



Walkable and Livable Communities Institute

Observations and Recommendations: The Built Environment Burlington, Vermont

The South End ‘Arts District’

Prepared by the Walkable and Livable Communities Institute for the City of Burlington, the Vermont state AARP office, and AARP Livable Communities.

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The following memo summarizes the WALC Institute’s observations and recommendations during a September 2014 visit to Burlington, focusing on walkability and bike-ability in the South End ‘Arts District’ and planBTV South End, including the future Champlain Parkway, south Pine Street improvements, and future Safe Routes to School efforts for Champlain Elementary School. These initial recommendations are based on a short visit to the community and shouldn’t be considered exhaustive. They do provide a strong starting point, however, for identifying some short-term, mid-range and long-term initiatives that will improve health and well-being through better built environments.



Overarching Opportunities for Burlington

The WALC Institute team of Robert Ping and Dan Burden assessed existing conditions in Burlington's South End neighborhood in September 2014. The following are general recommendations that are good for any community, including Burlington.

In general, downtown areas and neighborhoods that aim to improve the ability of people to walk, bicycle, socialize and "age in place," should adopt the following:

- 1) **Narrower Vehicle Lanes.** The wider a roadway, the faster cars tend to travel, decreasing safety for all users. Wide roadway lanes also make for wide crossings, increasing the amount of time a pedestrian is exposed to the threat of being hit by a car, and the amount of time drivers have to wait for the crossing. A large proportion of pedestrian fatalities occur on overly wide suburban five- or more-lane roadways. Throughout Burlington, including Pine Street, there are opportunities on non-highway streets to reduce the width of vehicle lanes to 10 feet. Ten feet should be the default lane width, even on many of the arterial streets. If necessary, such as when there are especially high numbers of large trucks on a street or significant curves, cities can permit construction of wider lanes, but the narrower lane should be the default. Narrower lanes contribute to lower vehicle speeds, materials savings, reduced environmental impacts, and allows for wider sidewalks, bike lanes, or wider buffers between sidewalks and passing vehicles. Narrower lanes can also make intersections more compact and efficient. Narrow lanes can be as safe as wider lanes, and they add to motorist vigilance. Less can be more.
- 2) **Buildings that Front the Street.** Buildings and homes should "front" the street—instead of being set back far from the street—to create a pedestrian-scale landscape and to put "eyes on the street" so that people feel watched over. Pine Street contains great examples of buildings that front the street. In other areas, establish maximum allowable setbacks for homes and commercial buildings in places of emphasis. Encourage placement of buildings and homes so that they create natural surveillance and maximize opportunities for people to meet or say hello. This practice is especially important near schools and parks, and within civic, retail, and commercial districts.
- 3) **Shade.** Vertical walls of green have a traffic-calming effect, helping to hold down vehicle speeds and creating a nice walking and biking environment. Burlington has many beautiful mature trees, and the City should fund planting, replacing, and maintaining shade-producing street trees. Streets lined with trees are safer for motorists, pedestrians, and bicyclists. Downtowns with shaded streets also generally yield higher retail sales. The trees create an important buffer between the people who are walking and talking on the

sidewalks and the traffic moving by them. Try conducting a shade-mapping party. With a fun event, train a group of advocates and leaders—including youth and seniors—to participate in the mapping exercise. Create four distinct maps of the entire downtown to serve as overlays, which can later be combined to represent the following:

- i) One map shows all existing shade;
- ii) One map shows aesthetically appealing streets or blocks;
- iii) One map illustrates “sense of security”; and
- iv) One map shows where people can easily find a place to sit.

Combining these maps will help identify voids and enable the community to prioritize changes. Additionally, a tree farm could be a good project for developing or enhancing partnerships between municipalities, schools, volunteer organizations, and private enterprise.

Burlington

In addition to the broad guidance noted above, Burlington has some specific opportunities to greatly improve walking and biking conditions. The opportunities are summarized below as recommendations. Some can be accomplished at little cost, while others require a more elaborate process, additional funding and a longer timeframe.

