's really a "brown belt") should be reclaimed as part of a "Green Street" and by extending the suite of streetscape design elements recently installed on lower Church and St. Paul streets. This way we are managing our stormwater, giving pedestrians more room, and enhancing their experience all at the same time!

Biking, a way of life!

Burlington has already done a lot to improve the bikeability in the city. Improving existing infrastructure and adding additional bicycle facilities will make biking an even more attractive and viable mode of transportation.

1. bikeways

Creating a seamless and convenient network of bikeways is the most important (and most challenging) task in the downtown and waterfront core. Continuous north-south and east-west connections for safe bike travel has been identified as a priority in the [2004 North-South Bike Plan](#) as well as in the city's transportation plan. A city-wide bike and pedestrian plan should be prepared to ensure the appropriate connections are achieved throughout the city, and not only in downtown. There are a variety of bikeway types that accommodate users with different experience levels, including paths, bike lanes, and riding in traffic. A cycle track or protected bike lane is another bikeway type that is gaining popularity in the U.S. and Canada as more information becomes available about the increased safety and comfort they provide for the recreational cyclist, including kids and the elderly. Recent studies have shown the dedicated bike lane can reduce injury for bikers by 90%. To increase the amount of riders in Burlington, we need facilities that appeal not only the 1% "strong and fearless" and 7% "enthused and confident" riders, but also to the 60% "interested and concerned", who are generally unwilling to ride on the street with cars. (Portland, OR)

2. intersection treatments

Cycle tracks separate cyclists and motor vehicles to a greater degree than a bicycle lane. This increases comfort for cyclists on the cycle track, but it creates additional considerations at intersections, which must be addressed through design. Particular concerns associated with cycle tracks at signalized intersections include the lack of visibility for bicyclists in the cycle track, the right hook danger, and the difficulty of left-turn movements from the cycle track. At signalized intersections along the cycle track, cyclists should be provided a protected phase for the through movement as well as a designated "bike box" to enable left-hand turns.

3. bike parking and storage

Cyclists must have safe and convenient places to store their bicycles at a trip's end. One of the most user-friendly designs is the "u-shaped" bicycle rack, though locally-made options that maintain a high level of function should be encouraged. Racks should continue to be placed around the city, both outside as well as inside – incorporated into new downtown development and in parking garages. Like parking for cars, bike parking needs to be distributed throughout the area rather than concentrated in only a handful of locations. An easy and inexpensive way to accommodate a large amount of bike parking without

cluttering the sidewalk is to convert some vehicular parking spots around downtown into spaces for bike parking. Choosing locations at the end of a block could also improve visibility for motorists at busy intersections. The City will need to carefully select locations where the loss of a valuable vehicular space is justified by high use from cyclists, to maintain support among retailers and positive momentum for the program. Racks should be locally designed when feasible, while maintaining a high level of function for users. There is currently not enough permanent indoor secure bike storage in Burlington. A public/private partnership could be created between local non-profits and the City to fund and install secure, covered bike storage in proximity to the multi-modal center for commuters who come into downtown via transit. Permanent, secure bike storage should also be available at the waterfront for those who access the City via the bike trail and for use during events. Secure storage could be something as simple as an indoor bike locker, card-accessed bike cage, or a more elaborate bike station that includes a repair station, showers, lockers, changing rooms, rentals, and even cafe space.

4. bike culture

Easily identifiable bike shops, repair stations, cafes, and other businesses that cater to the needs of hungry and thirsty bikers will do much to build the City's reputation as a bike friendly destination. This is as much an economic strategy as it is a transportation strategy especially when considering the strong bike culture in nearby Quebec. Burlington already has some incredible end of trip facilities, most notably, Maglianero, with its cool bike art and showers. These kinds of highly functional end-of-trip facilities, combined with incentivized programs and other "soft" improvements, will continue to build on Burlington's growing bike culture.

5. bike share

As a more complete network of bike routes and facilities are developed, creation of a "Bike share Burlington" smart bike program would further encourage the use of bikes by locating short term rental (or in some cases free) bikes in docking stations around the city. The most common locations for the bike kiosks are in long-term parking lots, parking garages, in parking spaces, and carved out of the edges of public parks. For small cities, there must be a critical number of people who will use the bikes and a significant expenditure of resources to construct and roll out the bike kiosks as part of a large-scale launch. With UVM and a bike share company as key partners, this program could see wide success in Burlington, helping to make biking a more dominant form of transportation where more people feel safe riding.

