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To: **The District Four Comission**

From: **Local Motion**

Date: **August 31, 2011 [NOTE: revised cover letter]**

Re: **Analysis of the Conformance of the Proposed Champlain Parkway Design with Criterion 5**

Local Motion appreciates the opportunity to present the following information to the District 4 Commission for the August 31, 2011 hearing for the Champlain Parkway project. **This information is offered as part of Local Motion's role as a "Friend of the Commission," and is intended to highlight specific issues related to Criterion 5 that may be of interest to the Commission.**

Our primary concern with regard to Criterion 5 is the degree to which the proposed design may cause "unreasonably dangerous or congested conditions" for pedestrians and bicyclists, which would reasonably fall under the "other means of transportation" phrase in Act 250. **Our assessment is that, while the proposed design includes a number of features that do in fact reduce danger and congestion for people on foot and on bike, the projected increase in vehicular traffic along the corridor requires that additional steps be taken to ensure that conditions remain reasonably safe.** We are concerned in particular about the potential for unreasonably dangerous conditions for bicyclists and pedestrians at various locations along the Pine Street portion of the project corridor. All of our concerns are explained in detail in the pages that follow, starting at the northern edge of the project area and moving southward.

Of special concern is the City's proposal to make the vehicle lanes on Pine Street "shared use" by striping them 13 feet wide. This proposal will, in our estimation, increase danger for both bicyclists and pedestrians in several ways:

1. Wide lanes encourage speeding, which, in combination with the replacement of stop signs with traffic signals at Maple Street, will induce motorists to run the light. **Cars running lights is a major cause of pedestrian injury and death at intersections.**

2. "Shared use" lanes are grossly inadequate in a location with this much traffic. **Dedicated bike lanes are essential if the Parkway is to provide reasonably safe conditions for bicyclists.**

As in our comments submitted in July regarding conformance with Criterion 10, we would like to emphasize the importance of the concept of a "Complete Street." This concept has particular relevance in a discussion of conformance with Criterion 5, as a Complete Street is designed to ensure that no one mode is unduly burdened by dangerous or congested conditions. As stated in the city's Transportation Plan, "the only essential element of a complete street is accommodating all travel modes safely and efficiently." *See page 8 in the Transportation Plan.* **In essence, then, a Complete Street is one that, by virtue of its emphasis on safety and efficiency for all modes, produces conditions that are *not* unreasonably dangerous or congested for *any* of the users of the road.**

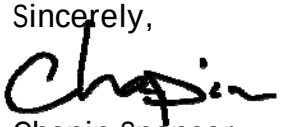
Therefore, it is our assessment that the City of Burlington must adhere to the Complete Streets principles outlined in its Transportation Plan not only to conform with Criterion 10, but also to conform with Criterion 5. Given the large volume of traffic projected for this corridor, a high degree of attention to the quality and continuity of bike-ped facilities is essential if the city is to ensure safe and efficient conditions for all users of the Champlain Parkway.

We would like to acknowledge that many of the issues we raise in this letter will be addressed in later stages of the design process, and that Burlington DPW staff have indicated that they already plan to incorporate some of the strategies recommended in this memo at that point. Our intention is to be comprehensive in scope, laying out the full range of strategies that will be needed to ensure compliance with Criterion 5.

The attached document discusses several specific locations where the current design of the Champlain Parkway project (including affected areas on adjacent streets) is, in our estimation, likely to cause "unreasonably dangerous or congested conditions" for pedestrians and/or bicyclists. We urge the Commission to give serious consideration to these issues in its evaluation of Criterion 5.

Thank you very much for your consideration.

Sincerely,



Chapin Spencer
Executive Director

Location 1: Intersection of Main and Pine

Current Design

The design for this area of the Parkway does not include any facilities specifically for bicyclists other than "sharrows" (shared-use markings), which are inadequate and inappropriate on a high-volume street. The design does not specify if pedestrians will be afforded any extra protection at this important crossing, and no curb modifications are shown.

Implications for Safety and Efficiency

- Bicyclists will be forced to navigate a very busy and complex intersection while riding in the same lanes as motor vehicle traffic
- Pedestrian crossing distances across Main Street will quite long, which will make crossing difficult for people with mobility impairments

Recommendations

- Incorporate a "bicycle box" at the top of both the through lane and the left-turn lane and institute advanced green lights for bicycles so as to allow bicyclists to enter the intersection before cars do
- Prohibit parking in this block, and include bike lanes up to the point where the left turn lane begins
- Install countdown crossing signals, advanced pedestrian crossing, and illuminated "no right on red" signs to allow pedestrians to enter the intersection before cars do
- Bump out the curbs so as to shorten crossing distances across Main Street

Location 2: Pine Street from south of Main to Kilburn

Current Design

The design for this section of the Parkway currently calls for left-turn lanes for cars at both King and Maple. As above, this precludes the inclusion of dedicated bike lanes for this entire stretch of street. In addition, though this is outside of our purview, it appears likely that the left turn lanes (particularly for northbound traffic) will be too short to accommodate demand, causing left-turning cars to spill out into the through lane and cause congestion.