General Observations

Burlington’s South End area, part of planBTV South End, is framed by Lake Champlain to the west, Shelbourne Road and S. Union Street to the east, Maple Street to the north, and Queen City Park road to the south. PlanBTV South End is part of Burlington’s comprehensive plan that is being updated with a public involvement process.

Burlington is on the right track. The planning department and elected officials are forward-thinking, and have created a meaningful public-involvement process to update the comprehensive plan. The South End is ripe for reinvestment, and the creation of an Arts District is a great catalyst for this.

There are some areas that need improvement. The Champlain Parkway project, led by the state department of transportation, needs to connect to neighborhood



walkability and revitalization efforts. Stronger initiative connections also will be the key to success in the South End. Multiple initiatives are in motion—including the Champlain Parkway project, PlanBTV South End, reuse of the EPA superfund site, roadway improvements on and connecting to S. Pine Street, school travel safety and convenience, zoning and redevelopment of the South End—and they should be approached as a singular effort as much as is practicable, with involvement of all relevant federal, state and local agencies and stakeholders. Such a process would need robust public involvement and feedback to connect all of the neighborhood elements together into an understandable and viable plan for the future. PlanBTV South End is a good place to connect these elements together, and should become the connection ‘playbook’ for the South End.

Some of the overarching key ingredients we recommend for the South End, with connection to the Champlain Parkway project, include:

- Traffic-calmed streets
- Greater access to the waterfront for people on foot or bike
- Sidewalk gap completion
- Greater emphasis on mid-block crossings
- Landscaped streets, with a focus on tree canopies
- Emphasis on development that adds street network connectivity and removes the need for traffic to migrate to Pine Street
- Internal trip circulation (keeping traffic away from Pine as much as possible)
- Emphasis on moving vehicle parking from off-street to on-street

Below are additional, specific observations and recommendations made by the WALC Institute team during our two-day visit in September 2014, and building upon our visit in November 2013. Recommendations are organized into three categories:

- b) **Short-Term: *The 100-Day Challenge***, are recommendations that we feel can be accomplished within a 100-day time period with minimal funding and planning;
- c) **Mid-Range Projects: *The Second Wave***, are projects, programs and policies that will likely take up to 1 year or more, and will require additional funding and planning;
- d) **Long-Term Initiatives: *The Big Wins***, are ongoing or large projects, policies and program efforts that may be able to start right away, but will take larger planning and funding efforts and a longer time period to complete.

Safe Routes to School-specific recommendations below include “[SRTS]” in the title.

The cumulative effect of the traffic calming elements in this report will substantially reduce traffic speeds and increase compliance, reducing the risk of collisions along this corridor.

Short-Term: *The 100-Day Challenge*

Adopt one or two of the recommendations below as a 100-Day Challenge. The concept behind the challenge is to set a goal that can be accomplished in a short period—no more than 100 days—to maximize existing energies, channel newly created momentum toward action and implementation, and allow an established or new committee to demonstrate its commitment to healthier community design. A 100-Day Challenge also can help create awareness and support for the overall initiative.

Programs

- **Expand Walk and Bike to School Day [SRTS]** – A great way to promote Safe Routes to School programs and campaigns in Burlington schools is to continue promoting walking and bicycling through participation in this international event. To date, only Chamberlin and Orchard schools are officially registered for this event in Burlington. Expanding participation also is a good way for elected officials, such as the mayor, to promote walking, bicycling and safety to the community, and to generate positive earned media attention. We recommend that Champlain Elementary School now begin planning to participate, to help promote walking and bicycling in the South End, and to identify safety issues and opportunities. In fact, Champlain could launch a program on Bike to School Day in May, and the school could be Burlington’s overall media school; focus press advisories, elected officials, celebrities and other prominent community members on the school that day. Consider choosing a different ‘media school’ for each year’s events.
- **Create a City-Wide Safe Routes to School Task Force [SRTS]** – A great way to boost Safe Routes to School programs citywide is to convene a task force of decision makers, stakeholders and health, public works, safety, transportation, education and planning agency staff. The benefits and purpose of a task force include: resource allocation, funding and sponsor recruitment; functioning as a program advisory committee; general program and curriculum development; and media and community relations. Abby Mattera, an experienced local Safe Routes to School expert, would be the ideal facilitator for this group.