TOOL: Require the provision of bike parking/storage facilities in any new development in downtown and encourage existing property owners to do the same. (Planning & Zoning Department)

Burlington should develop a city-wide bicycle plan and continue to retrofit urban streets to more safely accommodate bicycle travel. A more customized and nuanced approach that includes a greater diversity of bikeway types, including the cycle tracks, and other locally-calibrated infrastructure, will ensure that the appropriate treatment is used on each street within the network, enabling users of different abilities to enjoy a safe and direct route to their destinations. Making cycling as convenient, safe, and enjoyable as possible for the greatest number of people will position the City to reduce reliance on the car and advance our reputation as a

biking destination. In addition to bikeways, the City will need to continue to provide high quality bike parking, end-of-trip facilities, and an interesting streetscape.

Cycle Track

A cycle track is a dedicated lane reserved for bicycle travel physically protected from moving traffic by a physical barrier such as parked cars, bollards, curbs or medians.

A cycle track is an exclusive bicycle facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. Cycle tracks are separated from vehicle travel lanes, parking lanes and sidewalks with a physical barrier. A buffer strip can also be integrated to protect cyclists from car doors. Cycle tracks can be either one-way or two-way, and be on one or both sides of a street. Unlike a more standard bike lane, this design physically protects cyclist from vehicular traffic, which has the benefit of greatly improving the rider comfort and safety. Cycle tracks have been shown to increase the number of cyclists by over 15%, especially among older populations and families who would not normally use an urban bike lane, and to decrease accident rates by up to 90%. Because cyclists are not riding directly in view of drivers, intersections must be carefully designed to ensure safe mixing of cyclists and drivers in advance of turning movements.

Bicycle Lane

A bike lane is dedicated lane reserved for bicycle travel within a vehicular thoroughfare. The bicycle lane is separated from vehicular travel lanes by a painted line or parallel painted lines for a buffered bike lane.

A bicycle lane is portion of the roadway that has been dedicated for the exclusive use of bicycles typically located between the parking lane and the travel lane. Bikes can move in the same direction as vehicular traffic or in the opposite for a “contra-flow” lane. Bicycle lanes are usually one-way and can be on the left or right side of a street. Bicycle lanes should be on both sides of the street, but may be on only one side if space is severely constrained. Studies have shown that a simple white line is effective in channelizing both motorists and bicyclists.

Sharrow

A sharrow is a pavement marking applied to a bike route too narrow to accommodate a bicycle lane or cycle track in both directions, or on bike routes shared streets or bike boulevards with very slow vehicular target speeds.

A sharrow refers to the condition where cars and cyclists share the same travel lane. Sharrows are typically marked by a bicycle symbol with chevron, making it clear to drivers that the travel lane is a shared space and to expect cyclists. Even though the travel lane is shared, cyclists should ride along the right pavement marking in a predictable straight line and away from hazards at the edge of the road such as drain gates and opening car doors. Sharrows are a solution for streets that are part of a continuous bicycle route but are too narrow for conventional bike lanes or cycle tracks. They also have the benefit of being relatively inexpensive to install.

Transit ties it all together

To a large extent, improvements to the public transit service will play a vital role in the future success of Burlington and the region's economy, allowing for continued economic growth in a way that is consistent with many city policies such as reduced energy use, environmental protection, sustainable land use

development, and reduced traffic congestion. The Chittenden County Transportation Authority's Transit Development Plan (TDP) provides a program for the expansion and enhancement of public transportation service in the county over a 10-year period and beyond. Policy changes and increased support for public transit are necessary to the expansion of the regional network. Burlingtonians use transit either by necessity or choice and whatever the reason, the more extensive and frequent the service is, the more ridership there will be. For many, and especially employees who don't have a 9am to 5pm work schedule, the main improvement needed is night and weekend service and higher frequency along primary routes. Convenience and ease of utilization are critical to increased ridership.

Downtown Transit Center:

The number one obstacle and opportunity facing expanding public transit in the region is the lack of a high quality downtown transit center. CCTA has identified a preferred location for the creation of a new "transit mall" that will significantly improve existing service and is critical to facilitating much needed expansion.

Getting there from here:

Our expanding regional transit system is connecting more people from more places every day. From inner-city loops to inter-city commuters, the need of a growing group of riders is making public transit a part of their daily lives. Building new connections to other communities, major employment centers, and commuter lots with higher frequency transit (especially nights and weekends) is key to our future success.

How long 'till the next bus?

They say "ignorance is bliss" but not so much when you are trying to catch a bus. Riders need up-to-date information about bus routes and schedules preferably available in a clean and bright shelter or better yet on a smart phone.

Planes, trains and transit:

From an Amtrak Station on the waterfront with service to New York and Montreal, to an international airport just outside of town, you can go as far as your imagination (and pocketbook) can take you! Regular and frequent transit service connecting the downtown and the rest of the region can make living, working or even visiting Burlington car-free a breeze.