Implications for Safety and Efficiency

- Bicyclists will be forced to ride with traffic along this very busy section (a *reduction* in facilities from the current situation, where there is a dedicated southbound bike lane from Maple Street southward)

Recommendations

- Model traffic flow with left-turn lanes eliminated at King and at Maple and left turns prohibited during peak hours (thereby requiring that vehicles proceed

north to Main or south to Kilburn to turn left); if delays are the same or reduced, revise the design to include only through lanes for cars, plus separated bike lanes on both sides of the street from Kilburn to King

Location 3: Pine Street at Kilburn Street

Current Design

The design for this section of the Parkway currently calls for the shared-use path on the west side of Pine Street to end at a bicycle information kiosk near the entrance to the transfer station. There is no provision for bicyclists to proceed northward safely and efficiently once the shared-use path ends. In addition, there is no enhanced crossing indicated for pedestrians at this busy intersection.

Implications for Safety and Efficiency

- Bicyclists will have no choice but to ride with traffic or ride on sidewalks from this point northward, thereby endangering themselves and/or pedestrians
- Pedestrians will continue to have to wait for extended periods before they will be allowed to cross at the (currently unsignaled) crosswalk, and will be at risk of being hit by an inattentive motorist when they do cross [1]

Recommendations

- Build a shared-use path along the rail bed from Pine Street to Champlain Street, and extend it to Battery Street and the lakeshore bike path if possible
- Install an RRFB or HAWK signal at Pine and Kilburn that gives pedestrians added visibility and safety when they need to cross
- Install signage or markings that indicate that the RRFB/HAWK signal also serves as a crossing signal for northbound bicyclists who need to cross the street from the end of the shared use path to the bike lane on the east side of Pine Street

Location 4: Intersections of Pine Street with Marble Avenue, Howard Street, and Locust Street

Current Design

The design for these three intersections along the Parkway currently calls for crosswalks only. Some legs of intersections do not have crosswalks at all.

Implications for Safety and Efficiency

- As above, pedestrians will continue to have to wait for extended periods before they will be allowed to cross at the (currently unsignaled) crosswalk, and will be at risk of being hit by an inattentive motorist when they do cross

[1] A recent study conducted by Local Motion at Pine and Howard streets demonstrated that, even under current traffic conditions, a pedestrian has to wait for an average of over 17 seconds as an average of four cars fail to yield before he or she is allowed to cross the crosswalk. This will no doubt worsen with increased traffic along this corridor unless additional measures are taken to facilitate pedestrian crossings.

- Bicyclists wishing to cross Pine Street to reach the shared use path on the west side of the street will also have to wait for extended periods and expose themselves to being hit by a car to cross the street

Recommendations

- Install an RRFB or HAWK signal at each of these three intersections that gives pedestrians added visibility and safety when they need to cross
- Install signage or markings that indicate that the RRFB/HAWK signals also serve as crossing signals for bicyclists who need to cross the street to get to the shared use path
- Bump out the curb at each intersection on the east side of Pine Street only, with the bump-out terminating just shy of the edge of the northbound bike lane (see below)

Location 5: Pine Street from Lakeside to Kilburn

Current Design

The design for this section of the Parkway currently does *not* include any bike lanes (even though the street presently includes a southbound bike lane on the east side of the street). Presumably, the designers are operating on the assumption that the shared-use path on the west side of the street is sufficient to accommodate bike traffic safely.

Implications for Safety and Efficiency

- Bicyclists wishing to patronize businesses on the east side of Pine Street – which accounts for a disproportionate share of the business spaces along this corridor – will be forced to either ride with traffic on the northbound side of the street, ride on the sidewalk along the east side of the street, or cross the street multiple times between the shared use path and their destinations

Recommendations

- Incorporate a northbound bike lane into the design between the parking lane and the vehicle travel lane, adding an appropriately sized buffer strip between the parking lane and the bike lane[2]

Location 6: Intersection of Pine Street and Lakeside Avenue

Current Design

The design for this section of the Parkway currently does not indicate what kind of crossing technology will be used to ensure reasonably safe and efficient pedestrian and bicyclist movement through this intersection.

[2] The curb-to-curb width of the street along this section (generally about 37 feet) is sufficient for a one-foot buffer along the western margin of the street, two eleven-foot travel lanes, a four-foot bike lane, a two-foot buffer, and an eight-foot parking lane.