Projects

- **Increase On-Street Parking, especially Head-out Angled Parking** – In dense business and housing areas, and in front of or near Champlain Elementary School, head-out angled parking would be the safest and most convenient treatment for motorized vehicles. Currently there is very little parking on Pine Street. Many parking spaces in surface lots could be converted to head-out angled parking, dramatically improving safety. In head-out angled parking, which also is called back-in angled parking, drivers

signal their intent, go slightly past their spot—just as with parallel parking—and back into the space. This way, passengers unload towards the sidewalk, not the street, and when pulling out, drivers can easily see oncoming traffic. Conduct a parking survey on the potential for head-out angled parking in high-use areas along the southern Pine Street corridor, and in other areas.

- **Create Arts District Way Finding and Promote the Brand** – The South End Arts and Business Association brand can be visually promoted, increasing the neighborhood’s sense of pride and place. In conjunction with a wayfinding system and decorative signage such as signpost flags, the existing brand can be utilized to promote performances and art showings such as open studios; draw retail business; and help to define the neighborhood for future revitalization.
- **Install “Sharrows”** – Where there isn’t enough roadway width to support bike lanes on both sides of the street, consider marking appropriate sections of Pine Street with “sharrows”—white, on-street stencils of three chevrons and a bicycle—to designate shared use of the street for bicycles and motorized vehicles. For instance, from the Maple Street intersection heading downhill, or south, along the west side of this narrower segment of the street, sharrows can be painted in the middle of the lane so that on-street parking can be preserved on the west side, leaving room for an uphill bike lane next to the curb on the east side of the street. Bicyclists will then have their own lane for riding uphill at a slower rate than other traffic, and they can “take the lane” when traveling downhill at a faster rate.
- **Reduce Lane Widths on Pine Street if a Full Road Diet is Not Yet Feasible** – Most of Pine Street is overly wide through the South End area, encouraging motorists to exceed posted speed limits, especially through the area between Lakeside Avenue. An easy, short-term win is to use bold, wide striping to reduce the roadway to two 10- or 11-foot lanes, which leaves the remaining roadway available for bike lanes and/or on-street parking with curb extensions.
- **Identify Bike Lane Opportunities and Paint Them** – Bicycle lanes can be painted onto overly wide streets with minimal budget and planning, and can be part of lane-narrowing on some streets. Bicycle lanes will increase bicycle ridership and safety, and will also provide many other benefits for drivers as well, even if the lane is under-used by bicyclists. Bicycle lanes should be included in road diets wherever it is feasible.
- **Improve Crossings to Make Them More Visible** – Many crosswalks throughout the South End are poorly marked, not marked at all, or fading and difficult for motorists to see. Prioritize crosswalks for restriping, including mid-block crossings. Start with two wide, bold edge lines and use high-emphasis markings in all downtown locations. Survey major intersections, particularly in places where there are opportunities for higher

pedestrian counts and vulnerable populations such as near Champlain Elementary School, and paint or repaint crosswalks that are missing or faded. Consider colorizing crosswalks to increase visibility.

- **Install Bicycle Parking** – Identify opportunities for additional bicycle parking in high-use areas. Consider on-street bicycle parking racks in dense retail, employment and housing areas, which can accommodate 10 to 12 bicycles per parking space. Install bicycle racks that feature two points of contact, such as the “staple”, or “inverted U” rack, instead of racks with only one point of contact, such as “wave” racks or “wheel bender” racks.

Mid-Range Efforts: *The Second Wave*

Program

- **Launch Walking School Bus Program(s)** [SRTS] – One of the best outcomes of a Safe Routes to School program at the community or school level is the Walking School Bus, or Bike Train. Imagine the yellow school bus, but without the bus itself: adult or older youth volunteers walk or bike a prescribed route, picking up students along the way to and from school. This program provides a safe alternative to driving, with leaders helping younger students to cross streets and avoid bullies and other obstacles. Students get exercise and social connections, and some parents may be relieved of driving duties. Learn more about Walking School Bus programs at saferoutesinfo.org.

Projects

- **Create an “Arts District” Gateway** – This developing area of town deserves to be a people-friendly destination. Work with neighborhood and arts groups, local businesses and other key stakeholders to select the location(s) and to design gateway signage, landscaping and/or street features on the north and south ends of the Pine Street/South End corridor. Install landscaped curb extensions at the gateways to reduce road-crossing widths. Consider installing nearby “parklets” on the edge of the street, and pocket parks in the “furniture zone” between the street and sidewalks as added gateway components.
- **Implement a “Road Diet” on S. Pine Street** – S. Pine Street already has some limited walking and bicycling facilities, such as segments of sidewalk and a bike lane on one side of the street, and two crosswalks with pedestrian-activated flashing beacons. However, vehicle lanes are overly wide, encouraging fast traffic speeds, marked crossings are mostly non-existent or poorly marked, and drivers routinely ignore (or are confused by) the flashing beacons, resulting in two pedestrian crashes just during our two-day visit.

- We recommend conducting a design charrette on this corridor with significant community involvement, focusing on the segment between Maple Street and Lakeside Avenue, especially involving arts community stakeholders in the South End, to determine the appropriate treatments to calm S. Pine Street and make it the pedestrian-, bicycle- and people-friendly destination that the City and community members want. *(see PhotoVision image on page 14 for example road diet treatments)*
- **Install Curb Extensions and Create Pedestrian Islands** – Reduce crossing widths and further calm traffic by installing curb extensions on streets, starting with the highest foot-traffic areas and moving into lower foot-traffic areas over time. When blocks exceed 400 feet in length, pedestrians tend to cross mid-block, and mid-block pedestrian crossing islands can be a good solution. Good places to start are at the two existing crossings with flashing beacons, where motorists are still not compliant. The City could also make good use of landscaped medians on streets such as Pine Street by creating pedestrian crossings there. These recommended treatments will help to physically slow down vehicles, increasing yielding and compliance.
- **Identify Opportunities for Roundabouts and Mini-Roundabouts** – Modern roundabouts are far safer than four-way signalized intersections, substantially reducing crashes and helping to calm traffic – they can even contribute to reduced travel time through a corridor, and move 30% more traffic without signal and stop-control delays. Roundabouts can improve walking and bicycling connectivity, and they also provide opportunities to create a gateway. We recommend prioritizing the feasibility of a roundabout at the intersection of Pine Street and Lakeside Avenue, and a mini-roundabout at the intersection of Pine Street and Maple Street *(see below)*. When installing roundabouts, be strategic but be bold, and maximize the opportunity to help people become more comfortable with roundabouts and the benefits they offer. Launch a public information campaign well before a roundabout is built, to teach local residents how to use them.

a. Maple/Pine Intersection existing conditions:

This intersection is notorious for congestion, especially during peak hours. The four-way-stop intersection requires complex driver coordination, and is prone to collisions, including high-speed crashes, due to driver error. Constant starting and stopping wastes fuel and is noisy for residents living nearby.



b. Maple/Pine Intersection AFTER installation of mini-roundabout and walkability changes:

A domed (*first image*) or landscaped (*second image*) mini-roundabout will reduce collisions, congestion, pollution and noise while also helping to beautify the neighborhood. The domed roundabout design is traversable by even the largest trucks, and the landscaped design includes a “truck apron” that will enable turning movements for all but the largest trucks, assuming that the future traffic flow improvements for the South End will route large trucks onto other streets into downtown and the rail yard area. Due to the limited right-of-way on this S. Pine Street segment, both a bike lane AND parallel street parking on both sides will not fit, even with narrower 10 foot travel lanes. Therefore, we recommend street parking on the downhill side, and a bike lane on the uphill side. A bike lane on the uphill will increase safety for cyclists, especially when colorized, who are traveling well below average motorized vehicle speeds. Cyclists can then “take the lane” while traveling downhill, as their travel speeds are more easily in line with motorized vehicle speeds. The use of stenciled on-street “Sharrows” on the downhill lane increases the perception that bicyclists are allowed in the lane. This illustration also shows the increased aesthetic appeal of the neighborhood when utility lines are buried underground, an increasingly popular practice that also decreases ongoing maintenance costs.