Implications for Safety and Efficiency

- Pedestrians wishing to cross any of the three legs of this intersection (particularly the northern and western crossings) will be exposed to constant turning traffic[3]
- Bicyclists wishing to follow the shared use path across the mouth of Lakeside or to cross Pine on the northern side of the intersection and use the proposed northbound bike lane will face similar dangers

Recommendations

- Design the traffic signal phasing such that, when the crosswalk button is pushed, traffic is stopped in all directions and pedestrians can cross multiple legs of the intersection without encountering any turning traffic
- Incorporate illuminated "no right on red" signs to ensure that vehicles do not turn across pedestrian paths
- Install signage or signals that indicate that the pedestrian crossing signals also serve as signals for bicyclists who need to cross the street on or to/from the shared use path

Location 7: Lakeside Avenue between Pine and the "new" Parkway

Current Design

The design for this section of the Parkway currently calls for a shared-use path along the south side of Lakeside Avenue, with users of the path crossing Lakeside at Pine. However, no shared-use path or other dedicated bicycle facilities are included on the north side of Lakeside Avenue, a major route for bicyclists heading from adjacent neighborhoods over to the Lakeshore Bike Path and the Lakeside neighborhood.

Implications for Safety and Efficiency

- Bicyclists traveling west on Lakeside Avenue will be forced to either ride with traffic on the street, ride with pedestrians on the sidewalk, or cross the street *three times* (across Lakeside at Pine, across the mouth of the Parkway, and back across Lakeside at the Parkway) in order to reach their destination

Recommendations

- Incorporate a shared-use path along the northern side of Lakeside from the intersection with Pine (in front of DPW) to the driveway for the General Dynamics building

[3] This is already the case at this intersection, where a substantial percentage of vehicles turn from Pine onto Lakeside and all vehicles on Lakeside must turn at Pine. This problem will only be exacerbated with the construction of the Parkway, as vehicles turning from Lakeside to Pine and vice versa will account for essentially all of the increased traffic at this location.

- Incorporate a westbound bike lane on the north side of Lakeside Avenue from the eastern driveway of the General Dynamics building to the western end of Lakeside (outside the project area)
- Bump out the curb on the north side of Lakeside Avenue from the DPW back lot entrance to the eastern General Dynamics driveway so as to allow the bike lane to enter the street in the lee of the bump-out
- Incorporate an eastbound bike lane on the south side of Lakeside Avenue from the western end of Lakeside to just before the intersection with the "new" Parkway
- Build an "off-ramp" for bikes at the end of the eastbound bike lane on Lakeside so as to facilitate the transition to the shared-use path
- Turn the portion of sidewalk in the southwest quadrant of the intersection of Lakeside and the "new" Parkway into a shared-use path

Location 8: Intersection of Lakeside Avenue and the "new" Parkway

Current Design

The design for this section of the Parkway currently calls for a very large turning radius on the southeast corner of the intersection, causing the crosswalk across the mouth of the "new" Parkway to be set back a considerable distance (what appears to be 50 to 70 feet) from the intersection. It also lacks a crosswalk on the easternmost leg of the intersection. Finally, the design for this section of the Parkway currently does not indicate what kind of crossing technology will be used to ensure reasonably safe and efficient pedestrian and bicyclist movement through this intersection.

Implications for Safety and Efficiency

- Pedestrians traveling along the south side of Lakeside will be unlikely to use the crosswalk, as its setback from the intersection is effectively a 100+ foot detour; they will cut across the mouth of the intersection instead, putting themselves and drivers at risk
- Pedestrians wishing to cross Lakeside on the eastern side of this intersection will not be able to do so safely due to the lack of a crosswalk
- Pedestrians wishing to cross any of the three legs of this intersection (particularly the southern and eastern crossings) will be exposed to constant turning traffic

Recommendations

- Use a much smaller return radius for the southeast corner of the intersection of Lakeside and the "new" Parkway
- Pull the crosswalk at the mouth of the "new" Parkway much closer to the intersection so as to reduce or eliminate any required detour
- Add a crosswalk across Lakeside on the eastern side of this intersection

- Design the traffic signal phasing such that, when the crosswalk button is pushed, traffic is stopped in all directions and pedestrians can cross multiple legs of the intersection without encountering any turning traffic
- Incorporate illuminated "no right on red" signs to ensure that vehicles do not turn across pedestrian paths
- Install signage or signals that indicate that the pedestrian crossing signals also serve as signals for bicyclists who need to cross the street on or to/from the shared use path

Location 9: Intersection of the "new" Parkway and Sears Lane

Current Design

The design for this section of the Parkway currently calls for crosswalks across only two of the four legs of this intersection and sidewalk only on the north side of Sears Lane. Sears Lane is a major route to school for young children living in the Lakeside neighborhood.