Policy

- **Pass a Strong Complete Streets Ordinance** – Burlington benefits from a Vermont Complete Streets reporting policy and supportive internal practices. But a strong city council-approved ordinance would ensure that Complete Streets is institutionalized in Burlington’s ongoing and future planning and public works efforts. Adopt the most up-to-date best practices for Complete Streets policies and enhance the current policy framework to ensure that a Complete Streets policy will actually achieve the desired outcome. This will ensure that Complete Streets will exist into the future, regardless of changes in political or agency culture, and it will give leaders an official policy to stand behind. Note that a Complete Streets policy that includes too many ways to justify less-than-optimal street improvements will not accomplish Burlington’s goal to become a more walkable, bike-able and economically viable community. The policy could, for example, include a provision requiring new developments to install a minimum of 5’ or wider sidewalks in residential areas, and 8’ or wider in commercial areas. Model complete streets policies and a local-policymaking workbook are available at the National Complete Streets Coalition’s [website](#).
- **Create Public Access to Open Space** – South End Burlington has a large tract of unused land—an EPA superfund site—on the southwestern side of S. Pine Street, from the edge of the Burlington Electric Company site north to the Maltex Building (447 Pine Street). We understand that the superfund area does not include the top surface of this section of land, just the groundwater, so that recreational uses are an option as long as activities are above ground. We recommend working with EPA to determine whether above ground recreational uses can be approved. Since development is not feasible at this point, consider creating park space, with walking and biking paths, paved and unpaved, play areas and other recreational opportunities, along with retail options that do not require moving dirt, such as food-cart ‘pods’, or groups of food carts surrounding a central open area with café-style seating. We also recommend that sightlines be created that give visibility to Lake Champlain.

Long-Range or Policy Initiatives: *The Big Wins*

Projects

- **Champlain Parkway and Street Connectivity** – The City should continue to work with the state department of transportation to ensure that the future ingress and egress to and from the Parkway is traffic-calmed and pedestrian- and bicycle-friendly. This could include a roundabout, well-marked crossings with pedestrian refuge islands, narrow

lane crossings and slow vehicle speeds. Also, trip circulation and future development should be carefully planned in order to reduce vehicle speed on Pine Street (and Lakeside Avenue). Further, ensure that traffic circulation is dispersed via multiple streets, to reduce traffic volume on any single arterial or collector.

- **Form-Based Code** – We understand that the City is considering implementing a Form-Based Code policy, which we consider a best practice and therefore highly recommend. By using the physical form rather than the separation of uses as an organizing principle, form-based code offers a powerful alternative to conventional zoning. With form-based code what matters are the relationships between buildings and the street, pedestrians and vehicles, public and private spaces and the size and types of roads and blocks. Instead of dictating or limiting *activities*, the code focuses on such elements as parking locations and limits, building frontages and entrances, window standards, street-scaping and building elevations. Form-based code can be customized to fit a community’s vision, be it to preserve and enhance a neighborhood’s character or dramatically change and improve it. *For more information about Form-Based Code, see the AARP and WALC Institute fact sheet on Form-Based Code, available at www.aarp.org/livable.* This new zoning method will provide incentives for new transit-oriented, pedestrian, and bicycle-friendly mixed-use development, and should allow and incentivize housing and retail uses in the South End, emphasizing Accessory Dwelling Units (ADU). This will revitalize the South End, create a compelling Arts District destination, and boost the economic success and livability of both the neighborhood and the City as a whole.
- **Pine Street Corridor Improvements** – The following images illustrate a before and after “PhotoVision” of what is possible with traffic-calming and transit-, walking- and bicycling-friendly improvements, and zoning that allows for mixed-use development with housing.

a. Pine Street, at Champlain Elementary School, existing conditions:

This section of S. Pine Street is notable for wide lanes and high traffic speeds, poor pedestrian right-of-way compliance from motorists, limited marked pedestrian crossings, pedestrian/motor vehicle collisions, and limited on-street (and bicycle) parking. This area should be traffic-calmed, especially due to the proximity of Champlain Elementary School.



b. Pine Street AFTER walkability changes and future development:

Improvements include: 10-foot travel lanes, marked crosswalk, median with pedestrian crossing, advanced limit lines, street-scale lighting, crossing guard for elementary schools students (and others), bike lanes, sheltered bus stops, conversion of underused school parking lot into park with play areas and decorative safety fencing, new head-out angled parking spaces (replaces surface lot spaces that are removed), multi-story, mixed-use liner buildings with café-style seating, parklets, bike parking and landscaping. Also, utility lines are buried to increase aesthetic appeal and reduce long-term maintenance and emergency repair costs.



Program and Policies

- **Create Sightlines to Lake Champlain** – Lake Champlain is a jewel. This icon of Vermont and Burlington is a tourist draw, and certainly adds to the social and economic assets of Burlington. We recommend ensuring, through policy and planning, that all projects along the South End consider the feasibility of creating sightlines—and access to—the lake. This would be especially valuable for the South End Arts district’s future development, since sightlines to such a beautiful vista can be an inspirational factor for artists, residents and visitors in the South End, as well as an economic development asset.
- **Establish a Safe Routes to School Program and Policy [SRTS]** – Partner with the school district to coordinate initiatives aimed at making it safe for students to walk and bicycle to school. Convene a community-wide task force, or have an existing committee absorb Safe Routes to School as a primary initiative. Convene school teams at each school under consideration, and develop a comprehensive 5-E’s program at each of the designated schools. Consider starting with a pilot school, or multiple schools, that already have parental momentum, a supportive principal, and/or ‘champion’ volunteers. Consult school officials to identify ongoing challenges for students who wish to walk or

bicycle to school. Identify existing city facilities and/or upcoming projects that address problem areas, and work with schools to conduct outreach to parents and promote walking and bicycling to school. Apply for TAP or HSIP funds to pay for program activities and infrastructure improvements.

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ADDITIONAL ITEMS TO CONSIDER

- Continue to build social capital through ongoing, robust outreach to stakeholders and residents, and ongoing partnerships with officials and advocates.
- Consider creating small neighborhood parks in unused and underused lots, such as underused parking lots, and temporary on-street “[parklets](#)” in (former) parking spaces.
- Ensure that there are healthy food retail outlets within walking distance to residents, especially lower-income residents.
- Establish food cart/truck “pods” or “truck stops,” especially in underused parking areas or brownfields. Create a process for temporary placement and monthly leasing of space for multiple food carts, or food trucks. Install trash receptacles, covered seating such as picnic benches, and landscaping in these areas.
- Plan future walkability improvements around destinations, and use [Walkscore](#) as one of the tools to evaluate need and outcomes.
- Increase transparency (windows) requirements on all downtown buildings over time, with high emphasis on key blocks, eventually reaching over 70 percent transparency.
- Establish true ‘cost’ parking, which will help to incentivize added street life, safety, and downtown investment. See the [AARP/WALC Institute Parking fact sheet](#).
- Adopt a “[Health in All Policies](#)” policy, and conduct [Health Impact Assessments](#). Similar to a Social or Environmental Impact Assessment, the HIA can help to boost walkability and bikeability by looking at transportation and land use projects, programs and policies through a health lens. It can also help to build political and public support for walking and bicycling and foster new collaborations. A “Health in All Policies” policy can help to reduce the types of transportation projects that inhibit pedestrian and bicycling safety, health and convenience, such as roadway expansion projects.
- Program stoplights to give pedestrians ‘lead’ time, especially on busy streets, in order to get them partly across the street before motor vehicles are allowed to begin moving. Also, dedicated left-turn signals can precede (lead interval) or follow (lag interval) the pedestrian phase to further increase safety. There are safety benefits for all (including the motorist) to use the lag (end of cycle), but it is not always possible in some settings, to be determined by the signal timing engineer.