Implications for Safety and Efficiency

- Children walking to school will have to make multiple crossings of the street
- Children will be forced to walk on the north side of Sears, which will require that they cross Sears at its mouth at Pine

Recommendations

- Add crosswalks on the south and west legs of the intersection
- Add a sidewalk on the south side of Sears Lane

Location 10: Intersection of the "new" Parkway and Flynn Avenue

Current Design

The design for this section of the Parkway currently calls for a very large return radius on the southwest corner of the intersection, resulting in an extremely long crosswalk across the southern leg of the intersection. It also does not include a crosswalk on the western leg of the intersection. Finally, the design for this section of the Parkway currently does not indicate what kind of crossing technology will be used to ensure reasonably safe and efficient pedestrian and bicyclist movement through this intersection.

Implications for Safety and Efficiency

- Pedestrians and bicyclists using the shared-use path will be forced to deal with turning traffic movements while navigating very long crosswalks
- Some pedestrians traveling west on Flynn Avenue to visit on the west side of the Parkway (where most businesses in this area are located) will not have a convenient way to cross Flynn Avenue to the north side

Recommendations

- Redesign the geometry of the intersection so as to eliminate the need for a large return radius
- Realign the crosswalk on the southern leg of the intersection so it crosses at right angles to traffic so as to reduce the crossing distance
- Add a crosswalk (also at right angles to traffic) on the western leg of the intersection

Location 11: Briggs Street

Current Design

The design for this section of the Parkway currently lacks a sidewalk along Briggs, a street with numerous local businesses (including Petra Cliffs, a climbing gym that many children patronize).

Implications for Safety and Efficiency

- Pedestrians coming from Flynn Avenue will be forced to walk in the street or in the grass to reach businesses along this street
- Pedestrians coming from Home Avenue will be forced either to jaywalk across the Parkway or to go all the way to Flynn Avenue and double back in order to reach businesses along this street

Recommendations

- Add a sidewalk in the greenbelt between Briggs Street and the Parkway that extends from Flynn Avenue all the way to Home Avenue

Location 12: Terminus of Ferguson and Lyman avenues

Current Design

The design for this section of the Parkway currently lacks effective connections to the shared use path for bicyclists and includes connections only on one side of the street for pedestrians.

Implications for Safety and Efficiency

- "Goat paths" will develop from the unserved sidewalk and from the end of the cul-de-sac on each street

Recommendations

- Extend the sidewalks on both sides of the street all the way to the shared-use path
- Incorporate an "on-ramp" from the end of each cul-de-sac onto the shared-use path for use by bicyclists

Location 13: Batchelder Street

Current Design

The design for this section of the Parkway currently lacks any paved connections to the shared-use path.

Implications for Safety and Efficiency

- "Goat paths" will develop from the street to the shared-use path as bicyclists and pedestrians use the path

Recommendations

- Build "on-ramps" from the street onto the shared-use path at two locations: opposite the end of Morse Place, and at the south end of Batchelder Street

Location 14: Intersection of the "new" Parkway and Home Avenue

Current Design

The design for this section of the Parkway currently includes excessively large curb return radii, particularly on the northwest corner of the intersection. A large return radius at this location would be useful only for large trucks traveling southbound on the Parkway and wanting to turn westbound onto Home Avenue, a travel pattern that is not likely to occur with any regularity. In addition, the design lacks crosswalks on the northern and western legs of the intersection. Finally, the design for this section of the Parkway currently does not indicate what kind of crossing technology will be used to ensure reasonably safe and efficient pedestrian and bicyclist movement through this intersection.

Implications for Safety and Efficiency

- Some pedestrian and bicyclist movements will be restricted due to a lack of crosswalks
- Pedestrians and bicyclists are exposed to unnecessary danger due to excessively long crossing distances and vehicle turning movements

Recommendations

- Tighten up curb return radii, particularly on the northwest and southwest corners of the intersection
- Add crosswalks to the northern and western legs of the intersection (needed to tie into the proposed sidewalk from Briggs Street)
- Design the traffic signal phasing such that, when the crosswalk button is pushed, traffic is stopped in all directions and pedestrians can cross multiple legs of the intersection without encountering any turning traffic
- Incorporate illuminated "no right on red" signs to ensure that vehicles do not turn across pedestrian paths

- Install signage or signals that indicate that the pedestrian crossing signals also serve as signals for bicyclists who need to cross the street on the shared use path

Location 15: Junction of the shared use path and Queen City Park Road

Current Design

The design for this section of the Parkway currently does not provide for any special treatment at the southern terminus of the shared-use path, where it empties out onto Queen City Park Road mid-block.

Implications for Safety and Efficiency

- Bicyclists reaching this location must cross relatively high-speed traffic in order to proceed eastward on Queen City Park road

Recommendations

- Install an RRFB sign and a marked crosswalk at the juncture
- Stripe bike lanes on Queen City Park Road from Shelburne Road to the bridge over the railroad tracks (and beyond if possible)